FINAL SCOPING REPORT

THE PROPOSED CLASS 3 ROAD BETWEEN THE K34 AND THE HAZELDEAN NODE (HAZELDEAN BOULEVARD), PRETORIA EAST, GAUTENG

Prepared for:

City of Tshwane
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Submitted to:

Gauteng Department of Agriculture and Rural Development
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Newtown
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GDARD REF NO: Gaut 002/14 – 15/0020
SEF Project Code: 505648

PURPOSE OF DOCUMENT

A period of 30 calendar days (**18 July 2014 – 19 August 2014**) has been provided for the review and commenting phase of the Final Scoping Report. All Interested and Affected Parties (I&APs) as well as State Departments have been notified of this review period.

The Final Scoping Report contains the following information:

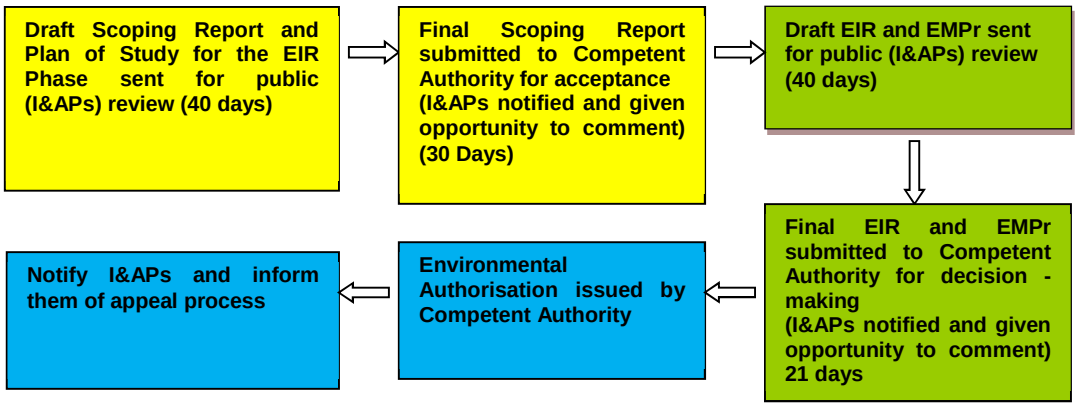
- A description of the project, including project motivation;
- Discussion of applicable alternatives;
- A description of the environment affected by the project;
- The public participation process; and
- The plan of study for the Environmental Impact Reporting (EIR) phase.

The Final Scoping Report can be viewed at the following venue:

Name of public venue	Name of Contact Person	Contact Number(s)	Viewing Times
Postnet Silver Lakes, Shop 4, Hazeldean Square Shopping Centre, Corner Graham and Silver Lakes Road	Mr Charl van der Walt	(012) 809 1797	07:30-18:00 weekdays 08:00-14:00 Saturdays 09:00-13:00 Sundays

Should you wish to participate in the S&EIR process by contributing issues of concerns/comments, please register as an I&AP by visiting SEF's website at http://www.sefsa.co.za. To register as an I&AP or comment on the project, click on "Stakeholder Engagement". Click on the "register" button and complete the compulsory fields to register as an I&AP. Use your chosen login and password to access the Final Scoping Report for the proposed **Hazeldean Boulevard** and associated appendices. Should you have any problems in obtaining the information from the Internet, please feel free to contact SEF for assistance.

All comments on this Final Scoping Report are to be submitted directly to the Gauteng Department of Agriculture and Rural Development (GDARD) as the review period of 30 days will run concurrently with the GDARD review period. After the acceptance of the Scoping Report, the EIR phase will be initiated. The flow diagram below highlights the phases in the project where I&APs have the opportunity to participate within the process.



PROJECT SUMMARY	
Project Name	Hazeldean Boulevard
Preferred Site	Portion 3, 5 and 6 of Farm Tyger Valley 334, Portion 20 and 21 of Farm Zwartkoppies 364
Surveyor-General 21 Digit Code	T0JR00000000033400003 T0JR00000000033400005 T0JR00000000033400006 T0JR00000000036400020 T0JR00000000036400021
Development Footprint	The preferred road alternative is approximately 2km in length with a 32m road reserve. It is proposed that the road is a dual carriageway with a median with each carriageway consisting of a roadway width of 8.3m.
Lay Down Area Dimensions	To be addressed within the Environmental Impact Report.
Site Photographs	Refer to Appendix 2
Copy of Title Deeds / Zoning Certificates	Refer to Appendix 6
Registered Servitudes	A registered water pipeline presently traverses Portion 20 and 21 of the Farm Zwartkoppies No. 364 JR. The surveyor general codes for the pipeline are 2120/2009 and 2121/2009 respectively. Copies of the registration certificates are provided in Appendix 7.
Confirmation of Supply:	
Water (Construction & Operational Phases)	Construction Phase = to be confirmed in EIR Operational Phase = N/A Supplier: City of Tshwane
Sewage (Construction & Operational Phases)	Construction Phase = to be confirmed in EIR Operational Phase = N/A Supplier: City of Tshwane
Electricity (Construction & Operational Phases)	Construction Phase = to be confirmed in EIR Operational Phase = N/A Supplier: City of Tshwane
Solid Waste (Construction & Operational Phases)	Construction Phase = to be confirmed in EIR Operational Phase = N/A Receiver: to be confirmed in EIR

ENVIRONMENTAL ASSESSMENT PRACTITIONER

Strategic Environmental Focus (Pty) Ltd (SEF) is a privately owned company which was formed in 1997 with the objective of providing **expert solutions to pressing environmental issues. SEF is one of Africa's largest multi-disciplinary environmental consultancies**, offering sustainable environmental solutions to private and public sector clients. With our integrated services approach in the management of natural, built and social environments; and with over a decade of experience, we bring a wealth of knowledge and expertise to each project.

SEF's Vision

SEF is a national sustainability consultancy that provides integrated social, biophysical & economic solutions by forging strategic stakeholder relationships, underpinned by SEF's core values.

SEF's Mission

SEF offers holistic sustainable solutions in response to global change.

SEF has assembled a team of professionals, consisting of a core of environmental experts with extensive experience in dealing with Environmental Impact Assessments (EIAs), Public Participation Processes, Architectural and Landscape Architecture, Mining and Environmental Management. SEF also has a team of specialist practitioners such as specialists in Heritage Impact Assessments (HIA), Wetland Delineation and Functional Assessments; Wetland/ Riparian Rehabilitation, Aquatic Assessments; Ecological (Fauna, Avifauna and Flora) Assessment, Visual Impact Assessments (VIAs), Socio-Economic Assessments, etc.

SEF is a Qualifying Small Enterprise and a **Level 2 contributor in terms of the Broad Based Black Economic Empowerment** Act, 2003 (Act No. 53 of 2003) and has a procurement recognition level of 156%.

SEF commits itself to complying with the requirements and the implementation of a Quality Management System. The Quality Management System will be reviewed and implemented to continually improve efficiency and effectiveness of the organisation.

SEF uses a "green" approach to anything we embark on. We believe in using technology to our and the environment's best advantage. We encourage the use of green alternatives such as telephone and video conferencing instead of travelling for workshops and meetings and CDs instead of printed material, where possible.

The following project team members are involved in this S&EIR application process.

Table 1: Project Team Members

Name	Organization	Project Role
Mr Dave Rudolph	SEF	Project Director
Ms Carene Kruger	SEF	Project Manager
Ms Poogendri Reddy	SEF	Environmental Manager
Ms Kagiso Motlhasedi	SEF	Environmental Assistant
Ms Menda Nkunjana	SEF	GIS Technician
Ms Karin van der Walt	SEF	Senior Specialist (Ecological)
Mr Byron Grant	SEF	Principal Specialist (Aquatic)
Mr Byron Bester	SEF	Specialist (Aquatic)
Ms Jessica de Beer	SEF	Principal Specialist (Social)

Ms Mamo Seliane	SEF	Specialist (Heritage)
Mr Derek Cosijn	Jongen Keet Associates/ Calyx Environmental cc	Noise Specialist
Mr John Phipson	Mzansi Agriculture	Soil / Agricultural Specialist
Prof. Leslie R. Brown	Enviroguard Ecological Services cc	Wetland Specialist

KEY PERSONNEL

Mr Dave Rudolph

Dave Rudolph has 22 years of experience in the field of environmental management and resource planning. The experience relates to large scale spatial planning and assessment initiatives at a National, Provincial and Local level. He has managed numerous large scale Environmental Assessments, both nationally and internationally.

Ms Carene Kruger

Carene holds a BSc (Honours) Degree in Environmental Management (University of Johannesburg) and has been an EAP for over 6 years. She is employed as a Project Manager at SEF and has been with the company for 5 years. Her working experience varies from small to large scale projects pertaining to master planning, commercial, residential, mining and municipal infrastructure projects. Carene has excellent knowledge of the NEMA and has dealt with legal processes such as the Gautrain Variant Assessment High Court Interdict and other appeal processes. She also worked in the United Kingdom as a commercial recycling advisor and has extensive experience in community upliftment projects obtained in Mozambique.

Ms Poogendri Reddy

Poogendri has obtained a BSc Honours in Zoology from Rhodes University. She is currently registered as a Candidate Natural Scientist with the South African Council for Natural Scientific Professions. She has been with SEF for more than a year and a half as an environmental assistant and public participation practitioner and currently holds the position of environmental manager. She has a broad working knowledge and experience in basic assessments, scoping and environmental impact assessments and mine closure assessments for a range of development and mining projects.

Ms Kagiso Motlhasedi

Kagiso has obtained her BSC Degree in Environmental Science with specialization in Geology and Geography (University of Johannesburg) and is currently completing her Honours degree in Environmental Science (UNISA). She was previously employed as a compliance officer for a waste management company. She is currently an Environmental Assistant at SEF, where her duties include the drafting of Basic Assessment reports as well as Scoping & Environmental Impact Assessment reports. In addition to the above, Kagiso is also actively involved in the Water Use License Application and public participation processes as relevant to the National Environmental Management Act (Act No 108 of 1998), National Water Act (Act 36 of 1998) and Minerals & Petroleum Resources Development Act (Act No 28 of 2002).

Table 2: Contact Details of Environmental Assessment Practitioner

Name	Contact Details
Ms Carene Kruger	Strategic Environmental Focus (Pty) Ltd Postal Address: PO Box 74785, Lynnwood Ridge, Pretoria, 0040 Tel: +27 12 349 1307 Fax: +27 12 349 1229 Email: carene@sefsa.co.za

EXECUTIVE SUMMARY

1 INTRODUCTION

Strategic Environmental Focus (Pty) Ltd (SEF), as independent environmental impact assessment practitioners, has been appointed by Abland (Pty) Ltd to undertake an environmental application process for the proposed development of Hazeldean Boulevard in Pretoria East, Gauteng.

A Scoping and Environmental Impact Reporting (S&EIR) process will be conducted for this project based on triggered listed activities within the Environmental Impact Assessment (EIA) Regulations of 2010 (Government Notice (GN) No's 543; 544; 545 and 546) promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).

The purpose of the Scoping phase is to describe the proposed activity and those reasonable alternatives that have been identified as well as the receiving environment that may be affected by the proposed project. The reports generated also describe the required public participation process followed during the Scoping phase as well as how it will be carried out during the Environmental Impact Reporting (EIR) phase. All Interested and Affected Parties (I&APs) have been given an opportunity to comment on the Draft Scoping Report and will now have the opportunity to comment on this Final Scoping Report and all issues or concerns raised will be included and adequately addressed in the process moving forward.

The Gauteng Department of Agriculture and Rural Development (GDARD) will, based on the Final Scoping Report, issue a decision on whether or not the application may proceed to the EIR phase.

2 BRIEF PROJECT DESCRIPTION

The proposed Class 3 road applied for by the City of Tshwane Metropolitan Municipality (CoT) is located in Pretoria East, Gauteng, with the aim of connecting the Provincial K34 (Lynnwood/Graham Road) and the Hazeldean Node. The road falls within the CoT and has been proposed as part of the regional road network master plan. The scope of works for the proposed project includes the construction of a Class 3 road with a total length of 2km and a road reserve of 32m. The proposal put forward is for the construction of a road with a dual carriageway with a median where each carriageway is of a roadway width of 8.3m. The project will also include an upgrade of the intersection of Graham and Alexander Road into a complete signalised intersection. It should be noted that the first phase of construction of the proposed Class 3 road will only be one carriageway until such time as the Hazeldean node develops further. Thereafter the traffic impact assessment requires the complete dual-carriageway road to be built.

This preferred alternative (Alternative 1) will cut through a Class 2 ridge. Alternative 2 is anticipated to also be constructed as a dual carriageway of the same dimensions. This alternative passes around the Class 2 ridge but is anticipated to cut through The Farm Inn Country Hotel and Wildlife Sanctuary. In addition, both the preferred alternative and alternative 2 will traverse a watercourse, and as such a water use license is also required for the project.

3 KEY IMPACTS

The following key impacts were identified and will be carried forward into the EIR phase for further investigation and assessment:

Biophysical Impacts:

- Potential impacts on surface water resources that occur in close proximity to the study area and which the road will traverse;
- Potential impacts of increased surface water run-off (viz. increased soil erosion) associated with the

establishment of hard surfaces and vegetation clearing, which is relevant in the construction phase;
- Potential impacts on ground water quality due to hydrocarbon spillages from vehicles during the construction phase of the development;
- Potential impacts on soils due to hydrocarbon spillages from vehicles during the construction phase of the development;
- Damage to flora and faunal displacement within the proposed area, stemming from construction activities such as vegetation clearing and topsoil stripping within the site; and
- Loss of irreplaceable or important conservation areas.

Socio-Economic Impacts:
- Increased dust and noise generation during the construction phase;
- Change in the visual character of the area as some of the surrounding land use is agricultural;
- Potential impacts on heritage resources;
- Potential loss of viable and high potential agricultural land;
- Job creation during the construction phase of the proposed project;
- Traffic alleviation and a decrease in the traffic burden of surrounding roads (specifically Silver Lakes Road); and
- Positive economic impact of an improved road network in a rapidly developing urban area in line with the CoT's master plan.

Cumulative Impacts:
- Increased loss of viable high potential agricultural land;
- Increased noise impact due to the new road cutting through a low density residential and agricultural area; and
- Increase in economic growth for the regional node.

It should be noted that further impacts may be identified from the specialist investigations. These will be assessed during the EIR phase together with impacts identified through the public participation period.

4 PROJECT ALTERNATIVES

To give effect to the principles of NEMA and Integrated Environmental Management (IEM), an EIA should assess a number of reasonable and feasible alternatives that may achieve the same end result as that of the preferred project alternative. The following alternatives have been identified as part of this Scoping exercise:

Alternative 1: Site/ Location Alternatives:
At present, no location alternatives exist, as the location of the road and study area earmarked for specialist investigations was chosen based on the need that exists in the specific area.

Alternative 2: Route Alternatives:
Option 1: The preferred alternative will connect the K34 (Graham Road) to the south west boundary of the Hazeldean node at a point located at approximately 25^{o} 47' 17.73"S; 28^{o} 22' 45.89"E. This alternative passes through a Class 2 ridge and is regarded as an ecological important area (Gauteng C-Plan v.3, 2011). The alignment of this route is preferred based on the registered water pipeline servitude running parallel with the proposed road.

Option 2: Alternative 2 will begin at the same point as the preferred alternative, however this is anticipated to end at the approximately 25^{o} 47' 09.39"S; 28^{o} 22' 28.97"E. This alternative passes along the outer edge of the ridge. However, this alternative will traverse the Farm Inn Country Hotel and Wildlife Sanctuary which is located on an ecological irreplaceable area (Gauteng C-Plan v.3, 2011)

For an illustration of both the alternatives described above, please refer to the Locality map attached as Appendix 1.

Option 3: Based on the outcomes of the specialist studies and consultation with I&APs, minor deviations from the preferred alternative (Option 1) may be considered. This will be included in the EIR Phase.

Alternative 3: No development 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-development' option will be followed and the status quo of the site will remain.

5 CONCLUSIONS AND RECOMMENDATIONS

The EIR phase may only commence once the Competent Authority accepts the Final Scoping Report and instructs the Environmental Assessment Practitioner (EAP) to continue with the tasks contemplated in the Plan of Study for the EIR phase of the environmental application process.

The EAP proposes that, on the basis of the information contained in this Scoping Report, that the GDARD accept the Scoping Report and Plan of Study for the EIR phase. The more pertinent issues can then be thoroughly investigated and assessed, in terms of their significance. The ability to mitigate any of the impacts identified in this Scoping Report will also be investigated and detailed within a working/ dynamic Environmental Management Programme (EMPr) for consideration by I&APs and ultimately by GDARD.

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LIST OF ABBREVIATIONS AND ACRONYMS

CoT	City of Tshwane Metropolitan Municipality
DEA	Department of Environmental Affairs (previously DEAT)
DEAT	Department of Environmental Affairs and Tourism
DWA	Department of Water Affairs
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIR	Environmental Impact Reporting
EMPr	Environmental Management Programme
GN	Government Notice
ha	Hectares
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
IEM	Integrated Environmental Management
IRP	Integrated Resource Plan
ME	Mitigation Efficiency
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NHRA	National Heritage Resources Act (Act No. 25 of 1999)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
SAHRA	South African Heritage Resources Agency
RSDF	Regional Spatial Development Framework
SDF	Spatial Development Framework
SEF	Strategic Environmental Focus (Pty) Ltd
SFM	Significance Following Mitigation

S&EIR	Scoping and Environmental Impact Reporting
WOM	Without Mitigation Measures
WM	With Mitigation Measures

GLOSSARY OF TERMS

Applicant	Any person who applies for an authorisation to undertake an activity or to cause such activity to be undertaken as contemplated in sections 24(5), 24M and 44 of the National Environmental Management Act, 19998 (Act No. 107 of 1998).
Class 3 Road	A Class 3 road is a minor arterial road that falls within the category of mobility roads. Mobility roads are large or strategic trip generators and are through roads (i.e. the destination is not reached).
Ecology	The study of the interrelationships between organisms and their environments.
Environment	The surroundings within which humans exist and that are made up of – (i) the land, water and atmosphere of the earth; (ii) micro-organisms, plant and animal life; (iii) any part or combination of (i) and (ii) and the interrelationships among and between them; and (iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.
Environmental Impact Assessment	Systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes basic assessment and S&EIR.
Environmental Management Programme	A working document on environmental and socio-economic mitigation measures, which must be implemented by several responsible parties during all the phases of the proposed project.
Interested and Affected Party	Any person or groups of persons who may express interest in a project or be affected by the project, positively or negatively.
Key Stakeholder	Any person who acts as a spokesperson for his/her constituency and/or community/organization, has specialized knowledge about the project and/or area, is directly or indirectly affected by the project or who considers himself/herself a key stakeholder.
Stakeholder	Any person or group of persons whose live(s) may be affected by a project.
Study Area	Refers to the entire study area encompassing all the alternatives as indicated on the study area or locality map.
State Department	Any department or administration in the national or provincial sphere of government exercising functions that involve the management of the environment.

SECTION A: INTRODUCTION

Strategic Environmental Focus (Pty) Ltd (SEF) has been appointed by Abland (Pty) Ltd (on behalf of the CoT) to undertake an environmental application process for the proposed development of the Hazeldean Boulevard to be located in Pretoria East, Gauteng. The proposed route for the Class 3 road will traverse Portions 3, 5 and 6 of Farm Tyger Valley 334 JR and Portions 20 and 21 of Farm Zwartkoppies 364 JR.

A-1 DESCRIPTION OF PROPOSED ACTIVITY

A-1.1 Locality

The proposed Class 3 road is located in Pretoria East, Gauteng, with the aim of connecting the provincial K34 (Lynnwood/Graham Road) and the Hazeldean Node. The road falls within the City of Tshwane. Two alternatives are being considered with a common starting point (see Figure 1). Coordinates for the start and end points for each alternative are presented in Table 3. The proposed route traverses several farm portions which are all privately owned.

Table 3: Approximate coordinates for proposed road and alternative

Name	Start Point	End Point
Alternative 1 (Preferred)	25° 47' 57.55"S	25° 47' 17.73"S
	28° 21' 51.58"E	28° 22' 45.89"E
Alternative 2	25° 47' 57.55"S	25° 47' 09.39"S
	28° 21' 51.58"E	28° 22' 28.97"E

A-1.2 Surrounding Land Use

To further place the site in context, please refer to the locality map below (Figure 1). The area in which the proposed route and the alternative are placed is in the partially developed Pretoria East area. It is south of the N4 national route and to east of the M10 (Solomon Mahlangu Drive previously known as Hans Strijdom Drive). Bordering the general area to the south is the M6 (Lynnwood Road) which becomes the K34 (Graham Road) prior to the start of the proposed road. The R223 occurs to the east of the proposed site. The land use in the area through which the proposed road will run is dominated by small holdings which are privately owned and as such is used as either agricultural land or low density residential properties. The Silver Lakes area occurs to the north-west of the study site. The proposed road begins at the intersection between Graham road and Alexander Road and ends on the south-western boundary of the Hazeldean node. The area to the north-east is predominantly vacant or agricultural land that is earmarked for development as the Hazeldean node progresses.

A-1.3 Details of the Project

The scope of works for the proposed project includes the construction of a Class 3 road with a total length of 2km and a road reserve of 32m. The preferred alternative cuts through a watercourse, and as such a water use license is also required for the project. The proposal put forward is for the construction of a road with a dual carriageway with a median where each carriageway is of a roadway width of 8.3m. The project will, additionally consist of the development of a signalised intersection at the intersection of Graham and Alexander Roads to facilitate a smooth traffic merge.

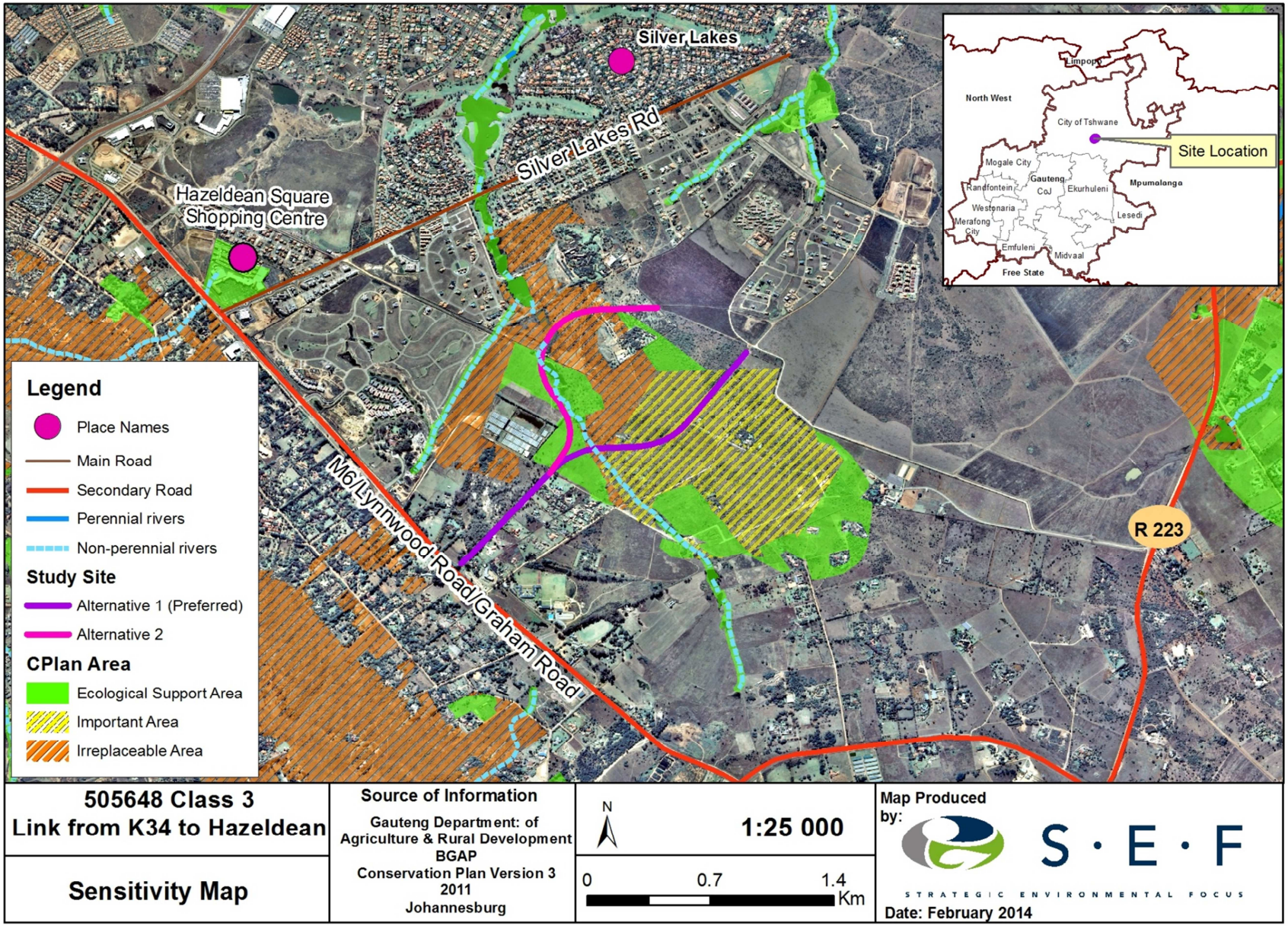

Figure 1: Locality Map indicating the two alternatives put forward as well as the general ecological sensitivities of the area

A-2 LEGAL REQUIREMENTS APPLICABLE TO THIS APPLICATION

SEF registered the proposed Hazeldean Boulevard project with the GDARD and the project has been assigned the reference number: **Gaut: 002/14 – 15/0020**. The legislation, guidelines and policies applicable to this project are as follows:

A-2.1 NEMA and the Environmental Impact Assessment Regulations

The EIA Regulations, promulgated under NEMA, focus primarily on creating a framework for co-operative environmental governance. NEMA provides for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by State Departments and to provide for matters connected therewith.

In terms of the EIA Regulations of 2010 and activities listed in GN No. 544 and 546 (requiring a Basic Assessment process) and GN No. 545 (requiring a S&EIR process), the following listed activities are deemed by the EAP to be applicable to the proposed road development based on the information provided by the project proponent and their consulting engineers.

GN No & Activity Number		Activity Description
GN No. 544 of 18 June 2010	11	**The construction of:** i. canals; ii. channels; iii. bridges; iv. dams; v. weirs; vi. bulk storm water outlet structures; vii. marinas; viii. jetties exceeding 50 square metres in size; ix. slipways exceeding 50 square metres in size; x. buildings exceeding 50 square metres in size; or **xi. infrastructure or structures covering 50 square metres or more** **where such construction occurs within a watercourse or within 32 meters of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.**
GN No. 545 of 18 June 2010	18	**The route determination of roads and design of associated physical infrastructure, including roads that have not yet been built for which routes have been determined before 03 July 2006 and which have not been authorised by a competent authority in terms of the Environmental Impact Assessment Regulations, 2006 or 2009, made under section 24(5) of the Act and published in Government Notice No. R 385 of 2006-** (i) It is a national road as defined in section 40 of the South African National Roads Agency Limited and National Roads Act, 1998 (Act NO. 7 of 1998) **(ii) It is a road administered by a provincial authority;** **(iii) The road reserve is wider than 30 meters; or** (iv) The road will cater for more than one lane of traffic in both directions.

GN No & Activity Number		Activity Description
GN No. 546 of 18 June 2010	**16**	**The construction of:** (i) jetties exceeding 10 square metres in size; (ii) slipways exceeding 10 square metres in size; (iii) buildings with a footprint exceeding 10 square metres in size; or **(iv) <u>infrastructure covering 10 square metres or more</u>** **where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.** (b) In Gauteng: *(i) A protected area identified in terms of NEMPAA, excluding conservancies;* *(ii) National Protected Area Expansion Strategy Focus areas;* *(iii) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;* *(iv) Sites or areas identified in terms of an International Convention;* ***(v) <u>Sites identified as irreplaceable or important in the Gauteng Conservation Plan</u>;*** *(vi) Any declared protected area including Municipal or Provincial Nature Reserves as contemplated by the Environment Conservation Act, 1989 (Act No. 73 of 1989) and the Nature Conservation Ordinance (Ordinance 12 of 1983);* *(vii) Areas zoned for a conservation purpose.*
	24	**The expansion of** (a) jetties where the jetty will be expanded by 10 square metres in size or more; (b) slipways where the slipway will be expanded by 10 square metres or more; (c) buildings where the buildings will be expanded by 10 square metres or more in size; or **(d) <u>infrastructure where the infrastructure will be expanded by 10 square metres or more</u>** **where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.** (b) In Gauteng: **i.** A protected area identified in terms of NEMPAA, excluding conservancies; **ii.** National Protected Area Expansion Strategy Focus areas; **iii.** Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; **iv.** Sites or areas identified in terms of an International Convention; ***v.*** ***<u>Sites identified as irreplaceable or important in the Gauteng Conservation Plan;</u>*** **vi.** Any declared protected area including Municipal or Provincial Nature Reserves as contemplated by the Environment Conservation Act, 1989 (Act No. 73 of 1989) and the Nature Conservation Ordinance (Ordinance 12 of 1983); **vii.** Areas zoned for a conservation purpose

It must be noted that activities requiring a Basic Assessment process, as well as activities requiring a S&EIR process are triggered by the proposed development. Therefore, according to the above listed activities, a situation arises, whereby; the legal requirements of the activity listed in terms of GN No. 545 of 2010 supersede those of the activities listed in terms of GN No. 544 and 546 of 2010, and as such **this application shall undergo a S&EIR process**.

The aforementioned listed activities are deemed to include activities that could potentially have a detrimental impact on the social and biophysical state of an area and as such, are required to undergo an environmental impact assessment process.

A-2.2 National Water Act, 1998 (Act No. 36 of 1998)

The National Water Act, 1998 (Act No. 36 of 1998) (NWA) aims to provide management of the national water resources to achieve sustainable use of water for the benefit of all water users. This requires that the quality of water resources is protected and there is an integrated approach to management of water resources with the delegation of powers to institutions at the regional or catchment level. The purpose of the Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in responsible ways.

Of specific importance to this application is Section 19 of the NWA, which states that an owner of land, a person in control of land or a person who occupies or uses the land which thereby causes, has caused or is likely to cause pollution of a water resource must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring and must therefore comply with any prescribed waste standard or management practices.

Due to the route of the preferred alternative passing through a watercourse on site, according to the NWA, the proposed road may trigger the following water uses listed in Section 21:

(c) impeding or diverting the flow of water in a watercourse; and
(i) altering the bed, banks, course or characteristics of a watercourse.

Accordingly, the proposed road development thus requires a water use licence, which is administered by the Department of Water Affairs (DWA).

A-2.3 Other Legal Requirements

A-2.3.1 Acts

Constitution of the Republic of South Africa
The Constitution of the Republic of South Africa has major implications for environmental management. The main effects are the protection of environmental and property rights, the change brought about by the sections dealing with administrative law, such as access to information, just administrative action and broadening of the *locus standi* of litigants. These aspects provide general and overarching support and are of major assistance in the effective implementation of the environmental management principles and structures of the NEMA. Section 24 in the Bill of Rights of the Constitution specifically states that:

Everyone has the right -

- To an environment that is not harmful to their health or well-being; and
- To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -
    - Prevent pollution and ecological degradation;
    - Promote conservation; and
    - Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed.

This Act is relevant to this application for environmental authorisation, as it requires the project applicant to consider the protection and management of local biodiversity, which will be further highlighted in the Ecological Assessment.

National Heritage Resources Act, 1999 (Act No. 25 of 1999)
This Act legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 hectares (ha) and where linear developments (including roads) exceed 300 metres in length. The Act makes provision for the potential destruction of existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered by the South African Heritage Resources Agency (SAHRA).

Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
To provide for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.

Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)
To provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith.

National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)
The purpose of this Act is to provide for the protection, conservation and management of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes.

Promotion of Access to Information Act, 2000 (Act No. 2 of 2000)
The Act recognises that everyone has a Constitutional right of access to any information held by the state and by another person when that information is required to exercise or protect any rights. The purpose of the Act is to foster a culture of transparency and accountability in public and private bodies and to promote a society in which people have access to information that enables them to exercise and protect their rights

The Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002);
The main purpose of the Act is to make provision for equitable access to and sustainable development of the nation's mineral and petroleum resources; and to provide for matters connected therewith.

The Act recognises the following aims and objectives:

- Recognising that minerals and petroleum are non-renewable natural resources;
- Acknowledging that South Africa's mineral and petroleum resources belong to the nation and that the State is the custodian thereof;
- Affirming the State's obligation to protect the environment for the benefit of present and future generations, to ensure ecologically sustainable development of mineral and petroleum resources and to promote economic and social development;
- Recognising the need to promote local and rural development and the social upliftment of communities affected by mining;
- Reaffirming the State's commitment to reform to bring about equitable access to South Africa's mineral and petroleum resources;
- Being committed to eradicating all forms of discriminatory practices in the mineral and petroleum industries;
- Considering the State's obligation under the Constitution to take legislative and other measures to redress the results of past racial discrimination;

- Reaffirming the State's commitment to guaranteeing security of tenure in respect of prospecting and mining operations; and
- Emphasising the need to create an internationally competitive and efficient administrative and regulatory regime.

During the construction phase of the project, a mining permit **may** be required for the use of fill material from borrow pits which may be located in close proximity to the site of the proposed road. Should this be required, an application in terms of Sections 22 and 24 of the MPRDA, 2002 (Act No. 28 of 2002) will be lodged with the Department of Mineral Resources (DMR) for the proposed borrow pit/s.

A-2.3.2 Provincial Policies and/or Guidelines

Integrated Environmental Management (IEM)

IEM is a philosophy for ensuring that environmental considerations are fully integrated into all stages of the development process. This philosophy aims to achieve a desirable balance between conservation and development (DEAT, 1992). The IEM guidelines intend encouraging a pro-active approach to sourcing, collating and presenting information in a manner that can be interpreted at all levels.

The DEA Integrated Environmental Management Information Series guidelines are also considered during this S&EIR application process.

National Spatial Biodiversity Assessment

The National Spatial Biodiversity Assessment (NSBA) classifies areas as worthy of protection based on its biophysical characteristics, which are ranked according to priority levels.

Protected species – Provincial Ordinances

Provincial ordinances were developed to protected particular plant species within specific provinces. The protection of these species is enforced through permitting requirements associated with provincial lists of protected species. Permits are administered by the Provincial Departments of Environmental Affairs.

Gauteng Conservation Plan Version 3.3 (C-Plan 3.3)

The latest revision of the Gauteng C-Plan was undertaken in December 2013 and released by the Gauteng Department of Agriculture and Rural Development (GDARD). The technical document was produced to provide an extensive biodiversity survey of the province as was deemed feasible due to the size of the province. It was created with the following aims in mind:

- To serve as the primary decision support tool for the biodiversity component of the Environmental Impact Assessment (EIA) process;
- To inform protected area expansion and biodiversity stewardship programmes in the province; and
- To serve as a basis for development of Bioregional Plans in municipalities within the province.

City of Tshwane Integrated Development Plan 2011 - 2016

An Integrated Development Plan is created by every municipality in terms of the Municipal Systems Act, 2000 (Act No. 32 of 2000) and is used to guide the activities of the City. The present IDP is for the period 2011 – 2016 with annual revisions. The aim of the IDP is to provide a ‘coherent plan’ for the improvement of quality of life for people living in the City of Tshwane. The IDP specifically seeks to align the priorities of the municipality with the national and provincial priorities, policies and strategies. The Tshwane IDP also indicates a commitment by the CoT to the eight Millennium Development Goals and as such, the integration of principles of sustainable development into policies and programmes. In addition, the CoT is a signatory to Agenda 21 (which was adopted at the United Nations Conference on Environment and Development in 1992). Under this agreement, the CoT is further obligated to incorporate Local Agenda 21 into all of its developmental activities.

City of Tshwane Metropolitan Spatial Development Framework (SDF) 2012

Spatial Development Frameworks are created as a provision of basic guidelines for a land use management system for municipalities. It forms a part of a municipality's Integrated Development Plan (IDP). The Tshwane SDF outlines a spatial mission and vision for the City to support the overall vision and mission in becoming the "African Capital City of Excellence". The goal of the document is as follows:

- to map the spatial realities of the City;
- to map the vision for the spatial fabric of the City; and
- to map the gaps that permeate the current spatial reality and how, through strategic spatial intervention, the City of Tshwane can begin to realize the ambition of becoming an African Capital City of Excellence.

Gauteng's 25 Year Integrated Transport Master Plan (ITMP)

The ITMP was created by the Gauteng Department of Roads and Transport in 2013 to describe the present reality of transport in Gauteng and outlines how it works and its functions. It also takes into account the effect the expected population growth will have on the transport system. It is an implementation plan to be instituted over the next 25 years that aligns with the National Development Plan, the Strategic Investment Projects (SIPs), Gauteng Vision 2055, and various Integrated Transport Plans (ITPs) developed by local governments.

South African Road Classification and Access Management Manual

This manual was created as a guideline document for National, Provincial and Municipal government for the functional classification of roads and provides a methodology for how the classification may be undertaken. It also provides guidance for the appropriate management of the roads to ensure optimal functioning of the road in relation to its classification.

A-3 DETAILS OF THE APPLICANT

The details of the project applicant are:

Name of Applicant	Postal Address	Relevant Numbers
City of Tshwane (represented by Mr Hilton Vorster)	P. O. Box 440, Pretoria, 0001	Tel: (012) 358 7950 Fax: 012 358 7648 E-mail: hiltonv@tshwane.gov.za

A-4 NEED AND DESIRABILITY OF THE PROJECT

To date, there has been a significant level of development in the Hazeldean node with necessary environmental authorisations already issued for the progression of the mixed-use development of Hazeldean. The area in which the Hazeldean node is located is region 6 within the Regional Spatial Development Framework (RSDF) of the City of Tshwane. This node is a popular choice for retail and office functions and the southern section of this node is developing at a rapid pace. It is noted in the CoT SDF that the area in general is well serviced. However, upgrades are required if development in the area continues at the current pace.

Within the Tshwane RSDF, Hazeldean is specifically identified as an emerging node where economic, social, and/or residential opportunities are emerging. Given the proposed expansion and construction projects that are planned in the area, it becomes necessary to develop the road network to cope with the additional traffic burden. This is proposed to be undertaken through the creation of a solid Class 3 road network such that future development may be adequately served.

This is further supported by the high level traffic assessment undertaken for the Hazeldean Development Area, which concluded that the local authority road network planning requires strengthening and review, particularly the Class 3 mobility routes.

To this end, the development of the Class 3 road to connect the K34 (Graham Road) to the Hazeldean node will provide an essential link to facilitate the expansion and growth of the Hazeldean node and therefore the economic growth of the greater region 6 with the CoT, while easing the traffic burden on the surrounding roads.

SECTION B: THE RECEIVING ENVIRONMENT

In order to, with any level of confidence, assess the potential impacts of the proposed road development on the receiving environment, one needs to first assess the baseline conditions found over the study area. Using this *Status Quo* one can then, broadly speaking, determine the likely impacts that will emanate from a specific development typology on a well-defined receiving environment.

B-1 BIOPHYSICAL ENVIRONMENT

B-1.1 Geology and Geotechnical Suitability

The site through which both the preferred route and the alternative runs is considered to be of intermediate geotechnical suitability. It is mainly dominated by shale with interbedded quartzite and slate as well as bands of diabase, syenite and pyroxenite that run approximately from the north-west to the south-east.

B-1.2 Soils and Agricultural Potential

The site is composed of the following soil types: sLo1, W, dWo2, mSw1, sSd7R and dSd3. The soils are largely vertic melanic clays with some dystrophic or mesotrophic plinthic catenas and some freely drained, deep soils (Mucina and Rutherford, 2006).

A soil and agricultural potential study will be undertaken as part of the specialist component of the project and the results thereof will be included in the EIR phase of the project to determine the significance and use of the site for agricultural purposes.

B-1.3 Topography and Hydrology

The study area which is located in Pretoria East, falls within the Marikana Thornveld vegetation type as classified by Mucina and Rutherford (2006). This area falls within the larger Savanna Biome which extends north into the Limpopo province. Features of the landscape include open *Acacia karroo* woodland which occurs in valleys. The area also has slight undulating plains and some lowland hills (Mucina and Rutherford, 2006). The preferred route for the road development is distinctly characterised by the presence of a Class 2 ridge. In addition, the study area is traversed by a non-perennial river that runs a course from a north-westerly direction to the south-east. Several wetlands are known to occur along the course of this waterbody.

A Wetland and Riparian Delineation Assessment will be undertaken as part of the specialist component of his study to identify potential wetlands/ rivers/ drainage lines/ waterbodies specifically affected by the development. The results of this assessment will be included in the EIR. From initial assessments, it does appear that the construction of the road will cut across some part of the known waterbodies and, as such, a water use license application will be applied for from the DWA.

B-1.4 Climate

The area is in a summer rainfall zone and is characterised by very dry winters with frost occurring frequently in winter. The mean monthly maximum and minimum temperatures for the Pretoria area is 32.8^{o}C and -1.0^{o}C. Mean Annual Precipitation is between 600 and 700mm. The South African Weather Service indicates that the Pretoria area received an average of between 300 and 500mm of rainfall between July 2013 and December 2013.

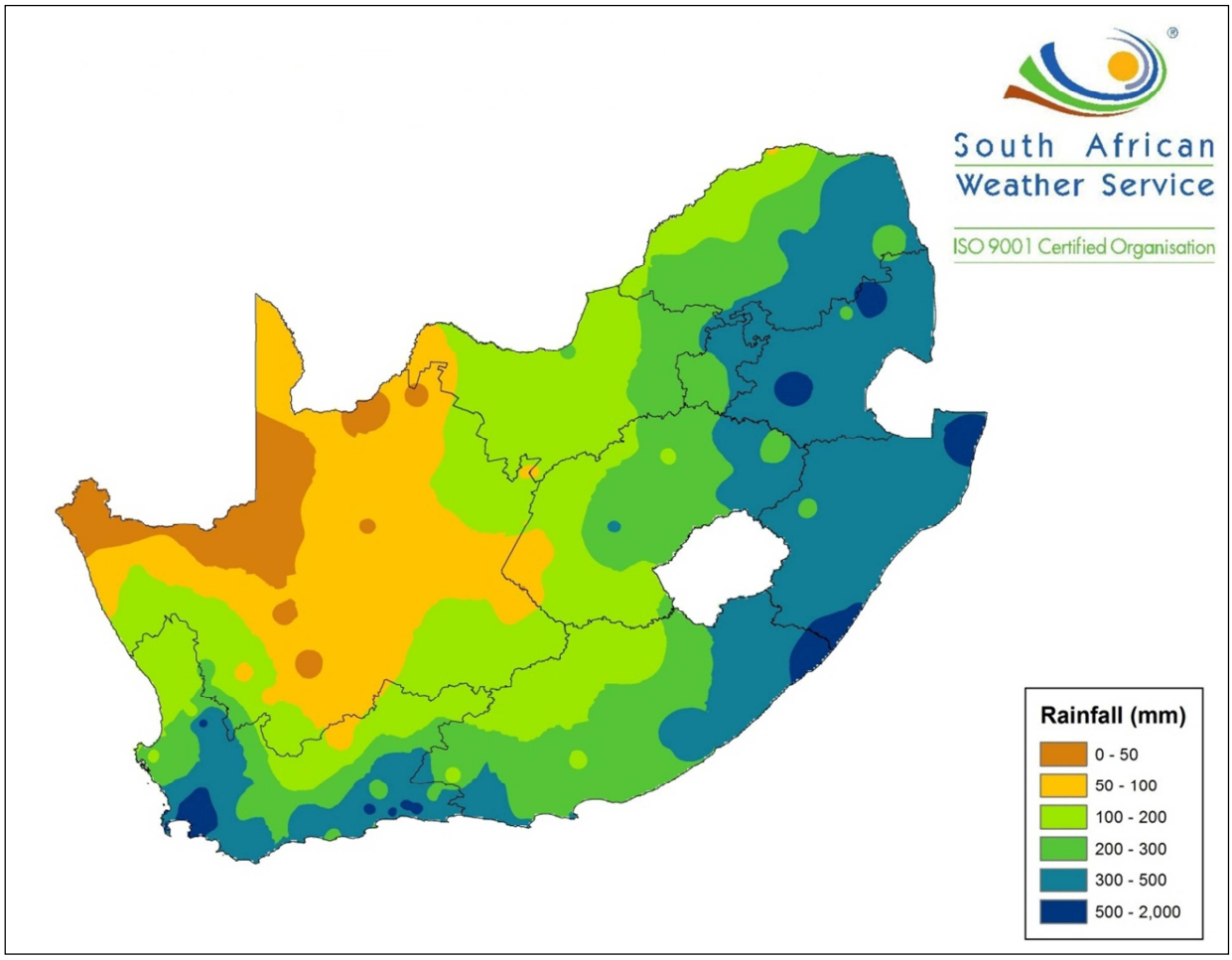

Figure 2: Rainfall for the period July 2013 – December 2013, based on preliminary data. Figure from the South African Weather Service (accessed 14 February 2014)

B-1.5 Flora and Fauna

Floral and Faunal (including avifaunal) Assessments will be conducted during the EIR phase of the project and their findings shall be incorporated into the Environmental Impact Report.

The Marikana Thornveld vegetation type is an area with several important taxa. However it is significantly impacted upon. According to the Gauteng C-Plan, the proposed road cuts through an Important area and an Ecological support area. The proposed alternative traverses an irreplaceable area as well an ecological support area. This will be confirmed and further information made available subsequent to the undertaking of the ecological assessment.

B-2 SOCIAL ENVIRONMENT

B-2.1 Visual

Scenic value can be described as the reaction to aesthetics of the environment as perceived by an individual or a group and therefore it is a very subjective perception. In terms of surrounding landscape compatibility, the proposed road development fits in with the urban landscape and should not be considered to appear out of character for the area. The visual impacts of the proposed roads will be evaluated during the impact assessment phase.

B-2.2 Heritage

As per the National Heritage Resources Act, 1999 (Act No. 25 of 1999), the proposed development will undergo a Phase 1 Heritage Impact Assessment, due to the length of the proposed road exceeded 300m. Should any heritage artefacts be uncovered, the relevant heritage agency will be appropriately consulted.

B-2.3 Noise

Noise control must form part of the planning stage of any development. During the construction phase, noise may be generated as a result of construction related activities such as: the use of machinery and equipment, and the movement of construction vehicles etc. These potential noise impacts must be mitigated, where possible. The site is bordered to the south by Lynnwood / Graham road with the Silver Lakes Roads to the west of the proposed site. As such, the noise level in the area during the operational phase is expected to be high, particularly during the peak traffic hours. As a point of reference, Figure 3 below indicates the decibel (dB) range in relation to human hearing. This will be investigated during the EIR phase of the project and suitable mitigation measures will be recommended as part of the EIR and specific controls will be outlined in the Environmental Management Programme (EMPr). Given the proximity of the proposed road to residential areas, a noise assessment will be undertaken and results presented in the EIR.

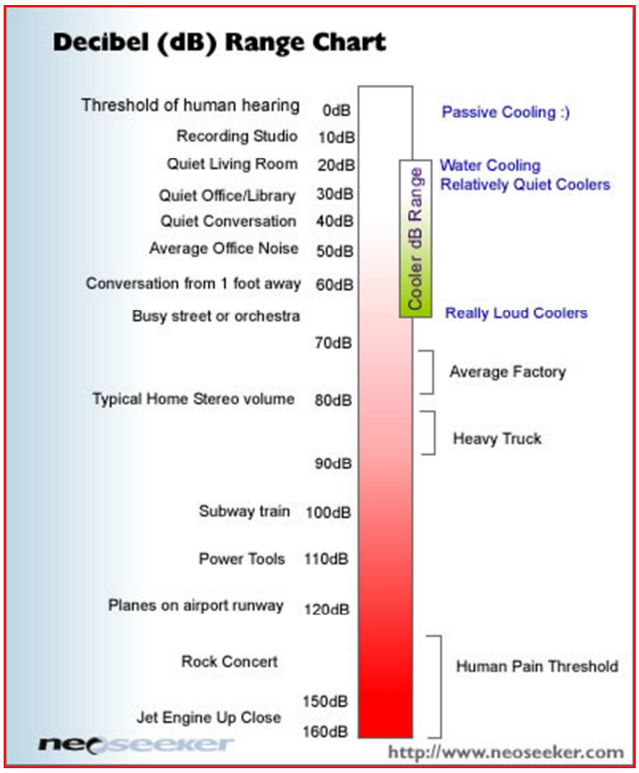

Figure 3: Noise Intensity Levels

B-2.4 Air

Vehicles travelling on exposed surfaces, earthworks as well as wind are the main generators of dust. The nuisance and aesthetic impacts associated with the dust generated during the construction phase should be minimal, if mitigating measures are implemented. Dust generated off the earth's surface is generally regarded as a nuisance rather than a health or environmental hazard. On a large scale, dust will impair atmospheric visibility; however, in the context of the proposed activity, the impact of dust production on air quality should be minimal taking into account that effective dust suppression techniques are available and will be recommended during the EIR phase.

SECTION C: ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PROCESS

C-1 APPROACH TO THE EIA

An Environmental Impact Assessment (EIA) is an effective environmental planning tool. It identifies the environmental impacts of a proposed project and assists in ensuring that a project will be environmentally acceptable and integrated into the surrounding environment in a sustainable way.

The EIA for this project complies with the requirements of the National Environmental Management Act, 1998 (Act 107 of 1998) [NEMA] and the NEMA EIA Regulations, 2010 of the DEA. The guiding principles of an EIA are listed below.

Definition of the term "environment"

The term "environment" is used in the broadest sense in an environmental impact assessment. It covers the physical, biological, social, economic, cultural, historical, institutional and political environments.

C-2 GUIDING PRINCIPLES FOR AN EIA

The EIA must take an open participatory approach throughout. This means that there should be no hidden agendas, no restrictions on the information collected during the process and an open-door policy by the proponent. Technical information must be communicated to stakeholders in a way that is understood by them and that enables them to meaningfully comment on the project.

There should be on-going consultation with Interested and Affected Parties (I&APs) representing all walks of life. Sufficient time for comment must be allowed. The opportunity for comment should be announced on an on-going basis. There should finally be opportunities for input by specialists and members of the public. Their contributions and issues should be considered when technical specialist studies are conducted and when decisions are made.

The eight guiding principles that govern the entire process of EIA are as follows (see Figure below):

- **Participation:** An appropriate and timely access to the process for all interested parties.
- **Transparency:** All assessment decisions and their basis should be open and accessible.
- **Certainty:** The process and timing of the assessment should be agreed in advanced and followed by all participants.
- **Accountability:** The decision-makers are responsible to all parties for their action and decisions under the assessment process.
- **Credibility:** Assessment is undertaken with professionalism and objectivity.
- **Cost-effectiveness:** The assessment process and its outcomes will ensure environmental protection at the least cost to the society.
- **Flexibility:** The assessment process should be able to adapt to deal efficiently with any proposal and decision making situation.
- **Practicality:** The information and outputs provided by the assessment process are readily usable in decision making and planning.

A S&EIR process is considered as a project management tool for collecting and analysing information on the environmental effects of a project. As such, it is used to:

- Identify potential environmental impacts;
- Examine the significance of environmental implications;
- Assess whether impacts can be mitigated;
- Recommend preventive and corrective mitigating measures;
- Inform decision makers and concerned parties about the environmental implications; and
- Advise whether development should go ahead.

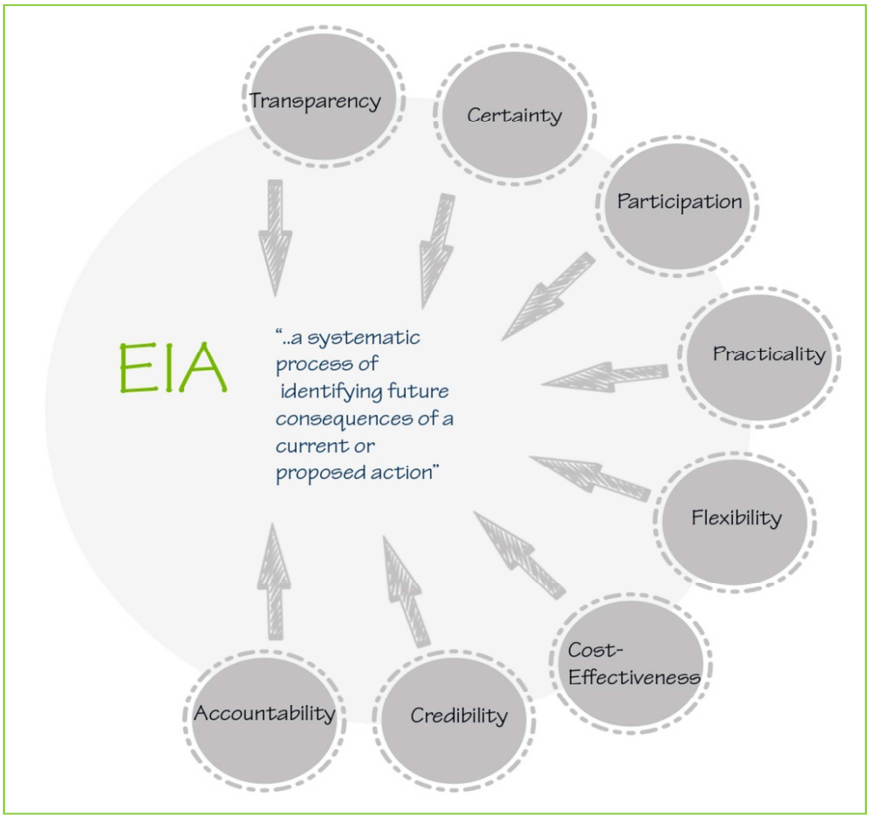

Figure 4: The eight guiding principles for the EIA process

A S&EIR process typically has four phases, as illustrated in the Figure below. The Public Participation process forms an integral part of all four phases and is discussed in greater detail in Section C – 4 of this final Scoping Report.

C-3 S&EIR TECHNICAL PROCESS

This section provides a summary of the technical process to be followed for this S&EIR process.

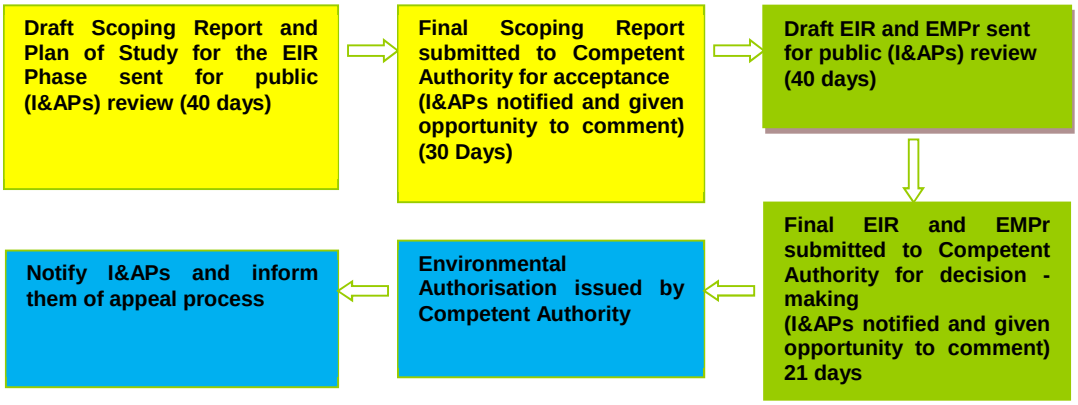

Figure 5: Flow diagram of the Scoping and EIR process

C-3.1 Pre-application Consultation with the relevant authorities

No pre-consultation meeting was held between SEF and GDARD. The EAP conducting the S&EIR process for the applicant, in support of their application for an environmental authorisation, is deemed to have a good understanding of the information requirements of the Department for the proposed road development, such that the Department's specific information requirements are deemed to have been met for the scoping phase of this project.

A pre-application meeting was held between SEF and the DWA on 4 March 2014 regarding the specific requirements for the Water Use License Application to be submitted to the DWA.

C-3.2 Application for Authorisation

The application form informing the Department of the intent to obtain an environmental authorisation was submitted to the GDARD, which was followed by the issuing of a reference number by the GDARD on 22 May 2014 (Gaut: 002/14 – 15/0020).

C-3.3 Information Gathering

Early in the EIA process, the technical specialists identified the information that would be required for the impact assessment and the relevant data that is needed. In addition, the specialists will source available information about the receiving environment from reliable sources, I&APs, previous documented studies in the area and previous EIA Reports.

C-3.4 Specialist Studies

The following specialist studies were identified to be undertaken during the EIR phase:

- Ecological Assessment (Floral, faunal and avifaunal);
- Heritage Impact Assessment (Phase 1);
- Noise Assessment;
- Social Impact Assessment;

- Soils and Agricultural Potential Assessment;
- Wetland Delineation and Functional Assessment; and
- Aquatic Assessment.

C-4 PUBLIC PARTICIPATION PROCESS

The principles of NEMA govern many aspects of the S&EIR process, including consultation with I&APs. These principles include the provision of sufficient and transparent information to I&APs on an on-going basis, to allow them to comment; and ensuring the participation of historically disadvantaged individuals, including women, the disabled and the youth.

The principal objective of public participation is thus to inform and enrich decision-making. This is also the key role in the scoping phase of the process.

Prior to the start of the scoping phase, SEF together with the project proponent engaged with identified stakeholders individually. Personal meetings were held with directly affected landowners on 10 and 11 April 2014 and 5 July 2014 to provide them with an overview of the alternatives being considered, how the development will affect them, and how they may participate in the process. Ms Carene Kruger (EAP) and/or Ms Jessica de Beer (Principle Specialist: Social) attended the meetings with the affected landowners.

Table 4: Details of meetings with affected landowners

Attendees	Organisation / Interest	Meeting date
Mr Pedro Michaletos	The Farm Inn Country Hotel and Wildlife Sanctuary	10 April 2014
Ms Helena Michaletos		10 April 2014
Ms Monica Muller	Zwartkoppies 364 JR, Portion 21	10 April 2014
Mr Seef Rademeyer		
Mr Thinus Basson	Zwartkoppies 364 JR, Portion 20	10 April 2014
Mr Nestor van der Merwe	Tygervalley 334 JR, Portion 3 & 4	11 April 2014
Mr Carl Coetzee	Tygervalley 334 JR, Portion 12	11 April 2014
Ms Pasqua Tamma	Tygervalley 334 JR, Portion 5	11 April 2014
Mr Seef Rademeyer	Zwartkoppies 364 JR, Portion 21	5 July 2014
Mr Daniel Jooste		
Ms Liebet Marie Jooste		
Mr Christof Rademeyer		
Ms Elsabe Muller		
Ms Monica Muller		
Ms Euna Easton		
Mr Tobie Muller		
Mr Andre Wright	Boogertman and Partners (Professional team mandated by the owner of Tygervalley 334 JR, Portion 5 (Ms P Tamma)	19 May 2014
Mr Thys van der Merwe		
Ms Marie Badenhorst	Boogertman and Partners (Professional team mandated by the owner of Tygervalley 334 JR, Portion 5 (Ms P Tamma)	3 June 2014

Figure 6: Landowner meeting held on site on 5 July 2014

C-4.1 Identification of Interested and Affected Parties

I&APs representing the following sectors of society have been identified in terms of Regulation 55 of the EIA Regulations R543 of 2010 (see **Appendix 5** for a complete preliminary I&AP distribution list):

- Provincial Authorities;
- Local Authorities;
- Ward Councillors;
- Parastatal/ Service Providers;
- Non-governmental Organisations;
- Local forums/ unions; and
- Adjacent Landowners.

C-4.2 Public Announcement of the Project

The project was announced on **Wednesday, 28 May 2014**, in the following manner (see **Appendix 5** for public announcement documentation):

- Publication of media advertisements in a local newspaper (The Eastern Times);
- Notification of project in the local community newspaper (The Hazeldean Times)
- On-site notices advertising the S&EIR process placed in conspicuous locations along the proposed route and alternative route, as well as in the public venue where reports are made available for review and comment; and
- Distribution of letters by fax/ by hand/ post/ email to I&APs including Registration and Comment Sheets.

C-4.3 Draft Scoping Report

I&APs and relevant State Departments have had the opportunity to raise issues either in writing, by telephone or email on the Draft Scoping Report for a period of 40 days (from Wednesday, 28 May 2014 until Tuesday, 8 July 2014). The availability of the Draft Scoping Report was announced by means of personal letters to all the registered I&APs on the distribution list, and by adverts placed in the abovementioned newspaper.

In addition, the Draft Scoping Report has been distributed for comment as follows:

- Left in public venue (Postnet, Hazeldean Square Shopping Centre, Silver Lakes);
- Hand-delivered/ couriered to the relevant authorities; and
- Posted on SEF's website at http://www.sefsa.co.za

All the comments and concerns raised by I&APs during the draft scoping phase have been captured in a Comment and Response Report (attached as Appendix 5 to this report). All I&APs received appropriate communication acknowledging their contributions.

C-4.4 Final Scoping Report

The Scoping Report has been updated with comments and/or concerns raised by I&APs. The CRR is attached to this Final Scoping Report with a summary of the comments and responses presented below. The Final Scoping Report will be submitted to the GDARD and registered I&APs simultaneously for review and comment for a period of 30 days (**18 July 2014 – 19 August 2014**). Registered I&APs will be advised to submit any additional comments on this final Scoping Report directly to the GDARD prior to the lapsing of the 30 day review period.

C-4.5 Public participation during the Impact Assessment Phase

Public participation during the Impact Assessment Phase of the S&EIR process will revolve around a review of the findings of the Environmental Impact Report (EIR) and inputs into the Environmental Management Programme (EMPr). The findings will be presented in a Draft Environmental Impact Report and EMPr (including the specialist studies conducted), which will be available for public review and comment.

Table 5: Summary of the comments and responses report (See Appendix 5 for detailed table)

SUMMARY OF COMMENTS RAISED	SUMMARY OF RESPONSES
1. COMMENTS RELATED TO THE BIOPHYSICAL ENVIRONMENT	
1.1. COMMENTS RELATED TO AIR QUALITY	
The impact of hydrocarbon pollution due to the proposed new road on an ecologically sensitive area is a concern.	The traffic volumes expected to use the Class 3 Road will not necessarily emit a significant amount of gaseous hydrocarbons. The impact is, therefore, considered to be minimal.
1.2. COMMENTS RELATED TO THE ROAD DESIGN AND TRAFFIC	
The increase in traffic and associated noise and safety impacts that the proposed new road will have is of concern.	A Noise Impact Study is currently underway to assess the noise impact from the proposed new road as well as the Social Impact Assessment Study which will consider safety impacts. This report will be made available during the EIA Phase of the project.
The Hazeldean area (The Meadows, The Ridge, The Retreat and Oukraal) use Silver Lakes Road which is heavily congested. The proposed new road will alleviate congestion on Silver Lakes Road and increase access to Graham Road.	The motivation behind the Class 3 Road is to alleviate traffic off the existing Silverlakes Road and to accommodate for future traffic volumes that will be generated by the development of the greater Hazeldean area.
Clarity is required in terms of estimated traffic volumes at peak time and how traffic volumes will affect the ingress onto the proposed new road from residence bordering the road.	The estimated traffic volumes will be determined during the EIA Phase of the project.
Clarity is sough in terms of what intersections (traffic lights) will be provided at the Alexandra/Graham Road intersection and if the road is going to be a single or double lane road.	The intersection of Alexander and Graham/Lynnwood Road is an approved provincial intersection. The intersection will be controlled by traffic lights. The estimated traffic volumes will be determined during the EIA Phase of the project. The Hazeldean Boulevard will be a dual carriageway with a 32m road reserve.
Clarity is required in terms of access to the proposed road from adjacent residential properties.	In terms of the City of Tshwane's standards and road classifications, access off a Class 3 Road is restricted (i.e. intersection spacing). No direct access off the Class 3 Road to Portions 20 and 21 Zwartkoppies is planned. Access to Portion 21 will be via the planned Class 4 Road running on the southern side of the existing 'The Meadows Estate' in Hazeldean.
1.3. COMMENTS RELATED TO ECOLOGICALLY SENSITIVE AREAS	
The impact of the proposed road on a Class 2 Ridge has been raised as a concern.	An ecological study is currently underway which entails the assessment of the impact of the Class 3 Road on the ridge system.
The area earmarked for the proposed road falls within a Critical Biodiversity Area (CBA) 1 & 2 and an Ecological Sensitivity Area 1. Alternative 2 traverses through an irreplaceable area and an area of	The river and wetland systems are currently being assessed by a wetland specialist (Enviroguard Ecological Services cc and an aquatic specialist (SEF). These reports will be made available during the EIA Phase of the project.

SUMMARY OF COMMENTS RAISED	SUMMARY OF RESPONSES
ecological support.	
2. COMMENTS RELATED TO THE SOCIO-ECONOMIC CONSIDERATIONS	
2.1. COMMENTS RELATED TO CRIME	
Security concerns with regard to the construction phase of the proposed road have been raised as well as issues with boundary fences.	Mitigation measures will be provided to address security impacts, such as implementing strict security measures in consultation with the affected landowners. It is also advised that the construction base be fenced to avoid unauthorised entry by humans or animals.
2.2. COMMENTS RELATED TO PROPERTY VALUES	
The owners of Portion 21 of the farm Zwartkoppies 364 have raised concerns with regards to the potential loss of viable and high potential residential developable land.	The potential impact of the proposed road on the value of land will be assessed as part of the Social Impact Assessment, which will form part of the EIA Phase of the project. However, as part of this assessment, the status quo of the land-use it taken into account including current zoning and development rights. Portion 21 is currently zoned as agricultural and therefore proposed future development cannot be assessed as part of this process.
2.3. COMMENTS RELATED TO ECONOMIC IMPACTS	
The Farm Inn has indicated that the proposed Alternative 2 will negatively impact on their ability to operate their business and that the road will negatively impact on the animals, hotel, their ability to employ staff and to support local suppliers.	Your comment has been noted and will be considered as part of the Social Impact Assessment, which will form part of the Draft Environmental Impact Assessment Report.
3. COMMENTS RELATED TO THE BUILT ENVIRONMENT	
Existing approved land use rights on Portion 5 are not taken into consideration, and it doesn't align to the existing cadastral boundary.	Two meetings (19 May 2014 and 03 June 2014) were held with Boogertman & Partners (the appointed consulted) regarding the proposed estate development on Portion 5 (i.e. to be known as Graystone Estate). To this effect, the applicant (City of Tshwane) is considering moving the road alignment slightly to the right in order to traverse a smaller portion of the site as part of a new alternative (Alternative 3). This information will be made available during the EIA Phase of the project. It has been noted that the property owner is currently considering to apply for rezoning and development rights on the property including Environmental Authorisation.

SECTION D: IDENTIFICATION OF IMPACTS

D-1 IDENTIFICATION OF IMPORTANT ENVIRONMENTAL IMPACTS

The key environmental impacts listed in the following section have been determined through:

- Legislation; and
- Experience of the Environmental Assessment Practitioner (EAP).

The following issues were identified and will be carried forward into the EIR phase for further investigation and assessment:

D-1.1 Biophysical Impacts

- Potential impacts on surface water resources that occur in close proximity to the study area and which the road will traverse;
- Potential impacts of increased surface water run-off (viz. increased soil erosion) associated with the establishment of hard surfaces and vegetation clearing, which is relevant in the construction phase;
- Potential impacts on ground water quality due to hydrocarbon spillages from vehicles during the construction phase of the development;
- Potential impacts on soils due to hydrocarbon spillages from vehicles during the construction phase of the development;
- Destruction of flora and faunal displacement within the proposed area, stemming from construction activities such as vegetation clearing and topsoil stripping within the site; and
- Loss of irreplaceable or important conservation areas, including (but not limited to) the Class 2 ridge occurring within the study area.

D-1.2 Socio-Economic Impacts

- Increased dust and noise generation during the construction phase;
- Change in the visual character of the area as some of the surrounding land use is agricultural;
- Potential impacts on heritage resources;
- Potential loss of viable and high potential agricultural land;
- Job creation during the construction phase of the proposed project;
- Traffic alleviation and a decrease in the traffic burden of surrounding roads (specifically Silver Lakes Road); and
- Positive economic impact of an improved road network in a rapidly developing urban area in line with the CoT's master plan.

D-2 IDENTIFICATION OF CUMULATIVE IMPACTS

Cumulative impacts, as illustrated below, occur as a result from the combined effect of incremental changes caused by other activities together with the particular project. In other words, several developments with insignificant impacts individually may, when viewed together, have a significant cumulative adverse impact on the environment (see Figure 7 below).

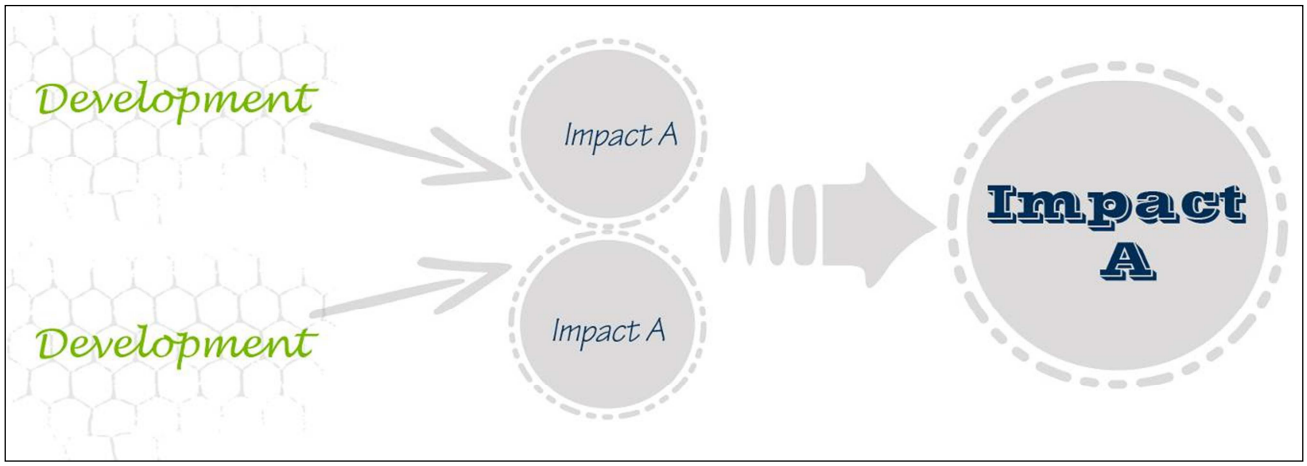

Figure 7: The identification of Cumulative Impacts

The following cumulative impacts have been identified in terms of the proposed development and warrant further investigation during the assessment phase:

- Increased loss of viable high potential agricultural land;
- Increased noise impact due to the new road cutting through a low density residential and agricultural area;
- Increase in economic growth for the regional node; and
- Increased urbanisation towards the East of Pretoria

Table 6: Summary of Anticipated Impacts

Key Issue	Relevant Area	Environmental Objective	Potential Impacts	Additional Investigations	Potential Mitigation
BIOPHYSICAL ENVIRONMENT					
Potential impact on surface water resources	Regional	To prevent excessive negative impacts on the surface water resources, including the non-perennial river and associated wetlands which the road is anticipated to cross	Surface water contamination	EMPr mitigation measures And Wetland Assessment	Recommendations and mitigation measures outlined in the EIR and EMPr, as well as recommendations by the aquatic specialists
Increased surface water runoff	Regional	To limit the excessive runoff of surface water from cleared sites	Increased runoff into the municipal system, as well into the non-perennial river and associated wetlands that occur in close proximity to the proposed road	EMPr mitigation measures	Recommendations and mitigation measures outlined in the EIR and EMPr, as well as recommendations by the aquatic specialists
Potential impact on groundwater regime	Regional	To prevent negative impacts on the local hydrological regime	Groundwater contamination	EMPr mitigation measures	Recommendations and mitigation measures outlined in the EIR and EMPr
	Site	To prevent contamination of groundwater on site and in the immediate vicinity of the site	Groundwater contamination	EMPr mitigation measures	Recommendations and mitigation measures outlined in the EIR and EMPr
Potential impact on the soil profile	Site	To prevent excessive negative impacts on the underlying soil profile and prevent waste spillages	Soil contamination	EMPr mitigation measures	Recommendations and mitigation measures outlined in the EIR and EMPr
Potential destruction of flora and fauna	Site	To limit the extent of floral destruction and faunal habitat destruction and minimise impacts on sensitive species	Loss of biodiversity, loss of sensitive or endangered species	Ecological Impact Assessment	Recommendations and mitigation measures of the ecological specialists and EMPr
Potential loss of irreplaceable or important conservation areas	Regional	To limit the extent to which the areas regarded as irreplaceable or important are destroyed (the Class 2 ridge in particular)	Loss of irreplaceable areas which are essential to the functioning of the ecosystem	Ecological Impact Assessment	Recommendations and mitigation measures of the ecological specialists and EIR and EMPr
SOCIO-ECONOMIC ENVIRONMENT					
Quality of the physical environment: Dust generation	Site	To minimise negative impacts on the local air quality as a result of construction activities.	Reduced air quality due to vehicle fumes and dust.	EMPr air quality mitigations.	Implementation and adherence to the EMPr.

Key Issue	Relevant Area	Environmental Objective	Potential Impacts	Additional Investigations	Potential Mitigation
Quality of the physical environment: Noise levels	Regional	To mitigate the effects of construction and operational activities on surrounding land owners.	Increased ambient noise levels.	Noise Assessment	Recommendations and mitigation measures of the noise specialists and EMPr
Potential impact on heritage resources	Site	To prevent negative impacts to heritage resources found on site	Destruction of heritage resources	Phase 1 Heritage Impact Assessment	Recommendations and mitigation measures of the ecological specialists and EMPr
Loss of potentially viable agricultural land	Regional	To limit the extent of viable agricultural land lost due to the construction of the road	Loss of land that could potentially be used as agricultural land or a fragmentation of viable agricultural land	Soils and Agricultural Potential Assessment	Recommendations and mitigation measures of the agricultural consultant
Creation of temporary and permanent employment opportunities and positive economic growth	Regional	To facilitate the provision of short and long term employment opportunities so as to contribute positively to the local economy.	Positive impacts surrounding region through employment.	Social Impact Assessment	Recommendation and mitigation measures outlined in the EIR and EMPr as well as those outlined in the Social Impact Assessment
Traffic alleviation and a decrease in the traffic burden of surrounding roads (specifically Silver Lakes Road);	Regional	To determine the most feasible alternative road route that will contribute to alleviation of the traffic burden on the surrounding road network.	Positive effect on alleviating traffic on other congested road routes.	EMPr mitigation measures	Recommendations and mitigation measures outlined in the EIR and EMPr

SECTION E: ALTERNATIVES

E-1 IDENTIFICATION OF ALTERNATIVES

The EIA procedures and regulations stipulate that the environmental investigation needs to consider feasible alternatives for any proposed development. Therefore, a number of possible proposals or alternatives for accomplishing the same objectives should be identified and investigated. During the EIR phase of the project, the identified alternatives will be assessed, in terms of environmental acceptability as well as socio-economic feasibility. To define the term alternatives as per Government Notice No. 543 of the NEMA EIA Regulations 2010 means:

"…in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to:

(a) The property on which or location where it is proposed to undertake the activity;
(b) The type of activity to be undertaken;
(c) The design or layout of the activity;
(d) The technology to be used in the activity;
(e) The operational aspects of the activity; and
(f) The option of not implementing the activity."

The alternatives below will be further investigated during the EIR phase of the project:

Alternative 1: Site/ Location Alternatives:
At present, no location alternatives exist, as the location of the road and study area earmarked for specialist investigations were chosen based on the need that exists in the specific area.

Alternative 2: Route Alternatives:
Option 1: The preferred alternative will connect the K34 (Graham Road) to the south west boundary of the Hazeldean node at a point located at approximately 25^{o} 47' 17.73"S; 28^{o} 22' 45.89"E. This alternative passes through a Class 2 ridge and is regarded as an ecological important area (Gauteng C-Plan v.3, 2011). The alignment of this route is preferred based on the registered water pipeline servitude running parallel with the proposed road.

Option 2: Alternative 2 will begin at the same point as the preferred alternative, however this is anticipated to end at the approximately 25^{o} 47' 09.39"S; 28^{o} 22' 28.97"E. This alternative passes along the outer edge of the ridge. However, this alternative will traverse the Farm Inn Country Hotel and Wildlife Sanctuary which is located on an ecological irreplaceable area (Gauteng C-Plan v.3, 2011)

For an illustration of both the alternatives described above, please refer to the Locality map attached as Appendix 1.

Option 3: Based on the outcomes of the specialist studies and consultation with I&APs, minor deviations from the preferred alternative (Option 1) may be considered. This will be included in the EIR Phase.

Alternative 3: No development 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-development' option will be followed and the status quo of the site will remain.

SECTION F: PLAN OF STUDY FOR EIR PHASE

F-1 SCOPE AND PURPOSE OF THE EIR PHASE

The EIR phase will focus on the proposed construction of Hazeldean Boulevard and the associated impacts thereof. The next step of the S&EIR process is the development of guidelines for the execution of the impact assessment and the compilation of an Environmental Impact Report, as well as an Environmental Management Programme (EMPr). The compilation of these documents will take into account all comments and concerns raised by I&APs which are captured within the CRR as well as the findings of various specialist studies.

The Final Environmental Impact Report and EMPr will be submitted to the GDARD for consideration towards environmental authorisation.

F-2 METHODOLOGY OF THE EIR PHASE

F-2.1 Specialist Investigations and Terms of Reference

Based on the experience of the EAP in projects of a similar nature and electronic communication with the Directorate of Nature Conservation at the GDARD, a team of specialists were identified to provide technical and scientific input in assessing the impacts of the proposed road development. The following specialist studies will be incorporated into the Draft Environmental Impact Report:

- Ecological Assessment (Floral, faunal and avifaunal);
- Heritage Impact Assessment (Phase 1);
- Noise Assessment;
- Social Impact Assessment;
- Soils and Agricultural Potential Assessment;
- Wetland Delineation and Functional Assessment; and
- Aquatic Assessment.

The Environmental and Technical Investigation Team of Specialists will focus on discipline-specific problems and examine each significant issue in further detail through the relevant specialist studies.

As per the Environmental Management Guidelines, specialists' Terms of Reference (ToR) must be clearly defined and clarified. This is to ensure that the specialists have covered all the issues and topics in an appropriate manner and at an appropriate level of detail. The proposed studies will take into consideration the present state of the receiving environment and provide an assessment of the impacts likely to be associated with the proposed project, as well as mitigation measures to be used to minimise possible impacts. The ToR for each specialist study is explained in greater detail below.

F-2.1.1 Ecological Assessment (Flora, fauna and avifauna)

The Ecological Assessment will aim to:

- Describe the relevant baseline conditions relating to the natural vegetation communities and faunal species in the area of investigation;
- Describe the anticipated environmental impacts on the natural vegetation and fauna during the construction and operational phases of the project;
- Describe how the negative environmental impacts, as described above, will be managed;
- Provide a description of the dominant and typical species occurring on site; and

- Provide a description of threatened, endemic or rare species to the province, with an indication of the relative functionality and conservation importance of the specific community in the area under investigation.

F-2.1.2 Heritage Impact Assessment (Phase 1)

A Heritage Impact Assessment will be undertaken in order to assess the impacts and significance in terms of culture and heritage on the site and propose mitigation measures. The ToR includes *inter alia*:

- A desk-top investigation of the area;
- A site visit to the proposed development site;
- Identification of possible archaeological, cultural and historic sites within the proposed development area;
- An evaluation of the potential impacts of construction and operation of the proposed development on archaeological, cultural and historical resources; and
- Recommendations and mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

F-2.1.3 Noise Assessment

The terms of reference for the noise assessment are as follows:

- A sufficiently detailed quantitative (by measurement) and qualitative assessment is to be undertaken within the area of influence of the planned Hazeldean Boulevard in order to enable a full appreciation of the nature, magnitude, extent and implications of the potential noise impact of this project. Two alignments are to be investigated;
- The level of investigation is to be that of an Environmental Impact Assessment (EIA), that is the level of detail of the noise impact analysis is to be such that it will adequately inform the relevant authority as how to proceed with the matter;
- All aspects of the investigation are to conform to the requirements of relevant environmental legislation and noise standards;
- The potential impacts at the pre-construction, the construction and the operational phases of the project are to be assessed. If impacts are identified these will be assessed; and
- Where relevant, appropriate noise mitigation measures are to be identified. These need only be conceptual at this stage.

F-2.1.4 Social Impact Assessment

The methodology for the Social Impact Assessment (SIA) will be undertaken as follows:

- Conduct a site visit of the area in order to identify the affected community groups and stakeholders;
- A literature review of the relevant policy documents and overarching framework;
- The literature review will also engage with the historical data of the area as well as any other planned developments for the area. This will lead to the identification of possible strategic partnerships;
- Through the literature review, core economic activities of the area will also be identified; and
- Extensive consultation with relevant stakeholders will be planned. These stakeholders include representatives of the relevant stakeholders, including community representatives, non-governmental organisations and other identified groups. Engaging with stakeholders on various levels assists in attaining their buy-in and support for the project.

F-2.1.5 Soils and Agricultural Potential Assessment

- *In situ* soil observations and classification, with description of individual soil profiles within the proposed infrastructure footprint, which entailed the following:
  - Identifying master and diagnostic horizons to a depth of restricting layer;
  - Determining soil depth of diagnostic horizons;
  - Estimating soil texture as percentage (%) clay content;
  - Evaluating soil structure (uniformity/firmness/workability); and
  - Describing potential limitations/restrictions to land capability;
- Assessing soil erodibility according to the Soil Loss Estimation Model for Southern Africa (SLEMSA) criteria (NDA, 2002);
- Delineating uniform soil patterns within uniform terrain into map units, with respect to observed limitations;
- Mapping of various soil types and erosion sensitivity of the site;
- Evaluating agricultural potential and land capability of demarcated soil map units;
- Identification of potential impacts and suitable mitigation measures to offset the negative impacts of the proposed bypass; and
- Report compilation on land capability and recommendations on soil management practices to implement in order to mitigate the identified impacts, as per CARA requirements.

F-2.1.6 Wetland Delineation and Functional Assessment

The above mentioned Assessment will provide for integration of the proposed development into the existing GIS database. The following deliverables will be produced:

- A wetland and riparian map which will include:
  - Wetland hydro-geomorphic units;
  - Riparian areas; and
  - Recommended buffer zones
- A wetland and riparian assessment report which will discuss:
  - Characteristics of the receiving environment;
  - Detailed methodologies;
  - Wetland and riparian delineation;
  - Wetland and riparian functional assessment including PES and EIS;
  - Wetland and riparian buffer zones;
  - Mitigation measures; and
  - Recommendations

F-2.1.7 Aquatic Assessment

In order to enable an adequate description of the aquatic environment and the determination of the present ecological state, the following stressor, habitat and response indicators will be evaluated:

- *In situ* water quality assessment and determination of water quality variables of concern, where available;
- Identification of prevailing impacts;
- Habitat assessment, utilizing the Invertebrate Habitat Assessment Systems (IHAS);
- Macro-invertebrate assessment, including the generation of reference conditions and determination of Present Ecological State utilizing the South African Scoring System Version 5 (SASS5) and the Macro-Invertebrate Response Assessment Index (MIRAI);

- Ichthyological assessment, including the evaluation of reference conditions and determination of present ecological state utilizing the Fish Assemblage Integrity Index (FAII) and the Fish Response Assessment Index (FRAI); and
- Ecological Importance and Sensitivity (EIS) will be determined according to the most applicable method (as prescribed by the Department of Water Affairs).

F-2.2 Approach to Assessment of Impacts

The EAP in association with the relevant specialists will provide an outline of the approach used in the study. Assumptions and sources of information will also be clearly identified.

F-2.2.1 Impact Identification and Assessment

The EAP must make a clear statement, identifying the environmental impacts of the construction, operation and management of the proposed development. As far as possible, the EAPs must quantify the suite of potential environmental impacts identified in the study and assess the significance of the impacts according to the criteria set out below. Each impact will be assessed and rated. The assessment of the data must, where possible, be based on accepted scientific techniques, failing which the specialist is to make judgements based on his/ her professional expertise and experience.

F-2.2.2 Assessment Procedure: Proposed Impact Assessment Methodology

For the purpose of assessing impacts during the EIR phase of the project to follow, the project will be divided into two phases from which impacting activities can be identified, namely:

Construction Phase:	All the construction related activities on site, until the contractor leaves the site.
Operational Phase:	All activities, including the operation and maintenance of the proposed development.

The activities arising from each of these phases will be included in the impact assessment tables. This is to identify activities that require certain environmental management actions to mitigate the impacts arising from them.

The assessment of the impacts will be conducted according to a synthesis of criteria required by the integrated environmental management procedure.

Extent The physical and spatial scale of the impact.	Footprint	The impacted area extends only as far as the activity, such as footprint occurring within the total site area.
	Site	The impact could affect the whole, or a significant portion of the site.
	Regional	The impact could affect the area including the neighbouring farms, the transport routes and the adjoining towns.
	National	The impact could have an effect that expands throughout the country (South Africa).
	International	Where the impact has international ramifications that extend beyond the boundaries of South Africa.

Duration The lifetime of the impact, that is measured in relation to the lifetime of the proposed development.	Short Term	The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than that of the construction phase.
	Short-Medium Term	The impact will be relevant through to the end of a construction phase.
	Medium Term	The impact will last up to the end of the development phases, where after it will be entirely negated.
	Long Term	The impact will continue or last for the entire operational lifetime of the development, but will be mitigated by direct human action or by natural processes thereafter.
	Permanent	This is the only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.
Intensity Is the impact destructive or benign, does it destroy the impacted environment, alters its functioning, or slightly alter the environment itself?	Low	The impact alters the affected environment in such a way that the natural processes or functions are not affected.
	Medium	The affected environment is altered, but functions and processes continue, albeit in a modified way.
	High	Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.
Probability The likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time.	Improbable	The possibility of the impact occurring is none, due either to the circumstances, design or experience. The chance of this impact occurring is zero (0%).
	Possible	The possibility of the impact occurring is very low, due either to the circumstances, design or experience. The chances of this impact occurring is defined as 25%.
	Likely	There is a possibility that the impact will occur to the extent that provisions must therefore be made. The chances of this impact occurring is defined as 50%.
	Highly Likely	It is most likely that the impacts will occur at some stage of the development. Plans must be drawn up before carrying out the activity. The chances of this impact occurring is defined as 75%.
	Definite	The impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied on. The chance of this impact occurring is defined as 100%.

Mitigation **–** The impacts that are generated by the development can be minimised if measures are implemented in order to reduce the impacts. The mitigation measures ensure that the development considers the environment and the predicted impacts in order to minimise impacts and achieve sustainable development.

Determination of Significance – Without Mitigation **–** Significance is determined through a synthesis of impact characteristics as described in the above paragraphs. It provides an indication of the importance of the impact in terms of both tangible and intangible characteristics. The significance of the impact "without mitigation" is the prime determinant of the nature and degree of mitigation required. Where the impact is positive, significance is noted as "positive". Significance will be rated on the following scale:

No significance: The impact is not substantial and does not require any mitigation action;
Low: The impact is of little importance, but may require limited mitigation;
Medium: The impact is of importance and is therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels; and
High: The impact is of major importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.

Determination of Significance – With Mitigation – Determination of significance refers to the foreseeable significance of the impact after the successful implementation of the necessary mitigation measures. Significance with mitigation will be rated on the following scale:

No significance: The impact will be mitigated to the point where it is regarded as insubstantial; Low: The impact will be mitigated to the point where it is of limited importance;
Low to medium: The impact is of importance, however, through the implementation of the correct mitigation measures such potential impacts can be reduced to acceptable levels;
Medium: Notwithstanding the successful implementation of the mitigation measures, to reduce the negative impacts to acceptable levels, the negative impact will remain of significance. However, taken within the overall context of the project, the persistent impact does not constitute a fatal flaw;
Medium to high: The impact is of major importance but through the implementation of the correct mitigation measures, the negative impacts will be reduced to acceptable levels; and
High: The impact is of major importance. Mitigation of the impact is not possible on a cost-effective basis. The impact is regarded as high importance and taken within the overall context of the project, is regarded as a fatal flaw. An impact regarded as high significance, after mitigation could render the entire development option or entire project proposal unacceptable.

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

Ranking, Weighting and Scaling – For each impact under scrutiny, a scaled weighting factor will be attached to each respective impact. The purpose of assigning such weightings serve to highlight those aspects considered the most critical to the various stakeholders and ensure that each specialist's element of bias is taken into account. The weighting factor also provides a means whereby the impact assessor can successfully deal with the complexities that exist between the different impacts and associated aspect criteria.

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

Extent	Duration	Intensity	Probability	Weighting Factor (WF)	Significance Rating (SR)	Mitigation Efficiency (ME)	Significance Following Mitigation (SFM)
Footprint 1	Short term 1	Low 1	Probable 1	Low 1	Low 0-19	High 0,2	Low 0-19
Site 2	Short to medium 2		Possible 2	Low to medium 2	Low to medium 20-39	Medium to high 0,4	Low to medium 20-39
Regional 3	Medium term 3	Medium 3	Likely 3	Medium 3	Medium 40-59	Medium 0,6	Medium 40-59
National 4	Long term 4		Highly Likely 4	Medium to high 4	Medium to high 60-79	Low to medium 0,8	Medium to high 60-79
International 5	Permanent 5	High 5	Definite 5	High 5	High 80-100	Low 1,0	High 80-100

Figure 8: Description of bio-physical assessment parameters with its respective weighting

Identifying the Potential Impacts Without Mitigation Measures (WOM) – Following the assignment of the necessary weights to the respective aspects, criteria are summed and multiplied by their assigned weightings, resulting in a value for each impact (prior to the implementation of mitigation measures).

Equation 1: Significance Rating (WOM) = (Extent + Intensity + Duration + Probability) x Weighting Factor

Identifying the Potential Impacts With Mitigation Measures (WM) – In order to gain a comprehensive understanding of the overall significance of the impact, after implementation of the mitigation measures, it will be necessary to re-evaluate the impact.

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

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

Equation 2: Significance Rating (WM) = Significance Rating (WOM) x Mitigation Efficiency
Or
WM = WOM x ME

Significance Following Mitigation (SFM) – The significance of the impact after the mitigation measures are taken into consideration. The efficiency of the mitigation measure determines the significance of the impact. The level of impact will, therefore, be seen in its entirety with all considerations taken into account.

F-2.2.3 Integration of Specialist's Input

In order to maintain consistency in the impact assessment, it is suggested that all potential impacts to the environment (or component of the environment under review) should be listed in a table similar to the example shown below (more than one table will be required if impacts require assessment at more than one scale). The assessment parameters used in the table should be applied to all of the impacts and a brief descriptive review of the impacts and their significance will then be provided in the text of the specialist reports and consequently in the EIR. The implications of applying mitigation are reviewed in Section C-2.4 below.

Table 7: Example of an Impact Table

Nature			Status	-
Impact source(s)				
Affected stakeholders				
Magnitude	*Extent*			
	Intensity			
	Duration			
	Reversibility			
	Probability			
Significance	*Without mitigation*			H
	With mitigation			L
Confidence				

F-2.2.4 Mitigation Measures

Mitigation measures will be recommended in order to enhance benefits and minimise negative impacts and they will address the following:

- Mitigation objectives: what level of mitigation must be aimed at: For each identified impact, the specialist must provide mitigation objectives (tolerance limits) which would result in a measurable

reduction in impact. Where limited knowledge or expertise exists on such tolerance limits, the specialist must make an "educated guess" based on his/ her professional experience;

- Recommended mitigation measures: For each impact the specialist must recommend practicable mitigation actions that can measurably affect the significance rating. The specialist must also identify management actions, which could enhance the condition of the environment. Where no mitigation is considered feasible, this must be stated and reasons provided;
- Effectiveness of mitigation measures: The specialist must provide quantifiable standards (performance criteria) for reviewing or tracking the effectiveness of the proposed mitigation actions, where possible; and
- Recommended monitoring and evaluation programme: The specialist is required to recommend an appropriate monitoring and review programme, which can track the efficacy of the mitigation objectives. Each environmental impact is to be assessed before and after mitigation measures have been implemented. The management objectives, design standards, etc., which, if achieved, can eliminate, minimise or enhance potential impacts or benefits. National standards or criteria are examples, which can be stated as mitigation objectives.

Once the above objectives have been stated, feasible management actions, which can be applied as mitigation, must be provided. A duplicate column on the impact assessment tables described above will indicate how the application of the proposed mitigation or management actions has reduced the impact. If the proposed mitigation is to be of any consequence, it should result in a measurable reduction in impacts (or, where relevant, a measurable benefit).

F-2.3 Approach to the Assessment of Cumulative Impacts

Cumulative impacts can arise from one or more activities. A cumulative impact may result in an additive impact i.e. where it adds to the impact which is caused by other similar impacts or an interactive impact i.e. where a cumulative impact is caused by different impacts that combine to form a new kind of impact. Interactive impacts may be either countervailing (the net adverse cumulative impact is less than the sum of the individual impacts) or synergistic (the net adverse cumulative impact is greater than the sum of the individual impacts).

Possible cumulative impacts of the project will be evaluated in the EIR. In addition, various other cumulative impacts e.g. other external impacts that could arise from the project will be further investigated in the EIR phase of the project.

The assessment of cumulative impacts on a study area is complex; especially if many of the impacts occur on a much wider scale than the site being assessed and evaluated. It is often difficult to determine at which point the accumulation of many small impacts reaches the point of an undesired or unintended cumulative impact that should be avoided or mitigated. There are often factors which are uncertain when potential cumulative impacts are identified.

F-2.3.1 Steps in Assessing Cumulative Impacts

The assessment of cumulative impacts will not be done separately from the assessment of other impacts. Cumulative impacts however, tend to have different time and space dimensions and therefore require specific steps. This may even mean that some of the actions in the assessment process, that preceded general impact identification, may have to be revisited after potential cumulative impacts have been identified. This will ensure that the scope of the EIR process is adequate to deal with the identified cumulative impacts.

Three (3) general steps, which are discussed below, will be recommended to ensure the proper assessment of cumulative impacts.

F-2.3.2 Determining the Extent of Cumulative Impacts

To initiate the process of assessing cumulative impacts, it is necessary to determine what the extent of potential cumulative impacts will be. This will be done by adopting the following approach:

- Identify potentially significant cumulative impacts associated with the proposed activity;
- Establish the geographic scope of the assessment;
- Identify other activities affecting the environmental resources of the area; and
- Define the goals of the assessment.

F-2.3.3 Describing the Affected Environment

The following approach is suggested for the compilation of a description of the environment:

- Characterise the identified external environmental resources in terms of their response to change and capacity to withstand stress;
- Characterise the stresses affecting these environmental resources and their relation to regulatory thresholds; and
- Define a baseline condition that provides a measuring point for the environmental resources that will be impacted on.

F-2.3.4 Assessment of Cumulative Impacts

The general methodology which is used for the assessment of cumulative impacts should be coherent and should comprise of the following:

- An identification of the important cause-and-impact relationships between proposed activity and the environmental resources;
- A determination of the magnitude and significance of cumulative impacts; and
- The modification, or addition, of alternatives to avoid, minimize or mitigate significant cumulative impacts.

F-3 PUBLIC PARTICIPATION PROCESS DURING THE EIR PHASE

F-3.1 Stakeholder Engagement

All I&APs registered on the project's database will be kept informed of the EIA process. Notification letters will be submitted informing all registered I&APs of the availability of draft and final Environmental Impact Reports and EMPr for review and comment.

All comments and/or concerns received via telephone, fax, email or post will be incorporated into a Comment and Response Report (CRR) and included within the Final Environmental Impact Report. All correspondence received will be acknowledged.

F-3.2 Public Review of the Draft Environmental Impact Report

It is proposed that the Draft Environmental Impact Report will be available for comment at public venues from around October 2014. The report will also be available on SEF's website (www.sefsa.co.za).

F-3.3 Public Review of the Final Environmental Impact Report

It is proposed that the Final Environmental Impact Report will be available for comment at public venues near the end of 2014. The report will also be available on SEF's website (www.sefsa.co.za). The public review period of the final report will run concurrently with the submission of the final report to the GDARD for consideration towards environmental authorisation.

SECTION G: CONCLUSION AND RECOMMENDATIONS

In accordance with GN No. 543, the Final Scoping Report is aimed at describing the proposed activity and those reasonable alternatives that have been identified, as well as the receiving environment that may be affected by the proposed project. In accordance with the EIA Regulations, an identification of relevant legislation and guidelines was also given, as well as a description of the public participation process that was and will be followed.

In conclusion, the Final Scoping Report established the scope of the proposed project throughout its phases, as well as its key impacts on the receiving and surrounding environments. The project motivation has also been described. The Final Scoping Report also sets out the proposed scope of the EIR phase that will be undertaken for the proposed project **(Section F)**.

Comments and/or concerns identified by Interested and Affected Parties (I&APs) during the review period of the Draft Scoping Report have been incorporated into this Final Scoping Report for further investigation during the EIR Phase to follow. The Final Scoping Report and Plan of Study for the EIR phase will now be submitted to the GDARD for consideration. All comments received on the Final Scoping Report will also be forwarded directly to the GDARD for consideration.

The EAP proposes that, on the basis of the information contained in this Scoping Report, that the GDARD accept the Scoping Report and Plan of Study for the EIR phase and allow the EAP to proceed with the EIR phase of the project, such that the more pertinent issues can be thoroughly investigated and assessed, in terms of their significance and impact.

The ability to mitigate any of the potential impacts identified in this Scoping Report will also be investigated during the EIR phase and summarised into a working/ dynamic Environmental Management Programme (EMPr) for consideration by I&APs and ultimately by the GDARD.

SECTION H: REFERENCES

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Noise Intensity Levels, 2010. http://www.neoseeker.com (Accessed on 3 December 2010).

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SECTION I: APPENDICES

Appendix 1: Locality Map

Appendix 2: Photograph plate

Appendix 3: Background Information

Appendix 4: Authority Correspondence

Appendix 5: Public Participation Report

Appendix 6: Copies of Zoning Certificates (will be made available during EIR phase)

Appendix 7: Other Information (Water Pipeline Servitude)