

FINAL SCOPING REPORT FOR THE PROPOSED INDUSTRIAL 1/ MIXED USE DEVELOPMENT ON JUPITER EXTENSION 9

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PURPOSE OF DOCUMENT

A period of **21 calendar days (01 October 2014 - 22 October 2014)** has been provided to the **State Departments** and the **general public** 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.

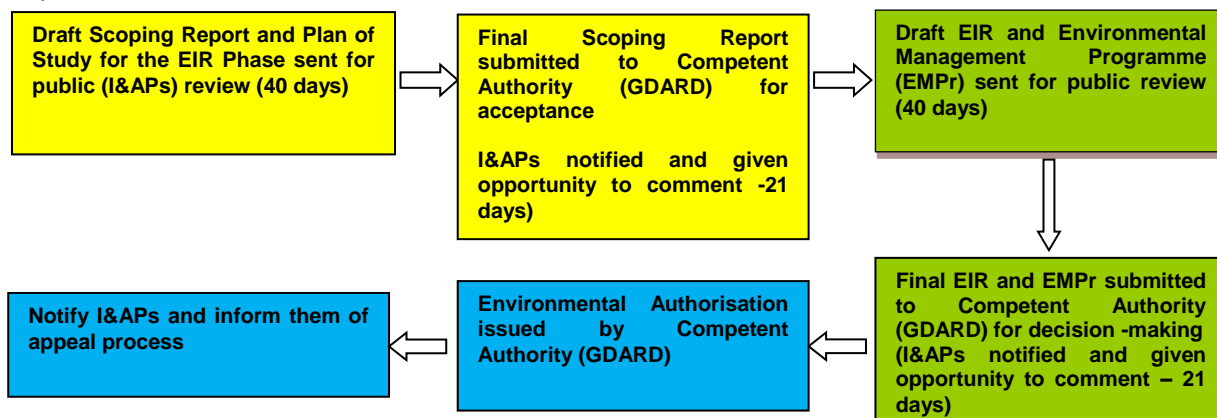
The Final Scoping Report can be viewed at the following venue:

Name of public venue	Name of Contact Person	Contact Number(s)	Viewing Times
Germiston Public Library Cnr Queen and Cross Street	Ms Edith Kruger	Tel: (011) 999 0522	Mon. Wed, Fri: 10:00-17:50 Tue & Thurs: 12:00-17:50 Sat: 08:30-12:50

Should you wish to participate in the Scoping and Environmental Impact Reporting (S&EIR) process by contributing issues of concerns/comments, please register as an I&AP by completing the enclosed Registration and Comment Sheet or you can visit Strategic Environmental Focus (Pty) Ltd (SEF's) website at <http://www.sefsa.co.za>.

To register as an I&AP or comment on the project using SEF's website, click on "**Stakeholder Engagement**". Click on the "register" button and complete the compulsory fields to register as an I&AP. On completion of these fields, click on the "register button" and you will see "**REGISTRATION SUCCESSFUL**". Use your login details to login in and view the Final Scoping Report for the proposed **Jupiter Extension 9** 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 21 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	Proposed industrial 1/ mixed use development on Jupiter Extension 9.
Farm Name and Portion	Remainder of Portion 2 of Farm Elandsfontein 90-IR and Portion 531 of Farm Elandsfontein 108-IR, Germiston, Ekurhuleni Metropolitan Municipality (EMM), Gauteng Province.
Brief Development Overview	<p>Ergo Mining (Pty) Limited (ERGO) is currently undertaking a mining closure application simultaneously with this application for Environmental Authorisation for the proposed industrial/ mixed use development by Abland (Pty) Ltd (Abland). Effectively it has been agreed with the Department of Mineral Resources (DMR), that the end-land use will be Industrial 1/mixed use development at a site visit between DMR, SEF and the Department of Water and Sanitation (DW&S) on 20 May 2014. The site was previously used for mining purposes which included conducting gold bearing tailings reclamation operations from sand dumps and slimes dams (dumps).</p> <p>The proposed development will be developed in terms of the Germiston Town Planning Scheme, 1985. According to the Spatial Development Framework (SDF) for the area, the area is earmarked for industrial/ mixed use zoning.</p> <p>The proposed erven will be privately owned by Abland.</p> <p>The extension of the 30m wide road reserve from Gosforth Park in the south (Van Riebeeck Road, which currently grants access to Gosforth Park and the Raceway Industrial Park area) gives access to the proposed development. This road will extend to the Barlow Street in the north. A 25m wide east-west link road reserve (Europa Road) might link the development in the future with the N3 Eastern Bypass and/ or Gosforth Road to the east. To the south- west of the development, a proposed possible future access point is indicated. This proposed overhead access point will most probably require a new overhead bridge over the N3 eastern bypass to the Rosherville area to the west. Another possible future link road is proposed to the south west of the proposed site via a new Right of way Servitude, linking the development with Gosforth Road.</p> <p>On the intersection of the north- south, east to west access roads, a retail/ commercial node is proposed.</p> <p>Access to the proposed development will additionally be via the extension of Dimitri towards the east. A total of 5 access points will be developed. The development t will be phased into 7 smaller developments.</p>
Development Footprint	The proposed development will fall over two farm portions, each registered in their own registration division of Elandsfontein 90 IR and Elandsfontein 108 IR. The Remainder of Portion 2 of the farm Elandsfontein 90 IR comprises of 366.8315 ha and Portion 513 of the farm Elandsfontein 108 IR is 75, 7381 ha in total. The total area of the farm portions to be used for the proposed development is approximately 158, 8182 ha in extent.
Development Height	Detailed designs of the proposed development will be provided within the EIR. A site development plan is currently being developed for the proposed site.
Municipal Services	<p>Electrical Services: An Electrical Services Report with regards to electrical capacity and provision to the development has been compiled and will be provided for within the EIR. The total estimated load for Jupiter Extension 9 is 22 400 kVA.</p> <p>Civil Services: Provision of the municipal civil engineering services is being addresses. The outline scheme report, stormwater management etc. will be made available in the EIR.</p>
Site Photographs	Refer to Appendix 2.

ENVIRONMENTAL ASSESSMENT PRACTITIONER

Strategic Environmental Focus (Pty) Ltd (SEF) is a privately owned company and 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** assisting the private sector and government in managing the sustainability of our natural resources. SEF has been proactively providing these sustainable solutions for over 17 years, with offices located across the major centres of South Africa, as well as offering global expertise through years of experience providing these sustainable solutions on many international projects.

As a proudly South African company, SEF has been responding and resolving issues of environmental sustainability in the development sector, for over a decade and a half, and we have been privileged and honoured to have been part of the development of some of our country’s most prized national landmarks, in both the private and public domain.

As a business steeped in entrepreneurship, we pride ourselves on being innovative and future focussed, driven through our unique offering of having all types of environmental consultant specialists under one roof. SEF’s core environmental experts have extensive experience in dealing with Environmental Impact Assessments (EIAs), Public Participation Processes (PPPs), 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), Soils and Agricultural Potential Assessments, Socio-Economic Assessments, etc.

SEF’s Vision

SEF is a national sustainability consultancy which provides integrated and innovative Social, Biophysical & Economic solutions while fostering strategic stakeholder relationships, underpinned by SEF’s core values.

SEF’s Mission

SEF offers holistic and innovative sustainable solutions in response to global challenges.

SEF is a Qualifying Small Enterprise (QSE) 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 135%.

SEF commits itself to comply with the requirements and the implementation of a Quality Management System (QMS). The QMS 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 Compact Discs (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
Mrs Carene Kruger	SEF	Project Manager
Ms Mpho Manyabe	SEF	Environmental Manager
Mr Mandla Zuma	SEF	Environmental Assistant and facilitator for the Public Participation Process

Mrs Carene Kruger

Carene holds a BSc (Honours) Degree in Environmental Management (University of Johannesburg) and is currently completing her M.Sc (Environmental Science) at the University of Pretoria. 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. Key projects include: Lonmin Platinum EMPR amendment applications, Wonderboom Airport expansion, Gautrain Variant Assessment EIA, SKA- Meerkat infrastructure and Hazeldean Node Master Plan.

Ms Mpho Manyabe

Mpho has obtained her National Diploma in Environmental Sciences from the Tshwane University of Technology (TUT) and is currently completing her BSc Honours Degree (Environmental Management) at the University of Southern Africa (UNISA). Mpho has 7 years of work experience in the field of environmental management from various consulting companies. Mpho has previously worked as an assistant environmental consultant conducting EIAs for the mining industries and service stations, and also other small industries. She has also been involved in numerous Public Participation Processes (PPPs) throughout the Gauteng Region. She previously had been employed as an environmental scientist where she was involved in environmental assessment projects, for Parastatals, National Departments and Municipalities from 2008. She has also been involved in Safety, Health and Environmental (SHE) management for private and public entities where she had been the overall project manager for such projects.

Mr Mandla Zuma

Mandla obtained a BSc in Environmental Management from the University of Zululand in 2009. He worked with the Department of Environmental Affairs (DEA) (Oceans and Coasts) as an Intern in the Coastal Conservation Strategies section for four months; where the main responsibilities included looking after coastal information. He then worked with SEF as an Intern for seven months and was later appointed as an Environmental Assistant. Mandla has been assisting in compiling Basic Assessment (BAs) and EIAs and other related tasks. He has been involved in tasks requiring good legislation interpretation and also assists with public and authority consultation.

Table 2: Contact Details of Environmental Assessment Practitioner

Name	Contact Details
Mrs 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) have been appointed by Abland (Pty) Ltd (hereunder referred to as Abland) to undertake an environmental application process for the proposed industrial 1/ mixed use development (Jupiter Extension 9). The proposed development will be located on the Remainder of Portion 2 of the Farm Elandsfontein 90-IR and Portion 531 of the Farm Elandsfontein 108-IR, Germiston, Ekurhuleni Metropolitan Municipality (EMM), Gauteng Province.

A Scoping and Environmental Impact Reporting (S&EIR) process is being conducted for this project based on triggered listed activities within the Environmental Impact Assessment (EIA) Regulations of 2010 [Government Notice (GN) Regulation. 543, 544 and 545] promulgated in terms of the amended 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. Based on the aforementioned aspects, the Scoping phase highlights the potential environmental impacts that may occur based on the proposed project. The Scoping phase then also dictates which specialist assessments must be undertaken, during the Environmental Impact Reporting (EIR) phase, to investigate and assess potential environmental impacts. The report further describes the required Public Participation Process (PPP) followed during the Scoping phase as well as how it will be carried out during the EIR phase.

The Draft Scoping Report was made available to I&APs and State Departments from **13 August 2014 - 22 September 2014** for review and commenting. The report has been finalised and the Final Scoping Report has been submitted to the Gauteng Department of Agriculture and Rural Development (GDARD) and I&APs for review. The purpose of this Final Scoping Report is to provide all I&APs with an opportunity to assess whether or not their comments/ concerns submitted have been included and adequately addressed. All comments on this Final Scoping Report are to be submitted directly to the GDARD as the commenting and review period of the Final Scoping Report (i.e. 21 calendar days) will run concurrently with the GDARD's review period.

The GDARD will, based on this Final Scoping Report, issue a decision on whether or not the application may proceed to the EIR phase.

2 BRIEF PROJECT DESCRIPTION

The Ergo Mining Operations (Proprietary) Limited (Ergo Mining) (formerly DRDGOLD Mining Operations (Pty) Limited) is the controlling company for various mining operations conducting gold bearing tailings reclamation operations from sand dumps and slimes dams (dumps), created from historic gold mining located on the Witwatersrand, Gauteng. Ergo Mining is divided into two operating companies, namely Crown Gold Recoveries (Pty) Limited (CGR) and Ergo Mining (Pty) Limited (ERGO). It is worth noting that ERGO was established not only to treat Tailings Storage Facilities (TSFs) to recover gold, uranium and sulphur (in the form of iron pyrite) but also to use the opportunity to remove some of the TSFs to less environmentally sensitive areas and to place the tailings in better designed TSFs. These facilities were previously reclaimed and treated by AngloGold Ashanti Limited (AGA), but AGA discontinued reclamation activities on the East Rand Gold dumps in 2004 and 2007.

The proposed site was previously used for mining purposes which included conducting gold bearing tailings reclamation operations. A mining closure application process is currently being undertaken by ERGO, simultaneously with this application for Environmental Authorisation for the proposed industrial 1/ mixed use development by Abland. Effectively it has been agreed with the Department of Mineral Resources (DMR), that the end-land use will be Industrial 1/mixed use development at a site visit between DMR, SEF and the Department of Water and Sanitation (DW&S) on 20 May 2014. It must be noted that ERGO has given consent

to Abland who would ultimately accept liability for the management and subsequent maintenance of the said mine once a closure certificate has been granted.

The proposed development will be developed into industrial/ mixed use development in terms of the Germiston Town Planning Scheme, 1985. According to the Spatial Development Framework (SDF) for the area, the area is earmarked for a mixed use /industrial zoning. The proposed erven will be privately owned by Abland.

The extension of the 30m wide road reserve from Gosforth Park in the south (Van Riebeeck Road, which currently grants access to Gosforth Park and the Raceway Industrial Park area) gives access to the proposed development.

This road will extend to the Barlow Street in the north. A 25m wide east-west link road reserve (Europa Road) might link the development in the future with the N3 Eastern Bypass and/ or Gosforth Road to the east. To the south- west of the development, a proposed possible future access point is indicated. This proposed overhead access point will most probably require a new overhead bridge over the N3 eastern bypass to the Rosherville area to the west. Another possible future link road is proposed to the south west of the proposed site via a new Right of way Servitude, linking the development with Gosforth Road.

On the intersection of the north- south, east to west access roads, a retail/ commercial node is proposed.

Access to the proposed development will additionally be via the extension of Dimitri towards the east. A total of 5 access points will be developed. The development will be phased into 7 smaller developments.

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 of increased surface water run-off (*viz.* increased soil erosion) associated with the existing wetland;
- Potential impacts on ground and surface water quality due to hydrocarbon spillages from vehicles during construction and operational phase of the proposed project;
- Removal of alien invasive plant species;
- Increased erosion potential from construction activities and vehicular activity may cause siltation that will reduce quantity of runoff;
- Soil compaction due to the movement of vehicles on site;
- Positive impact on topography; and
- Positive impacts from the removal of the sources of groundwater contamination (sand and slimes dumps).

Socio-Economic Impacts:

- Decreased dust generation during the operational phase;
- Increased visual impacts associated with additional industrial/ mixed use development activities
- Increase in local employment and subsequently, number of job seekers, during construction and operational phases; and
- Use of available land within the urban edge.

Cumulative Impacts:

- Increased visual impacts associated with additional industrial/ mixed use development activities;
- Increase in local employment and subsequently, number of job seekers, during construction and

- operational phases; and
- Influx of people (looking for jobs) into the area.

4 PROJECT ALTERNATIVES

To give effect to the principles of the 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:

A. Land Use Alternatives

Alternative 1: Industrial 1/ mixed use development (Preferred Alternative)

This is the preferred alternative by Abland. As mentioned before, this development proposal will enhance the requirement of the EMM SDF. This development will furthermore also meet the requirements of the surrounding area in terms of industrial 1/ mixed use development.

Alternative 2: Light Industrial Alternative

The introduction of a light industrial development, although suited to the general functioning and land uses of the surrounding urban environment and other light industrial areas, is considered unsuitable due to the following reasons:

- Over-saturation of a single-use activity;
- Lack of diversity and vibrancy associated with a mixed-use development; and
- Higher risk of pollution to the surrounding wetland and the Natalspruit system.

Alternative 3: Low Density Residential Alternative

The provision of a low density residential development does not cater for numerous socio-economic requirements and is therefore less favourable than the preferred alternative (industrial 1/ mixed-use development).

An amount of R191,982,000.00 has been gazetted for the 2013/14 financial year for the housing and or /construction of Reconstruction and Development Programme (RDP) houses and was provided for on the Operating Budget [Integrated Development Plan (IDP), 2013/ 2014] in other sections of EMM to cater for the housing requirements.

C. No Development Alternative

This implies that the site be left as is and that no development or alteration be done. If this alternative is pursued the site's status quo will be retained. This option has the following disadvantages:

- A high demand for commercial and employment provision exists in this area, especially with respect to the proposed development characteristics. Should the site not be developed, a very viable opportunity to exploit the commercial market in the immediate area will be negated
- If not developed, Abland will derive no income from the property. A closure certificate application is currently being lodged with the DMR. Should the site not be developed, it will lead to the site falling into long term disrepair.
- Illegal squatters or vagrants may potentially settle on the site, as severe pressure for housing in the lower income brackets also exist. Due to the presence of extensive development throughout the greater area it is possible that undeveloped, un-managed land may be illegally settled.
- Agricultural land capability is not applicable on the proposed site. The land is generally capable of supporting urban development.

5 CONCLUSIONS AND RECOMMENDATIONS

In accordance with GN No. R 543, the Final Scoping Report for the proposed development 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.

Comments and/or concerns received from 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 has been submitted to the GDARD for consideration, together with the Plan of Study (PoS) for the EIR phase and other relevant supporting information.

The EAP proposes that, on the basis of the information contained in this Scoping Report, that the GDARD accepts the Scoping Report and PoS 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.

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LIST OF ABBREVIATIONS AND ACRONYMS

ABLAND	Abland (Pty) Ltd
AGA	AngloGold Ashanti Limited
AIDS	acquired immunodeficiency syndrome
AMD	Acid Mine Drainage
BA	Basic Assessment
CBD	Central Business District
CD	Compact Disk
CGR	Crown Gold Recoveries (Pty) Limited
CRR	Comment and Response Report
DEA	Department of Environmental Affairs (previously DEAT)
DEAT	Department of Environmental Affairs and Tourism
DMR	Department of Mineral Resources
DWA	Department of Water Affairs
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIR	Environmental Impact Reporting
EMM	Ekurhuleni Metropolitan Municipality
ENPAT	Environmental Potential Atlas
EMPr	Environmental Management Programme
ERGO	Ergo Mining (Pty) Limited
GDARD	Gauteng Department of Agriculture and Rural Development
GGP	Gross Geographic Product
GNR	Government Notice Regulation
ha	Hectare
HDI	Historically Disadvantaged Individual
HDPE	high-density polyurethane
HIA	Heritage Impact Assessment
HIV	Human Immunodeficiency Virus
IDP	Integrated Development Plan
IEM	Integrated Environmental Management
IRPTN	Integrated Rapid Public Transport Network
I&APs	Interested and Affected Parties
mamsL	mean sea level
ME	Mitigation Efficiency/ Effectiveness

MPRDA	Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
MSA	Municipal Systems Act, 2000 (Act No. 32 of 2000)
NHRA	National Heritage Resources Act, (Act No. 25 of 1999)
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEM: BA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NSBA	National Spatial Biodiversity Assessment
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PoS	Plan of Study
PPP	Public Participation Process
QMS	Quality Management System
QSE	Qualifying Small Enterprise
PHRA-G	Gauteng Provincial Heritage Resources Authority
RDP	Reconstruction and Development Programme
SAHRIS	South African Heritage Resources Information System
SDF	Spatial Development Framework
SEF	Strategic Environmental Focus (Pty) Ltd
SFM	Significance Following Mitigation
SHE	Safety, Health and Environmental
S&EIR	Scoping and Environmental Impact Reporting
S&J	Simmer and Jacks Mines (Pty) Ltd
Stats SA	Statistics South Africa
ToR	Terms of Reference
TSF	Tailings Storage Facility
TUT	Tshwane University of Technology
VIA	Visual Impact Assessment
WM	With Mitigation Measures
WML	Waste Management License
WOM	Without Mitigation Measures
WUL	Water Use License
WULA	Water Use License Application

GLOSSARY OF TERMS

Alternative	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.
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, 1998 (Act No. 107 of 1998).
Closure	Closure is a term used to describe a number of facets associated with the cessation of mining activities and the "shutting down" of a mine. It refers to actions that must be taken with regard to the physical infrastructure of a mine, actions around the natural environment and the socio-economic situation, measures that must be taken regarding the employees (labour issues) and the financial implications. Whilst this paper will focus mainly on the legal requirements concerning the environmental aspects of closure, reference will be made to some of the legalities concerning the other aspects.
Closure Certificate	A certificate issued in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA).
Cumulative Impact	Cumulative impact, in relation to an activity, means the impact of an activity that in itself may not be significant, but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.
Ecology	The study of the interrelationships between organisms and their environments.
Endangered Species	A species of organisms facing a very high risk of extinction.
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.
Indigenous Species	A species is defined as native (or indigenous) to a given region or ecosystem if its presence in that region is the result of only natural processes, with no human intervention.
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.
No-go/ Do nothing alternative	The option of not undertaking the proposed activity or any of its alternatives. The no-go alternative also provides the baseline against which the impacts of other alternatives should be compared.
Opencast Mining	Opencast mining is a surface mining technique of extracting rock or minerals from the earth by their removal from an open pit or borrow.
Stakeholder	Any person or group of persons whose live(s) may be affected by a project.
Succession	The natural restoration process of vegetation after disturbance.
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.

Wetland	A wetland is defined as land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which under normal circumstances supports or would support vegetation typically adapted to life in saturated soil (National Water Act, 1998 (Act No. 36 of 1998) (NWA)).
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SECTION A: INTRODUCTION

Strategic Environmental Focus (Pty) Ltd (SEF) have been appointed by Abland (Pty) Ltd (hereunder referred to as Abland) to undertake an environmental application process for the proposed industrial 1/ mixed use development (Jupiter Extension 9). The proposed development will be located on the Remainder of Portion 2 of the Farm Elandsfontein 90-IR and Portion 531 of the Farm Elandsfontein 108-IR, Germiston, Ekurhuleni Metropolitan Municipality (EMM), Gauteng Province.

A Scoping and Environmental Impact Reporting (S&EIR) process is being conducted for this project based on triggered listed activities within the Environmental Impact Assessment (EIA) Regulations of 2010 [Government Notice (GN) Regulation. 543, 544 and 545] promulgated in terms of the amended 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. Based on the aforementioned aspects, the Scoping phase highlights the potential environmental impacts that may occur based on the proposed project. The Scoping phase then also dictates which specialist assessments must be undertaken, during the Environmental Impact Reporting (EIR) phase, to investigate and assess potential environmental impacts. The report further describes the required Public Participation Process (PPP) followed during the Scoping phase as well as how it will be carried out during the EIR phase.

The Draft Scoping Report was made available to I&APs and State Departments from **13 August 2014 - 22 September 2014** for review and commenting. The report has been finalised and the Final Scoping Report has been submitted to the Gauteng Department of Agriculture and Rural Development (GDARD) and I&APs for review. The purpose of this Final Scoping Report is to provide all I&APs with an opportunity to assess whether or not their comments/ concerns submitted have been included and adequately addressed. All comments on this Final Scoping Report are to be submitted directly to the GDARD as the commenting and review period of the Final Scoping Report (i.e. 21 calendar days) will run concurrently with the GDARD's review period.

The GDARD will, based on this Final Scoping Report, issue a decision on whether or not the application may proceed to the EIR phase.

A-1 DESCRIPTION OF PROPOSED ACTIVITY

A-1.1 Property and Location

The proposed site is located on the Remainder of Portion 2 of the farm Elandsfontein 90 IR and on Portion 531 of the farm Elandsfontein 108-IR, EMM, Gauteng Province. The study area is located just south of the Geldenhuis Interchange (N3 Eastern bypass and M2), along the Nasmith Avenue/ Barlow Street in the Jupiter Industrial area. Nasmith Avenue/ Barlow Street connects to the M37 Refinery Road to the east, and Cleveland Road to the west. Barlow Street connects the site to the east-west link, while Refinery Road connects the site to Germiston CBD and the M2 Highway. The site is further situated just to the north of the M46 Rand Airport Road/ Power Street which in turn connects the site to the Elands Interchange between the N3, N12 and N17 Highways.

The Remainder of Portion 2 of the farm Elandsfontein 90 IR comprises of 366.8315 ha and Portion 531 of the farm Elandsfontein 108 IR is 75, 7381 ha in total. The total area of the farm portions to be used for the proposed development is approximately 158, 8182 ha in extent.

A-1.2 Surrounding Land Use

The land use around the proposed site include urbanised areas which consist of suburbs, transportation systems, industrial areas and mine residue disposal sites. Please refer to Figure 1

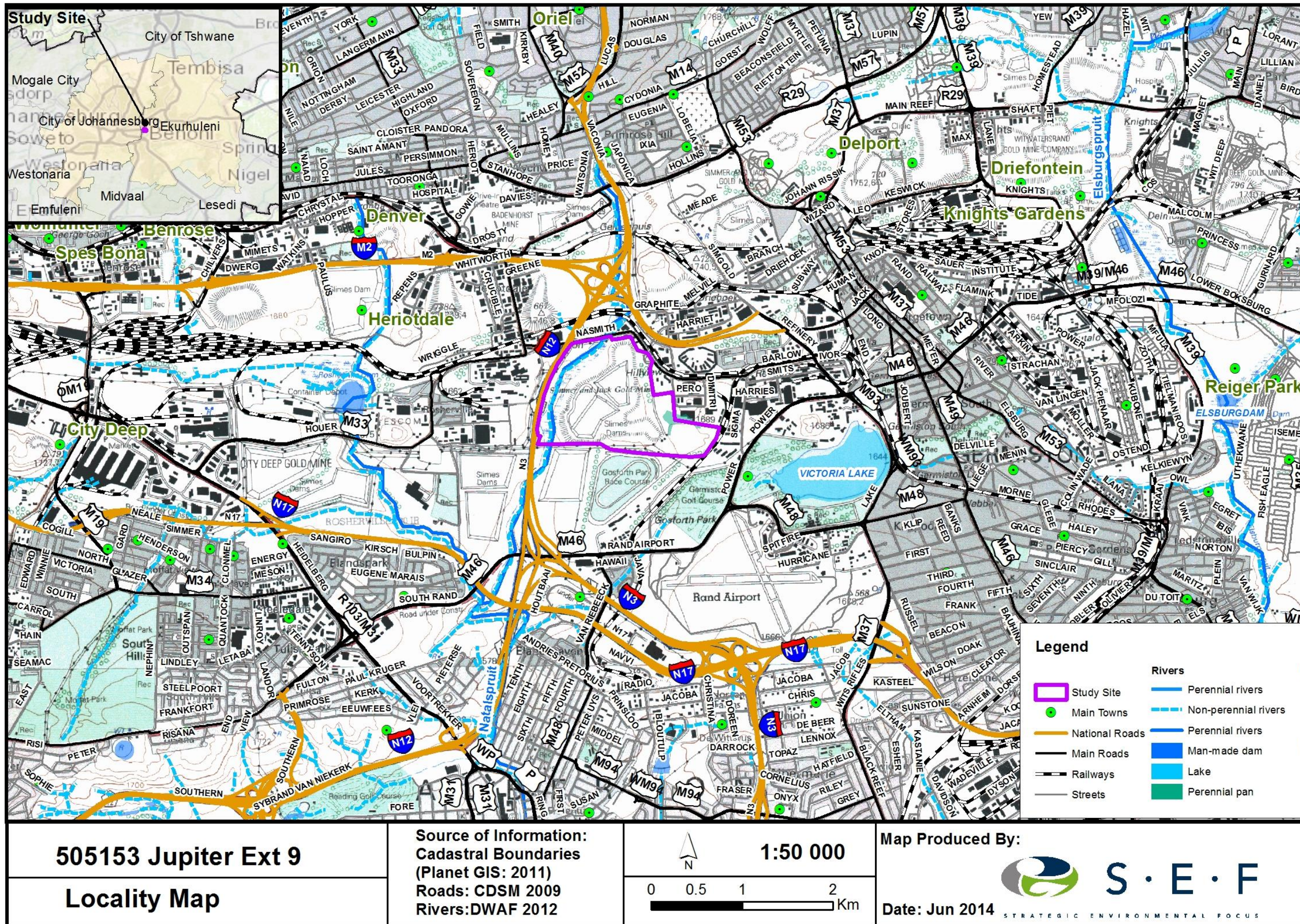


Figure 1: Locality Map

Most of the surrounding properties are zoned as:

- Commercial;
- Industrial 1;
- Industrial 2;
- Industrial 3; and
- Special Uses.

High voltage Eskom substations and powerlines are located to the north and east of the proposed site. The Germiston High educational facilities is located 2.3 km south east of the site, while the Leeuwenhof Akademie is located 1.6 km north west of the site. The Willem Cruywagen is located 1.57 east of the site. The Rand Airport is 1.6 km south east of the site. The area is also characterised by Class 1b, Class 2 and Class 4 Industries in the North East and North Western sides of the proposed site. There is a wetland on the immediate western side of the proposed site.

The site is visible to passing traffic on the N3 highway, smaller urban streets and the railway line linking Germiston and Johannesburg, north of the site. A railway line runs approximately 0.5 km north to east of the proposed site. To further place the site in context, the land uses within all four major compass directions are described in Table 3 below. Table 4 below shows the surrounding land uses in the adjacent farms/ erven.

Table 3: Surrounding Land Uses by campus directions

Direction	Land Use	Distance (km)
North	Eskom substations and powerlines	Adjacent to the site
	N3 Highway	0.2 km
	Railway line	0.5 km
North east	Class 1b Industries	1 km
	Class 2	0.3 km
	Class 4	1 km
North west	Leeuwenhof Akademie	1.6 km
	Class 1b Industries	1 km
	Class 2	0.5 km
	Class 4	1 km
East	Eskom substations and powerlines	Adjacent to the site
	Willem Cruywagen Health Care Facility	1.57 km
South	M 46	1.1 km
	Railway line	0.8 km
South East	Germiston High	2.3 km
	The Rand Airport i	1.6 km
West	Wetland	Adjacent to the site
	N3 Highway	0.2 km

Table 4: Surrounding Land Use in the adjacent farms/ erven

Property Description	Land Use
Erf 1162, Jupiter X 3	Warehouses and Storage Facilities
Erven 73- 83, 124, 127, 132, Jupiter X 3	Industrial Uses
Erven 138 and 140. Jupiter X 3	Offices and Ware houses
Erven 675, 662, 873, 1332, Jupiter X 3	Commercial Uses, Warehouses, Industrial
Remainder of Portion 149 of the farm Elandsfontein, 108 IR.	Germiston Country Club
Portions 12-16,23,24,27,28,42,43 of Erf 59, Gosforth Park X 4	Raceway Industrial Park
Portions 1-8 of Erf 69, Gosforth Park X 2	Industrial Uses and Warehouses,
Remainder of Portion 707, Portion 870 and Remainder of Portion 344 of the farm Elandsfontein, 92 IR.	PPC Cement
Erven 31-33, 36, 37, Jupiter X 1	Warehouses, Industrial Uses and Distribution Centres

Erven 64-71, Jupiter X 5	Offices and Industrial Uses
Erven 61-62, Jupiter X 4	Warehouses, Storage and Distribution Centre
Erf 1162, Germiston, X 4	Tanker Services and Parking.

A-1.3 Details of the Project

The Ergo Mining Operations (Proprietary) Limited (Ergo Mining) (formerly DRDGOLD Mining Operations (Pty) Limited) is the controlling company for various mining operations conducting gold bearing tailings reclamation operations from sand dumps and slimes dams (dumps), created from historic gold mining located on the Witwatersrand, Gauteng. Ergo Mining is divided into two operating companies, namely Crown Gold Recoveries (Pty) Limited (CGR) and Ergo Mining (Pty) Limited (ERGO). It is worth noting that ERGO was established not only to treat Tailings Storage Facilities (TSFs) to recover gold, uranium and sulphur (in the form of iron pyrite) but also to use the opportunity to remove some of the TSFs to less environmentally sensitive areas and to place the tailings in better designed TSFs. These facilities were previously reclaimed and treated by AngloGold Ashanti Limited (AGA), but AGA discontinued reclamation activities on the East Rand Gold dumps in 2004 and 2007.

The proposed site was previously used for mining purposes which included conducting gold bearing tailings reclamation operations. A mining closure application process is currently being undertaken by ERGO, simultaneously with this application for Environmental Authorisation for the proposed industrial 1/ mixed use development by Abland. Effectively it has been agreed with the Department of Mineral Resources (DMR), that the end-land use will be Industrial 1/mixed use development at a site visit between DMR, SEF and the Department of Water and Sanitation (DW&S) on 20 May 2014. It must be noted that ERGO has given consent to Abland who would ultimately accept liability for the management and subsequent maintenance of the said mine once a closure certificate has been granted.

The proposed development will be developed into industrial/ mixed use development in terms of the Germiston Town Planning Scheme, 1985. According to the Spatial Development Framework (SDF) for the area, the area is earmarked for a mixed use /industrial zoning. The proposed erven will be privately owned by Abland. The extension of the 30m wide road reserve from Gosforth Park in the south (Van Riebeeck Road, which currently grants access to Gosforth Park and the Raceway Industrial Park area) gives access to the proposed development.

This road will extend to the Barlow Street in the north. A 25m wide east-west link road reserve (Europa Road) might link the development in the future with the N3 Eastern Bypass and/ or Gosforth Road to the east. To the south- west of the development, a proposed possible future access point is indicated. This proposed overhead access point will most probably require a new overhead bridge over the N3 eastern bypass to the Rosherville area to the west. Another possible future link road is proposed to the south west of the proposed site via a new Right of way Servitude, linking the development with Gosforth Road.

On the intersection of the north- south, east to west access roads, a retail/ commercial node is proposed.

Access to the proposed development will additionally be via the extension of Dimitri towards the east. A total of 5 access points will be developed. The development will be phased into 7 smaller developments (Figure 3 and Figure 4), consisting of the following uses:

- Industries (excluding noxious industries);
- Warehouses;
- Offices;
- Commercial Uses;
- Places of Refreshment (including drive-through restaurant) and Hotel;
- Place of Public Worship;

- Places of Instruction;
- Social Hall;
- Dry Cleaners;
- Builders Yard;
- Motor sales market;
- Truck Stop;
- Shops;
- Retail Trade;
- Place of Amusement;
- Access and Access Control;
- Public Open Space; and
- Roads.

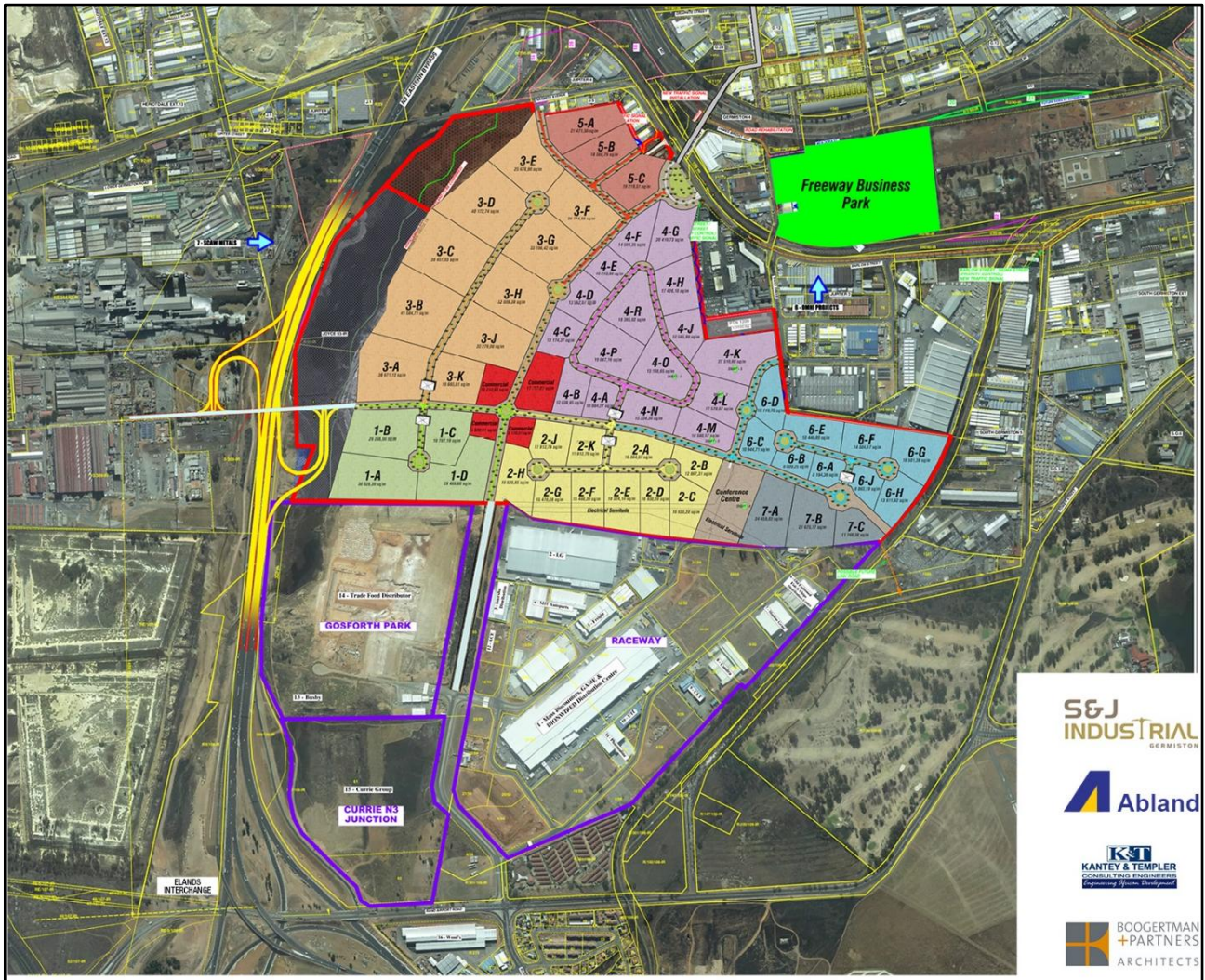


Figure 2: Proposed Layout Plan

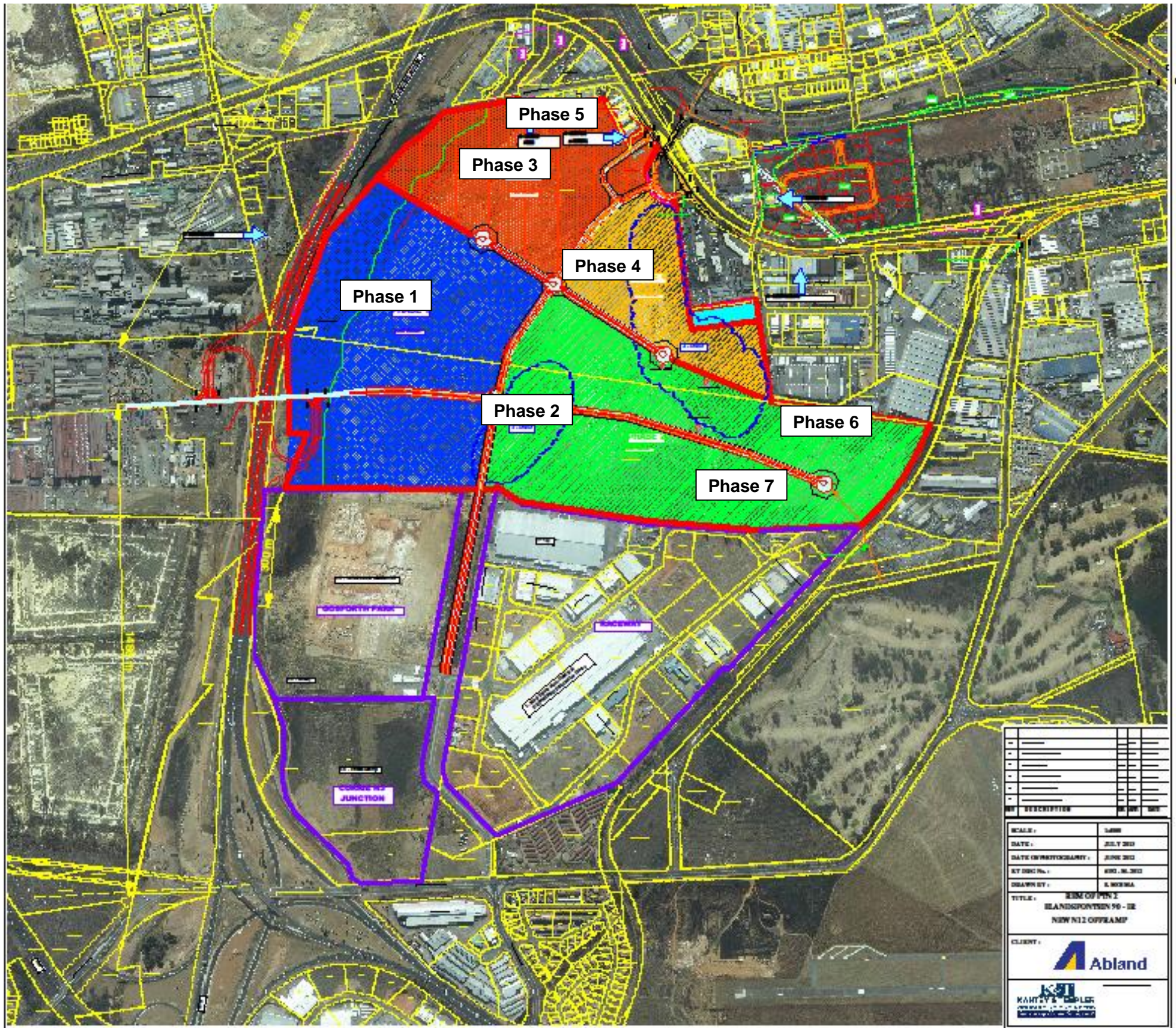


Figure 3: Proposed Layout Plan in Phases

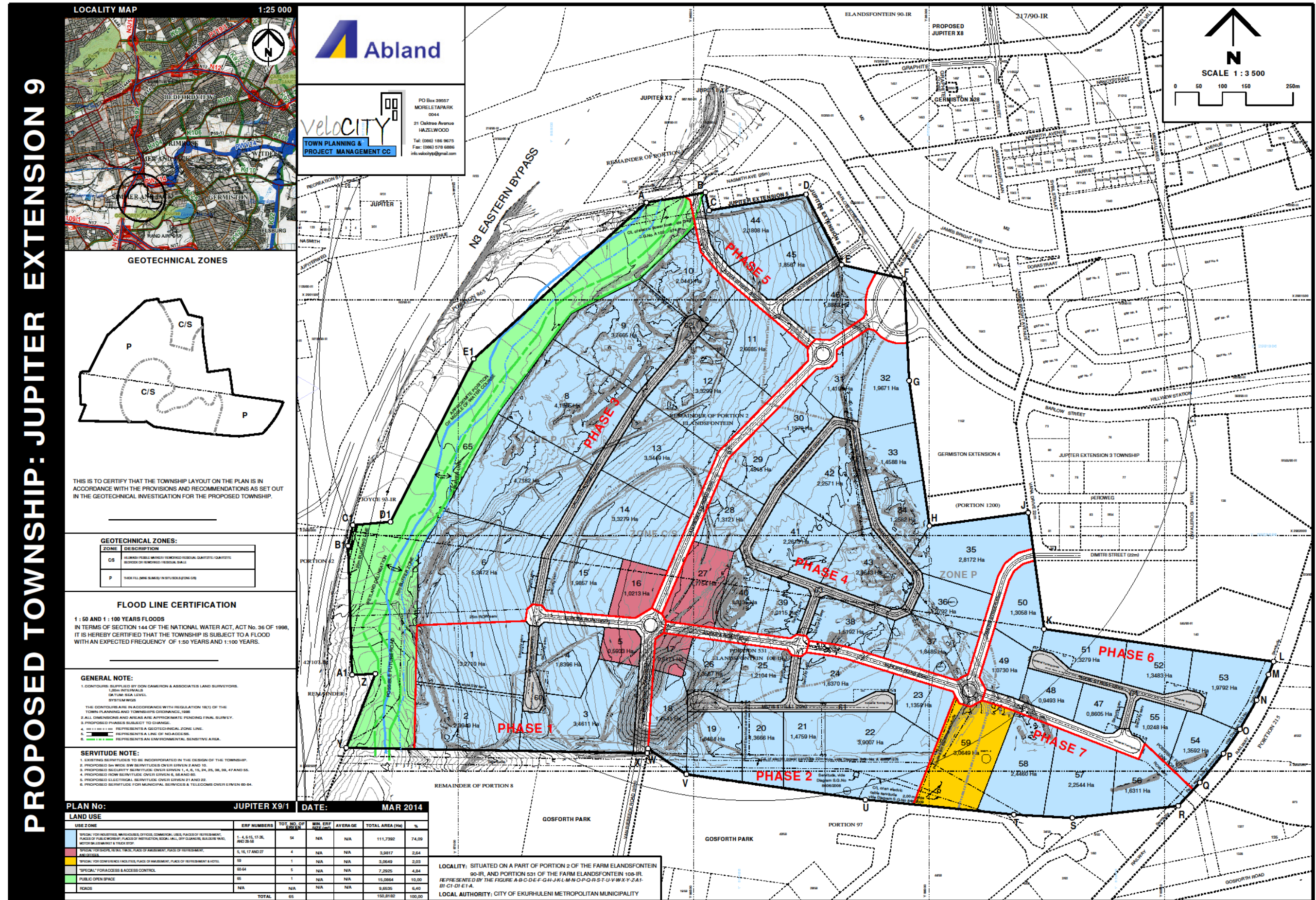


Figure 4: Detailed Proposed Layout Plan

A-2 LEGAL REQUIREMENTS APPLICABLE TO THIS APPLICATION

The aim of this component of the report is to provide a brief overview of the pertinent policies as well as legal and administrative requirements applicable to the proposed project. The application form informing the GDARD of intent to obtain an Environmental Authorisation was submitted on 17 July 2014. Subsequent to the submission of the Application for Environmental Authorisation form, the GDARD issued the project with the following reference number: **GAUT: 002/14-15/0089**.

The legislation, guidelines and policies applicable to this project are as follows:

A-2.1 The National Environmental Management Act, 1998 (Act No. 107 of 1998) and Environmental Impact Assessment Regulations of 2010

The EIA Regulations, promulgated under the 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. R 544 [requiring a Basic Assessment (BA) process] and R 545 (requiring a S&EIR process), the following listed activities are deemed by the Environmental Assessment Practitioner (EAP) to be applicable to the proposed development based on the information provided by the client.

The mentioned listed activities are deemed to potentially have a detrimental impact on the social and biophysical state of an area and as such, are required to undergo a S&EIR process.

Table 5: List of Applicable EIA Activities

GNR No & Activity Number	Activity Description	Project Description
GN No. R 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 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.	The proposed project will also include the construction of a bridge over an existing wetland to the western side of the site.
	18 The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock or more than 5 cubic metres from: (i) a watercourse	During the construction of the proposed road, more than 5 cubic metres of soil will be in filled and deposited into the wetland/wetland buffer. There will also be dredging, excavation, removal and moving of soil from the wetland.

GNR No & Activity Number		Activity Description	Project Description
GN No. R 545 of 18 June 2010	15	Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more; except where such physical alteration takes place for: (i) linear development activities; or (ii) agriculture or afforestation where activity 16 in this Schedule will apply.	The extent of the proposed site is approximately 158, 8182 ha.
	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 metres; or (iv) the road will cater for more than one lane of traffic in both directions.	To the south- west of the development, a proposed possible future access point is indicated. This proposed overhead access point will most probably require a new overhead bridge over the N3 eastern bypass to the Rosherville area to the west. The road will be managed by the South African National Roads Agency (SANRAL)

A-2.2 Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)

As mentioned above, a closure certificate application process is currently being undertaken for the site with view of developing an industrial/ mixed use development.

The proposed site has previously been granted a Prospecting and a Mining Right:

- New **Prospecting Right** with reference number GP 30/5/1/1/2 (0167) PR has been issued to Rand Quest Syndicate Limited for prospecting Gold ore and all minerals on the remaining extents of Portion 2 of the Farm Elandsfontein 90IR and Portion 531 (a portion of Portion 8) of the Farm Elandsfontein 108 IR.
- A new **Mining Right** with reference number GP 30/5/1/2/2 (0140) MR has been issued to Ferreira Estate and Investment Company Limited for mining Gold ore on the remaining extents of Portion 2 of the Farm Elandsfontein 90IR.

The applicant in associated with the current landowner, Simmer and Jacks Mines (Pty) Ltd (S&J), are currently in discussion with the above companies to resolve the matter.

According to the Mineral and Petroleum Resources Development Regulations of 2004, Government Notice (GN) Regulation. 527, promulgated in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA), *Section 57 (1) states that an application for a closure certificate by the holder of prospecting right, mining right, retention permit or mining permit in terms of Section 43 (4) of the Act must be completed in a form of Form P, contained in Annexure II.*

Furthermore, Section 57(2) states that the application form must be accompanied by the following documentation-:

- A Closure Plan;
- An Environmental Risk Report;
- A Final Performance Assessment Report; and
- An application to transfer environmental liabilities and responsibilities in Form O contained in Annexure II.

The closure application form is therefore being submitted concurrently with this Final Scoping Report to the Department of Mineral Resources (DMR).

A-2.3 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 as well as integrated 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.

The wetland habitat on the property occurs along the lower lying portion on the western boundary of the site. It is associated with a tributary of the Natalspruit and can be classified in terms of its hydro-geomorphic characteristics, as a channelled valley bottom wetland that receives both surface and subsurface water input. The proposed road will be constructed above the existing wetland and therefore the proposed project will trigger the following water uses listed in Section 21 of the NWA:

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

The proposed project thus requires a Water Use Licence (WUL), which is administered by the Department of Water and Sanitation (DW&S), and therefore, a Water Use License Application (WULA) will be submitted to the DW&S during the EIR phase.

A-2.4 Other Legal Requirements

A-2.4.1 Constitution of the Republic of South Africa Act, 1996 (Act No. 108 of 1996)

The Constitution of the Republic of South Africa Act, 1996 (Act No. 108 of 1996) (here in after referred to as the Constitution) 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.

A-2.4.2 National Road Traffic Act, 1996 (Act No. 93 of 1996)

To provide for road traffic matters which shall apply uniformly throughout the Republic and for matters connected therewith. The Act specifically deals with matters related to improving Road Safety in the Republic of South Africa. The Act furthermore provides a statutory framework for issues relating to the transportation of dangerous goods, operator fitness, fitness of vehicles, fitness of drivers, registration and licensing of motor vehicles, manufacturers, builders and importers, Road traffic signs and general speed limit, accidents and accident reports, reckless or negligent driving, inconsiderate driving, driving while under the influence of intoxicating liquor or a drug having a narcotic effect, and miscellaneous offences and resumptions and legal procedures.

A-2.4.3 National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)

The purpose of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEM: BA) 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 applicable to this application for environmental authorisation, in the sense that it requires the project applicant to consider the protection and management of local biodiversity.

A-2.4.4 National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)

The Act aims to reform the law regulating waste management in order to protect the health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development; to provide for institutional arrangements and planning matters; to provide for national norms and standards for regulating the management of waste by all spheres of government; to provide for specific waste management measures; to provide for the licensing and control of waste management activities; to provide for the remediation of contaminated land; to provide for the national waste information system; to provide for compliance and enforcement; and to provide for matters connected therewith.

The proposed project does not trigger the need for a Waste Management Licence (WML) due to the following reasons during construction and operation:

- Workers will not be housed/ based on site and will be transported to and from the site every day – thus only chemical toilets will be provided for during construction.
- Flush toilets will be connected to the municipal sewerage system during operation.

A-2.4.5 National Heritage Resources Act, 1999 (Act No. 25 of 1999)

This Act legislates the necessity for Cultural and Heritage Impact Assessment (HIA) in areas earmarked for development, which exceed 0.5 hectares (ha) and the rezoning of a site exceeding 10 000 m² (1 hectare) in extent. The Act makes provision for the potential destruction to existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered by the Gauteng Provincial Heritage Resources Authority (PHRAG).

Due to the current state of the proposed site, it is not envisaged that a HIA will be undertaken.

A-2.4.6 Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)

To provide for control over the utilisation 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.

A-2.4.7 Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

The object of the Act is 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.

A-2.4.8 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.

A-2.5 Provincial Policies and/or Guidelines

A-2.5.1 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 [Department of Environmental Affairs and Tourism (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 IEM Information Series guidelines are also considered during this S&EIR application process.

A-2.5.2 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.

A-2.5.3 Protected species – Provincial Ordinances

Provincial ordinances were developed to protect 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.

A-2.5.4 Provincial and Municipal By-laws

The EMM have developed local bylaws and various policies relating to various environmental aspects. Abland will ensure that such policies and bylaws, as far as possible, will be adhered to.

A-2.5.5 Development Strategies

According to the Municipal Systems Act, 2000 (Act No. 32 of 2000) (MSA), all municipalities have to undertake an Integrated Development Plan (IDP) process to produce IDPs. An IDP is a legislative requirement, and has a legal status and supersedes all other plans that guide development at local government level. In terms of Section 26 (e) of the MSA, every municipality is also required to formulate a SDF as a part of its IDP.

The following Development Strategies are applicable to the proposed project:

Government Sphere	Applicable Development Strategy
Metropolitan	Ekurhuleni Metropolitan Municipality IDP (2013/14-2015/16)
	EMM Spatial Development Framework (MSDF, 2010/11)
	Gauteng Spatial Development Framework (GSDF) 2000
	Ekurhuleni Growth & Development Strategy 2025

A-3 DETAILS OF THE APPLICANT

The details of the project applicant are:

Name of Applicant	Postal Address	Relevant Numbers
Abland (Pty) Ltd Mr Jurgens Prinsloo	PO Box 67663 Bryanston 2021	Tel: (011) 510 9933 Fax: (011) 510 9990

Abland is a South African based property development company. The company's core business is to provide a fully integrated property development and management service. Commercial, retail and industrial properties form part of the company's portfolio of services. Property management and administration is handled by their management company, Abreal Property Management (Abreal) Please refer to Figure 5 below

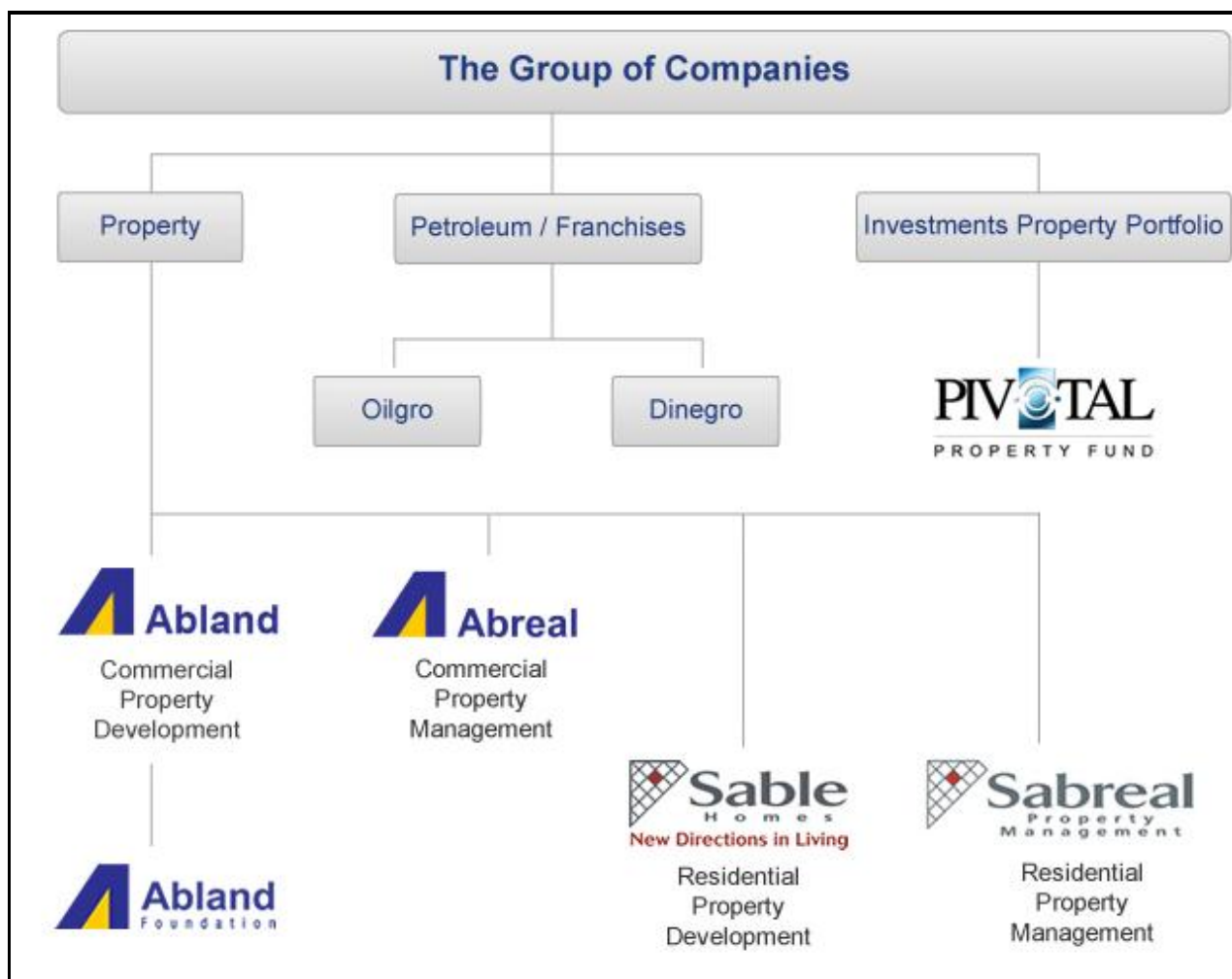


Figure 5: Abland Company Group of Companies

A-4 NEED AND DESIRABILITY OF THE PROJECT

The proposed development is in accordance with the Germiston Town Planning Scheme, 1985. According to the SDF for the area, the area is earmarked for a mixed use/ industrial zoning. A closure certificate application is being lodged with the DMR for the site as it was previously used for mining operations conducting gold bearing tailings reclamation operations from sand dumps and slimes dams (dumps).

The development will also be motivated by means of the principles of the following:

- Gauteng Spatial Development Framework (GSDF) 2000;
- Ekurhuleni Metropolitan Municipality IDP (2013/14-2015/16);
- Ekurhuleni Growth & Development Strategy 2025; and
- EMM Spatial Development Framework (MSDF, 2010/11).

The Remainder of Portion 2 of the farm Elandsfontein 90 IR and Portion 531 of the farm Elandsfontein 108 IR is located in an area where several new industrial and commercial developments have been developed and are also planned in the immediate vicinity of the proposed site.

A-4.1 Access

The locality of the proposed site adjacent to existing and future industrial developments, and also major through routes and highways, are vitally important. Very few land uses are compatible with industrial uses and therefore it is preferable for industrial uses to be located in separate industrial and commercial nodes. The

accessibility of the site is another advantage. There will be five (5) access points to the proposed development. To the north, access will be obtained via Nasmith Avenue, just to the west of the existing Jupiter Extension 5 Township. To the west, the site will connect to the existing Dimitri Avenue, /Vana Drive adjacent to Jupiter Extension 3. The 5 access points will be to the south of the development, through an extension of Van Riebeeck Road, which currently grants access to Gosforth Park and Raceway Industrial Park area.

Nasmith Avenue/ Barlow Street connects to the M37 Refinery Road to the east, and Cleveland Road to the west. Barlow Street connects the site to the east-west link, while Refinery Road connects the site to Germiston CBD and the M2 Highway. The site is further situated just to the north of the M46 Rand Airport Road/ Power Street which in turn connects to the site to the Elands Interchange between the N3, N12 and N17 Highways. The site's close proximity to Rosherville, Gosforth Park, Jupiter and Germiston Driehoek Industrial areas also ensures the optimal use of existing infrastructure, including electricity, roads and water and sanitation networks. The proposed development will also strengthen the existing Germiston Industrial Node.

A-4.2 Land-use

Open and vacant, unutilised land within a built-up area can be perceived as a weakness due to the security threat that vacant land imposes, as well as the negative influence it has on the image of a neighbourhood. The vacant land, which implies lower densities, makes the provision of essential municipal services less viable and more expensive to provide. By developing the existing land within the municipal boundaries with higher densities, the phenomenon of urban sprawl can be curbed and the development of urban fibre can be stimulated. The proposed land use rights of the erven accommodated in the development, Jupiter Extension 9, are in accordance with the proposals of the IDP, as the IDP earmarks this area for industrial development and the site is in close proximity to major routes in the area.

Furthermore, the proposed development can rely on a broad human resource base due to its close proximity to formal and informal developments in the area. Skilled, semi-skilled and unskilled labour is available.

The proposed development will positively influence the income base of the EMM. The income generated by rates is a function of land value, which is in turn a function of the land use. The establishment of non-residential developments broadens the economic base of the area.

The development will also ensure the following:

- Infill development – The application site is a vacant portion of land situated adjacent to existing and future industrial areas, within the Municipal boundaries.
- Work opportunities in close proximity to place of residence – as mentioned previously a large labour force (skilled, semi-skilled and unskilled) is available in close proximity to the proposed development.
- Optimal use of existing infrastructure.

Taking into account the contextual characteristics of the area and high accessibility, of the site, the proposed development for which there is proven need, could be regarded as desirable.

A-4.3 Socio-Economic

The development can be regarded as being desirable and will have several beneficial social and economic impacts on the area, which can be summarised as follow:

- Optimum utilisation of services and infrastructure.
- Increase in property values of surrounding properties.
- Increased security.
- Compatibility with surrounding land uses.

The proposed industrial/ mixed land use development will act as a catalyst for the sustainable development of the larger precinct. The remaining inherent potential of the surrounding land will be unlocked through this development. The building plans and site development plans that must be submitted before construction can commence, will have to comply with the relevant design guidelines and development parameters of pending land use policies. The proposed development can thus be perceived as desirable from a land use perspective.

The proposed development will contribute to the overall efficiency, sustainability and improved quality and liveability of the greater metropolitan area.

Urban Form

Several areas around the site have already been developed for industrial purposes. These areas are well-established, well-planned and properly developed. The Jupiter area has a very strong industrial urban form and is also earmarked for such, in terms of the ruling development frameworks and guidelines.

Character of the Environment

The area in question is characterised by patches of vacant land in close vicinity to the application site. There is also typical industrial-type of land uses and commercial warehousing to the south, east and west, as well as various other mixed business/retail facilities. The proposed development to be known as Jupiter Extension 9 will fit in with the existing character of the area.

Influence to the Area

The proposed development will fit in with the existing urban form and character of the area. It will uplift the area aesthetically and economically and might attract other potential developers to the area as well. Thus, in effect, it might have a very positive financial influence to the precinct. Furthermore, the proposed development is adjacent to other already developed and planned industrial and mixed use developments within the area. It will thus eliminate urban sprawling to some extent as well. This specific area and the land uses being proposed on site are deemed as prominent land uses with strategic significance to the local area and community, as well as to the broader urban regions of EMM. Thus, in general it can be argued that the proposed establishment application will have a positive influence to the area.

SECTION B: THE RECEIVING ENVIRONMENT

In order to, with any level of confidence, assess the potential impacts of the proposed industrial 1/ mixed use development on the receiving environment, one needs to first assess the baseline conditions found over the site. 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 Location and Accessibility

The proposed site is located on Portion 531 Elandsfontein 108-IR and Remainder of Portion 2 of Elandsfontein 90 IR, EMM, Gauteng Province. The study area is located just south of the Geldenhuis Interchange (N3 Eastern bypass and M2), along the Nasmith Avenue/ Barlow Street in the Jupiter Industrial area. Nasmith Avenue/ Barlow Street connects to the M37 Refinery Road to the east, and Cleveland Road to the west. Barlow Street connects the site to the east-west link, while Refinery Road connects the site to Germiston CBD and the M2 Highway. The site is further situated just to the north of the M46 Rand Airport Road/ Power Street which in turn connects to the site to the Elands Interchange between the N3, N12 and N17 Highways.

The Remainder of Portion 2 of the farm Elandsfontein 90 IR comprises of 366.8315 ha (a portion of portion 8) of the farm Elandsfontein 108 IR is 75, 7381 ha in total. The total area of the farm portions to be used for the proposed development is approximately 158, 8182 ha in extent.

The extension of the 30m wide road reserve from Gosforth Park in the south (Van Riebeeck Road, which currently grants access to Gosforth Park and the Raceway Industrial Park area) gives access to the proposed development.

B-1.2 Regional Climate

The area falls under the Highveld Climatic Zone which is characterised by warm summers with rainfall. Winters tend to be mild to warm during the day to cold at night with sharp frosts. Johannesburg has an annual average of between 8 and 10 hours of sunshine per day and lies 1753 m above mean sea level (mamsl).

B-1.3 Topography

The local topography is generally dominated by urban structures and old mine residue deposits. Please refer to the Locality Map in Figure 1.

B-1.4 Regional Geology

The oldest rocks outcrops within the study area are sediments of the Witwatersrand Supergroup which form the pronounced ridges in the Germiston region. Gold-bearing reefs within the Witwatersrand sediments (Figure 6)¹ have been mined over a significant portion of the East Rand, and these operations have given rise to the mine dumps that are currently being reclaimed by ERGO and other operators in this area.

¹ Geologic map of the Witwatersrand basin and location of goldfields (Frimmel et al., 2005, Econ Geol 100th Anniv Vol, p. 772): <http://www.min.tu-clausthal.de/www/lager/Exc2005/bilder/klein/sa003.htm>

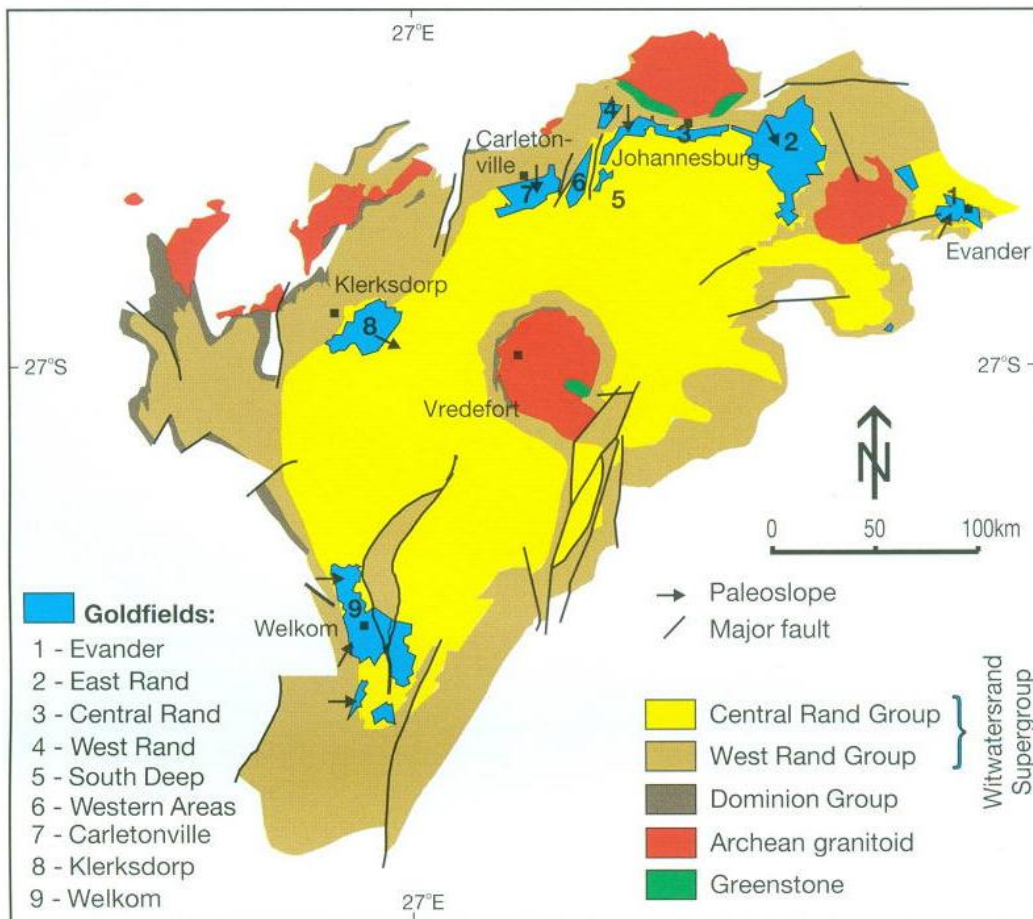


Figure 6: Geologic map of the Witwatersrand basin and location of goldfields

The Turffontein subgroup (quartzite with prominent conglomerate zones and sandy shale) of the Witwatersrand Supergroup is conformably overlain by Klipriviersberg Group (basaltic lava, agglomerate and tuff) of the Ventersdorp Supergroup, which outcrops to the south-western portion of the study area. This formation is unconformably overlain by the Chuniespoort Group (Black Reef quartzite and Malmani dolomite) of the Transvaal Sequence, which outcrop along the southern margins of the study area.

Surface outcrops across the study area consist predominantly of the Dwyka Group and Vryheid formation, of the Karoo Supergroup, which has been unconformably deposited on the older strata. The Vryheid formation consists of feldspathic sandstone, shale, mudstone and coal (Wilson & Anhaeuser, 1998). The formation contains five bituminous coal seams which have been historically mined in the Springs area. Unconsolidated alluvial deposits (sands) of quaternary/tertiary age are found along streams, wetlands and pans (Zawada, 2004).

Strata in the Witwatersrand group generally dip at a variable angle in a south or south westerly direction towards the centre of the East Rand basin. The regional geology has been modified by the intrusion of both Karoo- and Pilanesberg-age dykes. Extensive dolerite sills, such as the "Green Sill", were frequently encountered during mining in the Springs area.

B-1.5 Soils

In general, the soil consists of mainly hill wash materials, alluvium along watercourses and residual soils all derived from the underlying geology. The major constituents of the hill wash and residual soils are sand, fine gravels and minor silt, whilst in the water courses the alluvial deposits consist primarily of sand and clay with minor gravels. Locally developed pedogenic horizons of ferricrete and ferruginous soils are to be found, particularly along the margins of water courses and the capillary fringes of perched water. These soils are

typically poor and acid, stony or sandy.

A description of the agricultural characteristics of the soils are not applicable to the study area due to past mining and urban development.

B-1.6 Land Capability

Agricultural land capability is not applicable. Apart from shallow undermined areas (which require special foundations) and un-rehabilitated workings, the land is generally capable of supporting urban development. This includes the land currently occupied by mine dumps.

B-1.7 Land Use

The land use around the proposed site includes urbanised areas which consist of suburbs, transportation systems, industrial areas and mine residue disposal sites.

B-1.8 Surface Water

The study area falls within the Quaternary Catchment **C22B** and contains a single stream that drains through the site in its north-western corner. The Quaternary Catchment has been subdivided into a local catchment of 890.71 ha, which incorporates the total drainage area for the unnamed stream as it exists in the study area.

The identified wetland habitats within the study area are associated with this particular stream, which forms a tributary of the Natalpruit, one of the most polluted perennial rivers in Gauteng. The stream originates 3.67 km upstream of the study area just north of the Geldenhuis interchange and joins several other tributaries before it flows into the Natalpruit, approximately 9.13 km downstream of the study area. The local catchment is characterised by a highly urbanised area with several slimes dams that drain into a single stream, which has been highly transformed in terms of its hydrology and biodiversity.

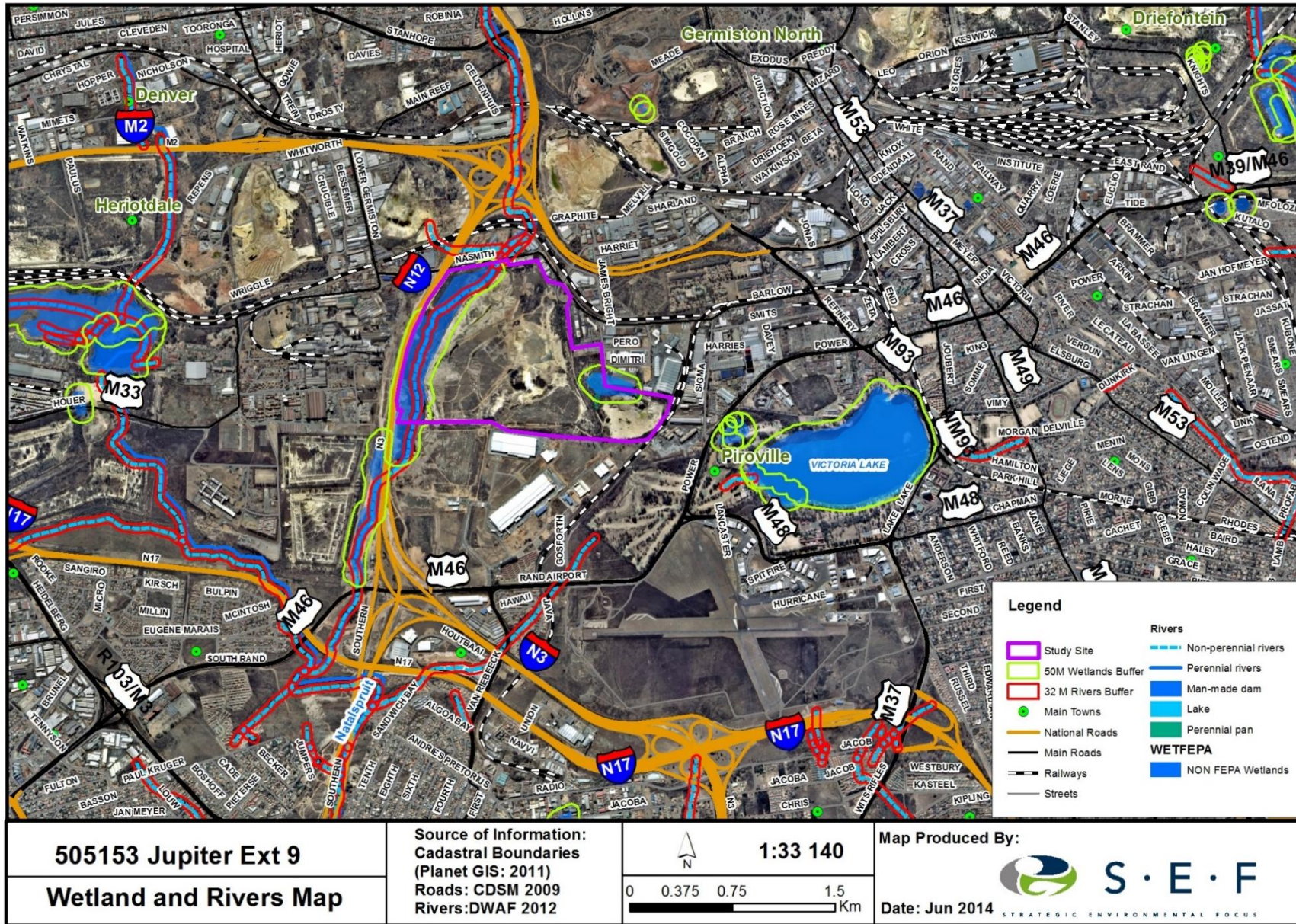


Figure 7: Wetlands and Rivers Map

The drainage on the site broadly mimics the topography, which entails that the overland drainage would flow from the higher parts of the site on the eastern section down towards the wetland on the western boundary of the site. There are many areas where erosion has taken place mainly as a result of the slimes reclamation processes. This has also resulted in further drying of the surrounding areas due to more water runoff and less water retention of the soil.



Figure 8: Erosion as a result of the slimes reclamation processes

B-1.9 Groundwater

The proposed site falls within the Witwatersrand Basin which is a geological formation in the Witwatersrand, South Africa. The Basin straddles the North West, Gauteng and the Orange Free State Provinces and is of the same period as the Vredefort impact of 2.023 million years ago, and the Bushveld Igneous Complex. During the underground mining operations within the Witwatersrand, water was pumped to the surface to enable mining to take place. As mining stopped the pumping of underground water ceased and the mine voids started filling with water. Through the oxidation of the sulphide minerals in the voids, Acid Mine Drainage (AMD) started to form and in the case of the Western Basin, started to decant on surface. Water in the Central and Eastern Basins has yet to decant but is continually rising.

The Central Basin has not been active for the past 2 to 3 years in terms of dewatering. Although historical mine water quality records, for when active mining was still taking place, are available from mining companies, the current geochemical conditions associated with flooding of the old mine workings would be materially different from the past situation of active mining and associated preferential flow paths. The flooding of the mine workings has probably mobilised accumulated pyrite oxidation products, which would result in the rapid deterioration of accumulated mine water. It is therefore sensible to allow for more impacted mine water in the planning and design of the mine water abstraction and treatment infrastructure.

B-1.10 Air Quality

Dust is particularly problematic when wind speeds increase, especially during the dry winter season. The windy period is typically during the months of August to November in Johannesburg. Dust emissions from active and discontinued dumps remain one of the most significant environmental issues facing the proposed site. High levels of dust due to wind erosion of tailings dams can lead to respiratory problems as well as causing a nuisance. As previously discussed, a closure certificate application process is currently being undertaken with objectives of having a shallower side slopes of the remaining consolidated tailings material and to provide a soil/rock cladding on the slopes. The proposed development will therefore reduce dust generation due to hard surfaces on the greater parts of the site.

B-1.11 Fauna and Flora

Flora

A large number of declared alien invasive species are present along the edge of the wetland and pose a

significant risk to the larger environment. These species include *Acacia mearnsii*, *Tamarix chinensis*, *Eucalyptus camaldulensis*, *Robinia pseudoacacia*, *Campuloclinium macrocephalum*, *Cirsium vulgare* and the alien invasive grass *Pennisetum clandestinum*.



Figure 9: Vegetation Type

On the north-eastern edge of the wetland, a stand of *Eucalyptus camaldulensis* trees occur that was most probably planted to assist in the drying of the wetland and slimes dams present at that time. These trees range in height with some up to an estimated 15-18 m tall.

The areas bordering onto the wetland comprises a mixture of excavated land, small slimes/water dams and small areas where the terrestrial vegetation have recovered though still in an early secondary successional stage.

Fauna

Animal life in this study area is poorly represented, probably due to the fact that the habitat has been fragmented by mining on site. No rare or endangered species of mammals, birds, reptiles or amphibians were observed during the site visit.

B-1.12 Archaeological and Cultural resources

The mine dumps are sometimes regarded as landmarks which are integral to the cultural heritage of Johannesburg. This point can be debated and some people disagree and do not attach any positive cultural value thereto. The proposed site does not have any archaeological and cultural resources.

B-1.13 Wetlands

The wetland habitat on the property occurs along the lower lying portion on the western boundary of the site. It is associated with a tributary of the Natalspruit and can be classified in terms of its hydro-geomorphic characteristics, as a channelled valley bottom wetland that receives both surface and subsurface water input. Similar to other valley bottom wetlands, the delineated wetland displays a gradient of wetness across its width.

Facultative hydrophytes and terrestrial species dominate the drier wetland portions, while obligated hydrophytes occur in the wetter areas (Enviroguard Ecological Services cc, 2014).

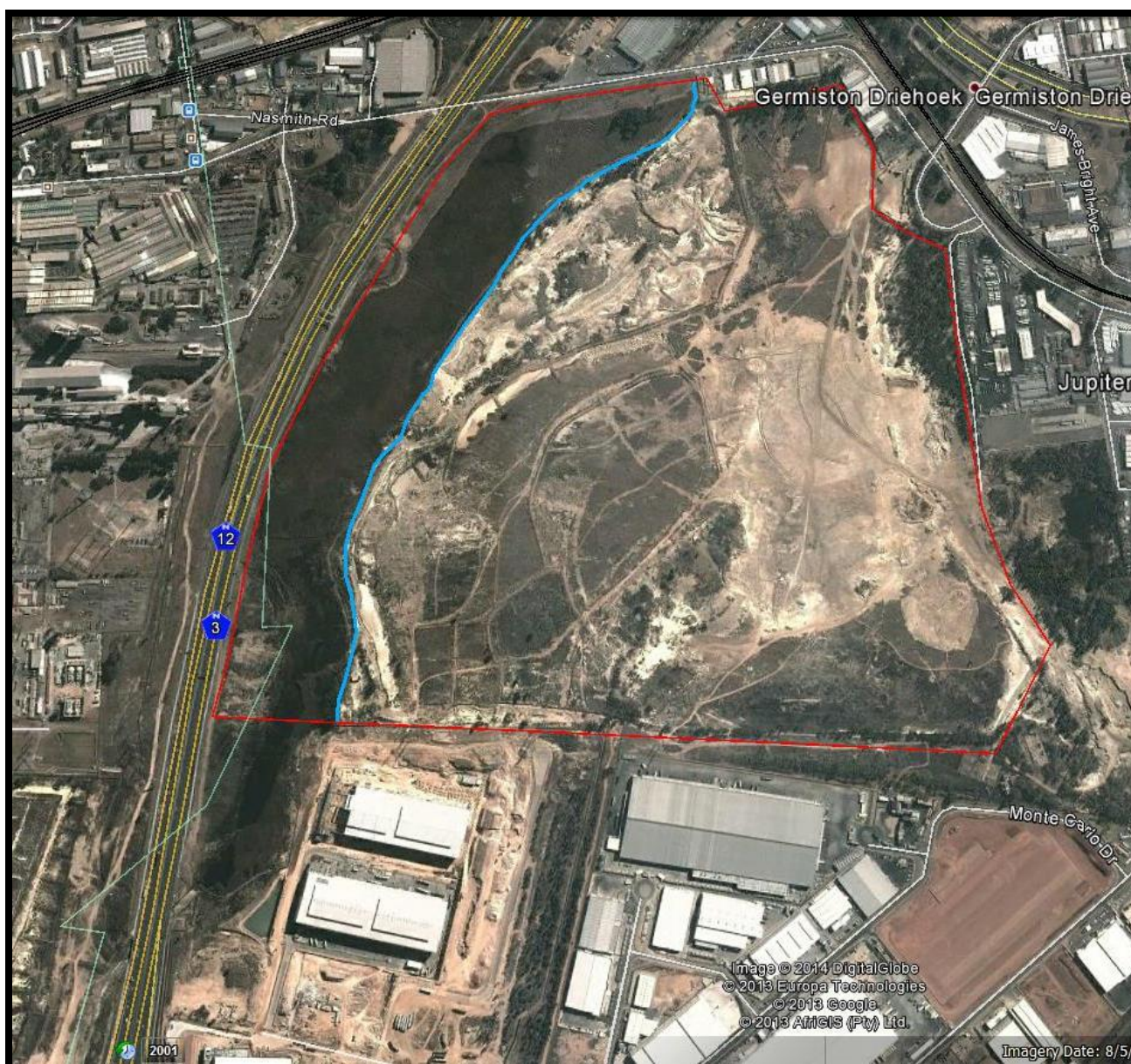


Figure 10: Wetland present on site (Blue line = edge of the wetland) (Source: Google earth 2014)

The vegetation of the central wet to moist portion of the valley bottom wetland (permanently wet area) is dominated by a homogeneous stand of the obligate hydrophyte *Phragmites australis* (Common Reed) (see Figure 11 below). *Phragmites australis* is the dominant wetland plant species inside the study area, as well as downstream of the study area where it forms similar large stands. It commonly forms extensive stands in moist and permanently wet (standing water of up to 1 m deep) areas and can spread at a rate of 4-5 meters per year. The plant is known to form dense stands with little place for other plant species to also establish.



Figure 11: Presence of a wetland (Enviroguard Ecological Services cc, 2014)



Figure 12: Wetland with 30m buffer zone

B-1.14 Visual Aspects

Slimes have been removed from site, and as a result, visual aspects have significantly improved. The site is visible to passing traffic on the N3 highway, smaller urban streets and the railway line linking Germiston and Johannesburg, north of the site. Much of the activity is also visible from industrial areas. Any dust liberated from the site is visible to anyone living or working in or travelling through the area.

B-1.15 Atmospheric pollution

High levels of dust due to wind erosion of tailings dams can lead to respiratory problems as well as causing a nuisance. The proposed development will therefore allow for industrial type/ mixed used development once the site has been granted a closure certificate.

B-1.16 Presence of servitudes

There is a buried power line cable feeding the pump station. This will be left buried or sold if required as part of the electrical infrastructure for the future development.

The Tailings Storage Facility (TSF) plant in Brakpan, is located up to 50km from the site. In order to bring to account the resources on the western side of town, the 600 000tpm, 62km Crown-Ergo pipeline was constructed to link the assets. The R350 million pipeline was constructed of steel and innovative technology was used to install the high-density polyurethane (HDPE) lining. Please refer to Figure 13 for the location of the pipeline.

In summary, the following servitudes affect the proposed development and have been incorporated in the Layout Plan:

- Electrical Power Servitude along the southern boundary of the site;
- Electrical Cable Servitude of 2,00mm wide along part of the southern boundary of the property;
- A mine shaft servitude near the southern boundary of the property;
- Rand Water Board Servitude along the south eastern boundary of the property;
- Servitude that traverse part of the property to the north; and
- Electrical Power Lines Servitudes along part of the northern boundary of the property (Eskom Tx's Croydon- Jupiter 275kV powerline, and Eskom Tx's Croydon- Jupiter 275kV powerline).

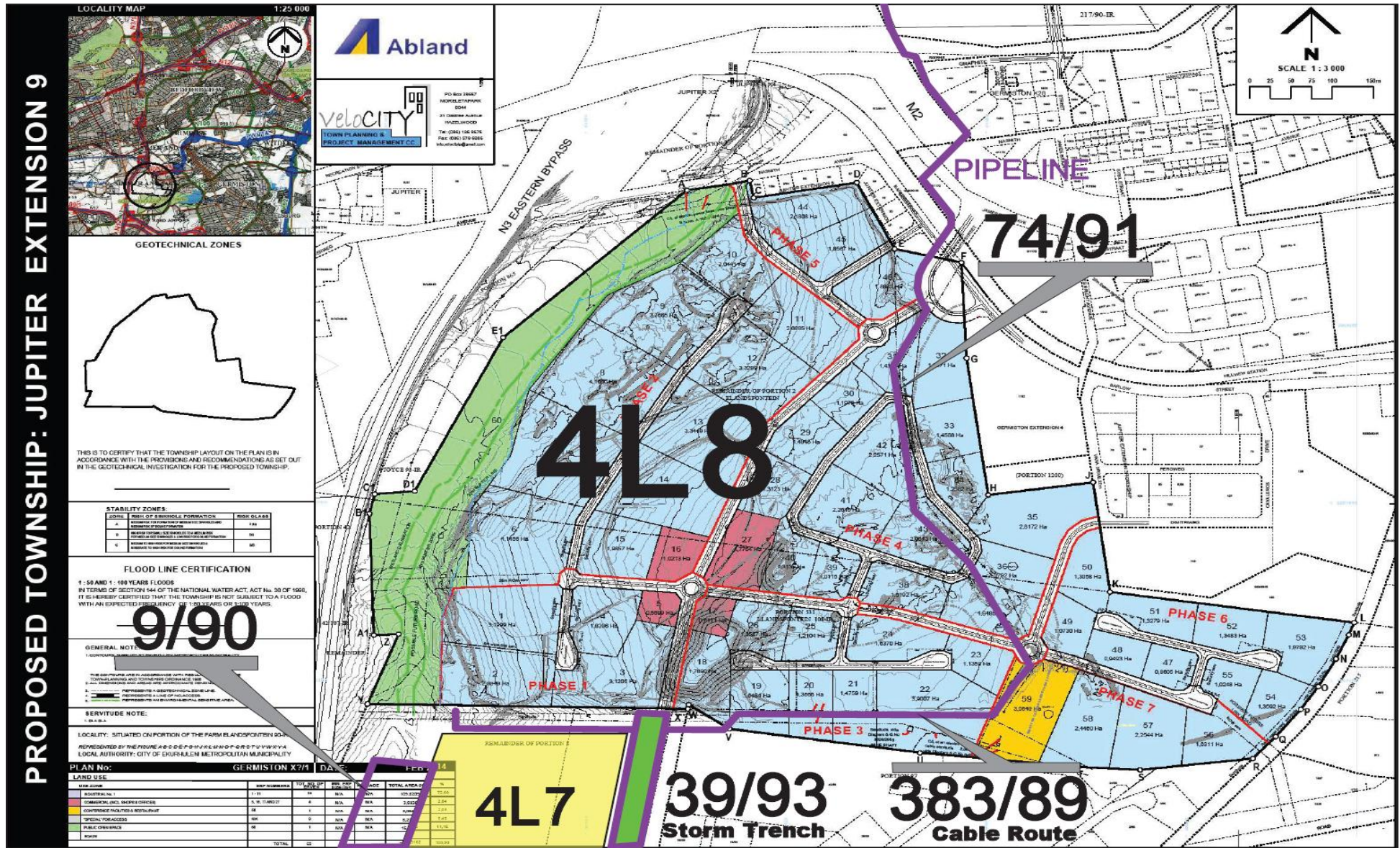


Figure 13: Location of the pipeline

B-2 SOCIAL ENVIRONMENT

B-2.1 Demographic Conditions

Ekurhuleni means the “place of peace”, which may aptly describe a region, made up of people from all ethnic groups and cultures, intent on putting an oppressive and sometimes violent past behind it but it does not accurately reflect the hive of activity coming from Southern Africa’s major industrial centre.

The study area falls within Ward 36 of the EMM, Germiston. According to the latest population census [Statistics South Africa (Stats SA), 2011], the total population for the ward is 27 057, which is 0.22% of the Gauteng’s population (12 272 263).

The median age of the ward is 30 years of age, which is higher than that of Gauteng (28) and South Africa (25). As can be seen from Table 6 below, the majority of Ward 36 population is aged between 18 and 64 (70.5%), with 22.8% being under 18 years of age. The over 65 years of age population is relatively large (6.7%) as compared to Gauteng (4.3%).

Table 6: Population by age category

Column	Ward 36	Gauteng	South Africa
Under 18	22.8%	27.9%	34.9%
18 to 64	70.5%	67.8%	59.8%
65 and over	6.7%	4.3%	5.3%

Table 7 below indicates that the majority (51.2%) of Ward 36 population is Black African, which is much lower than that of Gauteng (77.4%) or South Africa (79.2%). This number is followed by 41.8% White persons, which is much higher than that of Gauteng (15.6%) or South Africa (8.9%). Table 8 shows that the majority of persons within this ward speaks Afrikaans (28.1%) as their home language, which is more than double the figure for Gauteng (12.3%).

Table 7: Population group

Column	Ward 36		Gauteng		South Africa	
Black African	51.2%	13,841	77.4%	9,493,684	79.2%	41,000,938
Coloured	3.1%	848	3.5%	423,594	8.9%	4,615,401
Indian or Asian	3.2%	864	2.9%	356,574	2.5%	1,286,930
White	41.8%	11,298	15.6%	1,913,884	8.9%	4,586,838
Other	0.8%	206	0.7%	84,527	0.5%	280,454

Source: Statistics South Africa, 2011

Table 8: Population by language most spoken at home

Column	Ward 36		Gauteng		South Africa	
Afrikaans	28.1%	7,611	12.3%	1,502,940	13.2%	6,855,081
English	22.7%	6,147	13.1%	1,603,464	9.5%	4,892,622
IsiZulu	12.6%	3,411	19.5%	2,390,037	22.4%	11,587,374
Sepedi	5.1%	1,377	10.5%	1,282,896	8.9%	4,618,575
Sesotho	4.5%	1,209	11.4%	1,395,090	7.4%	3,849,561
Other	10.9%	2,937	3%	371,574	1.6%	828,258

Source: Statistics South Africa, 2011

According to Stats SA (2011), Ward 36 has a total of 9 404 households, which is equal to 0.24% of the households in Gauteng. There are a total of 2.8% households in this ward that are classified as informal dwellings (shacks), which is less than 10% of the rate in Gauteng (44.4%) and about 10% of the rate in South Africa (34.9%). From these households, Table 9 below shows that a large percentage (97.5%) are getting water from a regional or local service provider, which is a little higher than the rate in Gauteng (93.5%) and about 25% higher than the rate in South Africa (76.9%).

Table 9: Population by water source

Column	Ward 36		Gauteng		South Africa	
Service provider	97.5%	26,382	93.5%	11,477,568	76.9%	39,807,757
Tanker	0.3%	86	1.5%	186,720	2.7%	1,382,835
Other	1.4%	385	2%	239,036	2.5%	1,298,645

Source: Statistics South Africa, 2011

Table 10 below indicates that almost all (99%) households within Ward 36 have electricity for at least one of cooking, heating or lighting, whereas Gauteng has about 10% less (87.9%) and South Africa almost 20% less (85.3%). A total of 84.9% of Ward 36 households have electricity for cooking, heating and lighting, which is about 10% more than Gauteng and almost 30% more than South Africa.

Table 10: Population by electricity usage

Column	Ward 36		Gauteng		South Africa	
No electricity	1%	91	12.1%	473,811	14.7%	2,120,974
Have electricity for some things	14.1%	1,329	15.3%	598,985	29.4%	4,246,047
Have electricity for everything	84.9%	7,985	72.6%	2,836,225	55.9%	8,083,139

Source: Statistics South Africa, 2011

In terms of access to flush or chemical toilets, 97.6% of the Ward 36 population have access to this service, which is about 10% higher than the rate in Gauteng (87.3%) and 1.5 times the rate in South Africa (59.3%). Table 11 indicates that only a small amount (0.3%) of households within Ward 36 does not have access to any toilets, which is about one third of the rate in Gauteng (0.9%).

Table 11: Population by toilet facilities

Column	Ward 36		Gauteng		South Africa	
Flush toilet	96.3%	26,060	86.3%	10,589,780	56.5%	29,257,489
Chemical toilet	1.2%	334	1%	120,158	2.8%	1,441,139
Pit toilet	0%	7	9%	1,099,373	30.7%	15,908,467
Bucket toilet	0.3%	91	1.4%	173,729	1.9%	960,337
Other	2.1%	563	2.4%	289,224	8.1%	4,203,129

Source: Statistics South Africa, 2011

Another variable to consider when looking at service delivery indicators is access to refuse disposal (Table 12). Within Ward 36, the majority (97.3%) of households are getting refuse disposal from a local authority or private company, which is about 10% higher than the rate in Gauteng (89.9%) and more than 1.5 times the rate in South Africa (59.4%).

Table 12: Population by refuse disposal

Column	Ward 36		Gauteng		South Africa	
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Column	Ward 36		Gauteng		South Africa	
Service provider (regularly)	96.6%	26,131	88.6%	10,871,269	58%	30,013,366
Unspecified	0.8%	214	0.6%	70,406	0.4%	229,169
Own dump	0.8%	206	5.6%	691,453	31.4%	16,247,036
Other	1.9%	506	5.2%	639,137	10.2%	5,280,991

Source: Statistics South Africa, 2011

In terms of economic indicators, one can see from Table 13 that 66.3% of the Ward 36 population is employed (of those aged 15 years and older), which is about 1.3 times the rate in Gauteng (50.6%) and more than 1.5 times the rate in South Africa (38.9%). From Ward 36 population, 23.3% are not economically active and 8.8% are unemployed, which is almost half the rate of South Africa (16.5%). The majority of those who are employed within Ward 36 are employed in the formal sector (78.5%), with 9.2% in the informal sector and 9.6% in private households (Table 14).

Table 13: Population by employment status

Column	Ward 36		Gauteng		South Africa	
Discouraged work-seeker	1.7%	328	3.4%	296,450	5.4%	1,835,092
Employed	66.3%	13,161	50.6%	4,467,370	38.9%	13,180,077
Other not economically active	23.3%	4,616	28%	2,468,859	39.2%	13,295,256
Unemployed	8.8%	1,748	18.1%	1,598,044	16.5%	5,594,055

Source: Statistics South Africa, 2011

Table 14: Sector of employment

Column	Ward 36		Gauteng		South Africa	
Do not know	2.8%	379	2.4%	107,458	2.4%	318,446
In the formal sector	78.5%	10,620	76.6%	3,493,322	74%	9,956,436
In the informal sector	9.2%	1,241	8.9%	406,295	12.2%	1,640,901
Private household	9.6%	1,298	12.1%	552,709	11.4%	1,534,843

Source: Statistics South Africa, 2011

When considering the monthly income of those that are employed (Table 15), it is clear that the majority (22.4%) of the Ward 36 population earn between R6 000 - R13 000 per month. This is higher than the average monthly income for Gauteng and South Africa, which is between R2 000 - R3 000 per month.

Table 15: Employees by monthly income

Column	Ward 36		Gauteng		South Africa	
R0	4.6%	604	7.7%	341,634	8.6%	1,132,167
Under R400	2.8%	374	2.7%	119,771	3.2%	419,334
R400 - R800	2.4%	309	4.4%	194,979	6%	796,136
R800 - R2k	6.5%	857	11.7%	524,456	16.8%	2,208,054
R2k - R3k	12.4%	1,634	19.5%	871,916	18.7%	2,469,585
R3k - R6k	15.3%	2,015	15.9%	711,119	14.7%	1,940,963
R6k - R13k	22.4%	2,953	13.2%	590,990	12.5%	1,649,796
R13k - R26k	18%	2,375	11%	491,271	9.1%	1,203,627
R26k - R51k	7.3%	958	5.6%	250,465	3.8%	494,584

Column	Ward 36		Gauteng		South Africa	
R51k - R102k	1.6%	207	2%	89,932	1.2%	155,154
Over R102k	1%	127	1%	44,227	0.7%	87,467
Unspecified	5.7%	750	5.3%	236,610	4.7%	623,210

Source: Statistics South Africa, 2011

B-2.2 Human immunodeficiency virus infection / acquired immunodeficiency syndrome

Human immunodeficiency virus infection (HIV) / acquired immunodeficiency syndrome (AIDS) in South Africa has increased rapidly over the past decade. The social and economic consequences of the disease are far reaching and affect every facet of life in South Africa. Despite South Africa creating a progressive and far-sighted policy and legislative environment for dealing with HIV/AIDS, the prevalence of HIV/AIDS continues to increase. This indicates that policies and laws have not been adequately implemented and have not impacted significantly on the ground.

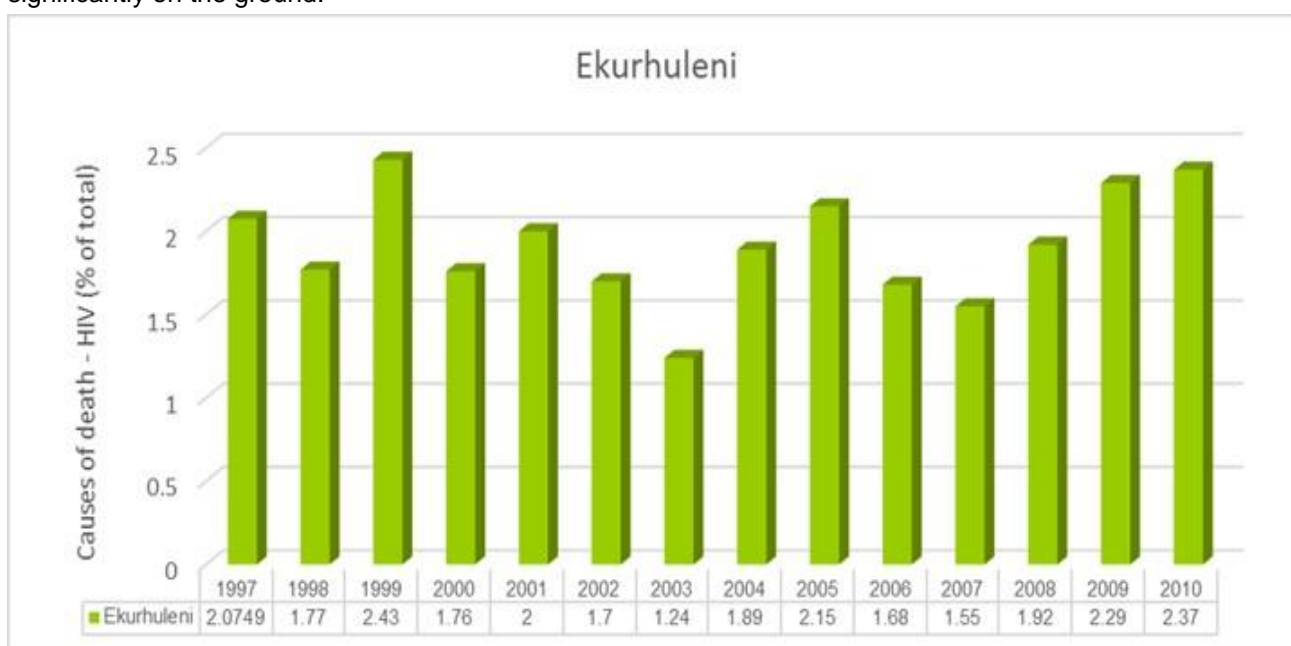


Figure 14: Causes of death (HIV) (Source: Stats SA, 2014)

According to Figure 14 above, the number of HIV positive persons living within the EMM in 2010 has increased by 1.13% since 2003, the lowest recorded percentage (<http://www.world-data-atlas.com/statssa>).

B-2.3 District and Local Municipalities

In December 2000, nine disestablished local authorities were consolidated into the EMM. These were Alberton, Benoni, Boksburg, Kempton Park, Tembisa, Germiston, Springs, Nigel, Brakpan, Lethabong, Khayalami and the Eastern Gauteng Services Municipality (EMM 2003). The EMM is one of three metropolitan municipalities in the Gauteng Province and one of five in South Africa.

This large area is divided, for administrative efficacy, into the Northern, Southern and Eastern Service Delivery Regions (SDRs) comprising the following areas:

- **Southern SDR:** Germiston (as regional centre), Alberton, areas of Boksburg and sections of Freeway Park, amongst others.
- **Eastern SDR:** Springs (as regional centre) Nigel, Kwa-Thema, Tsakane, Duduza, part of Benoni, Brakpan and Boksburg, and the Etwatwa-Daveyton area.

- **Northern SDR:** Kempton Park (as regional centre), Tembisa, part of Benoni, Edenvale and part of Germiston, including Bedfordview and Primrose.

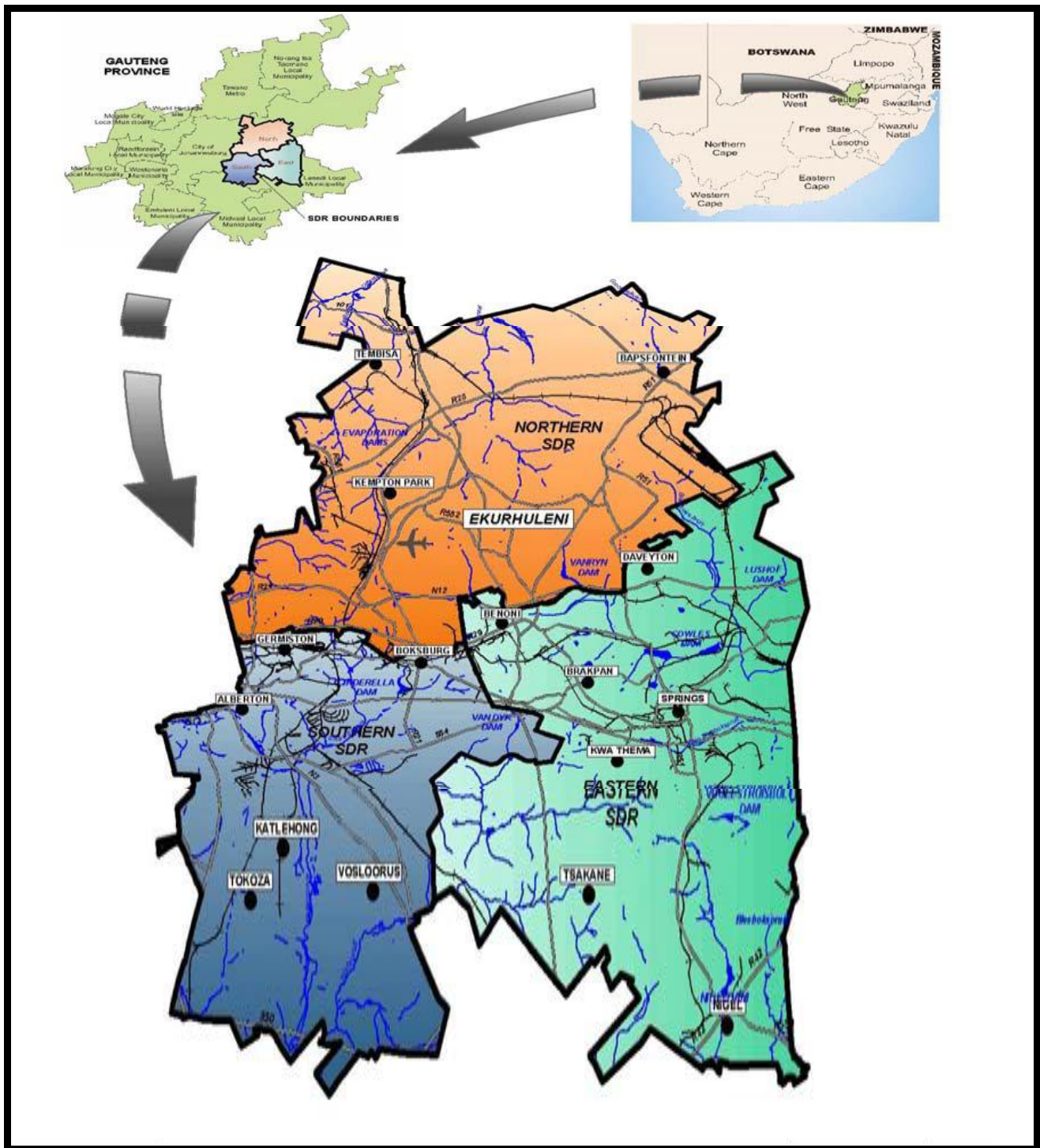


Figure 15: Map of Ekurhuleni Metropolitan Municipality showing all the SDRs (Naledzi Environmental Consultants, 2007)

The proposed site falls within the Southern SDR.

B-2.4 Transport

The metropolitan is well served with an excellent road and rail network linked to both national and provincial networks. Approximately 360 km of freeway are located within the municipality, while the provincial road

network amounts to around 1 300 km. Approximately 22% of roads in EMM are gravel and represents the bulk of backlogs with regard to tertiary roads. The EMM area is well served with a rail linkage to Johannesburg, Tshwane and the rest of Gauteng and Johannesburg. Overall, there is a shift from passenger's use of train services to the use of buses and mini-bus taxis, with car usage increasing annually. The Rapid Minibuses are the most popular mode of public transport with over 11 000 taxis operating in the municipal area. Except in isolated cases, the supply of these taxis generally exceeds the demand. The OR Tambo Airport is the air transport hub of Southern Africa. One of the biggest challenges in terms of transport is the creation of appropriate and applicable linkages between the various nodes within EMM (ERPM SLP, 2009).

B-2.5 Education

Education is often an indicator of the level of development and future economic opportunities within an area. It is clear from Table 16 that a large percentage (87.9%) of the Ward 36 population has completed Grade 9 or higher, which is about 10% higher than the rate in Gauteng (77.3%) and about 1.3 times the rate in South Africa (65.8%). A total of 65.2% of the Ward 36 population completed a level of Grade 12 or higher, which is about 1.3 times the rate in Gauteng (50.8%) or more than 1.5 times the rate in South Africa (39.3%).

Table 16: Population by highest educational level in Ward 36

Column	Ward 36		Gauteng		South Africa	
None	1.2%	246	3.6%	301,311	8.4%	2,665,875
Other	0.5%	105	0.5%	45,417	0.4%	113,586
Some primary	3.2%	639	7.3%	612,987	12%	3,790,137
Primary	1.6%	324	3.3%	277,530	4.5%	1,413,894
Some secondary	25.5%	5,157	32.2%	2,714,952	33.1%	10,481,580
Grade 12 (Matric)	50%	10,137	39.7%	3,348,633	32.2%	10,193,388
Undergrad	10.5%	2,121	6.8%	577,179	4.5%	1,423,179
Post-grad	4.7%	945	4.1%	348,144	2.5%	801,450

Source: Statistics South Africa, 2011

B-2.6 Manufacturing and Industry

Following the decline in the gold mining industry the growth of a substantial manufacturing and industrial support base has resulted in the EMM contributing some 23 % to the Gross Geographic Product (GGP) of the Gauteng Province. Approximately 40 % of all industrial activity in Gauteng derives from the EMM area, which is the largest industrial area in South Africa. Manufacturing, together with wholesale and retail trade, collectively contributed approximately half of the GGP for the EMM in 2001. The services and finance sectors also make significant contributions to the local economy, with finance showing the strongest growth of all sectors in recent years. In terms of employment opportunities, manufacturing and mining are the largest and smallest contributors respectively. The informal sector in EMM is thriving with the majority of informal trade occurring in the townships.

B-2.7 Health care

Health care services are provided by the numerous hospitals and clinics distributed throughout the EMM. However, not all facilities provide a full range of services and some facilities in densely populated areas experience severe capacity problems. Other community services and facilities, including public safety and security, sports, recreation as well as arts and culture are generally concentrated in and around the Central Business District (CBD) of the EMM (SRK, 2003).

B-2.8 Solid waste disposal

The EMM has six regional waste disposal facilities, which are considered to be among the best facilities in South Africa. An estimated 1 200 000 tons of solid waste is disposed of at the following landfill sites:

- S&J Land Holdings in Germiston;
- Rooikraal in Germiston;
- Platkop near Heidelberg;
- Weltevreden in Brakpan;
- Rietfontein in Springs; and
- Zesfontein in Benoni (proposed development).

B-2.9 Transport

Good transport linkages make the EMM highly accessible. Towns within the EMM area are linked by highways as well as national and provincial roadways of high standards. The Germiston Railway Centre is a major east-west and north-south rail interchange, while the sub-continent's import and export requirements are serviced by the OR Tambo International Airport, as well as the host of regional and municipal airports within the EMM area (SRK, 2003). The Integrated Rapid Public Transport Network (IRPTN) initiative will also see the development of high quality public transport system such as trains, buses and mini – bus taxis providing seamless travel experience to the EMM commuters².

B-2.10 Cemeteries

Most of the active cemeteries are located in the vicinity of the lower income areas. The EMM has 63 cemeteries of which 29 are currently active. Collectively, the active cemeteries total some 669.3 hectares of land, while the vacant burial space covers some 443.7 hectares (SRK, 2003).

B-2.11 State of the Human Environment

While increased urbanisation generally improves the quality of life for many people, the urban environment can simultaneously become a centre for poverty. The growth of cities worldwide has been accompanied by disproportionate growth in urban poverty. Effective management of urban development in favour of the poor, who often establish illegal settlements on the urban periphery, is an immense challenge for national, provincial and local government. Without secure tenure, formal employment and access to basic infrastructure and social services, the inhabitants of informal settlements have little hope of improving their living conditions and quality of life. Moreover, the urban poor are disproportionately threatened by the environmental hazards and health risks posed by living in ecologically vulnerable areas or in densely packed inadequate housing with poor sanitation and polluted water, air and soil resources (UNCHS Habitat, 2001).

The environmental problems within urban areas or cities, which generally have a direct impact on the human environment, largely stem from the nature of urban growth and development. The bulk of the impacts are borne by the poor population. This can be attributed to a number of factors (Goldblatt, 2002):

- Vulnerability: Poor people are more vulnerable to pollution impacts due to lowered health status from other factors such as inadequate nutrition;
- Location: Poor households are often located on the least desirable, cheapest land, which is often prone to environmental hazards;

² Ekurhuleni Press Release: Ekurhuleni's route to modern public transport takes high gear - June 2014. <http://www.ekurhuleni.gov.za/thecouncil/news/press-releases/>

- Inadequate access to services: Low income households typically pay a large proportion of their income for basic services and infrastructure or to gain access to such services; and
- Inability to respond: The ability of poor households to respond to environmental degradation is extremely limited.

They cannot relocate freely, they have limited power to affect change, either politically or via the legal system, and they have limited resources.

The pressure that people feel as a result of environmental conditions expresses itself in the social dimensions of human well-being. For example, continuing exposure to unhealthy living conditions and a degraded environment breeds discontent, resistance and even overt conflict - fuelled by perceptions of injustice and discrimination. This has been evident in the continued labour unrest in South Africa especially in the mining and industrial sector.

B-2.12 Safety and security

Public safety services within the EMM include emergency response services, fire brigade, traffic control and the metropolitan police force. There are approximately 33 police stations distributed throughout the EMM. The safety risk from flooding along the natural watercourses and where informal (and sometimes even formal) settlements are situated within the 1: 50 or the 1: 100 year flood line in the EMM, is high (SRK, 2003). The decay of many of the older industrial areas within the EMM is a cause of concern for public safety. Squatters often inhabit the abandoned buildings and warehouses, which can be structurally unsound and unsafe (per communication, E Olivier: EMM).

B-2.13 Housing and settlement

The housing backlogs together with a shortage of land have negative impacts for both the people in need of land, as well as for landowners. These include the landless often having to reside in unhealthy and unsafe environments and/or on land illegally occupied, while landowners incur financial losses through, *inter alia*, legal costs for eviction rulings, lost opportunity costs where development cannot proceed, or lost agricultural production on arable land (Policy: Development of Integrated Sustainable Human settlements in Ekurhuleni, 2004).

An amount of R191, 982,000.00 has been gazetted for the 2013/14 financial year for the housing and or /construction of RDP houses and was provided for on the Operating Budget (IDP, 2013/ 2014).

SECTION C: ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PROCESS

C-1 APPROACH TO THE EIA

An 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 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 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 16 below):

- **Participation:** An appropriate and timely access to the process for all I&APs.
- **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 proposed project should go ahead.

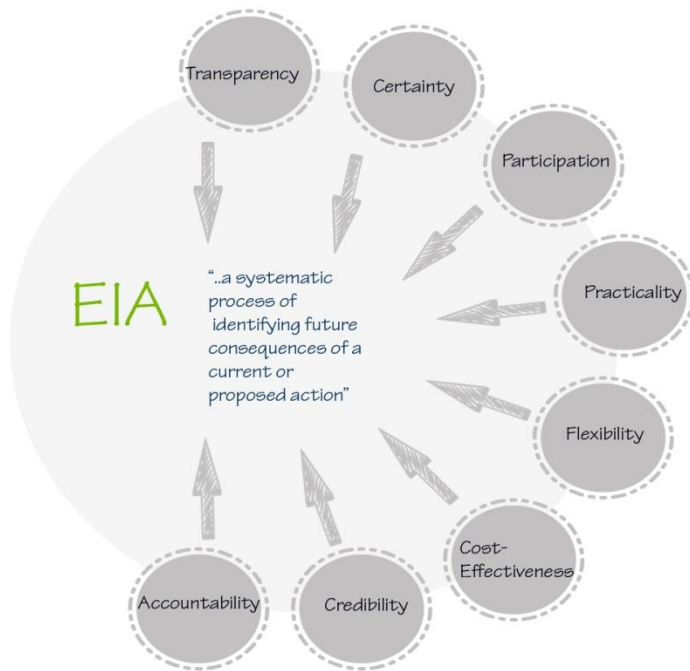


Figure 16: The eight guiding principles for the EIA process

A S&EIR process typically has four phases, as illustrated in the Figure 17 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 17: Flow diagram of the Scoping and EIR process

C-3.1 Pre-application Consultation with the GDARD

A site visit between the DMR, SEF and the DWA was convened on 20 May 2014. The GDARD were invited to attend the meeting but could not be available, and therefore, no pre-consultation meeting was held between SEF and the GDARD. SEF are conducting the S&EIR process for the applicant, in support of their application for an Environmental Authorisation, Closure Certificate and WUL and are deemed to have a good understanding of the information requirements of the GDARD for the proposed project, such that the GDARD's specific information requirements are deemed to have been met for the Scoping phase of this project.

C-3.2 Application for Authorisation

The application form informing the GDARD of intent to obtain an Environmental Authorisation was submitted on 17 July 2014. The GDARD issued the application with the following reference number: GDARD Ref No: **Gaut 001/14 – 15/0089**. The letter acknowledging receipt of the application form is included in Appendix 3.

C-3.3 Information Gathering

Early in the EIA process, the technical team will identify the information that would be required for the impact assessment and the relevant data will subsequently be obtained. In addition, the technical team 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

For the proposed development, the following specialist studies have been undertaken and will be integrated into the EIR:

- Geotechnical Impact Assessment;
- Radiation survey;
- Traffic Impact Assessment; and
- Wetland Delineation.

More specialists' studies may be imperative and this will be dependent on the requirements stipulated by the GDARD.

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 (HDIs), 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.

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 4 for a complete preliminary I&AP distribution list):

- National Authorities;

- 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 in the following manner (see Appendix 4 for public announcement documentation):

- Publication of media advertisement in the local newspaper, Germiston City News, on 13 August 2014;
- On-site notices (4) advertising the S&EIR process were placed on and around the site and other strategic locations within the area on 13 August 2014; and
- Distribution of letters by fax/ by hand/ post/ email to I&APs including Registration and Comment Sheets.

C-4.3 Draft Scoping Report

A period of **40 calendar days (13 August 2014 - 22 September 2014)** was provided to the **State Departments** and the **general public** for the review and commenting phase of the Draft Scoping Report. All I&APs as well as State Departments have been notified of this review period. I&APs and relevant State Departments have the opportunity to submit comments either in writing, by telephone or email on this Draft Scoping Report.

The availability of the Draft Scoping Report has been announced by means of personal letters to all stakeholders on the distribution list, and by advert placed in the abovementioned newspaper.

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

- Left in a public venue (Germiston Public Library);
- 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 S&EIR process will be captured in a Comment and Response Report (CRR). I&APs will receive letters acknowledging their contributions.

C-4.4 Final Scoping Report

The Final Scoping Report has been updated with comments and/or concerns raised by I&APs during public review of the Draft Scoping Report. The CRR is attached to this report (Appendix 4). The Final Scoping Report has been submitted to the GDARD and registered I&APs simultaneously. Registered I&APs have a period of **21 calendar days (01 October 2014 - 22 October 2014)** during which time to submit any additional comments on this Final Scoping Report directly to the GDARD (and a copy to SEF).

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 EIR and inputs into the Environmental Management Programme (EMPr). The findings will be presented in a Draft EIR and EMPr (including the specialist studies conducted), which will be available for public review and comment.

SECTION D: IDENTIFICATION OF IMPACTS

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

- Legislation; and
- Experience of the EAP.

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

Biophysical Impacts:

- Potential impacts of increased surface water run-off (viz. increased soil erosion) associated with the existing wetland;
- Potential impacts on ground and surface water quality due to hydrocarbon spillages from vehicles during construction and operational phase of the proposed project;
- Removal of alien invasive plant species;
- Increased erosion potential from construction activities and vehicular activity may cause siltation that will reduce quantity of runoff;
- Soil compaction due to the movement of vehicles on site;
- Positive impact on topography; and
- Positive impacts from the removal of the sources of groundwater contamination (sand and slimes dumps).

Socio-Economic Impacts:

- Decreased dust generation during the operational phase;
- Increased visual impacts associated with additional industrial/ mixed use development activities;
- Increase in local employment and subsequently, number of job seekers, during construction and operational phases; and
- Use of available land within the urban edge.

D-1 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 18 below).

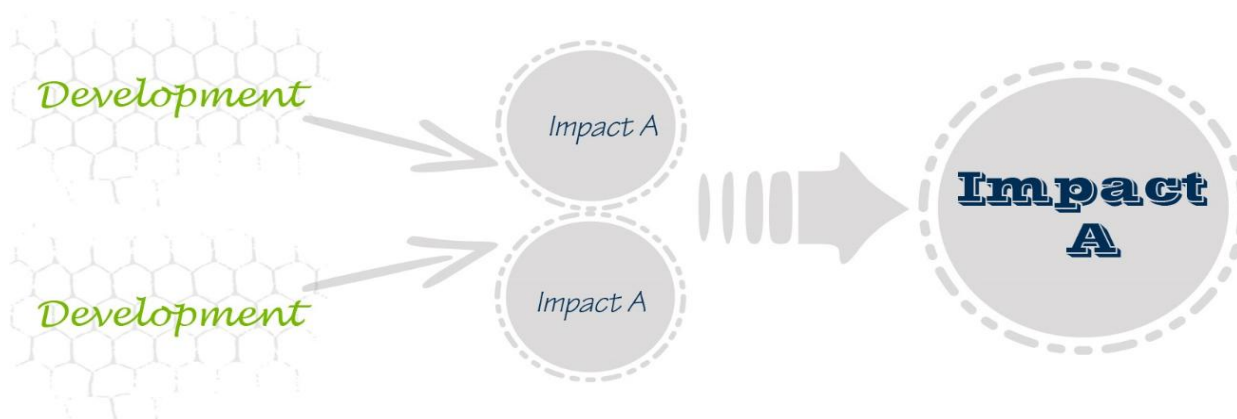


Figure 18: The identification of Cumulative Impacts

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

- Increased visual impacts associated with additional industrial/ mixed use development activities;
- Increase in local employment and subsequently, number of job seekers, during construction and operational phases; and
- Influx of people (looking for jobs) into the area.

SECTION E: ALTERNATIVES

E-1 IDENTIFICATION OF ALTERNATIVES

To give effect to the principles of the 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:

A. Land Use Alternatives

Alternative 1: Industrial 1/ mixed use development (Preferred Alternative)

This is the preferred alternative by Abland. As mentioned before, this development proposal will enhance the requirement of the EMM SDF. This development will furthermore also meet the requirements of the surrounding area in terms of industrial 1/ mixed use development.

Alternative 2: Light Industrial Alternative

The introduction of a light industrial development, although suited to the general functioning and land uses of the surrounding urban environment and other light industrial areas, is considered unsuitable due to the following reasons:

- Over-saturation of a single-use activity;
- Lack of diversity and vibrancy associated with a mixed-use development; and
- Higher risk of pollution to the surrounding wetland and the Natalspruit system.

Alternative 3: Low Density Residential Alternative

The provision of a low density residential development does not cater for numerous socio-economic requirements and is therefore less favourable than the preferred alternative (industrial 1/ mixed-use development).

An amount of R191,982,000.00 has been gazetted for the 2013/14 financial year for the housing and or /construction of Reconstruction and Development Programme (RDP) houses and was provided for on the Operating Budget [Integrated Development Plan (IDP), 2013/ 2014] in other sections of EMM to cater for the housing requirements.

C. No Development Alternative

This implies that the site be left as is and that no development or alteration be done. If this alternative is pursued the site's status quo will be retained. This option has the following disadvantages:

- A high demand for commercial and employment provision exists in this area, especially with respect to the proposed development characteristics. Should the site not be developed, a very viable opportunity to exploit the commercial market in the immediate area will be negated
- If not developed, Abland will derive no income from the property. A closure certificate application is currently being lodged with the DMR. Should the site not be developed, it will lead to the site falling into long term disrepair.
- Illegal squatters or vagrants may potentially settle on the site, as severe pressure for housing in the lower income brackets also exist. Due to the presence of extensive development throughout the greater area it is possible that undeveloped, un-managed land may be illegally settled.
- Agricultural land capability is not applicable on the proposed site. The land is generally capable of supporting urban development.

SECTION F: PLAN OF STUDY FOR ENVIRONMENTAL IMPACT REPORTING PHASE

F-1 SCOPE AND PURPOSE OF THE ENVIRONMENTAL IMPACT REPORTING PHASE

The EIR phase will focus on the proposed project 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 EIR, as well as an 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 EIR and EMPr will be submitted to the GDARD for consideration towards Environmental Authorisation.

F-2 METHODOLOGY OF THE ENVIRONMENTAL IMPACT ASSESSMENT REPORTING PHASE

F-2.1 Specialist Investigations and Terms of Reference

As mentioned above, the following specialist studies were undertaken to provide technical and scientific input in assessing the impacts of the proposed project. The following specialist studies will be incorporated into the Draft EIR:

- Geotechnical Impact Assessment;
- Radiation survey;
- Traffic Impact Assessment; and
- Wetland Delineation.

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 studies which have been undertaken took into consideration the present state of the receiving environment and provided 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 in the reports (please refer to Appendix 6 for the Specialist Reports).

Based on the current state of the proposed site, it is not envisaged that a HIA will be undertaken. Nevertheless, following are the ToRs for the HIA:

The Baseline Phase will be undertaken as follows:

- Desktop survey of the existing South African Heritage Resources Information System (SAHRIS) database, the Environmental Potential Atlas (ENPAT), aerial photographs and existing literature;
- Short field survey to establish the heritage potential of the study area and related constraints in respect of the proposed development; and
- Baseline survey report.

Impact Assessment Phase:

- A field survey (to be undertaken by both walking and driving throughout the study site) according to accepted archaeological practices to locate potential sites, objects and structures of architectural,

- cultural heritage, and or archaeological significance;
- Highlight the associated issues/ opportunities/ constraints in the context of the proposed development; and
- A consolidated report.

Proposed method of assessment:

Each cultural heritage, architectural, or archaeological site, object and/or structure will be identified and documented, classified according to the National Heritage Resources Act, (Act No. 25 of 1999) (NHRA) and described according to minimum accepted standards, then assessed according to several criteria.

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 establishment, operation and management of the proposed industrial/ mixed use 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:

Establishment Phase: All the establishment related activities on site

Operational Phase: All activities, including the operation and maintenance of the proposed industrial/ mixed use 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 industrial/ mixed use 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 establishment phase.
	Short-Medium Term	The impact will be relevant through to the end of the establishment phase.
	Medium Term	The impact will last up to the end of the establishment phases, where after it will be entirely negated.
	Long Term	The impact will continue or last for the entire operational lifetime of the proposed industrial/ mixed use 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 proposed industrial/ mixed use 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 proposed industrial/ mixed use development can be minimised if measures are implemented in order to reduce the impacts. The mitigation measures ensure that the proposed industrial/ mixed use 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 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 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 19 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	Low 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	High 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 19: 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
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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.

$$\text{Equation 2: } \text{Significance Rating (WM)} = \text{Significance Rating (WOM)} \times \text{Mitigation Efficiency}$$

Or

$$\text{WM} = \text{WOM} \times \text{ME}$$

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 F-2.2.4 below.

Table 17: Example of an Impact Table

Impact source(s)		Status	
Nature of impact			
Reversibility of impact			
Degree of irreplaceable loss of resource			
Affected stakeholders			
Magnitude	Extent		
	Intensity		
	Duration		
	Probability		
Significance	Without mitigation		
	With mitigation		

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, minimise or mitigate significant cumulative impacts.

F-3 PUBLIC PARTICIPATION PROCESS DURING THE ENVIRONMENTAL IMPACT REPORTING 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 EIR and EMPs for review and comment.

All comments and/or concerns received via telephone, fax, email or post will be incorporated into a CRR and included within the Final EIR. All correspondence received will be acknowledged.

F-3.2 Public Review of the Draft Environmental Impact Report

It is proposed that the Draft EIR will be available for comment 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 EIR will be available for comment at the public venue from around December 2014/ January 2015. 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. R 543, the Final Scoping Report for the proposed development 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.

Comments and/or concerns received from 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 has been submitted to the GDARD for consideration, together with the Plan of Study (PoS) for the EIR phase and other relevant supporting information.

The EAP proposes that, on the basis of the information contained in this Scoping Report, that the GDARD accepts the Scoping Report and PoS 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

Acocks, J.P.H. 1988: Veld Types of South Africa. Mem. Bot. Surv. Southern. Africa. No. 57.

Bredenkamp G & Van Rooyen, N. 1996. In: Low, A.B & Rebelo, A.G. 1996. Vegetation of South Africa, Lesotho and Swaziland. Department of Land Affairs and Tourism, Pretoria.

Coates Palgrave, K. 1992. Trees of Southern Africa. 6th Impression. Struik. Cape Town.

Department of Development Planning & Local Government. 2002: Geotechnical suitability study of vacant land in Gauteng Province. Johannesburg.

Department of Environmental Affairs and Tourism. 2001. ENPAT. Pretoria: DEAT.

Department of Rural Development and Land Reform. Chief Directorate: Surveys and Mapping 2009: Hydrology. Cape Town: CDSM

Department of Water Affairs & Forestry. Date unknown. Quaternary Catchments of South Africa.

Enviroguard Ecological Services cc, 2014. Wetland Delineation: Portion 531 of the farm Elandsfontein 108 IR and the Remainder of Portion 2 of the farm Elandsfontein 90 IR.

Ekurhuleni Metropolitan Municipality Development Guide, October 2010.

Ekurhuleni Metropolitan Municipality: City Development Department Spatial Planning Directorate: MSDF, 2011.

Gauteng Department of Agriculture, Conservation & Environment. 2001: Development Guidelines for Ridges. (Data updated 2003).

Gauteng Department of Agriculture, Conservation & Environment. 2002: Gauteng Agricultural potential Atlas.

Gauteng Department of Agriculture, Conservation & Environment. 2005: Gauteng Biodiversity Gap Analysis Project: Gauteng Conservation Plan Version 2.

Gauteng Department of Agriculture, Conservation and Environment 2003: Information Layers and Buffer Zones for Industries in Gauteng (Phase 1&2).

Gauteng Spatial Development Framework, 2011.

Low, A.B. & Rebelo, A.G. (Eds.). 1996: Vegetation of South Africa, Lesotho and Swaziland. Pretoria: DEAT
Naledzi Environmental Consultants cc (2007). Wetland Inventory Report.

Policy Development of Integrated Sustainable Human Settlements in Ekurhuleni, 2004.

Rutherford M.C. & Westfall R.H. 1994 Biomes of Southern Africa – An Objective Categorization. Memoirs of the Botanical Survey of South Africa No. 63.

SRK Consulting, 2004. Ekurhuleni Metropolitan Municipality State of the Environment Report.

Van Wyk, B & Malan, S. 1997. Field guide to the Wild Flowers of the Highveld 2nd Ed. Struik. Cape Town.

SECTION I: APPENDICES

Appendix 1: Locality Map

Appendix 2: Photograph plate

Appendix 3: Authority Correspondence

Appendix 4: Public Participation

Appendix 5: EAP Details

Appendix 6: Background Information/Specialist Studies