Poort Inry Teater (Pty) Ltd.

Draft EIA Report

Locality: Witbank

Departmental Ref No: 17/2/3 N-135

SHANGONI
Management Services (Pty) Ltd

ENVIRONMENTAL IMPACT ASSESSMENT – Draft EIA Report

Poort Inry Teater (Pty) Ltd.

Environmental Impact Assessment – Draft EIA Report

Locality: Witbank

Departmental Ref No: 17/2/3 N-135

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PROJECT DETAILS

Mpumalanga Department of Economic Development, Environment and Tourism

Reference No.: 17/2/3 N-135

Project Title: Command Park Extension 1

Project Number: POO-wit-24-05-11

Compiled by: Ms. Patricia van der Walt

Date: 6 December 2013

Location: Portion 55 of the farm Naauwpoort 335 J.S., Mpumalanga

Technical Reviewer: Mr. Lourens de Villiers

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HL de Villiers

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REFERENCES

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DEFINITIONS

Environment

The surroundings (biophysical, social and economic) within which humans exist and that are made up of

- the land, water and atmosphere of the earth;
- micro-organisms, plant and animal life;
- any part or combination of (i) and (ii) and the interrelationships among and between them; and
- the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

Environmental Aspects

Elements of an organization's activities, products or services that can interact with the environment.

Environmental Degradation

Refers to pollution, disturbance, resource depletion, loss of biodiversity, and other kinds of environmental damage; usually refers to damage occurring accidentally or intentionally as a result of human activities.

Environmental Impacts

Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services.

Environmental Impact Assessment

A study of the environmental consequences of a proposed course of action.

Environmental Impact Report

A report assessing the potential significant impacts as identified during the environmental impact assessment.

Environmental impact

An environmental change caused by some human act.

Land use

The various ways in which land may be employed or occupied. Planners compile, classify, study and analyse land use data for many purposes, including the identification of trends, the forecasting of space and infrastructure requirements, the provision of adequate land area for necessary types of land use, and the development or revision of comprehensive plans and land use regulations.

Pollution Prevention

Any activity that reduces or eliminates pollutants prior to recycling, treatment, control or disposal.

Public Participation Process

A process of involving the public in order to identify needs, address concerns, in order to contribute to more informed decision making relating to a proposed project, programme or development.

Red Data Book (South African)

An inventory of rare, endangered, threatened or vulnerable species of South African plants and animals

Scoping

A procedure for determining the extent of and approach to an EIA, used to focus the EIA to ensure that only the significant issues and reasonable alternatives are examined in detail

Scoping Report

A report describing the legislative framework, the proposed project, the public participation undertaken to date, the affected environment and issues identified for further study.

Soil

It is the unconsolidated mineral and organic material that lies on earths immediate surface. Soil serves as a natural medium for growth of plants. The composition of soil is dependent on factors, such as the; genetic and environmental factors of parent material; climate (including precipitation and temperature effects;, macro- and micro – organisms in the area and the topography, all acting over the period of time.

Waste

Waste is unwanted or undesired material left over after the completion of a process. "Waste" is a human concept: in natural processes there is no waste, only inert end products.

ABBREVIATIONS

BID	-	Background Information Document
BNG	-	Breaking New Ground
DEDET	-	Department of Economic Development, Environment and Tourism, Mpumalanga
DSR	-	Draft Scoping Report
DWA	-	Department of Water Affairs
EAP	-	Environmental Assessment Practitioner
ECA	-	Environmental Conservation Act of 1989
EIA	-	Environmental Impact Assessment
EIR	-	Environmental Impact Report
EMF	-	Environmental Management Framework
EMP	-	Environmental Management Programme
FSR		Final Scoping Report
GA	-	General Authorisation in terms of the National Water Act
HIA	-	Heritage Impact Assessment
IDP	-	Integrated Development Plan
GN	-	Government Notice
I&AP	-	Interested and Affected Party
NEMA	-	National Environmental Management Act, Act 107 of 1998 as amended
R	-	Regulation
S&EIR	-	Scoping and Environmental Impact Reporting

EXECUTIVE SUMMARY

The purpose of this document is to supply the Mpumalanga Department of Economic Development, Environment and Tourism (MPDEDET) requested information pertaining to the National Environmental Management Act (NEMA), as amended, and Regulation 28 of the Environmental Impact Assessment Regulations, 2010.

Contained in this document is a brief overview of the activity and site specific information for the proposed project (location, topography, surrounds, vegetation, etc.). The latter part of the document contains an environmental management framework that includes a reflection of applicable legislation, the public participation process followed, the need and desirability of the project, identified alternatives, a quantitative risk assessment and an environmental management programme.

Document layout

Section one – Introduction

The purpose of this section is to provide a brief overview of the site, proposed activity and locality, applicable infrastructure and environmental authorisation required.

Section two – Nature and extent of the environment affected by the activity

The status of the environment in which the proposed mixed use development is to be situated is discussed in section 2. The environmental areas, geology, climate, topography, soil, land use and land capability, fauna and flora, wetlands, surface water, groundwater, archaeological and cultural sites, noise, air quality and socio-economic aspects are described in this section.

Section three – Legislation and guidelines applicable

Section three lists all environmental legislation and guidelines applicable to the proposed project.

Section four – Public participation process

Section four provides information pertaining to the consultation process that was followed during this EIA process.

Section five – Need and desirability

Section five describes the need and desirability of this project from the perspective of the developer and local community.

Section six – Identified alternatives

Section six considers alternatives to the project site selection, the layout of the development and alternatives to the methodologies and/or materials used for the development.

Section seven – Environmental Impact Assessment

Section seven identifies the environmental impacts and assesses their danger to the study area during the different developmental phases (planning/design, construction, operation, post construction- and concurrent rehabilitation and closure). This section also recommends appropriate mitigation measures for the potentially significant environmental impacts.

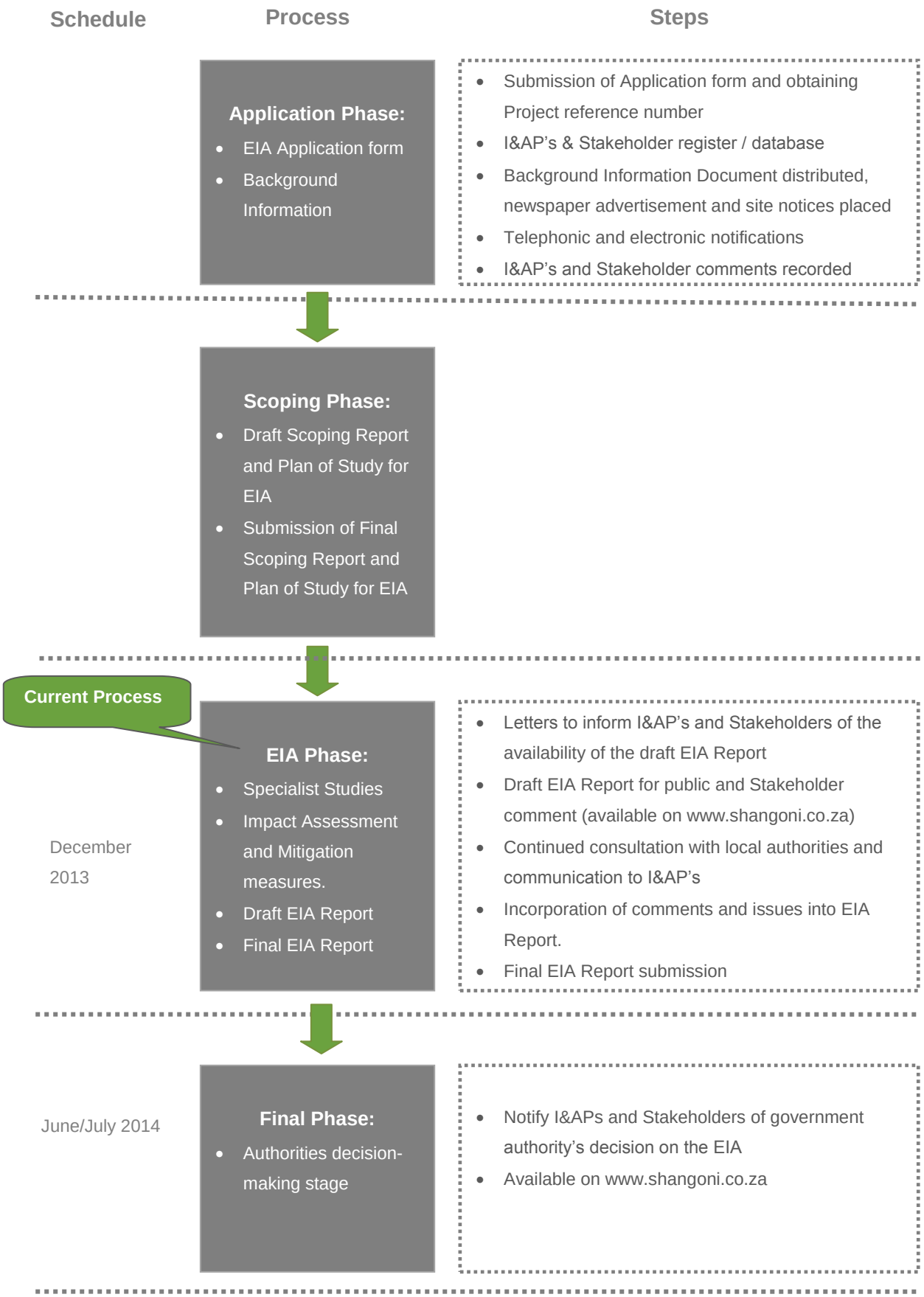
Section eight – Environmental Impact Statement

Section eight gives a brief summary of the key findings together with a comparative assessment of the positive and negative implications of the project.

Section nine – Conclusion and recommendation

This report is concluded in section nine, highlighting the expected level of impact the project will have and provides the recommendation of the independent Environmental Assessment Practitioner (EAP).

Refer the following diagram for a process flow of the process followed during the EIA:


Schedule
Process
Steps
Application Phase:
EIA Application form
Background Information
Submission of Application form and obtaining Project reference number
I&AP's & Stakeholder register / database
Background Information Document distributed, newspaper advertisement and site notices placed
Telephonic and electronic notifications
I&AP's and Stakeholder comments recorded
Scoping Phase:
Draft Scoping Report and Plan of Study for EIA
Submission of Final Scoping Report and Plan of Study for EIA
Current Process
EIA Phase:
Specialist Studies
Impact Assessment and Mitigation measures.
Draft EIA Report
Final EIA Report
December 2013
Letters to inform I&AP's and Stakeholders of the availability of the draft EIA Report
Draft EIA Report for public and Stakeholder comment (available on www.shangoni.co.za)
Continued consultation with local authorities and communication to I&AP's
Incorporation of comments and issues into EIA Report.
Final EIA Report submission
Final Phase:
Authorities decision-making stage
June/July 2014
Notify I&APs and Stakeholders of government authority's decision on the EIA
Available on www.shangoni.co.za

1. INTRODUCTION

1.1 Applicant

Name of Applicant	Poort Inry Teater (Pty) Ltd
Contact Person	Me. B. Foden
Postal Address	P.O. Box 41024 Craighhall 2024
Telephone No.	+27(0) 11 253 8765
Fax No.	+27(0) 86 512 3569
Farm name and portion on which the activities take place	Portion 55 of the farm Naauwpoort 335 J.S., Mpumalanga
Co-ordinates of operation	25°57'9.14"S 29°15'12.17"E

1.2 Appointed Environmental Assessment Practitioner

Name of firm	Shangoni Management Services (Pty) Ltd.	
Postal address	PO Box 74726 Lynwood Ridge Pretoria 0040	
Telephone No.	(012) 807 7036	
Fax	(012) 807 1014	
E-mail	patricia@shangoni.co.za	
Team of Environmental Assessment Practitioners on project		
Name	Qualifications	Responsibility
Mr. H.L. de Villiers	Bsc. (Hons) (PU for CHE) MSc.(UP)	EIA Project Leader and Co-ordinator
Ms. Lizette Crous	Post Graduate Certificate Environmental Management (University of London)	EAP
Ms. Patricia van der Walt	B.Sc. (Hons) (Applied Science in Environmental Technology)	Junior EAP

Detailed CV's for the project team are appended (Appendix H).

1.3 Current Activity

The proposed industrial and commercial development Command Park Extension1, will be located on Portion 55 of the farm Naauwpoort 335 J.S., Mpumalanga. The project site is disected by the R544 (Watermeyer Street, Emalahleni (Witbank)).

The site is currently vacant with highly disturbed vegetation and there are numerous signs of illegal dumping scattered across the property. There is also a illegal scuatter camp located on the western part of the property next to the R544.

The property is zoned as agricultural although no agricultural activities have taken place on the land in the last ten years. A rezoning application has been submitted with the local authority, to change the land use zoning to mixed use.

1.4 Proposed Activity

1.4.1 Size

The total are of the site is 25.92 ha in extent. The proposed mixed use development, Command Park Extension 1, will entail the following:

- 65 erven for "Industrial 1" – 14.7ha
- 11 erven for " Business 2" – 5.9 ha
- 2 erven for a "Private Park" – 0.33ha
- 3 erven for a "Private Road" – 2.9 ha
- Roads – 1.8 ha

The current layout for the development is still a draft plan and may change as the Council or other stakeholders provides input into the final design and layout of the development. Refer to *Figure 1* for the proposed layout plan.

1.4.1 Accessibility

The proposed new intersection on Watermeyer Street (P120-1) will be part of the Road Master Planning for Class 3 regional distributer roads between Dixon Street and Watermeyer Street. This new access to the north of Watermeyer Street will be a public road reserve across Portion 50 of the farm Naauwpoort. This road will continue in a north-eastern direction for future expansion.

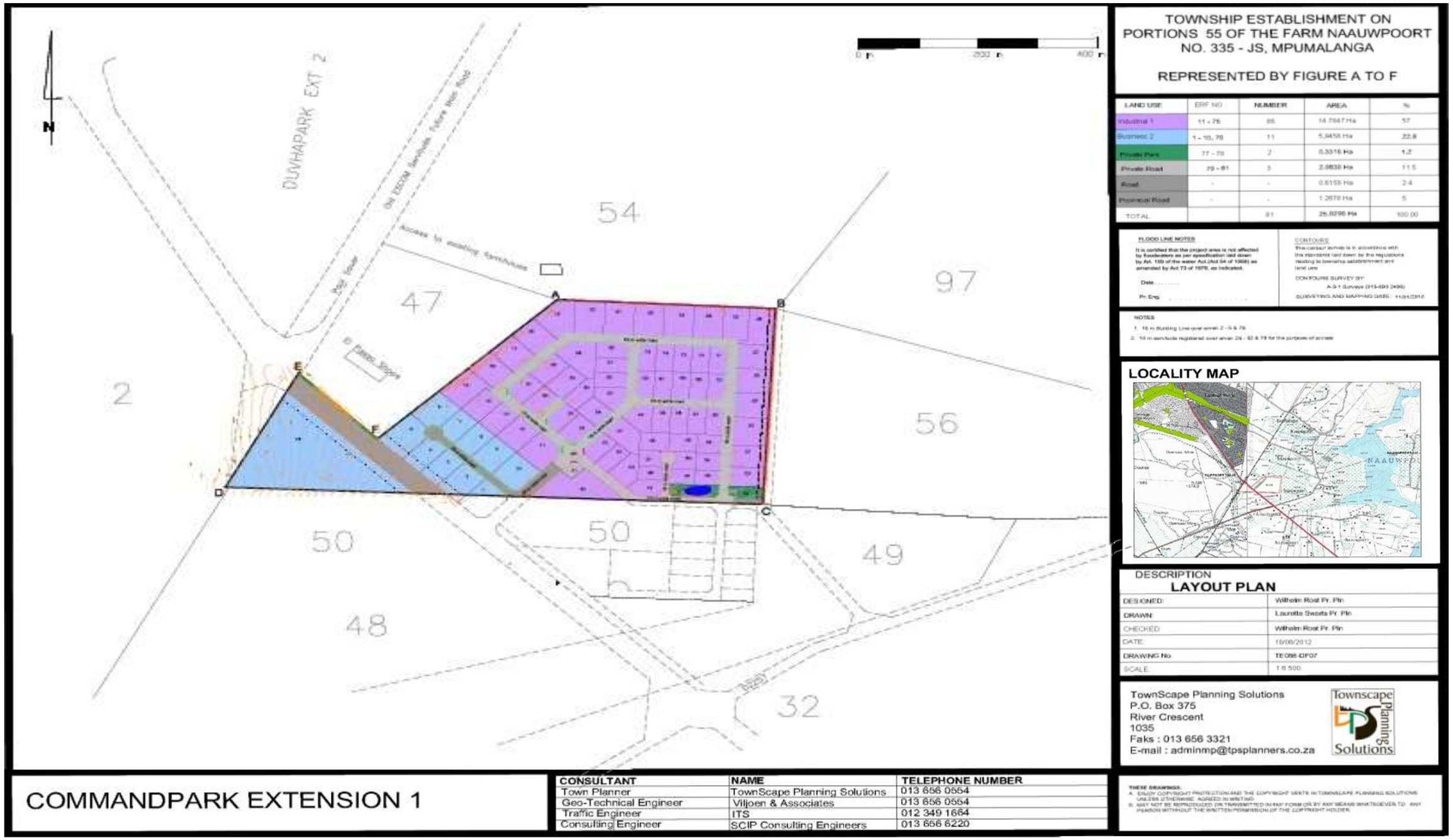


Figure 1: Command Park Extension 1 layout plan.

1.5 Proposed Locality

The proposed industrial and commercial development Command Park Extension1, will be located on Portion 55 of the farm Naauwpoort 335 J.S., Mpumalanga. The project site is located next to the R544 (Watermeyer Street, Emalahleni (Witbank)) . The size of the property is approximately 26ha in extent.

Table 1: Direction & distance to the nearest town

Direction from site	Distance from site	Closest town
North - westerly	3km	Duvha Park
North	8km	Emalahleni

The site locality map is given below in Figure 2 as well as in Appendix A. The site photographs are shown in *Figure 3* to *Figure 16*.

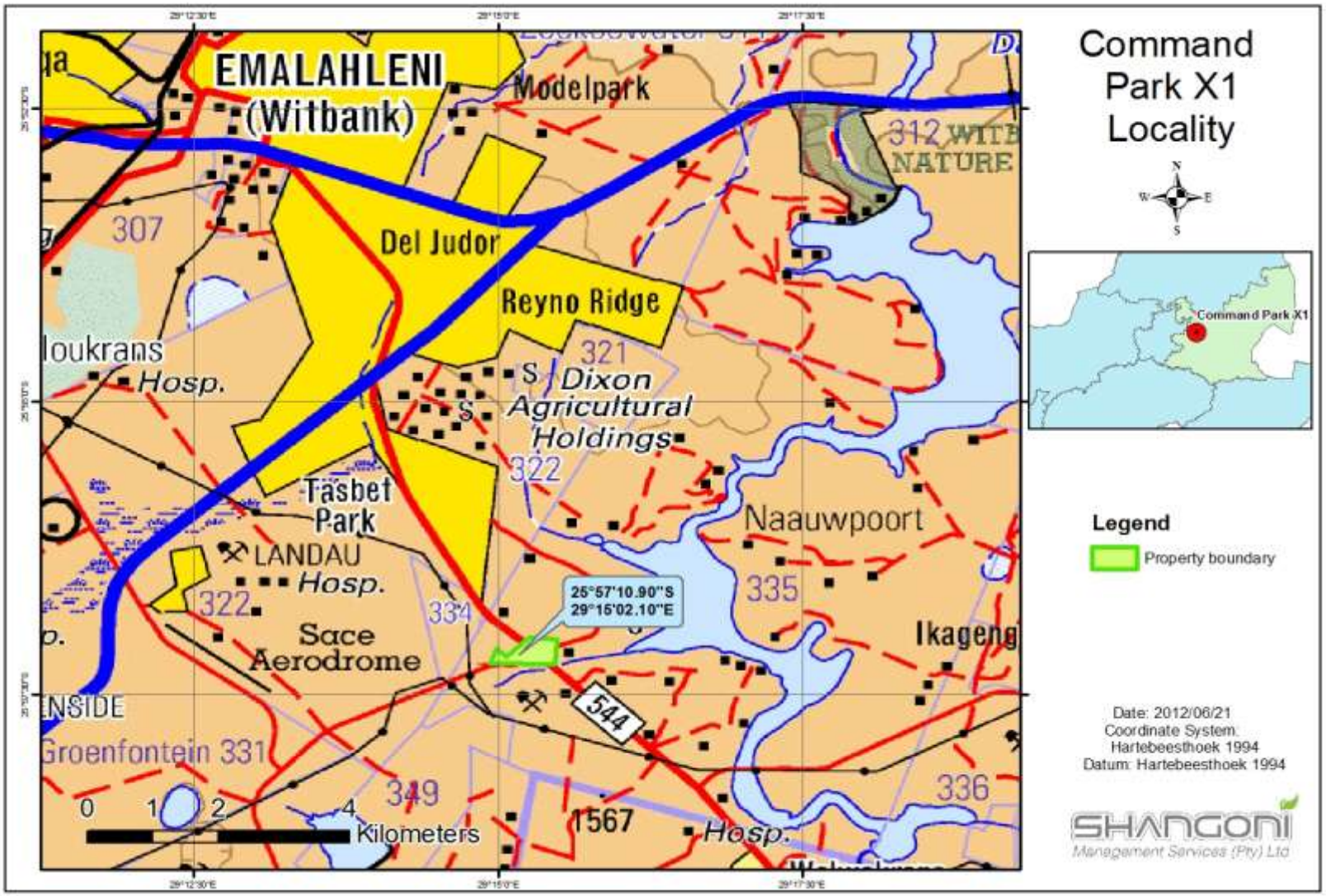


Figure 2: Site locality map.

Figure 3: Site photograph 1.

Figure 4: Site photograph 2.

Figure 5: Site photograph 3.

Figure 6: Site photograph 4.

Figure 7: Site photograph 5.

Figure 8: Site photograph 6.

Figure 9: Site photograph 7.

Figure 10: Site photograph 8.

Figure 11: Site photograph 9.

Figure 12: Site photograph 10.

Figure 13: Site photograph 11.

Figure 14: Site photograph 12.

Figure 15: Site photograph 13.

Figure 16: Site photograph 14.

2. NATURE AND EXTENT OF THE ENVIRONMENT AFFECTED BY ACTIVITY

2.1 Biophysical aspects affected

2.1.1 Geology

The site is underlain by red to yellow sandy soils found on the shales and sandstones of the Madzaringwe Formation, Karoo Supergroup. The red to yellow sandy soils are of the Ba (30%) and Bb (65%) land types (Mucina & Rurtherford, 2006).

A geotechnical assessment was conducted on site, to identify geotechnical issues relating to the construction of buildings. Refer to Chapter 2, section 2.1.4 Soils, for information obtained during the geotechnical assessment.

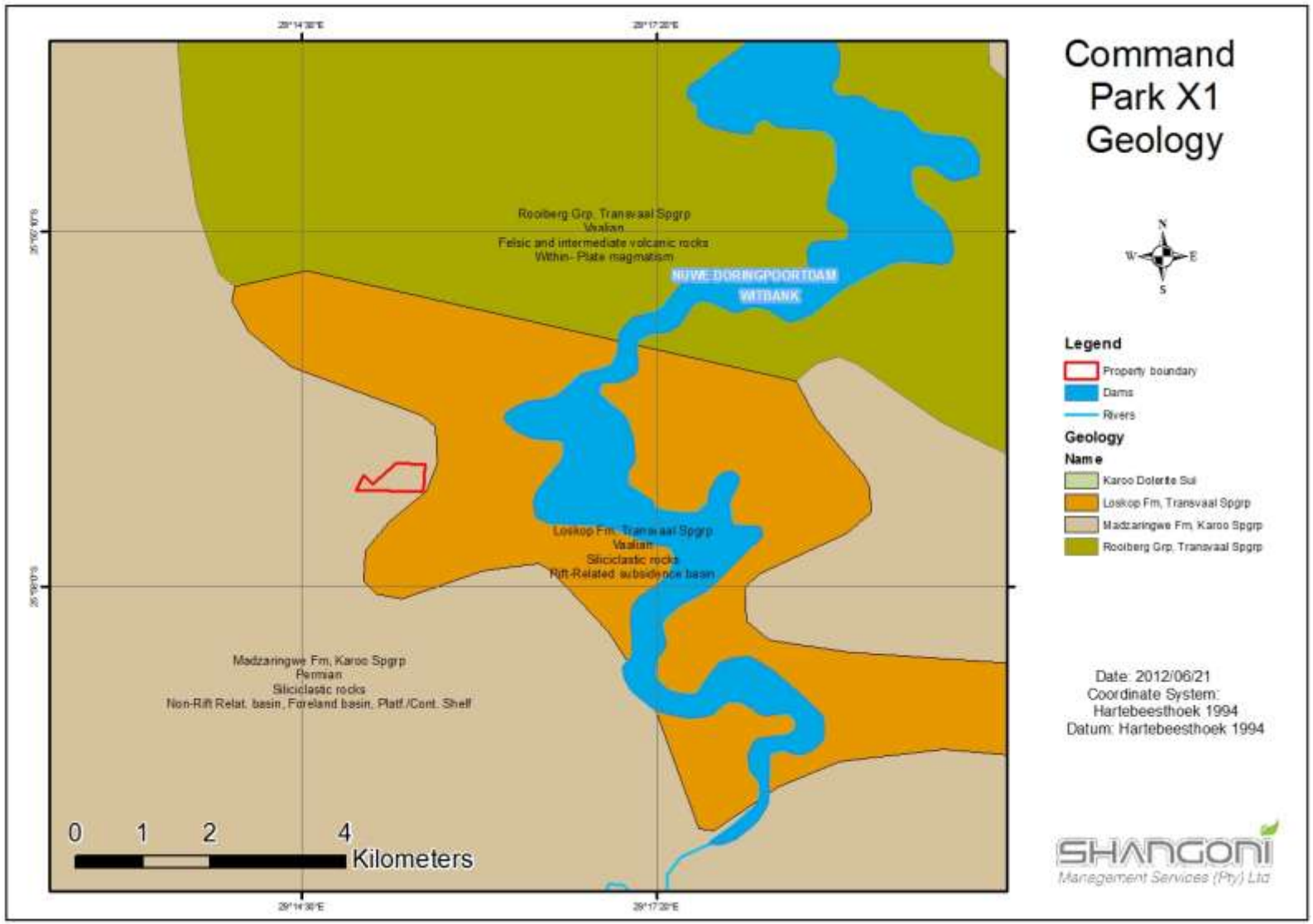


Figure 17: Geology of site and surrounding area.

2.1.2 Regional climate

The climate of the site is typical of Highveld conditions, with relatively warm to hot summers with a fairly high rainfall, and moderate to cool winters with little or no rain. Valleys and wetlands are much cooler at night and more prone to frost than higher lying areas. The area experiences thunderstorms during the summer months, which usually occur in the late afternoons.

Rainfall

The site occurs in a summer rainfall area receiving a mean annual rainfall of 688.3mm. The average precipitation (taken over a period of the past five years) is 165mm in January and 2mm in July. The relative humidity varies between 12% as minimum and 93% as maximum.

See Figure 18 for the Average Monthly Rainfall as provided by www.weathersa.com .
See Figure 19 for the Average Yearly Rainfall as provided by www.weathersa.com .

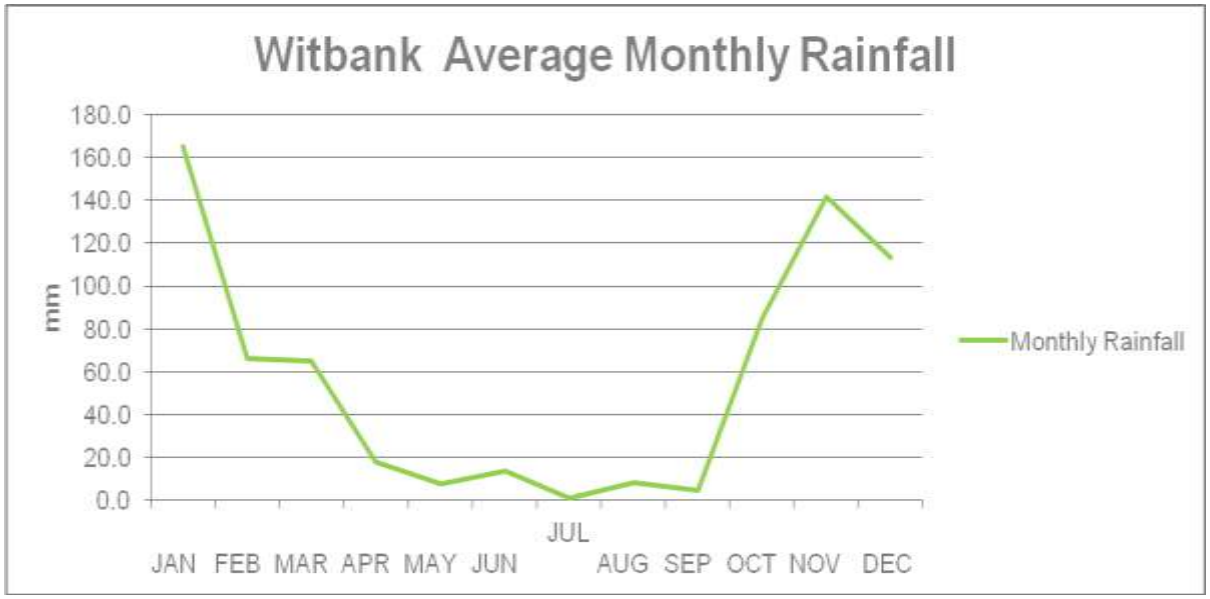


Figure 18: Witbank average monthly rainfall

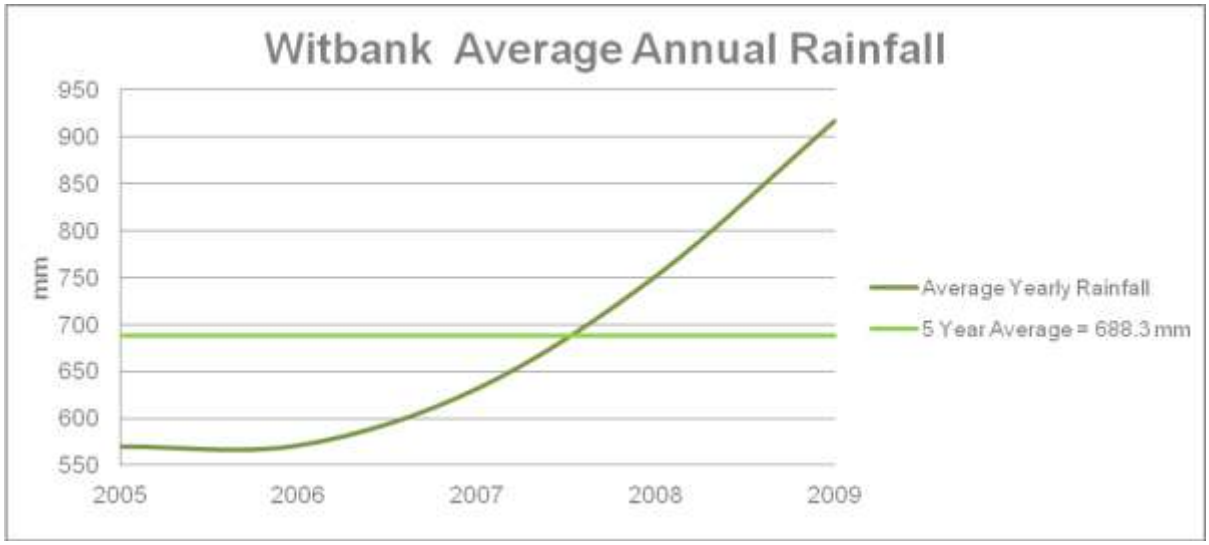


Figure 19: Witbank average annual rainfall

Temperature

The maximum and minimum temperatures for the closest weather station, Witbank, are given to be between 14°C and 27°C during the summer months. In winter the temperature may vary between 3°C and 21°C. The occurrence of frost during winter months provides for very dry grasslands during winter months, which contribute to veldt fires.

See Figure 20 for the Average Daily Temperatures as provided by www.weathersa.com .

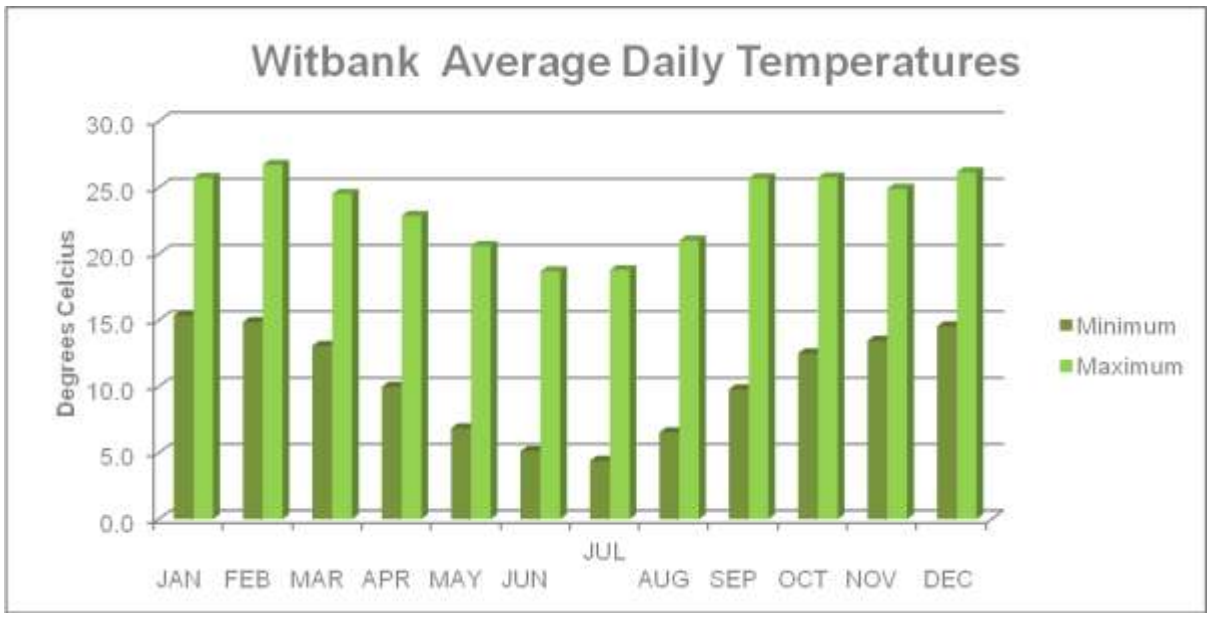


Figure 20: Witbank average daily temperatures

Wind

See the figures below for the Wind Roses of Witbank (closest weather station) from January to December.

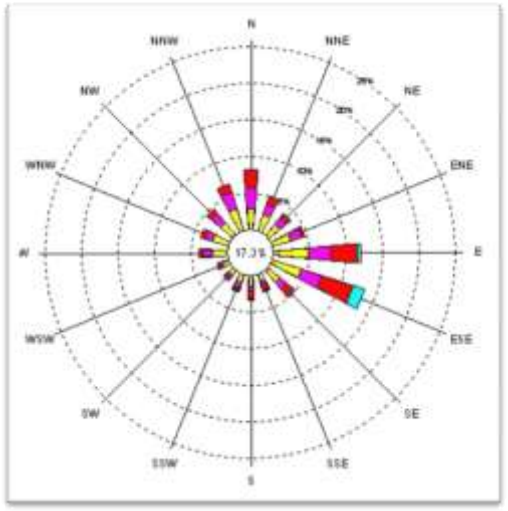


Figure 21: Wind Rose - January

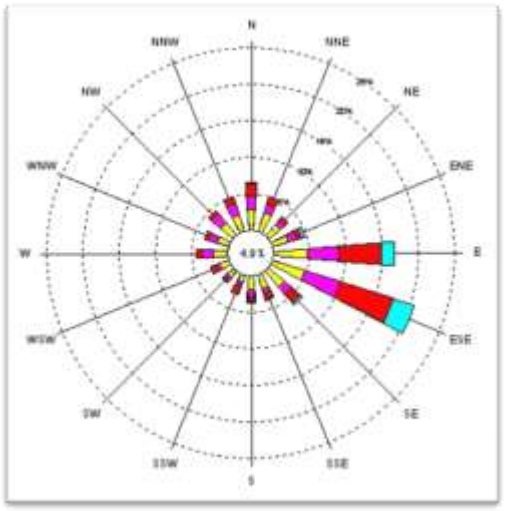


Figure 22: Wind Rose - February

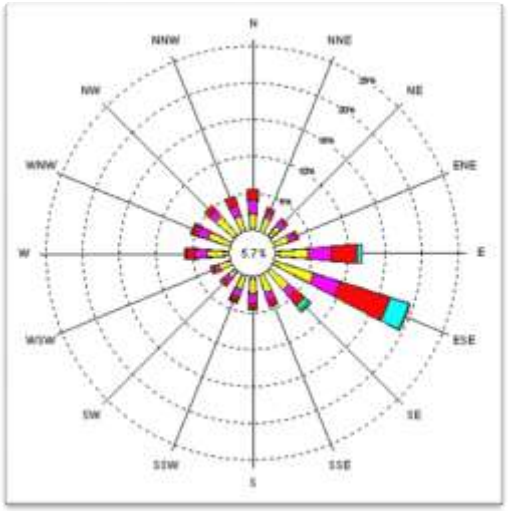


Figure 23: Wind Rose - March

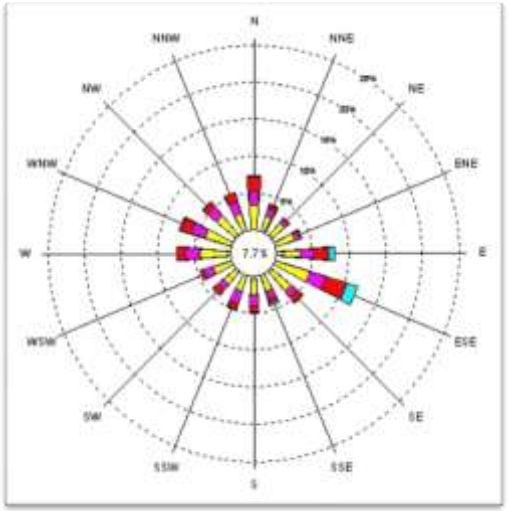


Figure 24: Wind Rose - April

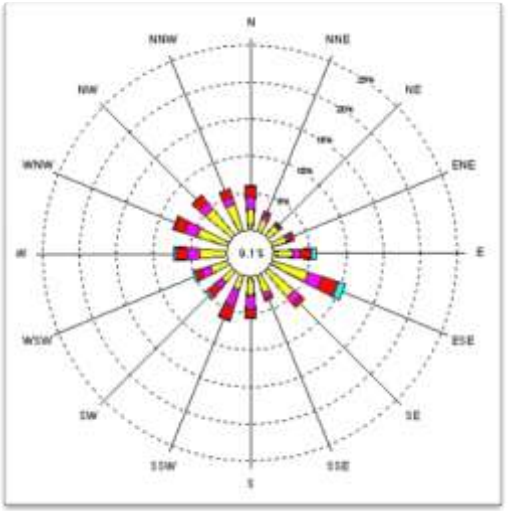


Figure 25: Wind Rose - May

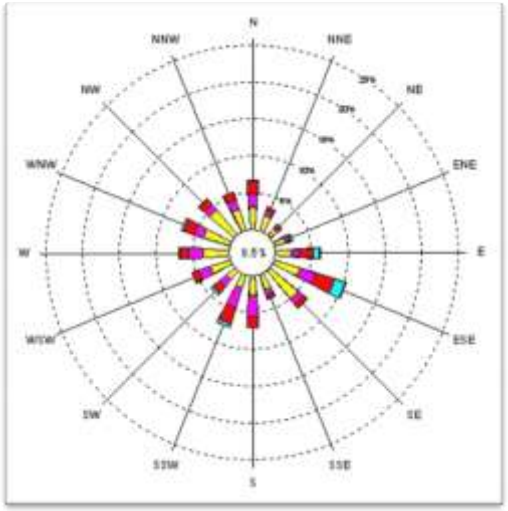


Figure 26: Wind Rose - June

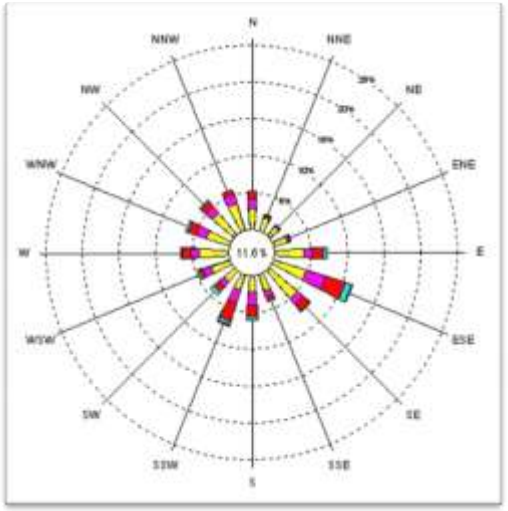


Figure 27: Wind Rose – July

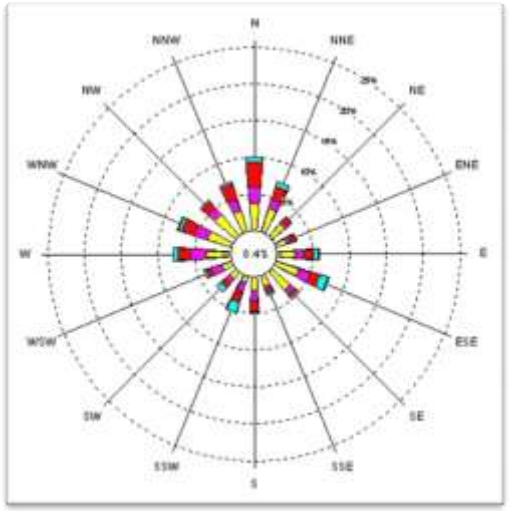


Figure 28: Wind Rose - August

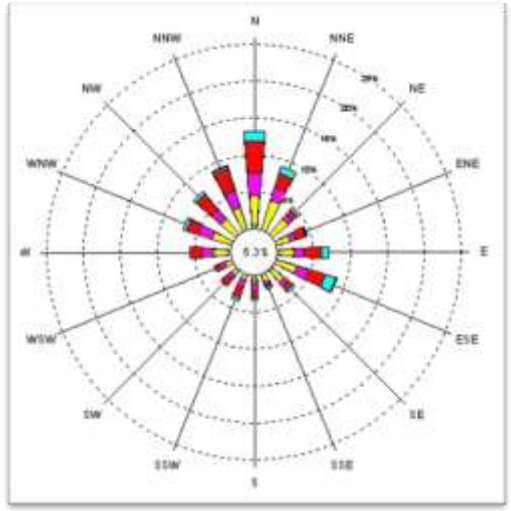


Figure 29: Wind Rose - September

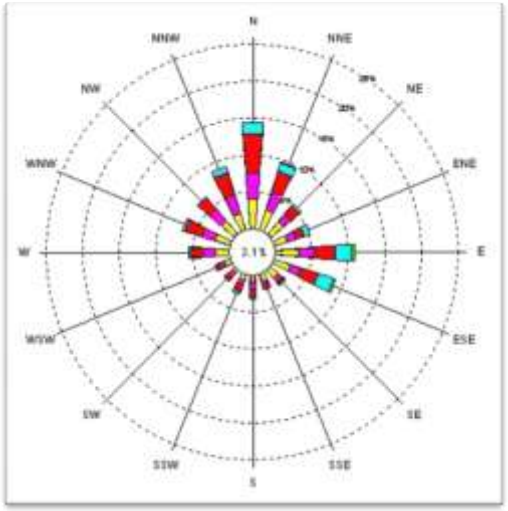


Figure 30: Wind Rose - October

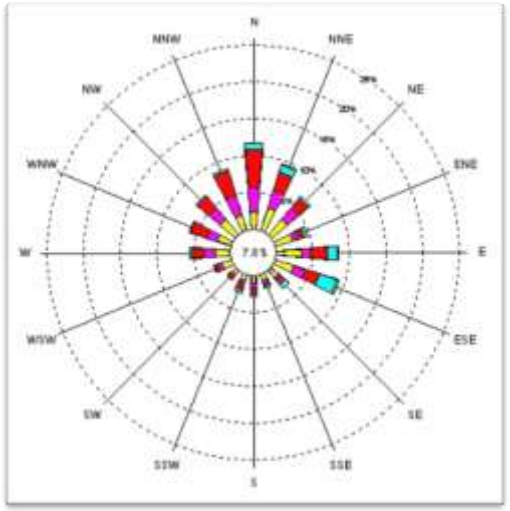


Figure 31: Wind Rose - November

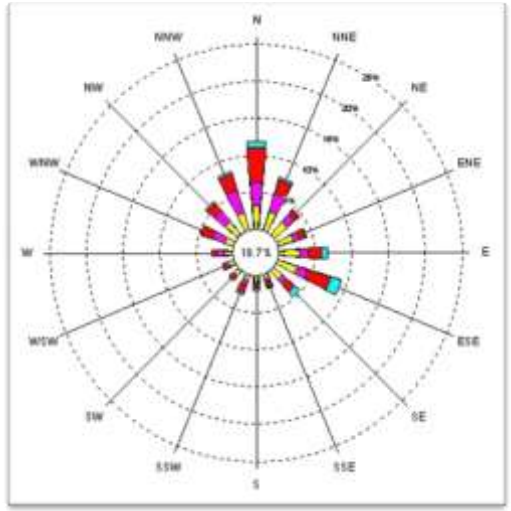


Figure 32: Wind Rose - December

2.1.3 Topography

The site falls within the Eastern Highveld Grassland, the general topography of this grassland area consists of slightly to moderately undulating plains, including some low hills and pan depressions (Mucina & Rutherford 2006).

The landscape at the site is characterised by gentle slopes with few or no exposed rocks and very few indigenous trees. No wetlands are present on the site (Terblanche, R., 2010).

During a geotechnical assessment of the site, the slope of the site was measured to be between 1-2% in a north eastern direction.

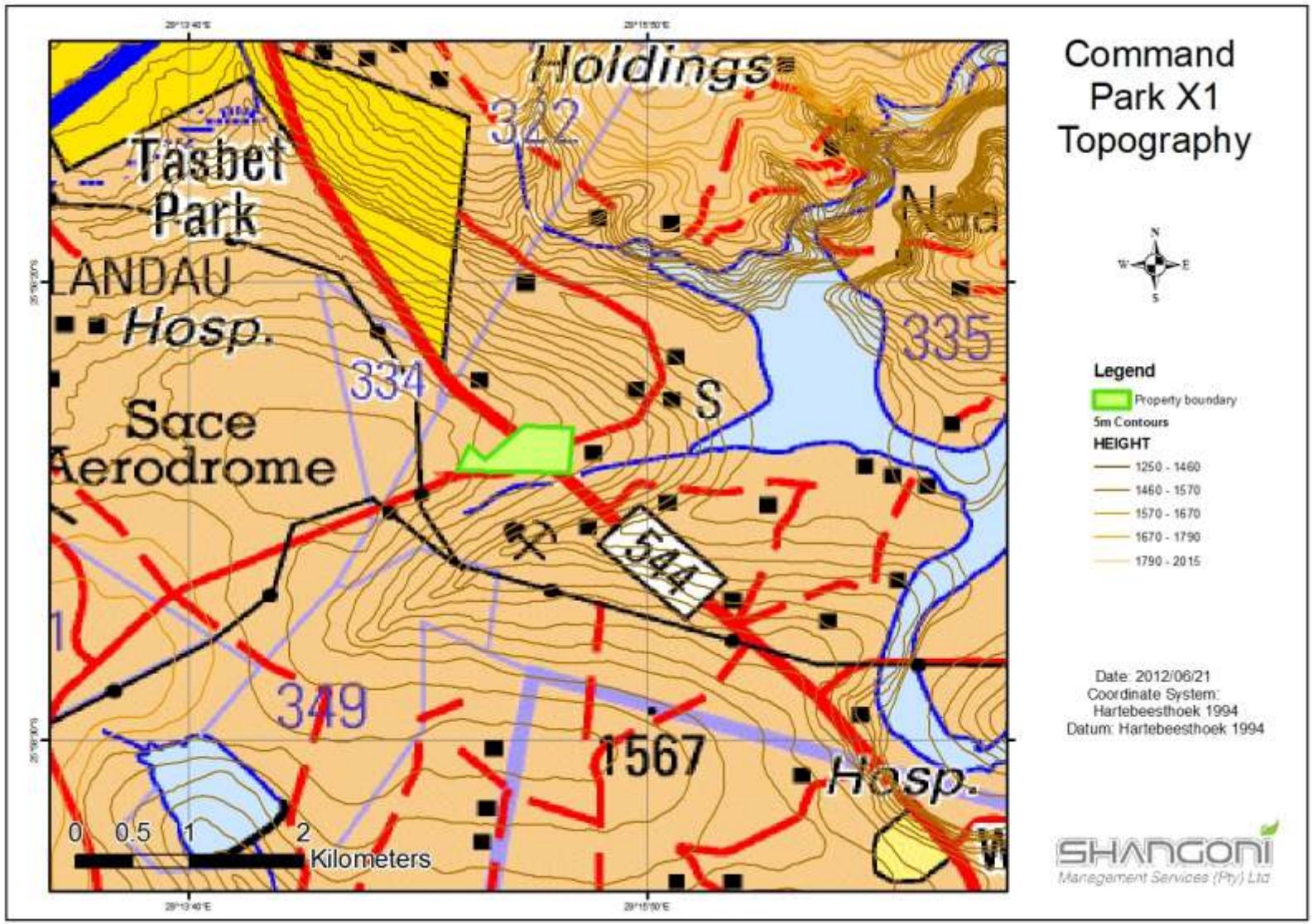


Figure 33: Topography of site and surrounding area.

2.1.4 Soil

Type

The dominant soil type, according to South African soil taxonomy classification, is called Bainsvlei soil. This soil type contains predominantly 1:1 clay minerals, together with oxides and hydroxides of iron and manganese. This soil type is further described in Table 2 (Viljoen & Associated, 2009).

Table 2: Description of the Bainsvlei soil type.

Soil	Diagnostic Horizons	Depth	Description
Bainsvlei	Orthic A-Horizon	0-400mm	Damp dark brown clay.
	Red Apedalic B-Horizon	400-600mm	Damp red aerobic clay with loose consistency.
	Soft Plintic B-Horizon	>600mm	Damp red aerobic clay with loose consistency.

Collapsible soil

The collapsible coefficient (SP) of the soil was determined by conducting consolidation tests on samples taken from profile pits. This coefficient gives an indication of what is to be expected under construction loads. The consolidation tests were done at the materials original moisture content up to a loading capacity of 200kPa and thereafter in wet conditions up to a loading capacity of 400kPa. Table 3 shows five different SP categories.

Table 3: Collapsible coefficient (SP) categories.

SP category	Description
<1%	No problems
1-5%	Medium problems
5-10%	Problems
10-20%	Serious problems
>20%	Very serious problems

It is recommended that the foundations should be thoroughly inspected for soft collapsible areas. If such an area is identified, it should be compacted to a minimum density of 95% of the AASHTO density of the material. The area of investigation represented a slightly compressible soil, estimated at a total settlement of 5-10mm (Viljoen & Associated, 2009).

Expandable soil

An interpretation of analytical data, based on the plasticity index and percentage clay fraction of materials, revealed a low potential for swelling and shrinking anomalies to occur under fluctuating moisture regimes. The area of investigation represented a slightly expansive soil, estimated at a total heave of 7.5 – 15mm (Viljoen & Associated, 2009).

Load bearing capacity of soil

The soil bulk density was estimated at 1 275kg/m^3, thus having a load bearing capacity greater than 100kPa (Viljoen & Associated, 2009).

Excavation

Conventional earth moving equipment may be used for excavations of sub-surface services up to 1 500mm. Some areas may require blasting (Viljoen & Associated, 2009).

Foundation requirements and Building procedures

According to the National Home Builders Registration Council (NHBRC) the study area is zoned as H1C1. Refer to Table 4 for recommendations on the foundation design for a site falling within H1C1 zoning (Viljoen & Associated, 2009):

Table 4: Foundation design for H1C1 zoning.

Construction type	Foundation design (SAICE, 1995)
Site Class H1	Modified normal, soil raft.
Site Class C1	Modified normal, compaction of *in situ* soils below individual footings, deep strip foundations, soil raft.

Soil chemistry

Acidification and the resulting corrosion effect on iron subsurface infrastructure is highly unlikely as the interpretation of analytical data found no acidification anomalies. Take note that a neutralising requirement of 1 ton/ha/300mm CO_3 is indicative of the analytical data.

The soil was found not to be prone to erosion as a result of having low sodium content relative to the cation exchange capacity (Viljoen & Associated, 2009).

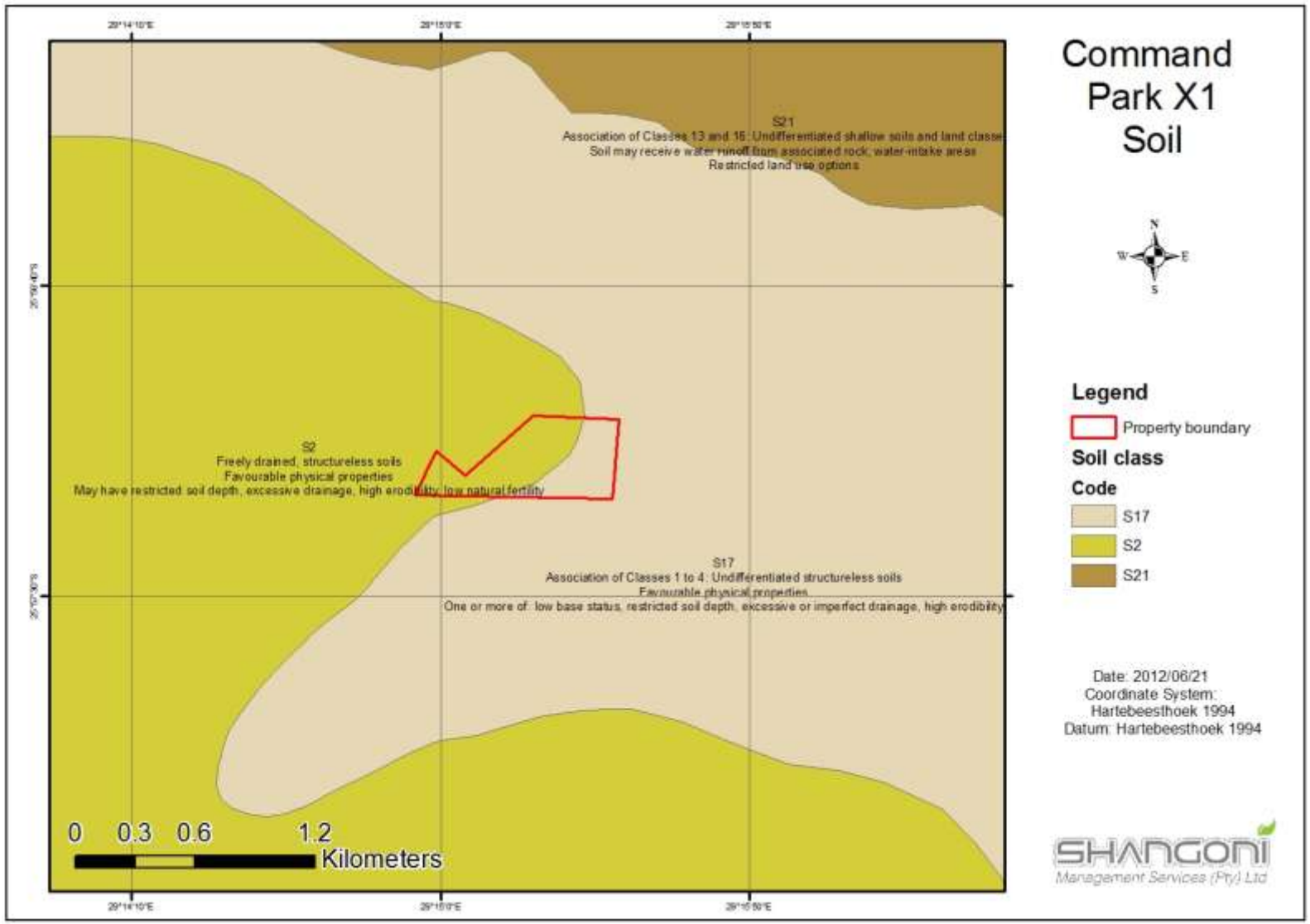


Figure 34: Soils charactaristic of the site and surrounding area.

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Tel. 083 271 6304, Fax. (018) 2967500, e-mail:Univata@iafrica.com
Managing Member: CJ Viljoen *Pr.Sci.Nat., M.Sc*

Soil Profile Nr: 1
Date: December 2009
Job Nr: P228
Client: TownScape Planning Solutions

Depth (m)	Soil Profile	Sample Nr. Symbols	Description of Soil and Properties
0.00 – 0.30			Slightly moist, light grey mottled light brown, very soft, intact micaceous clay silt. Roots.
0.40		A	
0.50 – 1.30			Slightly moist, reddish brown, soft, intact, micaceous clay.
1.40 – 2.30			Moist, yellow brown mottled reddish brown, loose, intact, fine sandy clay with abundant ferricrete nodules.

Notes: No refusal.
No groundwater intersected - moist conditions.
NHBRC Zone Classification: H1C1

Figure 35: Soil profile number 1.

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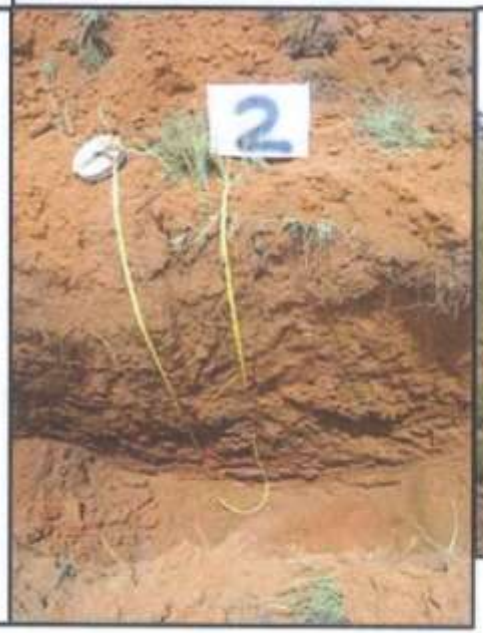
Tel. 083 271 6304, Fax. (018) 2907500, e-mail Univata@iafrica.com
Managing Member: CJ Viljoen *Pr.Sci.Nat., M.Sc*

Soil Profile Nr: 2
Date: December 2009
Job Nr: P228
Client: TownScape Planning Solutions

Depth (m)	Soil Profile	Sample Nr. Symbols	Description of Soil and Properties
0.00 – 0.80			Slightly moist, light grey mottled light brown, very soft, intact micaceous clay silt. Roots.
0.90 – 1.20			Slightly moist, reddish brown, soft, intact, micaceous clay.
1.30 – 1.60			Moist, yellow brown mottled reddish brown, loose, intact, fine sandy clay with abundant ferricrete nodules.
1.70 – 2.00			Shale.



Notes: Refusal on shale.
No groundwater intersected - moist conditions.
NHBRC Zone Classification: H1C1

Figure 36: Soil profile number 2.

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Soil Profile Nr: 3
Date: December 2009
Job Nr: P228
Client: TownScape Planning Solutions

Depth (m)	Soil Profile	Sample Nr. Symbols	Description of Soil and Properties
0.00 – 0.60			Slightly moist, light grey mottled light brown, very soft, intact micaceous clay silt. Roots.
0.70 – 1.10			Slightly moist, yellow brown, soft, intact, micaceous clay.
1.20 – 1.90			Moist, yellow brown mottled reddish brown, loose, intact, fine sandy clay with abundant ferricrete nodules.
2.00			Shale.

Notes: Refusal on shale.
No groundwater intersected - moist conditions.
NHBRC Zone Classification: H1C1

Figure 37: Soil profile number 3.

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Soil Profile Nr: 4
Date: December 2009
Job Nr: P228
Client: TownScape Planning Solutions

Depth (m)	Soil Profile	Sample Nr. Symbols	Description of Soil and Properties
0.00			
0.10			
0.20			Slightly moist, light grey mottled light brown, very soft, intact micaceous clay silt. Roots.
0.30			
0.40			
0.50			
0.60		B	
0.70			
0.80			
0.90			Slightly moist, yellow brown, soft, intact, micaceous clay.
1.00			
1.10			
1.20			
1.30			
1.40			Moist, yellow brown mottled reddish brown, loose, intact, fine sandy clay with abundant ferricrete nodules.
1.50			
1.60			
1.70			
1.80			
1.90			Shale.

Notes: Refusal on shale.
No groundwater intersected - moist conditions.
NHBRC Zone Classification: H1C1

Figure 38: Soil profile number 4.

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Soil Profile Nr: 5
Date: December 2009
Job Nr: P228
Client: TownScape Planning Solutions

Depth (m)	Soil Profile	Sample Nr. Symbols	Description of Soil and Properties
0.00 – 0.50			Slightly moist, light grey mottled light brown, very soft, intact micaceous clay silt. Roots.
0.60 – 1.40			Moist, yellow brown mottled reddish brown, loose, intact, fine sandy clay with abundant ferricrete nodules.
1.50			Shale.

Notes: No refusal.
No groundwater intersected - moist conditions.
NHBRC Zone Classification: H1C1

Figure 39: Soil profile number 5.

2.1.5 Land use and land capability

The site for the proposed development is zoned as agricultural. No agricultural activities have taken place on this land in the last ten years. A rezoning application has been submitted with the local authority, to change the land use zoning. The land is currently open and vacant, experiencing some illegal dumping on site and informal settlement on the south-eastern part of the property.

The surrounding land uses include the following:

- North - Vacant – Open field
- South - Proposed Command park Ext 2 & logistic business
- East - Pub & logistic business
- West - Vacant land

Figure 40: Google earth illustration of the land use surrounding the site.

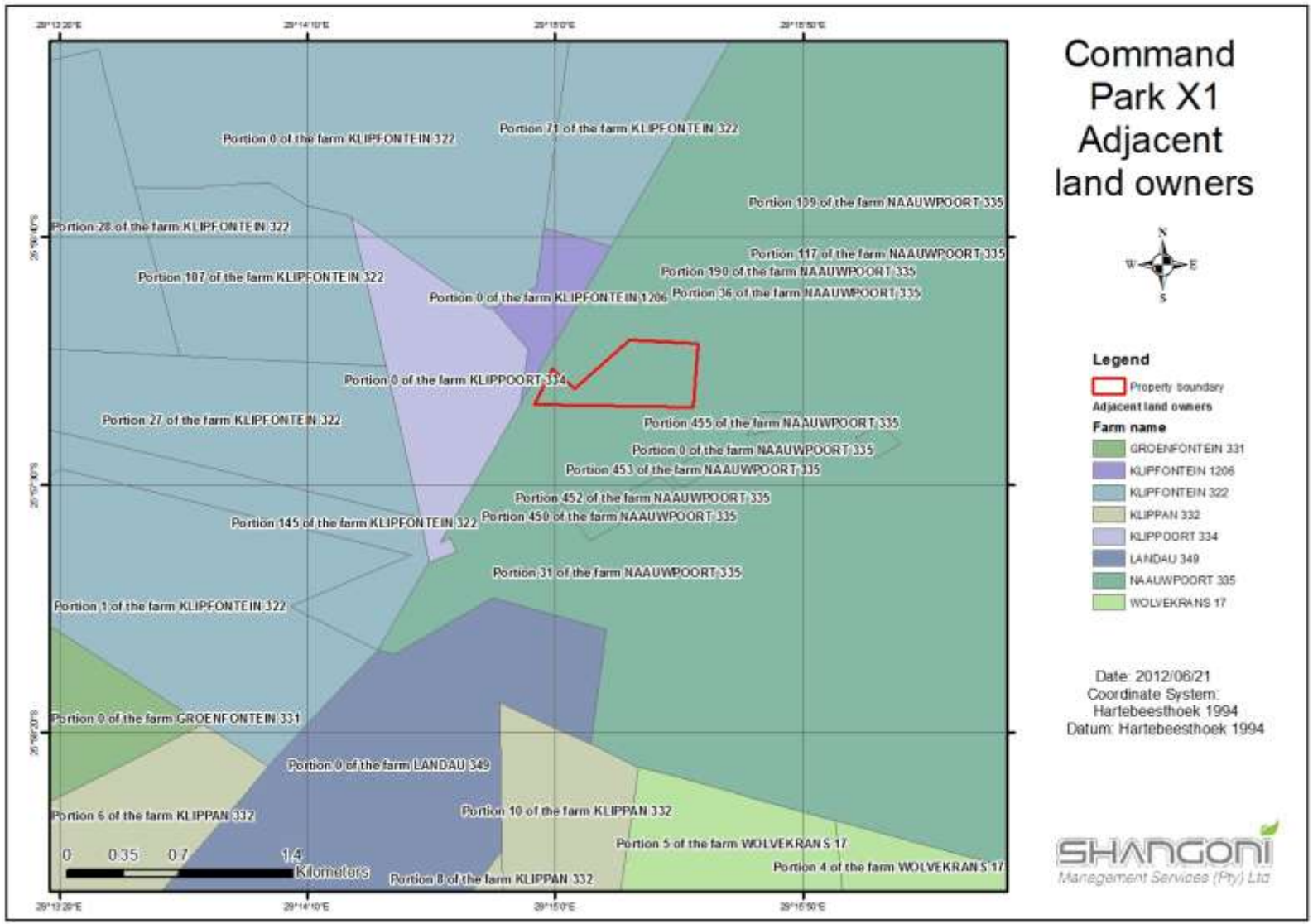

Figure 41: Adjacent landowners to the proposed Comand Park X1 project site.

2.1.6 Flora

The site is situated in the south eastern part of Emalahleni (Witbank) in the Mpumalanga province. The vegetation type of the area can be described as Eastern Highveld Grassland. The Eastern Highveld Grassland can be described as a short dense grassland dominated by the usual Highveld grass composition (Aristida, Digitaria, Eragrotis, Themeda, Tristachya etc.) with small, scattered rocky outcrops with wiry, sour grasses and some woody species (Acacia caffra, Celtis Africana, Diospyros lyciodes subsp lycioides, Parinari capensis, Protea caffra, P. Welwitchii and Rhus magalismontanum) (Mucina & Rutherford 2006).

An ecological fauna and flora habitat survey was conducted on the site in July 2010. It was found that most of the site appears to be moderately to severely degraded. This is as a result of informal dumping, the presence of tracks and dirt roads, together with residential and industrial sites occurring in the area. The existing vegetation onsite consists of grassland, weeds and a few exotic trees.

Table 5: Ecological fauna and flora habitat survey - vegetation found onsite

Vegetation	Found on site
Grassland	Hyparrhenia hirta (common thatch grass), Themeda triandra (red grass), Eragrostis chloromelas (curly leaf), Elionurus muticus (wire grass), Cynodon dactylon (couch grass) and Aristida congesta (common three awn)
Forb (herbs)	The diversity does not appear to be high, though numerous exotic weeds are present
Exotic trees	*Acacia decurrens* (green wattle) and *Eucalyptus camaldulensis* (red river gum)
Exotic weeds	*Tagetes minuta* (khaki weed), *Verbena* species (purple-tops), *Conyza* species (flea banes), *Verbena aristigera* (fine-leaved verbena), *Verbena brasiliensis* (purple top) and *Cosmos bipinnatus* (Bidens formosa) (cosmos).

No extinct, critically endangered, endangered, vulnerable, near threatened, or any flora which fall under the conservation status, critically rare, rare, declining and data deficient were observed on the site. It is unlikely that there will be a loss of any plant species of particular high conservation priority if the site was to be developed.

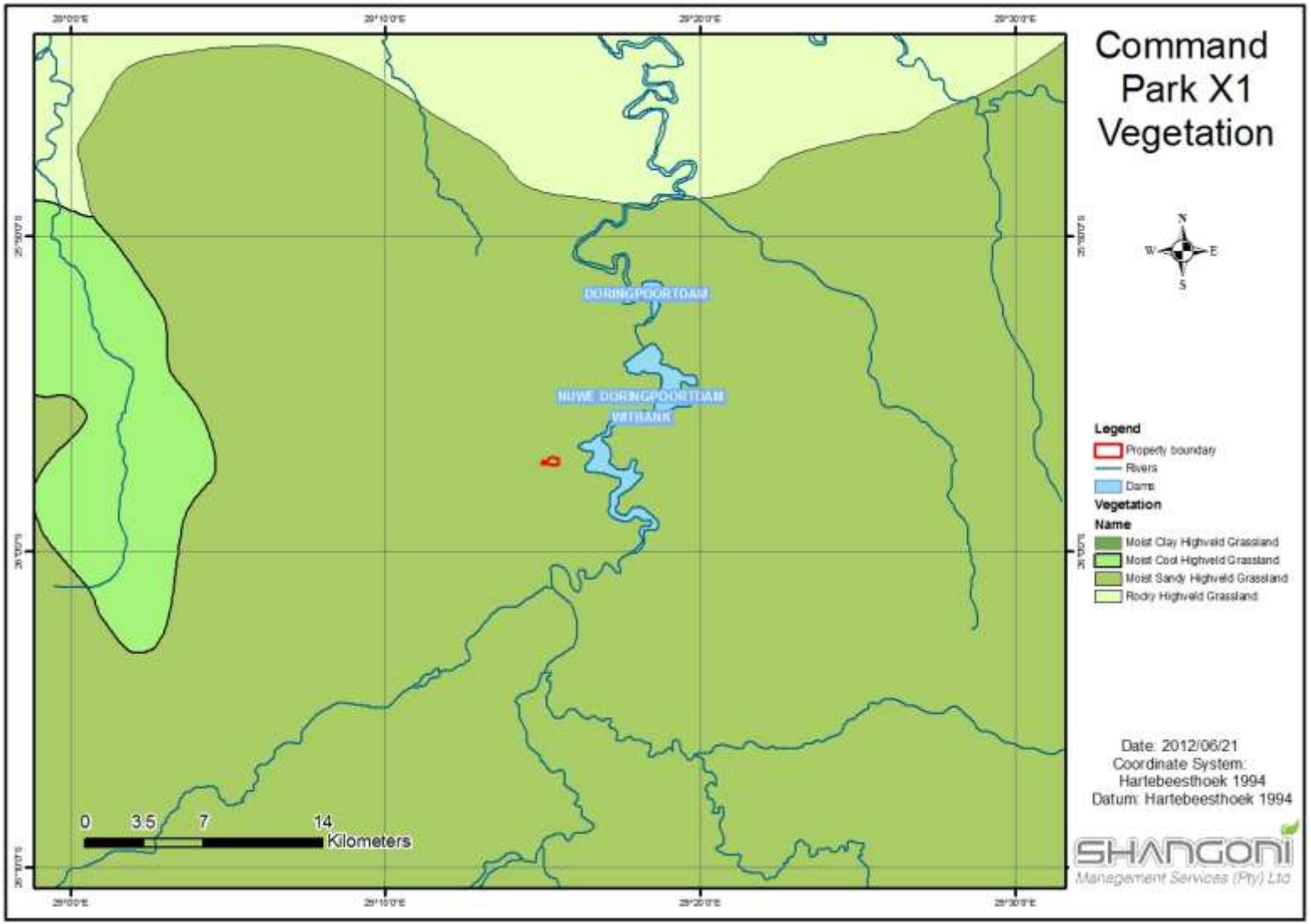

Figure 42: Vegetation characteristic of the site and surrounding area.

2.1.7 Fauna

It is unlikely that there are any red listed animal species or any animal species of particular conservation importance at the site. It is therefore concluded that if the site is developed, there would be no threat to any red listed animal or plant species.

Mammals

The site falls outside reserves, thus threatened species such as the black rhinoceros (*Diceros bicornis*) and the African wild dog (*Lycaon pictus*) were not present or expected. The occurrence of smaller mammals of high conservation importance on site is highly unlikely (Terblanche, R.,2010).

Birds

The site does not appear to provide any significant habitat to any threatened bird species or any bird species of particular conservation importance (Terblanche, R.,2010).

Reptiles

If the site was to be developed, it appears that there would be no threat to any reptile species of particular high conservation importance (Terblanche, R.,2010).

Amphibian

If the site was to be developed, it appears that there would be no threat to any amphibian species of particular high conservation importance (Terblanche, R.,2010).

Invertebrates

There appears to be no threat to any of the butterfly and fruit chafer beetles of particular high conservation priority if the site were developed (Terblanche, R.,2010).

Table 6: Likelihood of onsite occurrence of some butterfly and beetle invertebrate species.

Invertebrate	Name	Description	Occurrence onsite
Butterfly	*Aloeides barbarae* (Barbara's Copper)	Is found on grassy hilltops, sparsely strewn with small rocks in the Barberton area. The site falls outside the known extent of occurrence.	Unlikely
	Aloeides nubilus	No ideal habitat appears to be present onsite for the butterfly.	Unlikely
	Aloeides rossouwi	The butterfly is currently only known from one peak on the escarpment southwest of the town Stoffberg. The site falls outside the known extent of occurrence.	Unlikely

		No ideal habitat appears to be present onsite for the butterfly.	
	Chrysorits aureus (Golden Opal/ Heidelberg Copper)	Has very specific habitat requirements, which include rocky ridges with a steep slope and a southern aspect. No ideal habitat appears to be present onsite for the butterfly.	Unlikely
	Dingana fraterna	The altitudinal band where adults of this species are found, is between 1600 and 1700 m. There is no suitable habitat for at the site.	
	Lepidochrysops irvingi	Is found at habitats near Graskop, Sabie and Nelshoogte west of Barberton where females have been found to oviposit on the plant species *Ocimum obovatum* (= *Becium obovatum*). No ideal habitat appears to be present onsite for the butterfly.	Unlikely
	Lepidochrysops jefferyi	It is localised and only known from a few localities in the Barberton district at habitats where the plant species *Ocimum obovatum* (= *Becium obovatum*) is present. No ideal habitat appears to be present onsite for the butterfly.	Unlikely
	Lepidochrysops rossouwi	It is found on grassy escarpment in the Lydenburg and Stoffberg areas at habitats where the plant species *Lantana rugosa* is present. No ideal habitat appears to be present onsite for the butterfly.	Unlikely
	Lepidochrysops swanpoeli	It is localised and only known from a few grassy hills near Barberton where the plant species *Ocimum obovatum* (= *Becium obovatum*) is present. No ideal habitat appears to be present onsite for the butterfly.	Unlikely
	Metisella meninx.	The ideal habitat of *Metisella meninx* is treeless marshy areas where *Leersia hexandra*	Unlikely

		(rice grass) is abundant. There is no suitable habitat for *Metisella meninx* on the site	
	Platylesches dolomitica	Is a rare butterfly of which the habitat, presumably dolomite ridges, is still poorly known. *Platyleshces dolomitica* was not found on the site	Unlikely
Beetles	*Discopeltis barbertonensis* or *Trichocephala brincki*	No *Discopeltis barbertonensis* or *Trichocephala brincki* were found during the surveys. There appears to be no suitable habitat for *Discopeltis barbertonensis* or *Trichocephala brincki* at the site.	Unlikely

2.1.8 Surface water

Drainage

During the geotechnical investigation (December 2009), it was found that the dominant drainage pattern of the study area was surface sheet flow, with no drainage channels intersecting the site and drainage occurring in a northern direction. Perennial water fluctuations were indicated by the presence of ferruginised profiles.

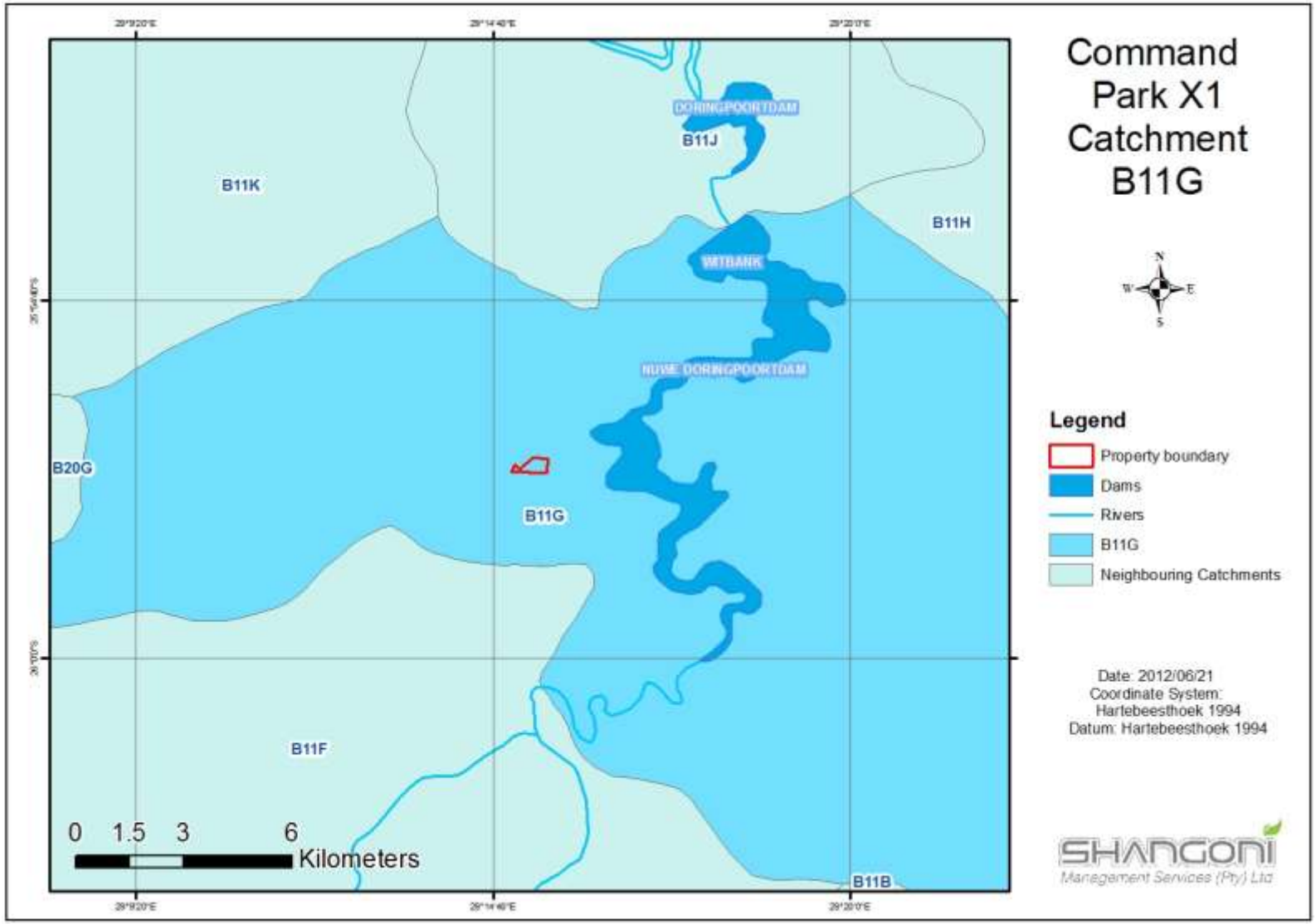

Figure 43: Catchments area of site and surrounding areas.

2.1.9 Groundwater

The presence of oxides and hydroxides of iron and manganese were found in soil profiles during the geotechnical investigation (December 2009). These oxides and hydroxides of iron and manganese are indicative of anaerobic wet soil conditions. This suggests the water table may be close to the surface during extreme rainy seasons.

2.1.10 Noise

Noise around the proposed site is generated by the traffic, the thatchery business, El Paso Restaurant and residential activities at Duvhapark extension 2.

According to Jorgensen & Johnson (1981), the noise levels generated by general construction activities on a building site can reach levels of approximately 70 dB, caused by for instance heavy machinery. It can therefore be assumed that the proposed development will have a negative impact on the environmental noise of the area once construction starts.

Sound is inversely proportional to the distance from the source and can get absorbed by buildings and vegetation barriers. Noise intensities (dB) will be at their highest on site and will decrease as you move away from their sources.

The decline curve below (Figure 44) gives an indication of how noise generated at the site will decrease with distance. This gives a clear indication of the distance that the sound would have travelled upon reaching a level of 60 dB, prescribed by the SABS as being the acceptable limit for environmental noise.

According to Figure 44, at a distance of 27 metres from the construction site, the generated noise would have decreased to a level of 60 dB and at a distance of 45 metres it would have decreased to approximately 55dB. It can therefore be said that noise travelling further than 45 metres will have a low impact on neighbouring farms and residential areas.

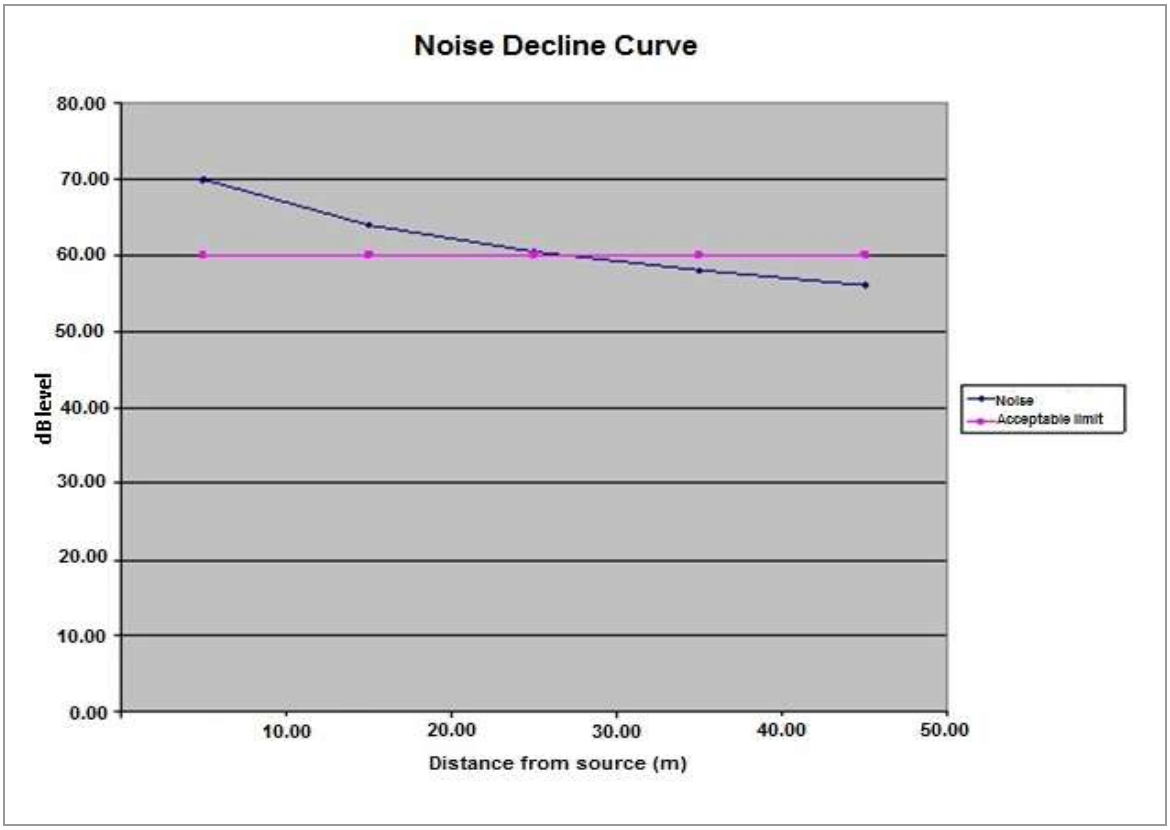

Figure 44: Noise decline curve.

The following statement was extracted from the report titled: Roberts R.A., Motivating Memorandum in respect of an industrial land use township establishment to be known as Command Park Extension 1, Townscape Planning Solutions, November 2012, which is attached hereto in Appendix D.

The locality of the property is such, that noise pollution should not be a factor. The rights envisaged should also not have any noise impact on the surroundings, as the intension is to accommodate uses/facilities, which seek the passive mode of open space.

2.1.11 Sites of archaeological and cultural interest

The following information was extracted from the report titled: Roberts R.A., Motivating Memorandum in respect of an industrial land use township establishment to be known as Command Park Extension 1, Townscape Planning Solutions, November 2012, which is attached hereto in Appendix D.

No important cultural heritage resources or graves could be found on the site.

There is no objection to the proposed development from a cultural heritage point of view. If any heritage elements such as graves are revealed during the construction phase, the correct procedures as described in Act 25 of 1999 should be adhered to.

2.1.12 Visual aspects

The incidence of viewers driving on the R544 that runs through a portion of the proposed development site will be fairly high. The R544 runs parallel to the Duvhapark extension 2 residential area, before it would pass the proposed development, Command Park Extension 1.

Negative public opinion can mainly be contributed to the contrast between the general natural environment and the infrastructure coupled with the proposed project. The proposed development is to be constructed in an area where the natural vegetation is disturbed. No significant contrast is expected to be experienced by viewers, as the development will be within an existing built environment, thus not contributing to a significant visual impact.

2.1.13 Air quality

The project site is located in the Emalahleni District Municipality that forms part of the Highveld Priority Area (Refer to Figure 45).

South Africa has limited financial and technological resources as well as air quality specialists to ensure efficient and effective air quality improvements. The risk thus exists that these resources will be stretched beyond their capacity if they are required to simultaneously manage the air quality throughout the country. By establishing priority areas, these resources can be focused on recognised areas of concern.

The Highveld was declared as a priority area on 23 November 2007, and is now referred to as the Highveld Priority Area, in terms of section 18(1) of the National Environmental Management: Air Quality Act, 2004 (Act No 39 of 2004). This means that the ambient air quality in this area currently exceeds or may in future exceed the ambient air quality standards and that the area requires specific air quality management plan. The Air Quality Management Plan aims to put systems and methods in place to systematically deal with the Air quality issues.

The expected impact on air quality associated with the development, will occur primarily during the construction phase, and is anticipated to be low.

The following statement was extracted from the report titled: Roberts R.A., Motivating Memorandum in respect of an industrial land use township establishment to be known as Command Park Extension 1, Townscape Planning Solutions, November 2012, which is attached hereto in Appendix D.

The locality of the proposed land uses is not of a nature to be affected by any dust pollution. The landscaping of the area, as per natural character, is that of a nature to have little impact on dust pollution.

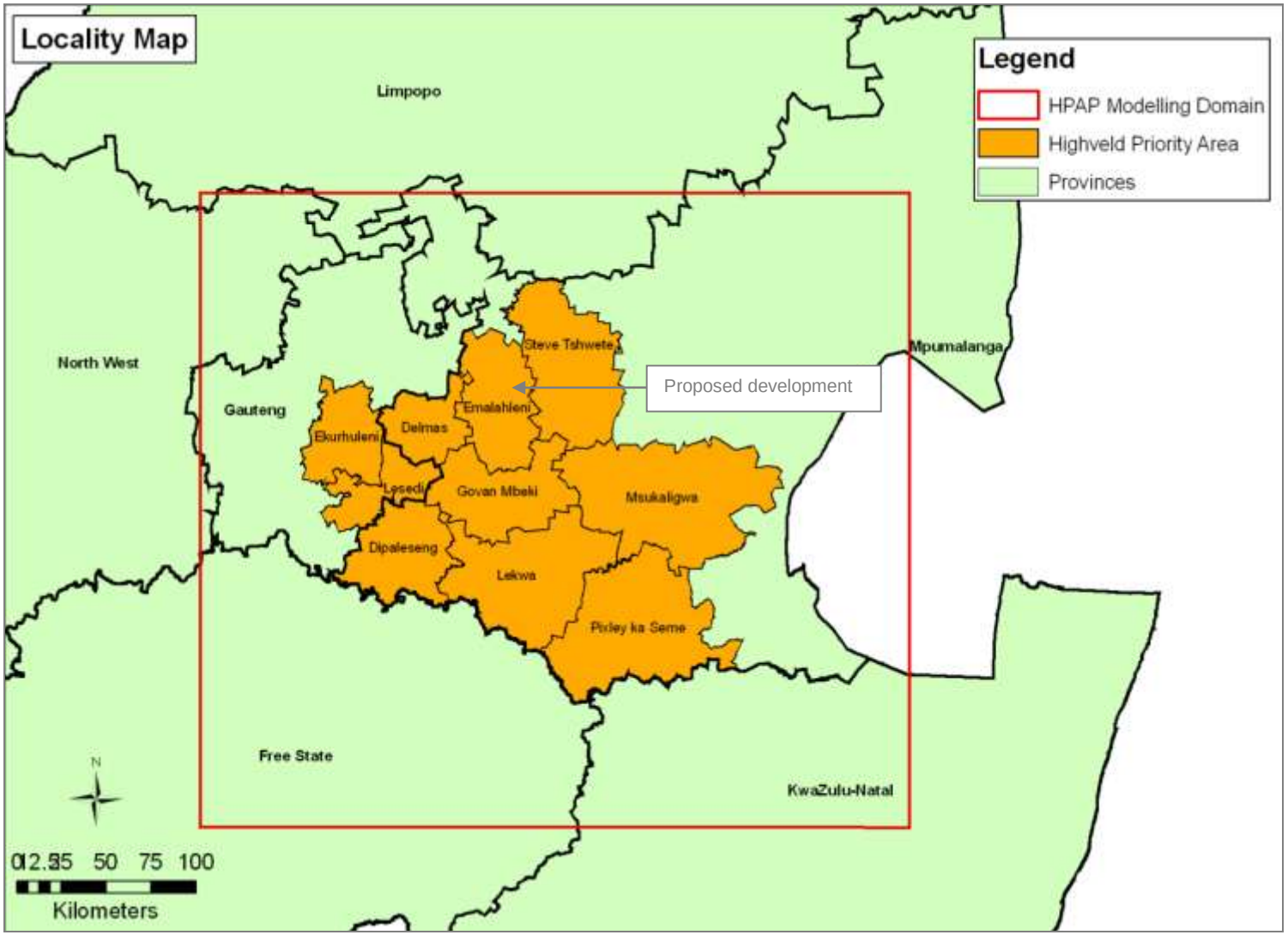

Figure 45: Locality map depicting the Highveld Priority Area (HPA),

2.1.14 Socio-economic aspects

The proposed development is located approximately 8 km from Emalahleni/Witbank central. Emalahleni/Witbank is one of the major urban concentrations in the Nkangala District Municipality and within Mpumalanga as a whole.

Demography

In 2007 the total population of the Nkangala District Municipality was 1 226 500 according to Stats SA 2007. This population number consisted out of approximately 34% of Mpumalanga's population and indicated that the population growth rate increased by about 2% between the period 2001 and 2007.

Emalahleni Local Municipality had the highest population growth of 36.4% between 2001 and 2007 (Refer to *Table 7* below). The population constituted 90.9%, followed by the White population with 7.8%.

The Emalahleni Local Municipality has the highest backlog in terms of water and sanitation, as a result of the local municipality in context of the District grew from about 45% in 2004 and 57% in 2007. The existing housing backlog within the district is causing an increase in informal settlements.

Table 7: Local and district population numbers.

District	2001%	%	2007	%	2010	%	2015	%
Emalahleni LM	276 410	27.1	435 222	35.5	460 000	35.6	495 000	36.3
Nkangala DM	1 018 827	100	1 226 501	100	1 291 800	100	1 364 260	100

(NDM-IDP,2011-2016)

Major economic activities

The Emalahleni, Middelburg area in the Nkangala district is home to concentrations of major economic activity. These major concentrations are however starting to encroach on environmentally significant areas. The primary sector in Nkangala contributed 31.6 per cent, the secondary sector 23.2 per cent and tertiary sector 45.2 per cent in 2009.

Table 8: Economic contribution of each sector within the local and district municipalities.

Sector	Nkangala District Municipality	Emalahleni
Agriculture	1.90%	0.50%
Mining	29.70%	35.00%
Manufacturing	12.20%	5.20%
Electricity	8.90%	14.40%
Construction	2.10%	2.30%
Trade	8.90%	8.60%
Transport	8.80%	9.10%

Trade	13.50%	14.40%
Community Services	14.00%	10.40%
Primary Sector	31.60%	35.50%
Secondary Sector	23.20%	21.90%
Tertiary Sector	45.20%	42.50%

(NDM-IDP,2011-2016)

Unemployment and employment

A reduction in the percentage unemployment was experienced in the Emalahleni Local Municpality between 2001 and 2007. The decline was similar for both males and females; however employment remained higher for males than females. Approximately 61% males and 38% females were employed during 2007 (ELM-IDP, 2010-2011).

3. LEGISLATION AND GUIDELINES APPLICABLE

3.1 Bill of rights

- The Constitution of the Republic of South Africa, 1996: Chapter two, the Bill of rights

Everyone has the right:

1. *to an environment that is not harmful to their health or well-being; and*
2. *to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that.*
   - i. *prevent pollution and ecological degradation;*
   - ii. *promote conservation; and*
   - iii. *secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.*

3.2 Atmospheric emissions

- National Environmental Management: Air Quality Act, 2004 (Act No 39 of 2004) - Part 6– Measures in respect of dust, noise and offensive odours

Section 32 provides the MEC with the power to prescribe measures for the control of dust in specified places or areas, either in general or by specified machinery or in specified instances. The MEC may also prescribe steps for the prevention of nuisance by dust or other measures aimed at the control of dust.

- National Environmental Management Act 1998 (Act No 107 of 1998) - Chapter 7 – Section 28 – Duty of care and remediation of environmental damage

Section 28 of the Act places a duty on every person to identify any significant pollution or degradation (historic and potential) caused by the person to the environment. Reasonable measures must then be taken to prevent the pollution from occurring, continuing or recurring.

Such measures include ceasing, modifying or controlling the act, activity, process causing the pollution, containment of or preventing the movement of the pollutants, eliminating the source of pollution and remedying the effects of the pollution.

- Environment Conservation Act, 1989 (Act No 73 of 1989) - Section 31 A – Damage to the environment

Section 31 A provides the Minister of Environmental Affairs and Tourism with extensive powers in instances of environmental damage and degradation.

- Constitution of the RSA, 1996 (Act No 108 of 1996) - Section 24 – Environment

Section 24 provides every citizen the right to an environment that is not harmful to our health and well-being and to have the environment protected for the benefit of present and future generations through reasonable and other legislative 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.

3.3 Biodiversity

- Conservation of Agricultural Resources Act, 1983 – GN R1048 of 25 May 1984 – Promulgated in terms of the Agricultural Resource Act, 1983 - GN R1048 of 25 May 1984 - Section 5 – Prohibition on the spreading of weeds

- Conservation of Agricultural Resources Act, 1983 – GN R1048 of 25 May 1984 – Promulgated in terms of the Agricultural Resource Act, 1983 - GN R1048 of 25 May 1984 - Part II - Weeds and invader plants

- Conservation of Agricultural Resources Act, 1983 – GN R1048 of 25 May 1984 – Promulgated in terms of the Agricultural Resource Act, 1983 - GN R1048 of 25 May 1984 - Section 15 and 16 – Declaration and control of weeds and invader plants

- National Veldt and Forest Fire Act, 1998 (Act No 101 of 1998) - Section 12 – Duty to prepare and maintain firebreaks.

Every landowner on whose land a veldt fire may start or spread must prepare and maintain firebreaks on his side of the boundary between and adjoining land. If firebreaks are established through burning strict requirements are placed on the owner – firebreaks shall be wide and long enough to reasonably prevent a veldt fire from spreading to neighbours, may not cause soil erosion and must be free of inflammable material. Chapter 5 of the Act further places a duty on all owners to acquire sufficient and effective equipment and have available personnel to fight fires.

3.4 Hazardous Chemicals

- Occupational Health and Safety Act, 1993 (Act No 85 of 1993) - GN R1179 of 25 August 1995 – Hazardous Chemical Substance Regulations (HCS) - Regulation 9A – Handling of HCS

Every manufacturer or person who imports, sells or supplies HCS for use at work shall provide an MSDS in the prescribed format, or if not reasonable practicable enough information to enable the user to take the necessary measures as regards the protection of health and safety.

- Occupational Health and Safety Act, 1993 (Act No 85 of 1993) - GN R1179 of 25 August 1995 – Hazardous Chemical Substance Regulations (HCS) - Regulation 14 – Labelling, packaging, transportation and storage

In order to prevent the spreading of contamination with HCS, an employer shall ensure all HCS in storage or distribution are properly identified, classified and handled in accordance with SANS 1072 and SANS 10228 and that the container / vehicle in which HCS is transported is clearly identified classified and packed in accordance with SANS 10228 and SANS 10229 and that every container into which HCS is decanted is clearly marked with regards to the content thereof.

- Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No 36 of 1947) - GN R181 of 7 February 2003 – Regulations relating to the prohibition on the sale, acquisition, disposal or use of agricultural and stock remedies.

Any person applying agricultural remedies (which includes pesticides) as part of his trade, shall register with the Department of Agriculture as a pest control operator and shall use it in the manner specified on the label on the container or on the container itself. Further, the sale, use, acquisition or disposal of agricultural or stock remedies may only take place if the container and label is approved by the Registrar.

3.5 Heritage resources

- National Heritage Resources Act No 25 of 1999 (Act No. 25 of 1999, as amended)

During the course of the development, the developer and contractors must comply with all other relevant legislation (including the bylaws of the Local Municipality).

3.6 Land and Soil Management

- National Environmental Management Act, 1998 (Act No. 107 of 1998)
- Environmental Conservation Act, 1989 (Act No. 73 of 1989)

3.7 Laws of general application

- Constitution of the RSA, 1996 (Act No. 108 of 1996)
- National Environmental Management Act, 1998 (Act No. 107 of 1998)
- Environment Conservation Act, 1989 (Act No. 73 of 1989 as amended)

- Promotion of Access to Information Act, 2000 (Act No. 2 of 2000 as amended)

3.8 Noise

- Environment Conservation Act, 1989 (Act No 73 of 1989) – GN 5479 of 20 August 1999 – Noise Control Regulations 1999 (Gauteng) - Section 8 – Prohibition of disturbing noise

- Environment Conservation Act, 1989 (Act No 73 of 1989) – GN 5479 of 20 August 1999 – Noise Control Regulations 1999 (Gauteng) - Section 9 – Prohibition of noise nuisance

3.9 Planning of new activities

- National Environmental Management Act, 1998 (Act No. 107 of 1998)
- Environment Conservation Act, 1989 (Act No 73 of 1989) – GN R1182 of 5 September 1997 - Sections 21, 22 and 26 and GN R1182 and 1183 (as amended) of 5 September 1997

Prior approval is required from the Gauteng Provincial Department (Environmental Affairs) for the undertaking of any activity listed in GN R1182 of 5 September 1997.

- National Heritage Resources Act, 1999 - Section 38 – Management of heritage resources

Section 38 list several activities and prior to the undertaking thereof notification to the provincial heritage resource authority is required, who may in return an environmental impact assessment, unless an EIA has already been undertaken in terms of Section 21, 22 and 26 of the Environment Conservation Act, 1989.

3.10 Soil management

- National Environmental Management Act 1998 (Act No 107 of 1998): Chapter 7 – Section 28 – Duty of care and remediation of environmental damage.

Section 28 of the Act places a duty on every person to identify any significant pollution or degradation (historic and potential) caused by the person to the environment. Reasonable measures must then be taken to prevent the pollution from occurring, continuing or recurring. Such measures include ceasing, modifying or controlling the act, activity, process causing the pollution, containment of or preventing the movement of the pollutants, eliminating the source of pollution and remedying the effects of the pollution.

- Environment Conservation Act, 1989 (Act No 73 of 1989) - Section 31 A-Damage to the environment.

Section 31 A provides the Minister of Environmental Affairs and Tourism with extensive powers in instances of environmental damage and degradation.

4. DESCRIPTION OF POTENTIAL ENVIRONMENTAL IMPACTS

4.1 Construction Phase

- Harm to the environment due to workers or contractors being unaware of how their activities may impact the environment or due to unauthorised access to the site.
- Destruction and/or disturbance of natural vegetation surrounding the site during site clearance.
- Generation of dust by earth moving vehicles and other construction activities, during clearance of site and construction of the mixed use development.
- Areas cleared of vegetation increase the likelihood of ambient dust emissions.
- Risk of a fire outbreak from stockpiled vegetation during site clearance.
- Areas cleared of vegetation have an increased likelihood of experiencing soil erosion.
- Loss of fertility of valuable topsoil, as a result of improper topsoil stock piling.
- Increased likelihood of topsoil erosion as a result of improper stock piling.
- Soil, surface water and ground water pollution due to contaminated water runoff.
- Soil, surface water and ground water pollution due to incorrect handling, storage and disposal of hazardous chemical.
- Soil, surface water and ground water pollution due to incorrect handling, storage and disposal of hazardous waste.
- Soil, surface water and ground water pollution due to incorrect handling, storage and disposal of general waste.
- Soil, surface water and ground water pollution due to unsanitary conditions on site.
- Wastage and depletion of valuable resources such as water and electricity as a result of poor management and redundant use.
- Wear of access roads, accidents on access roads, unpermitted transport of materials and loss of materials being transported on the access roads.
- Potential disturbance or nuisance to neighbors as a result of the increase in ambient noise from construction vehicles and machinery.

4.2 Operational Phase

- Incorrect storm water management can result in soil and surface water contamination.
- Incorrect storm water- and erosion management can cause siltation.

- Soil, surface water and ground water pollution due to incorrect handling, storage and disposal of hazardous chemical.
- Soil, surface water and ground water pollution due to incorrect handling, storage and disposal of hazardous waste.
- Soil, surface water and ground water pollution due to incorrect handling, storage and disposal of general waste.
- Soil, surface water and ground water pollution due to unsanitary conditions on site.
- Nuisance conditions such as flies or mosquitoes, vermin or odour, due to incorrect storage and disposal of waste.
- Wastage and depletion of natural resources such as water and electricity as a result of poor management and excessive use.

4.3 Specialist Studies

The following specialist studies have been identified as part of the EIA

- Geotechnical assessment
- Ecological fauna and flora habitat survey
- Traffic impact study
- Civil services report
- Electrical engineering report

5. PUBLIC PARTICIPATION PROCESS

5.1 Introduction

A Public Participation Process (PPP) is a requirement in terms of the 2010 EIA Regulations of the National Environmental Management Act,1998 (Act No. 107 of 1998) and it forms an integral part of any EIA process.

This section provides information pertaining to the PPP that was conducted by Shangoni Management Services during this particular assessment.

The purpose of this process is to gather information from the community and relevant Stakeholders that could ultimately affect the decision-making process concerning the Planning, Construction and Operational Phases of the proposed mixed use development. The community and public have been identified as I&APs and have been given the opportunity to participate in this process. Their comments, whether positive or negative, will influence the decision of the Authorities and the developer's final actions.

5.2 Objectives of the PPP

The PPP has the following objectives:

- To inform I&APs as well as all Stakeholders of the proposed development;
- To provide an opportunity for I&APs and Stakeholders to raise environmental issues or concerns and make suggestions;
- To promote transparency and an understanding of the project and its consequences;
- To serve as a structure for liaison and communication with I&APs and Stakeholders.

To summarise, the objective of the on-going PPP is to promote openness and transparency concerning the proposed mixed use development for the duration of the project. The process should by no means be regarded as a vehicle to temper opposition or objections. Any conclusions agreed upon must be socially, financially and technically acceptable and feasible in order to meet the requirements of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998), and the vision of Poort Inry Teater (Pty) Ltd.

5.3 The Guidelines Followed for the PPP

The PPP for this project was conducted by Shangoni Management Services and undertaken strictly according to the guidelines in terms of the National Environmental Management Act (NEMA), No. 107 of 1998, Chapter 6:

5.4 Public Participation Process

54. (1) This regulation only applies in instances where adherence to the provisions of this regulation is specifically required.

(2) The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by-

(a) fixing a notice board at a place conspicuous to the public at the boundary or on the fence of -
  (i) the site where the activity to which the application relates is or is to be undertaken; and
  (ii) any alternative site mentioned in the application;

(b) giving written notice to -
  (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  (v) the municipality which has jurisdiction in the area;
  (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
  (vii) any other party as required by the competent authority;

(c) placing an advertisement in –
  (i) one local newspaper; or
  (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;

(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this

paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in sub regulation (c)(ii); and

(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to

(i) illiteracy;

(ii) disability;

(iii) or any other disadvantage.

(3) A notice, notice board or advertisement referred to in sub regulation (2) must

(a) give details of the application which is subjected to public participation; and

(b) state-

(i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;

(ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;

(iii) the nature and location of the activity to which the application relates;

(iv) where further information on the application or activity can be obtained; and

(vi) the manner in which and the person to whom representations in respect of the application may be made.

(4) A notice board referred to in sub regulation (2) must-

(a) be of a size at least 60cm by 42cm; and

(b) display the required information in lettering and in a format as may be determined by the competent authority.

(5) Where deviation from sub regulation (2) may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub regulation to the extent and in the manner as may be agreed to by the competent authority.

(6) Where a basic assessment report, scoping report or environmental impact assessment report as contemplated in regulations 22, 28 and 31 respectively is amended because it has been rejected or because of a request for additional information by the competent authority, and such amended report contains new information, the amended basic assessment report, scoping report or environmental impact assessment report must be subjected to the processes contemplated in regulations 21, 27 and 31, as the case may be, on the understanding that the application form need not be resubmitted.

(7) When complying with this regulation, the person conducting, the public participation process must ensure that-

(a) information containing all relevant facts in respect of the application is made available to potential interested and affected parties; and
(b) participation by potential interested and affected parties is facilitated in such a manner that all potential interested and affected parties are provided with a reasonable opportunity to comment on the application.

(8)Unless justified by exceptional circumstances, as agreed to by the competent authority, the applicant and EAP managing the environmental assessment process must refrain from conducting any public participation process during the period of 15 December to 2 January.

Register of interested and affected parties

55.(1) An EAP managing an application must open and maintain a register which contains the names, contact details and addresses of -
(a) all persons who, as a consequence of the public participation process conducted in respect of that application in terms of regulation 54, have submitted written comments or attended meetings with the applicant or EAP;
(b) all persons who, after completion of the public participation process referred to in paragraph (a), have requested the applicant or the EAP managing the application, in writing, for their names to be placed on the register; and
(c) all organs of state which have jurisdiction in respect of the *activity* to which the application relates.

(2) An EAP managing an application must give access to the register to any person who submits a request for access to the register in writing.

Registered interested and affected parties entitled to comment on submissions

56.(1) A registered interested and affected party is entitled to comment, in writing, on all written submissions, including draft reports made to the competent authority by the applicant or the EAP managing an application, and to bring to the attention of the competent authority any issues which that party believes may be of significance to the consideration of the application, provided that-
(a) comments are submitted within-
  (i) the timeframes that have been approved or set by the competent authority; or
  (ii) any extension of a timeframe agreed to by the applicant or EAP;
(b) a copy of comments submitted directly to the competent authority is served on the EAP; and
(c) the interested and affected party discloses any direct business, financial, personal or other interest which that party may have in the approval or refusal of the application.

(2) Before the EAP managing an application for environmental authorisation submits a final report compiled in terms of these Regulations to the competent authority, the EAP must

give registered interested and affected parties access to, and an opportunity to comment on the report in writing.

(3) The report referred to in sub regulation (2) include-

(a) basic assessment reports;

(b basic assessment reports amended and resubmitted in terms of regulation 24 (4);

(c) scoping reports;

(d) scoping reports amended and resubmitted in terms of regulation 30(3);

(e) specialist reports and reports on specialised processes compiled in terms of regulation 32;

(f) environmental impact assessment reports submitted in terms of regulation 31;

(g) environmental impact assessment reports amended and resubmitted in terms of regulation 34(4); and

(h) draft environmental management programmes compiled in terms of regulation 33.

(4) The draft versions of reports referred to in sub regulation (3) must be submitted to the competent authority prior to awarding registered interested and affected parties an opportunity to comment.

(5) Registered interested and affected parties must submit comments on draft reports contemplated in sub regulation (4) to the EAP, who should record it in accordance with regulations 21, 28 or 31.

(6) Registered interested and affected parties must submit comments on final reports contemplated in sub regulation (3) to the competent authority and provide a copy of such comments to the applicant or EAP.

(7) The competent authority must, in order to give effect to section 24O of the Act, on receipt of the draft reports contemplated in sub regulation (5), request any State department that administers a law relating to a matter affecting the environment to comment within 40 days.

(8) The timeframe of 40 days as contemplated in sub regulation (7) must be read as 60 days in the case of waste management activities as contemplated in the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), on which the Department of Water Affairs must concur and issue a record of decision in terms of section 49(2) of the National Environmental Management: Waste Management Act, 2008 (Act No. 59 of 2008).

(9)(a)When a State department is requested by the competent authority to comment, such State department must, within 40 days or in the case of Department of Water Affairs, 60 days for waste management activities, of being requested to comment by the competent authority, provide comments to the competent authority.

(b)If a State department fails to submit comments within 40, or 60 days for waste management activities, from the date on which the Minister, MEC, Minister of Mineral Resources or identified competent authority requests such State department in writing to submit comment, it will be regarded that there are no comments.

Comments of interested and affected parties to be recorded in reports submitted to competent authority

57. (1) The EAP managing an application for environmental authorisation must ensure that the comments of interested and affected parties are recorded in reports and that such written comments, including records of meetings, are attached to the report, submitted to the competent authority in terms of these Regulations.

(2) Where a person is desiring but unable to access written comments as contemplated in sub regulation (1) due to-

(i) a lack of skills to read or write;
(ii) disability; or
(iii) any other disadvantage,

reasonable alternative methods of recording comments must be provided for.

5.5 Public Participation Process Followed

The following PPP was conducted for the proposed mixed use development:

- Identification of key Interested and Affected Parties (all adjacent landowners);
- Identification of key Stakeholders;
- Informing the key Stakeholders of the process by means of correspondence;
- Placement of a press notice in the Witbank News newspaper, informing the public of the process;
- Placement of site notices at the site; and
- Correspondence with I&APs and Stakeholders and the addressing of their comments.

5.5.1 Identification & Registration of I&APs on a Database

Through networking and advertising, I&APs were registered on a database. Shangoni ensured that individuals or organisations from an institutional as well as a geographical point of view were identified.

Geographically, Shangoni focused on nearby or adjacent landowners, communities and structures that represents them. Institutionally, the focus was on those organisations or individuals that may influence policies and decisions or make a contribution to the project. Not all of these organisations were necessarily in the direct project sphere of impact.

5.5.2 Notification of key stakeholders and IAPs

Stakeholders are all the relevant Authorities and land owners which may possibly be affected by the proposed mixed use development. The following stakeholders were identified (Table 9):

Table 9: Stakeholders identified during the PPP

Name	Organisation/Farm	Postal Address	Contact details
Cllr. B. Nkosi	Emalahleni Local Municipality Ward Councillor Ward 19		Fax: (013) 690 6556
Dr. Johnson Jerry Mahlangu	Department of Health and Social Development	Private Bag X11285 Nelspruit 1200	
Kate Ringane	Emalahleni Local Municipality Environmental Department	PO Box 3, Witbank 1035	Fax: (013) 692 8045
Mr. David Dube	Department of Human Settlements	Private Bag X11328 Nelspruit 1200	
Mr. David Mahlobo	Department of Co-operative Governance and Traditional Affairs	Private Bag X11304 Nelspruit 1200	
Mr. F. Mntambo	Department of Water	Private Bag	

	Affairs: Mpumalanga Regional Office	X11259 Nelspruit 1200	
Mr. Isaiah Khoza	Department of Safety, Security and Liaison	Private Bag X11269 Nelspruit 1200	
Mr. J. Mbatha	Department of Finance	Private Bag X11205 Nelspruit 1200	
Mr. Kgopana Mathew Mohlasedi	Department of Public Works, Roads and Transport	Private Bag X11310 Nelspruit 1200	
Mr. Phillip Hine	South African Heritage Resources Agency (SAHRA)	PO Box 4637 Cape Town 8000	
Mr. T.C. Makola	Nkangala District Municipality	PO Box 437 Middelburg 1050	
Mr. Tendo Ramagoma	National Heritage Council (NHC)	PO Box 74097 Lynnwood Ridge Pretoria 0040	
Ms. Mahlasedi Mhlabane	Department of Education	Private Bag X11341 Nelspruit 1200	
Ms. Nelisiwe Sithole	Department of Agriculture, Rural Development and Land Administration	Private Bag X11219 Nelspruit 1200	
Ms. Sibongile Nkosi	Department of Culture, Sport and Recreation	PO Box 1243 Nelspruit 1200	

J P W Viljoen	Portion 47 of the farm Naauwpoort 335 JS	PO Box 12912 Leraatsfontein 1038	
Parsons Transport Trust	Portion 54 of the farm Naauwpoort 335 JS	PO Box 6088 Tasbetpark Witbank 1040	
M F du Toit	Portion 154 of the farm Naauwpoort 335 JS	PO Box 7909 Tasbetpark Witbank 1040	0823382564 / 013 6566421
E Merrick	Portion 36 of the farm Naauwpoort 335 JS	PO Box 6412 Tasbetpark Witbank 1040	
E L E De Kock	Portion 97 of the farm Naauwpoort 335 JS	PO Box 1277 Thabazimbi 0380	
Parsons Beleggings Tust	Portion 56 of the farm Naauwpoort 335 JS	PO Box 6088 Tasbetpark Witbank 1040	
P J Du Plessis	Portion 32 of the farm Naauwpoort 335 JS	PO Box 12073 Leraatsfontein 1038	
T G Kruger	Portion 48 of the farm Naauwpoort 335 JS	PO Box 14068 Leraatsfontein 1038	
Madri Trust	Portion 50 of the farm Naauwpoort 335 JS	President Brandstr 3 Hoëveldpark Witbank 1035	
E.J. Steenkamp	27 Adala Street Die Heawel I Witbank	P.O. Box 8923 Die Heuwel X1 Witbank	Cell: (083) 317 7255 Tel: (013) 691 1444 Email:

	1042	1042	kleinkiesteenkamp@gmail.com

Shangoni sent registered letters to the Department and Organs of State containing a background information document (BID), map showing the location of the site, and a stakeholder registration form. The same letters were delivered, either by hand or registered mail, to all adjacent land owners. Figure 46 provides an example of the letters sent out to Departments, Organs of State and potential I&APs. Figure 47 to Figure 48 provide proof that notification letters were sent to Departments, Organs of state and potential I&APs.

Table 10 provides a list of the I&APs who registered and were added to the database of I&APs during the PPP.

Table 10: Registered I&APs

Name	Farm/Association	Postal Address	Contact details
Mr. J.P.W Viljoen	Plot 335 Naauwpoort Witbank 1035	Box 12912 Leraatsfontein 1038	Cell: (082) 853 7419 Email: jpwviljoen@gmail.com
Department of Agriculture, Rural Development and Land Administration C.H.P Kleynhans	Department of Agriculture, Rural Development and Land Administration	Private Bag X 11219 Nelspruit 1200	Tel: (013) 766 6067/8 Fax: (013) 766 8295 Email: dardla@mpg.gov.za
E.J. Steenkamp	27 Adala Street Die Heawel I Witbank 1042	P.O. Box 8923 Die Heuwel X1 Witbank 1042	Cell: (083) 317 7255 Tel: (013) 691 1444 Email: kleinkiesteenkamp@gmail.com
Department of Education M.O.C Mhlabane Head of Department	Government Boulevard Riverside Park Building 5 Mpumalanga Province	Private Bag X 11341 Nelspruit 1200	(013) 766 5120
Department of Community	Government Complex,	Private Bag X11269 Nelspruit	Cell: (073) 985 9655/ (082) 040 1516

Safety, Security and Liaison Phiwe Mhlongo/ Isaiah Khoza	Riverside Nelspruit 1200	1200	Tel: (013) 766 4039 Fax:: (013) 766 4600
Department of Culture, Sport and Recreation Ms. Sibongile Nkosi	Building 5, Government Boulervard, Riverside Park Nelspruit 1200	PO Box 1243 Nelspruit 1200	Tel: 013 766 5242 Fax: 013 766 5591/5612 Email: nkosist@mpg.gov.za

SHANGONI
Management Services (Pty) Ltd

Shangoni Management Services Pty (Ltd)
Reg: 2008/000000/07 VAT: 4081019 1089

Tel +27(0)12 807 7038 Fax +27(0)12 807 1014
E-mail info@shangoni.co.za www.shangoni.co.za
Block C8, Block@Nature 472 Botterklapper Street The Willows 0081
PO Box 74726 Lynnwood Ridge 0040

29 June 2012

Emalahleni Local Municipality
Ward Councillor
Ward 19
Fax: 013 690 6556

Attention: Cllr. B. Nkosi

APPLICATION FOR ENVIRONMENTAL AUTHORIZATION: FOR THE PROPOSED COMMAND PARK X1 COMMERCIAL DEVELOPMENT LOCATED ON PTN 55 NAAUWPOORT 335 JS

Poort Inry-teater (Pty) Ltd has initiated a Scoping & EIA Process to obtain Environmental Authorization from the Mpumalanga Department of Economic Development, Environment and Tourism (MPDEDET) for the proposed Command Park x1 commercial development located on Portion 55of the farm Naauwpoort 335 JS.

The proposed commercial development will require environmental authorization subject to a Scoping & EIA Process as required by Sections 26 to 35 of Government Notice R 543 of the EIA Regulations of 18 June 2010.

Shangoni Management Services (Pty) Ltd was appointed as the Independent Environmental Assessment Practitioner (EAP) responsible for the Scoping & EIA Procedure.

Attached please find a background information document together with a stakeholder registration form in respect of the application. Your written comments on this expansion project will be appreciated. In order to process your inputs, all written comments must reach our offices by 10 August 2012. In the event of you not wishing to comment on this application it will be appreciated if we could receive a written confirmation thereof to enable us to continue with the application.

Please do not hesitate to contact the undersigned should you require any additional information.

Contact Details: Shangoni Management Services
Miss. Isabel Hough
E-mail: isabelhough@shangoni.co.za
Cell: 079 534 4303
Fax 2 E-mail: 086 578 9670
Fax: 012 807 1014

Yours Faithfully

Miss. Isabel Hough
Environmental Assessment Practitioner

Directors RB Hayes J Nel JA van Rooy CJ Potgieter HL de Vilbiss

Figure 46: An example of the notification letters.

List of REGISTERED LETTERS
Lys van GEREGISTREERDE BRIEWE
(with an insurance option/met 'n versekeringsopsie)

Post Office

Full tracking and tracing/Volledige volg en spoor

Name and address of sender: Shangoni Management Services
Naam en adres van afsender: PO Box 74726 Lynnwood Ridge 0040

Enquiries/Navrae
Toll-free number
Tolvry nommer
0800 111 502

No	Name and address of addressee / Naam en adres van geadresseerde	Insured amount / Versekerde bedrag	Insurance fee / Versekeringsgeld	Postage / Posgeld	Service fee / Diensgeld	Affix Track and Trace customer copy / Plak Volg-en-Spoor-kliëntafskrif
1	Department of Public Works, Roads and Transport Private Bag X11310, Nelspruit, 1200	Mr. Kgopana Mathew Mahlaeli				RD 716 548 448 ZA
2	Department of Health and Social Development Private Bag X11285, Nelspruit, 1200	Dr. Johnson Jerry Mahlangu				RD 716 548 434 ZA
3	Department of Agriculture, Rural Development and Land Administration Private Bag X11219, Nelspruit, 1200	Ms. Nelisiwe Sithole				RD 716 548 451 ZA
4	Department of Education Private Bag X11341 Nelspruit, 1200	Ms Mahkeedi Mhlabane				RD 716 548 465 ZA
5	Department of Water Affairs Mpumalanga Regional Office Private Bag X11259, Nelspruit, 1200	Mr. F. Mntambo				RD 716 548 479 ZA
6	Department of Culture, Sport and Recreation PO Box 1243, Nelspruit, 1200	Ms Sibongile Nkosi				RD 716 548 482 ZA
7	Emalahleni Local Municipality Environmental Department PO Box 3, Witbank, 1035	Kate Ringane				RD 716 548 496 ZA
8	Nkangala District Municipality PO Box 437 Middelburg, 1050	Mr. T.C. Makola				RD 716 548 505 ZA
9	Emalahleni Local Municipality Ward Councillor Ward 19	Cllr. B. Nkosi				RD 716 548 536 ZA
10	South African Heritage Resources Agency PO Box 4637, Cape Town, 8000	Mr. Phillip Hine				RD 716 548 540 ZA
	Total / Totaal	R	R	R	R	

Number of letters posted / Getal briewe gepos: 10

Signature of client / Handtekening van kliënt:

Signature of accepting officer / Handtekening van aanneembeampte:

Date stamp / Datumstempel

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R200,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentere bewys betaalbaar nie. Opsionele versekering van tot R2 000,00 is beskikbaar en is slegs op binnelandse geregistreerde briewe van toepassing.

Figure 47: Proof of registered letters sent (pg 1)

List of REGISTERED LETTERS
Lys van GEREGISTREERDE BRIEWE
(with an insurance option/met 'n versekeringsopsie)
Full tracking and tracing/Volledige volg en spoor

Post Office

Name and address of sender:
Naam en adres van afsender: Shangoni Management Services
PO Box 74726 Lynnwood Ridge 0040

Enquiries/Navrae
Toll-free number
Tolvry nommer
0800 111 502

No	Name and address of addressee / Naam en adres van geadresseerde	Insured amount / Versekerde bedrag	Insurance fee / Versekeringsgeld	Postage / Poogeld	Service fee / Diensgeld	Affix Track and Trace customer copy / Plak Volg-en-Spoor-idiëntafskrif
1	Department of Human Settlements Private Bag X11328, Nelspruit, 1200	Mr. David Dube				REGISTERED LETTER RD 716 548 522 ZA CUSTOMER COPY
2	Department of Co-operative Governance and Traditional Affairs Private Bag X11304 Nelspruit, 1200	Mr. David Mahlobo				REGISTERED LETTER RD 716 548 519 ZA CUSTOMER COPY
3	Hoëveld Vlejs Mark PO Box 7895 Tasbetpark, 1040	Mr. L.G. Koekemoer				REGISTERED LETTER RD 716 548 394 ZA
4	El Passo Landowner PO Box 12912 Le Roatsfontein, 1038	Jo Viljoen				REGISTERED LETTER RD 716 548 377 ZA CUSTOMER COPY
5	El Passo Takaways Die Heuwel Uitbreiding 1 Witbank, 1042	Paul & Kleintjie Steenkamp				REGISTERED LETTER RD 716 548 425 ZA
6	EPON Engineering Postnet Suite 277, P/Bag X7294 Witbank, 1035	Edward				REGISTERED LETTER RD 716 548 403 ZA CUSTOMER COPY
7	El Passo Bottle Store PO Box 3426 Witbank, 1035	The owner				REGISTERED LETTER RD 716 548 417 ZA
1	ELKIM CC Business Without limitations t/a BTS PO Box 314, River Crescent	Gerhard Steyn				REGISTERED LETTER RD 716 548 385 ZA CUSTOMER COPY
9						
10						
	Total / Totaal	R	R	R	R	

Number of letters posted / Getal briewe gepos: 8

Signature of client / Handtekening van kliënt: .....

Signature of accepting officer / Handtekening van aanneembeampte: .....

Date stamp

2012 -05- 25

Datumstempel

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R200,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumenteere bewys betaalbaar nie. Opsionele verseëring van tot R2 000,00 is beskikbaar en is slegs op binnelandse geregistreerde briewe van toepassing.

MASKHAME PRINTERS 791248

Figure 48: Proof of registered letters sent (pg 2)

5.5.3 Comments and Response Report

Comments and concerns received from I&APs were incorporated into a Comments and Responses Report, which is given below as Table 11 and Appendix E.

Table 11: Comments and response report

Raised by	Date received	Issue / Comment / Concern	Response
Mr. J.P.W Viljoen	09/07/2012	No objections at this stage.	Comment noted.
Department of Education Mrs. M.O.C. Mhlabane	17/07/2012	Correspondence dated 29 June 2012 from your office on the aforementioned instance is acknowledged and referred to. The Department of Education has no objection around the development of the proposed Command Park Extension 1. It has been noted that the development will cater for the establishment of Industrial and Business activities thus have no impact on the availability of school sites. It is further highlighted that the Department will not participate further in this project for reasons already outlined above. It is hoped you find this in order.	Comment noted.
Department of Agriculture, Rural	11/09/2012	Your letter dated 29 June 2012 is acknowledged.	Comment noted.

Development and Land Administration C.H.P Kleynhans		The proposed Command Park x1 is to be on the outskirts of town on vacant land. The latest Spactial Development Framework for Emalahleni should be referred to for checking the suitability of the site. The department has no objection against the proposed commercial development subject to: 1. Town planning application be lodged with Emalahleni Local Municipality for land use rights. 2. Adhere with all other legal requirements. Please do not hesitate to contact the undersigned should you require any further information.	
Department of Community Safety, Security and Liaison Phiwe Mhlongo/ Isaiah Khoza	30/10/2012	Our Department acknowledges receipt of this e-mail and the contents therein, we hoever wish to state that it is our sister Department that is directly affected by the development and not Community Safety, Security and Liaison, we do not have any objection to the developments against the background that we are not the revelevant Department, a consent for such	Comment noted.

		development should be sought from Public Works, Road and Transport. I hope that you find this in order.	
Department of Culture, Sport and Recreation Ms. Sibongile Nkosi	31/10/2012	Please do not send this information to me, we do deal with development. This is a Department of Culture, Sport and Recreation. We have never registered as an Interested or affected party.	Comment noted.

5.5.4 Registering Stakeholders

All key stakeholders were registered and received the draft Scoping Report. No correspondence were received from any of the I&AP's with regards to the Draft Scoping Report.

5.5.5 Press Notices

In accordance with the National Environmental Management Act (NEMA) 1998, (Act No. 107 of 1998), a notice was placed in the Witbank News newspaper, on the 29th of June 2012. The press notice is shown below as Figure 49.

Press notices are crucial to create awareness of the project and to reach a broader range of I&APs.

WITBANK NEWS FRIDAY 29 JUNE 2012 43

classifieds

KENNISGEWING EMALAHLENI LANDELIKSEGEBRUIKS SKEMA 2010

NOTICE OF APPLICATION FOR TOWNSHIP ESTABLISHMENT

KUSILE POWER STATION

LIQUIDATION AND DISTRIBUTION ACCOUNTS IN DECEASED ESTATES LYING FOR INSPECTION

NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORIZATION

NOTICE EMALAHLENI LAND USE MANAGEMENT SCHEME 2010

TOTAL COAL SOUTH AFRICA
FORZANDO NORTH COAL MINE

Solar Panel Facility
NEAS Reference Number: DEA/EIA/0000991/2012
DEA Reference Number: 14/12/16/3/3/1/452

AVAILABILITY OF BASIC ASSESSMENT (BA) and ENVIRONMENTAL MANAGEMENT PROGRAMME (EMP) FOR I&AP REVIEW

Project Applicant: Forzando Coal Mines (FCM) are owned by Total Coal South Africa (TCSA) (74%) and Mmakau Coal (26%).

Figure 49: Proof of newspaper advertisement in the Witbank News.

NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORIZATION

Notice is hereby given that an application for environmental authorization in terms of the EIA Regulations of 2010 (Regulations in terms of Chapter 5 of the National Environmental Management Act of 1998, as amended) has been lodged with the Mpumalanga Department of Economic Development, Environment and Tourism (DEDET). The activity requires an application subject to a Scoping and EIA Process as required by Sections 26 to 35 of Government Notice R. 543 of the EIA Regulations.

Ref. Number: 17/2/3 N-135

Applicant: Poort Inry-Teater (Pty) Ltd.

Project Name: Proposed Command Park X1 commercial development situated on Portion 55 of the farm Naauwpoort 335 IS, Mpumalanga.

Project Location: The proposed development will be located on Portion 55 of the farm Naauwpoort 335 IS approximately 6.3km south east from Emalahleni CBD area next to the R544.

Project Description: The proposed commercial development will entail the following:

- 65 erven for "Industrial 1" – 14.7ha
- 11 erven for " Business 2" – 5.9 ha
- 2 erven for a "Private Park" – 0.33ha
- 3 erven for a "Private Road" – 2.9 ha
- Roads – 1.8 ha

The total are of the site is 25.92 ha in extent

The current layout for the development is still a draft plan and may change as the EIA process provides input into the final design and layout of the development.

Activities applied for: EIA Regulations Listing Notice 2 of 2010 (R545), Activity No. 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 20ha 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

Invitation to participate: Should you wish to be included in the register of Interested and Affected Parties or comment on this application, please submit your name, contact information, and interest in the matter **in writing** to the above address not later than 6 August 2012.

Independent Environmental Assessment Practitioner:
Shangoni Management Services (Pty) Ltd.
PO Box 74726, Lynnwood Ridge, Pretoria, 0040.
Contact Person: Miss. I. Hough

Tel: (012) 807 7036, Cell: 079 534 4303, Fax: (012) 807 1014, Fax to E-mail: 086 578 9670,

E-mail: isabelhough@shangoni.co.za, For Online Participation go to www.shangoni.co.za and click on Public Participation.

SHANGONI
Management Services (Pty) Ltd

Figure 50: Public notice wording.

5.5.6 Placement of Public Notices

The site notices (A2) were placed in the vicinity of the proposed mixed use development, Command Park extention1 (as shown in Figure 51 to Figure 57).

Figure 51: First photograph of site notices (zoomed in).

Figure 52: Second photograph of site notices.

Figure 53: Third photograph of site notices.

Figure 54: Fourth photograph of site notices.

Figure 55: Fifth photograph of the site notices.

Figure 56: Sixth photograph of the site notices.

Figure 57: Seventh photograph of the site notices.

5.5.7 Issuing I&APs and Stakeholders with a draft Scoping Report

The draft Scoping Report was sent to all Departments and Organs of State as well as all registered I&APs in order to obtain their comments and notices. The report was also submitted to the Mpumalanga Department of Economic Development, Environment and Tourism for review. No comments, on the draft Scoping Report, were received during the public participation phase (review period: 18 October 2012-4 December 2012).

5.5.8 Conclusions of the Public Participation Exercise

In conclusion, the Public Participation exercise has provided adequate information to enable an understanding of what the proposed mixed use development, of Command Park extension 1, would entail and also to address the concerns and comments of this Environmental Assessment.

6. NEED AND DESIRABILITY FOR THE ACTIVITY

6.1 Developer

The proposed site currently consists of an open veldt that is being used as a walk through and also poses a security risk. The site is highly disturbed and there are numerous signs of illegal dumping. Infrastructure and increased activity provided by the development, which acts as passive surveilance, will result in increased security for surrounding neighbores and prevent illegal dumping of waste.

The mixed use development provides an adaptable building product which contains flexibility-to-change uses. The developer also has an opportunity to incorporate green technology and design. The combination of mixed use development and green development may allow for a diverse flow of investment.

6.2 Local Community

Integrating different bussinesses and industries in a readily accessible location provides for a more efficient use of public infrastructure. The mixed use development will therefore allow for an increase in employment, business, land values and investment choices.

7. IDENTIFIED ALTERNATIVES

Typically, alternative assessments are conducted to assist in comparing various projects or attributes of projects that will occur. The most critical comparison is evaluating any proposed project against the No-Go option. The alternatives assessment then considers alternatives to project site selection for the proposed development; alternatives to layout of the development; and alternatives to construction methodologies and / or materials used for the development.

The alternatives assessment was conducted using a simple cost-benefit analysis of each proposed alternative, through assessing various environmental attributes. These attributes can include physical (geology and soils, surface water quality and quantity, groundwater quality and quantity); biophysical (flora and fauna, sensitive environments); and social (site of archaeological or cultural importance, land use issues, social health and welfare).

The impact of each alternative was then evaluated in terms of whether it has a positive, negative, or no impact. In this instance, the impact is not evaluated in terms of significance but rather whether or not it will arise. Positive impacts are assigned a value of 1; no impact a value of 0; and a negative impact a value of -1.

By adding all of the attribute scores for each alternative, a suitability score is derived which indicates the preferred alternative. A total positive score indicates the project benefits outweigh the potential negative impacts, while a total negative score indicates the project environmental costs outweigh the potential benefits. Essentially, the highest scoring alternative is then carried forward for full impact evaluation.

7.1 No-Go Option

The potential impact of the preferred project option on environmental and socio-economic attributes, identified during the assessment phase, is evaluated against the potential impact of the no-go option on the same attributes. The no-go alternative is the option wherein the proposed Command Park extension 1 is not developed. The summary of this assessment is provided in Table 12 hereafter.

Table 12: Development vs. No-Go Option

Attribute	Development Option	No-go Option 2
Physical environment		
Air Pollution	-1	0
Noise Pollution	-1	0
Water Quality	0	0
Water Quantity	0	0
Visual Aesthetics	-1	-1
Biophysical environment		
Fauna and Flora	-1	-1
Sensitive Environments	0	0
Social environment		
Traffic	-1	-1
Impact on property values	1	-1
Safety and security	1	-1
National and regional economy	1	0
Infrastructure development	1	0
Total	-1	-5

The negative environmental impacts expected by the proposed mixed use development can be mitigated to acceptable limits. The positive social impacts outweigh the negative impacts and the consideration of the “no-go” option can be justifiably dismissed as a sustainable alternative.

7.2 Alternatives to Site Selection

The proposed development aims at utilizing the applied property to its full economic potential, taking the natural as well as socio-economic environment into consideration.

No alternatives were considered because the property where the proposed project will take place is owned by the applicant.

7.3 Construction Alternatives:

7.3.1 Alternative Design

The proposed technology, design and process of the project will be determined by the applicant based on the most economic, social and environmental sustainable options available for the development.

7.3.2 Activity Alternatives

The proposed technology, design and process of the project will be determined by the applicant based on the most economic, social and environmental sustainable options available for the development.

7.3.3 Scheduling Alternatives

It is recommended that construction activities take place during the drier months to avoid any complications in wet weather. No detailed information regarding the proposed time frame for the project is available yet, however it is anticipated that construction will start as soon as possible after all the necessary approvals have been obtained.

8. COMMENTS OBTAINED DURING THE PUBLIC PARTICIPATION PHASE

Raised by	Date received	Issue / Comment / Concern
Mr. J.P.W Viljoen	09/07/2012	No objections at this stage.
Mrs. M.O.C. Mhlabane	17/07/2012	Correspondence dated 29 June 2012 from your office on the aforementioned instance is acknowledged and referred to. The Department of Education has no objection around the development of the proposed Command Park Extension 1. It has been noted that the development will cater for the establishment of Industrial and Business activities thus have no impact on the availability of school sites. It is further highlighted that the Department will not participate further in this project for reasons already outlined above. It is hoped you find this in order.
C.H.P Kleynhans	11/09/2012	Your letter dated 29 June 2012 is acknowledged. The proposed Command Park x1 is to be on the outskirts of town on vacant land. The latest Spactial Development Framework for Emalahleni should be referred to for checking the suitability of the site. The department has no objection against the proposed commercial development subject to: 3. Town planning application be lodged with Emalahleni Local Municipality for land use rights. 4. Adhere with all other legal requirements. Please do not hesitate to contact the undersigned should you require any further information.

9. MINUTES OF PUBLIC MEETINGS

No public meetings were held during the Public Participation Phase.

10. EAP's RESPONSES TO COMMENTS RECEIVED

Raised by	Date received	Response
Mr. J.P.W Viljoen	09/07/2012	No response required, comment noted.
Mrs. M.O.C. Mhlabane	17/07/2012	No response required, comment noted.
C.H.P Kleynhans	11/09/2012	No response required, comment noted.

11. ENVIRONMENTAL IMPACT ASSESSMENT

11.1 Introduction and approach followed

The proposed mixed-use development can have a variety of impacts. These can occur over different spatial and temporal scales. The nature of each impact can also vary widely depending on the physical environment and the perceptions and values of the affected parties. An assessment of the potential impacts on the social and natural environment should be conducted in a methodical manner.

Assessment and evaluation of environmental impacts is often complicated by the subjective nature of the impacts. Ideally, the degree of severity or significance of a particular impact should be expressed in quantitative terms. There must also be some expression as to whether a particular impact is desirable or not. As the desirability of an impact will depend largely on the attitude and experience of the assessment practitioner, subjectivity is unavoidable. To address these problems, a standard set of definitions was used for the entire impact assessment process.

It is believed that the approach followed will adequately fulfill the environmental authorities' requirements, the requirements of the EIA Regulations (2010) and the objectives of the environmental best practice, so as to ensure transparency and to enable an informed decision regarding the proposed project.

11.2 Methods used to identify impacts

Specialist reports (and other available information) were reviewed to assess the present status of the natural environment and the extent to which it has already been modified. Specialist studies included:

- A geotechnical assessment;
- Ecological fauna and flora habitat survey;
- Traffic impact study; and
- Civil services report.

The potential impacts were then identified based on the activities associated with the proposed development.

In general, the environmental impacts associated with the proposed development will tend to decrease with increasing distance from the activity. The most noticeable impacts are therefore present on the site of operation or on adjacent properties.

11.3 Identified impacts

A number of potential impacts were identified during the EIA process. These impacts are listed below.

11.3.1. Construction Phase

- Harm to the environment due to workers or contractors being unaware of how their activities may impact the environment or due to unauthorised access to the site.
- Destruction and/or disturbance of natural vegetation surrounding the site during site clearance.
- Generation of dust by earth moving vehicles and other construction activities, during clearance of site and construction of the mixed use development.
- Areas cleared of vegetation increase the likelihood of ambient dust emissions.
- Risk of a fire outbreak from stockpiled vegetation during site clearance.
- Areas cleared of vegetation have an increased likelihood of experiencing soil erosion.
- Loss of fertility of valuable topsoil, as a result of improper topsoil stock piling.
- Increased likelihood of topsoil erosion as a result of improper stock piling.
- Soil, surface water and ground water pollution due to contaminated water runoff.
- Soil, surface water and ground water pollution due to incorrect handling, storage and disposal of hazardous chemical.
- Soil, surface water and ground water pollution due to incorrect handling, storage and disposal of hazardous waste.
- Soil, surface water and ground water pollution due to incorrect handling, storage and disposal of general waste.
- Soil, surface water and ground water pollution due to unsanitary conditions on site.
- Wastage and depletion of valuable resources such as water and electricity as a result of poor management and redundant use.
- Wear of access roads, accidents on access roads, and unpermitted transport of materials and loss of materials being transported on the access roads.
- Potential disturbance or nuisance to neighbors as a result of the increase in ambient noise from construction vehicles and machinery.

11.3.2 Operational Phase

- Incorrect storm water management can result in soil and surface water contamination.
- Incorrect storm water- and erosion management can cause siltation.
- Soil, surface water and ground water pollution due to incorrect handling, storage and disposal of hazardous chemical.
- Soil, surface water and ground water pollution due to incorrect handling, storage and disposal of hazardous waste.
- Soil, surface water and ground water pollution due to incorrect handling, storage and disposal of general waste.
- Soil, surface water and ground water pollution due to unsanitary conditions on site.

- Nuisance conditions such as flies or mosquitoes, vermin or odour, due to incorrect storage and disposal of waste.
- Wastage and depletion of natural resources such as water and electricity as a result of poor management and excessive use.

11.4 Environmental Impact Assessment

All activities related to the proposed development, that could have some impact on the environment were identified. These impacts can be of environmental, socio-economic or cultural nature. Impacts are often not only confined within the direct scope of the proposed activity and can accumulate as a network of indirect impacts on the surrounding area.

Different impacts are associated with the construction and operational phases of the proposed activity. The significance was determined by the extent, duration, and intensity and reversibility of the impact.

The environmental risk of any aspect was determined by multiplying the significance of the impact by the probability of the impact occurring. Each parameter connects the physical characteristics of an impact to a quantifiable value in order to rate the environmental risk. A description of the parameters used in this impact assessment is given in the Table 13 below.

The suitability and feasibility of all proposed mitigation measures are included in the assessment of significant impacts. This was achieved through comparison of the significance of the impact before and after the proposed mitigation measure is implemented.

Table 13: Environmental impact assessment parameters

Parameters	Description
Extent	Refers to the physical or geographical size that is affected by the impact. It can be categorised into the following ranges: • Onsite – Within specific site boundary (weight value – 1) • Local – Within municipal boundary (weight value – 2) • Regional – Outside municipal boundary (weight value – 3)
Duration	Time span associated with impact: • Short term – 1 Year or less (weight value – 1) • Medium term – 1-5 Years (weight value –2) • Long term – Longer than 5 Years (weight value – 3)
Intensity and reversibility	The severity of an impact on the receiving environment: • Low – Natural and/or cultural processes continue in a modified way and is reversible (weight value – 1) • Medium – Natural and/or cultural processes stop and is partially reversible (weight value – 2) • High – Natural and/or cultural processes disturbed to an irreversible state (weight value – 3)
Significance of Impact / Consequence	Adding the extent, duration and intensity together provides the significance of the impact (High, Medium or Low). **Extent + Duration + Intensity = High/Medium/Low Impact**

Probability	The likelihood of an impact occurring: • Unlikely – 0% - 45% chance of the potential impact occurring (weight value – 1) • Possible – 46% - 75% chance of the potential impact occurring (weight value – 2) • Likely - >75% chance of the potential impact occurring (weight value – 3)
Environmental Risk Refer to Table 24 below	Multiplication of the significance of the impact by the probability of the impact occurring produces a final conclusion of the overall risk that an impact poses to the surrounding environment. **High/Medium/Low Impact X Probability = High/Medium/Low Environmental Risk**

Table 14: Environmental Risk Matrix

Significance of Impact				
		Low Impact (3 → 5)	Medium Impact (6 → 8)	High Impact (9)
Probability	Definite / Very Likely 3	9 - 15 L - M	18 - 24 M - H	27 H
	Possible 2	6 - 10 L - M	12 – 16 M	18 M - H
	Unlikely 1	3 - 5 L	6 – 8 L	9 L

ENVIRONMENTAL RISK	Guidelines for Control Strategies
(H) - High	Proactively reduce risk level, short term response.
(M- H) Medium to High	Proactively reduce risk level, short term response.
(M) – Medium	Management strategies to reduce risk level, short to medium term response.
(L – M) Low to Medium	Management strategies to reduce risk level, short to medium term response, operational control and housekeeping.
(L) - Low	Operational control and housekeeping.

11.4.1 Construction Phase

Tables 15 to 24 provide the environmental impact assessments for all construction phase activities.

Table15: Environmental risk assessment: Environmental awareness and training.

Activity: Construction activities relating to the development	
Aspect: Lack of environmental knowledge among employees.	
Nature of Environmental Impact: Harm to the environment due to employees or contractors being unaware of how their activities may impact the environment or due to unauthorised access to the site.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**
Objective of Mitigation Measures	

To prevent harm to the environment through the actions of uneducated employees or contractors.	
Proposed Mitigation	
• The contractor is to ensure that all employees, including sub-contractors and their employees, are required to attend onsite Environmental Awareness/Training prior to commencing work on site. • Follow-up Environmental Awareness/Training may be required from time to time as new subcontractors or crews commence work or for specific activities that may potentially impact the environment. • The contractor is to maintain accurate records of any training undertaken. • The ECO shall monitor the contractor's compliance with the requirement to provide sufficient environmental awareness training to all site staff. • Training is to cover all aspects of the EMP and procedures to be followed.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 16: Environmental risk assessment: Site clearance.

Activity: Clearance of the site.	
Aspect: Removal of indigenous vegetation outside the project footprint.	
Nature of Environmental Impact: Loss of indigenous grassland, terrestrial habitat, and forage for life stock in the surrounding environment.	
Before Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	3
Environmental Risk = Significance of Impact X Probability	**12**
Objective of Mitigation Measures	
To prevent the removal of vegetation outside the project footprint during site clearance.	
Proposed Mitigation	
• Before any construction takes place the proposed area for the expansion will be pegged out. All construction activities will be limited to within these areas in order to reduce the footprint of the proposed activity and avoid impact on adjacent natural vegetation and animal life. • Construction areas should be fenced off or barricaded prior to and during construction. • Site clearing is to be limited to only the area necessary for carrying out the specified work. • The contractor is to draw up a plan for submission to the ECO and the facility manager indicating the locations of construction infrastructure including the site-camp, paint or cement cleaning pits, toilets, stores, site office. • The site boundary is to be clearly demarcated and screened from the commencement of works. • Delineated wetland areas must be designated as "No-go areas", avoided and conserved. • Alien and invasive plant species, including exotic weeds, must be eradicated. • The "no-go" areas are to be demarcated with a wire and danger-tape temporary barrier fence attached to planted posts (wooden or metal) at a minimum. This can be in the form of two strands of wire 500mm apart on droppers of 3m spacing, with danger tape zigzagged between the wires. • Should the only means of completing specified work be to enter "no-go" areas, authorisation must be provided in writing by the ECO.	

• The erection of the final boundary fence or wall is preferable. • No unauthorised entry, stockpiling, dumping or storage of equipment outside the site boundary is permitted. • All construction activities, plant, labour and materials are to be restricted within the site boundary. • Removal of vegetation is to be avoided until such time as soil stripping is required. • Cleared indigenous vegetation can be stockpiled for possible reuse in later rehabilitation or landscaping, or as a brush pack for erosion prevention. • Once the construction activities have been completed, the remaining disturbed area must be top soiled, sloped and re-vegetated as soon as possible using suitable grass species. • Compacted soil should be ripped to ensure effective re-vegetation.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 17: Environmental risk assessment: Topsoil conservation.

Activity: Stockpiling of topsoil and cleared vegetation.	
Aspect: Topsoil is exposed to the elements.	
Nature of Environmental Impact: Degradation and erosion of a valuable resource (topsoil).	
Before Mitigation	
Extent of the Impact	1
Duration of the Impact	2
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	3
Environmental Risk = Significance of Impact X Probability	18
Objective of Mitigation Measures	
To reduce the duration and extent of exposure of topsoil, in order to preserve it as a resource and protect it from erosion.	
Proposed Mitigation	
• Before any construction takes place the proposed area for expansion will be pegged out. All construction activities will be limited to these areas. • Topsoil will be stripped within the construction footprint, to the maximum available depth. • Topsoil is to be stockpiled at demarcated areas and retained for future rehabilitation efforts (Topsoil stockpiles must regularly be inspected for signs of erosion or misuse). • Any sub-soil or rocks removed should also be stockpiled separately and be used during the rehabilitation. • The contractor is to ensure that all reasonable measures are taken to limit erosion during construction phase. Erosion protection measures include sand bags, cut-off drains and/or berms. • Cleared indigenous vegetation should be used as a brush pack on topsoil stockpiles for erosion prevention. • If sterilisation of the topsoil during stockpiling has occurred, inorganic fertilisers will be used to supplement the soils before seeding of the area takes place.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2

Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	2
Environmental Risk = Significance of Impact X Probability	**8**

Table 18: Environmental risk assessment: Fire risk.

Activity: Hot work activities, smoking and cooking.	
Aspect: Runaway veldt fire.	
Nature of Environmental Impact: Loss of indigenous grassland, terrestrial habitat, and forage for life stock in the surrounding environment.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	2
Environmental Risk = Significance of Impact X Probability	**12**
Objective of Mitigation Measures	
To prevent the occurrence and spreading of a veldt fire.	
Proposed Mitigation	
Equipment • Basic fire-fighting equipment is to be placed at strategic locations on site and readily available (e.g. at the site office, flammable material store and watchman's container). • Equipment is to be maintained in good working order. • All personnel handling fuels and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE). **Signage** • Safety signage including "No Smoking", "No Naked Lights" and "Danger", and product identification signs, are to be clearly displayed on fuel storage facilities and tanks. • Emergency numbers are to be clearly displayed. • All construction workers shall be issued with ID badges and clearly identifiable uniforms. **Training** • An emergency procedure, taking into consideration all potential emergencies, such as a fire outbreak, hazardous chemical spill, etc. should be compiled. • The contractor is to ensure that all employees, including sub-contractors and their employees, are trained on the emergency procedure. • Follow-up emergency training may be required from time to time as new subcontractors or crews commence work. • The contractor is to maintain accurate records of any emergency training undertaken. • The ECO shall monitor the contractor's compliance with the requirement to provide sufficient emergency training to all site staff. **Activities** • All construction workers shall be transported to and from site on a daily basis. • Workers shall remain on the site at all times during the work day and no one will be allowed to leave site by foot, not even during break times. • Cooking during lunch is to be restricted to bottled gas facilities in designated areas approved by the ECO. This facility is to be supervised and strictly controlled. • No open fires are permitted. A dedicated braai facility may be permitted in an area approved by the	

ECO, if the campsite in close proximity to firefighting equipment. At no time is a braai fire to be left unattended. • Smoking is prohibited near places where any readily combustible or flammable materials are present. Notices are to be prominently displayed prohibiting smoking in such areas. • Welding, flame cutting and other hot work is only to be undertaken in places where the necessary safety precautions are in place (i.e. not near potential sources of combustion and with a fire extinguisher immediately accessible). • Night watchmen are to be provided with adequate cooking and heating facilities (no open fires), a suitable method of disposing of wastewater, and access to communication equipment. **Flammable materials** • Flammable material storage must comply with standard fire safety regulations. • All flammable materials are to be stored in a suitable, lockable storage area. • Combustible materials may not accumulate on the construction site. • Access to fuel and chemical stores should be strictly controlled. • Stockpiles of vegetation are only to be located in areas approved by the facility manager and may not exceed 2m in height. Methods of stacking must take cognizance of the possible creation of a fire hazard. • No burning of stockpiled vegetation is permitted.

After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	1
Environmental Risk = Significance of Impact X Probability	**4**

Table 19: Environmental risk assessment: Cement and concrete.

Activity: The handling, storage, mixing, and disposal of cement and concrete.	
Aspect: Concrete and cement spillage.	
Nature of Environmental Impact: Potential soil and surface water pollution.	
Before Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	3
Environmental Risk = Significance of Impact X Probability	**12**
Objective of Mitigation Measures	
To prevent the pollution of soil and surface water as a result of concrete and cement improper handling, storage, mixing and disposal of cement and concrete.	
Proposed Mitigation	
• Cement must be mixed in a designated area. Dry cement must be removed from the soil surface to prevent an impermeable layer forming on top of the soil. The cement must be disposed of together with any building rubble. • Ready-mix trucks are not permitted to clean chutes on site. Cleaning into foundations or a dedicated cleaning pit is permitted. • Bricklayers and plasterers are to minimise any cement spill or runoff in their work area and are to ensure that the work area is cleaned of all cement spillage at the end of each workday. • Both used and unused cement bags are to be stored in weatherproof containers so as not to be	

affected by rain or runoff. • Contaminated soil resulting from concrete or cement spills, including residue produced by the washing of cavities, are to be removed immediately after the spillage has occurred and placed on the appropriate rubble stockpile. • Runoff from the washing out of wall cavities is to be contained against the building by excavations of berms around the foundations. All reasonable measures must be taken to prevent the dirty water from contaminating a watercourse.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 20: Environmental risk assessment: Vehicle and equipment maintenance.

Activity: Vehicle and equipment maintenance and fueling.	
Aspect: Leaking and/or spilling of fuels, greases and oils.	
Nature of Environmental Impact: Hydrocarbon pollution of soils, surface -and groundwater.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	3
Environmental Risk = Significance of Impact X Probability	**18**
Objective of Mitigation Measures	
To prevent hydrocarbon pollution of soils, surface- and ground-water by spilling of fuel, grease or oil and leaking equipment and vehicles.	
Proposed Mitigation	
• Equipment and vehicles are to be repaired immediately upon developing leaks. • Drip trays shall be supplied for all repair work undertaken on machinery on site. • Drip trays are to be utilised during daily greasing and re-fuelling of machinery and to contain incidental spills and pollutants. • Drip trays are to be inspected daily for leaks and effectiveness and emptied when necessary. This is to be closely monitored during rain events to prevent overflow. • Appropriate equipment to deal with emergency spill incidents is to be readily available on site. This includes fire extinguishers, spill kits for hydrocarbon spills, drip trays for equipment and/or machinery leaks, drums or containers for contaminated water. • Soil contaminated with hazardous substances, fuel or oil shall be treated as hazardous waste and removed from site. • If refueling on site or from drums, the ground must be protected and proper dispensing equipment is to be used i.e. hand pumps and funnels. Drums may not be tipped to dispense fuel. • All liquid fuels (petrol and diesel) are to be stored in tanks or containers with lids. • Inspect vehicles on entering the facility to ensure vehicles are in sound condition to reduce the risk of oil or diesel spillages.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2

Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	2
Environmental Risk = Significance of Impact X Probability	**8**

Table 21: Environmental risk assessment: General/domestic and hazardous waste.

Activity: Handling, storage and disposal of general/domestic and hazardous waste.	
Aspect: Poor waste management.	
Nature of Environmental Impact: Soil, surface- and ground-water pollution. Nuisance caused by odours and unsightly appearance of waste onsite, and littering.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	3
Environmental Risk = Significance of Impact X Probability	**15**
Objective of Mitigation Measures	
To prevent soil, surface- and ground-water pollution and the nuisance as a result of poor waste management.	
Proposed Mitigation	
• Installation of sufficient waste bins and skips/bulk containers where necessary. • All containers (bins and skips/bulk containers) shall be kept in a clean and hygienic manner. • Containers (bins and skips/bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly and suitably designed (e.g. prevent water ingress and contain spillages that may arise). • General waste shall be stored in a manner that prevents the harbouring of pests. • General waste materials should always be stored or disposed of separately from hazardous waste material (e.g. oil, diesel). • General and hazardous wastes may only be disposed of at authorised facilities and records of disposal kept.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 22: Environmental risk assessment: Dust.

Activity: Excavation activities, loading and offloading activities and vehicles travelling to and from the site.	
Aspect: Dust generation.	
Nature of Environmental Impact: Degradation of ambient air quality.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	3
Environmental Risk = Significance of Impact X Probability	**15**

Objective of Mitigation Measures	
To minimise the impact of excavation activities, loading and offloading activities, and vehicles travelling to and from the site, on the ambient air quality.	
Proposed Mitigation	
• On dry and windy days, water suppression, should be used to water down dusty roads. • Speed bumps or traffic speed signs need to be erected to reduce speeding onsite that could result in the generation of dust. • Regular maintenance of vehicles to address wear of tires and breaks. Optimal engine combustion will allow for 'cleaner' exhaust emissions.	
After Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**

Table 23: Environmental risk assessment: Ablution facilities.

Activity: Installation and use of ablution facilities.	
Aspect: Unsanitary conditions on site.	
Nature of Environmental Impact: Soil, surface- and ground-water pollution.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	3
Environmental Risk = Significance of Impact X Probability	**15**
Objective of Mitigation Measures	
Prevent soil, surface- and ground-water pollution from unsanitary conditions onsite.	
Proposed Mitigation	
• Sufficient ablution facilities shall be provided – minimum of 1 toilet per 15 workers. • The location of toilets is to be approved by the ECO prior to site establishment, but shall be located within 100m of any work point. • Ablating anywhere other than in the toilets shall not be allowed. • The ablution facilities are to be secured to avoid them from blowing or falling over. • The Contractor shall ensure that any chemicals and/or waste from the ablution facilities are not spilled on the ground at any time. • Ablution facilities are to be serviced regularly as required. • The contractor is to ensure that no spillage occurs and that the contents are removed from site according to approved methods, and with records of safe disposal kept on site.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 24: Environmental risk assessment: Hazardous chemical substances.

Activity: Storage and handling of hazardous chemical substances, including fuel, greases and oils.	
Aspect: Poor management and spills of hazardous chemical substances, including fuel, greases and oils.	
Nature of Environmental Impact: Soil, surface water and groundwater pollution.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	3
Environmental Risk = Significance of Impact X Probability	18
Objective of Mitigation Measures	
To prevent and minimise soil and water pollution as a result of poor management and accidental spills of hazardous chemical substances including fuel, greases and oils used onsite.	
Proposed Mitigation	
• Identify all hazardous chemical substances used onsite, including fuel, greases and oils. • Obtain the material safety data sheet of each of these hazardous chemical substances. • Ensure that the material safety data sheets have sufficient information to enable the user to take the necessary measures to protect his/her health and safety and that of the environment. • Material Safety Data Sheets for all hazardous chemical substances must be readily available on site. • Keep a stock inventory register of all chemicals in the store. • Powders must be stored above liquids. • Proper storage of chemicals in a lockable, well ventilated building. • Ensure adequate access control for the storage area. • Storage areas for hazardous chemicals are to comply with standard fire safety regulations. • Safety signage including “No Smoking”, “No Naked Lights” and “Danger”, and product identification signs, are to be clearly displayed in areas housing chemicals. • Appropriate equipment to deal with emergency spill incidents is to be readily available on site. This includes fire extinguishers, spill kits for hydrocarbon spills, drip trays for equipment and/or machinery leaks, drums or containers for contaminated water. • Chemicals are to be properly labeled and handled in a safety conscious manner. • All personnel handling hazardous chemicals and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE). • Ensure that diesel/fuel tanks are in a bunded area with capacity of holding 110% of the total storage volume. • The removal of only the daily-required amount of chemicals to be used from the chemical store. • If refueling on site or from drums, the ground must be protected and proper dispensing equipment is to be used i.e. hand pumps and funnels. Drums may not be tipped to dispense fuel. • Use of drip trays during filling of machinery or equipment. Drip trays should be emptied into secondary containers on a regular basis. • Ensure that any spilled chemical cannot exit the designated storage area by constructing a berm / bump at the exit, or store chemicals in a spill tray. • Clean all spillage of fuels, lubricants and other petroleum based products immediately. • The contaminated material must be disposed of in accordance with the waste management procedure. • No hazardous chemical must be discarded in the sewage or storm water system. • Train staff on the use of chemicals in accordance with the risks as described in the material data sheets. • Soil contaminated with hazardous chemical substances shall be treated as hazardous waste and	

removed from site.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	2
Environmental Risk = Significance of Impact X Probability	**8**

Table 25: Environmental risk assessment: Noise.

Activity: Construction workers, vehicles, machinery (mainly earthmoving equipment) and general noisy construction activities.	
Aspect: Generation of noise.	
Nature of Environmental Impact: Disturbance and nuisance to neighbors.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**
Objective of Mitigation Measures	
Minimise the noise generation during the construction phase.	
Proposed Mitigation	
• Regular maintenance of vehicles and equipment. • All equipment and machinery should be fitted with adequate silencers. • Working hours should be restricted to daylight hours. • No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is permitted on site. • If work is to be undertaken outside of normal work hours permission must be obtained from the ECO and the facility manager. • No noisy work is to be conducted over the weekends or on public holidays.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	2
Environmental Risk = Significance of Impact X Probability	**8**

11.4.3 Operational Phase

Tables 28 to 42 provide the environmental impact assessments for all operational phase activities.

Table 28: Environmental risk assessment: Environmental awareness and training.

Activity: Operational activities at the Wastewater Treatment Works.	
Aspect: Lack of environmental knowledge among employees.	
Nature of Environmental Impact: Harm to the environment due to employees being unaware of how their activities may impact the environment or due to unauthorised access to the site.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**
Objective of Mitigation Measures	
To prevent harm to the environment through the actions of uneducated employees.	
Proposed Mitigation	
• All employees are required to attend onsite Environmental Awareness/Training prior to commencing work on site. • Follow-up Environmental Awareness/Training may be required from time to time as new employees commence work or for specific activities that may potentially impact the environment. • The facility manager is to maintain accurate records of any training undertaken. • The ECO shall monitor the facility managers' compliance with the requirement to provide sufficient environmental awareness training to all site staff. • Training is to cover all aspects of the EMP and procedures to be followed.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 29: Environmental risk assessment: Dust.

Activity: Increased traffic frequency.	
Aspect: Dust generation.	
Nature of Environmental Impact: Degradation of ambient air quality.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**
Objective of Mitigation Measures	
To minimise the impact of dust generated by the increased traffic frequency on the ambient air quality.	
Proposed Mitigation	

• Dust suppression needs to be practiced on site. • Speed bumps or traffic speed signs need to be erected to reduce speeding onsite that could result in the generation of dust. • Regular maintenance of vehicles to address wear of tires and breaks. Optimal engine combustion will allow for 'cleaner' exhaust emissions. • Open areas should be ripped, if the soil is compacted, fertilised and re-vegetated as soon as possible using suitable grass species.

After Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	2
Environmental Risk = Significance of Impact X Probability	**8**

Table 30: Environmental risk assessment: Noise.

Activity: Vehicle frequency and general operational activities.	
Aspect: Generation of noise.	
Nature of Environmental Impact: Disturbance and nuisance to neighbours.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	3
Environmental Risk = Significance of Impact X Probability	**18**
Objective of Mitigation Measures	
To maintain a dB reading of less than 50dB at the site boundary.	
Proposed Mitigation	
• Regular maintenance of vehicles, back-up generators, pumps and other equipment. • All equipment and machinery should be fitted with adequate silencers. • Enclose machines and equipment with elevated noise emissions (in excess of 85dB) in noise reduction housing, where possible. • No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is permitted on site. • If work is to be undertaken outside of normal work hours permission must be obtained from the ECO and the facility manager. • No noisy work is to be conducted over the weekends or on public holidays.	
After Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	2
Environmental Risk = Significance of Impact X Probability	**8**

Table 31: Environmental risk assessment: General/domestic and hazardous waste.

Activity: Handling, storage and disposal of general/domestic and hazardous waste.
Aspect: Poor waste management.

Nature of Environmental Impact: Soil, surface- and groundwater pollution. Nuisance caused by odours and unsightly appearance of waste onsite.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	3
Environmental Risk = Significance of Impact X Probability	**15**
Objective of Mitigation Measures	
To prevent soil, surface- and groundwater pollution and the nuisance as a result of poor waste management.	
Proposed Mitigation	
• Develop a waste management plan. • Take note that hazardous waste includes: sludge, solids from screens, empty hazardous chemical substance containers, soil and material (e.g. cloths) contaminated by hazardous chemical substances, etc. • The waste management plan should consider the type of waste, description, source, storage, disposal method, disposal facility and responsible person. • The implementation of the waste management plan should ensure: ➢ Installation of sufficient waste bins and skips/bulk containers where necessary. ➢ All containers (bins and skips/bulk containers) shall be kept in a clean and hygienic manner. ➢ Containers (bins and skips/bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly and suitably designed (e.g. prevent water ingress and contain spillages that may arise). ➢ General waste shall be stored in a manner that prevents the harbouring of pests. ➢ General waste materials should always be stored or disposed of separately from hazardous waste material (e.g. oil, diesel). ➢ General and hazardous wastes may only be disposed of at authorised facilities and records of disposal must be kept. ➢ Safe disposal certificates should be requested from general and hazardous landfill sites with every waste dumping. ➢ These safe disposal certificates should be kept on file to illustrate compliance with the cradle to grave principle. ➢ The ECO shall monitor the compliance with the cradle to grave principle. • No incineration of any kind of waste will be permitted onsite.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 32: Environmental risk assessment: Storm water control.

Activity: Rain.	
Aspect: ‘Clean’ rainwater running into ‘dirty’ areas.	
Nature of Environmental Impact: Soil and surface water pollution.	
Before Mitigation	
Extent of the Impact	2

Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	3
Environmental Risk = Significance of Impact X Probability	**15**
Objective of Mitigation Measures	
To prevent the contamination of 'clean' rain water by 'dirty' areas through control of storm water runoff.	
Proposed Mitigation	
• Clean storm water runoff from the surrounding environment must be channeled away from 'dirty' areas. These 'dirty' areas include the integrated ponding and wetland system, chemicals storage areas and all waste storage areas. • Storm water measures should be inspected on a regular basis in order to ensure that the structures are functional and not causing soil erosion. • Where necessary, place culvets underneath road foundations.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	2
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	2
Environmental Risk = Significance of Impact X Probability	**8**

Table 33: Environmental risk assessment: Equipment and vehicle maintenance.

Activity: Vehicle and equipment maintenance and fueling.	
Aspect: Leaking and/or spilling of fuels, greases and oils.	
Nature of Environmental Impact: Hydrocarbon pollution of soils, surface -and groundwater.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	3
Environmental Risk = Significance of Impact X Probability	**18**
Objective of Mitigation Measures	
To prevent hydrocarbon pollution of soils, surface- and groundwater by spilling of fuel, grease or oil and leaking equipment and vehicles.	
Proposed Mitigation	
• Inspection and maintenance of equipment, generators and vehicles shall take place on a regular basis. • Security shall inspect vehicles on entering the facility to ensure vehicles are in sound condition to reduce the risk of oil or diesel spillages. • Equipment, generators and vehicles are to be repaired immediately upon developing leaks. • Generators must be stored on a concrete floor in a bunded area. • Drip trays shall be supplied for all repair work undertaken on machinery on site. • Drip trays are to be utilised during daily greasing and re-fuelling of machinery and to contain incidental spills and pollutants. • Drip trays are to be inspected daily for leaks and effectiveness and emptied when necessary. This is to be closely monitored during rain events to prevent overflow. • Appropriate equipment to deal with emergency spill incidents is to be readily available on site. This includes fire extinguishers, spill kits for hydrocarbon spills, drip trays for equipment and/or	

machinery leaks, drums or containers for contaminated water. • Soil contaminated with hazardous substances, fuel or oil shall be treated as hazardous waste and removed from site. • If refueling on site or from drums, the ground must be protected and proper dispensing equipment is to be used i.e. hand pumps and funnels. Drums may not be tipped to dispense fuel. • All liquid fuels (petrol and diesel) are to be stored in tanks or containers with lids.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**

Table 34: Environmental risk assessment: Sanitation.

Activity: Installation and use of ablution facilities.	
Aspect: Unsanitary conditions on site.	
Nature of Environmental Impact: Potential surface- and/or groundwater- contamination.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**
Objective of Mitigation Measures	
Prevent soil, surface- and groundwater pollution from unsanitary conditions onsite.	
Proposed Mitigation	
• Sufficient ablution facilities shall be provided – minimum of 1 toilet per 15 workers. • The location of toilets is to be approved by the ECO prior to site establishment, but shall be located within 100m of any work point. • Ablution facilities shall be inspected and maintained to prevent or minimise blockage and leakages. • Ablution facilities are to be serviced weekly or more frequently if required. • Toilets should have properly closing doors and supplied with toilet paper. • Awareness of the importance of proper hygiene should be created among employees. • Ablating anywhere other than in the toilets shall not be allowed.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 35: Environmental risk assessment: Resource use during operation.

Activity: Usage of resources, such as electricity and water.
Aspect: Inefficient and redundant use of a valuable resource.
Nature of Environmental Impact: Wastage/depletion of valuable resources.
Before Mitigation

Extent of the Impact	2
Duration of the Impact	2
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**7**
Probability	3
Environmental Risk = Significance of Impact X Probability	21
Objective of Mitigation Measures	
To prevent the inefficient and redundant use of valuable resources.	
Proposed Mitigation	
General • Ensure that all employees have been informed on the importance of natural resources (proper environmental training and awareness). • Regular site inspection by supervisors. • Inspect operations regularly to determine areas of improvement with regards to resource consumption. • Regular maintenance and inspection of equipment, such as hose pipes, to prevent leaks. • Monitoring of resource consumption. • Identify areas where resource consumption can be minimised. • Set targets to try minimise resource consumption. • Identify technologies and practices which may reduce resource consumption. • Implementation of technologies and practices which can reduce resource consumption. **Water** • Groundwater abstracted from boreholes should take place at a sustainable rate (Refer to Table 15). • Regular inspection and maintenance of all boreholes, JoJo tanks, toilets, water pipes and taps. • Leaking JoJo tanks, taps, toilets and pipes are to be repaired immediately. • Running water taps and pipes may not be left unattended. • Each time you flush the toilets approximately 20 litres of water is used, therefore use the toilets accordingly. • All pipe/hose and tap connections are to be fitted with correct and appropriate plumbing fittings. **Electricity** • Save electricity by turning off lights and computers when leaving the office. • Halogen light bulbs convert approximately 80% of the energy used into heat rather than light. Replace spent light bulbs with energy saving CFLs (compact fluorescent light) or newer and more efficient LEDs (light emitting diode).	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	2
Environmental Risk = Significance of Impact X Probability	**8**

Table 36: Environmental risk assessment: Alien invasive vegetation.

Activity: Growth of vegetation.	
Aspect: Infestation of alien invasive vegetation.	
Nature of Environmental Impact: Loss indigenous habitat and excessive water usage.	
Before Mitigation	
Extent of the Impact	2

Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**4**
Probability	2
Environmental Risk = Significance of Impact X Probability	**8**
Objective of Mitigation Measures	
To prevent control of alien invasive plant species.	
Proposed Mitigation	
• Ensure all alien invasive plants are identified on the site. • Ensure an eradication plan for the removal of the alien invasive vegetation is developed. • Ensure all alien invasive vegetation is removed from the site in accordance to the eradication plan. • Areas where alien vegetation was removed should be reseeded with indigenous grasses. • Alien invasive vegetation will be eradicated and controlled by manual removal, chemical application and/or biological control. The regulations in terms of the Conservation of Agricultural Resource Act, 1983 apply. • Perform a Habitat assessment study annually for three years.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 37: Environmental risk assessment: Shaping-sloping

Activity: Shaping	
Aspect: Poor sloping.	
Nature of Environmental Impact: Degradation of topography and general appearance.	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	2
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**5**
Probability	2
Environmental Risk = Significance of Impact X Probability	**10**
Objective of Mitigation Measures	
To prevent the degradation of the natural topography and general appearance.	
Proposed Mitigation	
• No excavated material or stockpiles shall be left on site and all material remaining after backfilling shall be removed or smoothed over to blend in with the surrounding landscape. • Backfilled areas shall be monitored and depressions filled after backfill settles. • New slopes should mimic the natural slopes and topography.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

Table 38: Environmental risk assessment: Vegetation establishment and landscaping.

Activity: Vegetation establishment.	
Aspect: No topsoil available on site for rehabilitation.	
Nature of Environmental Impact: Poor vegetation establishment, results in exposure of topsoil to the elements and as a result degradation and erosion of a valuable resource (topsoil).	
Before Mitigation	
Extent of the Impact	2
Duration of the Impact	1
Intensity of the Impact	3
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**6**
Probability	2
Environmental Risk = Significance of Impact X Probability	**12**
Objective of Mitigation Measures	
To prevent the loss of a valuable resource (topsoil) and ensure establishment of indigenous vegetation where necessary.	
Proposed Mitigation	
• Re-vegetation by indigenous vegetation. • If areas show no specified vegetation growth within three months, areas shall receive additional topsoil, ripped to a depth of 100mm and re-planted. • Cleared indigenous vegetation can be stockpiled for possible reuse in later rehabilitation or landscaping, or as a brush pack for erosion prevention. • Soil stabilising measures could include rotovating in straw bales (at a rate of 1 bale/20m²), applying mulching or brush packing, or creating windbreaks using brush or bales.	
After Mitigation	
Extent of the Impact	1
Duration of the Impact	1
Intensity of the Impact	1
Significance of Impact = Extent of Impact + Duration of Impact + Intensity of Impact	**3**
Probability	1
Environmental Risk = Significance of Impact X Probability	**3**

12. ENVIRONMENTAL IMPACT STATEMENT

12.1 Summary of key findings

Based on the outcomes of the specialist assessments that have informed the environmental impact assessment process, together with the recommendations made by the specialists and EAP, the overall impact of the project is of **Low significance** though the implementation of simple and effective mitigation measures.

12.2 Comparative assessment of positive and negative implications of the proposed activity and alternatives

The table below compares the positive and negative implications of the proposed development to those from the alternative activity, namely the no-go option or current situation.

Table 39: Comparison of the positive and negative implications of the proposed activity and alternative option

Contribution	Mixed-use development	No-go option
Positive contribution	• Significant improvement in the economic value of the property. • Removal of a potential source of soil, surface, and groundwater pollution, i.e. the illegal disposal of waste onsite. • Job creation. • Stimulation of the local economy.	• No further environmental disturbance.
Negative contribution	• Disturbance of vegetation (already serverly disturbed) due to construction activities, e.g. site clearance. • Minimal noise pollution. • Minimal dust generation.	• Continued pollution and contamination of the environment as a result of illegal disposal on the property; • Continued safety threat to neighbouring properties.

A comparison between the impacts of the proposed activity and no-go option shows that the no-go option has a greater negative impact on the environment than the proposed activity. Authorisation of the proposed development is recommended on condition that the environmental impacts are mitigated as stipulated in the Environmental Management Programme.

13. CONCLUSION AND RECOMMENDATION

During the construction phase, the project can be expected to have low negative impacts on the various environmental attributes if proper mitigation measures are implemented. The project can be expected to have a positive impact on the regional and local socio-economy during the construction phase. This will be as a result of the creation of jobs as well as procurement opportunities from local suppliers in the area. These benefits can be maximised through preference in procurement processes for local firms and employment of local labourers.

Once constructed, the mixed-use development will directly contribute to the local economy though the creation of jobs.

During the assessment of the no-go alternative, the construction of the proposed development was found to be the preferred option. Other environmental impacts that may result from the proposed development, such as noise-, soil-, water-, and air pollution can be mitigated.

Based on the outcomes of the specialist assessments that have informed the environmental impact assessment process, together with the recommendations made by the specialists and EAP, the overall impact of the project is of **Low significance** though the implementation of simple and effective mitigation measures.

The following recommendations are therefore made:

1. **The project should be approved and allowed to proceed on the preferred site.**
2. **The mitigation measures proposed above, that have been incorporated into the EMP in more detail, must be implemented during the construction and operational phases of the project.**
3. **A communications pathway must be established that would allow the designated ECO to accept and deal with stakeholder complaints.**
4. **Mitigation measures proposed above should be incorporated as far as possible into the operational plan for the development.**
5. **Strict monitoring and enforcement of requirements of the EMP must be undertaken to ensure that contractors and operators adhere to these requirements.**