PRETORIA
410 Pauline Spruijt Street, Garsfontein x 8, 0081
P.O. Box 74648, Lynnwood Ridge, 0040
Tel: +27 12 348 1922, Fax: +27 12 348 7154
Email: info@ilaweb.co.za, Website: www.ilaweb.co.za

DRAFT SCOPING REPORT:

PROPOSED TOWNSHIP ON PORTION 20 AND 22 OF THE FARM THEUNISPAN 293 LQ, PORTION 1-4 AND A PORTION OF THE REMAINDER OF THE FARM GROOTDOORN 292 LQ, PORTION 3 OF THE FARM STEENBOKPAN 295, WITHIN LEPHALALE MUNICIPALITY.

LDEDET REFERENCE NUMBER: 12/1/9/2-W49

NEAS REFERENCE NUMBER: LIM/EIA/0000717/2013

26 MARCH 2014

ILA Contact Persons:
Thuledu Ntshingila
Shalini Chetty
Karen Botes

DETAILS OF APPLICANT AND PROJECT TEAM

DETAILS OF APPLICANT

The Applicant is:

Flexilor Properties Pty Ltd T/A Steenbokpan Development Consortium

Mr. Christoffel Johann Maritz

27G Fox Odendaal Street, Standard Bank Building, Lephalale

PO Box 14058, Sinoville

0129

chrisjmaritz@gmail.com

DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

The Independent Environmental Assessment Practitioner is:

Interdesign Landscape Architects (Pty) Ltd (ILA)

Contact persons: Thuledu Ntshingila/Shalini Chetty

P.O. Box 74648

LYNNWOOD RIDGE

0040

Tel: (012) 348-1922

Fax: (012) 348-7154

Email: thuledu@ilaweb.co.za

Refer to ***Appendix 1*** for the EAP's expertise.

DETAILS OF SPECIALIST CONSULTANTS

The compilation of this Scoping Report was reliant on the input of the following multi-disciplinary team of specialists.

COMPANY	EXPERTISE
TOWN PLANNERS	
NuLane Architectural	Town Planning
EDS (PTY) Ltd	Traffic Investigation
GEOTECHNCICAL	
WSM Leshika	Geotechnical Site Investigation
BIOPHYSICAL ENVIRONMENT	
AGES	Ecological Assessment
WSM Leshika	1:100 year Floodline Delineation
WSM Leshika	Hydrogeological Assessment
ENGINEERING	
Royal HaskoningDHV	Water Supply, Sewer Reticulation, Roads, and Storm Water Drainage
HERITAGE RESOURCES	
PGS Heritage	Heritage Impact Assessment

DRAFT SCOPING REPORT DISTRIBUTION LIST

1. STAKEHOLDERS

ATTENTION	NAME OF ORGANISATION AND ADDRESS
Masungi Tshukelana	**Limpopo Department of Economic Development, Environment and Tourism** 20 Hans Van Renesburg 19 Biccard Street Polokwane 0700 Tel: 015 290 7160
Mr J. Gapane	**Limpopo Road and Transport (Floor 6: Room 34)** 40 Paul Kruger and 39 Church Street Polokwane 0700
Ms M. Raphashe	**Lephalale Local Municipality (Town Planning)** Cnr Joe Slovo & Douwater Avenue Onverwacht 0557 Email: moyabo.raphashe@lephalale.gov.za
Mr L. Sole	**Waterberg District Municipality** Development Planning Harry Gwala Street Modimolle 0510 Email: leonard.sole@lephalale.gov.za
Mrs L.T Kobe	**Department of Water Affairs** Director: WMA 1 Limpopo 49 Genl Joubert Street Azmo Place Polokwane 0700

Ms C. Scheermeyer	South African Heritage Resources Agency Heritage Officer Archaeology, Palaeontology & Meteorites Unit P.O.Box 4637 Cape town 8000 Email: cscheermeyer@sahra.org.za
Ms Nosipho Dlamini/ Mr Thapelo Mathathe	Department Agriculture, Forestry & Fisheries Office Number : 39 103 Munnik Street Magistrate Building Biccard 0920 015 519 3316
Ms N. Msimango	Eskom 92 Hans Van Redensburg Polokwane 0700
Mr J. Du Plessis	SASOL Paul Kruger Street Prichardt 2300 Jacques.duplessis@sasol.com
Ms Claire Patterson-Abroat	Endangered Wildlife Trust Email: clairet@ewt.org.za
Mr J. Wessel	Wildlife & Environment Society of South Africa 18 Blackwood Street Bryanston 3 2191 Email: info@wessanorth.co.za

2. INTERESTED AND AFFECTED PARTIES

In addition to the Drop Box download link that has been sent to all the registered I&APs, a hard copy of the DSR is available with the Ward Councillor for review. The Councillor can be contacted via the details below:

Name	Contact Number
Mr France Magwai	014 763 5662/079 977 8547

ABBREVIATIONS

DAFF:	Department of Agriculture, Forestry and Fisheries
DEA:	Department of Environmental Affairs
LDEDET:	Limpopo: Department of Economic Development, Environment and Tourism (Competent Authority)
DEIAR	Draft Environmental Impact Report
DSR:	Draft Scoping Report
DWA:	Department of Water Affairs
EA:	Environmental Authorisation
EAP:	Environmental Assessment Practitioner
EIA:	Environmental Impact Assessment
EIAR:	Environmental Impact Assessment Report
EMPr:	Environmental Management Programme
EMF:	Environmental Management Framework
FSR:	Final Scoping Report
I&AP's:	Interested and/or Affected Parties
IAIA:	International Association of Impact Assessment
ILA:	Interdesign Landscape Architects (Pty) Ltd
NEMA:	National Environmental Management Act
NEMBA:	National Environmental Management: Biodiversity Act
NEMPAA:	National Environmental Management Protected Areas Act
NEMWA:	National Environmental Management: Waster Act
SAHRA:	South African Heritage Resources Agency
SDF:	Spatial Development Framework
SMP:	Stormwater Management Plan
TIA:	Traffic Impact Assessment
WMP:	Waste Management Plan
WWTW:	Waste Water Treatment Works
WULA:	Water Use License Application
WDM:	Waterberg District Municipality

GLOSSARY OF TERMS

Alien Vegetation: is defined as undesirable plant growth, which shall include, but not be limited to all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA) regulations. Other vegetation deemed to be alien shall be those plant species that show the potential to occupy in number, any area within the defined construction area.

Alien Species: A plant or animal species introduced from elsewhere: neither endemic nor indigenous.

Alternatives: in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to – The property on which or location where it is proposed to undertake the activity; The type of activity to be undertaken; The design or township layout of activity; The technology to be used in the activity; and The operational aspects of the activity.

Applicant: Any person who applies for an authorization to undertake an activity or to cause such activity to be undertaken as contemplated in the National Environmental Management Act (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2006.

Arable Potential: Land with soil, slope and climate components where the production of cultivated crops is economical and practical.

Buffer zone: is a collar of land that filters out inappropriate influences from surrounding activities as described by Shafer (1999) according to Pfab (2001:11), also known as edge effects, including the effects of invasive plant and animal species, physical damage and soil compaction caused by trampling and harvesting, abiotic habitat alterations and pollution. According to Pfab (2001:11), buffer zones can also provide more landscape needed for ecological processes, such as fire, as pointed out by Shafer (1999).

Construction Activity: A Construction Activity is any action taken by the Contractor, his subcontractors, suppliers or personnel during the construction process as defined in the South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 107 of 1998).

Critically Endangered: A taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild, in the immediate future.

Ecology: The study of the interrelationships between organisms and their environments.

Environment: All physical, chemical and biological factors and conditions that influence an object and/or organism.

Environmental Authorisation: A brief description of the proposed activity, the extent or quantities involved, the surface areas involved, the infrastructural requirements and the implementation programme for which the authorization is issued

Environmental Impact: An Impact or Environmental Impact is the degree of change to the environment, whether desirable or undesirable, that will result from the effect of a Construction Activity within the limits that define the construction site. An Impact may be the direct or indirect consequence of a Construction Activity.

Environmental Impact Assessment: Assessment of the effects of a development on the environment.

Environmental Management Programme: A legally binding working document, which stipulates environmental

and socio-economic mitigation measures that, must be implemented by several responsible parties throughout the duration of the proposed project.

Indigenous: means a species that occurs, or has historically occurred, naturally in a free state within the borders of South Africa. Species that have been introduced to South Africa as a result of human activity are excluded (South Africa (Republic) National Environmental Management: Biodiversity Act, 2004: Chapter 1).

Interested and Affected Party: any person, group of persons or organization interested in or affected by an activity contemplated in an application, or any organ of state that may have jurisdiction over any aspect of the activity

Road Reserve: The road reserve is a corridor of land, defined by co-ordinates and proclamation, within which the road, including access intersections or interchanges, is situated. A road reserve may, or may not, be bounded by a fence.

Road Width: For the purposes of the EMP, the Road Width is defined as the area within the Road Reserve i.e. fence line to fence line, but also includes all areas beyond the Road Reserve that are affected by the continuous presence of the road i.e. a reach of a water course.

Mitigate: The implementation of practical measures to reduce adverse impacts

Public Participation Process: is a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters

Red data plant species: Fauna and flora species that require environmental protection based on the World Conservation Union (IUCN) categories and criteria.

Soil Compaction: Mechanically increasing the density of the soil, vehicle passage or any other type of loading. Wet soils compact easier than moist or dry soils.

Species: means a kind of animal, plant or other organism that does not normally interbreed with individuals of another kind. The term “species” include any sub-species, cultivar, variety, geographic race, strain, and hybrid or geographically separate population (South Africa [Republic] National Environmental Management: Biodiversity Act, 2004: Chapter 1).

The Contractor: the contractor as the developers agent on site, is bound by the ROD and EMP conditions through his/her contract with the developer, and is responsible for ensuring that conditions of the EMP and EA are strictly adhered to at all times. The contractor must comply with all orders (whether verbal or written) given by the ECO, project manager or site agent in terms of the EMP.

The Developer: remains ultimately responsible for ensuring that the development is implemented according to the requirements of the EMP and the conditions of the EA throughout all phases of the project.

The Environmental Control Officer (ECO): the ECO is appointed by the developer as an independent monitor of the implementation of the EMP i.e. independent of the developer and contractor.

The Environmental Liaison Officer (ELO): the Contractor shall submit to the Site Agent a nominated representative of the Contractor as an ELO to assist with day to day monitoring of the construction activities for the contract.

Vegetation: is a collective word for plants. Vegetation can be regarded as the first link in any food chain.

Vulnerable: A taxon is 'Vulnerable' when it is not 'Critically Endangered' or 'Endangered' but is facing a high risk of extinction in the wild in the medium term future.

Watercourse: is "A river or spring; a natural channel in which water flows regularly or intermittently; a wetland, lake or dam into which, or from which, water flows; and any collection of water which the Minister may by notice in the Government Gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks" (South Africa [Republic] National Water Act, 1998).

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EXECUTIVE SUMMARY

Interdesign Landscape Architects were appointed by the Steenbokpan Development Consortium to conduct an Environmental Impact Assessment process for the proposed establishment of a new township situated on a Portion of the Remainder of the Farm Grootdoorn 292 LQ. The proposed township comprises of a mixed land use development to be known as Steenbokpan Extension 3. The development site is situated 50km west of the town of Lephalalale adjacent to the Road D175, within the Lephalale Local Municipality and Waterberg District. The proposed Steenbokpan Extension 3 is 13.79 hectares (ha) in extent, and forms part of a larger development proposal of approximately 23 000 residential units on approximately 1840ha of land located on Portion 20, 22 and 25 of Theunispan 293 LQ, portions 1 – 4 of Grootdoorn 292 LQ, a portion of the remainder of the farm Grootdoorn 292 LQ, and portion 3 of Steenbokpan 295 LQ. However, this application is limited to Phase 1 of the proposed development which entails the township located on a Portion of the Remainder of the Farm Grootdoorn 292 LQ. This site is relatively flat and slopes gently down to the north, and falls within the Mokolo River Catchment, which drains into the Limpopo River to the north.

The proposed development is a product of specialist input, spatial evaluation, site investigations, background studies, stakeholder consultations, and seeks to reduce the housing backlog within the Lephalale Local Municipality area of jurisdiction. The purpose of the township layout has been designed taking into consideration all environmental and contextual aspects influencing everyday life within and around Lephalale, in order to come up with a functional land use plan.

The proposed township layout entails the following land uses:

LANDUSE	SIZE OF ERF.	COVERAGE
Municipal	Site Specific	1.77%
Institutional facility (Primary School)	300 pupils	1.30%
Residential 1	251 units	50.08%
Residential 3	190 units	14.54%
Roads	Higher Order Roads: 25 metres in width. Local Collectors/lower Order Roads: 13 m in width	30.87%
Public Open Space	Site Specific	1.44%

It should be noted that this township layout is still subject to amendments following receipt of comments from I&AP'S as well as specialist inputs. Land uses demarcation is also subject to change accordingly.

Bulk Services

Confirmation on the existence of bulk services required for the proposed township development was investigated by Royal Haskoning DHV, and the following findings were made:

- Water Supply- The development site is situated in the Limpopo River's catchment area, according to the Hydrogeological Assessment conducted by WSM Leshika (WSM Let, 2012). There are a total of 30 boreholes recorded in the study area. The majority of these boreholes are situated south of the Eenzaamheid Fault in the Waterberg sediments, and they presently supply water for irrigation, an informal settlement, farmsteads, stock and game watering points. There is no major municipal or other formal water supply infrastructure in the area except for a small municipal supply system providing water to an informal housing area, known as Steenbokpan Town. Water for the proposed development will be sourced from two functional boreholes on the south eastern corner of the development site.
- Sewerage reticulation –There is no existing sewerage reticulation system in the vicinity of the proposed development site. A sewage package plant to be situated on the north eastern corner

of the development site is therefore proposed for the township.

- Storm water system – There are no formal storm water drainage channels on the development site. It is therefore proposed that roads, erven and open areas will be drained through a series of pipe and open channel networks. The stormwater will discharge into the pans and retention ponds to be constructed on open spaces in order to harvest rain water for irrigation purposes. The necessary litter traps and reed beds will be designed and constructed upstream of the pans to prevent pollution of the water in the pans. The design will be done using worldwide best practises.
- Electricity Supply – A Portion of the Remainder of the farm Grootdoorn 292 LQ, site falls within the Lephalale Municipality precinct, however, Eskom is the licensed supply authority and therefore Eskom's standards relating to the electrical services required for the reticulation network and street lighting will be followed. A preliminary electrical demand for Phase 1 was calculated and the total predicted usage is said to be at 2MVA. Eskom will also ultimately be responsible for the maintenance of the electrical network. Refer to Appendix 6 in which Lephalale Municipality grants Eskom permission to service the development.
- Road Upgrade - The proposed development is located approximately 1 400 m to the north of the junction of road D175 with road D1675. Road D1675 is a surfaced road which intersects with road R510 (D 1836) which is the major arterial road between Lephalale and Thabazimbi. The first 1150 m of road D175 from the junction with road D1675 is surfaced. The remaining section of road D175, extending northwards has a gravel surface. The Provincial Road D175 will function as the Local Distributor for the proposed development. Internal traffic will be distributed through a network of access collectors and residential access loops. The unsurfaced section of the road, D175, from the proposed development access to the surfaced section of D175 will be upgraded in accordance with the recommendations made in the Traffic Impact Assessment (Refer to Appendix 9). The total length of the road, D175, to be upgraded is 250 m.

Specialist findings

The site is presently undeveloped and comprises of old fields surrounded by mixed broadleaf woodland that varies in density and species composition. These woodlands vegetation units are associated with red-yellow sandy soils that have medium sensitivity, except for the Marula-Grewia woodland variation that has medium-high sensitivity as a result of the very dense stands of the protected marula trees in the area. The site does not fall within a protected area or conservancy. Various specialist studies have been conducted as part of this investigation to identify any environmental or ecological constraints which are a limiting factor to the spatial extent of the proposed township. The findings of these specialist studies are summarised below.

1. Ecological Constraints

According to the Draft Ecological Report the cumulative constraints of the proposed development activities on the landscape will be minor considering the small footprint area. The substrate consists of sandy loam soils that forms a mosaic pattern and consist of the soil forms Clovelly and Hutton. Areas where the soils are of medium depth are dominated by red bushwillow, while deeper areas are characterized by Marula and silver clusterleaf tree.

A permit should be obtained for the eradication of the protected Marula trees, although the Marula trees would enhance the aesthetical value of the development and should be incorporated as part of the landscaping of the proposed development and/or preserved as a park ("green belt") area where possible.

2. Heritage Constraints

No Heritage features were identified on the proposed Phase 1 development.

3. Accessibility

A traffic investigation was also conducted to determine the future flow conditions at the key intersections within the study area.

The site access proposal will require the following road works;

- Construction of D175 / Tau Drive intersection, as part of site access proposal, to ensure safe access operations.
- Construction of Tau Drive from D175 (to the appropriate standards)
- Construction of direct site access from Tau Drive (to the appropriate standards)

It is recommended that the access from the Public Road linking to the provincial Road D175 be constructed to form the southern boundary of the site. Access to the site is proposed to be taken directly off a newly proposed public road, at a point located approximately 210m from Road D175. This public road is to be known as Tau Drive and will form a side stop control intersection with Road D175, at a point some 1,4km to the north of the intersection of Roads D175 and D1675.

4. *Geotechnical Constraints*

A geotechnical report was compiled to investigate and provide a broad overview of the sustainability of the land for the proposed development. This report set to outline the constraints of the development area and provide mitigation for the development.

The main expected geotechnical constraints on this site are:

- Collapsible soil horizons;
- Compressible soil horizons;
- Seasonal shallow groundwater seepage and/or saturated soil profiles;
- Localised seasonal surface seepage;
- Areas prone to flooding and within known drainage channels;
- Intermediate erodability of soil horizons.
- Very localised fairly steep slopes due to existing small borrow pits, excavations and/or soil heaps.

Appropriate site drainage and water management plans should be implemented for the proposed development. This investigation was compiled for planning purposes and needs to be augmented by further investigation and testing for design purposes.

Scoping and EIA process

The key objective of the Scoping and Environmental Impact Assessment process is to provide decision makers with the opportunity to consider the potential environmental impacts of a project early in the development process, and assess if environmental impacts can be avoided, minimised or mitigated to acceptable levels. The Scoping Phase identifies potential issues associated with the proposed township development, and defines the extent of the studies required to be conducted as part of the EIA Phase. Therefore, the purpose of this Scoping Report is to:

- Provide a detailed description of the proposed township development.
- Explain the rationale of the proposed township development in terms of need and desirability.
- Identify all the major issues associated with the proposed alternative township layouts, and describe how these issues will be investigated during the EIA phase.
- Present findings of the preliminary investigations conducted to date, as part of the conceptual township layout design process.
- Describe the public and stakeholder consultation process conducted to date and any major issues raised by interested and affected parties.

- Describe the consultation process held with the LLM in ensuring that the proposed township layout is in line with the town's spatial policies and plans.
- Review the practicality of the proposed alternative conceptual township layouts in terms of the town's spatial development framework and environmental management framework.
- Provide an EIA plan of study, detailing how the issues identified in this scoping report will be investigated and assessed during the EIA phase, and the public participation process to be followed.

More importantly, this Scoping Report provides interested and affected parties with an opportunity to verify that the issues they have raised to date have been captured and adequately considered within the study.

The public and surrounding community were notified about the proposed township development through: the placement of an advert in the Northern News; the display of site notices at visible public locations surrounding the development site; and the distribution of Background Information Documents at surrounding businesses and landowners. A database has been compiled containing details of interested and affected parties. The database will be continually updated throughout the EIA Process.

No major comments have been received to date following the above notification process except for some few questions raised by I&AP's.

Upon receipt of comments, the Scoping Report will be finalised for submission to LDEDET. All final reports will be made available to registered I&AP's.

Structure of Draft Scoping Report

A breakdown of the structure of the DSR is illustrated in the Table below;

Contents of the Report as stipulated in the EIA Regulations, 2010 (Chapter 3, Section 28)	Section covered in Final Scoping Report
1. Background	
Details and Expertise of the EAP	Appendix 1
An identification of all legislation and guidelines that have been considered in the preparation of the scoping report	Section 2
2. Project Description and Alternatives	
A description of the proposed activity	Section 4
A description of the need and desirability of the proposed activity	Section 3
A description of any feasible and reasonable alternatives that have been identified	Section 5
A description of the alternative routes	Section 5
A description of identified potential alternatives to the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and the community that may be affected by the activity	Section 5,7,8,9
3. Environmental Issues and Potential Impacts	
A description of the environment that may be affected by the activity and the manner in which the activity may be affected	Section 7 and 8

by the environment	
A description of environmental issues and potential impacts including cumulative impacts , that have been identified	Section 9
4. Details of public participation process	
The steps that have been taken to notify potentially interested and affected parties of the application	
Proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the application have been displayed, placed or given	Section 10.1.2 and Section 10.1.3
A list of all persons or organisations that were identified and registered in terms of Regulation 55 as interested and affected parties in relation to the application	Appendix 11
A summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues	Section 10: sub section 10.1
Copies of any representations, and comments received in connection with the application or the scoping report from interested and affected parties	Section 10.2
5. Plan of EIA Study	
A plan of study for environmental impact assessment which sets out the proposed approach to the environmental impact assessment of the application, which must include –	Section 11
A description of the tasks that will be undertaken as part of the environmental impacts assessment process, including any specialist reports or specialised processes, and the manner in which such tasks will be undertaken	Section 11: Sub-section 11.1
An indication of the stages at which the competent authority will be consulted	
A description of the proposed method for assessing the environmental issues and alternatives, including the option of not proceeding with the activity	Section 11: Sub-section 11.5.1
Particulars of the public participation process that will be conducted during the EIA process	Section 11: Sub-section 11.9

Scoping and EIA Phase Programme

The table below summarises the estimated timeframes following the submission of this Final Scoping Report to the LDEDET.

ACTIVITY	ANTICIPATED DATE
SCOPING PHASE	
Make Draft Scoping Report available to I&APs for 40 days review period	25 March-21 May 2014
Finalise Scoping Report and submit to Authority [Authority review period:14 days acknowledge receipt, 30 day review]	June 2014
EIA PHASE	
Prepare Draft EIA Report and EMPr [3 weeks to prepare upon receipt of all info]	July-August 2014 (School and Public Holidays Excluded)
Make Draft EIA Report available for review by registered Interested and Affected Parties and other stakeholders [40 day comment period]	August-September 2014
Finalise EIA Report and make available to registered I&APs and other stakeholders [21 day comment period]	October 2014
Finalise EIA Report and submit to Authority [Authority review period:14 day acknowledge receipt, 60 day accept / reject report, if accepted 45 day review, 2 days to issue decision]	October-November 2014
Issuing of Environmental Authorisation	December 2014

It should be noted that delays in the process may occur, for example, Authorities and I&AP's may require additional information following submission of documentation. Although it is impossible to predict potential delays and timeframes, ILA will attempt to comply with the given timeframes as far as possible, wherever these are within the control of ILA.

SECTION 1: INTRODUCTION

1.1 BACKGROUND

The Lephalale Local Municipality (LLM) is located in the north western part of Waterberg District of Limpopo Province of the Republic of South Africa. The Municipal area is predominantly rural with 38 villages, two townships (Marapong and Onverwacht), and one town Lephalale. The main town, Lephalale, is named after the local river, a tributary of the Limpopo River, which has been the source of life to the people of this area from time immemorial.

LLM is surrounded by four local municipalities (Blouberg, Modimolle, Mogalakwena and Thabazimbi). Its north-western border is also part of the international border between South Africa and Botswana. The LLM is the biggest Municipality in the Limpopo province (covering 14 000km^2). The town of Lephalale is located 280 km from Tshwane and is a recognized gateway to Botswana and other neighbouring Countries. The town Lephalale (Ellisras/Onverwacht/Marapong) is located approximately 40 km from the border of Botswana. It is situated between 23˚30' and 24˚00' south latitude 27˚30' and 28˚00' east longitude. (Lephalale Municipality, IDP 2013-2016)

Economically, LLM is dominated by electricity generation, which is represented by the largest direct dry-cooling power station in the world, Matimba, which started in 1981 as well as Medupi power station which is a Greenfields coal-fired power plant which will also utilise dry-cooling. Therefore, it is commonly referred to as “the heartbeat of the Waterberg Bushveld” and the South African Provincial and National Development node for mining and energy generation. LLM also has a relatively unevenly distributed contribution by sectors, both in GDP and formal employment numbers. Most formally employed people work in the agriculture sector (39%) while most GDP comes from mining (59%). Other sectors are very small in comparison to the mining sector, both in GDP size and employment numbers (Waterberg EMF 2009). (Lephalale, 2013 Website).

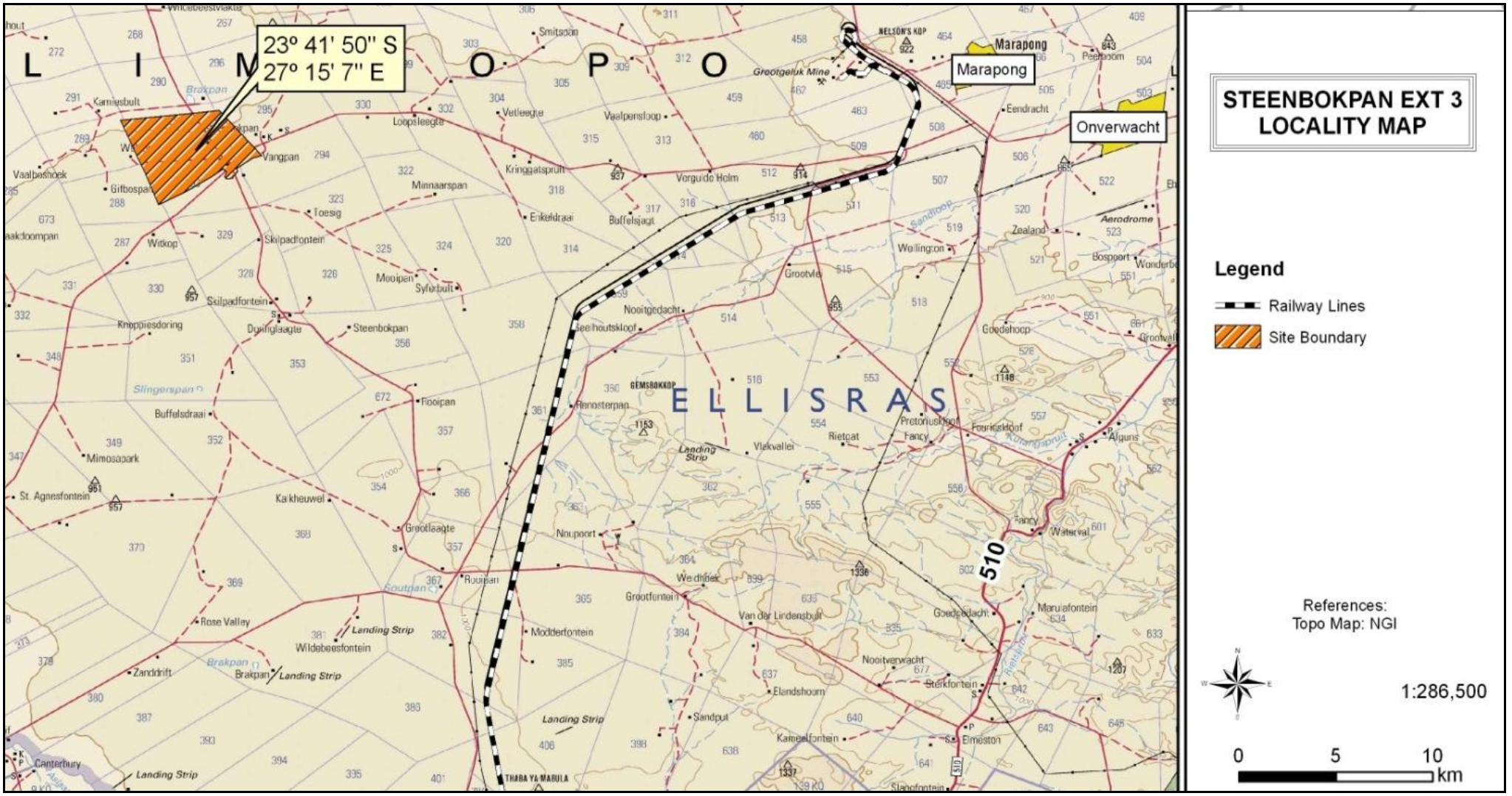


Figure 1: Locality Map of the site which falls within Lephalale, Limpopo

Steenbokpan is situated between Lephalale and the Botswana border, in the Limpopo Province (Refer to Figure 1 above), about 50 km west of Lephalale town, and adjacent to District Road D175. The proposed mixed use development will be known as Steenbokpan Extension 3. Steenbokpan Extension 3, measures approximately 13.79 hectares (ha), and forms part of a larger development of approximately 23 000 residential units on approximately 1840ha of land located on Portion 20, 22 and 25 of Theunispan 293 LQ, portions 1 – 4 of Grootdoorn 292 LQ, a portion of the remainder of the farm Grootdoorn 292 LQ, and portion 3 of Steenbokpan 295 LQ. This proposed development site is relatively flat and slopes gently down to the north and is classified as flatter terrain associated (less than 12 degree slopes). It falls within the Mokolo River Catchment, which drains into the Limpopo River to the North.

The proposed development is located approximately 1 400 m to the north of the junction of road D175 with road D1675. Road D1675 is a surfaced road which intersects with road R510 (D 1836) which is the major arterial road between Lephalale and Thabazimbi. The first 1150 m of road D175 from the junction with road D1675 is surfaced. The remaining section of road D175, extending northwards has a gravel surface. The Provincial Road D175 will function as the Local Distributor for the proposed development. Internal traffic will be distributed through a network of access collectors and residential access loops.

The unsurfaced section of the road, D175, from the proposed development access to the surfaced section of D175 will be upgraded in accordance with the recommendations made in the Traffic Impact Assessment. The total length of the road, D175, to be upgraded is 250 m. The Developer will be responsible for the full cost of the internal township roads and the upgrading, triggered by the development of Road D175.

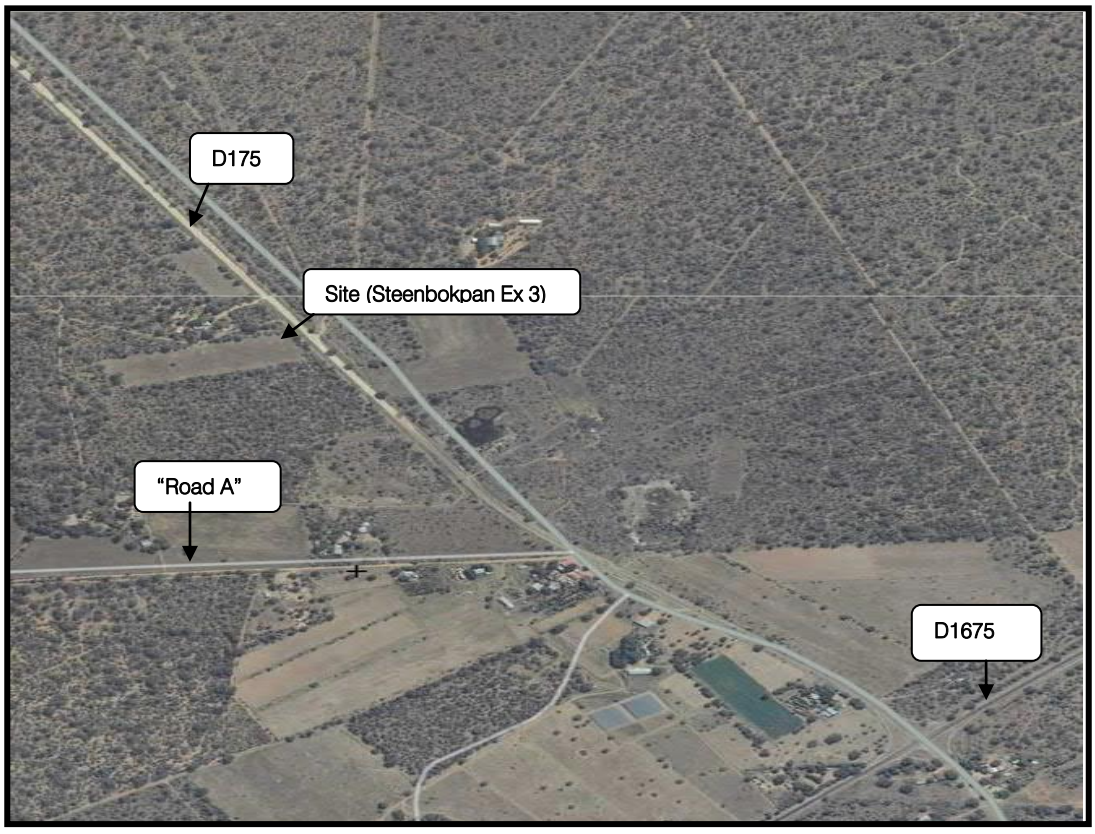


Figure 2: Proposed Road Upgrade

The LLM Final Integrated Development Plan 2013-2016, Lephalale is considered to be a Potential Development Area (PDA), this denotes areas that ordinarily would not be considered for development in the short-term or prior to full development of the Spatial Development Areas (SDA) that fall within the Provincial realm of development. Areas such as Steenbokpan and Stockpoort are being considered due to national development imperatives.

Potential Development Area 1 (Steenbokban node – site falls within this node).

Noting national development pressures on the Municipality, the area is upgraded to a level of a potential development area. Potential Development Areas 1 and 2 are part of the area zoned mining. This zone is further categorised into mining 1 and mining 2. Mining 1 denotes areas where mining production is in progress. Mining 2 on the other hand, depicts areas with known mineral reserves whose economic viability has not been established. Energy demand in the country and international petroleum market resuscitated demand for coal based products. The coalfields west of the Lephalale town are expected to be a theatre to stage the new power station already in progress and the potential "Mafutha" project by SASOL. Anglo coal is known to be involved in exploration activities in this area. It is expected that beneficiation of coal to either gas or liquid will require certain down and upstream industries in close proximity. For this, certain special development considerations need to be conceded to support the development of these industries. These are developments of national magnitude in terms of addressing the energy issues and their contribution to ASGISA in terms of job creation. Potential Development Area 1 is designated to accommodate developments of this nature. It involves the entire coal reserve up to the border of Botswana. Steenbokpan is the epicentre of this PDA. This means that specialized developments such as industrial parks, residential developments (the project proposal is in line with this) linked to operations may be considered through special resolution of Council. To avoid misuse of this concession a clear motivation linking a particular land-use to the main mining or industrial operation need to be submitted to council for approval. Council is expected to consider each application on its merits.

Potential Development Area 2 (Stockpoort node).

The coal reserve west of Lephalale seems to cover vast square kilometres without breaking. Thus, providing for land-uses without sterilising the mineral resources is a key challenge. While proximity to the coal source and other related industries is essential, a compromise might be required to avoid mineral sterilisation. Stockpoort and surrounding areas have a few farms without known coal reserve. These include Stockpoort 1LQ, Manchester 16 and Richmond 4LQ. The farm Bilton 2 LQ has some coal reserve on its north eastern border. It therefore provides a logical location for development. To accommodate this eventuality the area is designated potential development area two (2). Developments in PDA 2 will also need special Council resolution. Development applications need to prove that the development is addressing the national imperative as in PDA 1. Each development will be considered by Council on its own merit. No land-uses are determined, however, mixed land-uses including heavy industrial use maybe considered. As in PDA1 development application should be considered by Council based on their merits.

1.2 SETTLEMENT PATTERNS.

Lephalale land use is mainly conservation, crop farming, game farming, mining, energy and small portion is used for settlement. This has left the Lephalale facing two significant problems which could be addressed, or at least improved in the process of development:

1. People living in rural areas
2. Fragmented nature of urban development

As stated in the SDF "The majority of the population is, however, located in the rural area with enormous backlogs in municipal infrastructure, housing and social facilities", the challenge that the LLM has currently is the rectifying the existing "skewed" settlement pattern in these rural areas.

The huge open spaces and the distances between the various towns in Lephalale are also an issue for the LLM. This affects the communities negatively with regards to service delivery; the fragmentation of communities detracts from the quality of the urban environment with the Municipality. The objective of the Municipality is that development should preferable be targeted at infill development in area determined as priority development areas.

The SDF however took cognizance of this challenge, and made specific provision for future development and growth to ensure the linkage and integration of Marapong with Onverwacht and Lephalale/Ellisras. The construction of the Medupi power station which started in 2007 has already put tremendous pressure on the Municipality for the provision of more potable water, electricity and expansion of waste water treatment systems. The influx of people from surrounding areas and outside the Municipality has led to growth in informal settlements. The Municipality does not have its own land for development purposes. It is still relying on town planning and township ordinance 15 of 1986 and old town planning scheme. The Land use Management Bill is at the promulgation phase. The municipality does not have agricultural land use policies to promote sustainable agricultural land use (SDF 2009). The project proposal aims to satisfy the need for housing because of the existing and potential rapid expansion of the mining, energy and several supporting industries within the Steenbokpan node.

SECTION 2: ENVIRONMENTAL LEGAL FRAMEWORK

As required in terms of Regulation 28 (1) (f) & (o) of the EIA Regulations, 2010 published in GN. R. 543.

This legal framework is for all the project phases of the proposed township development, including the construction and operational phases.

2.1 NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 [ACT 107 OF 1998], AS AMENDED

The act provides for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state; and to provide for matters connected therewith.

This EIA process is in terms of Section 24 (5) of the Act. Section 24 states *'(1) In order to give effect to the general objectives of integrated environmental management laid down in this Chapter. The potential impact on—*

a) the environment;

b) socio-economic conditions: and

c) the cultural heritage.

of activities that require authorisation or permission by law and which may significantly affect the environment, must be considered, investigated and assessed prior to their implementation and reported on to the organ of state charged by law with authorising, permitting, or otherwise allowing the implementation of an activity.'

2.1.1 Environmental Impact Assessment (EIA) Regulations, 2010

The EIA process being followed for this application is in terms of the Environmental Impact Assessment Regulations 2010, promulgated under Section 24(5) of the National Environmental Management Act (No 107 of 1998), and published in Government Notice Regulation (GNR) 543 of 2010. In terms of these Regulations, certain activities are identified in Listing Notices 1 and 3 published in GNR 544 and 546 of 2010 respectively for which a Basic Assessment is required. Whilst, Listing Notice 2 published in GNR 545 of 2010 lists activities for which a Scoping and Environmental Impact Assessment is required. The proposed Steenbokpan Extension 3 township development triggers listed activities in both Listing Notice 1 (GNR 544), Listing Notice 2 (GNR 545), as described in **Table 1**[note that activities associated with the construction of the road are also being applied for]. Therefore, a full Scoping and Environmental Impact Assessment process is being followed for this application for environmental authorisation.

The Competent Authority or decision maker for this application is the Limpopo: Department of Economic Development, Environment and Tourism (LDEDET) as required in terms of Section 24 D (I). The application was registered with the LDEDET on 8th October 2013 and has been assigned the following project reference number **12/1/9/2-W49** and NEAS reference **LIM/EIA/0000717/2013**. Refer to ***Appendix 2*** for a copy of the LDEDET project registration letter.

Table 1: Applicable activities as listed in GNR 544 and GNR 545 of 2010

Listing Notice	Activity No.	Description of Activity as per listing notice
GNR 544 18 June 2010	22	"The construction of a road, outside urban areas, (i) with a reserve wider than 13,5 meters or, (ii) where no reserve exists where the road is wider than 8 metres"
GNR 545 18 June 2010	15	"Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more"

2.2 OTHER LEGAL REQUIREMENTS, GUIDELINE AND POLICY DOCUMENTS

The following guidelines, policies and legislation have informed aspects of this report and the Applicant is required to comply with the provisions of the listed legislation. In certain instances, the specialist site investigations conducted will refine the applicability of the legislation, guideline or policy.

2.2.1 National Environmental Management: Biodiversity Act 2004 (ACT NO. 10 OF 2004)

The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act and the protection of species and ecosystems that warrant national protection.

An ecological assessment of the proposed township development site has been conducted as part of the Scoping and EIA Phase. Refer to ***Appendix 4*** for the report.

2.2.2 National Environmental Management: Waste Act, 2008 (Act No.59 of 2008)

The NEM:WA provides reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development. One of its main objectives is to protect health, well-being and the environment by providing reasonable measures for securing ecologically sustainable development while promoting justifiable economic and social development. The proposed township layout of Steenbokpan Extension 3, seeks to incorporate such measures in terms of sustainable waste management.

2.2.3 National Water Act, 1998 (ACT NO. 36 OF 1998)

The National Water Act (NWA) guides the management of water in South Africa as a common resource. The Act aims to regulate the use of water and activities, which may impact on water resources through the categorisation of 'listed water uses' encompassing water extraction, flow attenuation within catchments as well as the potential contamination of water resources, where the Department of Water Affairs (DWA) is the administering body in this regard. It is likely that the Applicant will be required to apply for a Water Use License prior to the township development as the required services such as the proposed sewerage reticulation system will traverse within the 1:100 year floodline of the existing watercourses.

As confirmed by the Royal HaskoningDHV, the required WULA process in terms of the NWA can only be determined once the township layout has been finalised.

2.2.4 National Heritage Resources Act, 1999 (ACT NO. 25 OF 1999)

The purpose of the National Heritage Resources Act is to prevent the destruction or unsympathetic alteration of heritage resources that have either Formal or General Protection. The following are the most important sites and objects protected by the National Heritage Act:

- Structures or parts of structures older than 60 years;
- Archaeological sites and objects;
- Paleontological sites;
- Meteorites;
- Ship wrecks;
- Burial grounds;
- Graves of victims of conflict;
- Public monuments and memorials;
- Structures, places and objects protected through the publication of notices in the Gazette and Provincial Gazette;
- Any other places or objects, which are considered to be of interest or of historical or cultural significance;
- Geological sites of scientific or cultural importance;
- Sites of significance relating to the history of slavery in South Africa;
- Objects to which oral traditions are attached; and
- Sites of cultural significance or other value to a community or pattern of South African history.

The NHRA stipulates that cultural heritage resources may not be disturbed without authorization from the relevant heritage authority. Section 34(1) of the NHRA states that "no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority…" The NEMA (No 107 of 1998) states that an integrated EMP should (23:2 (b)) "…identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage". In accordance with legislative requirements and EIA rating criteria, the regulations of SAHRA and ASAPA have also been incorporated to ensure that a comprehensive and legally compatible HIA report is compiled. (Refer to Appendix 10)

Should there be a need for the destruction or removal of any heritage sites noted in this Heritage Impact Assessment they should be forwarded to the Limpopo Heritage Resource Agency (LIHRA) and the appropriate requirements should be fulfilled for the any actions undertaken. Although none of these heritage sites fall within Phase 1 of the development, it is of vital importance that should any sites be identified during construction of Phase 1 the appropriate mitigation measures should be adhered to.

The South African National Heritage Resources Agency (SAHRA) has been registered as a stakeholder in the I&APs database and will receive copies of the Scoping and EIA Report.

2.2.5 Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)

The Act provides, amongst other objectives, a framework for spatial planning and land use management in the Republic. This is necessary, as explained in the Act, to maintain economic unity, equal opportunity and equal access to government services given the Republic's past racial inequalities and divisions in terms of planning. Chapter 6 of the Act deals with matters related to Municipal land use planning and development, in which Section 49 of Part C assigns responsibilities in terms of provision of engineering services for planned developments.

2.2.6 Subdivision of Agricultural Land Act, 1970 (Act No.70 of 1970)

All agricultural subdivisions in the Republic of South Africa are regulated by the Subdivision of Agricultural Land Act (as amended). The purpose of the Act is to prevent the creation of uneconomic farming units and this is achieved through the requirement that the Minister of Agriculture, Forestry and Fisheries ("Minister of Agriculture") must consent to the proposed subdivision.

2.2.7 National Land Transport Act, 2009 (Act No. No.5 of 2009)

Any planned transport or road network as part of the overall township planning must be linked to the Municipal's Integrated Transport Plan, compiled in terms of the National Land Transport Act, 2009.

2.2.8 National Building Regulations and Standards Act, 1977 (Act No. 103 1977)

The NBR and its regulations represents the last and final stage before the erection of a bulding approved in terms of the scheme zoning and planning. The NBRs provide for the buldings that meet health, safety, access (disability); and recent eco- or green building standards such as natural ventilation , energy and water effecient buildings and material. Its should be noted, however, that the muncicplaity is not allowed in terms of the Act to impose land use conditions.

2.2.9 Occupational Health and Safety Act, 1993 (ACT NO. 85 OF 1993)

The purpose of this Act (OHSA) is to provide for:

- the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery;
- the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; and
- to establish an advisory council for occupational health and safety; and to provide for matters connected therewith.

Issues of health and safety in road construction include:

- Safety in respect of traffic during construction;
- Safety in deep excavations and cuttings and during the construction of all structures;
- Safety in respect of harmful materials such as hot bitumen, unhealthy vapours and contact with cement, lime and cement dust; and
- Health of all in respect of good sanitation, food and drinking water.

The OHSA also regulates construction activities to protect the safety of workers. Construction Regulations, 2003, promulgated in terms of Section 43 of the OHSA, apply to any persons involved in construction work. Further details on the requirements of these Regulations will be made available in the EIA Report.

2.2.10 Conservation of Agricultural Resources Act 1983(ACT NO. 43 OF 1983)

The Act provides for control over the utilisation of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invade plants; and for matters connected therewith.

All invader species classified in terms of the Conservation of Agricultural Resources Act 1983 (Act 43 of 1983) within the road reserve should be identified and eradicated in an ecologically sensitive manner during the construction phase.

2.2.11 National Forests Act 1998 [ACT NO. 84 OF 1998]

The purposes of this Act is to promote the sustainable management and development of forests for the benefit of all; create the conditions necessary to restructure forestry in State forests; provide special measures for the protection of certain forests and trees; promote the sustainable use of forests for environmental, economic, educational. recreational, cultural, health and spiritual purposes, promote community forestry, promote greater participation in all aspects of forestry and the forest products industry by persons disadvantaged by unfair discrimination.

The requirements of this Act will apply should any of the trees required to be removed for construction of the road be protected under this legislation.

2.2.12 Housing Policy and Strategy for South Africa: White Paper, 1994

The White Paper contains the fundamental principles of the Government's housing vision, underpinned by principles of sustainability, viability, integration, equality, re-construction, holistic development, and good governance. The housing vision, according to the White Paper, "*entails the establishment of viable, socially and economically integrated communities, situated in areas that allow convenient access to economic opportunities, as well as to health, educational and social amenities in which all South Africans will, on progressive basis, have access to:*

a. *Permanent residential structures with secure tenure ensuring internal and external privacy and providing adequate protection against the elements; and*

b. *Potable water, adequate sanitary facilities and domestic energy supply"*.

The housing policy and strategy overall aims to contribute to a non-racial, non-sexist, and democratic integrated society. The emphasis of the policy is on the poor and those who cannot independently satisfy their basic housing needs.

2.2.13 Guidelines for Human Settlement Planning and Design, 2000

These Guidelines were published to provide guidance in terms of settlement formation, to address the qualities that should be sought after in human settlements, and how these qualities can be achieved. The main purpose is to assist urban planners and engineers in designing environmentally sustainable settlement patterns in line with adequate provision of services and amenities

2.2.14 Waterberg Environmental Management Framework, 2010

The purpose of this Environmental Management Framework is to promote sustainable development within various Environmental Management Zones (EMZ) considered within the Waterberg District Municipality. This policy serves as a guideline to assist facilitate frameworks and aligns government mandates set by the Department of Environmental Affairs (DEA) in partnership with the Limpopo Department of Economic Development, Environment and Tourism (LDEDET), and the Waterberg District Municipality (WDM).

The following Environmental Management Zones have been identified:

- Zone 1: Protection of natural vegetation, scenic landscape and rock painting areas, with limited appropriate tourism;
- Zone 2: Nature and cultural tourism focus areas within a high quality natural setting;
- Zone 3: Game and cattle farming (including hunting) areas with commercial focus;
- Zone 4: Mining focus areas;
- Zone 5: Potential large industrial and related activities focus area;
- Zone 6: Restricted mining focus areas in aesthetic and/or ecological resource areas;
- Zone 7: Urbanisation focus areas and nodes;
- Zone 8: Rural settlement areas;
- Zone 9: Agriculture focus areas with a tourism component;
- Zone 10: Agriculture areas with commercial focus; and
- Zone 11: Major infrastructure corridors.

The application of the National Environmental Management Act and the Environmental impact Assessment Regulations is in respect to the sensitive Zones 1 and 2 is also set out. The proposed development, a portion of the remainder of the farm Grootdoorn 292 LQ, Steenbokpan Extension 3 falls

under Zone 5 in terms of the Waterberg Environmental Management Framework. This area has been earmarked for industrial development which will

2.1.15 Lephalale Municipality Integrated Development Plan, 2013-2016

The function of the Integrated Development Plan (IDP) is to provide a general direction to guide and inform all decisions of the Municipality relating to the use, development and planning of land. The area between Lephalale, the Stockpoort node and the Steenbokpan node will significantly be spatially re-defined. At present Steenbokpan is known as a local service point. In terms of the Lephalale SDF the Steenbokpan node has been identified as the Potential Development Area 1 (Steenbokpan node) PDA1.

Potential Development Area 1 (Steenbokban node – site falls within this node).

Noting national development pressures on the Municipality, the area is upgraded to a level of a potential development area. Potential Development Areas 1 and 2 are part of the area zoned mining. This zone is further categorised into mining one and mining 2. Mining one denotes areas where mining production is in progress. Mining 2 on the other hand, depicts areas with known mineral reserves whose economic viability has not been established. Energy demand in the country and international petroleum market resuscitated demand for coal based products. The coalfields west of the Lephalale town are expected to be a theatre to stage the new power station already in progress and the potential "Mafutha" project by SASOL. Anglo coal is known to be involved in exploration activities in this area. It is expected that beneficiation of coal to either gas or liquid will require certain down and upstream industries in close proximity. For this, certain special development considerations need to be conceded to support the development of these industries. These are development of national magnitude in terms of addressing the energy issues and their contribution to ASGISA in terms of job creation. Potential Development Area 1 is designated to accommodate developments of this nature; it involves the entire coal reserve up to the border of Botswana. Steenbokpan is the epicentre of this PDA. This means that specialized developments such as industrial parks, residential developments (the project proposal is in line with this) linked to operations may be considered through special resolution of Council. To avoid misuse of this concession a clear motivation linking a particular land-use to the main mining or industrial operation need to be submitted to council for approval. Council is expected to consider each application on its merits.

Potential Development Area 2 (Stockpoort node).

The coal reserve west of Lephalale seems to cover vast square kilometres without breaking. Thus, providing for land-uses without sterilising the mineral resources is a key challenge. While proximity to the coal source and other related industries is essential, a compromise might be required to avoid mineral sterilisation. Stockpoort and surrounding areas have a few farms without known coal reserve. These include Stockpoort 1LQ, Manchester 16 and Richmond 4LQ. The farm Bilton 2 LQ has some coal reserve on its north eastern border. It therefore provides a logical location for development. To accommodate this eventuality the area is designated potential development area two (2). Developments in PDA 2 will also need special Council resolution. Development applications need to prove that the development is addressing the national imperative as in PDA 1. Each development will be considered by Council on its own merit. No land-uses are determined, however, mixed land-uses including heavy industrial use maybe considered. As in PDA1 development application should be considered by Council based on their merits.

Apart from the industrial and commercial type of land uses the SDF also states that higher intensity residential developments like social housing can be promoted in areas where a mixture of residential and service industries is developed. Land use management must however ensure that noise levels are controlled. It is also very important that all development applications are in line with these guidelines provided.

2.3 DEPARTMENT OF ENVIRONMENTAL AFFAIRS GUIDELINES 3,4 & 5 OF 2006 AND GUIDELINE SERIES 5 AND 7 OF 2010

The EIA process has been informed by the above Guideline documents compiled by the National Department of Environmental Affairs (DEA).

SECTION 3: NEED AND DESIRABILITY ASSESSMENT

In terms of the latest DEA Guideline on Need and Desirability, 2012, a need and desirability assessment is required to explain how the development would benefit the local/regional/national community. In terms of need, the applicant has to explain and emphasise how the development will benefit the local/regional/national community. Whilst in terms of desirability, the applicant has to explain how the location of the development in that particular area would be more desirable than establishing it in another area. The applicant can also show the desirability of the development by explaining how that particular development could provide a service to the area.

According to the Western Cape Department of Economic Development and Planning Guidelines on Need and Desirability (2010), the concept of need and desirability can be explained in terms of the general meaning of its two components in which "*need"* refers to time and "*desirability"* to place i.e. is it the right time and is it the right place for locating the type of land-use / activity being proposed? In other words, need and desirability can be equated to wise use of land-i.e. the question of what is the most sustainable use of land.

The DEA Guideline outlines key issues that need to be addressed as part of the assessment, and these include:

- The scale of the proposed development;
- The numbers of the population implicated in the proposed development;
- Present use/s of the property;
- The impact on the existing character of the neighbourhood;
- Impact on protected or conserved areas;
- Traffic implications;
- Past site history;
- Future proposals;
- Non-agricultural uses in the area ; and
- New/existing buildings.

3.1 NEED

The current expansion of existing and potential mining, energy and several supporting industries at Lephalale and Steenbokpan towns have has left the current Local Municipality with a backlog for housing settlements. According to the IDP 2013-2016, housing settlement patterns should meet the needs and preferences of citizen within the area. These settlements should ensure that traveling distance to and fro from work is a short distance and that public transport is safe. It also needs to ensure that the community is afforded the opportunity to have affordable and sustainable housing.

The challenges that are being faced with regards to the provision of adequate housing to its ever growing population include:

- Lack of well located, developed land for housing (most of the land which is well located and well suited is privately owned and insufficient for housing subsidies).
- High number of people with RDP housing needs.
- Lengthy procedure in dissemination between Limpopo Provincial Government and local authorities regarding housing matters.

- Huge infrastructure requirements and projected costs for constructing infrastructure in vastly scattered rural settlements.
- Municipality does not own land around provincial growth point areas.
- Illegal occupation of land (informal settlements).
- Traditional leaders allocate residential sites without consultation with the Municipality, guidance and application of land use management system.

As the industrial development unfolds the need for the extension of housing settlements in Steenbokpan has materialised. This township development will provide housing for the This proposed Steenbokpan Extension 3 township development site will form the core of more townships to be developed in this area. This township with the other surrounding approved land uses will form a comprehensive and fully self-sustained township with all the normal amenities found in a town of such nature. The planning of the township was carried out in such a way that the environmental and other natural features have been respected and properly incorporated into the township. This township will cater for all income groups and will provide diffferent housing typologies.

3.2 DESIRABILITY

Steenbokpan is recognized as a local service point according to the SDF, the development site is less than 2 kilometers away from existing informal settelements to be known as Steenbokpan Town when formalised. There are a number of activities taking place within this convient radius, a general dealers, bottle store and post office to name a few and these amenties are within a walking distance from the proposed development.

The proposed development site is situated along the D175 gravel road (Steenbokpan-Stockport), which crosses the site from the north to the south, and will provide access to other area further away from the D1675 tar road. Game farming is currently undertaken on the proposed development site. The farms in the direct surrounding area are currently utilised for game and livestock farming with limited crop cultivation (citrus).

Agricultural activity in the area is varied with arable soils in the area associated with the Mokolo and Tamboti Rivers. These activities are closely associated with the Mokolo River and its associated primary aquifer, with farmers in the area relying on groundwater as well as highly regulated flow from the Mokolo Dam with sporadic flows being released for the farming community to sustain agriculture throughout the year.

Neighbouring farms in the larger area are being used for mining (Grootegeluk Coal Mine), industrial (Matimba and Medupi Power Stations), residential developments (expansion of the current townships of Lephalale and Steenbokpan), livestock and game farming, with some isolated crop cultivation occurring in the deeper soils under irrigation. The state of the access roads to the site was found to be in a good condition and a major tar road between Lephalale and Marken forms the northern border of the site. Secondary dirt roads on the farm were found to be in a medium – good condition. The infrastructure on site is restricted to the farmstead buildings, while small drinking troughs for game and cattle also exist scattered throughout the site.

The approval of the township will furthermore lead to a sustainable land-use activity on the application property. The proposed township will create opportunities toward the rectification of prevailing social and economic inequalities and contribute towards skills development or capacity building and economic empowerment of previously disadvantaged individuals and communities.

3.3 NEED AND DESIRABILITY ASSESSMENT

Table 2 below responds to the need and desirability questions provided in the DEA guidelines, applicable to the proposed township development.

Table 2: Need and Desirability Assessment for the proposed Steenbokpan Extension 3 Township development.

Need and Desirability	Assessment
Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved Spatial Development Framework (SDF) agreed to by the relevant environmental authority? (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP).	Yes, refer to *Section 7.5* and the township layout in *Appendix 3 (Township layout)* on how the proposed development aligns with the LLM IDP, SDF, and Waterberg District EMF.
Should development, or if applicable, expansion of the town or area concerned in terms of this land use (associated with the activity being applied for) occur here at this point in time.	The proposed township development is located outside the urban edge, on land characterised as Potential Development Area 1 (PDA) .Game farming is currently taking place on the proposed development site. The farms in the direct surrounding area are currently utilized for game farming and livestock farming with limited crop cultivation. Agricultural activity in the area is varied with arable soils in the area associated with the Mokolo and Tamboti Rivers. The Mokolo River and its associated primary acquifer is the primary source of water utilized by the farmer community to sustain agriculture throughout the year. Neighbouring famers in the larger area are being used the following: • Mining-Grootegeluk Coal Mine; • Industrial-Matimba and Medupi Power Stations; • Residential Developments-Expansion of Lephalale and Steenbokpan; • Livestock; and • Gaming. The access to the site was found to be in a good condition and a surfaced road between Lephalale and Marken forms the northern border of the site. Secondary gravel roads on the farm was found to be in a medium –good condition.
Does the community/area need the activity and the associated land use concerned (is it a social priority)? This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate)	The proposed township development is a local priority; the lack of adequate housing in the rural area has significant implications on the quality of life of its residents as it could result in detrimental effects on the health of households, social behaviour, and the level of productivity in the municipality.
Are the necessary services with adequate	EDS (Pty) Ltd and Royal Haskoning DHV have

capacity currently available (at the time of application), or must additional capacity be created to cater for the development.	been appointed by Flexilor Properties (Pty) Ltd T/A Steenbokpan Development Consortium to investigate the availability of services and if additional capacity is required for the proposed township. Their findings confirm that additional capacity for sewerage treatment and disposal will be required for the proposed Phase 1 development. The proposed sewage treatment plant for Phase 1 is a package plant with a treatment capacity of 250kl/day. There is insufficient electrical supply available to accommodate Phase 1 of development. The LLM has granted Eskom the permission to service the development and a new bulk supply will be required. (Refer to Appendix 9)
Is this development provided for in the infrastructure planning of the municipality, and if not what will the implications are on the infrastructure planning of the municipality (priority and placement of services and opportunity costs).	In terms of the IDP, the proposed area for the township development is listed as one of the priority projects under the LLM.
Is the development the best practicable environmental option for this land/site?	The proposed development will modify the natural vegetation and faunal habitats of the area. The importance of rehabilitation and implementation of mitigation processes to prevent negative impacts on the environment during and after the development phase should be considered a high priority.
Would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF as agreed to by the relevant authorities?	The approval of the proposed township development is not expected to compromise the LLM's IDP, Waterberg District EMF as it aligns with the development principles/guidelines stated therein.
Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in EMPs), and if so, can it be justified in terms of sustainability considerations?	In terms of the IDP, sustainable development is required to ensure the integration of social, economic and environmental factors in decision-making so that development serves present and future generations. Furthermore, sustainable development requires that a risk-averse and cautious approach be applied to decision making. Therefore, the proposed development will support sustainable development, as it does not fall within a protected or conservancy area. The development site is an old field that has been left fallow with not much agricultural activity taking place.
Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context).	Steenbokpan is situated between Lephalale and the Botswana border, in the Limpopo Province (Refer to Figure 1 above), about 50 km west of Lephalale town, and adjacent to District Road D175. The proposed mixed use development will be known as Steenbokpan Extension 3. Steenbokpan Extension 3, measures approximately 13.79 hectares (ha), and forms part

	of a larger development of approximately 23 000 residential units on approximately 1840ha of land located on Portion 20, 22 and 25 of Theunispan 293 LQ, portions 1 – 4 of Grootdoorn 292 LQ, a portion of the remainder of the farm Grootdoorn 292 LQ, and portion 3 of Steenbokpan 295 LQ. This site is relatively flat and slopes gently down to the north and is classified as flatter terrain (less than 12 degree slopes). It falls within the Mokolo River Catchment, which drains into the Limpopo River to the North. The proposed activity zone between Lephalale and Steenbokpan is strategically located along a Development Corridor, which will not only serve in support of economic activities along this route, but most importantly, serve as major "people transporter" between the rural settlements to the east and the "new" activity zone. Therefore, the entire corridor stretching from the rural areas in the east to the activity zone in the west is served by the Development Corridor.
How will the land use associated with the activity applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?	The proposed township development will transform the existing rural landscape into developed land uses. The land is currently being utilized for game and livestock farming with limited crop cultivation, this will degrade the rural sense of place and its natural aesthetic value. All the negative impacts associated with such a development will be assessed in detail during the EIA Phase. No Heritage resources will be impacted by the proposed development.
How will the development impact on people's health and wellbeing (e.g. in terms of noise, odours, visual character and sense of place, etc.)	The Township with the other surrounding approved land uses will form a comprehensive and fully self-sustained township with all the normal amenities found in a town of such nature, which will result in an improved standard of living for sustainable economic growth. The planning of the township was carried out in such a way that the local environment and other natural features have been retained as much as possible and properly incorporated into the township. The township will cater for all income groups and will provide different housing typologies.
Will the proposed activity or the land use associated with the activity applied for, result in unacceptable opportunity costs?	No unacceptable opportunity costs have been identified as yet as a result of the proposed township development. However, should these be identified during the EIA phase, further investigations by the relevant specialist will be conducted.
Will the proposed land use result in unacceptable cumulative impacts?	Potential cumulative impacts will be assessed during the EIA phase.

In addition, the Guideline outlines key issues that need to be considered in the assessment. These include:

- The scale of the proposed development - the total developable area for the township is 13.7943 hectares, which is Phase 1 located on Portion 2 of the Farm Grootdoon 292 LQ out of a total of 1839.7 hectares located on Portion 20, 22 and 25 of Theunispan 293 LQ, portions 1 – 4 of Grootdoorn 292 LQ, a portion of the remainder of the farm Grootdoorn 292 LQ, and portion 3 of Steenbokpan 295 LQ.
- The numbers of the population implicated in the proposed development - the total population estimated to be accommodated by the proposed township development site is not yet known at this stage.
- Present use/s of the property – the proposed land for development site is an old field utilised for game farming currently, the site is characterised with vegetation associated with the western Bushveld.
- The impact on the existing character of the neighbourhood – the proposed township development will change the surrounding rural character and set a precedent for urban densification, this is due to the rapid expansion of mining, energy and several supporting industries in at Lephalale and Steenbokpan
- Impact on protected or conserved areas –the development is surrounded by clumps of Marula Woodlands, mitigations measure will be examined during the EIA phase, as parts of the woodland falls on proposed road upgrade to be named “Tau Drive”
- Traffic implications – the development site will be connected to accessible provincial and district routes.
- Past site history –No heritage sites or artefacts were identified on the development site.
- Future proposals –the proposed township development will promote a compact urban structure through urban infill and densification specifically within the individual settlement clusters. Other developments that have been approved by the LLM in the Steenbokpan area are the Boikarabelo Cole Mine Development, which will be fully operational after five years. Steenbokpan Extension 1 Development with business rights in the area and Portion 25 of Farm Theunispan 293 LQ Development, which is located approximately 100m from the intersection of Roads D175 and D1675. (Application is underway for a contractor’s campsite). A photo voltaic solar farm application has also been approved on the remainder of the farm Vangpan 294 LQ, which is located approximately 5km away.
- Agricultural uses in the area – the surrounding land is currently being used as game farms and/or as cattle farms. The area of the development property is largely undisturbed and covered with typical vegetation associated with the western Bushveld.
- New/existing buildings – new buildings in line with the respective land uses will be built as part of the township establishment.

SECTION 4: PROPOSED TOWNSHIP LAYOUT PLAN

This section describes the land uses proposed for the township and a brief overview of the various conceptual township layout plans drafted by the town planner, Nu Lane Architectural Drafting (Dries De Ridder). It should be noted that township layout plan is a concept and subject to amendments during the entire EIA process. Land use demarcation is also subject to change accordingly. Detailed information is limited as the main objective is to develop a functional township layout for future preliminary design and finalisation. The alternative conceptual township layout plans were informed by specialist findings

4.1 DESIGN OBJECTIVES AND STRUCTURAL ELEMENTS

The following design objectives were used in determining the land uses, township layout and property sizes of the Steenbokpan Extension 3 Township:

- Social cohesion;
- Resilience;
- Economic self-sufficiency;
- Ease of access and mobility;
- Safety through passive design;
- Environmental preservation; and
- Integration and complementary land uses.

The layout gives a graphic illustration not only of the 196 erven which will comprise the proposed township layout and their sizes relative to each other, but also the different land uses or zonings which will apply to the different erven in the proposed township. As can be seen from the layout plan and as has been mentioned above the proposed township will be established on only a part of one farm portion and referred to as the application site, namely the as Portion of the Remainder of the farm Grootdoorn 292 LQ. The layout concept was dictated by the physical character, topography, vegetation, sensitive areas, and availability of services, roads and infrastructure on the property. Extensive research and a thorough consideration of all of the abovementioned factors have resulted in the existing layout. The application property is divided into two parts by Provincial road D175 leading to Stockpoort. The proposed township is situated on the western side adjacent to the provincial road. A modern design was adopted for the township. Provision was made for a hierarchy of roads with varying road reserve widths. Access was limited on the higher order roads.

The following structural elements informed the design of the township layout plan:

- Rural character of surrounding areas and settlement patterns;
- Green spaces to facilitate the transition of various areas and land uses;
- Public transport hot spots in close proximity to more urban-like land uses;
- Areas conducive of economic activity, especially a manufacturing hive;
- Variety of tenure options; and
- Specialist findings.

4.2 PROPOSED LAND USES

In order for the actual township layout design phase to be initiated, a set of appropriate, yet comprehensive, land uses and minimum standards had to be determined. This section therefore describes and motivates each planned land use and standard size.

The following existing development guidelines were taken into consideration in researching and planning the current project:

- The White Paper on Spatial Planning and Land Use Management, 2001;
- The National Spatial Development Perspective;
- The Provincial Growth and Development Strategy;
- The Provincial Spatial Rationale;
- The Waterberg District Municipality – Spatial Development Framework and Integrated Development Plan;
- Spatial Planning and Land Use Management Bill, 2011
- The Lephalale Spatial Development Framework and;
- The Lephalale Integrated Development Plan.

The identified land uses for the proposed Steenbokpan Township development are summarised in *Table 3* below. However, it should be noted that these land uses are for Phase 1 of the Portion of the Remainder of the Farm Grootdoorn 292 LQ.

Table 3: Proposed land uses for the new township

LAND USES		SIZE FOR Erf.	COVERAGE
1	Residential 1 (Low Density)	Site specific	14.54%
2	Residential 3 (High Density)	Site specific	50.08%
3	Public Open Space (Parks &Green Buffer Zones)	Site specific	1.44%
4	Educational (Primary School)	300 pupils	1.30%
5	Municipal	Site Specific	1.77%
6	Roads	Higher Order Roads: 25 metres in width. Local Collectors/lower Order Roads: 13 m in width	30.87%

Source: EDS Traffic Impact Study Steenbokpan Extension 3 Township (Appendix 9)

The layout makes provision for 196 erven within the ambit of the proposed township. This total number of erven will comprise the following categories of erven :

- Residential 1: 190 erven – These erven vary in size from ± 348 m² to ± 562 m² and cover ± 50,08 % of the township area. These erven will be zoned "Residential 1" with a density of one dwelling unit per erf, a height restriction of three storeys and coverage of 50%. Building lines applicable will be 2 meters on the street boundaries and 1 meter on the other boundaries. The erven are distributed throughout the township area. The majority of the erven have been placed in crescents preventing vehicles moving freely through the residential area.
- Residential 3: 2 erven – These erven have been provided in the north eastern and north western corners of the township. These erven are adjacent to higher order road. These erven cover ± 14, 54 % of the Township area. The land use rights applicable to these erven will be one dwelling unit per 250 m², with a height restriction of three storeys, coverage of 60% and 8 meter building lines along the street boundaries and 2 meters along the other boundaries.

- Municipal: 2 erven – These two erven are set aside for municipal offices, waterworks, refuse transfer station and other municipal functions. These erven cover ± 1, 77 % of the proposed township area.

- Institutional (Primary School): 1 erf – This erf provide for government purposes e.g. police station, offices, clinic and other government facilities. The development controls will be a height restriction of 3 storeys, a coverage of 60 % and a floor area ratio of 1, 2 with building lines of 5 meters along all boundaries. This erf cover ± 1, 30 % of the proposed township area.
- Public Open Space: 1 erf – This type of land use was provided along the access road to the Township and will ensure that the Bushveld character of the area be retained. It will also serve as a pedestrian walkway to the public facilities to be accommodated on the institutional and municipal erven. This erf covers ± 1, 44 % of the Township area.
- Landfill, sewer and water treatment plant erven: One erf numbered 193 and a servitude area were set aside for these facilities. The location of the erf and servitude area was determined taking into account the slope of the application property, future growth of the town, soil conditions and the prevailing wind direction. Erf 193 measures ± 500 m^2 and cover ± 0, 36 % of the Township.

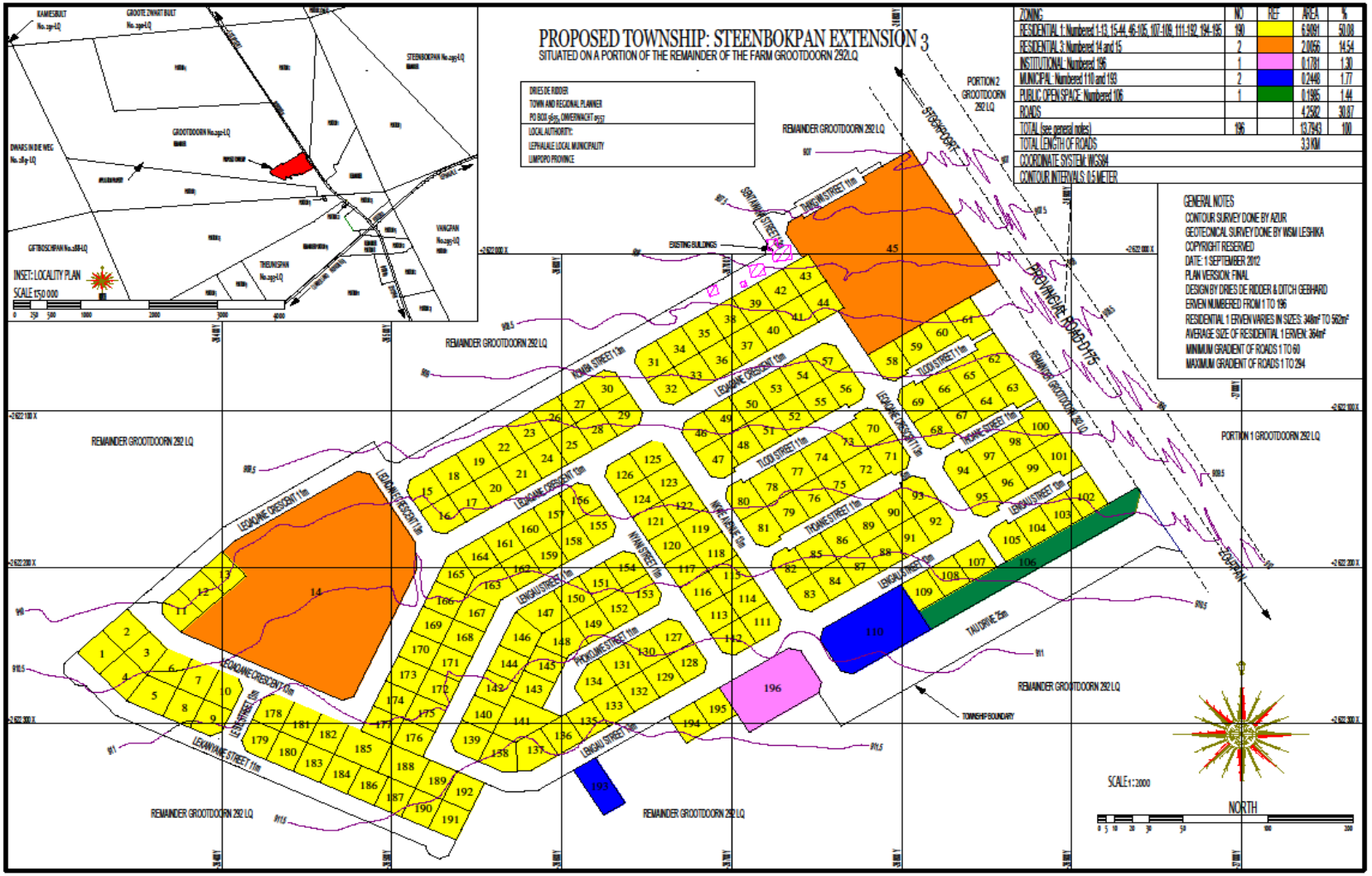


Figure 3: Proposed township development township layout

Not only does this fall well within the municipality's policy on residential land use, but it also ensures that the rural character of the township is maintained.

Public transport facilities are also located at several strategic localities to ensure accessibility and mobility. Although located far enough from the main access point not to cause additional congestion, it is still within reasonable walkable distance from the main intersection with the dividing road. More public transportation paints are yet to be provided as the township layout plan gets finalised.

Open hard and soft spaces are also located around the residential in order to encourage social cohesion.

This proposed township layout seeks to create a sustainable and integrated township. The layout of the township promotes a cohesive community.

SECTION 5. ASSESSMENT OF ALTERNATIVES

In terms of the EIA Regulations, 2010, alternatives in relation to the proposed activity, means different means of meeting the general purposes and requirements of the activity, which may include alternatives to:

- The property on which, or location where, it is proposed to undertake the activity;
- The type of activity to be undertaken;
- The design or township layout of the activity;
- The technology to be used in the activity;
- The operational aspects of the activity; and
- The option of not implementing the activity.

From the above, the following alternative "type of activity undertaken" has been considered for the proposed development property. The advantages and disadvantages of these alternatives will be investigated for the purpose to highlight whether they are feasible for the proposed property.

5.1 ALTERNAVITE 1: LAND USE ALTERNATIVE - TOWNSHIP DEVELOPMENT (PREFERED ALTERNATIVE)

Description

The preferred alternative entails makes provision for 196 erven within the ambit of the proposed township and their sizes related to each other. The different land uses or zonings will also apply to the different erven in the proposed township. The proposed township will be established on only a Portion of the Remainder of the Farm Grootdoorn 292 LQ. The layout concept is dictated by the physical character, topography, vegetation, sensitive areas, and availability of services, roads and infrastructure on the property. The alternatives are divided into two by Provincial road D175 leading to Stockpoort. The proposed township is situated on the western side adjacent to the provincial road. A modern design was adopted for the township. Provision was made for a hierarchy of roads with varying road reserve widths. Access is limited to the higher order roads.

Advantages

- Functionality in terms of settlement pattern, land use distribution and access;
- Various elements are interchangeable to create a stronger sense of place;
- Rural character is maintained, but several variations such as the activity spine introduce an urban element;
- Sufficient opportunities are created for economic and self-job creation;
- Mix of income areas in terms of various residential densities;
- Provision of open spaces, not only for recreational use, but also to serve as passive spaces between environmental features;
- Road classification will ensure reduction of speed in residential areas;
- Significant opportunities for creative urban and landscape design;
- Development is in line with the Potential Development Area 1 (Steenbokpan node) PDA1;
- Optimised space utilisation; and
- The geology of the area is favourable. There are no flood lines which prohibit the development of Phase 1.

Disadvantages

- Insufficient number of open spaces and parks at this stage;
- Location of agriculture pose environmental threat, the Marula Woodland will have to be removed for road access;
- The rural characteristics of the area will be lost; and
- Increase in noise pollution;
- Increased use of natural resources such as ground water from the designated boreholes; and
- Potential fire hazard if effective fire management plan is not implemented.

This alternative is in line with the Potential Development Area 1 (Steenbokpan node) PDA1. Currently there is a housing backlog in Steenbokpan Settlement of 454 units. The area is mainly an agricultural area consisting of game farms of which ± 50% is exempted. This area is of low-sensitivity and is ear marked to be suitable for this type of development.

5.2 ALTERNATIVE 2: LANDUSE ALTERNATIVE - RECREATIONAL ACTIVITIES (GAME RESERVE)

Description

Game farming is currently undertaken on the proposed development site. The farms in the direct surrounding area are currently utilized for game and livestock farming with limited crop cultivation.

Advantages

- Skills development and long-term job opportunities;
- The area is already being utilised for gaming purposes therefore, there will be no need for security upgrade;
- There will be no need to relocate game already grazing on the property;
- There will be no disturbance of the Marula Woodlands surrounding the property;
- Optimised space utilisation; and
- Ease of land use allocation and amendment.

Disadvantages

- This development is not in line with Potential Development Area 1 (Steenbokpan node) PDA1;
- Does not contribute to the general aesthetic of the place as the whole area is utilised for game farming;
- Hunting, trapping, poisoning and shooting of animals will increase;
- Monitoring of specific species such as pythons and specific bird species such as stork species and other water birds is necessary to ensure that this species would be unaffected in the long run.

This alternative is deemed safe but it is not practical enough. The development does not take into account the Potential Development Area 1 (Steenbokpan node) PDA1 stated in the IDP. Steenbokpan's main development initiative are being put into place to promote and integrated and efficient land use.

5.3 ALTERNATIVE 3: LANDUSE ALTERNATIVE - LIGHT INDUSTRIAL/ WAREHOUSING

Description

This type of development is more consumer-oriented than business oriented. This alternative is in line with the Potential Development Area 1 (Steenbokpan node) PDA1. This type of development will primarily be for the manufacturing of moderate amounts of partially processed materials.

Advantages

- Development is in line with the Potential Development Area 1 (Steenbokpan node) PDA1
- Skills development and long-term job opportunities;
- Contribution to development of local infrastructure;
- The alternative is in close proximity to major coal fields which are considered for the development of industrial activities to beneficiate the mineral product where facilities like warehousing might be considered.

Disadvantages

- Access upgrade will lead to the removal of protected trees (Marula);
- Change the character of the area;
- Pollution from the facility ;
- Visual impact;
- Increase in noise pollution from the Warehouse;
- Contribution to air pollution stemming from the industrial components; and
- Possible contamination of groundwater should the development of the industrial and commercial components not be managed properly.

This alternative is in line with the Potential Development Area 1 (Steenbokpan node) PDA1, this will provide services that are beneficial to the Steenbokpan node. Even though this alternative will promote economic growth and employment, this node is experiencing a housing crisis and is therefore not a priority at this stage due the demand for housing, therefore this option is not deemed feasible.

5.3 THE NO-GO ALTERNATIVE

In essence, the no-go alternative would ultimately imply that the state of the environment would be retained as it is presently, with obvious advantages and disadvantages to the natural environment. In this instance the potential environmental and social impacts will not occur and the status quo will be maintained. The Department of Environmental Affairs (DEA) stresses that the no-go alternative should be considered in cases where the proposed development will have a significant negative impact that cannot be effectively or satisfactorily mitigated against. The no-go alternative means that the current status-quo is maintained. In the case of the development proposal, this would imply the following;

- Surrounding and existing infrastructure will not be upgraded;
- Additional employment opportunities will not be created;
- No monitored clearing of vegetation will take place;
- Contribution to meeting the targets set for the Steenbokpan node in the SDF and EMF will not be realised;
- The current state of the site will remain as is with no destruction of habitat, noise or visual impact.
- Housing needs will not be met resulting in an increase of housing backlog

Identified alternatives will be assessed in terms of both environmental acceptability as well as economic feasibility. The preferred option with respect to the above alternatives will be highlighted and presented to the authorities in the EIA Report. This assessment will be included in the EIA phase.

The No-Go Alternative will be revisited during the EIA Phase following receipt of stakeholder input on the Draft Scoping Report and further specialist investigation. However based on the findings of the investigation during this Scoping Phase it is anticipated that the No-Go Option can be justifiably dismissed as this area is earmarked for development.

SECTION 6 PROVISION OF SERVICES

Confirmation on the existence of bulk services required for the proposed township development was investigated by Royal Haskoning DHV, and the following findings were made: **(Refer to Appendix 6)**

6.1 MUNICIPAL SERVICES AND INFRASTRUCTURE

According to the IDP 2013-2016, all new residential developments are reliant on access to bulk municipal services and these include water supply, separate sewerage and storm water drainage systems, electricity supply, and waste management.

Human settlement is badly planned, and there is little coordination between those installing water reticulation infrastructure and those responsible for providing bulk infrastructure.

These problems must be fixed for effective urban development. Compared with the best international standards, South Africa's information and communication technology is abysmal. An efficient information infrastructure that promotes economic growth and greater inclusion requires a stronger broadband and telecommunication network and lower prices. The economic and employment benefits outweigh the costs.

After carefully reviewing South Africa's infrastructure plans, the commission believed that the following investments should be prioritised:

- Upgrading of informal settlements.
- The development of the Durban-Gauteng freight corridor, including the development of a new dug-out port on the site of the old Durban airport.
- The timely development of a number of key new water schemes to supply urban and industrial centers, new irrigation systems in the Umzimvubu river basin and Makatini flats and the establishment of a national water conservation programme with clear targets to improve water use and efficiency.
- Procuring about 20 000 MW of renewable electricity by 2030, importing electricity from the region, decommissioning 11 000 MW of aging coal-fired power stations and accelerated investments in demand-side savings, including technologies such as solar water heating.

6.2 ACCESS TO SOCIAL AMENITIES AND ECONOMIC OPPORTUNITIES

The IDP 2013-2016 encourages new residential developments to be located in a manner that will ensure that these settlements will have reasonable access to social amenities and economic opportunities. This entails the development of community facilities for the upliftment of the communities through sports and recreation, green open spaces and healthy life style. The proposed township layout has made provision for such social amenities. The conceptual township layout plan also makes provision for business related land uses such as retail, spaza shops, shebeens, industrial (light manufacturing or repair shops), and informal trading. This provides access to economic opportunities for the future residents in the planned township. In rural areas, settlement patterns must balance the social, cultural and agricultural needs of families with the need to provide cost-effective services to households.

6.3 TRAFFIC, ROADS AND ACCESS

According to the IDP 2013-2016, the roads in Lephalale are adequately connected to National, Provincial and District roads. The issue being experienced in terms of the roads in the municipal area is two-fold in nature:

- The poor state of the Primary routes due to limited maintenance of these roads. This has had a negative ripple effect on the distribution of goods, services and people in and through the municipality. The possible cause could be linked to lack of funds, human resources, equipment and capacity to maintain existing infrastructure.

- The poor state of the internal circulation route in this area. This could be attributed to lack of appropriate road maintenance policies and funds. The R33 road serves as a link between Lephalale and Modimolle Municipality more especially for the delivery of machinery and equipment for construction of Medupi Power Station and the expansion of Grootegeluk coal mine.

The proposed development site is located approximately 1 400 m to the north of the junction of road D175 with road D1675. Road D1675 is a surfaced road which intersects with road R510 (D 1836) which is the major arterial road between Lephalale and Thabazimbi. The first 1150 m of road D175 from the junction with road D1675 is surfaced. The remaining section of road D175, extending northwards has a gravel surface. The Provincial Road D175 will function as the Local Distributor for the proposed development. Internal traffic will be distributed through a network of access collectors and residential access loops. The unsurfaced section of the road, D175, from the proposed development access to the surfaced section of D175 will be upgraded in accordance with the recommendations made in the Traffic Impact Assessment. The total length of the road, D175, to be upgraded is 250 m. The Developer will be responsible for the full cost of the internal township roads and the upgrading, triggered by the development of Road D175. Given the above provincial routes traversing near the planned township, regional accessibility is rated excellent.

6.4 WATER SUPPLY

According to the IDP 2013-2016, the rural areas such as Steenbokpan all obtain their water from groundwater sources (about 85% from boreholes and 15% from well field type boreholes in the riverbed alluvium). The four water sub schemes serve approximately 38 villages through a network of approximately 138 boreholes, which are all owned and operated by the municipality. The water is pumped to storage reservoirs and then distributed to the consumers. Chlorine dosing tanks were installed in the storage reservoir but the municipality is experiencing difficulty in maintaining the dosing equipment due to budgetary constraints and not enough resources. The ground water from the boreholes is generally low due to poor yields and unacceptable water quality (class 3 or 4); however this does not necessarily pose a health risk to communities. Water from the well field type boreholes has however higher yields and acceptable quality. The surety of the current water supply from boreholes is not known. It is also not known what the actual volume of water is provided to the community. The municipality has commissioned a study on water volumes provided to rural villages.

According to the bulk services report there is no major municipal or other formal water supply infrastructure in the area except for a small municipal supply system providing water to an informal housing area, known as Steenbokpan Town.

The medium to long term water supply plan for the development is to connect to the Mokolo and Crocodile West Water Augmentation Project (MCWAP). In the short term, it is proposed that Phase 1 of the development obtains water from boreholes situated in the area, as outlined in the Hydrogeological Assessment (WSM Let, 2012). There are two high yielding boreholes, BH2 and BH3, located in the South East section of Steenbokpan.

The sustainable yield of these boreholes was calculated to be 88 008 m3/annum or 240 kℓ/day (8.3 ℓ/s pumping 8 hrs/day). It was recommended in the assessment that these boreholes be used for

Phase 1 of the development, and that they be operated sustainably as follows:

- BH2 pumped at 4.8ℓ/s for a maximum of 8 hours per day (138 kℓ/day),
- BH3 pumped at 3.5ℓ/s for a maximum of 8 hours per day (101 kℓ/day),

These two boreholes should not be pumped simultaneously and all other uses, such as irrigation, should be stopped. As a back-up to BH2 and BH3 it is proposed that additional boreholes be utilised, if necessary, to supplement the supply (e.g. BH16 and BH22 with an estimated combined yield of 50 kℓ/day, both produce better quality water).

6.5 ELECTRICITY SUPPLY

According to the Reviewed IDP 2013-2016, Lephalale Municipality is an electricity provider and has an electrical reticulation network supplying electricity to Onverwacht and the eastern region of Lephalale. The Lephalale electricity network is supplied from Eskom at 11kV via the Lephalale Main Substation next to the Onverwacht area. The Eskom supply is generated at Matimba Power Station and fed via the Matimba Substation at 132kV.

For the area surrounding Lephalale town for which Eskom holds the supply license the load growth could be as high as 5 MVA per year for the next few years. In line with the expected load growth different scenarios will be proposed to upgrade the network. The rural villages, farm areas and Marapong are Eskom distribution area.

Eskom have provided a feasibility quote (Ref. LEL7303043) with a 65 % confidence level for the new 2 MVA bulk supply for the proposed township.

From discussions with Eskom's Planning Department initial investigations indicates that the development can be supplied from the existing 132/22 kV Theunispan Rural Substation. It is envisaged that the power supply to the site will be transmitted via a new 22 kV overhead line fed from the Theunispan Rural Substation with pole mounted metering switchgear located at Farm Grootdoorn 292 LQ. Refer to Appendix 6 which depicts the anticipated 22 kV overhead line route

6.6 SEWERAGE AND STORM WATER DRAINAGE

The development is situated in the Limpopo River's catchment area, and according to the Hydrogeological Assessment (WSM Let, 2012). There are a total of 30 boreholes recorded in the immediate area. The majority of these boreholes are situated south of the Eenzaamheid Fault in the Waterberg sediments, and they presently supply water for irrigation, an informal settlement, farmsteads, stock and game watering points.

There is no major municipal or other formal water supply infrastructure in the area except for a small municipal supply system providing water to an informal housing area, known as Steenbokpan Town.

Roads erven and open areas will be drained through a series of pipe and open channel networks. The stormwater will discharge into the pans and retention ponds to be constructed on open space to harvest rain water for irrigation purposes. The necessary litter traps and reedbeds will be designed and constructed upstream of the pans to prevent pollution of the water in the pans. The design will be done using worldwide best practises.

The proposed sewage treatment plant for Phase 1 is a package plant sized to treat the sewage flows of 250 kℓ/day for Phase 1 only. Therefore, it is recommended that the a Sewage Treatment Package Plant be installed in a suitable location in the public open space adjacent to the development, as shown in Appendix 6. The treated effluent from the Sewage Treatment Package Plant will require disposal, and it is proposed that the effluent be directed to a lined evaporation pond located at the future WWTW site. A gravity sewer main will be required to convey these flows, and this sewer can be incorporated into the future sewerage reticulation system of the whole development. During the development Phase 1, the

Brine discharged from the BWRO Plant will be combined with the effluent from the sewage package plant in the gravity outfall sewer. Together they will flow in the same gravity sewer to the WWTW. Combining both will aid in achieving cleansing velocity for the flatter pipe sections. The gravity outfall sewer will be approximately 3 750 m in length, and must be designed to achieve a cleansing velocity while traversing the flat topography of the area. Phase 1 will require a single evaporation pond for the treated effluent fro

The provision of adequate storm water drainage infrastructure forms an important aspect of residential development and according to the services report there is no municipal bulk storm water system in the vicinity of the proposed development.

Poor storm water drainage may cause flooding and the subsequent damage to properties. The required storm water drainage infrastructure and capacity for the planned township is outlined in the bulk services report.

6.7 WASTE MANAGEMENT

The municipality developed an Integrated Waste Management Plan, is a basic requirement for all waste management activities in terms of the National Environmental Management Waste Act, 59 OF 2008 and is a cornerstone of all waste management activities. Following the promulgation of Municipal Systems Act No.32 of 2000, all municipalities are obliged to participate in performance assessments and the compilation of well-defined and comprehensive IWMPs.

The function involves determination of waste disposal strategy, regulation, establishment, operation and control of waste disposal sites or facilities, refuse removal, waste minimization through recycling, re-use and waste education and awareness. In implementing its function the Municipality has a role to ensure that waste management systems are in place and the systems should be in line with the hierarchy of waste management according to the national waste management strategy. The implementation of the function is dependent on the function that is allocated to the Municipality i.e. refuse removal. Currently most of the waste is collected from household followed by commercial industries

The LLM currently provides the following services:

- Refuse removal
- Waste Transport and transfer
- Waste Storage
- Waste Education
- Waste Disposal
- Waste Information

According to the IDP, the LLM is committed to providing an equitable, efficient, and effective integrated waste management service within its jurisdictional area, which is sustainable and is in accordance with the internationally accepted waste hierarchy principle. “Through this, the municipality will ensure that waste is minimised, recycled, re-used and treated in accordance with national statutory requirements and policy and that appropriate mechanisms and technologies are in place for the environmentally acceptable and cost-effective collection, transport and disposal of waste”. The LLM currently provides the following services

- Domestic waste removal
- Business/Industrial waste removal
- Street cleansing and litter picking service
- Garden refuse removal services
- Waste Transfer
- Waste Treatment
- Landfill operation services
- Contracted services.

The planned township will require all the above waste management services when operational. An investigation into the capacity of the LLM to provide the above waste management services for the planned township is also being assessed as part of the overall bulk services report for the planned township. The findings of the assessment will be made available in the Draft EIA Report.

SECTION 7: AFFECTED BIOPHYSICAL ENVIRONMENT

Please note that all specialist reports make reference to proposed township on Portion 20 and 22 of the Farm Theunispan 293 LQ, Portion 1-4 and a Portion of the Remainder of the Farm Grootdoorn 292 LQ, Portion 3 of the Farm Steenbokpan 295. However, these studies are limited to Phase 1 of the proposed development located on a Portion of the Remainder of the Farm Grootdoorn 292 LQ.

7.1 TOPOGRAPHY

According to the Environmental Potential Atlas of South Africa (ENPAT, 2000) the project area is classified as a "Plain at a medium level". The site topography is best described as being relatively flat with little topographical features. On site the topography dips towards the northwest. Topographical elevation in the study area in the north-west is recorded at around 898 mamsl, while topography in the south-west is around 916 mamsl. The slope of the study area is classified as flatter terrain (less than 12 degree slopes) associated with the plains. The study area falls within the Mokol River Catchment, which drains into the Limpopo River to the north. The Mokolo River catchment covers an area of 8 387 km2. The catchment stretches from the Waterberg Mountains though the upper reaches of the Sand River, and includes the Mokolo Dam and a number of small tributaries that join the main Mokolo River up to its confluence with the Limpopo River. The topography of the area is flat, varying between 900 and 922 meters above sea level. The general topographical drainage system is poorly developed and drains in an easterly direction towards the Mogol River (810 meters above sea level)

7.2 REGIONAL AND SITE GEOLOGY

Geology is directly related to soil types and plant communities that may occur in a specific area (Van Rooyen & Theron, 1996). A Land type unit is a unique combination of soil pattern, terrain and macroclimate, the classification of which is used to determine the potential agricultural value of soils in an area. The land type units represented within the proposed footprint area include the Ah86 land type (Land Type Survey Staff, 1987) (ENPAT, 2000).

Soils associated with the site are mostly of the Hutton or Clovelly soil forms throughout most parts of the site. Clay content within these regions varies between 2 and 6%. Soil depth in this land type is generally deeper than 1200 mm. The pans and direct surrounding areas being underlied by shallow calcareous and clayey soils.

The land type, geology and associated soil type is presented in Table 4 below as classified by the Environmental Potential Atlas, South Africa (ENPAT, 2000).

Table 4: Land types, geology and dominant soil types of the proposed development site

Land type	Soils	Geology
Ah86	Red-yellow apedal, freely drained soils; red and yellow, high base status, usually < 15% clay	Sandstone and mudstone of the Matlabas Subgroup, Waterberg Group; undifferentiated shale, sandstone and coal of the Karoo Sequence; also alluvium

No specific mineral deposits are present on/or in close proximity of the site. The closet indicated mineral deposits are the coal deposits in the Grootegeluk Formation, Karoo Supergroup and are situated approximately 6.5 kms to the north of the northern boundary of the investigated area and approximately 10kms to the east of the eastern boundary of the investigated area.

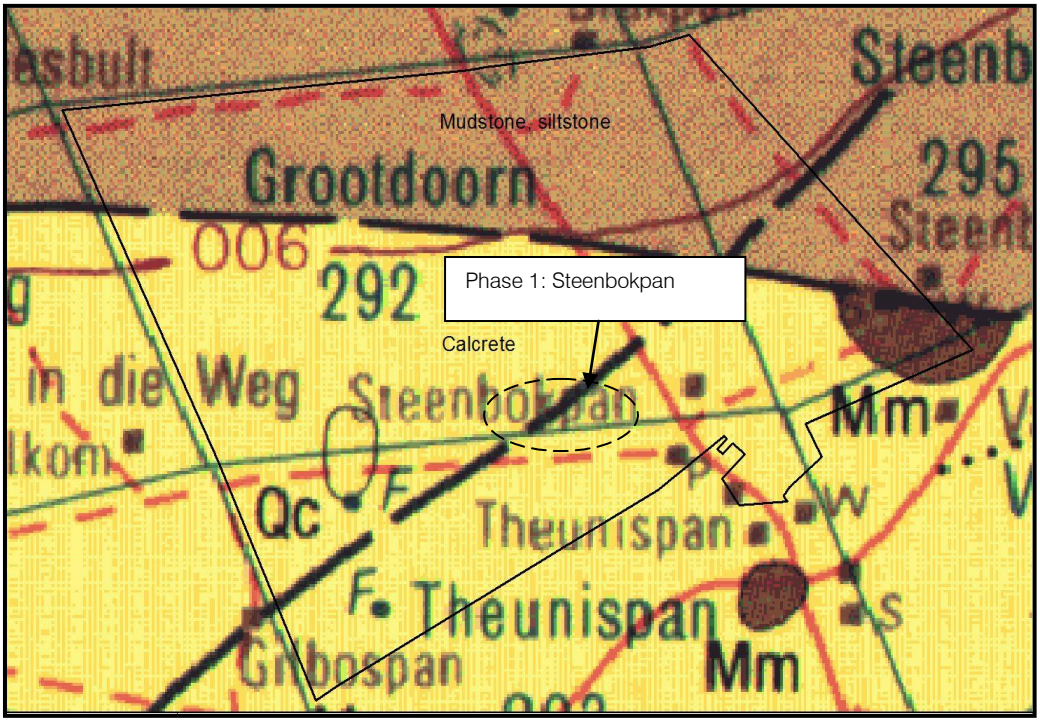


Figure 4: Geology Map of the study area

7.3 REGIONAL CLIMATE

Climate in the broad sense is a major determinant of the geographical distribution of species and vegetation types. However, on a smaller scale, the microclimate, which is greatly influenced by local topography, is also important. Within areas, the local conditions of temperature, light, humidity and moisture vary greatly and it is these factors which play an important role in the production and survival of plants (Tainton, 1981). In terrestrial environments, limitations related to water availability are always important to plants and plant communities. The spatial and temporal distribution of rainfall is very complex and has great effects on the productivity, distribution and life forms of the major terrestrial biomes (Barbour et al. 1987). Furthermore, aspects like topography, slope and altitude may further result in differences in precipitation and water availability to plants within the study area. The spatial and temporal distribution of rainfall is very complex and has great effects on the productivity, distribution and life forms of the major terrestrial biomes (Barbour et al. 1987).

Lephalale normally receives about 400mm of rain per year. Summer (October to April) rainfall patterns predominate with the traditional heavy deluges in the afternoon (cumulonimbus induced thundershowers being the norm). Figure 5 below shows the average monthly rainfall values for Lephalale. The area receives the lowest rainfall (3mm) in July and the highest (85mm) in November. The monthly distribution of average daily maximum temperatures (Figure 6) shows that the average midday temperatures for Lephalale range from 22.3°C in June to 31.9°C in January. The region is the coldest during July when the mercury drops to 3.7°C on average during the night. The predominant wind direction at Lephalale is north-north-east (10 %) with lesser wind component from the north-east (9.5%) and north (6.5%) (Figure 6). Wind speeds are generally slow to medium with no wind speeds exceeding 6 m/s being recorded. Wind speeds of less than 1 m/s, which are designated as calm, occur 47.18 % of the time. A significant seasonal variation in wind direction is observed at Lephalale. During summer, winds are predominantly from the north-east (13 %) with an additional component from the north-north-east (12.2%). Autumn is also characterised by winds that are predominantly from the north-east (7%), with additional components from the north (4.3%), north-north-west (4.3%) and north-west (4.3%). Winds blow from the north-north-east (7.5%) during the winter season with additional components from north (5.5 %) and north-east (5.8%). During the spring a similar pattern is observed with winds remaining from the north-north-east

(14.8%), north-east (12%) and north (10%) with a component from the north-north west (7%). An increase in calm conditions is observed during the winter season (59.06%).

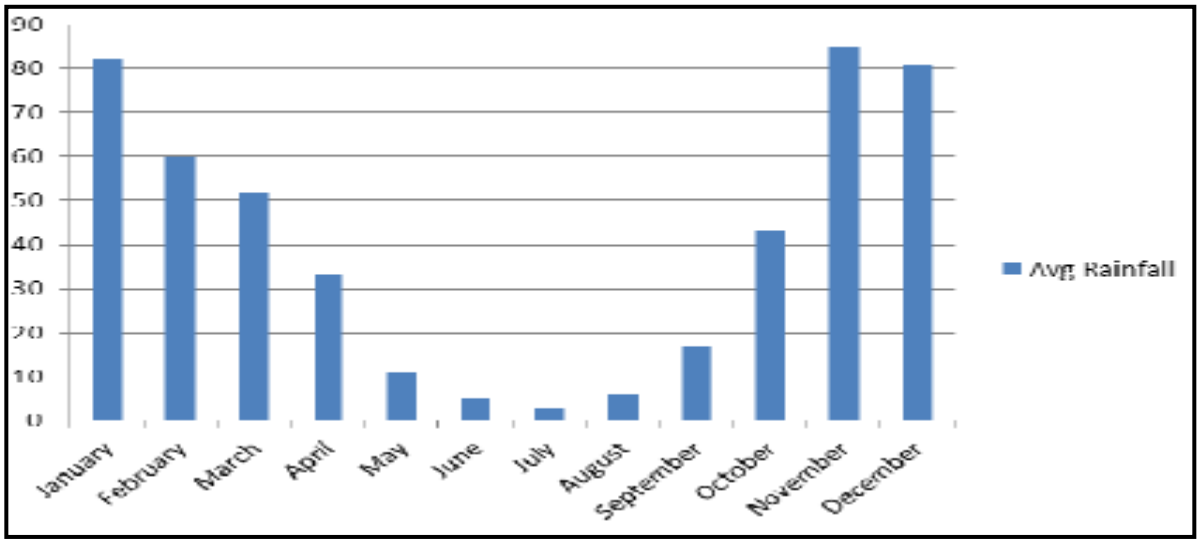


Figure 5: Average monthly rainfall for the Lephalale area

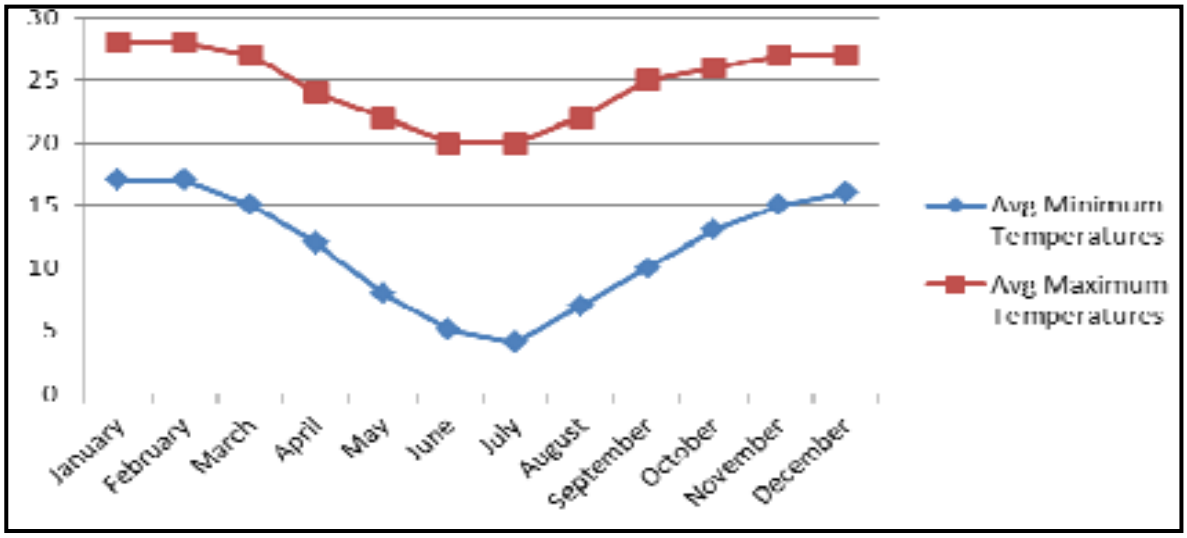


Figure 6: Average maximum and minimum temperature for the Lephalale area

7.4 GROUND WATER AND HYDROGEOLOGY

According to the Hydrogeology report compiled by WSM Leshika, results of the hydro census conducted on 21 May 2009 were recorded as indicated in the table below.

Table 5: Results of Hydro Census Conduct

BH no	Latitude	Longitude	Elevation (m.a.m.s.l.)	Static Water Level (m.b.g.l.)	Piezometric Water Level (m.a.m.s.l)	Date measured	Borehole Depth (m.b.g.l.)	Estimated Yield (l/s)	Equipment	Use	Estimated Use (kl/day)
BH-1	23,69551	27,28203	904.5	13.90	890.60	21-May-09			submersible	domestic	3
BH-2	23,69887	27,28464	904.8		904.80			4.2	mono	irrigation	80
BH-3	23.69867	27.28556	903.3	25.20	878.10	21-May-09		5.8	submersible	irrigation	112
BH-4	23.68260	27.25576	881.5	4.25	877.25	21-May-09			submersible	domestic	1
BH-5	23.68106	27.25736	885.2	8.00	877.20	21-May-09			none	none	
BH-6	23.69893	27.26152	907.6	36.30	871.30	21-May-09			submersible	domestic	5
BH-7	23.69386	27.23943	898.3						wind pump	game	4
BH-8	23.70502	27.26528	912.1						mono	irrigation	12
BH-9	23.70528	27.26342	913.3						submersible	domestic	2
BH-10	23.70558	27.26784	911.8						submersible	domestic and stock	3
BH-11	23.70799	27.27334	915.1						submersible	domestic and irrigation	15
BH-12	23.70490	27.26375	913.1						wind pump	domestic	1
BH-13	23.70490	27.26422	912.8						wind pump	domestic	1
BH-14	23.72338	27.25525							submersible	domestic	3
BH-15	23.72318	27.25512							none	none	
BH-16 (H21 0343)	23.71891	27.27723		13.95		28-Nov-02	63	1.3	submersible	domestic	56
BH-17	23.71287	27.27441		5.70		28-Nov-02			submersible	domestic	3
BH-18	23.70000	27.28548	905.2						submersible	domestic	3
BH-19	23.70180	27.26778	910.2						wind pump	domestic	1
BH-20	23.70238	27.26524	910.1						wind pump	abandoned	
BH-21	23.70400	27.24193	906.5						wind pump	stock and game	2
BH-22 (H210344)	23.71424	27.2757		7.52		28-Nov-02	170	0.55	submersible	domestic	23
BH-23*	23.70328	27.26011	912.5						none	none	
BH-24*	23.71081	27.27267		5.95		04-Nov-02			wind pump	domestic	3
BH-25*	23.71086	27.27739		6.23		28-Nov-02			submersible	domestic and game	3
BH-26*	23.71644	27.28606		10.40		01-Jul-99			wind pump	stock and game	2
BH-27*	23.72239	27.278028		9.37		28-Jul-02			submersible	domestic	2
BH-28*	23.72811	27.30608		7.10		01-Jul-99			wind pump	stock and game	2
BH-29*	23.74281	27.28506		8.60		01-Jul-99			wind pump	stock and game	2
BH-30*	23.73072	27.30539							submersible	domestic	2
TOTAL ESTIMATED USE											346

Note * indicates information not confirmed during the recent cencus
m.a.m.s.l - metres above mean sea leve
m.b.g.l. - metres below ground level
l/s - litres per sekond
kl/day - kilolitres per day

Figure 7: B-2 existing irrigation borehole (irrigates about 7ha)

Ground water is used for domestic, stock, game and irrigation. The estimated existing use is 346 kl/day, with the biggest user irrigation using about 215 kl/day. Approximately 80 kl/day is used by the informal settlement on the southern portion of the area. The remainder, about 51 kl/day is used for farmsteads, stock and game.

The proposed development is situated in the Limpopo Catchment area with 30 boreholes recorded in the immediate area. There are no major municipal or formal water supply infrastructures in the area except for a small municipal supply system providing water to an informal housing area known as Steenbokpan Town. The proposed development will be obtaining water from 2 boreholes situated on the north-west portion of the development to service Phase 1.

7.5 GEOTECHNICAL

According to the Geotechnical Report the development site soil predominantly comprises of colluvial material generally grades as silty sand with low percentages of clay and gravel. The material is generally non-plastic to only slightly plastic, with a low linear shrinkage, low potential activity and a moderate grading modulus.

Sandy Colluvium

The results indicate that the sandy colluvial material have an optimum moisture content of 6,8 % and a maximum dry density of 1 988 kg/m3. 1.1 % swell are expected. The CBR increases from 20 at 90% compaction effort to 38 and 62 at 95% and 100% compaction efforts which indicate good compaction characteristics. The indicator testing indicates that the material is non Liquid, Liquid Limit (LL) of 0, is non plastic, Plasticity Index (PI) of NP, Linear shrinkage of 0, 0 and Grading Modulus of 1.27. The material grades as a gravelly (3 %) silty (9 %) sand (87 %). The sandy colluvial material tested classify as “G7” according to the COLTO classification. G7 material is usually suitable for use as subgrade and selected layer in road construction. The material classify as “SC” according to the Unified Soil Classification System. These materials generally have “good” to “fair” compaction characteristics with a low compressibility when compacted.

Ferruginised pebble marker and siltstone

The results indicate that the ferruginised pebble marker horizon have an optimum moisture content of 11,8 % and a maximum dry density of 1 940 kg/m3. 0.6 % swell are expected. The CBR increases from 16 at 90% compaction effort to 25 and 48 at 95% and 100% compaction efforts which indicate good compaction characteristics. The indicator testing indicates that the material has a Liquid, Liquid Limit (LL) of 18, a Plasticity Index (PI) of 8, Linear shrinkage of 4,0 and Grading Modulus of 2.04. The material grades as a silty (6 %) gravelly (44 %) sand (50 %).

The site has been broadly classified into three Site Class Designation Zones (Figure 5, Appendix A), based on the above constraints and the criteria as set out in the NHBRC (1999). The classification and foundation recommendations are based on the field observation, soil profile descriptions, visual interpretations and laboratory test results.

The general geotechnical constraints pertaining to urban development as proposed by Patridge, Wood and Brink (1993) are listed below:

Table 6: Geotechnical Constraints

Constraint		Site Condition	Class
A	Collapsible soil.	Potentially collapsible horizons more than 750 mm in thickness.	2
B	Seepage.	Shallow seasonal perched groundwater, groundwater seepage and/or saturated soil profiles are expected. (Localised surface seepage and potential flood areas are also expected. Refer to the floodline report).	2
C	Active soil.	Low soil-heave potential expected.	1
D	Compressible soil.	Medium to high soil compressibility of upper soil horizons expected (depending on moisture content at time of construction).	2-3
E	Erodability of soil.	Intermediate soil erodability expected.	2
F	Difficulty of excavation to 1.5m depth.	Scattered or occasional boulders and/or rock less than 10% of the total volume down to a depth of 1,5 m below ground level. (*Localised areas of intermediate to hard excavation conditions are expected on shallow pedocrete formation*).	1 - (3)
G	Undermined ground.	No undermined ground.	1
H	Instability in areas of soluble rock.	No soluble rock. Site is not underlain by dolomite rock.	1
I	Steep slopes.	No steep slopes in developable areas. (*Only localised steep slopes due to existing excavations dump heaps and localised drainage channels*).	1 - (2)
J	Areas of unstable natural slopes.	No natural unstable slopes were identified during this investigation. (*Localised excavations resulted in very localised fairly steep slopes that may be unstable. The excavations may need to be rehabilitated or the slopes may need to be stabilised depending on the type and position of the structures).*	1 - (2)
K	Areas subject to seismic activity.	Less than 10% probability of an event less than 100cm/s^2 within 50 years.	1
L	Areas subject to flooding.	Areas situated within or next to known drainage channels. Areas prone to flooding. 1-100year floodline needs to be determined by a competent person. (*Refer to floodline report*).	2-3
Geotechnical classes:		*Most favourable (1)*	*Intermediate (2)*	*Least favourable (3)*

7.6 FLOODLINE DELINEATION

According to the Floodline Delineation report compiled by WSM Leshika dated May 2009, the study identified three pans on surrounding areas and the proposed Steenbokpan Extension 3 Township lies within the upper catchment area of the pan called "Brak Pan":

The site contours depicted on the township layout plan are at 0.5m, and the risk of surface flooding is considered to be paltry in respect of the requirements for delineation of the 1:100year floodline in Section 144 of the Water Act (No. 36 of 1998). The proposed site is well outside the flood lines of the three pans identified in the WSM Leshika Study, as well as from potential over flows from these pans. Even though these pans are considered to be negligible, they are to be preserved as they are corridors for fauna to move freely between the areas of disturbance.

The surface flow in this predominantly even terrain with unconsolidated, loose sad cover is in the form of sheet flow. It is deemed an endoreic area, runoff quantities will increase due to the increase in impermeable area which will lead to scour and donga formation when concentrated onto the natural sand formation. Special measures are required to control this effect.

Table 7: Catchment Characteristics

Catchment	Gross Area (km^2)	Net Area (km^2)	Mean Annual Evaporation (mm)	Mean Annual Precipitation (mm)	Mean Annual Net Runoff (mill m^3/a)
A41E	1 940	816	1 950	438	5.29

In developing a large town on this site, runoff quantities will increase due to the increase in impermeable areas, which will lead again to scour and donga formation when concentrated onto the natural sand formation. Special measures are required to control this effect.

7.7 FLORA AND FAUNA

According to the Draft Ecological Assessment report compiled by AGES dated April 2013, the development site is of low sensitivity. (Refer to Appendix 4)

7.7.1 Vegetation

The development site lies within the Savanna biome which is the largest biome in Southern Africa. It is characterized by a grassy ground layer and a distinct upper layer of woody plants (trees and shrubs). The environmental factors delimiting the biome are complex and include altitude, rainfall, geology and soil types, with rainfall being the major delimiting factor. Fire and grazing also keep the grassy layer dominant. The most recent classification of the area by Mucina & Rutherford (2006) shows that the site forms part of the Limpopo Sweet Bushveld vegetation type.

The landscape features of the Limpopo Sweet Bushveld is characterized by plains (sometimes undulating or irregular) that are traversed by several tributaries of the Limpopo River and by short open woodland. Thickets of Acacia erubescens, Acacia mellifera and Dichrostachys cinerea occur in disturbed areas which are almost impenetrable. The conservation status of the Limpopo Sweet Bushveld is Least Threatened with less than 1% conserved and about 5% transformed mainly by cultivation.

The site is currently managed as separate game and livestock farms, while a small section is utilized for citrus cultivation. The vegetation units on the site vary according to soil characteristics, topography and land-use. Most of the site is characterized by mixed broadleaf woodland that varies in density and species composition, while the areas surrounding the pans represent microphyllous woodland. The natural woody layer represents Marula – Red Bushwillow – Grewia woodland that varies in density according to soil depth.

The following vegetation units were identified during the survey:

1. Mixed Silver Clusterleaf tress – Red Bushwillow – Grewia woodland;
2. Marula Woodlands;
    a. Mixed Marula – Grewia – Red Bushwillow Woodland;
    b. Dense Marula – Grewia Woodland;
3. Old Cultivated Fields & orchards; and
4. Red Bushwillow – Grewia Woodland;

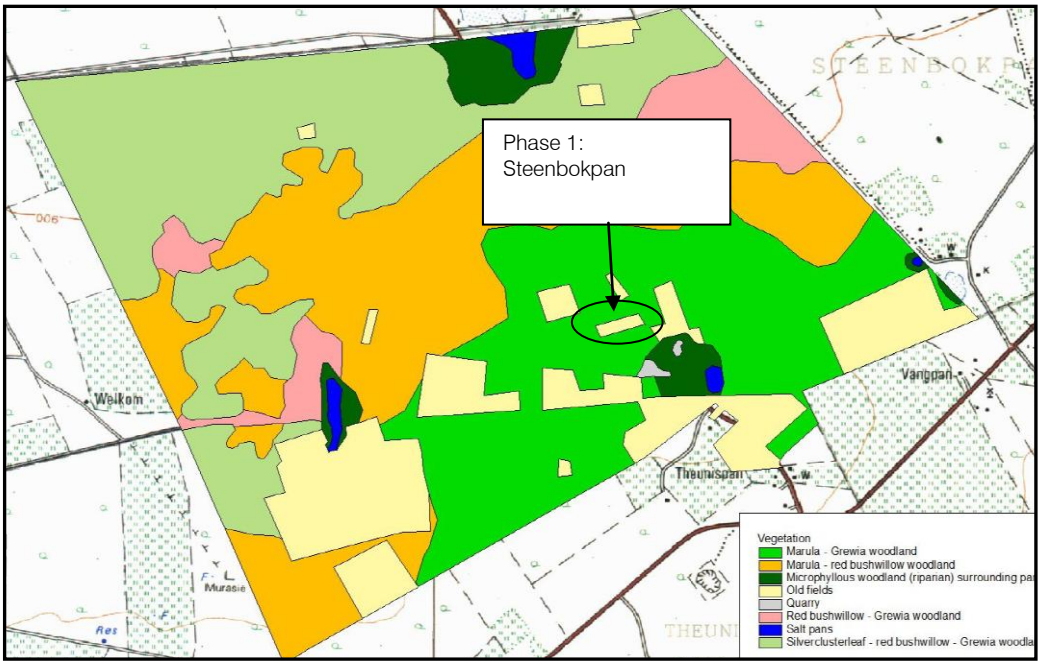


Figure 8: Vegetation map of study area

1. Mixed Silver Clusterleaf tree – Red Bushwillow – Grewia woodland

The northern section of the proposed development site form broadleaf woodland with a well-developed shrub layer. Although this area represented dense, often impenetrable thickets of shrubs and medium sized trees, a veldfire removed much of the shrub layer on the remaining extent of the farm Grootdoorn two years ago. The woody layer of the vegetation unit is mostly dominated by broadleaf species such as Terminalia sericea, Combretum apiculatum, Grewia species and Commiphora pyracanthoides.

The vegetation unit is classified as having a medium sensitivity due to the widespread status as part of the Savanna Biome. The township development could be supported in this vegetation unit. A permit would be needed for the eradication of these species and can be obtained from DAFF. Protected tree species such as Sclerocarya birrea, Acacia erioloba and Boscia albitrunca occur in low densities in this vegetation unit.

Figure 9: Silver Clusrterleaf tree – red bushwillow – Grewia woodland in the Northern section of the study area

2. Marula Woodlands

The Marula woodlands are characterized by a definite dominance of Marula trees in the woody layer of the vegetation units.

a. Mixed Marula – Grewia – Red Bushwillow Woodland

The Marula woodlands are characterized by an equal dominance in the woody layer by the tree species Marula, silver clusterleaf tree and red bushwillow, while the shrub layer is well developed and dominated by raisin bush species and sickle bush. The substrate consists of sandy loam soils that forms a mosaic pattern and consist of the soil forms Clovelly and Hutton. Areas where the soils are of medium depth are dominated by red bushwillow, while deeper areas are characterized by Marula and silver cluster leaf.

The herbaceous layer is mostly dominated by sour veld, unpalatable grass species such as broom love grass and various Aristida species.

Figure 10: Marula – red bushwillow variation

b. Dense Marula – Grewia Woodland

The Marula – Grewia woodland variation occurs in the central section of the property on deep sandy soils. The woody layer is characterized by a high density of tall Marula trees and a dense shrub layer dominated by various Grewia species and sickle bush. The encroachment is the result of overgrazing in the past and should be controlled as stipulated earlier. The Marula trees are exceptional specimens and enhance the aesthetical value of the area. Many bird species utilize the large trees for nesting sites.

Figure 11: Marula – Grewia variation

No red data plant species were noted in the area. The dense stands of the protected marula trees provide the most unique floristic component of this vegetation unit as an entity.

3. Old Cultivated Fields & orchards

When cultivated fields are left fallow, it results in a landscape mosaic of patches of secondary vegetation varying in age and dominated by various grass species (Moll,1965). Different stages of succession occur in the old fields, and Wildi (2002) described how dynamic these systems are over time and space. The most common old fields in the Savanna Biome and surroundings are the young old fields of 1-5 years old (Smits et al. 1999) dominated by the pioneer grass species of disturbed areas, Cynodon dactylon (Van Oudtshoorn, 1999). Secondary grassland communities may develop from this old field variation, dominated by the secondary grassland species directly related to manmade disturbances, Hyparhenia hirta. These fields are still in an early successional state, although somewhat older (older than 5 years) with several grass species like Aristida junciformis, Aristida congesta s. congesta and Eragrostis rigidior. An orange orchard still exists in the south-eastern section of the proposed development site on portion 3 of the farm Steenbokpan. The soil in the area is sandy to loamy (Hutton) originating from Sandstone/ Mudstone. The outer successional stage of old fields only starts after several years of abandonment when woody species start to invade. These secondary old fields are usually dominated by species such as Dichrostachys cinerea, Terminalia sericea, Acacia tortilis and Ziziphus mucronata. Where overgrazing occurs the encroacher Dichrostachys cinerea becomes dominant as is evident on site. The secondary old fields vary between a more open structured younger old field sections that flow into a dense (encroached) secondary Dichrostachys cinerea variant. This vegetation unit is defined as a secondary old field variant/modified land which is evident from the higher tree cover/diversity as well as the higher shrub cover/diversity.

No red data species was observed as a result of the modified state of the vegetation.

Figure 12: Primary old fields in the study area

Figure 13: Secondary old fields in the study area

5. Red Bushwillow – Grewia Woodland

The red bushwillow woodlands vegetation unit is characterized by a definite dominance of red bushwillow trees on gravelly soils. The red bushwillow-Grewia woodland variation is situated on the slightly shallower soils on the northern sections of portion 3 of the farm Steenbokpan and portions 1 and 2 of the farm Grootdoorn. The presence and dominance of red bushwillow indicate that the soils are shallower in this area and the sandstone bedrock closer to the surface. The soil forms characteristic of the slightly undulating landscape includes shallow Hutton and Clovelly soils derived from Waterberg Sandstone. The woody structure is moderately open with a well-developed shrub layer. As stated earlier red bushwillow is the dominant medium tall tree species, while the shrub layer is dominated by Grewia species, sickle bush and Commiphora pyracanthoides. Only individual Marula trees occur in the area. The presence of a moderately to high percentage of Aristida grass species indicate the poor nutrient status of the soils. The vegetation has a medium sensitivity and represents a widespread vegetation entity. The vegetation represents important habitat for fauna and the impact of the development will be medium. The protected tree species Sclerocarya birrea, Acacia erioloba and Boscia albitrunca occur throughout the area. A permit should be obtained from DAFF for the eradication of these species, although it is recommended that the species be preserved if possible. Indigenous tree species should be planted in the gardens of the proposed residential area.

Figure 14: State of the vegetation in the red bushwillow – Grewia woodland

According to the Draft Ecological Assessment Report compiled by Ages dated April 2013, this area of development is low sensitivity.

Any development will have profound effect on the environment, the development of the township will have medium to low impact on the vegetation and general ecology of the footprint areas.

7.7.2 HERPETOFAUNA

A Herpetofauna assessment of the proposed township development site was conducted in order to identify any reptiles and amphibians of conservation importance that may occur species such as the southern rock python, the black mamba, puff adder, boomslang, vine snake, spotted bush snake and several members of the green snakes (*Philothamnus* spp.) is expected to occur in the study area, although the presence of these snakes is dependent on the presence of their prey species (rodents, frogs etc.). The general habitat type for reptiles consists of open to very dense bushveld, with limited available habitat for diurnally active and sit-and-wait predators, such as terrestrial skinks and other reptiles. Arboreal species are the more prominent components of the local herpetofauna. The amphibians appear to be poorly represented on site. The only near threatened amphibian which has been recorded from the larger area is the giant bullfrog (*Pyxicephalus adspersus*), for which the arable land provides ideal dispersal area. This species has been recorded from this quarter degree grid cell, while the African bullfrog (*P. edulis*) has not, although one might expect it also to occur here. No suitable habitat for Giant Bullfrog (*Pyxicephalus adspersus*) occurs on the site.

The following herpetofauna was confirmed for the study area (Table 8):

Table 8. Herpetofauna confirmed for the study area

Scientific name	Common Name
Acanthocercus atricollis	Southern tree agama
Bitis arietans	Puff Adder
Chamaeleo dilepsis	Flap-neck chamaeleon
Dendroaspis polylepis	Black Mamba
Dispholidus typus	Boomslang
Geochelone pardalis	Leopard tortoise
Naja annulifera	Snouted Cobra
Naja mossambica	Mozambique spitting cobra
Nucras holubi	Holub's sandveld lizard
Philothamnus semivariegatus	Spotted bush snake
Python natalensis	Southern African Python

7.7.3 AVIAFAUNA

A desk top assessment was conducted for the Avifaunal habitat as part of the overall Ecological Assessment report in order to *inter alia* assess the possibility and probability of Red-listed avifauna being present on the study site (refer to Appendix 4). Three major bird habitat systems were identified within the borders of the study site:

- Woodland Biome: covers the greater part of Southern Africa. It is defined as vegetation with tree covers from sparse to almost closed canopy. It supports the highest diversity of bird species such as rollers, Bee eaters and waxbills
- Acacia Woodland: semi-deciduous, fine-leaved woodlands and they typically occur on nutrient rich, often alluvial soils in the drier western regions. It supports a higher number of birds but low bird diversity. Birds that such as Burnt-necked Eremomela and Brown crowned Tchagra are usually found in this region.
- Old fields: these fields are in a degraded state but are popular for bird species as well foraging area. Bird species such as the crowned plover and crested guinea fowls utilize these areas.

Table 9. Bird species confirmed for the study area

English Name	Afrikaans name
Abdim's stork	Kleinswartooievaar
African Hawk Eagle	Grootjagarend
African Hoopoe	Hoephoep
African pipit	Gewone koester
Blackcrowned Tchagra	Swartkroontjagra
Blackheaded Oriole	Swartkopwielewaal

Blacksmith plover	Bontkiewiet
Blackthroated canary	Bergkanarie
Blue Waxbill	Gewone Blousysie
Bluecheeked Bee-eater	Blouwangbyvreter
Buffy pipit	Vaalkoester
Cape Turtle Dove	Gewone Tortelduif
Carmine Bee-eater	Rooiborsbyvreter
Chinspot Batis	Witliesbosbontrokkie
Coqui Francolin	Swempie
Crested Francolin	Bospatrys
Crowned Plover	Kroonkiewiet
Diederik Cuckoo	Diederikkie
Doublebanded Sandgrouse	Dubbelbandsandpatrys
Eastern Redfooted Kestrel	Oostelike Rooipootvalk
Egyptian Goose	Kolgans
Eurasian Roller Europese	Troupant
Fiscal Shrike	Fiskaallaksman
Forktailed Drongo	Mikstertbyvanger
Glossy Starling	Kleinglansspreeu
Goldenbreasted Bunting	Rooirugstreepkoppie
Goldentailed Woodpecker	Goudstertspeg
Greenbacked Heron	Groenrugreier
Greenspotted Dove	Groenvlekduifie
Grey Hornbill	Grysneushoringvoël
Grey Lourie	Kwêvoël
Helmeted Guineafowl	Gewone Tarentaal
Klaas's Cuckoo	Meitjie
Laughing Dove	Rooiborsduifie
Lesser Grey Shrike	Gryslaksman
Lilacbreasted Roller	Gewone Troupant
Little Bee-eater	Kleinbyvreter
Longtailed Shrike	Langstertlaksman

All components of any of the ecosystems (physical environment, vegetation, animals) of a site are interrelated and interdependent. A holistic approach is therefore imperative to effectively include any proposed development, utilisation and where necessary conservation of the given natural resources in an integrated development plan, which will address all the needs of the modern human population (Bredenkamp & Brown 2001).

SECTION 8: AFFECTED SOCIO-ECONOMIC ENVIRONMENT

8.1 LAND USE AND SURROUNDING ENVIRONMENT

The proposed township development site is located on the Steenbokpan Extension 3; game farming is currently undertaken on the proposed development site. The farms in the direct surrounding area are currently utilized for game and livestock farming with limited crop cultivation (citrus). Agricultural activity in the area is varied with arable soils in the area associated with the Mokolo and Tamboti Rivers. These activities are closely associated with the Mokolo River and its associated primary aquifer with farmers in the area relying on groundwater as well as highly regulated flow from the Mokolo Dam with sporadic flows being released for the farming community to sustain agriculture throughout the year. Neighbouring farms in the larger area are being used for mining (Grootegeluk Coal Mine), industrial (Matimba and Medupi Power Stations), residential developments (expansion of the current townships of Lephalale and Steenbokpan), livestock and game farming, with some isolated crop cultivation occurring in the deeper soils under irrigation. The state of the access roads to the site was found to be in a good condition and a major tar road between Lephalale and Marken forms the northern border of the site. Secondary dirt roads on the farm was found to be in a medium – good conditions. The infrastructure on site is restricted to the farmstead buildings, while small drinking troughs for game and cattle also exist scattered throughout the sites. The site is fenced with game fencing.

Latent rights proposed developments:

- Boikarabelo Coal Mining Development
- Steenbokpan Extension 1 Development
- Portion 25 of Farm Theunispan 293 LQ Development

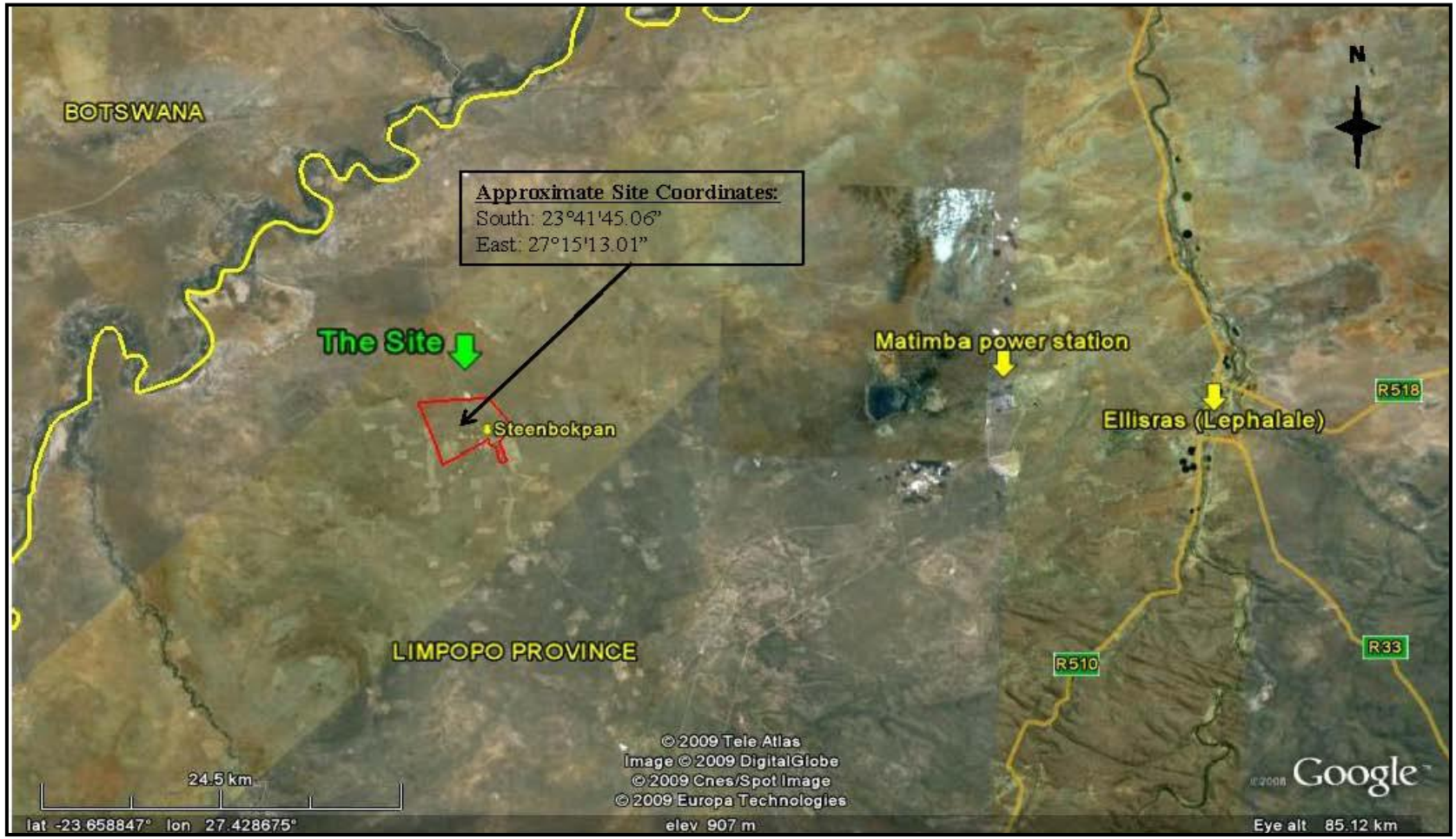


Figure 15: Locality map for proposed development and surrounding areas

8.2 POPULATION TRENDS

Municipal population according to the official census of 2001 was 96 102 people, comprising of 23 403 households. At that stage the average household size was 4.1 persons. Demographic analysis of Lephalale local Municipality, and studies conducted by the Department of Water Affairs (DWA) in the past on the basis of the 2001 data, census for water service planning purpose suggested a population increase, considerably higher than the provincial population growth rate of 0.94% per year, because of the local economic growth that attracted workers from other places across the country. Population growth within Lephalale Town node is among the highest in Limpopo and reflects the influx of people to work on the power station construction and the mine expansion projects. According to official census of 2001 and 2011 the household in Lephalale have increased from 20 277 with an average household size of 3.5 in 2001 to 29 880 household in 2011 reflecting a household size of 3.9. The recent census indicate a 35.8 %population increase in Lephalale Municipality against the Waterberg district population of 679 336 for the past ten years which, is phenomenally massive and require well thought strategic intervention by all spheres of government including private sector. The STATSSA census estimate population of Lephalale Municipality at 115 768 for 2011 which represent a change of 35.8% compared to 2001 census.

The current population in the Steenbokpan area is estimated at 2,000 people, of which ± 990 reside on farms and ± 1010 reside in Steenbokpan Settlement. Currently there are 249 households residing in Steenbokpan Settlement. Economic production is currently very low (less than 5% of the value of municipal production) mostly in the form of agriculture and land transactions. 20.2 The unemployment rate in Steenbokpan Settlement is estimated at 70% which is higher than the average of the country. Currently there is a housing backlog in Steenbokpan Settlement of 454 units. 20.3 The area is mainly an agricultural area consisting of game farms of which ± 50% is exempted. 20.4

The proposed establishment of a township within the Steenbokpan Node will act as catalyst for population growth and economic development. It will also facilitate urban densification and problems associated with informal settlements and overcrowding in the rural periphery.

8.3 LOCAL ECONOMY AND SOCIAL ENVIRONMENT

In terms of the Waterberg SDF the sector that contributes most to the GDP of the Waterberg District is mining. However, the sector that employs the largest number of people is agriculture. With future developments set to take place in the Waterberg District, it is likely that current GDP and employment trends will change. In terms of the population, three local municipalities registered positive growth with Modimolle registering the biggest growth followed by Mogalakwena. Changes of municipal demarcations may have impacted on the growth trends observed.

Population Characteristics

The Waterberg District Municipality area has an estimated total population of 572 625. Most of the people in the District are distributed around Mogalakwena, Lephalale, as well as the Thabazimbi local municipality areas respectively. The education levels are relatively low within the Waterberg District. The working population tend to fall into two main brackets that earn between R1 to R400 and R6401 to R12 800 per month.

Development Pattern

The primary activities of the Waterberg District include mining. The mining of minerals such as iron, platinum and coal has led to the development of nodes which have grown into the largest of the towns in the district. Lephalale is one of the areas with significant mining potential. Plans to expand mining in this area are already underway.

Agriculture is another primary activity. Commercial farming mainly occurs on the “Springbok flats” in the south-east of the district. Irrigated agriculture occurs along several of the rivers, most notably the Crocodile River. The Modimolle Local Municipality area and the Mookgophong Local Municipality area have strong agriculture sectors. Game and cattle farming also form an important component of the Waterberg District.

Secondary activity is mainly industrial development, especially around the Lephalale area. Small scale manufacturing and service industries are located in Bela-Bela, Thabazimbi and Mokopane.

The settlement pattern in the district is fairly dispersed, with a high concentration of towns and villages in

the east and the south. Mining, topographical features, tribal land and major transport corridors contribute to the settlement pattern. Densification is taking place in some centres, including Lephalale, Mokopane, Thabazimbi and Bela-Bela.

Road links are fairly well established in the Waterberg District, these links include the N1, N1 – R33, R510, and R516. With the exception of the N1, which is a toll road, the R-routes are not well-maintained. Many of the roads have deteriorated, to the point of being a danger to travel on.

Although a rail link does exist between Lephalale and Thabazimbi, it will need to be upgraded to increase its capacity. This will allow coal to be transported by rail instead of by road as is currently the case.

Major towns such as Thabazimbi, Lephalale, Bela-Bela, Modimole and Mokopane have airfields which accommodate light aircraft. At present no commercial flights exist.

The development in Lephalale will place a higher demand on the water resources of the area. The Mokolo and lower Crocodile Water Augmentation Project were commissioned to help combat the lack of water. This project will be implemented in three phases.

8.4 HERITAGE IMPACT ASSESSMENT

The proposed site is relatively flat and slopes gently to the north. Most of the properties are being used as game farms. They are largely undisturbed and are covered with typical vegetation associated with the western Bushveld.

The following heritage sites where identified:

- First a structure in a very dilapidated state, but was known to be the farmstead of the Harmse-family.
- Second identified was the shopping complex next to the D175 road. These shops are still in an operation mode.

Five cemeteries were also identified within the proposed development area. Three of these cemeteries were situated in close proximity of the identified shopping complex, the fourth cemetery was situated on Portion 2 of the Farm Grootdoorn 292 LQ and the fifth cemetery was situated on Portion 4 of the Farm Grootdoorn 292 LQ on the northern extent of the study area.

Although none of this heritage findings fall part of Phase 1 of development it is imperative that appropriate mitigation measures are undertaken.

8.5 PLANNING INITIATIVES

8.5.1 Lephalale Local Municipality Integrated Development Plan. 2013-2016

The function of the Integrated Development Plan (IDP) is to provide a general direction to guide and inform all decisions of the Municipality relating to the use, development and planning of land. The area between Lephalale, the Stockpoort node and the Steenbokpan node will significantly be spatially re-defined. At present Steenbokpan is known as a local service point. In terms of the Lephalale SDF the Steenbokpan node has been identified as the Potential Development Area 1 (Steenbokpan node) PDA1.

Energy demand in the country and international petroleum market resuscitated demand for coal based products. The coalfields west of the Lephalale town are expected to be a theatre to stage the new powerstation already in progress and the 'Mafutha' project by SASOL. Anglo coal is known to be involved in exploration activities in this area. It is expected that beneficiation of coal to either gas or liquid will require certain down and upstream industries in close proximity. For this, certain special development considerations need to be conceded to support the development of these industries. These are development of national magnitude in terms of addressing the energy issues and their contribution to ASGISA in terms of job creation. This implies that more development will take place in the area, including that of industrial and commercial nature. It is however highlighted that development should not be built on mineral reserves/deposits as it will sterilize the national resource. More importantly it suggests that industrial hubs or corridors should be created close to coal in order to curb high transport costs. The establishment of industrial parks close to the coal reserves will result in the strengthening of the area resulting in further economic development in future. The SDF provides guidelines for the development of various land-uses. Apart from the industrial and commercial type of land uses the SDF also states that

higher intensity residential developments like social housing can be promoted in areas where a mixture of residential and service industries is developed. Land use management must however ensure that noise levels are controlled. It is also very important that all development applications are in line with these guidelines provided.

According to the SDF, the LLM is listed as a priority investment area with high social and economic returns. A nodal strategy is therefore proposed which includes the development of the primary regional nodes, enhancement of urban-rural linkages with functional areas, the identification and monitoring of spatial economic dynamics and regional growth networks, and the integration of the nodes on a national and international scale via the development corridors. The spatial economic development programmes in high economic areas such as Lephalale, are encouraged to focus on the urban nodes, which are regarded as economic growth engines, as the basis for further concentration of development efforts. As for the rural strategy, a phased approach is proposed which includes:

- The development and enhancement of selected rural nodes/clusters;
- The formalisation of these selected villages; and
- The integration of villages into the formal urban system.

All the above applicable strategies and approaches have been considered in the formulation of the township layout plan for the proposed Steenbokpan Extension 3 township, particularly the rural strategy.

The LLM seeks to address the above challenges in terms of housing need and backlogs. The palm is based on the Rustenburg housing Strategy which collates data on housing backlogs in order to identify clusters of priority need. According to the latest available data contained, the total backlog as summarised as follows in the LLM-IDP 2013-2016:

Table 10: Total Housing Backlog

Rural Unit	Project Linked	BNG/IRPD	Individual	Social	Backyard Rental	CRU	GAP	Total
3452	-	8369	-	936	-	300	-	13507

According to the SDF, the above backlog is set to continue increasing due to natural population growth as well as immigration into the area as a result of economic growth.

8.5.2 Waterberg Environmental Management Framework, 2010

The purpose of this Environmental Management Framework is to promote sustainable development within varies Environmental Management Zones (EMZ) considered within the Waterberg District Municipality. This policy serves as a guideline to assist facilitate frameworks and aligns government mandates set by the Department of Environmental Affairs (DEA) in partnership with the Limpopo Department of Economic Development, Environment and Tourism (LDEDET), and the Waterberg District Municipality (WDM).

The following Environmental Management Zones have been identified:

- Zone 1: Protection of natural vegetation, scenic landscape and rock painting areas, with limited appropriate tourism;
- Zone 2: Nature and cultural tourism focus areas within a high quality natural setting;
- Zone 3: Game and cattle farming (including hunting) areas with commercial focus;
- Zone 4: Mining focus areas;
- Zone 5: Potential large industrial and related activities focus area;
- Zone 6: Restricted mining focus areas in aesthetic and/or ecological resource areas;
- Zone 7: Urbanisation focus areas and nodes;
- Zone 8: Rural settlement areas;
- Zone 9: Agriculture focus areas with a tourism component;

- Zone 10: Agriculture areas with commercial focus; and
- Zone 11: Major infrastructure corridors.

The application of the National Environmental Management Act and the Environmental impact Assessment Regulations is in respect to the sensitive Zones 1 and 2 is also set out. The proposed development, a portion of the remainder of the farm Grootdoorn 292 LQ, Steenbokpan Extension 3 falls under Zone 5 in terms of the Waterberg Environmental Management Framework.

SECTION 9: SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

9.1 ENVIRONMENTAL ASPECTS

9.1.1 Planning Phase

The following anticipated environmental aspects relating to the planning phase have been identified

- Subdivision of agricultural land
- Resettlement conflicts and issues
- Cultural and social disintegration

9.1.2 Construction Phase (including pre-construction site preparation)

The following anticipated environmental aspects relating to the construction phase have been identified;

- Preparation of the site including removal of vegetation. Areas will be identified which are not to be disturbed it is therefore important to ensure that proper fencing is erected around these areas, prior to vegetation clearance commencing;
- Excavations and the construction of foundations for all built structures. This includes the relocation of services affected by the proposed road
- Trenching for services;
- Protection of ecological and heritage sensitive areas;
- Establishment of material stockpile areas and other storage areas for material;
- Establishment of construction office;
- Possible vehicle maintenance;
- Establishment of on-site chemical sanitation;
- Generation of solid construction waste, such as building waste;
- Movement of heavy construction vehicles to and from site;
- Earthworks for building to take place;
- Fencing on site;
- Noise generation by operating compressors and excavators; and
- Fires for cooking.

9.1.3 Operational Phase

The following aspects are anticipated as part of the operational phase of the proposed development;

- Additional pressure on municipal services ;
- Visual impact on rural landscape
- Loss of rural character
- Noise and air pollution
- Waste management problems such as illegal dumping on open spaces, littering etc.
- Storm water generation
- Improvement in living conditions
- Economic opportunities

- Community development and upliftment
- Urban expansion and integration
- Protection of cultural and heritage resources
- Respect for the environment in open spaces

9.2 ANTICIPATED ENVIRONMENTAL IMPACTS

The table below summarises some of the potential adverse or negative and positive or beneficial impacts identified in each of the project phases.

Table 11: Summary of potential environmental impacts

CONSTRUCTION	OPERATION
SOCIO-ECONOMIC ENVIRONMENT	
BENEFICIAL OR POSITIVE	
▪ Skills development and creation of job opportunities. ▪ Potential economic opportunities for local contractors providing services and supplies, particularly in the road construction sector.	▪ Social cohesion and promotion of cultural diversity ▪ Improvement in living conditions due to adequate housing and access to basic community services such as healthcare facilities ▪ Potential increase in revenue base for the LLM through municipal rates and tariffs ▪ Potential increase in economic opportunities for SMEs and informal traders ▪ Investment opportunities for small businesses in the retail and light manufacturing sectors ▪ Reduced travel distance and travel time. ▪ Potential benefits for new trade based activities [e.g. fast food outlets, filling stations, truck stops] in new township. ▪ Economic opportunities for informal traders and SMEs ▪ Increased traffic and pedestrian safety in town. ▪ Promotes urban densification and integrated development ▪ Job opportunities especially during construction; and ▪ Income multiplier effect of investment. ▪ Potential sprawl of backyard shacks in high density residential areas – straining municipal services and resulting in dangerous illegal connections
ADVERSE OR NEGATIVE	
▪ Impact on aesthetics of the area and genius	▪ Loss of rural character

loci (Sense of place);

- Noise emanating from construction & dust generation could impact on adjacent properties;
- Heavy vehicle traffic increase that could impact negatively on safety and quality of existing roads;
- Crime may increase as a result of contract workers in the area;
- Possible damage/ loss of subterranean artefacts.
- Health and safety aspects associated with construction workers (HIV)
- Loss of tribal land and cultural disintegration
- Subdivision of viable agricultural land and subsequent decrease in productivity
- Potential impact on the pricing of goods and services due to increase in demand.
- Potential increase in criminal activities, attracted from nearby informal settlements
- Impact to Noise sensitive areas where routes pass through residential areas.
- Safety of pedestrians along arterial access routes.
- Proliferation of urban related crimes and social ills such as drug and alcohol abuse
- Displacement of local economic benefits.
- Fragmentation of farmland - Impact to properties utilised for agricultural land uses.

BIOPHYSICAL

BENEFICIAL OR POSITIVE

- Rehabilitation of degraded or disturbed areas, after construction.
- Potential enhanced protection of existing ecological systems.
- Better protection of cultural and heritage resources identified on site

ADVERSE OR NEGATIVE

- De-vegetation of area of construction - impacts to sensitive features such as watercourses and pristine grasslands [habitat for birds, terrestrial mammals and herpetofauna];
- Increased erosion risks due to clearance of vegetation and associated increase in sediment loads to watercourses;
- Fragmentation of habitat and migration corridors;
- Impacts to wetlands [impoundment of flows, interception of subsurface flows – impact to functional integrity];
- Loss of wetland habitat;
- Contamination risks to watercourses due to stockpiling of construction material, generation and disposal of building waste & liquids, vehicle and machinery maintenance.
- Spillages of hazardous substances on the development site could impact on water bodies and downstream users.
- Irreversible habitat loss and fragmentation.
- Increase of hard surface area [erosion and pollution risks].
- Permanent loss of biota within the footprint of the road.
- Reduction in the extent of conservancy, affecting the mobility, migration, and interaction of fauna.
- Water quality deterioration from storm water run-off.
- Soil, surface and ground water pollution from potential disposal of domestic waste on open spaces

Most of the socio-economic and biophysical environmental impacts listed above were identified by specialists as part of the preliminary studies conducted to date. These will be fully evaluated during the EIA phase, and further specialist investigations will be conducted if required by the competent authority. Adverse environmental impacts identified will be assessed and mitigation measures provided where possible

SECTION 10: PUBLIC PARTICIPATION PROCESS

Regulation 28 (1) (h) (k) & (m)

The public participation process conducted to date is in terms of Chapter 6 of the EIA Regulations, 18 June 2010.

10.1 SCOPING PHASE CONSULTATION

The initial public participation process commenced on 11th November 2013 and included the following:

10.1.1 Identification and Registration of I&APs

A detailed database containing the contact names of all registered interested and affected parties, including stakeholders, surrounding community members, ward councillors, business and community associations or organisations, and relevant state departments, has been compiled. This database will remain open for the registration of any interested and affected party during the EIA process.

A number of key stakeholders have been identified and listed in the I&APs database. These include the following:

- Limpopo Department of Economic Development, Environment and Tourism;
- Housing Development Agency;
- SAHRA;
- Eskom;
- Waterberg District Municipality
- Lephalale Local Municipality;
- SANRAL;
- DAFF;
- Sasol;
- WESSA;
- Birdlife South Africa; and
- Greater Lephalale and Steenbokpan Community

Please refer to ***Appendix 11*** for the database.

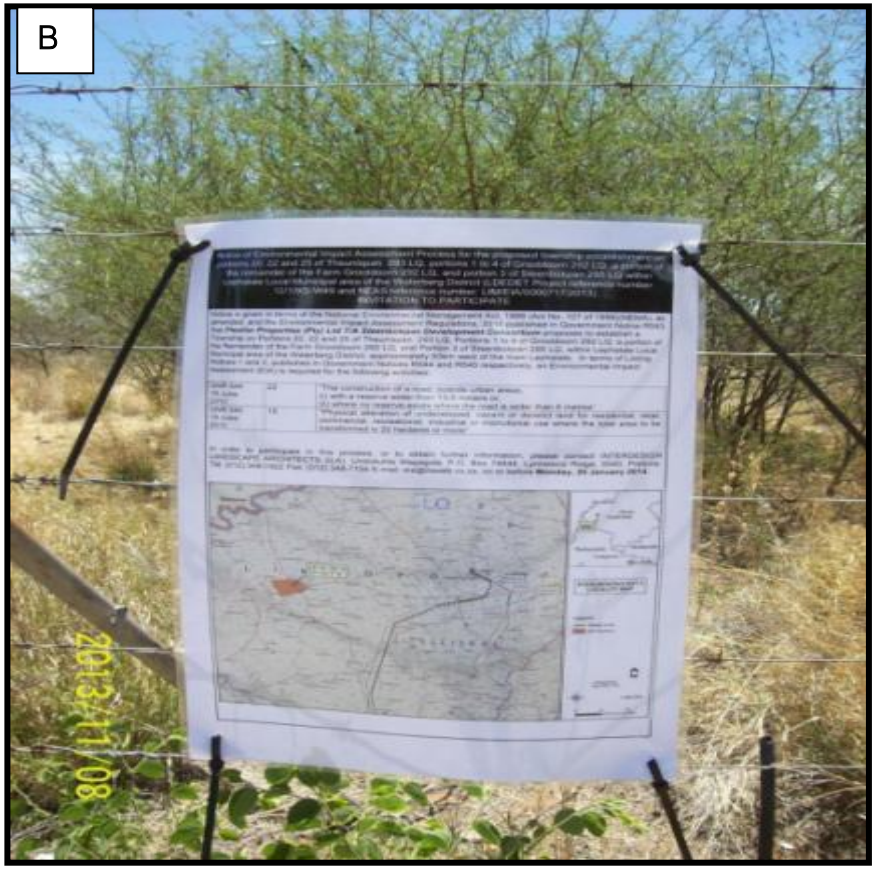
10.1.2 Newspaper Advertisements

An advertisement, notifying the public of the EIA process, inviting I&AP's to participate in the process by registering their comments with ILA (full contact details provided), and inviting the community to a public meeting, was placed in the Northern View on 8th November 2013 (refer to ***Appendix 12*** for copy of advertisement placed).

10.1.3 Site Notices

In order to notify the surrounding communities and immediate adjacent landowners of the proposed development, as well as inviting them to participate in the EIA process by registering their comments with ILA (full contact details provided), seven site notices in English were erected on 8th November 2013 at visible locations in areas surrounding the development site, as shown in ***Figure 16 A, B and C*** (refer to ***Appendix 13*** for proof of A4 copies of site notice).


A
2013/11/08


B
2013/11/08

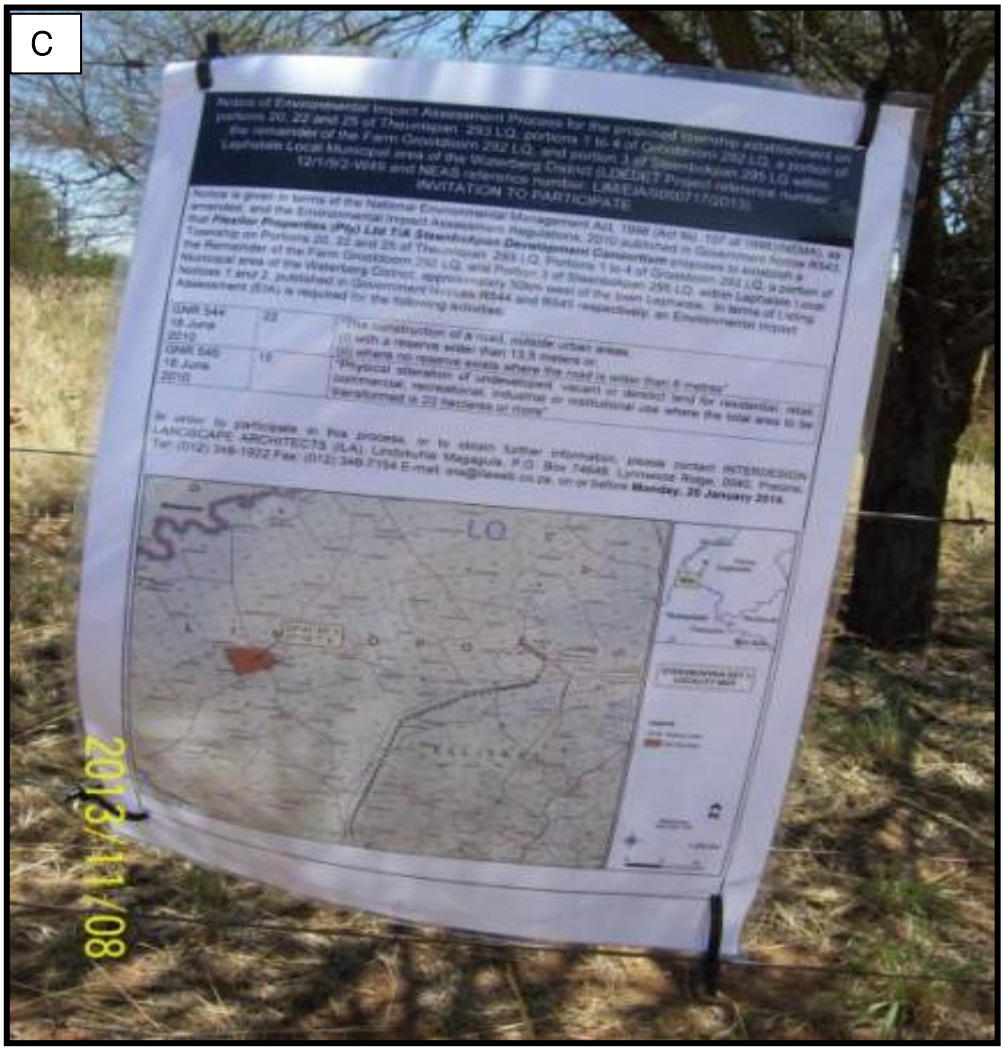


Figure 16 A,B and C: Pictures of Site Notices displayed at various locations near the development site.

Figure 26 A,B and C: Pictures of Site Notices displayed at various locations near the development site.

10.1.4 Background Information Document

A Background Information Document (BID) with a comment and registration sheet was prepared in English and Setswana and distributed to key stakeholders *(Refer to Appendix 14 for a copy of the BID, Registration sheet, acknowledgment of receipt and proofs that stakeholders were notified)*.

10.2 COMMENTS AND RESPONSE REPORT

To date, the following pertinent comments have been made below:

Table 12: Comments and Response Report following the initial public participation process

ISSUES AND COMMENTS RAISED	COMMENTATOR/S	SOURCE	RESPONSE
COMMENTS RECEIVED DURING INTIAL PUBLIC PARTICIPATION			
I refer to your letter dated 8 November 2013 and wish to inform you that Eskom Transmission is not affected by this application. For any further information please contact the writer at the above mentioned telephone number.	DLC Motsisi	Email 11/11/2013	Noted.
Request to be registered.	Mr MD Vos Neighbour	Email 26/11/2013	Added onto the database of interested and affected parties and will be kept up to date and afforded an opportunity to comment on all reports during the Environmental Assessment process.
Request to be registered.	Mr J Burger Neighbour	Email 11/11/2013	Added onto the database of interested and affected parties and will be kept up to date and afforded an opportunity to comment on all reports during the Environmental Assessment process.
None at the moment, will be furnished in due course if necessity arises.	Mr Shiko Water provision	Email 14/11/2013	Noted. Added onto the database of interested and affected parties and will be kept up to date and afforded an opportunity to comment on all reports during the Environmental Assessment process.
Has Eskom 3 power station and Boikarabelo railway been taken into consideration in design and planning? No NEMWA activities? Where will water be obtained from? What is the view of the local	Mrs L Van den Berg-Nicolai	Email 8/11/2013	Eskom has been granted authority to supply the development site with electricity. Refer to Appendix 6 for Bulk Service Report.

development forum and municipality on this development?			In the interim for Phase 1 of the development site, water will be obtained from two high yielding boreholes located on the South East section of Steenbokpan. (Refer to Appendix 6). No NEMWA activities are triggered; therefore, no waste management licence is required.
Who does this land belong to?	Mr Danny Steyn	Email 20/01/2014	The land belongs to the Genelorp Pty Ltd, East View Trading 5 Pty Ltd, C. Kuhn, Rainbow Pepper Trading 85 Pty Ltd, Basic Blue Trading 728 Pty Ltd, Prostart Traders 135 Pty Ltd. The project applicant is Flexilor Properties (PTY) Ltd T/A Steenbokpan Development Consortium.
Is the Local Lephalale Municipality (LLM) currently involved in this project?			The LLM is a registered Stakeholder and LDEDET is the Competent Authority.
Has there any other studies planned i.e. Traffic Impact Assessment (TIA), Agriculture Impact Assessment (AIA) etc.?			Studies have been conducted by specialists and have been attached as part of the report. Further studies will be conducted during the EIA Phase.
Who is doing the Town Planning? I have a map of farms but the portion 22 and 25 of Theunispan 293LQ is not shown. If I view your area map it appears to be part of portion 21 of this farm. Was there anymore sub-divisions done?			Dries De Rigger is the Townplanner We are not aware of any further sub-division of the farms. However, there is a possibility that Portion 21 is a recent sub-division.

10.3 PUBLIC REVIEW OF DRAFT SCOPING REPORT

The Draft Scoping Report will be made available for review by registered Interested and Affected Parties [I&AP's] for a 40 day period. A drop box download link of the DSR has been sent by email to all registered interested and affected parties. Hard copies of the DSR have been sent to the following stakeholders:

Table 13: DSR distribution list for stakeholders

ATTENTION	NAME OF ORGANISATION AND ADDRESS
Masungi Tshukelani	**Limpopo Economic Development, Environment and Tourism** 20 Hans Van Renesburg 19 Biccard Street Polokwane 0700 Tel: 015 290 7160
Mr M. Raphase	**Lephalale Local Municipality (Town Planning)** Cnr Joe Slovo & Douwater Avenues Onverwacht 0557
Mr L. Sole	**Waterberg District Municipality** Development Planning Harry Gwala Street Modimolle 0510
Mrs L.T Kobe	**Department of Water Affairs** Director: WMA 1 Limpopo 49 Genl Joubert Street Azmo Place POLOKWANE 0700
Ms C. Scheermeyer	**South African Heritage Resources Agency** Heritage Officer Archaeology, Palaeontology & Meteorites Unit P.O.Box 4637 Cape town 8000
Ms Nosipho Dlamini/ Mr Thapelo Mathathe	**Department Agriculture, Forestry & Fisheries** Private Bag X 2413 Makhado

	0920
Ms Claire Patterson-Abroat	**Endangered Wildlife Trust** Email: clairet@ewt.org.za
Mr J. Wessel	**Wildlife & Environment Society of South Africa** Email: info@wessanorth.co.za

In addition to the Drop Box download link that has been sent to all the registered I&APs, a hard copy of the DSR is available with the Ward Councillor for review. The Councillor can be contacted via the details below:

Name	Contact Number
Mr France Magwai	079 977 8547

10.4 FINAL SCOPING REPORT

All the comments received following the circulation of the DSR will be summarised and responded to in the comments and response table of the Final Scoping Report. The Final Scoping Report will include:

- copies of any representations, and comments received from Interested and Affected Parties;
- copies of the minutes of any meetings held by ILA with Interested and Affected Parties and other role players which record the views of the participants; and
- any responses by ILA to those representations and comments and views.

The LDEDET will then review the submitted Final Scoping Report and EIA Plan of Study as contemplated under Section 30 of the EIA Regulations, 2010.

SECTION 11: PLAN OF STUDY FOR EIA

Regulation 28 (1) (n), (o) & (p)

As required in terms of Section 28(n) of Government Notice R543, this section provides details of the methodology for the full EIA phase of this application. The plan of study for the EIA and EMPr is therefore set out below for review by the authorities and I&APs.

11.1 KEY TASKS TO BE UNDERTAKEN

Should the Final Scoping Report be approved by the LDEDET, ILA will proceed with the EIA Process, as described in the Guideline Documents 3, 4 and 5 (Gazetted by DEA) compiled by the Department of the Environmental Affairs and as per Regulations 31, 32 and 33 of the EIA Regulations 2010. Documents to be produced will comply with the requirements stipulated in the Regulations 31-33 published in Government Notice R543 under Section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended.

The main activities to be undertaken during the EIA phase are as follows:

- Take into consideration any comments from LDEDET with respect to the DSR and post EIA;
- Commission and undertake focused specialist studies on the potentially significant issues identified during the scoping phase;
- Maintain interaction and communication with stakeholders for the duration of the EIA phase;
- Integrate the findings of the detailed studies into a comprehensive and objective Environmental Impact Assessment Report (EIAR), inclusive of mitigation measures to ameliorate the effects of negative impacts and optimise positive ones;
- Prepare an Environmental Management Programme (EMPr);
- Distribute the Draft EIAR and EMPr to registered I&APs and stakeholders for review;
- Proceed and consider stakeholder review comments;
- Amend and finalise the draft EIAR and EMPr as required, incorporating review comments into a final issues and response report;
- Submit the final EIAR and EMPr to LDEDET for their consideration and decision-making; and
- Notify registered Interested and Affected Parties of the decision on the application (environmental authorisation) and of their right to appeal.

The rationale for the different levels of study for the various environmental components is taken from initial investigations by ILA and issues raised by I&APs and the expected severity of impacts. The level of information required to develop adequate, practical management and mitigation measures was also a consideration in determining the terms of reference of specialist studies.

11.2 SCOPING PHASE SPECIALIST INVESTIGATIONS

The following specialist investigations have already been conducted as part of the draft conceptual township layout design and scoping phase, and copies of these reports have been attached to this Scoping Report;

- Township layout Design by Nu Lane Architectural Drafting **(Appendix 3)**
- 1:100 year Floodline Delineation Report by WSM Leshika **(Appendix 5)**
- Bulk Services Report by Royal HaskoningDHV **(Appendix 6)**
- Geotechnical Investigation by WSM Leshika **(Appendix 7)**
- Hydrogeological Assessment by WSM Leshika **(Appendix 8)**
- Ecological Impact Assessment (Wetland, Flora and Fauna) by AGES ***(Appendix 4)***
- Heritage Impact Assessment PGS Heritage **(Appendix 10)**
- Traffic Investigations by EDS (PTY) Ltd Traffic Investigation ***(Appendix 9)***.

All the above specialist studies are detailed and in line with the requirements contemplated under Section 32 of the EIA Regulations, 2010. Therefore no further investigations on any of the above specialist studies will be conducted as part of the EIA Phase, unless if instructed by the LDEDET.

An investigation into availability and capacity of the required bulk services was conducted by Royal HaskoningDHV **(Appendix 6)**

11.3 EIA PHASE SPECIALIST INVESTIGATIONS

Other remaining specialist studies to be conducted as part of the EIA Phase include:

1. Depending on the nature of comments received during the scoping phase, a Socio-economic Impact Assessment study might be required. The purpose of this study is to investigate and assess the social and economic impacts the proposed township development will have to the rural community and how the negative impacts can be effectively mitigated.

   Stakeholder engagement and community participation is an important process of this study as it identifies the affected parties, and gives the interested and affected parties the opportunity to raise their concerns or issues in regard to the proposed development. Affected parties identified include:

   - Businesses operating in the surrounding rural settlements ; and
   - Farming Community.

   Concerns or issues raised by stakeholders and I&APs will be further investigated based on the following methodology:

   - Engage with affected persons (ward councillors, other identified community mechanisms, chamber of business, Farmer's organisations, and residents adjacent to

the proposed township development site);

- Quantify and assess impacts identified (current and anticipated impacts);
- Determine the most feasible conceptual township layout in terms of social impacts;
- Compile a Socio-Economic Impact Assessment Report for public review; and
- Suggest mitigation measures depending on the preferred township layout.

It should be noted that additional specialist studies might be requested by the LDEDET or Interested and Affected Parties following the circulation of the Draft Scoping Report.

11.4 CUMULATIVE IMPACTS

The NEMA EIA regulations require an assessment of cumulative impacts. The cumulative impacts for the proposed activity, as identified by specialists and by ILA after the assessment of risks and impacts will be included in the EIA. Preliminary cumulative impacts identified thus far can be listed as follows;

- Potential surface and groundwater pollution from the proposed sewerage system and waste disposal system;
- Loss of habitat for fauna and flora (long term impact on biodiversity); and
- Loss of the rural character of the area.

Although all specialists were required to investigate and assess all the proposed alternative township layouts, emphasis will be given on the preferred township layout during the EIA Phase.

11.5 INTEGRATION AND IMPACT ASSESSMENT

Once specialist studies and integration of findings have been undertaken, an EIAR will be prepared in accordance with Section 31 of the Environmental Impact Assessment Regulations, 2010, to cover the following:

11.5.1 Impact Identification and Assessment Method

The identification and assessment of environmental impacts is a multi-faceted process, which combines quantitative, qualitative analysis, and evaluation. It involves the application of scientific measures and professional judgement to determine the significance of environmental and social impacts associated with the proposed project.

The assessment of impacts is based on an objective Significance Assessment Methodology, which is in accordance with the Department of Environmental Affairs (DEA) Guideline Document 5: Assessment of Alternatives and Impacts (2006). This method requires the allocation of a significance rating, which is determined by multiplying probability and severity rating.

The criteria and approach that will be used to identify, describe and assess impacts during the EIA Phase, are outlined below:

11.5.2 Significance Assessment Methodology

An assessment of the significance of each of the impacts identified during the Scoping Process will be performed by means of a qualitative methodology. The above-mentioned methodology and results of the assessment are reflected in this section of the report.

In terms of the Significance Assessment Methodology, developed in accordance with the above guidelines, the significance of an impact is the product of a probability rating and a severity rating. A detailed description of the mentioned methodology follows below:

- **Significance -** is the product of probability and severity.
- **Probability -** describes the likelihood of the impact actually occurring, and is rated as follows:
  a) Improbable - Low possibility of impact to occur due to design or history. Rating: 2
  b) Probable - Distinct possibility that impact will occur. Rating: 3
  c) Highly probable - Most likely that impact will occur. Rating: 4
  d) Definite - Impact will occur regardless of any prevention measures. Rating: 5

- **Severity Rating -** is calculated from the factors allocated to intensity and duration. Intensity and duration factors are awarded to each impact, as described below.
- **Intensity Factor -** is awarded to each impact according to the following method:
  a) Low intensity - nature and/or manmade functions not affected (minor process damage or human/wildlife injury could occur. Factor 1
  b) Medium intensity - environment affected but natural and/or manmade functions and processes continue (Some process damage or human/ wildlife injury may have occurred). Factor 2
  c) High intensity-environment affected to the extent that natural and/or human-made functions are altered to the extent that it will temporarily or permanently cease (Major process damage or human/wildlife injury could occur). Factor 4

- **Duration -** duration is assessed and a factor awarded in accordance with the following:
  a) Short term - <1 to 5 years. Factor 2
  b) Medium term - 5 to 15 years. Factor 3
  c) Long term - impact will only cease after the operational life of the activity has ended, either because of natural process or by human intervention. Factor 4
  d) Permanent - mitigation, either by natural process or by human intervention, will not occur in such a way or in such a time span that the impact can be considered transient. Factor 4

- **Severity Factor -** the severity rating is obtained from calculating a severity factor, and comparing the severity factor to the rating in the table below. For example:

The Severity factor= Intensity factor X Duration factor

= 2 x 3

= 6

A severity factors of six (6) equals a severity rating of medium severity (Rating 3) as per Table 16 below:

Table XX: SEVERITY RATING

RATING	FACTOR
Low Severity (Rating 2)	Calculated values 2 to 4
Medium Severity (Rating 3)	Calculated values 5 to 8
High Severity (Rating 4)	Calculated values 9 to 12
Very High severity (Rating 5)	Calculated values 13 to 16
Severity factors below 3 indicate no impact	

- Significance Rating - is calculated by multiplying the severity rating with the probability rating. The significance rating should influence the development project as described below:

  a) Low significance (calculated Significance Rating 4 to 6)

  Positive impact and negative impacts of low significance should have no influence on the proposed development project.

  b) Medium significance (calculated Significance Rating >7 to 14)

  Positive impact: Should weigh towards a decision to continue

  Negative impact: Should be mitigated to a level where the impact would be of low significance before project can be approved.

  c) High significance (calculated Significance Rating 15 and more)

  Positive impact: Should weigh towards a decision to continue, should be enhanced in final design.

  Negative impact: Should weigh towards a decision to terminate proposal, or mitigation should be performed to reduce significance to at least low significance rating.

11.6 OBJECTIVES AND APPROACH OF THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

11.6.1 Objectives

The objectives of the EIA process are as follows;

- To identify issues/concerns that require further investigation during the Environmental Impact Assessment process;
- To inform stakeholders about the proposed activity and provide them with an opportunity to raise their concerns provide input as this contributes towards the thoroughness of the EIA process and to ensure all aspects have been considered when preparing a recommendation;
- To understand and thoroughly document the issues/concerns raised by stakeholders in such a way that delay due to misunderstanding will be prevented at all cost;
- To identify/ describe possible environmental issues associated with the construction and operational phases of proposed development and to determine the significance thereof;
- To rank environmental issues identified during the environmental scoping exercise through application of a methodology for the determination of significance, based on the Guidelines compiled by the Department of Environmental Affairs;
- To thoroughly investigate alternatives (activity, design, technology, site and lay-out alternatives;

- To assess the relevant biophysical environmental components of the site to an appropriate level of detail. This includes the physical, biological, and socio-economic components;
- To reflect all the required information/ findings in a logical and systematic way in order to assist the LDEDET with the evaluation of the proposed activity in terms of the requirements of National Environmental Management Act, 1998 (Act No. 107 of 1998)as amended; and
- To describe/ recommend specific measures/ Environmental Management Programme (EMPR) to be implemented to address significant aspects/ impacts associated with the proposed change of land use.

11.6.2 Approach

Aspects and impacts

- Cumulative impacts;
- Degree of impacts; and
- Degree to which impacts can be reversed.

These aspects and impacts will be looked into during the construction and operational phases identified during the Scoping phase and shall be extensively assessed as determined through application of a methodology, which is based on DEA (2006) Guideline 5: Assessment of Alternatives and Impacts in support of the Environmental Impact Regulations, Integrated Environmental Management Guideline Series, Department of Environmental Affairs (DEA), Pretoria (Gazetted by DEA).

Comprehensive mitigation measures informed by specialist reports as well as consultation with key stakeholders shall be included in the report as well as in the draft Environmental Management Programme.

The EIA process to be followed will furthermore:

- be open and transparent and will be maintained throughout the entire lifecycle of the EIA-process; and
- respect the democratic rights and obligations of the participants/ stakeholders.

11.7 ENVIRONMENTAL MANAGEMNT PROGRAMME (EMPr)

Following impact identification and assessment, an Environmental Management Programme (EMPr) will be complied in terms of Section 33 of the EIA Regulations, 2010 and will contain guidelines to ensure that all activities associated with the proposed development are carried out in an environmentally responsible and acceptable manner. Specific management objectives and mitigation measures will be specified for the entire duration of the development, including:

- Planning and design;
- Pre-construction and construction activities;
- Operation or undertaking of the activity;
- Rehabilitation of the environment; and
- Closure, where relevant.

The EMPr will be based on the principles of NEMA as well as the recommendations made in the EIA report, and will identify roles and responsibilities of management personnel on site. Furthermore, the EMPr will be used as a framework for environmental compliance monitoring and reporting.

11.8 EIA PHASE PUBLIC PARTICIPATION PROCESS

The approach to be followed for the public participation process during the EIA phase will be as per the requirements of Chapter 6 of the Environmental Impact Regulations published in Government Notice R543 in Government Gazette No. 33306 of 18 June 2010, under Section 24(5) of the National

Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

11.9 ON-GOING CONSULTATIONS WITH I&APS

Further consultations with key stakeholders such as local authorities, parastatals, local businesses, farmers, mining companies etc., will continue during the EIA phase in order to keep them informed of the EIA findings and proposed mitigation measures. The existing I&AP database and issues and comments report will be continuously updated throughout the EIA process.

11.9.1 Issues and Comments Report

All issues and concerns raised during the EIA phase public consultations will be captured for inclusion in the Issues and Response Report. As already categorised, the issues captured will be included into their respective categories, for example, socio-economic, biophysical etc. This is done to ensure that all issues and concerns raised by I&APs throughout the Scoping and EIA process have been effectively captured and considered in the final EIA report.

11.9.1.1 I&APs Review of Draft EIA Report

The Draft EIA Report will be made available to registered I&APs for a 40 day comment period. All comments received will be included in the Final EIA Report, which will be submitted to LLDEDET for review and issuing of a decision. In addition, registered I&APs will be notified of the outcome of the application, the reasons for the decision, and that an appeal may be lodged against the decision.

11.10 AUTHORITY REVIEW AND CONSULTATION

Further consultations with all relevant authorities will continue throughout the EIA phase. All commenting authorities will be requested to formally provide inputs into the EIA process, and these include:

- Limpopo Department of Economic Development Environment and Tourism;
- Limpopo Department of Water Affairs [DWA];
- Housing Development Agency;
- Lephalale Local Municipality; and
- WESSA;

Documents to be produced will comply with the requirements stipulated in the Regulations 31-34 published in Government Notice R543 under Section 24(5), read with Section 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

11.11 SCOPING AND EIA PROGRAMME

The table below summarises the activities and estimated timeframes of the remaining Scoping and EIA process.

ACTIVITY	ANTICIPATED DATE
SCOPING PHASE	
Make Draft Scoping Report available to I&APs for 40 days review period	25 March-21 May 2014
Finalise Scoping Report and submit to Authority [Authority review period:14 days acknowledge receipt, 30 day review]	May 2014 to June 2014

EIA PHASE	
Prepare Draft EIA Report and EMPr [3 weeks to prepare upon receipt of all info]	June to August 2014 (School and Public Holidays excluded)
Make Draft EIA Report available for review by registered Interested and Affected Parties and other stakeholders [40 day comment period]	August-September 2014
Finalise EIA Report and make available to registered Interested and Affected Parties and other stakeholders [21 day comment period]	October 2014
Finalise EIA Report and submit to Authority [Authority review period:14 day acknowledge receipt, 60 day accept / reject report, if accepted 45 day review, 2 days to issue decision]	October-November 2014
Issuing of Environmental Authorisation	December 2014

11.12 CONCLUDING REMARKS

Based on the preliminary investigations conducted to date as part of the Draft Scoping Phase, no environmental fatal flaws have been identified as a result of the proposed township development on certain portions of the Steenbokpan Extension 3. This will be further investigated and verified during the Final Scoping and EIA phase.