



# LEAP

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June 2017

**Lodge on Portion 126 (A Portion of Portion 2) of the Farm Zwavelpoort 373-J. R. within the City of Tshwane Metropolitan Municipality Gauteng.**

**Ref: GAUT: 002/17-18/E0023**

**Draft**

## **Basic Assessment Report Submission**



**Submitted for**

Square Time Café (Pty) Ltd  
Shop D Boardwalk Office Park  
Haymeadow Crescent  
Faerie Glen, Pretoria

**Submitted by**

LEAP  
Dr Gwen Theron

**Submitted to:**

GDARD  
Ground Floor, Umnotho House, 56 Eloff Street, Johannesburg, 2000


# Document Control Record

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<b>Report Title</b>	Lodge on Portion 126 (A Portion of Portion 2) of the Farm Zwavelpoort 373-J. R. within the City of Tshwane Metropolitan Municipality Gauteng.					
<b>Document ID</b>						
<b>File Path</b>	X:\Main data\PROJECTS\Z\Zwavelpoort Ptn 126 (Lodge)\Draft Basic Assessment\Draft Basic Assessment cover.docx					
<b>Client</b>	Square Time Café (Pty) Ltd Shop D Boardwalk Office Park Haymeadow Crescent Faerie Glen, Pretoria			<b>Client Contact</b>	Mr. Johannes Albertus De Villiers	
<b>Revision</b>	<b>Date</b>	<b>Revision details/Status</b>	<b>Prepared by</b>	<b>Author</b>	<b>Verifier</b>	<b>Approved by</b>
0			C Mahlangu	C Mahlangu	Dr. G Theron	Dr. G Theron
1						
<b>Current Revision</b>						
APPROVAL						
<b>Signature</b>						
<b>Name</b>	Dr Gwen Theron		<b>Name</b>			
<b>Title</b>	Environmental Practitioner		<b>Title</b>			

## **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:**

**GAUT:002/17-18/E0023**

**Application Number:**

**Date Received:**

**19 May 2017**

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.

Not Applicable

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.

Not Applicable

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

Refer to **Annexure E**

If no, state reasons for not attaching the list.

Not Applicable

Have State Departments including the competent authority commented?

No

If no, why?

The report is still at Draft report. Comments from State Departments and the Competent Authority will be included in the Final Report.

# SECTION A: ACTIVITY INFORMATION

## 1. PROPOSAL OR DEVELOPMENT DESCRIPTION

### 1.1 Project Title (must be the same name as per application form):

Proposed development a of Lodge on Portion 126 (A Portion of Portion 2) of the Farm Zwavelpoort 373-J. R. within the City of Tshwane Metropolitan Municipality Gauteng. The subject property is located east of the City of Tshwane Metropolitan Municipality's boundary in Region 6 – South of the Lynnwood Road on the proposed K147. The proposed property is situated within Zwavelpoort east of the Zwavelpoort Spruit / River. The site measures 10.9490 hectares in extent.



**Figure 1: Location Map**

Select the appropriate box

The application is for an upgrade of an existing development

 n/a

The application is for a new development

 X

Other, specify

 n/a

Indicate the number of the relevant Government Notice:

Activity No (s) (relevant notice): e.g. Listing notices 1, 2 or 3

Describe each listed activity as per the wording in the listing notices:

<p><b>GN 983 of 4 Dec 2014 as amended by GN. R 327, 07 April 2017</b></p>	<p><b>Listing Notice 1 Activity 9</b></p>	<p>The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water—</p> <p>(i) with an internal diameter of 0,36 metres or more; or</p> <p>(ii) with a peak throughput of 120 litres per second or more;</p>
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		<p>excluding where—</p> <p>(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</p> <p>(b) where such development will occur within an urban area.</p>
<p><b>GN 983 of 4 Dec 2014 as amended by GN. R 327, 07 April 2017</b></p>	<p><b>Listing Notice 1 Activity 10</b></p>	<p>The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes –</p> <p>(i) with an internal diameter of 0,36 metres or more; or</p> <p>(ii) with a peak throughput of 120 litres per second or more;</p> <p>excluding where—</p> <p>(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</p> <p>(b) where such development will occur within an urban area.</p>
<p><b>GN 983 of 4 Dec 2014 as amended by GN. R 327, 07 April 2017</b></p>	<p><b>Listing Notice 1 Activity 12</b></p>	<p>The development of-</p> <p>(i) canals exceeding 100 square metres in size;</p> <p>(ii) channels exceeding 100 square metres in size;</p> <p>(iii) bridges exceeding 100 square metres in size;</p> <p>(iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size;</p> <p>(v) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size;</p> <p>(vi) bulk storm water outlet structures exceeding 100 square metres in size;</p> <p>(vii) marinas exceeding 100 square metres in size;</p> <p>(viii) jetties exceeding 100 square metres in size;</p> <p>(ix) slipways exceeding 100 square metres in size;</p> <p>(x) buildings exceeding 100 square metres in size;</p> <p>(xi) boardwalks exceeding 100 square metres in size; or</p> <p>(xii) infrastructure or structures with a physical footprint of 100 square metres or more;</p> <p>The development of—</p> <p>(i).dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or</p> <p>(ii).infrastructure or structures with a physical footprint of 100 square metres or more;</p> <p>Where such development occurs –</p> <p>(a) within a watercourse;</p> <p>(b) in front of a development setback; or</p> <p>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>Excluding -</p> <p>aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</p> <p>(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</p>

		<p>(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;</p> <p>(dd) where such development occurs within an urban area; [or]</p> <p>(ee) where such development occurs within existing roads, [or] road reserves or railway line reserves; or</p> <p>(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><b>GN 983 of 4 Dec 2014 as amended by GN. R 327, 07 April 2017</b></p>	<p><b>Listing Notice 1 Activity 17</b></p>	<p>Development-</p> <p>(i) in the sea;</p> <p>(ii) in an estuary;</p> <p>(iii) within the littoral active zone;</p> <p>(iv) in front of a development setback; or</p> <p>(v) if no development setback exists, within a distance of 100 metres inland of the high- water mark of the sea or an estuary, whichever is the greater;</p> <p>in respect of-</p> <p>(a) fixed or floating jetties and slipways;</p> <p>(b) tidal pools;</p> <p>(c) embankments;</p> <p>(d) rock revetments or stabilising structures including stabilising walls;</p> <p>(e) buildings of 50 square metres or more; or</p> <p>(f) infrastructure with a development footprint of 50 square metres or more -</p> <p>but excluding-</p> <p>(aa) the development of infrastructure and structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</p> <p>(bb) 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>(cc) the development of temporary infrastructure or structures where such structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared; or</p> <p>(dd) where such development occurs within an urban area</p>
<p><b>GN 983 of 4 Dec 2014 as amended by GN. R 327, 07 April 2017</b></p>	<p><b>Listing Notice 1 Activity 19</b></p>	<p>The infilling or depositing of any material of more than [5] 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than [5] 10 cubic metres from [—</p> <p>(i)] a watercourse;</p> <p>[(ii) the seashore; or</p> <p>(iii)the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or estuary, whichever distance is the greater—]</p> <p>but excluding where such infilling, depositing, dredging, excavation, removal or moving—</p> <p>(a). will occur behind a development setback;</p> <p>(b). is for maintenance purposes undertaken in accordance with a maintenance management plan; [or]</p> <p>(c). falls within the ambit of activity 21 in this Notice, in which case that activity applies;</p> <p>(d). occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</p>



		(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
GN 983 of 4 Dec 2014 as amended by GN. R 327, 07 April 2017	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.
GN 983 of 4 Dec 2014 as amended by GN. R 324, 07 April 2017	Listing Notice 3 Activity 6	The development of resorts, lodges, hotels, [and] tourism or hospitality facilities that sleeps 15 people or more.  <b>c. Gauteng:</b>  i. A protected area identified in terms of NEMPAA, excluding conservancies; ii. National Protected Area Expansion Strategy Focus Areas; iii. Gauteng Protected Area Expansion Priority Areas; iv. Sites identified as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plans; v. Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004); vi. Sensitive areas identified in an environmental management framework adopted by the relevant environmental authority; vii. Sites or areas identified in terms of an international convention; viii. Sites identified as high potential agricultural land in terms of Gauteng Agricultural Potential Atlas; ix. Important Bird and Biodiversity Area (IBA); x. Sites managed as protected areas by provincial authorities, or declared as nature reserves in terms of the Nature Conservation Ordinance (Ordinance 12 of 1983) or the NEMPAA; xi. Sites designated as nature reserves in terms of municipal Spatial Development Frameworks; or xii. Sites zoned for conservation use or public open space or equivalent zoning.
GN 983 of 4 Dec 2014 as amended by GN. R 324, 07 April 2017	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.  <b>c. Gauteng</b>  i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii. Within Critical Biodiversity Areas or Ecological Support Areas identified in the Gauteng Conservation Plan or bioregional plans; or iii. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent.
GN 983 of 4 Dec 2014 as amended by GN. R 324, 07 April 2017	Listing Notice 3 Activity 14	The development of—  [(i) canals exceeding 10 square metres in size; (ii) channels exceeding 10 square metres in size; (iii) bridges exceeding 10 square metres in size; (iv) dams, where the dam, including infrastructure and water surface area exceeds 10 square metres in size;



	<p>(v) weirs, where the weir, including infrastructure and water surface area exceeds 10 square metres in size;</p> <p>(vi) bulk storm water outlet structures exceeding 10 square metres in size;</p> <p>(vii) marinas exceeding 10 square metres in size;</p> <p>(viii) jetties exceeding 10 square metres in size;</p> <p>(ix) slipways exceeding 10 square metres in size;</p> <p>(x) buildings exceeding 10 square metres in size;</p> <p>(xi) boardwalks exceeding 10 square metres in size; or</p> <p>(xii) infrastructure or structures with a physical footprint of 10 square metres or more;]</p> <p>(i). dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or</p> <p>(ii). Infrastructure or structures with a physical footprint of 10 square metres or more;</p> <p>where such development occurs—</p> <p>(a) within a watercourse;</p> <p>(b) in front of a development setback; or</p> <p>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.</p> <p><b>c. Gauteng</b></p> <p>i. A protected area identified in terms of NEMPAA, excluding conservancies;</p> <p>ii. National Protected Area Expansion Strategy Focus Areas;</p> <p>iii. Gauteng Protected Area Expansion Priority Areas;</p> <p>iv. Sites identified as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plans;</p> <p>v. Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004);</p> <p>vi. Sensitive areas identified in an environmental management framework adopted by the relevant environmental authority;</p> <p>vii. Sites or areas identified in terms of an international convention;</p> <p>viii. Sites managed as protected areas by provincial authorities, or declared as nature reserves in terms of the Nature Conservation Ordinance (Ordinance 12 of 1983) or the NEMPAA;</p> <p>ix. Sites designated as nature reserves in terms of municipal Spatial Development Frameworks; or</p> <p>x. Sites zoned for conservation use or public open space or equivalent zoning.</p>
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Does the activity also require any authorisation other than NEMA EIA authorisation?

YES	NO
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If yes, describe the legislation and the Competent Authority administering such legislation

Not Applicable
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If yes, have you applied for the authorisation(s)?

YES	NO
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If yes, have you received approval(s)? (attach in appropriate appendix)

YES	NO
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## 2. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline:	Administering authority:	Promulgation Date:
Constitution of the Republic of South Africa (Act No 108 of 1990)	Government of South Africa	18 December 1996
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	Department of Environmental Affairs (DEA) and Gauteng Department of Agriculture and Rural Development (GDARD)	27 November 1998
GN Regulation 983 to 986 Dec 2014 as amended and promulgated under Chapter 5 of the National Environmental Management Act (NEMA, Act 107 of 1998) in Government Gazette 40772 on 7 April 2017.  Listed activities:  1. GNR 983 amended by GN R 327: Listing Notice 1: Activity 9 2. GNR 983 amended by GN R 327: Listing Notice 1: Activity 10 3. GNR 983 amended by GN R 327: Listing Notice 1: Activity 12 4. GNR 983 amended by GN R 327: Listing Notice 1: Activity 17 5. GNR 983 amended by GN R 327: Listing Notice 1: Activity 19 6. GNR 983 amended by GN R 327: Listing Notice 1: Activity 27  7. GNR 985 amended by GN R 324: Listing Notice 3: Activity 4 8. GNR 985 amended by GN R 324: Listing Notice 3: Activity 6 9. GNR 985 amended by GN R 324: Listing Notice 3: Activity 12 10. GNR 985 amended by GN R 324: Listing Notice 3: Activity 14	Gauteng Department of Agriculture and Rural Development (GDARD)	7 April 2017
National Water Act (Act No 36 of 1998)	Department of Water Affairs (DWA)	26 August 1998
National Heritage Resources Act No 25 of 1999 (Act No 25 of 1999 as amended)	South African Heritage Resources Agency (SAHRA)	28 April 1999
The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)	National -Department of Agriculture Forestry and Fisheries (DAFF)	27 April 1983
Gauteng Environmental Management Framework	Gauteng DARD	2016

<p>i. Companion Guideline on the Environmental Impact Assessment Regulations, 2010</p> <p>ii. Environmental Management Framework Guidelines, 10 October 2012</p> <p>iii. Public Participation Guideline, 10 October, 10 October 2012</p> <p>iv. Fee Regulations Guidance Document, April 2014</p> <p>v. Guideline on need and desirability in terms of the Environmental Impact Assessment Regulations, 2010</p> <p>vi. EIA Listed Activities and Timelines (January 2015) Section 24G and Similar Listings (January 2015)</p>	Gauteng DARD	Various dates
<p>Spatial Planning and Land Use Management Act, 2013</p> <ul style="list-style-type: none"> <li>• The National Development Framework</li> <li>• Gauteng Spatial Development Framework</li> <li>• City of Tshwane Spatial Development Framework</li> <li>• Regional Spatial Development Framework</li> <li>• Section 7 of the Spatial Planning and Land Use Management Act, 2013</li> <li>• City of Tshwane Land Use Management By-Law, 2016 City of Tshwane Town Planning Scheme, 2008 (revised 2014)</li> </ul>	City of Tshwane	Various dates

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

Legislation, policy of guideline	Description of compliance
<p>Constitution of the Republic of South Africa (Act No 108 of 1990)</p>	<ul style="list-style-type: none"> <li>• Obligation to ensure that the proposed development will not result in pollution and ecological degradation; and</li> <li>• Obligation to ensure that the proposed development is ecologically sustainable, while demonstrating economic and social development.</li> </ul> <p>The proposed project can be considered as a sustainable development that will prevent pollution and ecological degradation whilst promoting justifiable economic and social development.</p>
<p>National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).</p>	<p>The Amendments to the EIA Regulations, were published 7 on April 2017 in terms of the NEMA and came into effect on 7 April 2017.</p> <p>In terms of these EIA Regulations, the following listed activities within Government Notice R. 327 and R 985 are triggered by the proposed development, thereby requiring environmental authorisation from the GDARD.</p> <p>Government Notice 983 to 986 as amended by R. 327, R. 325 and R. 324, lists construction, transformation, extraction, exploration and expansion of facilities or</p>

Legislation, policy of guideline	Description of compliance
	<p>activities that require environmental authorisation prior to commencement of construction. A distinction is made between Listing Notices 1 and 3 activities, which require a Basic Assessment, and Listing Notice 2 activities, which require a full EIA (Scoping followed by Impact Assessment).</p> <p>A Basic Assessment is generally intended for smaller scale activities, or activities whose impacts are well understood and can be easily managed. A Full EIA is required for Listing Notice 2 activities which are activities that due to their nature and/or extent are likely to have significant impacts that cannot be easily predicted. Listing 2 activities are therefore higher risk activities that potentially cause higher levels of pollution, waste and environmental degradation.</p> <p>The proposed project requires a basic assessment in terms of R. 327 and 324.</p>
National Water Act (Act No 36 of 1998)	All nearby waterbodies were scanned and Water Use License Application (in terms of General Authorisation) is envisioned (i.e. there is surface waterbodies within 500m of the proposed site).
National Heritage Resources Act No 25 of 1999 (Act No 25 of 1999 as amended)	A Phase 1 Heritage Impact Assessment and Paleontological Assessment have been undertaken and submitted to PHRAG for comment.
Gauteng Environmental Management Framework	<p>The land falls within <b>Zone 1 : High control zone</b>. Special control zones are sensitive areas outside the urban development zone. These areas are sensitive to development activities and in several cases also have specific values that need to be protected.</p> <ul style="list-style-type: none"> <li>• CBAs (Irreplaceable and Important areas) and ESAs outside the urban development zone as defined in C-Plan 3.3;</li> <li>• Rivers (including a 30m buffer on each side) and currently undeveloped ridges that must be conserved;</li> <li>• Areas that are sensitive (as determined in the sensitivity assessment); and</li> <li>• Protected areas.</li> </ul> <p>No listed activities may be excluded from environmental assessment requirements in this zone and further activities may be added where necessary to protect the environment in this zone. Additional requirements (guidelines, precinct plans, etc.) to ensure the proper development of identified areas in this zone, in a manner that will enhance their</p>

Legislation, policy of guideline	Description of compliance
	<p>potential for conservation, tourism and recreation may be introduced.</p> <p>In this instance: the proposed development is in line with the directives of the Zone. <b>Conservation, tourism and recreation is proposed.</b></p>
<ul style="list-style-type: none"> <li>i. Companion Guideline on the Environmental Impact Assessment Regulations, 2010</li> <li>ii. Environmental Management Framework Guidelines, 10 October 2012.</li> <li>iii. Public Participation Guideline, 10 October, 10 October 2012</li> <li>iv. Fee Regulations Guidance Document, April 2014</li> <li>v. Guideline on need and desirability in terms of the Environmental Impact Assessment Regulations, 2010</li> <li>vi. EIA Listed Activities and Timelines (January 2015)</li> <li>vii. Section 24G and Similar Listings (January 2015)</li> </ul>	<p>Guidelines have informed this Application for Environmental Authorisation procedures and project / BAR.</p>
<ul style="list-style-type: none"> <li>i. Spatial Planning and Land Use Management Act, 2013</li> <li>ii. The National Development Framework</li> <li>iii. Gauteng Spatial Development Framework</li> <li>iv. City of Tshwane Spatial Development Framework</li> <li>v. Regional Spatial Development Framework</li> <li>vi. Section 7 of the Spatial Planning and Land Use Management Act, 2013</li> <li>vii. City of Tshwane Land Use Management By-Law, 2016</li> <li>viii. City of Tshwane Town Planning Scheme, 2008 (revised 2014)</li> <li>ix. The Gauteng Draft Red Data Policy</li> <li>x. The Gauteng Draft Ridges Policy</li> <li>xi. GDARD CPLAN 3.3</li> <li>xii. Protection of Agricultural Land in Gauteng Revised Policy (June 2006)</li> </ul>	<p>Guidelines have informed this Application for Environmental Authorisation procedures and project / BAR</p>

### 3. ALTERNATIVES

Describe the proposal and alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. The determination of whether the site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment.

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

**Note:** After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

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

**Proposed Activity:** Proposed development of a Lodge on Portion 126 (A Portion of Portion 2) of the Farm Zwavelpoort 373-J. R. within the City of Tshwane Metropolitan Municipality Gauteng. (Preferred Alternative).

No alternative site is available, the Applicant is the owner of the subject property and the application is therefore only relevant to this site.

Provide a description of the alternatives considered

No.	Alternative Type	Description
1	<b>PROPOSED ACTIVITY:</b>	It is the intention of Square Time Café (Pty) Ltd (the Applicant and land owner) to develop a Lodge to be known as Sleepy Creek on Portion 126 (a Portion of Portion 2) of the Farm Zwavelpoort 373-J. R. within the City of Tshwane Metropolitan Municipality Gauteng.





Figure 2: Shows the land uses in the area that match the proposed / preferred alternative.

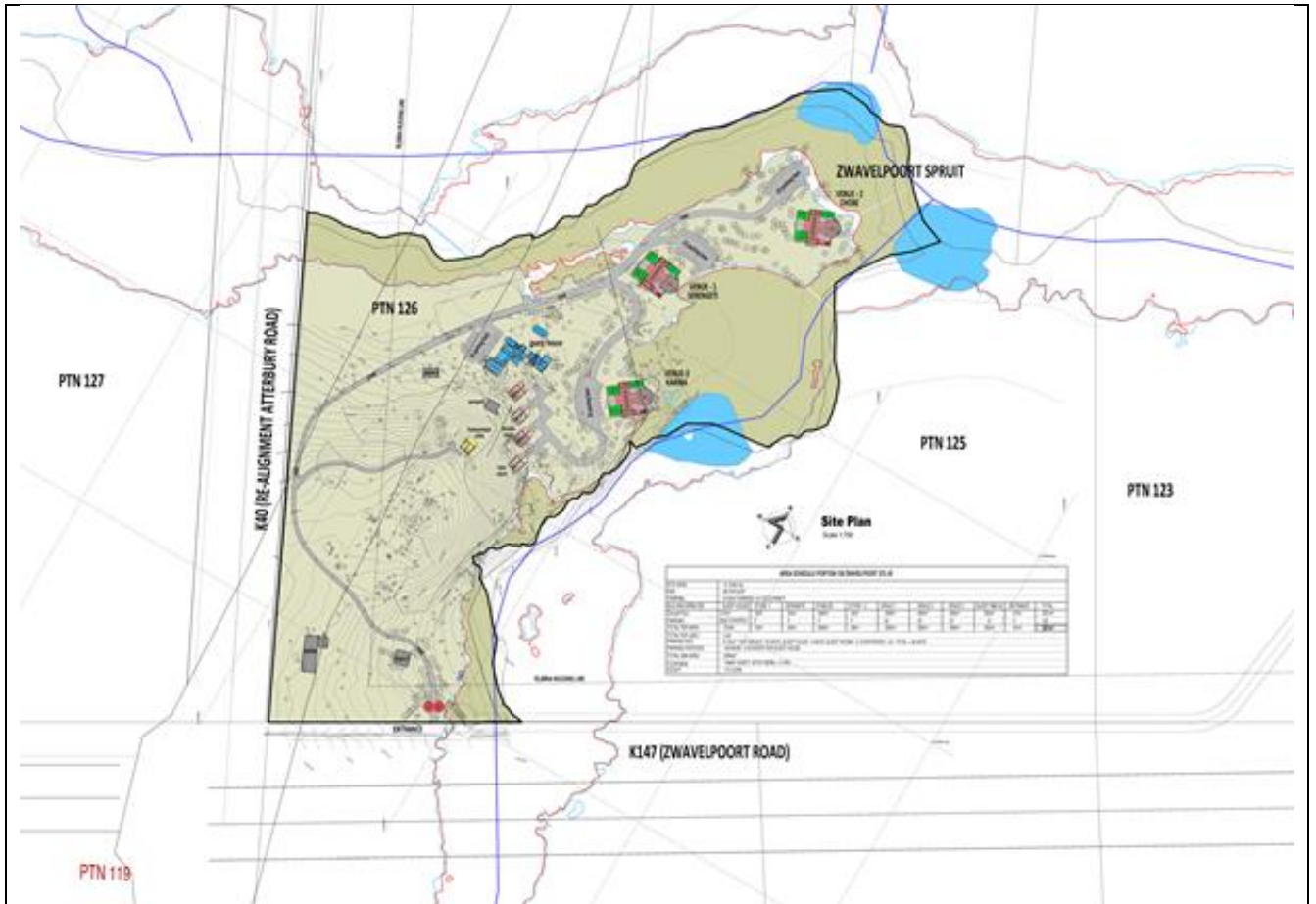


<b>2</b>	<b>ALTERNATIVES 1: Low density Residential</b>	<p>The introduction of a High income residential development, which will include residential houses and ancillary uses only, although suited to the general functioning and land uses of the surrounding urban environment low density residential uses are considered unsuitable due to the following reasons:</p> <ul style="list-style-type: none"> <li>• Over-saturation of a single-use activity</li> <li>• The housing shortage in the City of Tshwane will not be addressed as no additional housing facilities will be 10 provided.</li> <li>• Inappropriateness to the surrounding residential activities and therefore does not respond to the immediate context and surrounding land-uses</li> <li>• Lack of diversity and vibrancy associated with a residential development and related use</li> </ul>
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No.	Alternative Type	Description
	<b>Construction methods.</b>	
1	<b>Conventional construction</b>	<p>Conventional strip foundations or raft foundations will require that the full footprint of the building be excavated and that the full area be disturbed. Also, conventional roads will destroy the area and will not allow easy crossing in the event that a Juliana's Golden Mole may access the property- although NO suitable habitat occur on the property for the Juliana's Golden Mole.</p>
2	<b>Gabions, columns and stabilised gravel roads.</b>	<p>It is proposed that the building be constructed on columns. The idea is to use old containers to place them on the columns. The impact will thus be further reduced by the fact that an area of airflow is allowed below the buildings which also allow for small mammals and insects to be able to live on the full extent of the land.</p> <p>The roads will be left gravel and small interlocking block paving areas will be provided. Specific crossing strips will be retained for the Juliana's Golden Mole to ensure that they will be able to cross the gravel roads.</p> <p>Specific construction methods will be implemented to avoid erosion on the roads. Cut off drains, compaction areas and small areas of interlocking blocks will be implemented to stabilise the roads and prevent erosion</p>

#### **Additional information for the development**

It is the intention of Square Time Café (Pty) Ltd (the Applicant and land owner) to develop a Lodge to be known as Sleepy Creek on Portion 126 (a Portion of Portion 2) of the Farm Zwavelpoort 373-J. R. within the City of Tshwane Metropolitan Municipality Gauteng. Refer to the Site development plan below and **Annexure A**.



**Figure 3: Development Proposal to be amended to match the environmental sensitivities**

**1. Proposed development**

The proposed development includes the construction and operation of lodge comprising of the following:

- a) Guest house
  - 5 double rooms and 1 for caretaker (maximum of 10 people excluding the caretaker)
- b) Proposed Accommodation
  - 9 x 1 bedroom (guest-units with a maximum of 18 people)
- c) Servants quarters and ablution facilities;
- d) Recreational spaces - 3 venue areas (each can accommodate 64 people / seats) –.

**2. Associated Infrastructure**

Project engineers have developed the following engineering services proposals:

**2.1 Electrical Supply**

Electrical supply to this area falls under the jurisdiction of City of Tshwane Electrical Department.

**2.2 Access**

Currently, the property gains access via Zwavelpoort Street (the existing access road) to Graham Road (D2762 – future K34). This is currently the only area and the road has a 7m wide roadway with an existing reserve width of 25m. The access to the closet provincial road (D2762) is 3.3km of which the first 800m is still a gravel road. Due to the unnecessary purpose of providing the future Class 5 access road, duelling the existing Zwavelpoort Street, the existing access to Zwavelpoort Street is to operate until the K147 is to replace Zwavelpoort Street.

The future access from the property to the provincial road network, will only be possible via the larger Tshwane road network (class Us access road parallel to K147 linked with Achillies Road) onto K147. No direct access to either the future K147 or the K

### **2.3 Water Supply**

It is proposed however, that the supply of potable water will be via a new, proposed 'and that this borehole remain as the primary potable water supply to the development until such time, the municipal network of this pressure zone has been installed. Furthermore, it is proposed to design and install potable water storage tanks on site (including pumps) in order to meet the supply requirements and to provide sufficient supply to cover the fire requirements.

### **2.4 Sanitation**

No existing underground municipal gravity system exists within a radius of 5km. The only mentionable system and private on-site treatment facility can be found at 'The Hills Estate' along the current alignment of 'Garsfontein Road'.

In terms of the City of Tshwane's Building Control Section, the following conditions have been laid down: -

'Treatment of sewage effluent on the proposed vacant portions must be done by means of either a suction tank system, closed sewage treatment plant or any similar system to the satisfaction of the City of Tshwane Metropolitan Municipality. Only existing buildings, as per approved building plans, may continue to be served by means of a combined septic tank and French drain system and only if such a system already exists and meets the requirements as laid down in the National Building Regulations. This condition must be registered against the title deeds of the proposed vacant portions.'

Currently, a septic tank and soak away is being used, however, it is the intention to upgrade method of treatment of all waste water. A new package treatment plan system is proposed in this regard.

Furthermore, all existing and new buildings etc will be serviced by means of a private underground reticulation system, draining to a central point (on the site) and processed.

It should be noted that the selection of such a process plant will be done using package treatment plants endorsed by GDARD, DWAF and the City of Tshwane Sanitation Department.

### **2.5 Refuse Disposal**

The City of Tshwane's services in this regard do not extent into this rural area. Therefore, all refuse management and disposal must be contained and managed on site and disposed of offsite at designated areas in and around the City of Tshwane.

The management, co-ordination and implementation will be carried out by the property owner and will align where necessary will all environmental conditions as set out in the regulations and ACT.

### **2.6 Stormwater**

The property has a high lying area / ridge situated in the south, western corner of the property. The natural slope of the land is from this corner, in an easterly and northerly direction towards the two rivers / stream which form the properties eastern and northern boundaries.

With regards to the new components of development, the nett developable area (above the Q100 floodlines) is 6.7106ha and the proposed developable area is 0.232ha; 3.5% of the nett developable area. It is proposed however that all stormwater run-off from both the buildings and surrounds, be directed towards the river / stream.

Based on the proposed maximum developable area of 2 321m<sup>2</sup>, less than 5% of the total developable area of 67 106m<sup>2</sup>, we don't envisage the surface run-off to be increased significantly; however, where necessary, appropriate measures will be incorporated and implemented to minimise any erosion and scouring that could take place as a result of the slight increase in surface run-off.

Cognicase of both the minor and major storms will be considered and managed accordingly. The following storm criteria will be used: -

- Minor Storm

The design will be based on the appropriate times of concentration for the respective catchment area, draining towards collection or low points with an average Post-Development run-off factor of between 0.60 & 0.78. In addition, a return period of 1:5 years is applicable which approximates to an average intensity of 165mm/hour.

All culverts, pipes, kerb inlets, manholes and junction boxes if required shall be installed in accordance with the standard details required by City of Tshwane as well as the appropriate SABS standardised specification.

- Major Storm

As a result of the less than 3% actual development on the property, it is the intention to manage any major storm occurrence i.e. 1:20 year, 1:50 year return etc initially within the parking area kerb boundaries and thereafter on the site.

As a result of the minimal planning stages of both the provincial K-routes, it is difficult to access the volume of any overland stormwater that might impact the property. However, for the purposes of this development, it is the intension to review and assess the management of all stormwater from the higher lying, adjacent areas, as if not future roads will be constructed, through this proposed development, to the riverine areas.

The design will be based on the appropriate times of concentration for the respective catchment area, draining towards riverine areas applying an average Post-Development run-off factor of between 0.60 & 0.78. In addition, a return period of 1:20 years is applicable which approximates to an average intensity of 220mm/hour and a 1:50 year return period, which approximates to an average of 255mm/hour.

In summary, the proposal of the applicant presents as follows with regard to a statistical breakdown of each component:

Site Area	10, 5550 Ha									
FSR:	As Per SDP									
Parking	6/100m <sup>2</sup> Parking – A1 Occupancy									
Building Area FSR	Guest House	Store - 1	Servants	Stables	Store - 2	Venue 1	Venue 2	Guest Rooms (9)	Entrances	Total
Ground Floor	513m <sup>2</sup>	70m <sup>2</sup>	63m <sup>2</sup>	299m <sup>2</sup>	99m <sup>2</sup>	280m <sup>2</sup>	280m <sup>2</sup>	350m <sup>2</sup>	87m <sup>2</sup>	2321m <sup>2</sup>
Parking:	20 (2 Covered)	0	0	0	0	22	23	12	0	100
Total FSR Area:	513m <sup>2</sup>	70m <sup>2</sup>	63m <sup>2</sup>	299m <sup>2</sup>	99m <sup>2</sup>	280m <sup>2</sup>	280m <sup>2</sup>	350m <sup>2</sup>	87m <sup>2</sup>	232m <sup>2</sup>

Total FSR Used:	0.02
Parking REQ:	6/100m <sup>2</sup> For Venue's -53 Bay, guest house
Parking Provided:	100 Bays – 2 Covered for Guest House
Total GBA:	2059m <sup>2</sup>
Coverage	1044m <sup>2</sup> (Exist) 1277m <sup>2</sup> (New) = 2.19%
Height:	1 Floor

### No-Go Alternative

This option assumes that a conservative approach would ensure that the environment is not impacted upon any more than is currently the case. It is important to state that this assessment is informed by the current condition of the area. Should the GDARD decline the application, the 'No-Go' option will be followed and the status quo of the site will remain.

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

Alternative are provided.

## 4. PHYSICAL SIZE OF THE ACTIVITY

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

	<b>Size of the activity:</b>
Proposed activity ( <i>Total environmental (landscaping, parking, etc.) and the building footprint</i> )	Approximately 3000 sqm for buildings, 1000 sqm gravel roads and parking areas
<b>Alternatives:</b>	
Alternative 1 (if any)	Approx. 1 ha
Alternative 2 (if any)	n/a

Ha / m<sup>2</sup>

or, for linear activities:

	<b>Length of the activity:</b>
Proposed activity	n/a
<b>Alternatives:</b>	
Alternative 1 (if any)	n/a
Alternative 2 (if any)	n/a

m/km

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

	<b>Size of the site/servitude:</b>
Proposed activity	n/a
	n/a
	n/a
<b>Alternatives:</b>	
Alternative 1 (if any)	n/a
	n/a
Alternative 2 (if any)	n/a
	n/a

Ha/m<sup>2</sup>

## 5. SITE ACCESS

Proposal

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

YES	NO
n/a	

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

Describe the type of access road planned:

Currently the proposed development gains access via Zwavelpoort Street (the existing access road) to Graham Road (D2762 – future K34). This is currently the only access for the area and the road has a 7m wide roadway with an existing reserve width of 25m. The access to the closest provincial road (D2762) is 3.3km of which the first 800m is still a gravel road. Due to the unnecessary purpose of providing the future Class 5 access road, duelling the existing Zwavelpoort Street, the existing access to Zwavelpoort Street is to operate until the K147 is to replace Zwavelpoort Street.

The future access from the property to the provincial road network, will only be possible via the larger Tshwane road network (Class U5 access road parallel to K147 linked with Achilles Road) onto K147. No direct access to either the future K147 or the K40 will be allowed.

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

**Alternative 1**

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

YES	NO
n/a	

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

Describe the type of access road planned:

Same as above

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	n/a
n/a	

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

Describe the type of access road planned:

Not applicable

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
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Number of times

(only complete when applicable)



## 6. LAYOUT OR ROUTE PLAN

<b>Refer to Annexure A for Site Development Plan</b>
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A detailed site or route (for linear activities) plan(s) must be prepared for each alternative site or alternative activity. It must be attached to this document. The site or route plans must indicate the following:

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

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

- the scale of locality map must be at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map;
- the locality map and all other maps must be in colour;

- locality map must show property boundaries and numbers within 100m of the site, and for poultry and/or piggery, locality map must show properties within 500m and prevailing or predominant wind direction;
- for gentle slopes the 1m contour intervals must be indicated on the map and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the map;
- areas with indigenous vegetation (even if it is degraded or infested with alien species);
- locality map must show exact position of development site or sites;
- locality map showing and identifying (if possible) public and access roads; and
- the current land use as well as the land use zoning of each of the properties adjoining the site or sites.

## 7. SITE PHOTOGRAPHS

**Refer to Annexure E**

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

## 8. FACILITY ILLUSTRATION

**Facility illustrations - Refer to Annexure C**

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

# SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

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

## Instructions for completion of Section B for linear activities

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

Section B has been duplicated for sections of the route  times

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

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

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

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

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

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

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

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

## 1. PROPERTY DESCRIPTION

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

The subject property is located east of the City of Tshwane Metropolitan Municipality's boundary in Region 6 – South of the Lynnwood Road on the proposed K147. The proposed property is situated within Zwavelpoort east of

the Zwavelpoort Spruit / River. Portion on 126 (a portion of Portion 2) of the farm Zwavelpoort 373-JR.

## 2. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in decimal degrees. The degrees should have at least six decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

Alternative:	Latitude (S):	Longitude (E):
1. Project Proposal	25°50'20.49"S	28°21'47.66"E
2. Alternative 1	25°50'20.49"S	28°21'47.66"E

### In the case of linear activities:

Alternative:	Latitude (S):	Longitude (E):
• Starting point of the activity	n/a	n/a
• Middle point of the activity	n/a	n/a
• End point of the activity	n/a	n/a

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

Addendum of route alternatives attached n/a

The 21digit Surveyor General code of each cadastral land parcel

Portion 126 of the Farm Zwavelpoort	T	O	J	R	0	0	0	0	0	0	0	0	0	0	3	7	3	0	0	1	2	6
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

## 3. GRADIENT OF THE SITE

Indicate the general gradient of the site.

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

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

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

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

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

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

b) are any caves located on the site(s)	YES	NO
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If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

<b>Latitude (S):</b>	<b>Longitude (E):</b>
n/a	n/a

c) are any caves located within a 300m radius of the site(s)	YES	NO
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If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

<b>Latitude (S):</b>	<b>Longitude (E):</b>
n/a	n/a

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

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

<b>Latitude (S):</b>	<b>Longitude (E):</b>
n/a	n/a

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

## 6. AGRICULTURE

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

YES	NO
-----	----



**Figure 4: Gauteng Agricultural Potential Atlas (Source: GDARD)**

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

## 7. GROUNDCOVER

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

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

Natural veld - good condition % =	<b>Natural veld with scattered aliens</b> % = <b>30</b>	Natural veld with heavy alien infestation % = 0	Veld dominated by alien species % = 0	<b>Landscaped (vegetation)</b> % = <b>30</b>
Sport field % =	Old Cultivated land % =	Paved surface (hard landscaping) % =	<b>Building or other structure</b> % = <b>20</b>	<b>Bare soil</b> % = <b>20</b>

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

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

YES	NO
-----	----

If YES, specify and explain:

Not Applicable

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

YES	NO
-----	----

If YES, specify and explain:

Orange listed species noted on site include *Hypoxis hemerocallidea* (Hypoxidaceae) and *Crinum macowanii* (Amaryllidaceae). If these plants occur within the footprint of a building, the building can be moved to accommodate the plants.

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

YES	NO
-----	----

If YES, specify and explain:

The proposed development site is bordered on both the eastern and western sides by watercourses that confluence at its northern boundary. These watercourses have associated wetland seep zones as well as established riparian zones. Impacts include a series of impoundments along both watercourses and a high degree of exotic vegetation inclusion throughout the riparian zones.

Was a specialist consulted to assist with completing this section

YES	NO
-----	----

If yes complete specialist details

Name of the specialist:	Dr M Ross		
Qualification(s) of the specialist:	Pr Sci Nat (Ecological Sciences) 400061/09 MSc (Aquatic Health), RAU; PhD (Aquatic Health), UJ.		
Postal address:	PO Box 369 Wendywood		
Postal code:	2144		
Telephone:	-	Cell:	082 293 5752
E-mail:	mathew@enviross.co.za	Fax:	-
Are any further specialist studies recommended by the specialist?	YES	NO	
If YES, specify:			
If YES, is such a report(s) attached?	YES	NO	

If YES list the specialist reports attached below



Annexure G1: Ecology Assessment  
Annexure G2: Wetland Assessment  
Annexure G3: Golden Mole Study  
Annexure G4: Heritage Assessment  
Annexure G5: Paleontological Assessment

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

Date: \_\_\_\_\_

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

## 8. LAND USE CHARACTER OF SURROUNDING AREA

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

<b>1. Vacant land</b>	2. River, stream, wetland	3. Nature conservation area	<b>4. Public open space</b>	5. Koppie or ridge
6. Dam or reservoir	7. Agriculture	<b>8. Low density residential</b>	9. Medium to high density residential	10. Informal residential
11. Old age home	12. Retail	13. Offices	14. Commercial & warehousing	<b>15. Light industrial</b>
16. Heavy industrial <sup>AN</sup>	<b>17. Hospitality facility</b>	18. Church	19. Education facilities	20. Sport facilities
21. Golf course/polo fields	22. Airport <sup>N</sup>	23. Train station or shunting yard <sup>N</sup>	24. Railway line <sup>N</sup>	25. Major road (4 lanes or more) <sup>N</sup>
26. Sewage treatment plant <sup>A</sup>	27. Landfill or waste treatment site <sup>A</sup>	28. Historical building	29. Graveyard	30. Archeological site
31. Open cast mine	32. Underground mine	33. Spoil heap or slimes dam <sup>A</sup>	34. Small Holdings	
Other land uses (describe):		<b>35. Lodge / Guest houses</b> <b>36. Riding School</b>		

**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

<b>NORTH</b>						
	<b>35</b>	<b>14</b>	<b>10/17</b>	<b>8/4</b>	<b>35/8</b>	
	<b>15</b>	<b>6</b>	<b>8</b>	<b>1/8</b>	<b>35/36</b>	= Site
<b>WEST</b>	<b>8/15</b>	<b>8</b>		<b>1/2</b>	<b>8</b>	<b>EAST</b>
	<b>8/36</b>	<b>15</b>	<b>8</b>	<b>8/2</b>	<b>8</b>	
	<b>8/15</b>	<b>8/36</b>	<b>8</b>	<b>8</b>	<b>35</b>	
<b>SOUTH</b>						

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

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

Have specialist reports been attached

YES

NO

If yes indicate the type of reports below

Annexure G1: Ecology Assessment  
Annexure G2: Wetland Assessment  
Annexure G3: Golden Mole Study  
Annexure G4: Heritage Assessment  
Annexure G5: Paleontological Assessment

Specialist Study – ENVIROSS CC was appointed to conduct an Ecology Assessment on the subject property. A summary is presented here, and the complete report may be found in **Annexure G1**.

**Habitat features:**

The proposed development site is bordered on both the eastern and western sides by watercourses that confluence at its northern boundary. These watercourses have associated wetland seep zones as well as established riparian zones. Impacts include a series of impoundments along both watercourses and a high degree of exotic vegetation inclusion throughout the riparian zones.

**Floral features:**

The site presently is used as a residential smallholding, with houses and associated infrastructure having already been established. The vast majority of the property is maintained, with the grass layer being routinely cut. The majority of the northern portion of the site is dominated by cultivated pecan nut trees. The central to southern areas are considered open woodlands. There is an area of higher density woodland within the central region, but this is dominated by exotic *Acacia mearnsii* (Black wattle), with a small portion of open grassland also occurring. Overall, very limited primary vegetation features remain.

Although RDL floral species are recorded from the region, none were observed during the field survey, and none are thought to occur. Two Orange Listed species were observed, both of which are generally widespread and common within their distribution range.

**Faunal features:**

There are RDL species recorded from the region that includes the proposed development site although none were observed during the field survey. The wetland areas are thought to carry the greatest potential for supporting such species – a feature that could be enhanced should a rehabilitation plan for the wetland unit be implemented. This area, together with a conservation buffer zones, has been designated as ecologically sensitive features that, together with floral species and vegetation structure conservation, are thought to be ecologically valuable. Development outside of the areas designated as ecologically sensitive is not thought to have a significant impact on the conservation of the faunal and floral biodiversity within the region.

An ecological sensitivity map has been proposed for the proposed site. It is recommended that this be considered during the planning phase of the layout so that the areas designated as ecologically sensitive can be incorporated into the greenspace planning of the proposed development;

- The areas adjacent to the wetland units are shown to be of low ecological value due to various historical and present pressures and drivers of ecological change;
- No RDL faunal or floral species were noted within the scope of the proposed development site;
- Exotic vegetation is a prominent feature throughout a lot of the proposed development area. It is recommended that a management plan be implemented to control this;

- It has been shown that the overall significance of the pertinent ecological impacts can be reduced an overall low (negative) impact if the proposed ecological sensitivity mapping as well as the proposed mitigation measures are taken into consideration. This is based on the assumption that the proposed layout plan takes into consideration the wetland and associated buffer zones as ecological sensitive features.

It should be noted that, in order to conserve the faunal species community structures within the region, habitat destruction should be contained to an absolute minimum. Conserving the habitat units will ultimately conserve the species communities that inhabit it. This can only be achieved by the efforts of the contractor during the various processes of the construction phase.



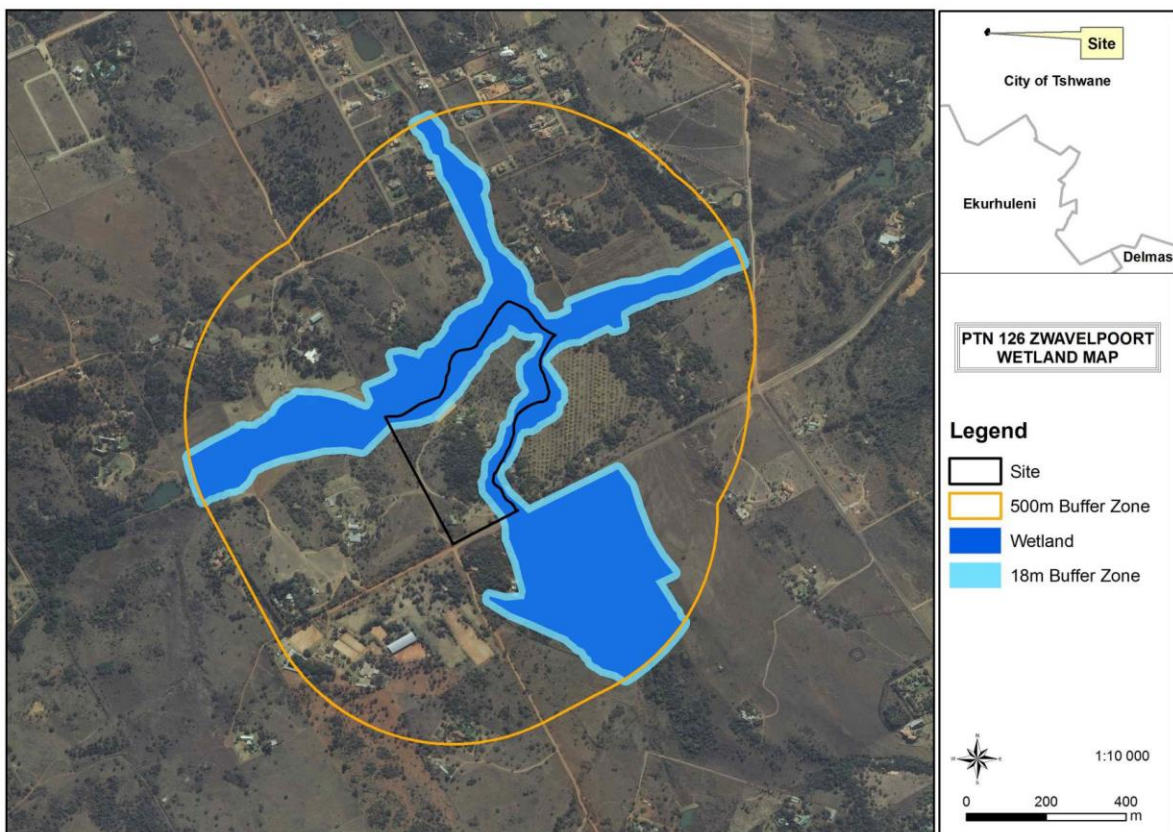
Figure 5: Ecological Sensitivity map



**Wetland Assessment** – Limosella Consulting was appointed to conduct a Wetland / Riparian Delineation on the subject property. A summary is presented here, and the complete report may be found in **Annexure G2**.

The watercourse associated with the study site was classified as a channelled valley bottom wetland. The watercourse showed several riparian characteristics, such as a high cover and abundance of woody plant species. However, this was attributed to transformation of natural conditions, including establishment of alien species. Currently, slow flowing wetland conditions still remain integral to the hydrological and ecological function of the system in its current form which falls in the classification of wetland rather than riparian.

The site lies at the confluence of watercourses that flow on the northern and southeastern boundaries of the site. The northern watercourse is known as the Swavelpoortspruit. This river, together with the watercourse along the southeastern border, are tributaries of the Moreletaspruit, which drains into the Hartebeespruit and then into the Pienaarsrivier to the north.



**Figure 6: Wetlands associated with the study area**

**Golden Mole** – Eco Agent CC was appointed to conduct a Golden Mole Study on the subject property. A summary is presented here, and the complete report may be found in **Annexure G3**.

Portion 126 of the Farm Zwavelpoort along the Zwavelpoort Road and near the south-eastern foothills of the Tierpoortrand, is a ca. 50 hectares property (Figure 1). It is partially developed by a few residences, facilities for equestrian sport, a shed, a pecan nut orchard and in places by mowed grass. Topographically the site is undulating by a wooded rise. The north-west boundary runs along a stream, whereas the south-easterly boundary traverses a manmade dam.

Generally, the substrate is a light brown sandy soil that becomes compacted when dry. Along the highland portion the soil is imbedded with gravel and even rocks. The pecan nut orchard was established in brownish soil without gravel. Black clay predominates along the dam and stream banks.

The substrate is too compacted to allow for the occurrence of Juliana's golden mole. As expected, no tell-tale borrows of the mole were found. It was also concluded that the mole is absent on adjoining properties.

#### **Heritage Assessment**

Refer to Section 10 below

**Paleontological Assessment** - Heidi Fourie Consulting was appointed to conduct a Paleontological Impact Assessment on the subject property. A summary is presented here, and the complete report may be found in **Annexure G5**.

The development is taking place on the Hekpoort Formation of the Pretoria Group, Transvaal Supergroup. It will be developed on a fault line.

The Transvaal Supergroup fills an east-west elongated basin in the south-central part of the old Transvaal (now North – West, Gauteng and Mpumalanga) as far south as Potchefstroom. It is Vaalian in age, approximately 2600 Ma to 2100 Ma. A maximum thickness of the Transvaal Supergroup reaches 2000 m in the north-eastern section. The east-west elongated basin is filled with clastic, volcanic and chemical sedimentary rocks. Three groups based on lithological differences have been established: they are the Rooiberg, Chuniespoort, and Pretoria Groups as well as other smaller groups (Kent 1980, Snyman 1996). It is the Bushveld Complex that is responsible for the tilting of the Transvaal sediments and the heat of its intrusion having created andalusite crystals (Norman and Whitfield 2006). This Supergroup is underlain by the Ventersdorp, Witwatersrand and Pongola Supergroups, and the Dominion Group. Three prominent ridges are present from the oldest to the youngest, the Time Ball Hill, Daspoort and Magaliesberg Formations (Norman and Whitfield 2006).

The Pretoria Group consists predominantly of quartzite and shale, together with a prominent volcanic unit, minor conglomerate, chemical and volcanic members. It comprises the Hekpoort Andesite, Dullstroom Basalt, Time Ball Hill, Silverton, and Magaliesberg Quartzite Formations as well as several smaller formations (in total 15) and overlies the Chuniespoort Group (Kent 1980). Both the shale and quartzite of the Pretoria Group are utilised in the building industry (Snyman 1996). The Time Ball Hill shale Formation is known to contain 'algal microfossils' diagenetic in origin. Stromatolites as they are known are preserved in the subordinate carbonate rocks (Kent 1980). The Pretoria Group is clastic sedimentary in nature (Eriksson 1999). The pile of sedimentary rocks, mainly mudstones and quartzites with some basalt can collectively reach a thickness of up to 5 km.

The Hekpoort Andesite Formation is usually well developed, except for the Mokopane and Thabazimbi regions (Visser 1989) and can be up to 500 m thick with andesite, basalt and pyroclasts. These sheets are massive with an amygdaloidal crust on top (Snyman 1996). It is rich in green hornblende with an age between  $2,224 \pm 21$  Ma (2626 Wes Rand sheet info). The Dwaalheuwel Formation is only present in the Mokopane area, above the Hekpoort Formation. In the east, it is grouped with the Strubenkop Formation and the Daspoort Formation. The Strubenkop Formation is fairly thin (20-80 m) in the east, but thicker towards its central part, up to 130 m thick towards the west. It is enriched with iron in the vicinity of Pretoria (Visser 1989).

Fossils in South Africa mainly occur in rocks of sedimentary nature and not in rocks from igneous or metamorphic nature. Therefore, if there is the presence of Karoo Supergroup strata the palaeontological sensitivity can generally be LOW to VERY HIGH, and here locally **High** for the Pretoria Group and **Moderate** for the Hekpoort Formation (SG 2.2 SAHRA APMHOB, 2012).

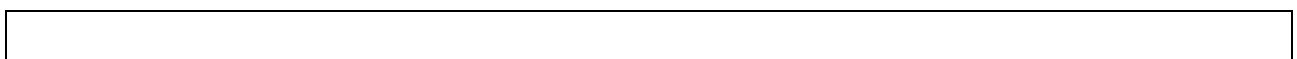
There is no objection to the development, it is not necessary to request a Phase 1 Palaeontological Impact Assessment: Field study to determine whether the development will affect fossiliferous outcrops as the palaeontological sensitivity is **Moderate**. A Phase 2 Palaeontological Mitigation is only required if a Phase 1 Palaeontological Assessment identifies a fossiliferous formation (for example breccia)

This project may benefit the economy, the growth of the community and social development in general. The impact on the palaeontological heritage is moderate. Care must be taken during the grading of roads, digging of foundations and removing topsoil, subsoil and overburden or blasting of bedrock.

If any palaeontological material is exposed during digging, excavating, drilling or blasting SAHRA must be notified. All construction activities must be stopped and a palaeontologist should be called in to determine proper mitigation measures



**Figure 7: Points of Noise Survey**





**Noise Impact Study** – dBAcoustics was appointed to conduct a Noise Impact Study on the subject property. A summary is presented here, and the complete report may be found in **Annexure I2**.

The purpose of the noise study was to determine if the activities at the three venues may create a noise intrusion into the abutting residential properties and to recommend mitigatory measures for compliance to the Noise Control. The measurement and rating of environmental noise with respect to annoyance and to speech communication. The proposed development will consist out of three separate venues which can accommodate 64 people per venue.

The noise study was done to:

- Determine the prevailing ambient noise levels in the vicinity of the study area.
- Quantify the impact of noise of the proposed development during the construction and/or operational phases on the prevailing ambient levels and the outdoor environment.
- Determine the noise impact of the additional traffic on the existing residential units in the vicinity of the proposed development.

The noise survey was carried out at the boundaries of the proposed development and the measuring points are illustrated in **Figure 7**.

The proposed lodge establishment must be in line with SANS 10103 of 2008 – The measurement and rating of environmental noise with respect to annoyance and to speech communication and the Gauteng Noise Control Regulations, provided that all the acoustic screening measures are in place and an acoustic compliance certificate is issued after completion of the above recommended noise screening measures.

## 9. SOCIO-ECONOMIC CONTEXT

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

### REGIONAL INFORMATION

#### LOCALITY

Region 6 is bordered by the Magaliesberg Mountain range to the north and the N1 freeway to the west and Ekurhuleni Local Municipality to the South. The Region includes large parts of the former Kungwini and Nokeng Tae Tsamane regions.

- The N4 freeway which links the City of Tshwane with Mpumalanga Province and runs east-west through the region.
- The N1 freeway which runs on the western side of the region and links the City of Tshwane with the Limpopo Province in the north and Johannesburg, Bloemfontein and Cape Town towards the south
- The R21 freeway along the western boundary of the region which links the City with the Ekurhuleni Municipality and the OR Tambo International Airport. The region clearly enjoys a high level of accessibility.

## AREA

The region is 885 km<sup>2</sup> in extend.

Region 6	M <sup>2</sup>	km <sup>2</sup>	ha	Wards
	885,239,940	885	88524	24

## Demographic

Region 6 had a population of about 605554 people according to the 2011 Census.

POPULATION			
High	Medium	Low	Total
152289	141418	292743	605 554

In terms of income groups 48 % can be regarded as within the low-income group (monthly household income of less than R 2000.00 a month).

Region 6 has an unemployment figure of about 20.5 % which is below the national average of 25%

## REGIONAL CHARACTERISTICS

The main characteristics of Region 6 are discussed below:

- The south-eastern section of this region has the highest income per capita and could be considered the fuel injection of the city.
- However, there is also a huge concentration of people in the north east quadrant, representing low and no-income groups.
- It is the region with the greatest development pressure.
- Decentralised nodes accommodate a wide range of urban facilities.
- The region is popular in terms of retail as well as office functions as many of the higher category retail and office functions of the City have relocated to this region over the past few years. Further to this is also the second most important industrialised area in Tshwane situated in Silverton/ Silvertondale/ Waltloo/ Bellevue- area.
- Suburban areas are mostly low density in nature and the region accommodates a number of Golf and Life Style Estates such as Woodhill, The Hills and Silver lakes. However, there is also a high density area to the north of the region with large areas planned for RDP type development and informal settlements invaded the land before construction of services took place.
- The east-west transportation linkages between nodes are saturated during peak hours.
- The historical radial linkages to the CBD are prominent.
- There is a high dependency on private motor vehicles, from the southern section of the region, placing an impossible demand on the road infrastructure. Further to this is a high rail related dependency of the north eastern quadrant to the City Centre. No south connection is possible.
- There is also an unusually high dependency on bus travel through the area from the far outlying rural areas e.g. Moutse and Moloto.
- The Bronberg and the Magaliesberg Mountain range is a major environmental feature running east to west in the northern part of the region. It provides limited thoroughfare, with only two major crossing points.

- The Moreleta Spruit and its tributaries cover virtually the entire area to the south of the Bronberg, contributing to the well-defined regional open space system of the southern part of the region.
- Further to the south of the region is the Rietvlei Dam and Nature reserve which is one of the larger open space assets of the City.
- The region contains a number of strategic land uses including the CSIR, South African National Intelligence Service and the Menlyn Park Retail Node which has a metropolitan function in terms of facilities.
- The Hatherley landfill site has a metropolitan function in terms of its Strategic nature and size. No other sites are known for future development in the Metro as yet.
- The region contains three large private hospitals as well as the Pretoria East Cemetery
- Almost all the developable land within the southern section of the Region has been developed and the uncontrolled development in the old Kungwini area places a burden on the existing saturated road infrastructure
- The north-eastern section of the region accommodates mostly low-income communities and industrial land uses.
- The middle and south-western section of the region accommodates medium to high-income areas with large institutional uses.
- The northern section of the region includes a number of strategically located undeveloped areas in terms of accessibility and infrastructure which offer significant development potential.

### **STRUCTURING ELEMENTS**

- The main structuring elements of the region include:
- The N1 and N4 Freeways facilitating north-south and east-west regional linkages with the rest of the country.
- The secondary (mobility) roads including Lynnwood Road, Atterbury Road, Garsfontein Road, radiating from the CBD through the region and Solomon Mahlangu Drive (Hans Strydom) linking the three roads with the N1 in the south and N4 in the north.
- The Bronberg Mountain limits road linkage with the northern section of the region to only two major crossing points.
- The Moreleta Spruit and its tributaries covering the entire area forming an interlinked regional open space network.
- The Rietvlei Nature Area limiting southward expansion of the region.
- The Urban Edge roughly following the municipal boundaries and currently under pressure due to limited expansion possibilities.
- The low density rural residential estate – Mooikloof – limits expansion in a south-eastern direction.
- The Menlyn retail node and Silverton/Waltloo Industrial node within the region plays a further important structuring role in terms of economic development and regional accessibility.
- Pretoria Road and Stormvoël/Tsamaya Roads are parallel to the N4.
- Large industrial and vacant land parcels divide the mainly low-income in the north east and the higher income areas to the south.
- A railway line runs east-west through the region with industrial and residential uses following this line, and a north- south line linking with the huge freight facility near Babsfontein to the south east of the region.
- The Magaliesberg forms the northern boundary of the region and limits access to the areas north of the mountain.

- Micheal Brink (Nico Smith)/Stormvoël/Tsamaya Roads provides east-west linkage between the north eastern part of the region and the CBD.
- Linkage between the north-eastern part of the metro and the CBD is very poor and obstructed by the mountain range.

## 10. CULTURAL/HISTORICAL FEATURES

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

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

(a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;

(b) the construction of a bridge or similar structure exceeding 50m in length;

(c) any development or other activity which will change the character of a site-

(i) exceeding 5 000 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?

If YES, explain:

YES	NO
-----	----

n/a

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:

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HCAC was appointed to conduct a Heritage Impact Assessment of the proposed project to determine the presence of cultural heritage sites and the impact of the proposed development on these non-renewable resources. The study area was assessed both on desktop level and by a field survey. The field survey was conducted as a non-intrusive pedestrian survey to cover the extent of the development footprint.

No archaeological sites or material was recorded during the survey and a paleontological desktop study (Fourie 2017) indicated: "The impact of the development on fossil heritage is Moderate and therefore a field survey or further mitigation or conservation measures are not necessary for this development (according to SAHRA protocol)". Therefore, no further mitigation prior to construction is recommended in terms of Section 35 for the proposed development to proceed. In terms of the built environment of the area (Section 34), several structures (dwellings and outbuildings) occur on the property, these are however not older than 60 years and will not be impacted on by the proposed development.

In terms of Section 36 of the Act no burial sites were recorded. However if any graves are located in future they should ideally be preserved in-situ or alternatively relocated according to existing legislation. No public monuments are located within or close to the study area. The study area is surrounded by commercial and road infrastructure developments and the proposed small-scale development will not impact negatively on significant cultural landscapes or viewsapes. and the proposed development will not impact negatively on significant cultural landscapes or viewsapes. During the public participation process conducted for the project no heritage concerns was raised.

Due to the lack of significant heritage resources in the study area the impact of the proposed project on heritage resources is considered low and it is recommended that the proposed project can commence on the condition that the following recommendations are implemented as part of the EMPr and based on approval from SAHRA.

For the complete report refer to **Annexure G4**.

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

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

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

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

## SECTION C: PUBLIC PARTICIPATION (SECTION 41)

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

### 1. LOCAL AUTHORITY PARTICIPATION

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

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

YES	NO
-----	----

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

YES	NO
-----	----

Comments from the local authority will be included in the final report.

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

Not Applicable

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 report is attached as **Annexure E**.

As part of the initial assessment and viability of the site the Environmental Management Department of the City of Tshwane Municipality was invited participate.

The Ward councillor of the area; Mr Reyaan Uys (Ward 91) received emails including documents like the Background Information Document.

Comment from the municipality on the Draft BA will be included in the Public participation report of this Final Basic Assessment.

### 2. CONSULTATION WITH OTHER STAKEHOLDERS

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

Has any comment been received from stakeholders?

YES	NO
-----	----

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

The stakeholders showed concern on the following:

- Availability of services infrastructure namely,
- water supply
- sewerage
- electricity
- Storm water management
- Traffic
- Security
- Golden Mole
- Noise

(Refer to Annexure E) These are detailed in the Comments & Response Report.

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

Not Applicable

### 3. GENERAL PUBLIC PARTICIPATION REQUIREMENTS

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

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

### 4. APPENDICES FOR PUBLIC PARTICIPATION

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

Annexure E provides details of the public consultation process.

- Appendix 1 – Proof of site notice
- Appendix 2 – Written notices issued as required in terms of the regulations
- Appendix 3 – Proof of newspaper advertisements
- Appendix 4 – Communications to and from interested and affected parties
- Appendix 5 – Minutes of any public and/or stakeholder meetings
- Appendix 6 - Comments and Responses Report
- Appendix 7 –Comments from I&APs on Basic Assessment (BA) Report
- Appendix 8 –Comments from I&APs on amendments to the BA Report
- Appendix 9 – Copy of the register of I &APs



## SECTION D: RESOURCE USE AND PROCESS DETAILS

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

### Instructions for completion of Section D for alternatives

- 1) For each alternative under investigation, where such alternatives will have different resource and process details (e.g. technology alternative), the entire Section D needs to be completed.
- 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)

## 1. WASTE, EFFLUENT & EMISSION MANAGEMENT

### Solid Waste Management

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

YES	NO
<b>Unknown at this stage</b>	

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

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

The building rubble and solid construction waste (such as sand, gravel, concrete and waste material) that cannot be used for filling and rehabilitation and other litter and waste generated during the construction phase will be removed from site and be disposed of safely and responsibly at a licensed landfill site, i.e. a landfill licensed in terms of Section 20 of the Environmental Conservation Act, 1989 (Act No. 73 of 1989).

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

All non-recycled general waste will be removed by a registered waste Contractor and taken to the licensed Landfill Site.

Will the activity produce solid waste during its operational phase?

YES	NO
<b>Unknown at this stage</b>	

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

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

Solid waste during the operational phase will primarily be household waste. It will be picked-up by the local municipality and discarded at a registered landfill site.

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

YES	NO
-----	----

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

The City of Tshwane's services in this regard do not extent into this rural area. Therefore, all refuse management and disposal must be contained and managed on site and disposed offsite at designated areas in and around the City of Tshwane.

The management, co-ordination and implementation will be carried out by the property owner and will align where necessary will all environmental conditions as set out in the regulations and ACT.

**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?

YES	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?

YES	NO
-----	----

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

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

Recycling facilities for paper and glass will be available within the small waste transfer station on the property.

**General Waste Management**

- Litter and rubble on the construction site and in the construction camp will be monitored strictly by a dedicated housekeeping team.
- All waste generated on site will be separated into metal, paper, plastic, glass & contaminated paper, glass, plastic and polystyrene and will be recycled.

**Construction rubble**

- All rubble from demolition activities will be used on site as part of the existing development, or will be taken off the construction site and disposed at an appropriate landfill.
- No material shall be left on site that may harm man or animals. Broken, damaged and unused nuts, bolts and washers shall be picked up and removed from site.
- Surplus concrete will not be dumped indiscriminately.
- Concrete water will be re-used in the batching process

**Operational waste**

- Waste is to be sorted and recycled at source.

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

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

YES	NO
-----	----

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

n/a	
-----	--

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

n/a	n/a
-----	-----

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

Yes	NO
-----	----

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

n/a	
-----	--

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

Not Applicable

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

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

YES	NO
-----	----

If yes, provide the particulars of the facility:

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

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

No waste water will be produced for this proposed activity.

**Liquid Effluent (Domestic Sewage)**

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

YES	NO
-----	----

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

n/a	
-----	--

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

YES	NO
-----	----

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

YES	NO
-----	----

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

n/a	
-----	--

**Emissions into the Atmosphere**

Will the activity release emissions into the atmosphere?

YES	NO
-----	----

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

n/a	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:

Emissions during construction will mostly be in the form of dust and smoke.  
Odour from the refuse yards are to be combated by the provision of a compaction unit and is to be walled.  
The EMP attached in Annexure H of the Basic Assessment Report indicates various ways in which these emissions will be minimized and controlled.

## 2. WATER USE

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

Municipal	Directly from water board	<b>groundwater</b>	river, stream, dam or lake	other	the activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month:

**Approx. 450kl/d**

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

Does the activity require a water use permit from the Department of Water Affairs? **YES** **NO**

If yes, list the permits required

A General Authorisation will be required in terms of Section 21 of the NWA. Section 21 (c) and (i) is applicable to any activity related to a wetland:  
Section 21(c): Impeding or diverting the flow of water in a watercourse; and  
Section 21(i): Altering the bed, banks, course or characteristics of a watercourse.  
  
Will apply for a General Authorisation after the approval of the Environmental Authorisation.

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

**YES** **NO**

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

**YES** **NO**

## 3. POWER SUPPLY

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

Electrical supply to this area falls under the jurisdiction of City of Tshwane Electrical Department.  
Confirmation of supply will be obtained from the City of Tshwane Electrical Department.

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

Not Applicable

## 4. ENERGY EFFICIENCY

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

The following energy savings methods shall be investigated for possible implementation for the proposed development:

- Use of energy efficient lighting,
- Use of day light wherever possible in lieu of artificial lighting,
- Use of renewable solar powered lighting for external lighting,
- Switching off of all electrical appliances at night and times not in use,
- Use of high-efficient HVAC systems,
- Possibility of co-generation in co-operation with the supply authority,
- Use of solar water heating,
- Setting thermostats of water heaters at the most efficient level,
- Insulation of hot water pipes and hot water storage tanks,
- Use of low-flow shower heads,
- Use of high-efficient electric motors,
- Use of variable speed drives on electric motors,
- Use of appropriate conductor size to reduce distribution losses,
- Use of control methods to reduce maximum demand and exploit off peak electricity tariffs,
- Insulation of windows, walls, ceilings and roofs.

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

The design intent is to make use of renewable solar powered lighting for external lighting.

## SECTION E: IMPACT ASSESSMENT

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

### 1. ISSUES RAISED BY INTERESTED & AFFECTED PARTIES

Summarise the issues raised by interested and affected parties.

The stakeholders showed concern on the following:

- water supply
- sewerage
- electricity
- Storm water management
- Traffic
- Security
- Golden Mole
- Noise

(Refer to Annexure E) These are detailed in the Comments & Response Report.

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):

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

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

**A combination of the following methods was used to identify impacts during the Basic Assessment:**

#### 2.1. Specialist Study Findings

A minimum of legally responsible specialist studies is conducted (as usually required by the relevant authority). These usually include a red data fauna & flora assessment and heritage impact assessment. The findings of such specialist studies will highlight potential impacts on protected or endangered species or environments.

#### 2.2. Site Inspection

The EAP and specialists conduct several site visits and identified potential sensitive environments. These areas are then red-flagged to be investigated further and excluded from development if necessary.

#### 2.3 Technical / Desktop Studies

Technical and specialist reports such as the geotechnical and agricultural assessments are used to identify those areas and aspects that may be impacted on, but that will not be identified through the other specialists' studies.

## 2.4 Public Participation

Conducting public participation produces an issues list. Such a list needs to be screened for relevant impacts which then need to be addressed by specialist studies or identified for further investigation.

## 2.5 GDARD Policies, Review / Terms of Reference

GDARD C-Plan 3 as well as the policies provides the red flags that must be investigated by the specialists. Furthermore, the GDARD officials and the different sub-directorates within the department review the application and give comments to the relevant environmental officer. The issues identified are forwarded to the environmental consultant and these issues are addressed or translated as impacts.

### 2.5 Methodology to determine significance of impacts

The significance of the identified impacts will be determined using the approach outlined below. This incorporates two aspects or assessing the potential significance of impacts (terminology from the Department of Environmental Affairs and Tourism Guideline document on EIA Regulations, April 1998), namely occurrence and severity, which are further sub-divided as follows:

**Table 1: Methodology to Assess Impacts**

Occurrence		Severity	
Probability of occurrence	Duration of occurrence	Magnitude (severity) of impact	Scale / extent of impact

To assess each of these factors for each impact, the following four ranking scales are used:

<b>Probability</b>	<b>Duration</b>
5 – Definite/don't know	5 – Permanent
4 – Highly probable	4 – Long-term
3 – Medium probability	3 –Medium-term (8-15 years)
2 – Low probability	2 – Short-term (0-7 years) (impact ceases after the operational life of the activity)
1 – Improbable	1 – Immediate
0 – None	
<b>Scale</b>	<b>Magnitude</b>
5 – International	10 – Very high/don't know
4 – National	8 – High
3 – Regional	6 – Moderate
2 – Local	4 – Low
1 – Site only	2 – Minor
0 – None	

Once these factors are ranked for each impact, the significance of the two aspects, occurrence and severity, is assessed using the following formula:

$$\text{SP (significance points)} = (\text{probability} + \text{duration} + \text{scale}) \times \text{magnitude}$$

The maximum value is 150 significance points (SP). The impact significance will then be rated as follows:

SP >75	Indicates <b>high</b> environmental significance	An impact which could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.
SP 30 – 75	Indicates <b>moderate</b> environmental significance	An impact or benefit which is sufficiently important to require management and which could have an influence on the decision unless it is mitigated.
SP <30	Indicates <b>low</b> environmental significance	Impacts with little real effect and which should not have an influence on or require modification of the project design.

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.

**Refer to Tables below**



## 2.1 Significance scores of expected impacts

Preferred Alternative – Proposed development of a Lodge on Portion 126 (A Portion of Portion 2) of the Farm Zwavelpoort 373-J. R. within the City of Tshwane Metropolitan Municipality Gauteng.

Table 2: Assessment of Potential Impact of the Proposed Potential impacts

Potential Impact	Scale	Duration	Probability	Magnitude	Significance Points	Impacts Significance	Confidence
<b>Biophysical Environment</b>							
<b>1. Issue: Air Quality</b>							
1.1 Dust/Air pollution - The generation of fugitive dust associated with construction activities & earthworks.	Site Only (1)	Immediate (1)	Highly Probability (4)	Moderate (6)	36	Moderate environmental significance	high
<b>2. ISSUE TOPOGRAPHY</b>							
2.1 Visual impacts: Topographical features contribute to the landscape character and sense of place of an area cutting and embankments and areas devoid of vegetation are most obvious when located on elevated areas in the landscape	Local (2)	Long term (4)	Highly Probability (4)	Moderate (6)	60	Moderate environmental significance	high
2.2 Bulk earthworks: Deep cuttings, high embankments disposal of soil, and excavations cause local changes to topography	Site only (1)	Long term (4)	Highly probability (4)	Moderate (6)	54	Moderate environmental significance	high
<b>3. ISSUE GEOLOGY AND SOILS</b>							
3.1 Soil erosion, loss of topsoil, deterioration of soil quality	Site only (1)	Long term (4)	Highly probable (4)	Minor (2)	18	Low environmental significance	high
3.2 soil pollution (due to hydrocarbon spillages)	Site only (1)	Medium term (3)	Medium probability (2)	Moderate (6)	36	Moderate environmental significance	high
<b>ISSUE FOUNA AND FLORA</b>							

Potential Impact	Scale	Duration	Probability	Magnitude	Significance Points	Impacts Significance	Confidence
4.1 Degradation, destruction of habitats/ ecosystem	Local (2)	Medium term (3)	Definite probability (5)	Very high (10)	100	High environmental significance	high
4.2 Increase of alien invasive plant species.	Local (2)	Medium term (3)	Highly probable (4)	High (8)	72	Moderate environmental significance	high
4.3 Impacts on fauna and flora	Local (2)	Medium term (4)	Definite probability (5)	Very high (10)	110	High environmental significance	high
<b>ISSUE HYDROLOGY</b>							
5.1 Storm water flow and damage- Developments cause the modification of the drainage patterns. Storm water may be concentrated at certain points, increasing the velocity of flow in one area and reducing flow in another. This may contribute to flooding, soil erosion, sedimentation, scouring and channel modification downstream of the development.	Regional (3)	Long term (4)	Low probability (2)	Moderate (6)	54	Moderate environmental significance	high
5.2 Impact on water quality (due to hydrocarbon spillages)	Regional (3)	Long term (4)	Low probability (2)	Moderate (6)	54	Moderate environmental significance	high
<b>SOCIO-ECONOMIC AND CULTURAL HISTORICAL ENVIRONMENT</b>							
<b>4. ISSUE AESTHETICS, LANDSCAPE CHARACTER AND SENSE OF PLACE</b>							
6.1 Noise/ vibration	Local (2)	Short term (2)	Highly probable (4)	Moderate (6)	48	Low environmental significance	high
6.2 Visual impact on adjacent residents and motorists	Site only (1)	Short term (2)	Medium probability (3)	Minor (2)	12	Low environmental significance	high

Potential Impact	Scale	Duration	Probability	Magnitude	Significance Points	Impacts Significance	Confidence
<b>7. ISSUE SOCIAL WELL-BEING AND QUALITY OF THE ENVIRONMENT</b>							
7.1 Safety and Security	Local (2)	Short term (2)	Low probability (2)	Minor (2)	12	Low environmental significance	high
7.2 Employment opportunities	Region (3)	Long term (4)	Highly Probable (4)	Moderate (6)	66	Moderate	Medium
<b>8. ISSUE HISTORICAL ENVIRONMENT</b>							
8.1 Destruction of palaeontological resources	None	None	Improbable	-	Not significant	-	High
8.1 No heritage resources occur in the study area	none	none	Improbable	-	Not significant	-	High
<b>9. ISSUE INFRASTRUCTURE AND SERVICES/WASTE</b>							
9.1 Generation of waste	Site only (1)	Short time (3)	Medium probability (3)	Minor (2)	14	Low environmental significance	high
9.2 Pressure on existing infrastructure and services	Region (3)	Long term (4)	Low probability (2)	Moderate (6)	54	Moderate environmental significance	Medium
<b>10. ISSUE DESIGN AND LAYOUT</b>							
10.1 Functional design	Local (2)	Long term (4)	Low Probability (2)	Minor (2)	16	Low environmental significance	Medium

**Alternative 1: Low density residential development including related uses**

The impacts for Alternative 1 are similar to that of the preferred alternative with the following exceptions.

Potential Impact	Scale	Duration	Probability	Magnitude	Significance Points	Impacts Significance	Confidence
<b>BIOPHYSICAL ENVIRONMENT</b>							
<b>ISSUE: AIR QUALITY</b>							
1.1 Dust/ Air pollution- The generation of fugitive dust associated with construction activities & earthworks.	Local (2)	Long term (4)	Highly probable (4)	Moderate (8)	80	High environmental significance	high
<b>3. ISSUE GEOLOGY AND SOILS</b>							
3.1 Soil pollution	Local (2)	Medium term (3)	High Probability (4)	High (8)	72	High environmental significance	high
<b>4. ISSUE HYDROLOGY</b>							
5.1 Storm water flow and damage- Developments cause the modification of the drainage patterns. Storm water may be concentrated at certain points, increasing the velocity of flow in one area and reducing flow in another. This may contribute to flooding, soil erosion, sedimentation, scouring and channel modification downstream of the development	Regional (3)	Long term (4)	High probability (4)	High (8)	88	High environmental significance	high
5.2 Impact on water quality of water resources situated within the vicinity of the proposed development.	Site only (1)	Long term (4)	High probability (4)	Moderate (6)	54	Moderate	high
<b>SOCIO- ECONOMIC AND CULTURAL HISTORICAL ENVIRONMENT</b>							
<b>5. ISSUE AESTHETICS, LANDSCAPE CHARACTER AND SENCE OF PLACE</b>							
6.1 Noise/ vibration	Local (2)	Long term (4)	Highly probable (4)	Moderate (6)	60	Moderate environmental significance	high
6.2 Noise impact	Site only (1)	Long term (4)	High probability (4)	Moderate (6)	54	Moderate environmental significance	high

**Table 4: Assessment of potential impacts and proposed mitigation measures during construction and operation**

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
<p><b>1.1 Dust /Air pollution</b> The generation of dust associated with construction activities &amp; earthworks</p>	Medium	<ul style="list-style-type: none"> <li>• The building area is to be physically screened off with a shade cloth fence at least 1.8m in height, to prevent dust from being blown onto the road or neighbouring properties.</li> <li>• Dust generation should be kept to a minimum.</li> <li>• Dust must be suppressed on access roads and construction areas during dry periods by the regular application of water or a biodegradable soil stabilisation agent.</li> <li>• Speed limits must be implemented in all areas, including public roads and private property to limit the levels of dust pollution.</li> <li>• It is recommended that the clearing of vegetation from the site should be selective and done just before construction so as to minimise erosion and dust.</li> <li>• Should construction in areas that have been stripped not be commencing within a short period of time the exposed areas shall be re-vegetated or stabilised. Soil stabilising measures could include rotovating in straw bales (at a rate of 1 bale/20 m<sup>2</sup>), applying mulching or brush packing, or creating windbreaks using brush or bales.</li> <li>• Excavating, handling or transporting erodable materials in high wind or when dust plumes are visible shall be avoided.</li> <li>• All materials transported to site must be transported in such a manner that they do not fly or fall off the vehicle. This may necessitate covering or wetting friable materials.</li> <li>• No burning of refuse or vegetation is permitted.</li> </ul>	Low
<p><b>2.1 Visual Impacts - Topographical changes</b></p>	Medium	<ul style="list-style-type: none"> <li>• The site area is to be physically screened off with a shade cloth fence at least 1.8m in height.</li> <li>• The site must be managed appropriately and all rubbish and rubble removed to a recognized waste facility.</li> <li>• Excess soil and bedrock should be disposed of at an appropriate facility.</li> <li>• A certificate of disposal must be obtained for any waste that is disposed of.</li> <li>• Waste must not remain on site for more than 2 weeks.</li> <li>• Refuse bins must be provided by the Contractor for rubbish to be used by staff.</li> <li>• Excess concrete must be disposed of correctly and at an appropriate facility.</li> <li>• No waste may be placed in any excavations on site.</li> <li>• The construction camp must be located as far from other properties as possible.</li> <li>• Light pollutions should be minimised.</li> <li>• The construction footprint must be minimised.</li> <li>• Construction / management activities must be limited to the daylight hours between 7:00am and 5:30pm weekdays; 7:00am and 1:30pm on Saturdays.</li> </ul>	Low

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		<ul style="list-style-type: none"> <li>Lighting on site is to be sufficient for safety and security purposes, but shall not be intrusive to neighbouring residents, disturb wildlife, or interfere with road traffic.</li> <li>Should overtime/night work be authorized, the Contractor shall be responsible to ensure that lighting does not cause undue disturbance to neighbouring residents.</li> <li>In this situation, low flux and frequency lighting shall be utilised.</li> </ul>	
<b>2.2 Bulk earthworks</b>	Low	<ul style="list-style-type: none"> <li>Avoid development on excessively steep slopes.</li> <li>Avoid cutting steep embankments</li> <li>Provide the necessary erosion protection measures.</li> </ul>	Low
<b>3.1 Soil erosion, loss of topsoil, deterioration of soil quality</b>	High	<ul style="list-style-type: none"> <li>Appropriate erosion and stormwater management structures must be installed around the construction site.</li> <li>All construction vehicles, plant, machinery and equipment must be properly maintained to prevent leaks.</li> <li>Plant and vehicles are to be repaired immediately upon developing leaks. Drip trays shall be supplied for all repair work undertaken on machinery on site or campsite area.</li> <li>Drip trays are to be utilised during daily greasing and re-fuelling of machinery and to catch incidental spills and pollutants.</li> <li>Drip trays are to be inspected daily for leaks and effectiveness, and emptied when necessary. This is to be closely monitored during rain events to prevent overflow.</li> <li>Vehicles to be used during the construction phase are to be kept in good working condition and should not be the source of excessive fumes.</li> <li>Fuels and chemicals must be stored in adequate storage facilities that are secure, enclosed and banded.</li> <li>All excavations and foundations must be inspected regularly.</li> <li>Once earthworks are complete, disturbed areas are to be stabilised with mulch, straw or other approved method.</li> </ul>	Medium
<b>3.2 Soil Pollution</b>	High	<ul style="list-style-type: none"> <li>Ensure correct position of construction caps, equipment yards, refueling depots, concrete batching plant etc. to avoid areas susceptible to soil and water pollution.</li> <li>Ensure appropriate handling of hazardous substances</li> <li>Remediate polluted soil.</li> <li>The maintenance of vehicles and equipment used for any purpose during the development will take place only in the maintenance yard. Any breakdown in the field requires the presence of a spill treatment team and equipment. This team must prevent and mitigate any spills that occur in this situation.</li> <li>Equipment used in the development process must be adequately maintained so that during operations it does not spill oil, diesel, fuel, or hydraulic fluid.</li> <li>In the event of spills from vehicles, the area should be cleaned immediately using a bioremediation product, such as <i>Petro-Clean™</i>. The absorbent and soil must be placed in a bin and removed from the site by a certified company and disposed of as a hazardous waste at a licensed commercial facility. No</li> </ul>	Medium

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		Hydrocarbons may escape into the environment. A spill recovery kit must be on site, along with trained personnel.	
<p><b>4.1 Degradation, destruction or elimination of habitats/ecosystems</b></p>	<p><b>High</b> - The proposed development site, can therefore be mitigated through observing the ecological sensitivity map.</p>	<ul style="list-style-type: none"> <li>• Red data plant species may occur (suitable habitat for several species, though presence not confirmed during field survey) on the proposed development. Wetland habitat along the eastern side of the site has been designated as ecologically sensitive.</li> <li>• No development will occur within the 32m buffer zone of the drainage line.</li> <li>• Site clearing is to be limited to only the area necessary for carrying out the specified works and the destruction of vegetation should be minimised.</li> <li>• No littering by construction workers is permitted. Any litter will be collected and removed off-site to a registered waste site.</li> <li>• Cleared indigenous vegetation can be stockpiled for possible reuse in later rehabilitation or landscaping, or as a brush pack for erosion prevention.</li> <li>• Stockpiles of vegetation are only to be located in areas approved by the ECO, and may not exceed 2m in height. Methods of stacking must take cognisance of the possible creation of a fire hazard.</li> <li>• No burning of stockpiled vegetation is permitted.</li> <li>• All alien plants that occur in South Africa. None of these species may be introduced and they must all be controlled.</li> <li>• The alien plants on site will be removed during construction.</li> <li>• Care must be taken to avoid the introduction of alien plant species to the site and surrounding areas. (Particular attention must be paid to imported material).</li> <li>• Alien vegetation re-growth must be controlled throughout the entire site during the construction period.</li> <li>• Remaining indigenous trees (naturally occurring in the area) should be retained wherever possible</li> <li>• The wetland area including the buffer zone should be fenced-off during the construction phase.</li> <li>• Currently very few alien plants occur within this plant community (excluding the wattle bush).</li> <li>• An alien invasive management programme must be incorporated into the Environmental Management Programme (particularly the wattle bush);</li> <li>• Ongoing alien plant control must be undertaken;</li> <li>• Areas which have been disturbed will be quickly colonised by invasive alien species. An ongoing management plan must be implemented for the clearing/eradication of alien species.</li> <li>• Monitor all sites disturbed by construction activities for colonisation by exotics or invasive plants and control these as they emerge.</li> <li>• Avoid planting of exotic plant species in public areas or home gardens, use indigenous species.</li> </ul>	<p>Medium</p>

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
4.2 Impacts on fauna and flora	Medium-low	<ul style="list-style-type: none"> <li>• Use indigenous plant species in all gardens</li> <li>• No RDL or otherwise sensitive fauna or flora is thought to inhabit the actual proposed development site due to the generally poor PES of the area. Wetland habitat along the eastern side of the site has been designated as ecologically sensitive.</li> <li>• Other than the road crossing the wetland and services crossing within the road reserve no development will occur within the 15m buffer zone of the wetland</li> <li>• The contractor must ensure that no fauna species are disturbed, trapped, hunted or killed during the construction phase.</li> <li>• Disturbance to birds, animals and reptiles and their habitats should be prevented at all times.</li> <li>• The illegal hunting or capture of wildlife will not be tolerated. Such matters will be handed over to the relevant authorities for prosecution.</li> <li>• These species should then be relocated to a natural habitat.</li> <li>• During the construction phase, artificial lighting must be restricted to areas under construction only. Where lighting is required for safety or security reasons, this should be targeted at the areas requiring attention. Yellow sodium lights or Compressed Fluorescent Bulbs (CFL"s) should be prescribed as they do not attract as many invertebrates (insects) at night and will not disturb the existing wildlife. Sodium lamps require a third less energy than conventional light bulbs.</li> <li>• Ideally fences should not restrict the natural migratory movements of certain animals. The site offers limited suitable migratory habitat. Electric fences have a negative impact on certain animal species including Bushbabies, geckoes, chameleons, bullfrogs and tortoises. Palisade fencing with adequate gaps is recommended for the conserved public open spaces.</li> <li>• Before any vegetation is removed, a suitably qualified person (i.e. on ECO request of a vegetation specialist) shall inspect the study area for any plant/ grass/ tree species that could be transplanted to other similar/ suitable areas. This includes all Red Data or Protected, or rare plants that may be found during the flora site assessment or during construction operations.</li> <li>• The vast majority of the northern and central areas (the dominant habitat feature) can be described as open exotic woodland with a maintained grass basal layer. This area would historically have included elements of Marikana Thornveld due to the flatter topography and clay-rich melanic soils. The woody elements have, however, largely been removed and replaced with exotic Pecan nut trees (<i>Carya illinoensis</i>). Some indigenous species, such as some individuals of</li> </ul>	Low



Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		<p>Vachellia karroo still remain, albeit sparsely. There is a woodland located within the central southern area that has a high inclusion of exotic and invasive tree species, with homogenous stands of Acacia mearnsii (Black wattle) being most notable. No other medicinal / protected / Red Data Flora was found on the site however should any medicinal/ protected/ Red Data flora that will have to be removed shall be removed by a suitably qualified specialist and relocated. The applicable responsible person at the provincial department must be notified in the event of such plants being identified, who will then advise the ECO regarding what steps need to be taken and who will be responsible for the relocation and transplantation processes.</p> <ul style="list-style-type: none"> <li>• All invader or exotic plant species must be removed from the site and disposed of at a landfill site.</li> <li>• All Declared Weeds and invaders must be removed from the site.</li> <li>• Where herbicides are used to clear vegetation, specimen-specific chemicals should be applied to individual plants only. General spraying should be prohibited.</li> <li>• Only indigenous floral species (preferably using endemic or local species from the area), which are water wise and require minimal horticultural practices may be used during landscaping and rehabilitation.</li> <li>• Remaining indigenous trees (naturally occurring in the area) should be retained wherever possible</li> <li>• The body corporate should be encouraged to plant indigenous non-invasive plants. The attention of property owners must be drawn to the most recent Declared Weeds List (2001) in the <i>Conservation of Agricultural Resources Act 43 of 1983</i> and the associated penalties and prohibitions</li> <li>• The least environmentally damaging insecticides, to manage invertebrate pests, must be applied. Pyrethroids and Phenylpyrazoles are preferable to Acetylcholines. Use insecticides that are specific to the pest (species specific) in question. The lowest effective dosages must be applied. The suppliers advice should always be sought. Do not irrigate for 24 hours after applying insecticides in areas where there is a chance of contaminating water-courses or dams, fungal pathogens should be used in preference to chemical insecticides.</li> </ul>	
<b>5.1 Stormwater flow, drainage and increased runoff due to hardened surfaces</b>	Medium	<ul style="list-style-type: none"> <li>• Natural storm water must flow freely, either as sheet flow or where necessary in open grass swales, to allow for infiltration and retention. Natural veld grass must be left undisturbed as far as possible, to allow natural drainage.</li> <li>• Drainage channels must be constructed along access roads every 50m to divert runoff during construction period.</li> </ul>	Low

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		<ul style="list-style-type: none"> <li>• Energy dissipaters (gabions/grass bales etc.) must be installed at all potential large flow volume areas, especially during the construction phase where large areas will be open soil.</li> <li>• Where feasible the use of vegetated swales should be used to accommodate surface runoff, in order to increase infiltration into the soil. The swales should be vegetated with indigenous, riparian vegetation in order to provide habitat for bird life and other aquatic and semi-aquatic species. Where feasible, the swales should be provided adjacent to the property boundaries along the natural gradient</li> <li>• The cross-section of the swale should be parabolic or trapezoidal in shape with side slopes no steeper than 1:3, to maximise the wetted channel perimeter. It is recommended that the longitudinal slope not exceed 2% where possible and that a maximum slope of 4% be used. Where a 4% slope must be exceeded, check dams should be provided at a minimum interval of 17m. As a rule of thumb the total surface area of the swale must be 1% of the area that drains into the swale. The surface of the swale must be carefully constructed, to avoid compaction, which will inhibit dense vegetation growth and effective runoff infiltration. The installation of vegetated filter strips parallel to the top of the channel banks can help to treat sheet flows entering the swale.</li> <li>• Maintenance of the swale should include periodic mowing of the grass (never shorter than the design flow depth of the channel). Bare areas should be re-seeded and debris and blockages regularly removed. Sediment depositions should be regularly removed from the swale, to prevent pollution of the runoff from contaminants contained therein.</li> <li>• Please note that the recommendations for the design of the swales are guidelines only and that the designs of the swales, sedimentation ponds and check dams must be done by a hydrological engineer.</li> <li>• Permeable paving should be used to reduce runoff and increase infiltration and ground water recharge.</li> <li>• As much as possible water should be retained on site to be reused again for irrigation and habitat creation.</li> <li>• Both storm water and excess effluent intended for irrigation must be purified according to DWS standards.</li> </ul>	
<b>5.2 Impacts Drainage line and water quality</b>	Medium	<ul style="list-style-type: none"> <li>• Utilize proper waste management practices.</li> <li>• Cover any wastes that are likely to wash away or contaminate storm water</li> <li>• Ensure handling, transport and disposal of hazardous substances are adequately controlled and managed.</li> <li>• Provide containment areas for potential pollutants at construction camps, refueling depot and concrete batching plants.</li> <li>• Fuel storage shall be within the construction camp, and within a bunded area with at least 110% of the volume of the amount</li> </ul>	Low

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		<p>of fuel stored, as per agreement and approval of the ECO. No storage of any fuel will be allowed on site, other than what is approved by the applicable provincial government departments.</p> <ul style="list-style-type: none"> <li>• Drip trays (min 10cm deep) are to be placed under all vehicles if they stand for more than 3 hours. The drip tray must be able to contain 110% of the total amount/ volume of oil in the vehicle. Spill kits must be available in all vehicles that transport hydrocarbons for dispensing to other vehicles on the site. The dispensing devices (pump heads) must be compatible with the vehicles to which they are dispensing. In addition the dispensing devices must be fitted with the necessary valves/ apparatus that will ensure that the nozzles do not drip fuel after pumping has stopped.</li> <li>• Cement mixing shall be done only at specifically selected sites. After construction activities ended the cement shall be crushed and removed from the site. This mixing area shall then be ripped and rehabilitated.</li> </ul> <p><b>The site does have an association with wetland and aquatic/riparian habitat units. The northern section of the site falls at the confluence between two watercourses (the Zwavelpoortspruit and a smaller unnamed tributary).</b></p> <p>Limit the construction footprint and support areas (e.g. temporary access servitudes) as far as possible;</p> <ul style="list-style-type: none"> <li>• No indiscriminate destruction of wetland vegetation should be allowed;</li> <li>• Make use of geotextiles within disturbed areas of steeper topography to avoid erosion through surface water runoff;</li> <li>• Stormwater management along informal roadways to reduce gully erosion formation;</li> <li>• Construct within the low-flow (dry) period;</li> <li>• Correct site reinstatement and landscaping following any disturbances will abate channel and gully formation;</li> <li>• Proper re-instatement of soils and landscaping to limit erosion gully formation.</li> <li>• Soil layers within wetland zones are to be stored in their respective layers and replaced after entrenching has occurred in reverse order i.e. the original soil layering must be retained should entrenching within wetland habitat found to be necessary. Provision for this should be detailed within a rehabilitation plan and the site reinstatement should be audited by suitably qualified personnel.</li> <li>• No dumping of any excess building material or other wastes or litter should be allowed within any wetland and buffer areas;</li> <li>• Exotic vegetation recruitment was observed as an impacting feature within the wetlands. It is recommended that an exotic vegetation management strategy be developed as part of a</li> </ul>	

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		rehabilitation plan to manage the present and future emergent exotic vegetation; <ul style="list-style-type: none"> <li>Subsistence hunting or harvesting of fauna or flora within the wetland zones should be prohibited;</li> </ul>	
<b>6.1 Noise/ vibration</b>	Medium	<ul style="list-style-type: none"> <li>Noise levels shall be kept within acceptable limits, and construction crew must abide by National Noise Laws and local by-laws regarding noise.</li> <li>If work is to be undertaken outside of normal work hours permission, must be obtained. Prior to commencing any such activity the Contractor is also to advise the potentially affected neighbouring residents. Notification could include letter-drops.</li> <li>No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is permitted on site.</li> <li>Construction / management activities involving use of the service vehicle, machinery, hammering etc, must be limited to the hours between 7:00am and 5:30pm weekdays; 7:00am and 1:30pm on Saturdays; no noisy activities may take place on Sundays or Public Holidays.</li> <li>Activities that may disrupt neighbours (e.g. delivery trucks, excessively noisy activities etc) must be preceded by notice being given to the affected neighbours at least 24 hours in advance.</li> <li>Equipment that is fitted with noise reduction facilities (e.g. side flaps, silencers etc) must be used as per operating instructions and maintained properly during site operations</li> </ul>	Low
<b>6.2 Visual Impact</b>	Low	<ul style="list-style-type: none"> <li>The site is in an extremely disturbed state, with existing properties that are not well maintained.</li> <li>Structures that are to be erected should be aesthetically pleasing and blend into the area as far as possible to minimise the visual impact.</li> <li>Buildings are to reflect and residential scale and design with finishes matching the existing styles and finishes. Buildings must adhere to the local zoning code.</li> <li>Buildings must be maintained in good standing at all times</li> </ul>	Low
<b>7.1 Safety and Security</b>	Low	<ul style="list-style-type: none"> <li>A fence will be constructed around the site prior to commencement of construction</li> <li>The Applicant will be in contact with the local security firms.</li> <li>Signs should be erected on all entrance gates indicating that no temporary jobs are available, thereby limiting opportunistic labourers and crime.</li> <li>The site and crew are to be managed in strict accordance with the Occupational Health and Safety Act (Act No. 85 of 1993) and the National Building Regulations</li> <li>All structures that are vulnerable to high winds must be secured (including toilets).</li> <li>Potentially hazardous areas such as trenches are to be cordoned off and clearly marked at all times.</li> </ul>	Low

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		<ul style="list-style-type: none"> <li>• The Contractor is to ensure traffic safety at all times, and shall implement road safety precautions for this purpose when works are undertaken on or near public roads.</li> <li>• Necessary Personal Protective Equipment (PPE) and safety gear appropriate to the task being undertaken is to be provided to all site personnel (e.g. hard hats, safety boots, masks etc.).</li> <li>• All vehicles and equipment used on site must be operated by appropriately trained and / or licensed individuals in compliance with all safety measures as laid out in the Occupational Health and Safety Act (Act No. 85 of 1993) (OHSA).</li> <li>• An environmental awareness training programme for all staff members shall be put in place by the Contractor. Before commencing with any work, all staff members shall be appropriately briefed about the EMP and relevant occupational health and safety issues.</li> <li>• All construction workers shall be issued with ID badges and clearly identifiable uniforms.</li> <li>• Access to fuel and other equipment stores is to be strictly controlled.</li> <li>• Emergency procedures must be produced and communicated to all the employees on site. This will ensure that accidents are responded to appropriately and the impacts thereof are minimised. This will also ensure that potential liabilities and damage to life and the environment are avoided.</li> <li>• Adequate emergency facilities must be provided for the treatment of any emergency on the site.</li> <li>• The nearest emergency service provider must be identified during all phases of the project as well as its capacity and the magnitude of accidents it will be able to handle. Emergency contact numbers are to be displayed conspicuously at prominent locations around the construction site and the construction crew camps at all times.</li> <li>• The Contractor must have a basic spill control kit available at each construction crew camp and around the construction site. The spill control kits must include absorptive material that can handle all forms of hydrocarbon as well as floating blankets / pillows that can be placed on water courses.</li> <li>• The Contractor shall make available safe drinking water fit for human consumption at the site offices and all other working areas.</li> <li>• Washing and toilet facilities shall be provided on site and in the Contractors camp.</li> <li>• Adequate numbers of chemical toilets must be maintained in the Contractors camp to service the staff using this area. At least 1 toilet must be available per 20 workers using the camp. Toilet paper must be provided.</li> </ul>	

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		<ul style="list-style-type: none"> <li>• The chemical toilets servicing the camp must be maintained in a good state, and any spills or overflows must be attended to immediately.</li> <li>• The chemical toilets must be emptied on a regular basis.</li> <li>• The Contractors site must be located on the high side of the site so any leakages or spillages will be contained on site.</li> <li>• HIV AIDS awareness and education should be undertaken by all Contractor staff.</li> </ul>	
<b>7.2 Economic opportunities</b>	Low	<ul style="list-style-type: none"> <li>• Make use of local labour</li> <li>• Provide clear and realistic information regarding employment opportunities and other benefits for local communities in order to prevent unrealistic expectations.</li> </ul> <p>Provide skills training for construction workers.</p>	Medium
<b>8.1 Destruction of cultural / heritage sites</b> No sites of cultural or heritage importance were found during the Heritage impact Assessment	Low	<ul style="list-style-type: none"> <li>• Ensure that construction staff members are aware that heritage resources could be unearthed and the scientific importance of such finds.</li> <li>• Ensure that heritage objects are not to be moved or destroyed without the necessary permits from the South African Heritage Resources Agency (SAHRA) in place.</li> </ul>	Low
<b>9.1 Waste</b>	Low	<ul style="list-style-type: none"> <li>• Adequate number of waste disposal receptacles are to be positioned at strategic locations within the development.</li> <li>• Temporary waste storage points on site shall be determined. These storage points shall be accessible by waste removal trucks and these points should not be located in areas highly visible from the properties of the surrounding land-owners/tenants/in areas. These areas should also be already disturbed. The storage of solid waste on site, until such time that it may be disposed of, must be in the manner acceptable to the relevant Authority.</li> <li>• No waste materials shall at any stage be disposed of in public areas or adjacent properties, or where the wind direction will carry bad odours across the properties of adjacent tenants or landowners. The piling of any material that could rot and release unpleasant smells into the air will not be permitted. Burning of waste is not permitted. Spot fines of up to R100 may be administered if the employees are found to be polluting the area in any way.</li> <li>• Several waste bins must be provided and clearly marked or colour coded according to industry standards to allow for recycling of waste into               <ul style="list-style-type: none"> <li>○ Paper</li> <li>○ Biodegradable</li> <li>○ Glass</li> <li>○ Plastics</li> <li>○ General</li> </ul> </li> <li>• No burning of waste.</li> </ul>	Low

Potential Impacts	Significance rating of impacts before mitigation	Proposed mitigation	Significance rating of impacts after mitigation
		<ul style="list-style-type: none"> <li>Wayleaves required for all disposed waste.</li> <li>The waste bins shall be cleared by municipal services on a weekly basis.</li> </ul> <p>During municipal strikes special arrangements must be made to have the waste removed via private waste removal services.</p>	
<b>9.2 Existing infrastructure</b>	Medium	<ul style="list-style-type: none"> <li>Integrity of existing services to be ensured.</li> <li>Adherence to Service Report</li> <li>Adherence to Traffic Impact Study requirements.</li> <li>The service systems are to be designed according to the minimum requirements of, and submitted to the City of Tshwane Metropolitan Municipality for approval. No construction activities must commence on site prior to obtaining the necessary approval.</li> <li>Underground services should be designed in such a way so as to require minimum maintenance to avoid disturbance of the underground and superficial environment.</li> </ul>	Medium-low
<b>10.1 Functional design</b>	Medium	<ul style="list-style-type: none"> <li>Scale and design must fit with adjacent land uses</li> <li>Areas where services infrastructure has been installed must be rehabilitated with indigenous vegetation on completion.</li> </ul>	Low

**NO GO:**

**No-Go Alternative**

The No- Go alternative is the option of not implementing the activities. This implies that the site be left as is and that no development be done.

This option has the following potential impacts:

- Many direct and indirect spin-off benefits, such as job creation, capacity building, rates for the municipality and the upgrading of supply of services will not be realised.
- Invasive vegetation would probably continue to spread in areas where land is vacant and not actively used in its entirety.
- If not developed, the site will derive no income and will not contribute to the services and total income of the area.

It is reasonable to state that the no-go option is less favourable than some of the other options presented.

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

- Annexure G1: Ecological Assessment
- Annexure G2: Wetland Assessment
- Annexure G3: Golden Mole Study
- Annexure G4: Paleontological Assessment Phase 1
- Annexure G5: Heritage Impact Assessment
- Annexure I2: Noise Impact Study

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

- **Assumptions**

In undertaking this BAR, it has been assumed that:

- All requirements from the local authority will be met by the proponent as a separate undertaking to the EIA process;
- The information provided by the proponent and the project planning team / specialists is accurate and discloses all information relevant to EIA, proposed project and possible impacts.
- Where supporting or baseline information was unavailable, a precautionary approach is adopted.

- **Gaps in Knowledge**

All specialist studies are conducted to certain levels of confidence, but in all instances known methodologies have been used and confidence levels are generally high. This means that in most cases the situation described in the pre-construction environment is accurate at high certainty levels, but there exists a low probability that some issues have not been identified during the studies. Furthermore, statistical analyses and mathematical models are merely tools which assist the researcher in assessing field observations and have innate assumptions which can reduce objectivity of the results obtained. This is not seen as a major flaw but should always be considered when assessing results.

**Gaps in knowledge known to LEAP at this time, includes:**

- Predicting the impact to the socio-economic and bio-physical environment for the life-cycle of the proposed project (i.e. 25-50 years) although it is expected to be positive since the social contribution will be extremely high



### 3. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING & CLOSURE PHASE – NOT APPLICABLE

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.

The decommissioning or closure of the proposed project is not anticipated.

**Proposal**

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

**Alternative 1**

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

**Alternative 2**

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

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

Not Applicable

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

Not Applicable

## 4. CUMULATIVE IMPACTS

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

Cumulative impacts are assessed with the combination effects of the Project with current and future development in the immediate area of the Project site. The cumulative impacts assessed depend on the status of other projects and the level of data available to characterise the magnitude of the impacts.

The large portions of the surrounding land are or has been utilised for industrial developments and as such it would make sense for these properties to be used for this purpose. In terms of density, the general typology of development in the area consists of higher impact uses.

### Cumulative Impacts

- **Litter and Waste**

Activities associated with use of the site results in littering. Similarly, the building process generates wastes that could pollute the site and its surrounds. For this reason, it is important that a waste management plan must be developed. The litter will reduce as the construction phase ends. This will not result in a cumulative impact.

- **Vegetation and Fauna**

The proposed development will partially transform the site and will lead to the partial loss of habitat for any potential plant or animal species. This is considered to be an impact of low significance as the largest portion of the development will occur on the low sensitive areas. A very small component of the development will be located on the high sensitivity areas of the site. The buildings are raised above the ground and constructed on columns to allow for free flow below the buildings, thus reducing the impact of the development. The cumulative impact is thus low

- **Stormwater Runoff**

The development of hard surfaces will give rise to greater volumes and velocity of runoff waters during high peak flows. This water will drain into the roads and stormwater management system. Localised flooding may result on negative impacts on bed and banks of the stream course due to the cumulative effects.

## 5. ENVIRONMENTAL IMPACT STATEMENT

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

### Preferred Alternative

The identified impacts in both the construction and the operational phase are those usually experienced with rural development. The negative impacts identified, however, are not considered highly significant and with appropriate mitigation can be reduced to a lower significance.

- The Applicant has the capacity and resources to adequately implement the mitigation measures stipulated in the EMP.
- Sensitive social receptors (surrounding landowners) are not located in close proximity of the development sites, the potential impacts on these receptors can be adequately mitigated.
- The creation of jobs for local people during operation, the rehabilitation of old lands and the removal and control of alien vegetation will result in moderately positive impacts locally.
- Most of the impacts will be as a result of the construction of the development, with the impacts of the operational phase being minimal / low in significance. With management and mitigation of the identified impacts, the significance of the overall impact of the development should be low / minimal.

### **Alternative 1: Low Density Residential Development**

All measures will be implemented to develop those areas with the least ecological value. The proposed development could also positively impact on the safety and security of the area, the expansion of services capacity (water and sanitation), as well as the upgrade of existing infrastructure.

The development of the will provide additional work opportunities during the construction phase.

As discussed above in the report, due to the Industrial nature of Alternative 1 the cumulative impacts related to Alternative 1 will be slightly higher, due to additional air pollution and pollution of stormwater from site running off towards adjacent waterbodies.

The duration of the impacts will only be during the construction phase and due to the disturbed nature of the proposed development site the Impacts from the proposed the development will be low.

Impacts can be successfully mitigated, however Alternative 1, Low density residential development is less favourable than the proposed development and will have slightly higher environmental impacts than the preferred alternative.

### **Alternative 2**

Not Applicable

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

The No- Go alternative is the option of not implementing the activities. This implies that the site be left as is and that no development be done.

This option has the following potential impacts:

- The potential to provide additional housing and the thinking of the local municipality to the population, will be lost;
- A very viable opportunity for creating jobs (for example maintenance and construction, etc.) and income for the local market will be negated;
- The remaining undeveloped area will fall further in disrepair and the protection and appropriate management of the ecological significant areas will be negated;

- Given the fact that the site will eventually degenerate further if left unmanaged, it is reasonable to state that the no-go option is less favourable than the proposal.

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

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.

In accordance with GN No. 982, the Environmental Impact Phase is aimed at identifying and assessing potential impacts caused by the proposed development. The ability to mitigate any of the identified impacts are also addressed and summarised into a working / dynamic Environmental Management Programme (EMP) for consideration by I&APs and ultimately by the GDARD.

Comments and/or concerns identified by Interested and Affected Parties (I&APs) during the review period of the Draft Basic Assessment will be incorporated into the Final Basic Assessment to be submitted to the GDARD for consideration.

Having assessed all the potential environmental impacts associated with the proposed development it is the opinion of the EAP that the proposed development a of Lodge on Portion 126 (A Portion of Portion 2) of the Farm Zwavelpoort 373-J. R. within the City of Tshwane Metropolitan Municipality Gauteng is issued with a positive Authorisation from the GDARD for the following reasons:

- The proposed development is in line with requirements of the spatial planning tools (i.e. the Spatial Development Framework for City of Tshwane Local Municipality – 03, July 2008, City of Tshwane Town Planning Scheme, 2008 (revised 2014) and the Gauteng Development Framework, 2011);
- The proposed development is not for human settlement or business activity outside the Urban Edge but rather for heritage purposes and thus does not contribute to urban sprawl.
- The proposed heritage site would make use of natural and human resources within the local community and as such complies to above factor.
- The economic service sphere of the heritage site would be of National and International significance and thus economic growth within the area would be stimulated by the proposed heritage site.
- The site is located in a remote area, not close to major public transport routes. It is expected that the development will generate employment opportunities for workers dependent on public transport for daily commuting. As part of the approval for the development, it is proposed to allocate a parking area on the property for a public transport vehicle/s.
- The proposed heritage site would stimulate local economic growth and therefore contribute to the wellbeing of the area.
- The property is found in a rural area with limited resources, social amenities, and infrastructure. The proposed development would contribute to all mentioned aspects. Therefore, the intensification of the

property by means of the proposed rezoning application would result in the land and infrastructure being optimally utilised.

- The proposed development is sustainable in the sense that the infrastructure would be optimally used and the proposed heritage site would create sustainable employment opportunities. The proposed use would be located in an area earmarked for tourism activities and therefore would stimulate eco-tourism activity within the area and contribute to spatial sustainable growth.

Although a number of potential negative biophysical, socio economic and cumulative impacts were identified, there are no fatal flaws that should prevent the development from proceeding. It was demonstrated that most of these impacts can also be mitigated effectively in order to reduce the significance. Refer to Table 6 for a summary of the impact significance ratings – before and after mitigation.

**Table 6: Proposed Activity: Impact Summary**

Construction Phase	Before Mitigation	After Mitigation
<b>BIOPHYSICAL ENVIRONMENT</b>		
1.1 Dust/Air pollution - The generation of fugitive dust associated with construction activities & earthworks.	<b>Moderate</b>	<b>Low</b>
2.1 Visual Impacts: Topographical features contribute to the landscape character and sense of place of an area. Visual scarring due to cutting and embankments and areas devoid of vegetation are most obvious when located on elevated areas in the landscape.	<b>Moderate</b>	<b>Low</b>
2.2 Bulk earthworks: Deep cuttings, high embankments, disposal of soil and excavations cause local changes to topography	<b>Moderate</b>	<b>Low</b>
3.1 Soil erosion, loss of topsoil, deterioration of soil quality	<b>Moderate</b>	<b>Low</b>
3.2 Soil pollution (due to hydrocarbon spillages)	<b>Moderate</b>	<b>Low</b>
4.1 Degradation, destruction of habitats/ ecosystem and impact on connectivity – classified as a Critical Biodiversity Area (CBA)	<b>High</b>	<b>Moderate</b>
4.2 Impacts on fauna and flora	<b>Moderate</b>	<b>Low</b>
5.1 Stormwater flow and drainage- Developments cause the modification of drainage patterns. Stormwater may be concentrated at certain points, increasing the velocity of flow in one area and reducing flow in another. This may contribute to flooding, soil erosion, sedimentation, scouring and channel modification downstream of the development.	<b>Moderate</b>	<b>Low</b>
5.2 Impact on water quality (due to hydrocarbon spillages)	<b>Moderate</b>	<b>Low</b>
<b>SOCIO-ECONOMIC ENVIRONMENT</b>		
6.1 Noise/ vibration	<b>Medium</b>	<b>Low</b>
6.2 Visual impact on adjacent residents and motorists	<b>Low</b>	<b>Low</b>
7.1 Safety and Security	<b>Low</b>	<b>Low</b>

7.2 Employment opportunities	Moderate (Positive)	High (Positive)
8.1 Destruction of paleontological resources	High	Moderate
9.1 Waste	Low	Low
9.2 Existing infrastructure	Low	Low
10.1 Functional design	Low (Positive)	Moderate (Positive)
<b>OPERATIONS</b>		
Impact of country estate development and residents / visitors on the wildlife and sensitive environments.	High	Low
Increase in traffic and air pollution (from dust) on the gravel road from traffic generated by the development.	Moderate	Low
Visual Impacts of buildings and infrastructure.	Moderate	Low
Light pollution	Moderate	Low
Increase in water use	Moderate	Low
Sewerage disposal and groundwater pollution	High	Low
Stormwater / surface run-off	Medium	Low
Solid Waste Disposal	Medium	Low
Noise	Medium	Low
Socio-economic	Moderate (Positive)	Moderate (Positive)
Property Value	Low	Low

## 7. SPATIAL DEVELOPMENT TOOLS

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

### **Tshwane Regional Spatial Development Framework – Region 6 (2012 and 2013)**

- The Tshwane Regional Spatial Development Framework - Region 6 was compiled by the City of Tshwane Metropolitan Municipality and aims to ensure that the desired urban form and patterns are established within the region.
- The proposed consent use application will not change the norms and standards of the area. There are

Already several different business land uses such as wedding venue's, guest houses, riding schools and Other land uses in the Zwavelpoort area which is in line with the Tshwane Town Planning Scheme, 2008 (as revised 2014).

- There are no imbalances as the property forms part of an earmarked rural area within the urban edge;
- All SDF's and Policies were taken into consideration. This proposed land use will contribute to previously excluded informal settlements as new job opportunities will be created and will assist (on a small scale) towards poverty;
- The property's proposed land use falls within the Regional Spatial Development – Region 6 of the City of Tshwane and no persons and areas were excluded as there are no informal settlements or homeland areas;
- Land Use Management Systems - Not applicable.
- There is sufficient access to the proposed land use and the proposed land use falls within the land use scheme. Land development procedures
- No urban sprawl will be created by this proposed development;

Refer to the Town Planning Consent Use Application – **ANNEXURE 11**

## 8. RECOMMENDATION OF THE PRACTITIONER

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

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

Not Applicable

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:

### **It is recommended that the Proposed Activity is authorised**

The recommendations to include, if the authorisation of the Proposed Activity is granted, are amongst others:

#### **General:**

- The monitoring of the construction site must be carried out by a professionally qualified Environmental Compliance Officer (ECO) with proven expertise in the field so as to ensure compliance to the Environmental Management Programme (EMP).
- All mitigation measures listed in the BAR as well as the EMP must be implemented and adhered to.
- rehabilitated as soon as possible and revegetated with indigenous species.

- The species should be indigenous to the specific area and the composition of the vegetation should reflect the natural vegetation
- The species used in rehabilitation of the proposed development should be indigenous to lessen the impact of exotic plant species on existing fauna and flora systems.
- The protected plant must be protected in situ and it will thus be necessary to adjust the building footprints to avoid any orange listed plant species.

**Specific recommendations by the specialist include:**

**Ecology:**

- The indiscriminate use of heavy machinery by uninformed operators leading to the unnecessary destruction of habitat through unnecessary expansion of the impacting footprint area is perceived to be the leading cause of ecological impacts that can be easily avoided.
- Careful planning, basic education of operators and on-site management will all enable the impacts to be significantly reduced.
- Reduce impact by ecologically-sensitive construction methods and the following of a carefully planned Environmental Management Programme (EMPr).
- By keeping the footprint of the impacts reduced to a minimum by only allowing heavy machinery to operate on designated access roadways and by avoiding the unnecessary degradation of habitat within areas adjacent to the actual construction areas, the ecological impacts can be greatly reduced.
- The perceived ecological impacts have been rated as medium to low, with the majority of the impacts rated higher being related to the wetland unit and the preservation thereof.
- It should be noted that wetland habitat units are regarded as inherently ecologically sensitive ecosystems, regardless of present ecological state, and that they should be treated as such. This is because local impacts can often manifest downstream of the site, affecting many habitat specialist species and the water resource.
- The impacts can be significantly reduced through the implementation of mitigation measures that are also proposed within the table and that these impacts can be regarded as low after implementation of the mitigation measures

**Wetland:**

- No activities should take place in the wetland and associated buffer zone.
- A temporary fence or demarcation must be erected around No-Go Areas outside the proposed works area prior to any construction taking place as part of the contractor planning phase when compiling work method statements to prevent access to the adjacent portions of the watercourse.
- Effective stormwater management should be a priority during both construction and operational phase. This should be monitored as part of the EMP. High energy stormwater input into the watercourses should be prevented at all cost. Changes to natural flow of water (surface water as well as water flowing within the soil profile) on the site above the river area resulting from the proposed road upgrade should be taken into account.
- Runoff water from roofs and paving etc. should be captured and allowed to infiltrate at the maximum vertical infiltration rate to the soil.
- Effective management of sediment input into wetlands.



**Paleontology:**

- The overburden and inter-burden must be surveyed for fossils. Special care must be taken during the digging, drilling, blasting and excavating of foundations, trenches, channels and footings and removal of overburden not to intrude fossiliferous layers.

**Heritage:**

Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.

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

The owner of the farm purchased the property due to the beautiful scenery and existing dams. It was his intention to do a lodge on this property to share the beauty of it with guests and tourists. He is already in the Restaurant industry and has a lot of clients who required such a facility that can accommodate smaller groups for functions as he cannot always accommodate them at the restaurant. He thus purchased this property in order to accommodate some of his existing clients and their needs.

There are five other lodges and wedding venues namely Graceland, Riverside Castle, Ndlovu Lodge, Mvubu Lodge and Monte de Dios a 5km radius.

This is not your typical a wedding venue which falls under the definition of a lodge but focuses more on recreation and accommodation with guest units (in total 28 Guests). All guests will be required to have all meals in the main guest house. Each unit may have a kitchenette but it is unlikely that this will be implemented except for coffee and tea in the rooms.

There will be 3 venue sites on the property for smaller functions such as 21st and other birthdays or small corporate functions such as team building and end year functions. Each of these venue sites can only accommodate 64 seats. These will mainly be rented out over weekends.

The conferences to be held will be exclusively for the people staying in the guest house and other accommodation. The conference room can only accommodate 22 seats. Thus no peak traffic will be generated for the proposed conference room.

**Desirability**

Zwavelpoort is a relatively large farm area in the east of Pretoria, one of the prettier and most significant farm areas of Gauteng Province. It is situated about an hour's drive from Johannesburg and its international airport, OR Tambo.

Zwavelpoort has a distinctive look and feel, reminiscent of the real, old world farmlands of South Africa. This makes it an idyllic retreat for those wanting to escape the busy pace of the city and experience the fresh air and unadulterated sunshine of the countryside.

The proposed development to the east of Pretoria will promote social space and interaction amongst people. The accommodation of 28 people will complement the area and the owner can offer accommodation to people travelling

to other venues and functions. The 3 smaller venues which accommodate only 64 seats are ideal for smaller functions. On the Zwavelpoort Road there are already other such wedding and recreational function venues.

There will also not be an increase in traffic due to the fact that the development will only accommodate 28 people during the week with some recreational facilities which will operate mainly over weekends. Thus no peak traffic will be generated. The proposed development is not in a residential area but rural area.

Tourism is regarded as a modern-day engine of growth and is one of the largest industries globally. In 2012, G20 heads of state recognised tourism as a driver of growth and development, as well as a sector that has the potential to spur global economic recovery. South Africa has earmarked tourism as a key sector with excellent potential for growth: the government aims to increase tourism's contribution, both direct and indirectly, to the economy from the 2009 baseline of R189,4-billion (7.9% of GDP) to R499-billion by 2020 (National Department of Tourism, 2012). Tourism supports one in every 12 jobs in South Africa. South Africa's spectacular scenery, friendly people, world-class infrastructure make it one of the most desired destinations in the world. The sector was given a massive boost by the successful hosting of the World Cup in 2010, when the country received a record-breaking, 8.1-million foreign visitors. Despite tough global economic conditions, tourism grew in 2011, with 8.3-million international tourists.

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

**10 years**

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

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

EMPr attached

**YES**

## **SECTION F: APPENDIXES**

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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

Annexure A: Site plan(s)

Annexure B: Photographs

Annexure C: Facility illustration(s)

Annexure D: Route position information – Not Applicable

Annexure E: Public participation information

Annexure F: Water use license(s) authorisation, SAHRA information, service letters from municipalities, water supply information - Not Applicable

Annexure G: Specialist reports

Annexure G1: Ecology Assessment

Annexure G2: Wetland Assessment

Annexure G3: Golden Mole Study

Annexure G4: Heritage Assessment

Annexure G5: Paleontological Assessment

Annexure H: EMPr

Annexure I: Other information

Annexure I1: Townplanning Memorandum

Annexure I2: Noise Impact Study

Annexure I3: Services report

Annexure I4: Traffic Assessment

Annexure I4a: Tshwane Roads Master Planning Approvals

Annexure I5a: EAP CV

Annexure I5b: Specialist CVs

Annexure I6: EAP declaration

### **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 complete