

# MEMORANDUM

15 November 2017

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## PROPOSED TOWNSHIP:

- Bloemhof Extension 12 on a portion of the Remaining Extent of Portion 1 and a portion of the Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein 344, Registration Division H.O., Province North West

- Spatial Planning
- Development Management
- Economic Development
- Admin & Finance

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# MEMORANDUM

## PROPOSED TOWNSHIP ESTABLISHMENT: BLOEMHOF EXTENSION 12

ON

### A PORTION OF THE REMAINING EXTENT OF PORTION 1 AND THE REMAINING EXTENT OF PORTION 26 (A PORTION OF PORTION 1) OF THE FARM KLIPFONTEIN 344, REGISTRATION DIVISION H.O., NORTH WEST PROVINCE

## CHAPTER 1: INTRODUCTION

### 1.1 INTRODUCTION

Koot Raubenheimer (ID No. 700305 5192 089) of the company Maxim Planning Solutions (Pty) Ltd (2002/017393/07) was appointed by the Lekwa-Teemane Local Municipality on 14 September 2017 to attend to the establishment of the proposed township areas of Bloemhof Extension 11, 12 and 13 comprising a total of 3570 erven to address the short term need for low income residential erven experienced in the Boitumelong/Bloemhof urban complex to alleviate the plight of landless people currently residing on vacant municipal owned land whilst similarly also addressing the short-medium term need for erven that can be utilized for middle income residential purposes. Following compilation of an integrated layout plan in respect of the entire development area, it was decided to divide the township area into three separate township areas i.e. Bloemhof Extension 11, Bloemhof Extension 12 and Bloemhof Extension 13. This division of the proposed township area into three separate township areas was deemed necessary due to the divorced location of the proposed township areas of Bloemhof Extensions 11 and Bloemhof Extension 12 and 13 to avoid confusion for inhabitants in identifying their location to especially emergency services. The division of the township area of Bloemhof Extensions 12 and 13 into two (2) separate township areas was necessary as the establishment of the proposed township area of Bloemhof Extension 12 will, together with the proposed township Bloemhof Extension 11, be funded by the Department of Local Government and Human Settlement whereas the establishment of the proposed township Bloemhof Extension 13 will be funded by the Lekwa-Teemane Local Municipality.

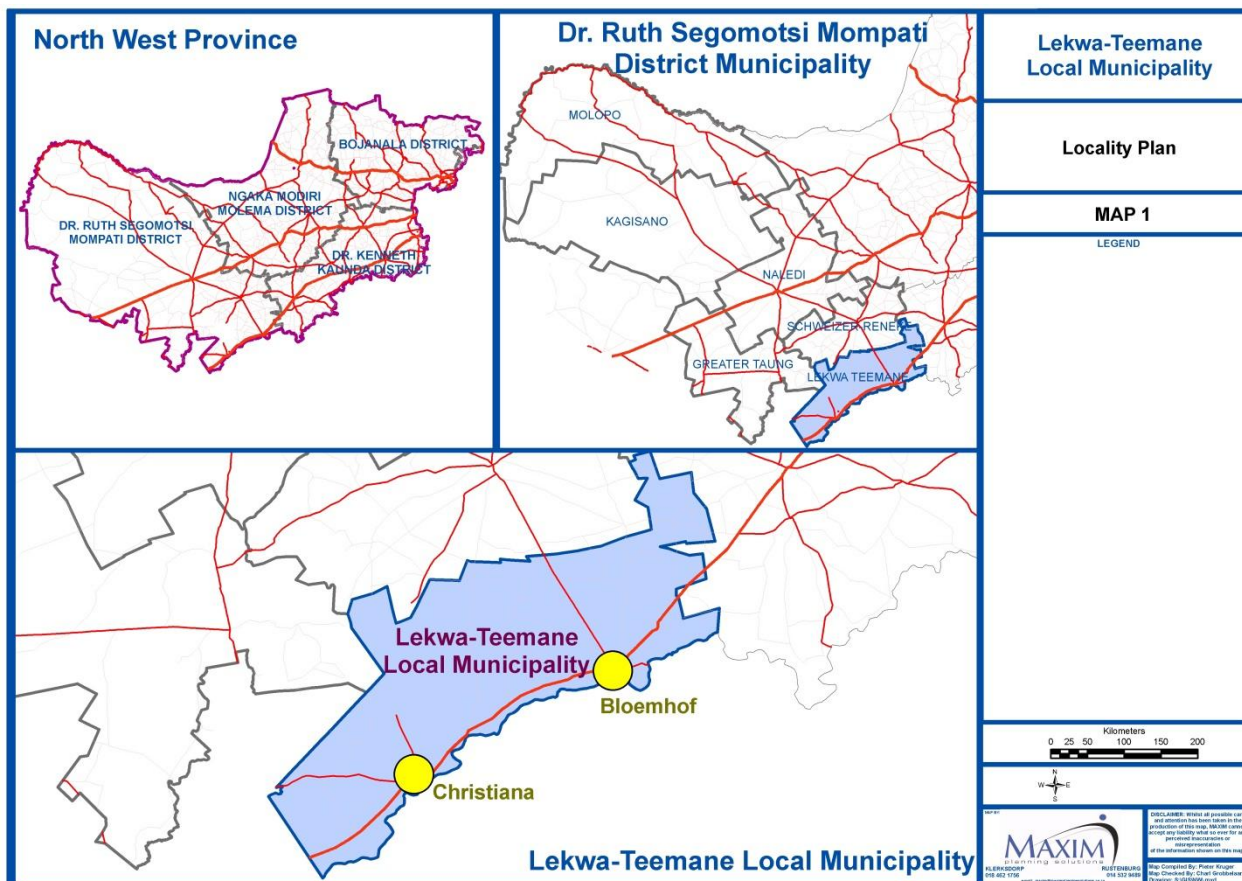
This appointment stems from a Business Plan submitted by the Lekwa-Teemane Local Municipality to the Department of Local Government and Human Settlement for financial

assistance in respect of the establishment of the proposed townships Bloemhof Extensions 11 and 12 for the purposes as detailed in the preceding paragraph.

## 1.2 BACKGROUND OF LEKWA-TEEMANE LOCAL MUNICIPALITY

### 1.2.1 REGIONAL LOCALITY

Lekwa-Teemane Local Municipality is situated in the Dr. Ruth Segomotsi Mompoti District Municipality on the southern border of the North-West Province (refer to **Map 1**) and covers an area of ±36 8038,132 ha.



**Map 1: Locality of Lekwa-Teemane Local Municipality in regional context**

The Local Municipality consists of a vast rural / commercial farming area as well as the urban areas of Bloemhof and Christiania which are situated adjacent to the N12 treasure corridor and in 2008 has a population size of approximately 48 725 people. The municipal area is subdivided in seven (7) wards.

Lekwa-Teemane has the status of a Local Municipality (NW396) in terms of the Municipal Demarcation Act of 1998, and is located in the Dr. Ruth Segomotsi Mompoti District Municipality (DC39) of the North West Province.

The Municipality forms the southern portion of the Dr. Ruth Segomotsi Mompati District Municipality and consists of the disestablished municipalities of Bloemhof and Christiana.

Lekwa-Teemane is identified as a Priority Two spending area based on its comprehensive “Medium Economic Growth Potential” and “Low Socio-Economic need”. This implies that Bloemhof and Christiana are poverty concentrated areas which show potential for future economic development. The focus in this area should be on labour intensive opportunities to address unemployment and poverty while social safety nets and access to services should be improved.

The dominated urban form centres on several residential settlements that serve the local population and agricultural and mining sector. Linkages between the settlement nodes and the rural orientated hinterland exist.

## 1.2.2 DEMOGRAPHICS

The demographic profile illustrates the trends in population and household growth as well as average income and the level of employment on a sub-place level within the local municipal area.

### 1.2.2.1 Population & Household

Table 1 below depicts the population size within the Lekwa-Teemane Local Municipality. The population size increased from 38 532 in 1996 to 53 248 in 2011. Therefore, the number of people residing in the Lekwa-Teemane Local Municipality increased by 14 716 people from 1996 to 2011. The population growth rate is 2.15%; however the municipality is still the smallest municipality within the Dr. Ruth Segomotsi Mompati District Municipality in terms of population. In interpreting the data contained in the sections below, cognizance must be taken of the fact that Wards 1 – 4 relate to the Bloemhof / Boitumelong urban complex whereas Wards 5 – 7 relate to the Christiana / Utlwanang / Geluksoord urban complex.

**Table 1: Population per ward**

WARD	POPULATION GROUP					
	Black	Coloured	Indian or Asian	White	Other	Total
Ward 1	9111	276	30	81	42	9540
Ward 2	4743	100	12	1	5	4861
Ward 3	8169	505	47	5	39	8765
Ward 4	1823	1781	104	1745	19	5472
Ward 5	8734	233	36	8	13	9024
Ward 6	3138	168	47	3500	58	6911
Ward 7	7540	863	20	220	32	8675
<b>TOTAL</b>	<b>43258</b>	<b>3926</b>	<b>296</b>	<b>5560</b>	<b>208</b>	<b>53248</b>

**Source: StatsSA, Census 2011**

In terms of the Housing Sector Plan of the Lekwa-Teemane Local Municipality, the population is estimated to increase from 53 248 in 2011 to 63 126 in 2019 entailing a population increase of 9878 over the 8 year period (refer **Table 2** below).

**Table 2: Population Projection: 2011 – 2019**

	2011	2012	2013	2014	2015	2016	201	2018	2019
Ward 1	9540	9745	9955	10169	10387	10611	10839	11072	11310
Ward 2	4861	4966	5072	5181	5293	5407	5523	5641	5763
Ward 3	8765	8953	9146	9343	9543	9749	9958	10172	10391
Ward 4	5472	5590	5710	5833	5958	6086	6217	6351	6487
Ward 5	9024	9218	9416	9619	9825	10037	10252	10473	10698
Ward 6	6911	7060	7211	7366	7525	7687	7852	8021	8193
Ward 7	8675	8862	9052	9247	9445	9649	9856	10068	10284
<b>TOTAL</b>	<b>53248</b>	<b>54393</b>	<b>55562</b>	<b>56757</b>	<b>57977</b>	<b>59224</b>	<b>60497</b>	<b>61798</b>	<b>63126</b>

In terms of the Housing Sector Plan (2014), Lekwa-Teemane Local Municipality has approximately 14 930 households, 11.5% of the total households in Dr. Ruth Segomotsi Mompati District Municipality. The majority of the household has occupancy rate of four or less members. The average household size of 3.56 is relatively low as compare to 2001 and this is due to the new RDP houses which are built within the Municipal area.

**Table 3: Household Projection: 2011 – 2019**

HOUSEHOLD PROJECTION FOR LEKWA TEEMANE						
	2014	2015	2016	2017	2018	2019
Ward 1	4234	4323	4414	4506	4601	4698
Ward 2	2230	2277	2325	2373	2423	2474
Ward 3	4091	4177	4265	4355	4446	4539
Ward 4	2999	3062	3126	3192	3259	3327
Ward 5	4323	4414	4507	4601	4698	4796
Ward 6	4205	4294	4384	4476	4570	4666
Ward 7	4167	4255	4344	4435	4528	4624
<b>TOTAL</b>	<b>26250</b>	<b>26801</b>	<b>27364</b>	<b>27938</b>	<b>28525</b>	<b>29124</b>

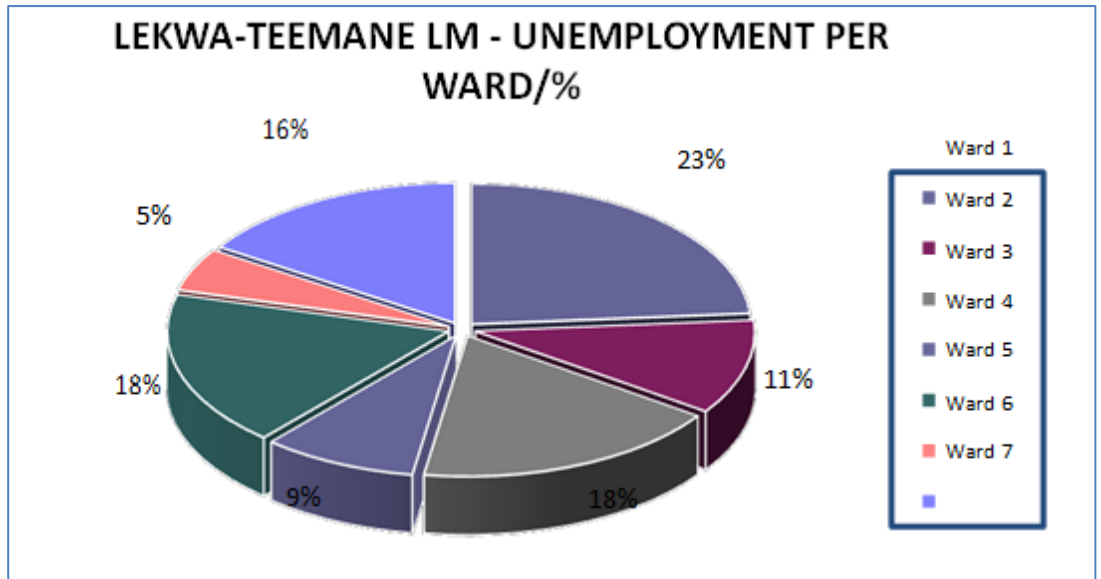
### 1.2.2.2 Level of Employment

The level of employment is an indication of employment and unemployment on a sub-place level within the municipal area.

The number of unemployed people in Lekwa-Teemane is alarmingly high, and affects the GVA (Gross Value Added – Production) of the economy. According Statistics South Africa's census 2011 the municipality's

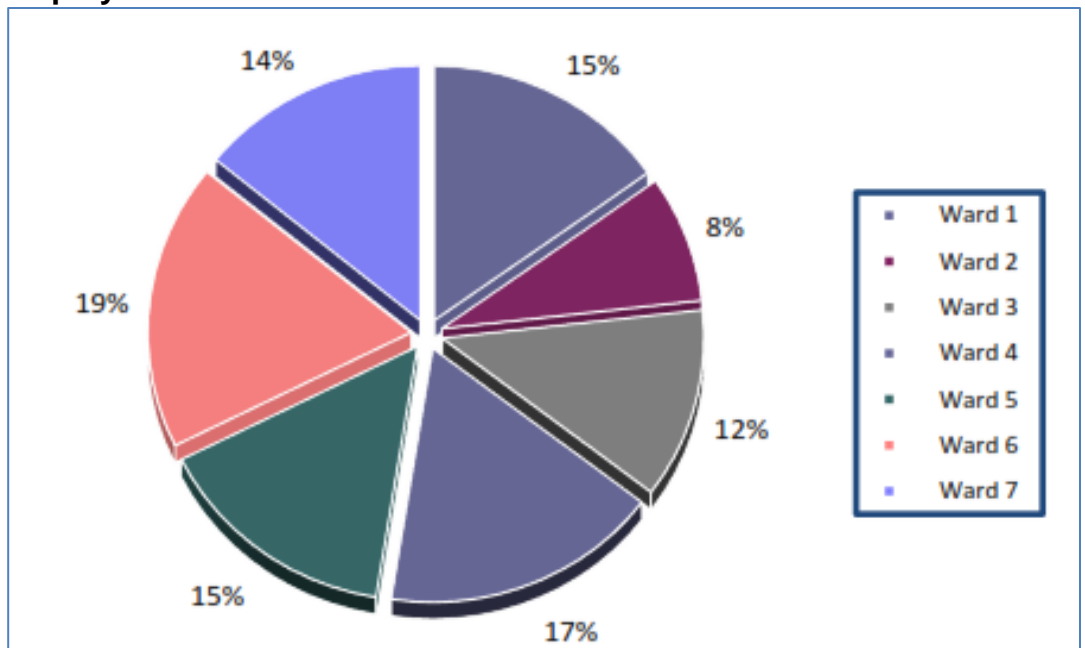
unemployment rate is estimated at 34%. This percentage is high and the municipality needs to increase job opportunities within Lekwa-Teemane.

**Figure 1: Lekwa-Teemane Local Municipality unemployment per ward (%)**



The formal sector employment depicts that the distribution of employment within Lekwa-Teemane municipal area are more or less equal throughout all the wards and that there are no significant change in the rural versus the urban areas, thus verifying that the agricultural sector is employing the majority of people.

**Figure 2: Lekwa-Teemane Local Municipality Formal Sector employment**





### 1.2.2.3 Household Income

**Table 4** below reflects that the vast majority of the population of Lekwa-Teemane falls within the lowest monthly income category and may qualify for subsidized housing. Average household income is a direct indicator of consumer demand for a broad spectrum of economic goods and services – such as housing and the quantity of additional floor space that could be sustained by a given consumer market. Average household income, to an extent, also reflects the living standard of a household, and influences aspects such as asset ownership

**Table 4: Income categories per ward in Lekwa-Teemane Local Municipality**

	LEKWA TEEMANE LOCAL		
	R 0-R3500	R3500-R7500	R7500+
Ward 1	93%	4%	3%
Ward 2	92%	5%	3%
Ward 3	96%	2%	2%
Ward 4	77%	14%	9%
Ward 5	91%	3%	6%
Ward 6	74%	15%	11%
Ward 7	93%	3%	4%

## 1.3 INTEGRATED HUMAN SETTLEMENT PLANNING

As integral part of the township establishment process, the following studies were conducted as part of the pre-planning activities:

- Contour survey conducted by TMK Professional Land Surveyors;
- Geotechnical investigation of the development area conducted by Geoset CC;
- Phase 1 Heritage Impact Assessment conducted by A Pelsers Archaeological Consulting CC;
- Detail civil engineering services investigation initially conducted by NEP Consulting Engineers;
- Environmental Impact Assessment conducted by AB Enviro-Consult; and
- Traffic Impact Study conducted by AC<sup>2</sup> (Pty) Ltd.

The results of the studies referred to above will be addressed in the respective sections of this Memorandum.

In terms of the Spatial Development Framework, the main development strategy for residential development should be based on the objectives of the Breaking New Ground Principles (BNG) for sustainable human settlements which can be summarised as follows:

- To ensure that sustainable housing development takes place.
- To integrate housing with other municipal services in order to establish sustainable human settlements, in support of spatial restructuring.
- To coordinate municipal departments in order to work together in planning and implementing.
- To promote middle and high income housing which will in turn generate resources to improve low income areas.
- To promote environmental and energy efficient housing.

## 1.4 **APPLICATION**

Koot Raubenheimer (Id No. 700305 5192 089) of the company Maxim Planning Solutions (Pty) Ltd (2002/017393/07) is hereby applying on behalf of the Lekwa-Teemane Local Municipality for the establishment of the proposed township Bloemhof Extension 12 on a portion of the Remaining Extent of Portion 1 and the Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein 344, Registration Division H.O., North West Province in terms of the provisions of Section 59(1) of the Lekwa-Teemane By-Law on Spatial Planning and Land Use Management and Section 107(1) of the Town Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986) read together with Sections 41(1) and 42(1)(a) and paragraph (g) of Schedule 1 of the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013).

## 1.5 **PUBLIC PARTICIPATION**

The application in respect of the establishment of the proposed township Bloemhof Extension 12 will be advertised in accordance with Section 98(1)(a) of the Lekwa-Teemane By-Law on Spatial Planning and Land Use Management and Section 108(1)(a), Regulation 26(1) and Annexure 16 of the Town Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986) in the Stellalander on 15 and 22 November 2017 as well as in the North West Provincial Gazette on 14 and 21 November 2017. Objectors will be afforded a period of 30 days from 15 November 2017 to submit objections or comments in respect of the proposed township area to the Municipal Manager and the authorised agent.

The application will also, in accordance with the prescriptions of Section 97(3)(b) of the Lekwa-Teemane By-Law on Spatial Planning and Land Use Management read with Section 108(1)(b) of the Town Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986) be referred to the following external organizations / departments for comments or objections:

- ✘ Department of Public Works and Roads
- ✘ Openserve (Telkom SA Limited)
- ✘ Eskom
- ✘ Dr. Ruth Segomotsi Mompati District Municipality
- ✘ Department of Minerals Resources (DMR)
- ✘ Department of Agriculture, Forestry & Fisheries (DAFF)



- ✧ Department of Water and Sanitation
- ✧ Department of Local Government and Human Settlements
- ✧ Department of Education
- ✧ Department of Health
- ✧ South African Post Office
- ✧ Transnet Freight Rail
- ✧ South African Heritage Resources Agency (SAHRA)
- ✧ South African National Roads Agency Limited (SANRAL)
- ✧ Department Rural, Environment and Agricultural Development (READ)

The fore-mentioned organizations / departments will be afforded a period of 60 days to comment in this matter in accordance with the prescriptions of Section 108 (1) of the Town Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986) read with paragraph (l) of Schedule 1 of the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013).

In addition to the fore-mentioned notices, notices will also be served on all adjacent property owners in accordance with the prescriptions of Section 99(1)(c) of the Lekwa-Teemane by-law on Spatial Planning and Land Use Management.

To ensure the greatest extent of public participation, notices will also be posted on the subject properties in accordance with the prescriptions of Section 101(1)(a) of the Lekwa-Teemane By-law on Spatial Planning and Land Use Management read with Regulation 17 of the Town Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986).

## **1.6 STUDY AREA DELINEATION**

The proposed development area comprises a portion of the Remaining Extent of Portion 1 and the Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein 344, Registration Division H.O., North West Province as described in detail in section 2.1.

## **1.7 REPORT OUTLINE**

The remainder of the report is structured in terms of the following main headings:

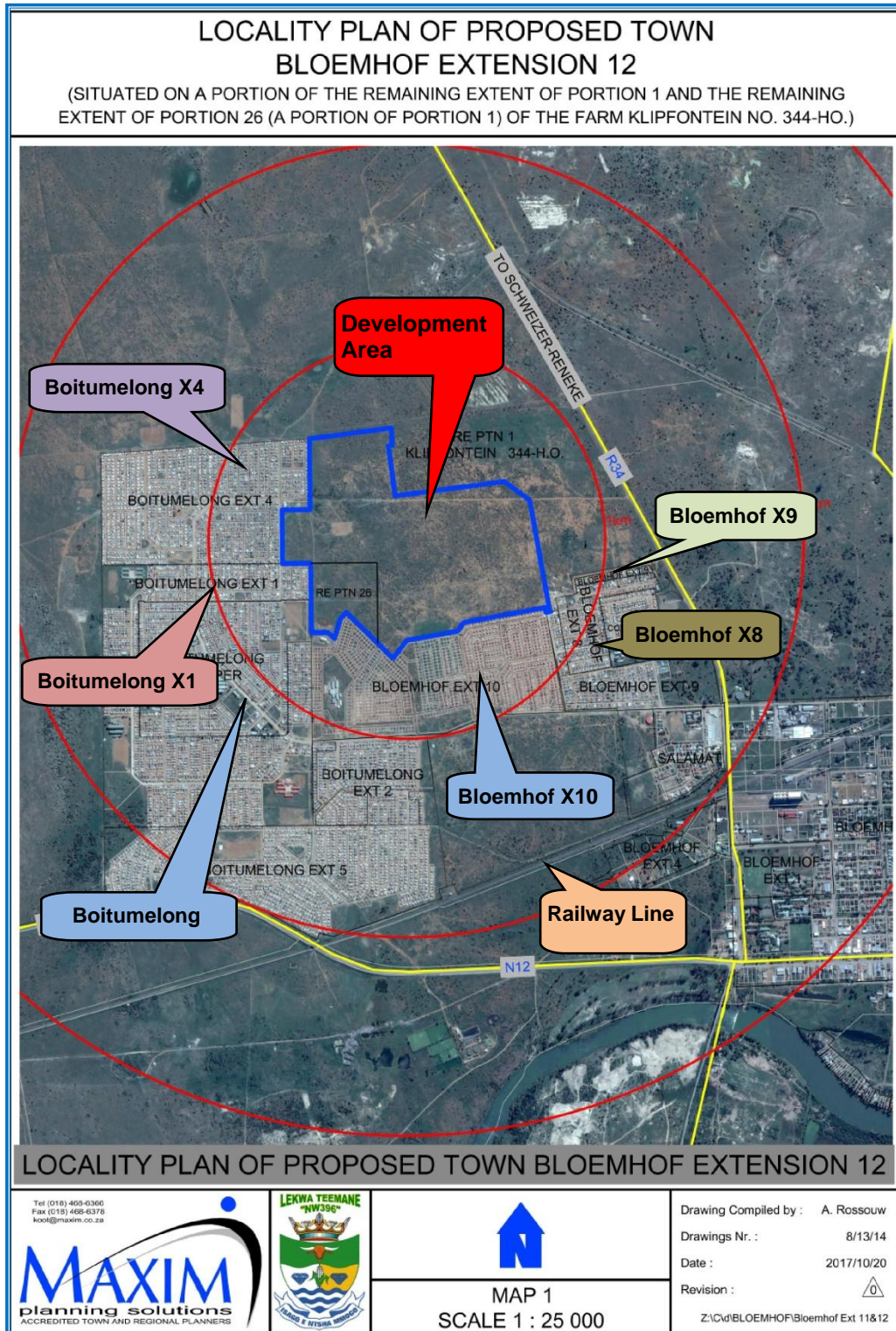
- Chapter 2: Particulars of the development area
- Chapter 3: Physical aspects
- Chapter 4: Proposed development
- Chapter 5: Provision of Engineering Services
- Chapter 6: Motivation

# CHAPTER 2: PARTICULARS OF THE DEVELOPMENT AREAS

## 2.1 LOCALITY

The proposed township is located directly adjacent and to the north of the existing township area of Bloemhof Extension 10 and is bordered to the west by the existing township area of Boitumelong and Boitumelong Extensions 1 and 4.

**Map 2: Locality of proposed development area**





The northern boundary of the proposed township area was aligned with the 9m building restriction area applicable along the Klipfontein Rural / Boitumelong 1 11kV powerline that is located along the northern boundary of the proposed township area together with the Klipfontein / Mooiplaas 1 22 kV, Klipfontein / Britten1 22 kV and Klipfontein / Diggers 1 22kV powerlines (refer **Plate 1**).



**Plate 1: View of the four (4) powerlines located adjacent to the northern boundary of the development area**

The proposed township Bloemhof Extension 12 is located on a portion of the Remaining Extent of Portion 1 and the Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein 344, Registration Division H.O., North West Province.

The proposed township area detailed above is located within the area of jurisdiction of the Lekwa-Teemane Local Municipality which in turn falls within the area of jurisdiction of the Dr. Ruth Segomotsi Mompati District Municipality.

A locality plan of the proposed township area is attached to the application for township establishment as **Annexure E**.

## 2.2 SG DIAGRAM

The Remaining Extent of Portion 1 of the farm Klipfontein 344, Registration Division H.O., North West Province is reflected on SG Diagram No. A3246/1920 (attached as **Annexure F** to the application for township establishment). The Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein 344, Registration Division H.O., Province North West is reflected on SG diagram No. A5703/1981 (attached as **Annexure F** to the application for township establishment).

## 2.3 OWNER

The Remaining Extent of Portion 1 of the farm Klipfontein 344, Registration Division H.O., North West Province is currently registered in the name of the Lekwa-Teemane Local Municipality by virtue of Crown Grant No. 47/1921 (refer **Annexure G** to the application for township establishment).

The Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein 344, Registration Division H.O., North West Province is currently also registered in the name of the Lekwa-Teemane Local Municipality by virtue of Certificate of Registered Title T44532/1982 (refer **Annexure G** to the application for township establishment).

## 2.4 AREA

The Remaining Extent of Portion 1 of the farm Klipfontein 344, Registration Division H.O., North West Province comprises a total area of 185,8692 hectares. The Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein 344, Registration Division H.O., Province North West comprises a total area of 11,1221 hectares. The proposed township area of Bloemhof Extension 12 will comprise a total area of ±96,2149 hectares.

## 2.5 EXISTING LAND USE AND ZONING

The proposed development area was until recently predominantly vacant with the exception of existing infrastructure of Eskom (refer **Plates 2 and 3**).



Plate 2: View of Development area



Plate 3: View of Eskom powerlines

According to information received from the relevant Ward Councilor, it was indicated that the development area of Bloemhof Extensions 12 and 13 has been invaded by the landless community of Boitumelong and it is estimated that in excess of 1 400 people have since informally settled on the development area.

The surrounding area is predominantly utilized for the following purposes:

The area directly west of the proposed township area comprises the township areas of Boitumelong and Boitumelong Extension 1 and 4 comprising predominantly of single dwelling units. The area directly adjacent and to the south of the proposed township area comprises the existing township areas of Bloemhof Extension 10 where subsidized housing units were recently erected (refer **Plate 4**) as well as the existing residential township area of Bloemhof Extension 8 (refer **Plate 5**).



**Plate 4: View of development in Bloemhof X10**    **Plate 5: View of development in Bloemhof X8**

The proposed township area is traversed by the Bloemhof Traction /Wildhoen Traction 1 132kV and the Stryders Traction / Bloemhof traction 1 132kV overhead power lines (as reflected on **Plates 6 and 7** below).



**Plate 6: View of powerlines (direction south)**

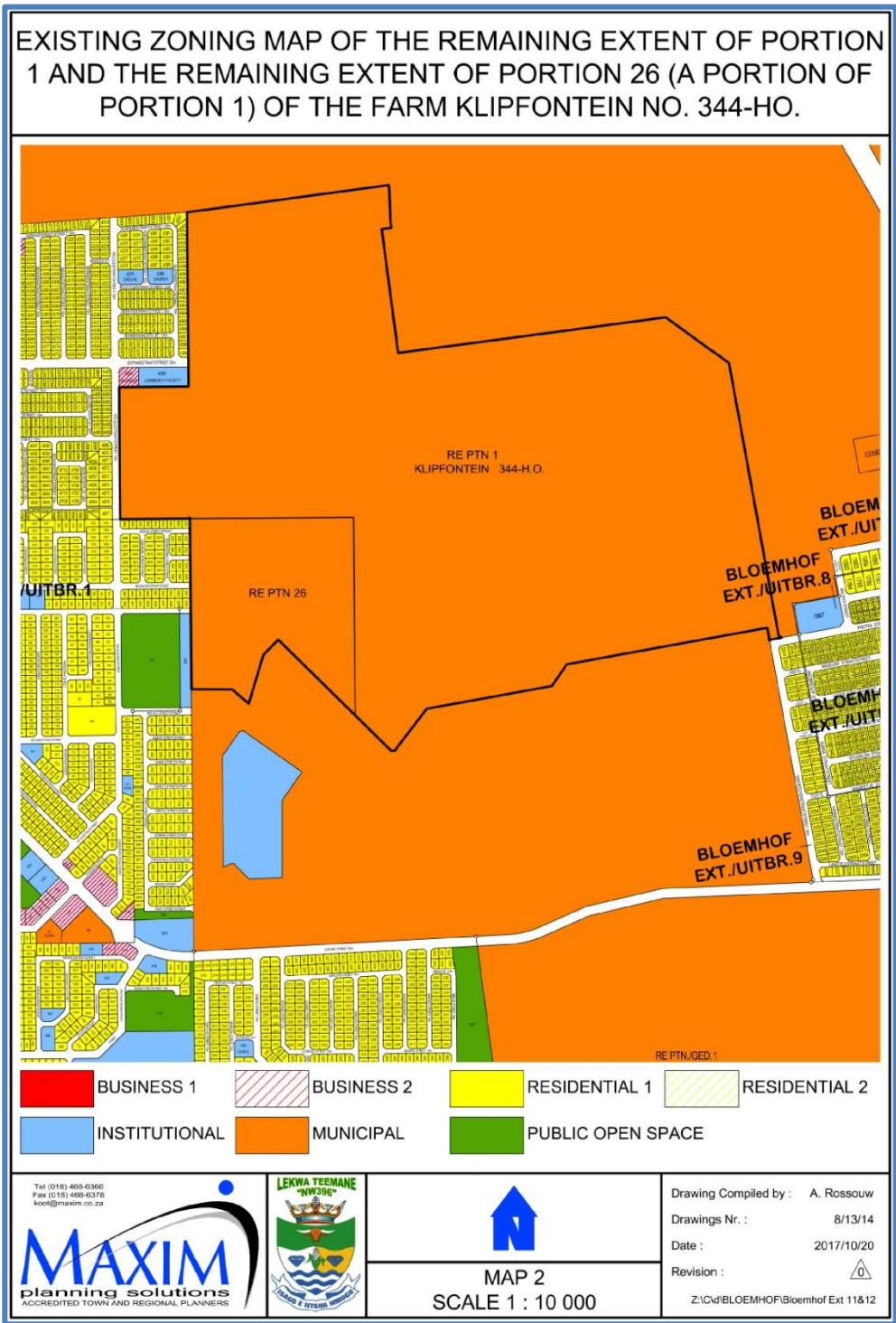
**Plate 7: View of powerlines (direction north)**



In terms of the Lekwa-Teemane Land Use Scheme, 2011 the subject properties are currently zoned as follows:

- Portion of the Remaining Extent of Portion 1 of the farm Klipfontein 344, Registration Division H.O., Province North West: "Municipal"
  - Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein 344, Registration Division H.O., Province North West: "Municipal"
- (as depicted on the following zoning map extracted from the Lekwa-Teemane Land Use Scheme, 2011).

**Map 3: Extract from the Lekwa-Teemane Land Use Scheme, 2011**



The relevant Scheme Map of the Lekwa-Teemane Land Use Scheme, 2011 is also attached to the application for township establishment as **Annexure I**.

## 2.6 MINERAL RIGHTS

According to Crown Grant No. 47/1921, the rights to minerals in respect of the Remaining Extent of Portion 1 of the farm Klipfontein 344, Registration Division H.O., North West Province have been separated from the property rights and are currently held by virtue of Certificates of Mineral Rights K6839/1998RM and K4212/2000RM (refer **Annexure G** to the application for township establishment).

According to Certificate of Registered Title T44532/1982, the rights to minerals in respect of the Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein 344, Registration Division H.O., North West Province have been separated from the property rights and are currently held by virtue of Certificate of Mineral Rights K4440/1995RM (refer **Annexure G** to the application for township establishment).

The reservation of rights to minerals is however subject to the provisions of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) that came into force on 01 May 2004. The application for township establishment will subsequently also be referred to the Department of Mineral Resources for its consent in respect of the proposed township.

## 2.7 RESTRICTIVE TITLE CONDITIONS

According to Crown Grant No. 47/1921, the Remaining Extent of Portion 1 of the farm Klipfontein 344, Registration Division H.O., North West Province is subject to the following title conditions, which will be dealt with as indicated:

***“The within property is subject to a servitude in perpetuity of the laying out of a Rifle or shooting Range in favour of the Government of the Union of S.A. measuring 73 Morgen 130 square Roods, as will appear from Notarial Deed No. 214/1921S reg. this day.”***

This condition does not affect the proposed township area due to the location thereof in relation to the proposed township area.

***“This Grant is made on the condition that no compensation or damages shall be payable by or claimable or recoverable from the Government by the Grantees or their successors in title for or in respect of any damage whatsoever that may be sustained by the said Grantees or their successors in title, through any portion of the land hereby granted being submerged as a direct result of the construction of by the Grantor at any time hereafter of a barrage in connection with any irrigation project in the Vaal River other than in respect of improvements, if any, now***

***existing which may be effected, and the Government hereby reserving the right to submerge any such land at any time it should deem fit.”***

This condition relates to the right granted to the State to erect a dam in the Vaal River. The Bloemhof Dam is located on the eastern side of the urban area of Bloemhof and the greater part of the urban area of Bloemhof will be submersed by water before said water will impact on the proposed township area. It is due to this reason that it was concluded that this condition does not affect the proposed township area due to the location of the proposed township area in relation to the Bloemhof Dam.

***“This Grant shall be subject to all conditions and stipulations contained in the Townlands Ordinance 1904 and in any amendment thereof and shall also be subject to all rights and servitudes which now affect or at any time hereafter may be found to affect the title to the land hereby transferred or to be binding on the Government of the Union of South Africa in respect of the said land as at the date hereof”.***

This condition has lapsed through repeal by virtue of the Pre-Union Statute Law Revision Act, 1967 (Act 36 of 1967).

***“This Grant is made on the further conditions that all roads already made over this land by lawful authority shall remain free and unencumbered; that the land shall be subject further to any law or statutory regulations for the time being in force and finally that the owner shall be liable to the prompt payment of such taxes as are payable according to law.”***

This condition will be transferred to all the erven in the proposed township area.

***“By virtue of Notarial Deed No. 386/65 d.d 9-5-64 the within mentioned property is subject to the right in perpetuity to***

- (a) construct an Electrical Transformer House***
- (b) convey electricity across the property***

***as will more fully appear from the said Notarial Deed”***

This servitude does not affect the proposed township area due to the location thereof in relation to the proposed township area.

***“By Notarial Deed No. 84/1970S, the right has been granted to EVKOM to convey electricity over the property hereby conveyed together with ancillary rights, and subject to conditions, as will more fully appear on reference to said Notarial Deed and diagram, grosse whereof is hereunto annexed.”***

This servitude does not affect the proposed township area due to the location thereof in relation to the proposed township area.



***“By Notarial Deed K1785/1975S, the right has been granted to EVKOM to convey electricity over the property hereby conveyed together with ancillary rights, and subject to conditions, as will more fully appear on reference to the said Notarial Deed, grosse whereof is hereunto annexed.”***

This servitude granted Eskom the general right to convey electricity over the Remaining Extent of Portion 1. The route of this servitude was determined by virtue of Notarial Deed of Servitude K1868/1977S. This servitude comprises the Bloemhof Traction / Wildhoen Traction 1 132 kV and the Stryders Traction / Bloemhof Traction 1 132 kV overhead powerlines (refer **Plates 5 and 6** above). These powerlines are located centrally within the proposed township area and traverse the development area in a north to south direction. This servitude was accommodated on the layout plan and the erven affected by this servitude will be made subject to the concerned condition.

***“Kragtens Notariële Akte No. K2963/1985S gedateer 19 September 1985 is die hierinvermelde eiendom onderhewig aan ‘n ewigdurende serwituu tgv Evkom tot ‘n stuk grond ongeveer 1,1 hektaar die reg om daarop ‘n substasie en sodanige werke op te rig as wat mag nodig wees, tesame met bykomende regte soos meer volledig sal blyk uit gemelde Notariële Akte waarvan ‘n afskrif hieraan geheg is.”***

This servitude in favour of Eskom does not affect the proposed township area due to the location thereof in relation to the proposed township area.

***“By Notarial Deed No. 2964/1985S, the right has been granted to EVKOM to convey electricity over the property hereby conveyed together with ancillary rights, and subject to conditions, as will more fully appear on reference to said Notarial Deed and diagram, grosse whereof is hereunto annexed.”***

This servitude in favour of Eskom does not affect the proposed township area due to the location thereof in relation to the proposed township area.

According to Certificate of Registered Title T44532/1982, the Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein 344, Registration Division H.O., North West Province is subject to the following title conditions, which will be dealt with as indicated:

***“A. GEDEELTE A bekend as BLOEMHOF DORPSGRONDE van die plaas KLIPFONTEIN NO. 334, Registrasie Afdeling H.O., TRANSVAAL, oorspronklik gehou onder Kroongrondbrief No. 47/1921 gedateer 24 en 27 Januarie 1921 (waarvan die eiendom hieronder gehou ‘n gedeelte uitmaak) is ONDERHEWIG aan die volgende voorwaardes -***

- (a). This Certificate is made on the condition that no compensation or damages shall be payable by or claimable or recoverable from the State by the VILLAGE COUNCIL OF BLOEMHOF or their Successors in title for***

***or in respect of any damage whatsoever that may be sustained by the said Village Council of Bloemhof or their Successors in Title, through any portion of the land held hereunder being submerged as a direct result of the construction by the State at any time hereafter of a barrage in connection with any irrigation project in the Vaal River other than in respect of improvements, if any, now existing which may be affected, and the State reserving the right to submerge any such land at any time it should deem fit.”***

This condition relates to the right granted to the State to erect a dam in the Vaal River. The Bloemhof Dam is located on the eastern side of the urban area of Bloemhof and the greater part of the urban area of Bloemhof will be submerged by water before said water will impact on the proposed township area. It is due to this reason that it was concluded that this condition does not affect the proposed township area due to the location of the proposed township area in relation to the Bloemhof Dam.

***“B. THE Remaining Extent of Portion a known as BLOEMHOF TOWNLANDS of the farm KLIPFONTEIN No. 344, Registration Division H.O., TRANSVAAL, measuring 4324,1715 Hectares (whereof the property held hereunder forms a portion) is –***

***(a) SUBJECT to Notarial Deed No. 386/1965 dated 09 MAY 1964 and registered on the 14 APRIL 1965 whereby the said property is subject to the right in perpetuity to -***

- (i) construct an Electrical Transformer House***
- (ii) convey electricity across the said property***

***in favour of ESCOM, as will more fully appear from the said Notarial Deed.”***

This servitude does not affect the proposed township area due to the location thereof in relation to the proposed township area.

***“(b). ONDERHEWIG AAN Notariële Akte Nr. 84/1970 geregistreer op 13 FEBRUARIE 1970 waarkragtens die reg aan EVKOM verleen is om elektrisiteit oor die genoemde eiendom te vervoer, tesame met bykomende regte en onderhewig aan kondisies, soos meer volledig sal blyk uit gesegde Akte.”***

This servitude does not affect the proposed township area due to the location thereof in relation to the proposed township area.

***‘C. DIE Resterende Gedeelte van Gedeelte A. groot 4321,5160 Hektaar, (waarvan die eiendom hieronder gehou ‘n gedeelte uitmaak), is***

***ONDERHEWIG aan Notariële Akte Nr. K 1785/1975-S geregistreer op 26 JUNIE 1975 waarkragtens die reg aan EVKOM verleen is om elektrisiteit oor die genoemde eiendom te vervoer, tesame met bykomende regte, en onderhewig aan voorwaardes, soos meer volledig sal blyk uit gesegde Akte.”***

This servitude granted Eskom the general right to convey electricity over the Remaining Extent of Portion 1. The route of this servitude was determined by virtue of Notarial Deed of Servitude K1868/1977S. This servitude comprises the Bloemhof Traction / Wildhoen Traction 1 132 kV and the Stryders Traction / Bloemhof Traction 1 132 kV overhead powerlines (refer **Plates 5 and 6** above). These powerlines are located centrally within the proposed township area and traverse the development area in a north to south direction. This servitude was accommodated on the layout plan and the erven affected by this servitude will be made subject to the concerned condition.

***“A. Subject further that all roads already made over this land by lawful authority shall remain free and unencumbered; that the land shall be subject further to any law or statutory regulations for the time being in force and finally that the owner shall be liable to the prompt payment of such taxes as are payable according to law.”***

This condition will be transferred to all the erven in the proposed township area.

## **2.8 SERVITUDES**

As alluded to in Section 2.7 supra, the Remaining Extent of Portion 1 and the Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein 344, Registration Division H.O., North West Province is subject to an Eskom servitude vide Servitude Diagram SG No. A4165/1975 (refer **Annexure J**)

With regard to the servitudes in favour of Eskom where ancillary rights apply, the consent of Eskom will be obtained in respect of the transfer of the erven in the proposed township area free from these servitudes.

## **2.9 LAND CLAIMS**

In order to ascertain whether a land claim has been registered in respect of the Remaining Extent of Portion 1 or the Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein 344, Registration Division H.O., North West Province, a request was submitted to the Commission on Restitution of Land Rights on 11 and 13 September 2017. In a response received from the Office of the Regional Land Claims Commissioner: North West dated 13 September 2017 (refer **Annexure H**), it was indicated as follows in respect of the Remaining Extent of Portion 1 of the farm Klipfontein 344, Registration Division H.O., Province North West:

***“We confirm that as at the date of this letter no land claim appears on our database in respect of the property. This includes the database of claims lodged by 31 December 1998; and those lodged between 1 July 2014 and 27 July 2016 in terms of the Restitution of Land Rights Amendment Act, 2014”.***

In a written response received from the Office of the Regional Land Claims Commissioner: North West dated 22 September 2017 (refer **Annexure H**), it was indicated as follows in respect of the Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein 344, Registration Division H.O., Province North West:

***“We confirm that there is an existing land claim against the property. The claim was lodged by two (2) claimants under Lekwa-Teemane and Mamusa Local Municipalities within Dr. Ruth Segomotsi Mompati District. This reflects on the database that was lodged between 1 July 2014 and 27 July 2016 in terms of the Restitution of Land Rights Amendment Act, 2014”.***

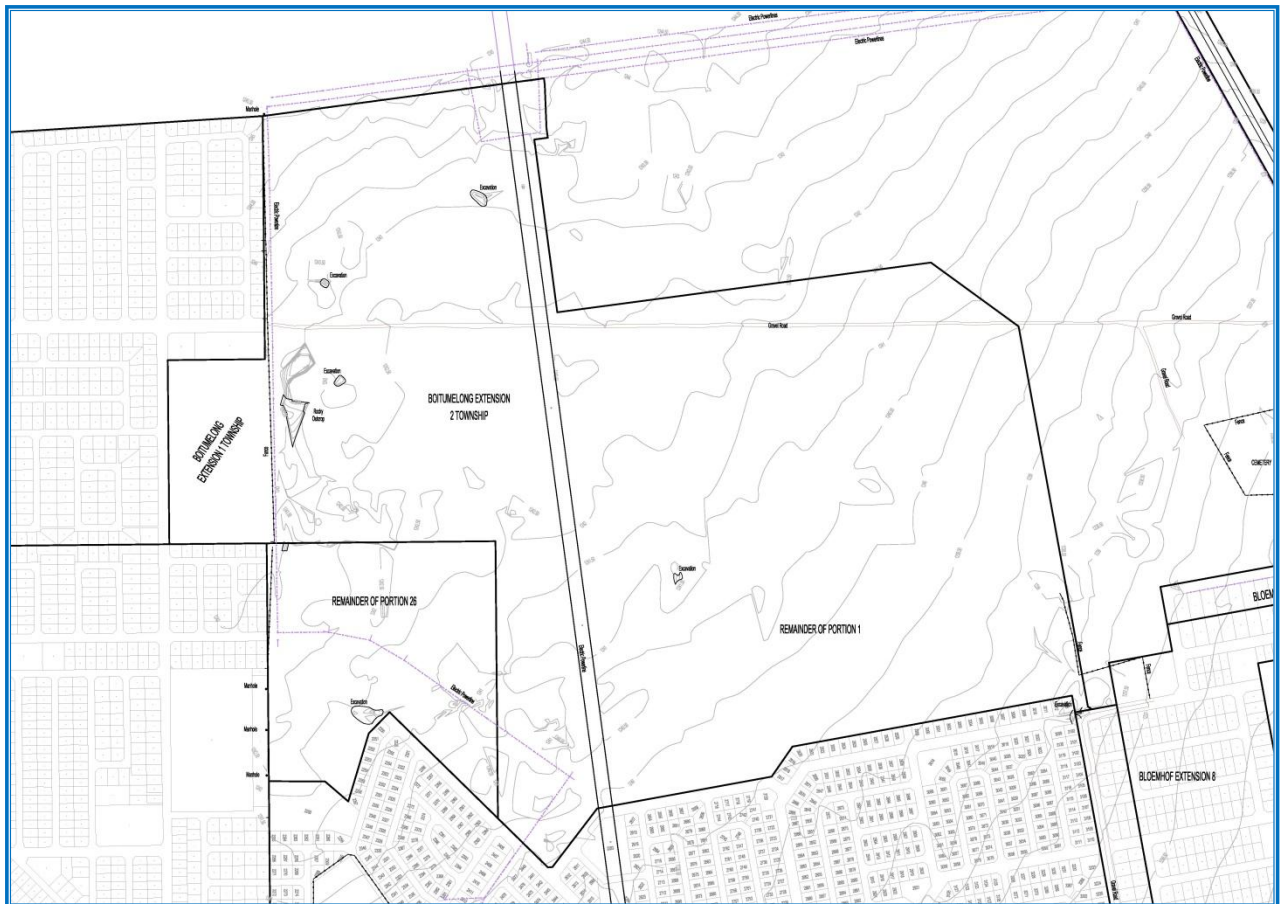
In terms of the provisions of Section 11(7)(aA) of the Restitution of Land Rights Act, 1994 (Act 22 of 1994) notice was given to the Regional land Claims Commissioner: North West on 10 October 2017 of the intention of the Lekwa-Teemane Local Municipality to utilize the Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein No. 344-HO for the purposes of the establishment of the proposed township Bloemhof Extension 12 (refer **Annexure H**).

## CHAPTER 3: PHYSICAL ASPECTS

### 3.1 TOPOGRAPHY

As part of the pre-planning studies that were conducted in respect of the development area, a contour survey of the study area was conducted by TMK Professional Land Surveyors (refer **Map 4**).

**Map 4: Results of contour survey of development area**



The proposed development area is located on a shallow slope towards the south and south-east and is situated at between 1245 metres above mean sea level (in the north-western corner of the development area) and 1238.0 metres above mean sea level (in the south-eastern corner of the development area). The proposed development area is further characterized by the following topographical features:

- Four (4) excavations located predominantly in the western portion of the development area;
- Rocky outcrop located along the western boundary of the development area;

These topographic features were successfully incorporated and accommodated in the layout plan of the township area (as will be discussed in further detail in Section 4 below).



### **3.2 CLIMATE**

The region is characterized by summer rainfall with thunderstorms, with annual low rainfall figures of 546mm at Wolmaransstad, recorded at the closest weather station to the site. Winters are dry with frost common. The warmest months are normally December and January and the coldest months are June and July.

An analysis of the data confirms a Weinert's N-Value in the order of 7,5 for Bloemhof. The mechanical disintegration of rocks will therefore not be dominant over chemical decomposition, and shallow soil horizons will be expected in areas of poor drainage, underlain by igneous rocks.

Storm water drainage and road pavement design must incorporate the climatic extremes above.

### **3.3 FRESHWATER SYSTEM / DRAINAGE**

The proposed development area is located within the Middle Vaal Water Management Area. Plate flow is the dominant drainage pattern on site and no drainage channel intersects the site. Drainage occurs in a southerly direction and then westwards towards the Vaal River.

The proposed township area is not subject to the 1:100 year floodline of any river or stream.

Special care must be taken to ensure adequate surface drainage to prevent the accumulation of water next to structures.

Storm water diversion measures such as ponding pools are recommended to control peak flows during thunderstorms.

All embankments must be adequately compacted and planted with grass to stop any excessive erosion and scouring of the landscape.

### **3.4 WETLANDS AND PANS**

As detailed in section 3.3 supra, the development area is not affected by the 1:100 year floodline of any river or stream and no wetlands or pans are present on site.

### **3.5 VEGETATION**

The area is typically characterized by Dry Cymbopogon Themeda Veld of the Pure *Grasveld veld type* (Acocks, 1988).

The site itself is covered by sparse grasslands of which some was used as agriculture land, and almost no indigenous trees are present on site. (Refer **Plates 2 and 3 above**).

### **3.6 GROUNDWATER**

Seepage and the presence of perennial fluctuations of ground water were not encountered on site, but a seasonal perched water table may exist. A ferruginised or calcified profile indicates that some perennial water level fluctuations occur.

Ground water in the form of seepage was not intersected in any test pits during the investigation, but some problems are foreseen and normal water tightening techniques such as damp course on foundation levels are required.

The expected high permeability of the silty sand may lead to leachate from sanitation systems to reach the ground water, and with the relative shallow residual rock, and a closed water borne sewage system is recommended.

### **3.7 GEOLOGY** (Extract from Geotechnical Report compiled by Geoset attached as **Annexure K** to the application for township establishment)

The site is underlain by basaltic amygdaloidal lava of the Allanridge formation, Venterdorp Supergroup. Surficial deposits include the colluvium covering the lithology.

Locally a transported layer of diamondiferous river terrace gravel was encountered on large portions of the site, which was economically mined in the past.

No dolomite occurs in the area and no stability investigation is required.

#### **3.7.1 SITE EVALUATION**

Although no seepage and the presence of perennial fluctuations of ground water were encountered on site, we expect that a seasonal perched water table may exist.

Special care must be taken to ensure adequate surface drainage to prevent the accumulation of water next to structures.

The site contains slightly to medium expansive sandy clayey soil, and foundations will need special treatment to withstand movement associated with the variable moisture content of the soil.

Minor problems regarding excavatability in excess of 1,5m can be expected on the site.

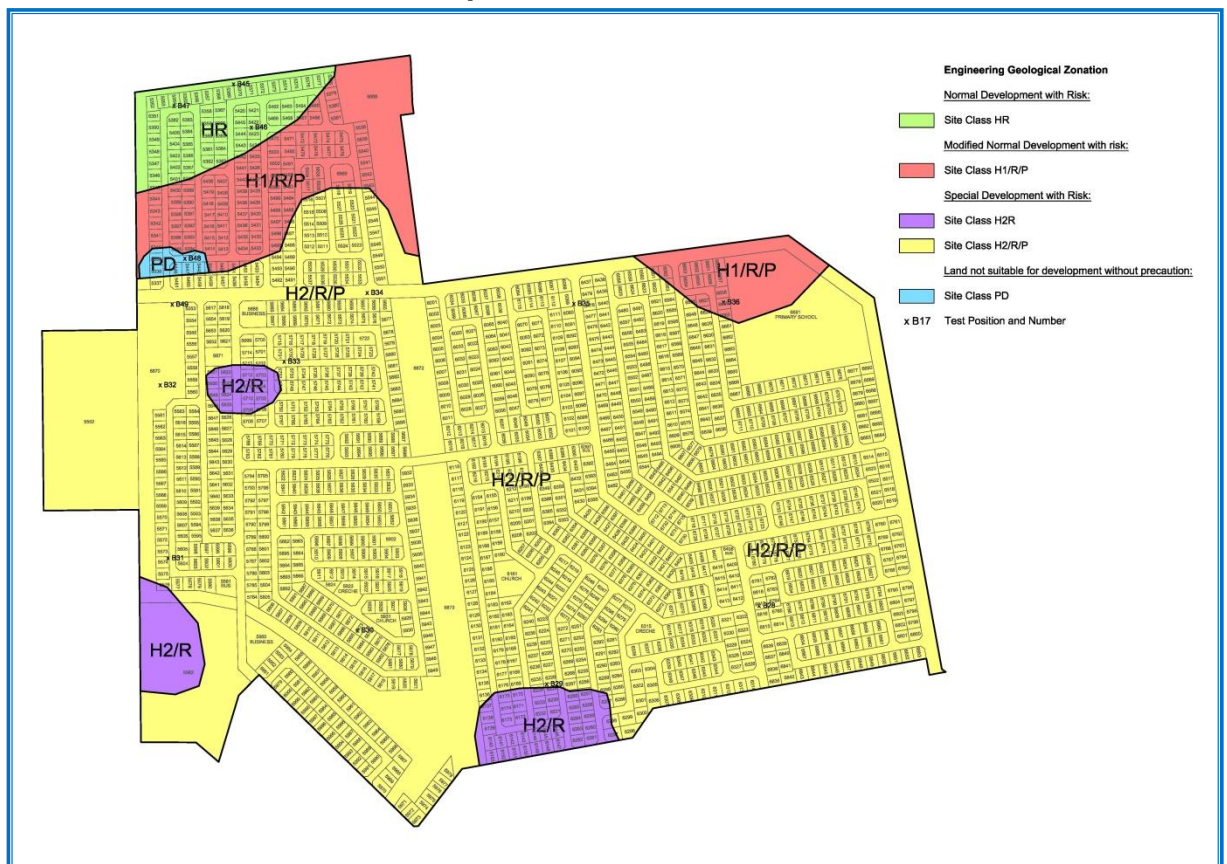
Mining activities on site and in the area were found, and evidence of gravel sieving with panning of alluvial diamonds indicated activity that left heaps of reworked gravel on the western and eastern portions of the site. This gravel can be used in landscaping but it must be properly compacted to engineer’s specification before it can be utilized as suitable material in foundations.

We also recommend a yield survey of diamond content of these gravels, and an investigation regarding the possibility that the sub surface gravel be commercially panned or sieved in order to extract any possible diamonds still present in these gravels with modern technology, even possibly as part of the landscaping process. Retaining walls as well as slope stabilization measures are recommended on all constructed embankments exceeding 1,5m.

Storm water diversion measures such as ponding pools are recommended to control peak flows during thunderstorms. All embankments must be adequately compacted and planted with grass to stop any excessive erosion and scouring of the landscape.

### 3.7.2 SITE ZONATION

In terms of the results of the geotechnical investigation, the development area was divided into the following geotechnical zones which are described in detail in this section and also reflected on **Map 5**:



**Map 5: Geotechnical Site Zonation**



**Normal Development with Risk:****Site Class HR(1C1F):**

Low or slightly expansive soil, with an expected range of less than 7,5mm of total soil movement measured at surface as heave. There is a risk that shallow rock lava, lava core stones or calcrete requires the use of pneumatic tools, a competent TLB, and even blasting, and this will increase development cost. Normal foundation construction and standard compaction techniques will be adequate, and it is classified as HR in terms of the NHBRC guidelines (1995) or the SAICE Code of practice (1995), and 1C1F by the classification for urban development (Partridge, Wood & Brink).

**Modified Normal Development:****Site Class PQ:**

Areas were identified where old quarried areas exist. Before normal construction in the quarried areas can take place, it should be upgraded by the construction of a soil raft or backfilled and recompacted by a specified engineered fill near optimum moisture content in layers not exceeding 150mm.

**Modified Normal Development with risk:****Site Class H1/R:**

This area on site is characterized by slightly to medium expansive soil exhibiting heave with an estimated total heave of up to 15mm movement measured at surface, with a small risk of shallow rock and core stones or calcrete that may be encountered. The top of the residual highly weathered lava is also classified as medium expansive. Foundations will therefore require modified normal foundation techniques with foundation solutions including split construction or soil replacement with a soil raft, where all or part of the horizon is removed and replaced with inert backfill to engineer's specification, followed by normal construction with lightly reinforced strip footings and light reinforcement (brickforce) in masonry. Site drainage and plumbing and service precautions must be used. It is classified as H1R in terms of the SAIEG & NHBRC guidelines (1995) or the SAICE Code of practice (1995) and 2C1F by the classification for urban development (Partridge, Wood & Brink).

Site Class H1/R/P: These portions on site is covered by diamondiferous gravel of alluvial origin on top of the same material classified above, and after proper landscaping including removal or levelling of these heaps of gravel even by mining or washing of these gravel for diamonds, the same foundation techniques as above can be used. It was classified as H1/R/P.

**Special Development with Risk:****Site Class H2R(2C1F):**

Medium expansive soil, with an expected range of up to 30mm of total soil movement measured at surface as heave, with a small risk of shallow rock and core stones or calcrete gravel that may be encountered. The top of the residual highly weathered lava is also classified as medium expansive. Foundations will

therefore require modified normal to special foundation techniques with foundation solutions including stiffened or cellular rafts, piled construction, split construction or soil replacement with a soil raft, where all or part of the horizon is removed and replaced with inert backfill to engineer's specification, followed by normal construction with lightly reinforced strip footings and light reinforcement (brickforce) in masonry. Site drainage and plumbing and service precautions must be used. Special foundation construction and standard compaction techniques will be required, and it is classified as H2R in terms of the NHBRC guidelines (1995) or the SAICE Code of practice (1995), and 2C1F by the classification for urban development (Partridge, Wood & Brink).

Site Class H2/R/P: These portions on site is covered by diamondiferous gravel of alluvial origin on top of the same material classified above, and after proper landscaping including removal or levelling of these heaps of gravel even by mining or washing of these gravel for diamonds, the same foundation techniques as above can be used. It was classified as H2/R/P.

### **Land not suitable for development without precaution:**

#### **Site Class PD:**

This zone represents a small area where the continuous long term leakage of the sewage system caused a marshy area and it must be repaired and properly maintained before any development can take place.

The comprehensive Geotechnical Report is attached as **Annexure L** to the application for township establishment.

## **3.7.3 FOUNDATION RECOMMENDATIONS AND SOLUTIONS**

### **Expansive soil**

#### **Site Class H (Estimated total heave of less than 7.5mm):**

Soil tested as medium expansive with a clay layer thickness of up to 0,3m from surface

#### **Normal construction:**

Minor heave requires normal construction (strip footing and slab on the ground) with site drainage and service/plumbing precautions recommended.

#### **Site Class H1 (Estimated total heave of between 7.5 and 15mm):**

Tested as medium expansive with a clay layer thickness of between 0,45 to 0,85m from surface,

or a highly expansive clay layer of between 0,3 and 0,4m in thickness from surface or a clay layer with a very high expansive potential of up to 0.3m.

#### **Modified normal:**

Lightly reinforced strip footings.

Articulation joints at all internal/external doors and openings

Light reinforcement in masonry.  
Site drainage and plumbing/service precautions.

Or soil raft:

Remove all or part of expansive horizon to 1,0m beyond the perimeter of the construction and replace with inert backfill compacted to 93% MOD AASHTO density at -1% to 2% of optimum moisture content.

Normal construction with lightly reinforced strip footings and masonry. Site drainage and plumbing/service precautions.

**Site Class H2 (Estimated total heave of between 15 and 30mm):**

Tested as medium expansive with a clay layer thickness of between 0,85 to 2,0m,

or highly expansive of between 0,4 and 0,85m in thickness measured from surface,

or a clay layer with a very high expansive potential of between 0.3 and 0.4m.

Soil raft:

See H1.

Stiffened or cellular raft:

Articulation joints or solid lightly reinforced masonry. Site drainage and plumbing/service precautions.

Piled construction:

Piled foundation with suspended floor slabs with or without ground beams. Site drainage and plumbing/service precautions.

Split construction:

Combination of reinforced brickwork/blockwork and full movement joints.  
Suspended floors or fabric reinforced ground slabs.  
Site drainage and plumbing/service precautions.

### **3.7.4 EXCAVATION CLASSIFICATION WITH RESPECT TO SERVICES**

The excavation characteristics of the different soil horizons encountered have been evaluated according to the South African Bureau of Standards standardised excavation classification for earthworks (SABS – 1200D) and earthworks (small works – SABS 1200DA). In terms of this classification and the in-situ soil/rock consistencies as profiled, the relationships given below are generally applicable.

1. “soft excavation” - very loose/very soft through to dense or stiff.
2. “intermediate excavation” - very dense/very stiff through to very soft rock.
3. “hard excavation” - soft rock or better

Some problems regarding excavatability can be expected on the site, with no outcrop and sub outcrop areas classified as hard rock excavation. The entire site was classified as soft excavation as it is easily excavated by hand, and it was classified as soft in restricted and non-restricted excavation (SANS 1200 D), but a competent TLB will be needed to reach installation depths in excess of 1,5m for services in some places, especially during the dry season.

To ensure the stability of excavations, it will need standard sidewall protection in excavations exceeding 1,5m.

### **3.7.5 CONCLUSION**

- The site is underlain by basaltic amygdaloidal lava of the Allanridge formation, Ventersdorp Supergroup, blanketed with alluvial gravel.
- We also recommend a yield survey of diamond content of these gravels, and an investigation regarding the possibility that the sub surface gravel be commercially panned or sieved in order to extract any possible diamonds still present in these gravels with modern technology, even possibly as part of the landscaping process.
- Some problems are foreseen regarding the excavatability to 1,5m depth on site.
- Zoning of the site revealed zones with constraints regarding the expansive properties of the sandy clay comprising the soil.
- The proposed mitigation measures will be sufficient to successfully address the anticipated geotechnical problems and to ensure the sustainable development as planned.
- This investigation was done to reveal the geotechnical properties on site with the techniques as described to form our opinion. Although every possible factor during the investigation was dealt with, it is possible to encounter variable local conditions. This will require the inspection of foundations by a competent person to verify expected problems.

## **3.8 ENVIRONMENTAL IMPACT ASSESSMENT**

AB Enviro-Consult was appointed to conduct an Environmental Impact Assessment in terms of sections 24 and 24(D) of the National Environmental Management Act, 1998 (Act 107 of 1998). The activity is listed in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014.

The activity that forms the subject of this application is listed in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014. The proposed development triggers the following regulations:

**Table 5: Listing details in terms of the National Environmental Management Act, 1998**

Indicate the number and date of the relevant notice:	Activity No (s) (in terms of the relevant notice) :	Describe each listed activity as per project description <sup>1</sup> :
GN.R. 327, 7 April 2017	28	Residential, mixed, retail, commercial and institutional developments where such land was used for agriculture on and after 01 April 1998 and where such development: (i) will occur inside the urban area of Bloemhof, where the total land to be developed is 235,42 hectares.
GN.R. 325, 7 April 2017	15	The clearance of 235,42 hectares of indigenous vegetation, in order to establish a township on a Portion of the Remaining Extent of Portion 1, the Remaining Extent of Portion 15 (a portion of Portion 1) and the Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein No. 344-HO, to be known as Bloemhof Extension 11, 12 and 13), North West Province.
GN.R. 324, 7 April 2017	12 (h) (iv)	Clearance of 1 560 530 000 square meters of indigenous vegetation within a critical biodiversity area (CBA 2) as identified in the NW 2009 Biodiversity Conservation Assessment (BCA). Clearance is proposed in order to establish a township on a Portion of the Remaining Extent of Portion 1, the Remaining Extent of Portion 15 (a portion of Portion 1) and the Remaining Extent of Portion 26 (a portion of Portion 1) of the farm Klipfontein No. 344-HO, to be known as Bloemhof Extension 11, 12 and 13), North West Province.

The project was registered with Department Rural, Environment and Agricultural Development on 01 November 2017 by virtue of NWP/EIA/57/2017 and the Environmental Impact Assessment Report is currently in process of finalisation following the finalisation of the public participation process and the Environmental Impact Assessment will in due course be submitted to the Department Rural, Environment and Agricultural Development (READ) for consideration.

### **3.9 CULTURAL HERITAGE AREAS**

A Pelsers Archaeological Consulting was commissioned to conduct a Cultural Heritage Resources Impact Assessment in respect of the proposed development areas. It should be noted that the Heritage Resources Impact Assessment focussed on all three

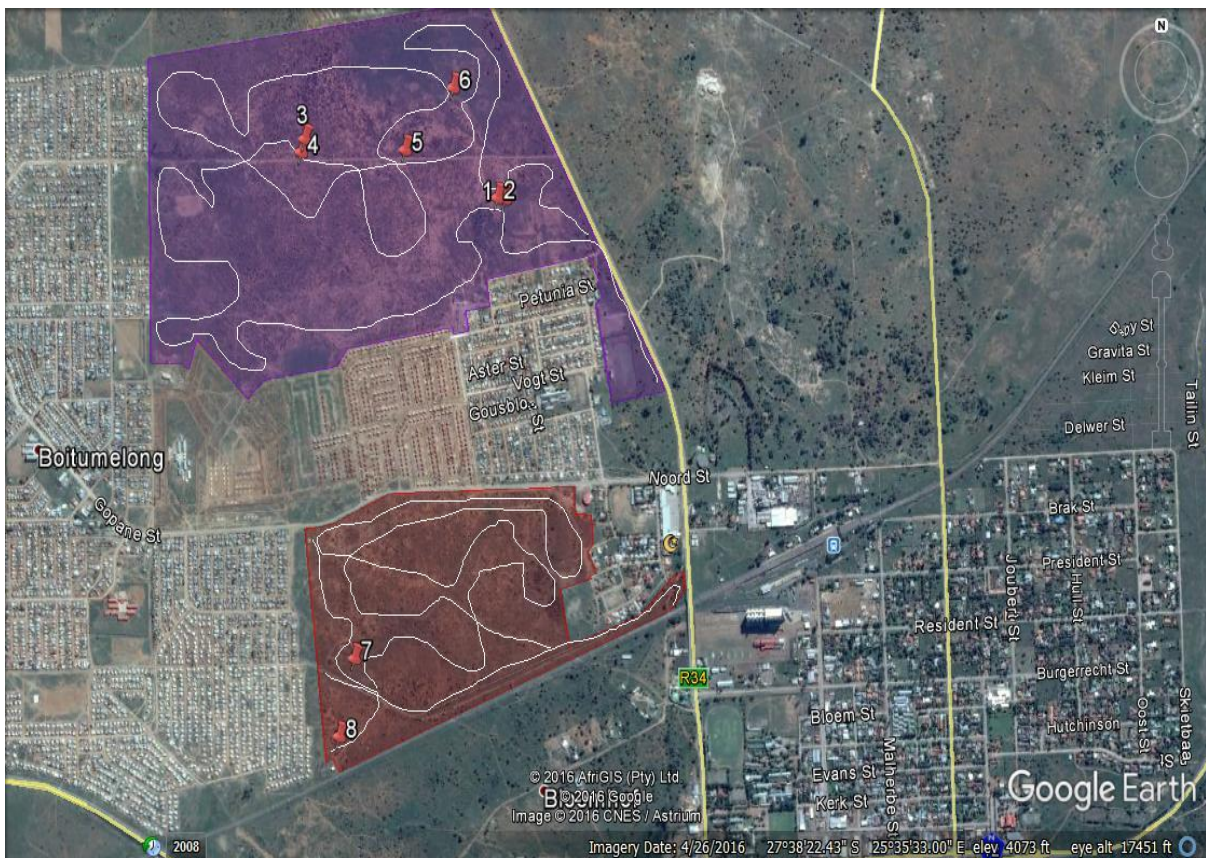


proposed township areas of Bloemhof Extensions 11, 12 and 13, as set out below. The fore-mentioned assessment contained the following results:

As part of the assessment of the area, a desktop study was undertaken to put the farm and the general geographical area in a historical and archaeological context.

A number of known cultural heritage sites (archaeological and/or historical) exist in the larger geographical area within which the study area falls. There are no known sites on the specific land parcel, although some were identified during the physical assessment undertaken.

A total of 8 sites were identified and recorded in the two areas during the January fieldwork, with 2 of these in the Extension 11 area and 6 in Extensions 12 and 13. Two (2) of the sites date to the recent historical period (Site 1 – cemetery and Site 7 – remains of old earthen-walled dams), while the bulk of the sites or finds date to the Stone Age (Sites 2-6 and Site 8). Five of the 6 Stone Age-related sites are situated in the Extensions 12 and 13 area, with many more expected to be present here. The open air Stone Age surface sites in Extensions 12 and 13 contain fairly dense scatters of stone tools located close to piles of stones (origin and function not known) and although seemingly out of context Phase 2 mitigation measures will be required. The results of the assessment are discussed in more detail below.



**Map 6: View of study areas showing sites recorded and tracks followed during assessment (Google Earth 2016).**

## **Sites 2 – 6: Stone Age Open-air Surface sites (Extensions 12 and 13) & Site 8 (Extension 11)**

The sites on Extensions 12 and 13 are all mostly close to piles of stone/stone cairns, with Stone tools (cores, flakes, scrapers, others) located around these features and sometime on top of these heaps. The origin and function of these stone cairns are unknown, but it is possible that they are the result of recent cleaning of the area and/or during the use of the area for agricultural purposes (ploughing). Although all possible find-sites on Extension 12 were not recorded it is clear that these areas of clearing with stone heaps cover a fairly extensive area in Extensions 12 and 13, that the Stone Age presence in the area is fairly significant.

***It is therefore recommended that Phase 2 mitigation is undertaken before any development commences. This will include detailed mapping of the areas, as well as the sampling of representative material from these sites to determine exactly the time-frame of Stone Age presence in and utilization of the area. Site 8 in the Extension 11 study area is not as extensive as the others in Extension 12, and although some individual tools were also identified at Site 7 (old dams) it is believed that the mitigation work on the Extensions 12 and 13 Stone Age sites will be representative for the Stone Age presence in this area.***

### **Site 1 - Cemetery**

This is the site of a large communal cemetery of recent age and is still being utilized. Parts of it are overgrown and it is not properly fenced. The graves here are more than likely not older than 60 years of age, but the site is still of High Significance and should not be negatively impacted by any development. It is recommended that the site be kept intact and cleaned and fenced in and managed as part of the proposed development of Extension 13.

**GPS Location of Site 1:** S27.63298 E25.58836

**Cultural Significance:** High.

**Heritage Significance:** Grade III: Other heritage resources of local importance and therefore worthy of conservation.

**Field Ratings:** Local Grade IIIB: Should be included in the heritage register and may be mitigated.

**Mitigation:** Fence-in, clean and manage as part of the development and avoid any impact on the cemetery and graves. The other option is to exhume and relocate after extensive consultation with the community and the obtaining of permissions to undertake the relocation of the cemetery and the graves contained in it.





**Plate 8: View of a part of the Site 1 Cemetery.**



**Map 7: Aerial view of Site 1 Cemetery location and extent (Google Earth 2016).**

**Sites 2 – 6: Stone Age Open-air Surface sites (Extension 12) & Site 8 (Extension 11)**

The sites on Extension 12 are all mostly close to piles of stone/stone cairns, with Stone tools (cores, flakes, scrapers, others) located around these features and sometime on top of these heaps. The origin and function of these stone cairns are unknown, but it is possible that they are the result of recent cleaning of the area and/or during the use of the area for agricultural purposes (ploughing). Although all possible find-sites on Extension 12 were not recorded it is clear that these areas of clearing with stone heaps



cover a fairly extensive area (refer **Map 8** below) and that the Stone Age presence in the area is fairly significant.

*It is therefore recommended that Phase 2 mitigation is undertaken before any development commences. This will include detailed mapping of the areas, as well as the sampling of representative material from these sites to determine exactly the time-frame of Stone Age presence in and utilization of the area. Site 8 in the Extension 11 study area is not as extensive as the others in Extension 12, and although some individual tools were also identified at Site 7 (old dams) it is believed that the mitigation work on the Extension 12 Stone Age sites will be representative for the Stone Age presence in this area.*

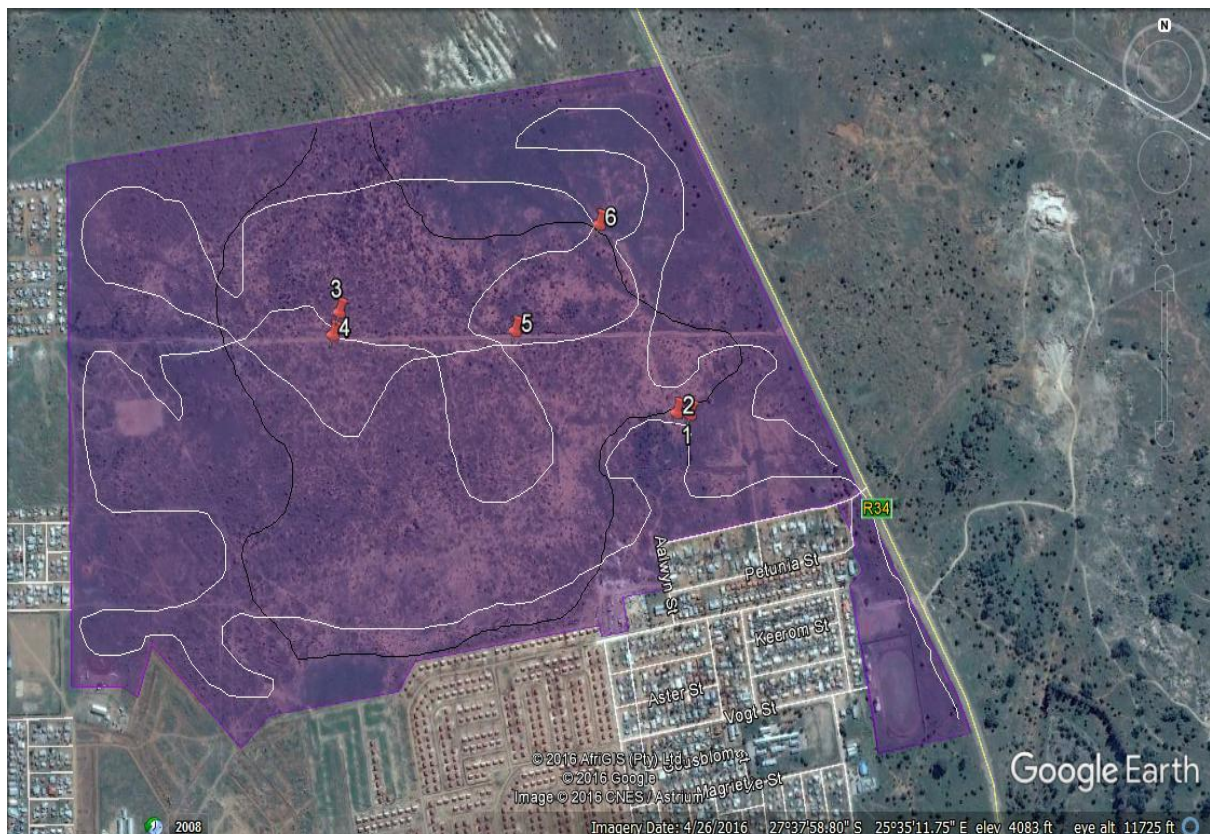
**GPS Locations of Sites:** S27.63629 E25.58807 (2); S27.63126 E27.58043 (3); S27.63166 E27.58031 (4); S27.63160 E25.58437 (5); S27.62981 E25.58636 (6) & S27.64875 E25.58177 (8)

**Cultural Significance:** Medium to High

**Heritage Significance:** Grade III: Other heritage resources of local importance and therefore worthy of conservation.

**Field Ratings:** General protection A (IV A): Site should be mitigated before destruction (High/Medium significance).

**Mitigation:** Detailed mapping of Stone Age sites in Extension 12 area before development commences, as well sampling of representative Stone Age material.



**Map 8: Aerial view of Extension 12 area showing tracks followed and Sites found. Sites 2 – 6 is the Stone Age site locations, with the area marked in black indicating the possible extent of Stone Age finds. Open areas and areas with visible stone heaps are located here (Google Earth 2016).**





Plate 9: Some stone tools found at Site 1.



Plate 10: View of Site 2 showing one of the stone heaps found at most of these sites.



Plate 11: Another of the sites with stone visible.



Plate 12: More stone tools from the heaps Extension 12 area



Plate 13: Another of the areas where these stone heaps are located. Stone tools are found on top of & all around these heaps.



Plate 14: Stone tools from Site 6



It should be noted that although all efforts were made to cover the total area and therefore to identify all possible sites or features of cultural (archaeological and/or historical) heritage origin and significance, that there is always the possibility of something being missed. The fairly dense grass cover also made visibility in some sections difficult. This aspect should be kept in mind when development work commences and if any sites (incl. graves) are identified then an expert should be called in to investigate and recommend on the best way forward.

The Heritage Resources Impact Assessment concluded as follows:

***“From a cultural heritage point of view the development can therefore continue, taking cognizance of the above recommendations”***

## CHAPTER 4: PROPOSED DEVELOPMENT

### 4.1 LAND USES

The intention of the township applicant i.e. the Lekwa-Teemane Local Municipality is to utilize the concerned property for the establishment of the proposed township area of Bloemhof Extension 12. The primary aim of the township area is to address the urgent need experience by the Lekwa-Teemane Local Municipality in the Bloemhof/Boitumelong urban complex for vacant residential erven that can be utilized for low income / subsidized housing. In accordance with the policy guidelines contained in the Breaking New Ground (BNG) Principles it is indicated that new residential township areas should focus on the establishment of integrated human settlements focussing on the provision of erven not only for subsidized/low income households but also addressing the need for other housing typologies such as rental housing, social housing, bonded housing and FLISP projects. During the compilation of the integrated layout plan in respect of the development areas that were identified, the need was identified to also provide erven for bonded and middle income housing purposes. It was subsequently decided to allocate the portion of the integrated layout plan comprising the Bloemhof Extension 11 township area to the provision of larger erven (on average 620,4m<sup>2</sup>) that can be utilized for bonded / middle income housing purposes. The remainder of the integrated layout plan comprising the proposed township areas of Bloemhof Extension 12 and 13 will address the subsidized housing, rental housing and social housing typologies thereby ensuring that an integrated human settlement is established.

The layout plan of the proposed township Bloemhof Extension 12 makes provision for the following land uses:

**Table 6: Bloemhof Extension 12 proposed land uses**

Use Zone	Proposed Land Use	Number of erven	Area in hectares	% of area
Residential 1	Dwelling house (average stand size 355,85m <sup>2</sup> )	1519	54,0535	56,18%
Residential 2 (Density: 80 dwelling units per hectare; Height: 3 storeys)	Dwelling units for CRU or Social Housing purposes	2	6,9217	7,19%
Business 1	Shops	5	0,6002	0,62%
Institutional	Primary School	1	3,2095	3,34%
	Church	2	0,3766	0,39%
	Crèche	2	0,2964	0,31%
Public Open Space	Parks	6	10,8812	11,31%
Existing public roads	Streets		19,8758	20,66%
<b>Total</b>		<b>1537</b>	<b>96,2149</b>	<b>100%</b>



The following should be noted in respect of the land uses mentioned above:

- **Residential 1**

The layout plan makes provision for 1519 residential erven with an average stand size of 355,85m<sup>2</sup>. These erven will be alienated on a full title basis.

The proposed “Residential 1” erven will be subject to the following development restrictions as imposed in terms of the Lekwa-Teemane Land Use Scheme, 2011:

- Maximum Height: 2 storeys
- Coverage: 60%
- Building line: Street boundary – 3m  
Other boundaries – 2m along any two boundaries if required for the installation of services.

- **Residential 2**

The layout plan makes provision for two (2) “Residential 2” erven that can be utilized for higher density residential development either in the form of Community Residential Units (CRU’s) or Social Housing. Based on the density proposed for the two (2) erven, it was calculated that the erven can provide for 245 and 308 dwelling units respectively. These units will be rented out to the inhabitants thereof in accordance with the relevant housing programme of Government applicable to the type of housing provided

The proposed “Residential 2” erven will be subject to the following development restrictions as imposed in terms of the Lekwa-Teemane Land Use Scheme, 2011:

- Maximum density: 80 dwelling units per hectare
- Maximum Height: 3 storeys
- Coverage: 50%
- Building line: Street boundary – 8m  
Other boundaries – 2m along any two boundaries if required for the installation of services.

- **Business 1**

The layout plan incorporates five (5) erven that can be utilized for business purposes and same were positioned centrally within the development area and adjacent to the main collector roads to limit walking distances whilst also ensuring easy accessibility to these facilities.

The proposed “Business 1” erven will be subject to the following development restrictions as imposed in terms of the Lekwa-Teemane Land Use Scheme, 2011:

- Maximum Height: 2 storeys
- Coverage: 70%

- Building line: Street boundary – 0m  
Other boundaries – 2m along any two boundaries if required for the installation of services
- **Institutional**  
The erven provided for a primary school, churches and crèches were also positioned in such a manner to limit walking distance to these facilities.

The proposed “Institutional” erven will be subject to the following development restrictions as imposed in terms of the Lekwa-Teemane Land Use Scheme, 2011:

- Maximum Height: 2 storeys
- Coverage: 70%
- Building line: Street boundary – 5m  
Other boundaries – 2m along any two boundaries if required for the installation of services
- **Public Open Space**  
The six (6) public open space erven provided as part of this development will primarily accommodate the areas where excavations are present as well as the rocky outcrop area. The powerline servitude comprising the Bloemhof Traction / Wildhoen Traction 1 132 kV and the Stryders Traction / Bloemhof Traction 1 132 kV overhead powerlines (refer **Plates 6 and 7** above) traverses the central portion of the development area and this servitude was accommodated on the layout plan in three (3) public open space erven. The fore-mentioned powerlines traverse the proposed township area in a north to south direction.

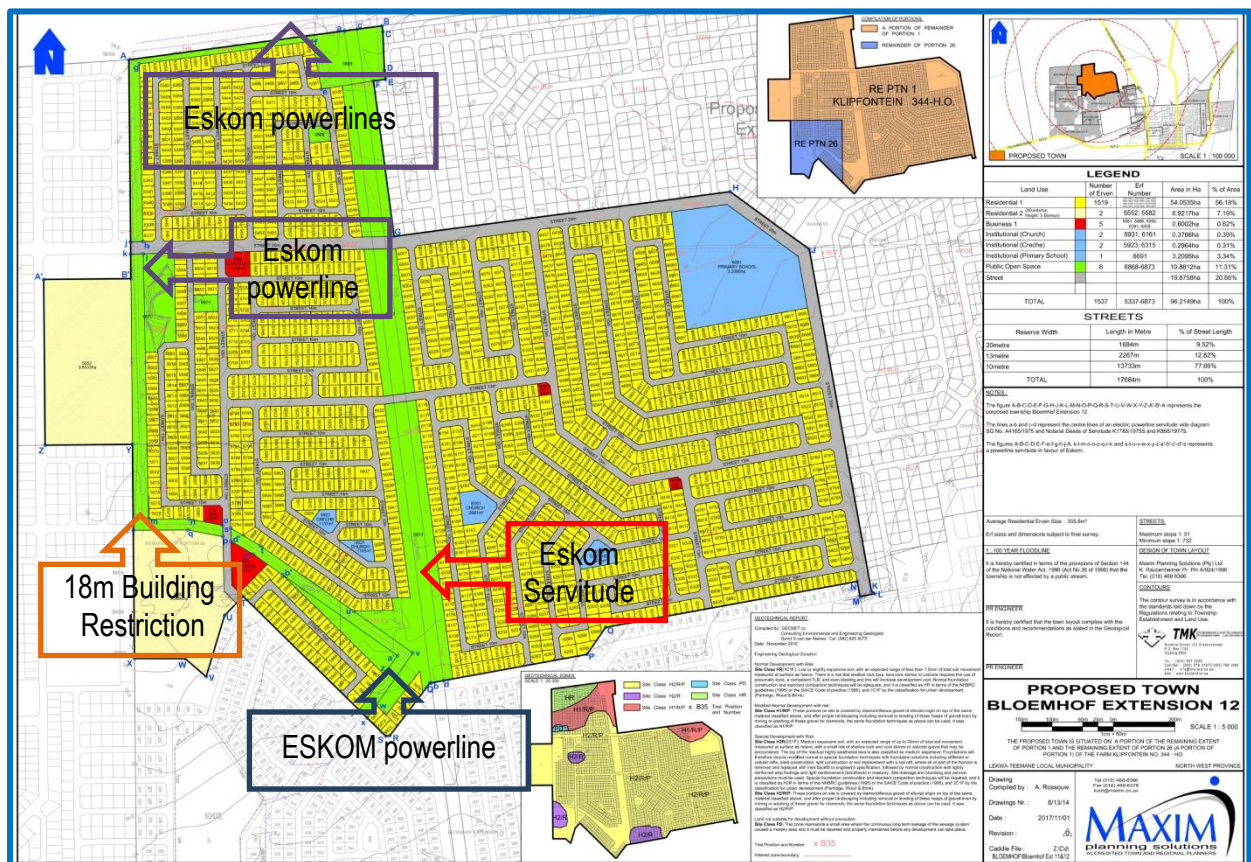
The proposed township area is also affected by the existing Klipfontein Rural / Boitumelong 1 11kV powerline. This line is currently not protected by a servitude and same will be addressed in the Conditions of Establishment. It should however be noted that this powerline was accommodated in the layout plan of the township area within a 18m buildings restriction area (9m from centre of powerline) and this servitude was accommodated in three (3) public open space erven in the proposed township area.

**Annexure W** to the application for township establishment contains a list of the erven in the proposed township area and the areas of each erf as contemplated in terms of paragraph 3(i) of Schedule 6 of the Lekwa-Teemane By-Law on Spatial Planning and Land Use Management.

## **4.2 FACTORS INFLUENCING THE LAYOUT PLAN**

The layout plan of the proposed township area of Bloemhof Extension 12 was influenced by the following factors:

- ✦ Aligning the northern boundary of the proposed township area with the 9m building restriction area applicable along the Klipfontein Rural / Boitumelong 1 11 kV overhead powerline;
- ✦ Accommodating the Eskom powerline servitude vide diagram SG No. A4165/1975 with a servitude width of 15,5m from the centre line of the powerlines within three (3) public open space erven;
- ✦ Accommodation the Klipfontein Rural / Boitumelong 1 11 kV overhead powerline located along the western boundary of the development area with a building restriction of 18m along the entire length of the powerline. This powerline originates in the township area of Bloemhof Extension 10 from where it runs in a general north-westerly direction and then all along the western boundary of the proposed township area. This powerline will be addressed in the Conditions of Establishment and will be protected by a servitude created on the General Plan of the township area.
- ✦ Accommodating the existing quarry areas and rocky outcrop area within the public open space erven provided in the proposed township area;
- ✦ Aligning the street network of the proposed township area with the street network of the adjacent township areas of Boitumelong Extension 4 and Bloemhof Extension 10;
- ✦ The topographic feature encountered on site were accommodated on the layout plan;
- ✦ The street network of the township was designed in such a manner to enhance stormwater drainage on this very flat development area;



Map 9: Locality of physical features that affected the layout plan

### 4.3 ACCESS

Access to the proposed township area of Bloemhof Extension 12 will primarily be provided from the existing street network of the adjacent township areas of Boitumelong Extension 4 and Bloemhof Extension 10. The proposed township area will also link with Provincial Road P12-1 (R34) (Bloemhof – Schweizer Reneke road) through the proposed township area of Bloemhof Extension 13.

The street network adopted for the proposed township area comprises a network of 20m, 16m, 13m and 10m streets and were designed to ensure proper surface stormwater drainage.

In order to assess the impact of the proposed township area on the surrounding road network, AC<sup>2</sup> (Pty) Ltd was commissioned to conduct a Traffic Impact Assessment in respect of the proposed township areas of Bloemhof Extensions 11, 12 and 13. The results of the Traffic Impact Study can be summarized as follows:

- **Intersection of R34 and Noord/Kismet Street (Note: Kismet merges with Gopane Street just north of Salamat)**

The observations made relating to the area in the direct vicinity of the intersection include:

- The R34 falls under jurisdiction of Northwest Province Roads, although Noord Street remain under the jurisdiction of the local municipality,
- The locality of the intersection and the surroundings are presented in **Map 10**.
- The intersection is priority controlled with free flow along the R34,
- Deceleration lanes are provided to accommodate left turning traffic from the R34 to Noord Street and Kismet Street. Acceleration left-turning lanes from Noord Street and Kismet Street onto the R34 are provided,
- No dedicated pedestrian crossing is provided at the intersection,
- The speed limit is 60km/h within the influence area of the intersection,
- From the grade, separated rail crossing to the south of the intersection one lane per direction is provided with a paved shoulder of 2.5m. After the acceleration lanes to the north of the intersection the road taper to one lane per direction with a 0.5m paved shoulder.
- The lane configuration in the direct vicinity of the proposed access to the R34 from Bloemhof Ext. 13 is presented in **Map 11**. The proposed access point is situated 1.5km to the north of the existing intersection of the R34 and Noord/Kismet Street.
- The set speed limit in the direct vicinity of the proposed new access point along the R34 is 80km/h.





**Map 10: Geometric Configuration of the intersection of the R34 and Noord/Kismet Street**



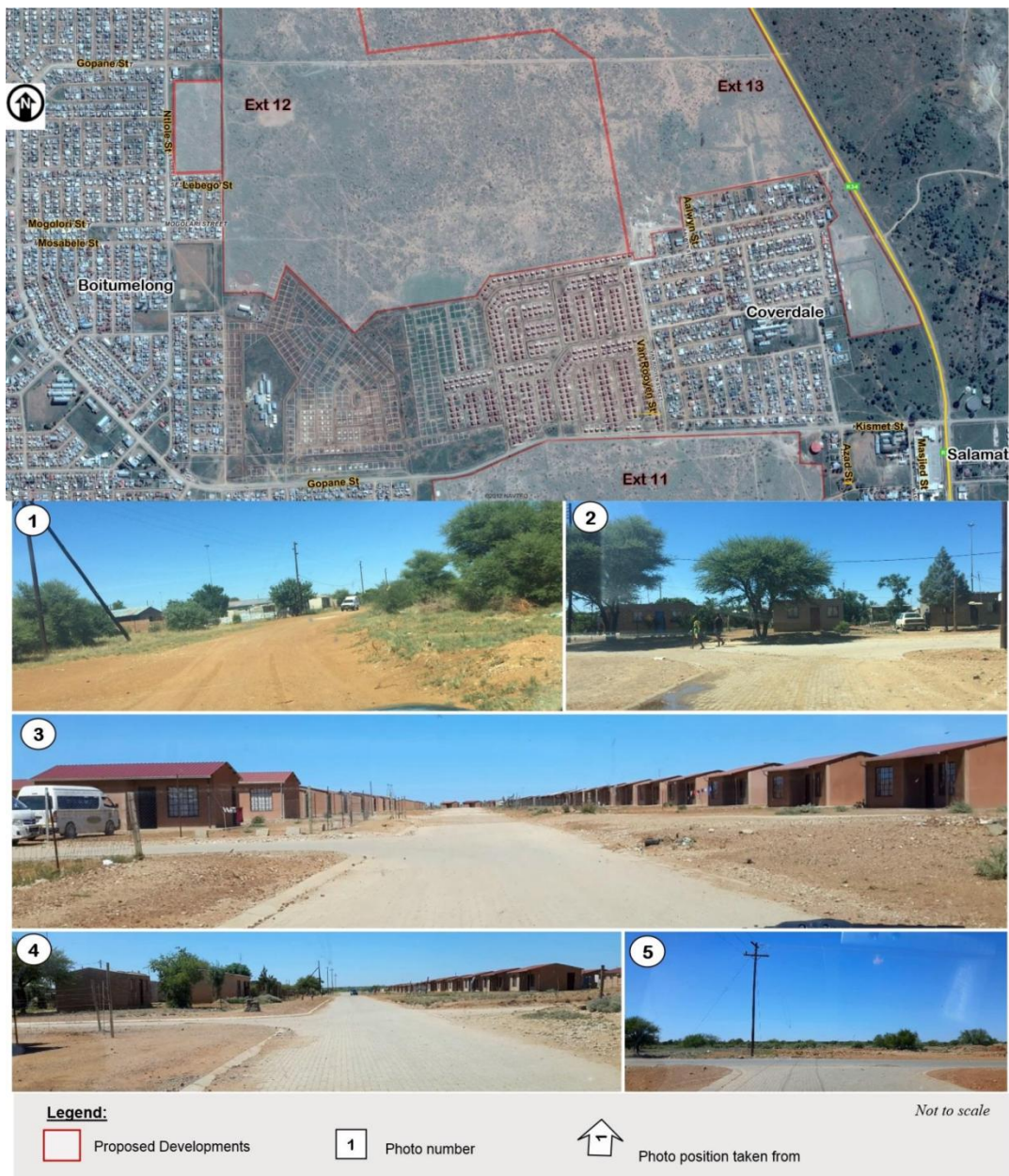
**Map 11: Existing Geometric Configuration of the proposed access to Bloemhof Extension 13**



• **Roads providing access from Bloemhof Ext 12 and 13 to Kismet Street**

Several roads provide access from the proposed Bloemhof Ext 12 and 13 to Kismet Street. The street environment of selected roads is presented in **Map 12**. The observations made during the site visit relating to the area in the direct vicinity of these roads include:

- The existing road along the northern boundary of Coverdale is a gravel road;
- All other roads are paved with block paving providing one lane (3.0m wide) per direction,
- No pedestrian walkways are provided,
- Road signage are lacking throughout the existing developments.

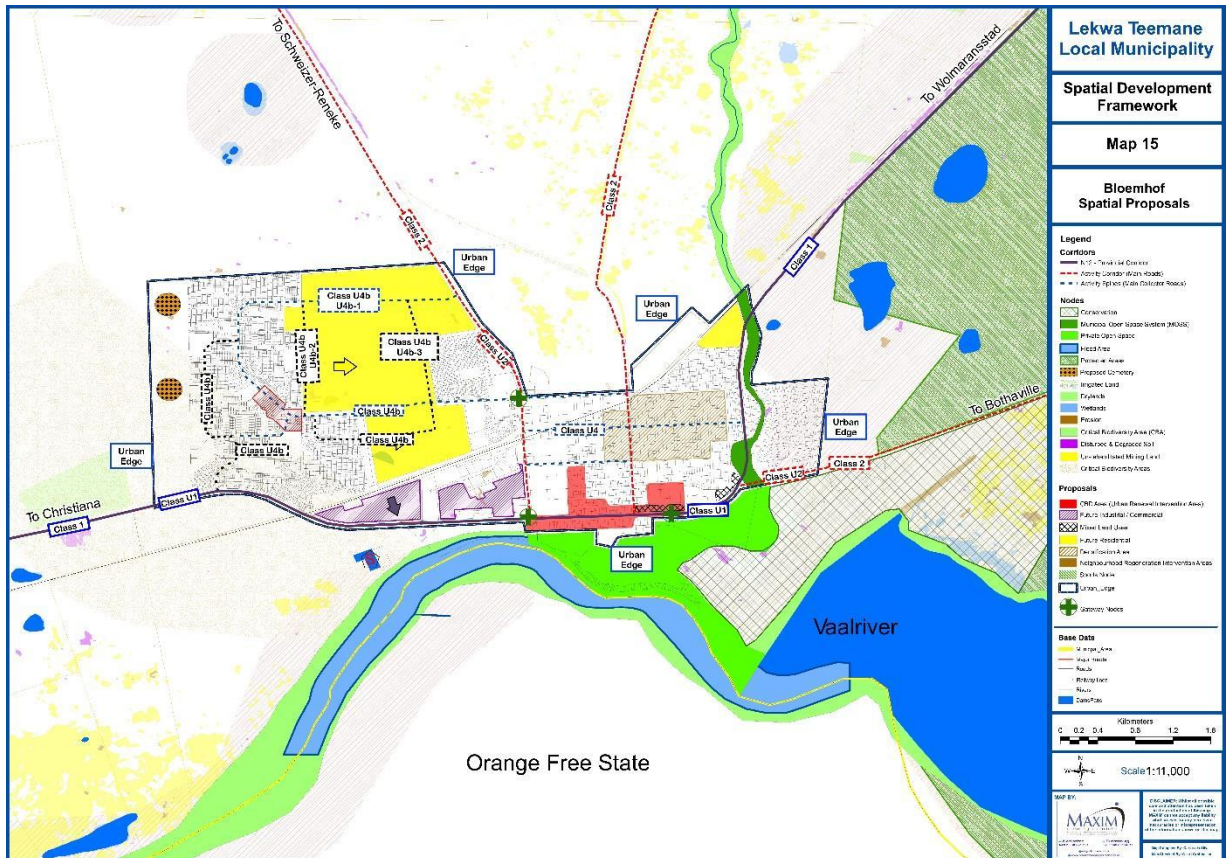


**Map 12: Existing configuration of roads providing access from Bloemhof Ext 12 and 13 to Kismet Street**

**Road Classification**

Based on the above road network classification system used in South Africa (COTO, 2012), the roads within the study area are classified as follows:

- Class U2 Roads: R 34 from Bloemhof urban edge to intersection with N12;
- Class U4b Roads: Kismet Street, New road (U4b-1) providing link from Bloemhof Ext 13 to the R34 and Noord Street; Two new roads (U4b-2, U4b-3) linking road U4b-1 with Kismet Street (Refer to **Map13**)



**Map 13: High Level Road Classification for Bloemhof**

**Trip Generation**

The estimated number of new trips that will be generated from the proposed developments are 246 per peak hour in total and apportioned per development phase:

- Bloemhof Extension 11 – 41 during the AM and PM peak hour;
- Bloemhof Extension 12 - 69 during the AM and PM peak hour;
- Bloemhof Extension 13 - 136 during the AM and PM peak hour.



- **Capacity Analysis**

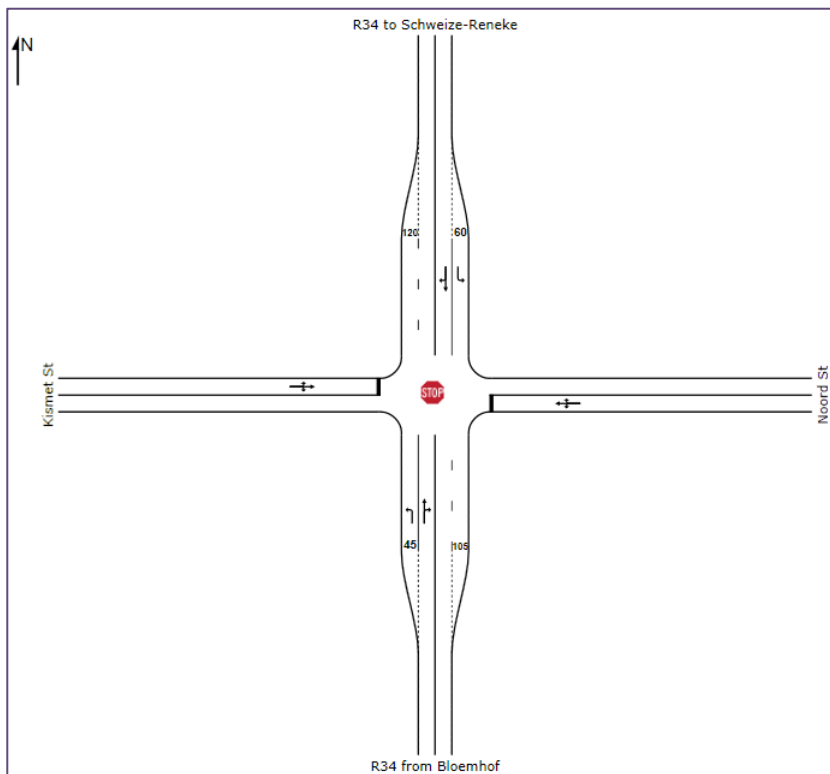
The intersections of the R34 and Kismet/Noord Street and the proposed new access road(U4b-1) to Bloemhof Ext 13 and the R34 form part of the capacity analysis. Both intersections are priority controlled with free flow along the R34. The capacity analysis was done for the base year 2017 and the 2022 horizon year without and with development traffic.

- **Intersection R23 and Kismet- / Noord Street**

The following comments are relevant to the analysis of the 4-legged priority controlled intersection with free-flow along R34 of the R34 and Kismet-/Noord Street. **Figure 3** shows the existing geometric layout of the intersection. **Table 7** shows a summary of the capacity analysis results for all scenarios.

The summary of the capacity analysis is:

- The 2017 with and without development analysis result in acceptable LOS for the AM and PM peak hours. No capacity upgrade is recommended for the 2017 scenarios.
- The 2022 Horizon and Total Traffic Demand scenarios yield acceptable level of service, during the AM and PM peak hour. No capacity upgrade is recommended for the 2022 scenarios.



**Figure 3: Intersection Configuration of R34 and Kismet-/Noord Street**



**Table 7: Capacity Analysis Results of the R34 and Kismet-/Noord Street Intersection**

AM Peak Hour	Two-Way Stop			Two-Way								
	Stop 2017 AM Peak			2017 AM Peak Total Demand			2022 AM Peak			2022 AM Peak Total Demand		
Approach	v/c	Average Delay (s)	LOS	v/c	Average Delay (s)	LOS	v/c	Average Delay (s)	LOS	v/c	Average Delay (s)	LOS
Southern App. R34	0.06	2.71	LOS NA	0.06	3.01	LOS NA	0.06	2.97	LOS NA	0.07	3.23	LOS NA
Eastern App. Noord St	0.04	8.72	LOS A	0.04	8.87	LOS A	0.04	8.74	LOS A	0.05	8.88	LOS A
Northern App R34	0.06	0.90	LOS NA	0.06	1.04	LOS NA	0.06	1.01	LOS NA	0.06	1.16	LOS NA
Western App Kismet St	0.31	12.12	LOS B	0.44	14.03	LOS B	0.38	13.36	LOS B	0.54	15.69	LOS C
<b>All Vehicles</b>	<b>0.31</b>	<b>5.80</b>	<b>LOS NA</b>	<b>0.45</b>	<b>7.34</b>	<b>LOS NA</b>	<b>0.39</b>	<b>6.72</b>	<b>LOS NA</b>	<b>0.54</b>	<b>8.39</b>	<b>LOS NA</b>

**PM Peak Hour**

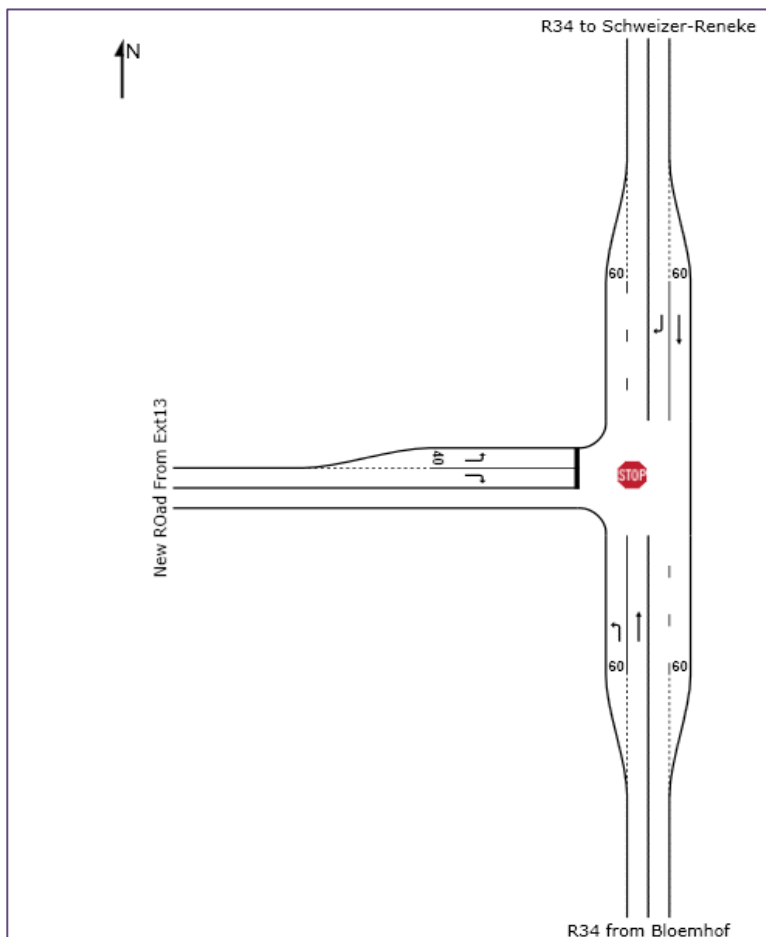
Approach	2017 PM Peak			2022 PM Peak			Total Demand PM Peak			2022 PM Peak Total Demand		
	v/c	Average Delay (s)	LOS	v/c	Average Delay (s)	LOS	v/c	Average Delay (s)	LOS	v/c	Average Delay (s)	LOS
Southern App. R34	0.07	3.09	LOS NA	0.09	3.66	LOS NA	0.07	3.36	LOS NA	0.11	3.82	LOS NA
Eastern App. Noord St	0.01	8.94	LOS A	0.01	9.24	LOS A	0.01	8.98	LOS A	0.02	9.27	LOS A
Northern App R34	0.06	0.97	LOS NA	0.06	1.39	LOS NA	0.06	1.10	LOS NA	0.06	1.54	LOS NA
Western App Kismet St	0.08	10.97	LOS B	0.14	11.68	LOS B	0.10	11.274	LOS B	0.17	12.02	LOS B
<b>All Vehicles</b>	<b>0.08</b>	<b>3.53</b>	<b>LOS NA</b>	<b>0.14</b>	<b>4.48</b>	<b>LOS NA</b>	<b>0.10</b>	<b>3.94</b>	<b>LOS NA</b>	<b>0.17</b>	<b>4.78</b>	<b>LOS NA</b>

o **Intersection of R34 and proposed access road to Bloemhof Ext 13**

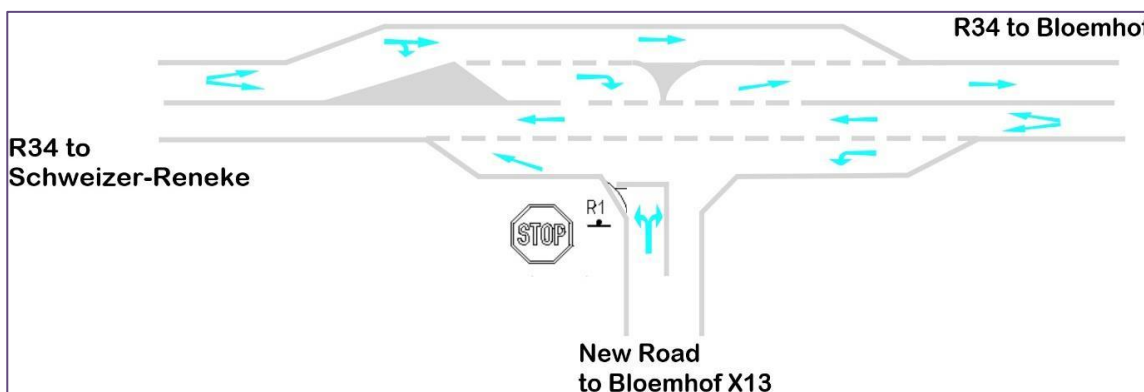
The following comments are relevant to the analysis of the 3-legged priority controlled intersection with free flow along the R34. **Figure 4** shows the proposed geometric layout of the intersection. **Table 8** shows a summary of the capacity analysis results for all scenarios based on the proposed concept intersection configuration presented in **Figure 5**.

The summary of the capacity analysis is:

- The 2017 with and without development analysis result in acceptable LOS for the AM and PM peak hours. No capacity upgrade is recommended for the 2017 scenarios.
- The 2022 Horizon and Total Traffic Demand scenarios yield acceptable level of service, during the AM and PM peak hour. No capacity upgrade is recommended for the 2022 scenarios.



**Figure 4: R34 and proposed access road to Bloemhof Ext 13 Intersection Configuration**



**Figure 5: Recommended Intersection Configuration of R34 and proposed access road to Bloemhof Ext 13**

**Table 8: Capacity Analysis Results of the R34 and proposed access road to Bloemhof Ext 13 Intersection**

Approach	Two-Way Stop			Two-Way Stop		
	v/c	2017 AM Peak Total Demand Average Delay (s)	LOS	v/c	2022 AM Peak Total Demand Average Delay (s)	LOS
Southern Approach R34	0.07	1.13	LOS NA	0.07	2.32	LOS NA
Northern Approach R34	0.07	0.06	LOS NA	0.07	0.06	LOS NA
Western Approach New Road	0.14	10.30	LOS B	0.06	10.3	LOS B
<b>All Vehicles</b>	<b>0.14</b>	<b>3.11</b>	<b>LOS NA</b>	<b>0.07</b>	<b>2.4</b>	<b>LOS NA</b>

**PM Peak Hour**

Approach	2017 PM Peak Total Demand			2022 PM Peak Total Demand		
	v/c	Average Delay (s)	LOS	v/c	Average Delay (s)	LOS
Southern Approach R34	0.08	0.97	LOS NA	0.08	2.06	LOS NA
Northern Approach R34	0.08	0.05	LOS NA	0.08	0.05	LOS NA
Western Approach New Road	0.15	10.92	LOS B	0.06	10.9	LOS B
<b>All Vehicles</b>	<b>0.15</b>	<b>2.87</b>	<b>LOS NA</b>	<b>0.08</b>	<b>2.2</b>	<b>LOS NA</b>

The capacity analysis resulted in acceptable LOS for both intersections.

- **Road Reserve**

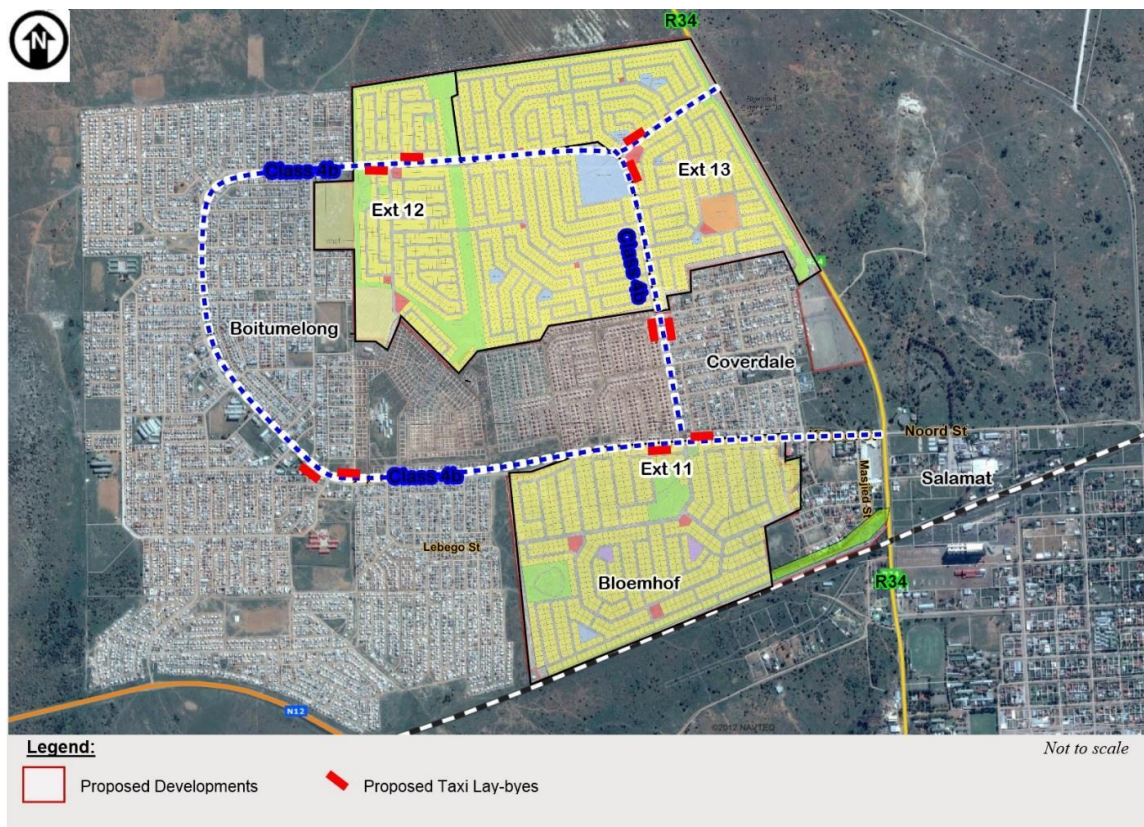
The required road reserves are allowed for in the proposed township layouts.

- **Site Specific Recommendations**

**Egress/Ingress throat length:** The access throat lengths need to be calculated during Site Development Plan approval stage. The standard calculation methodology for access throat length prescribed in COTO – TMH 16, 2012 Volume 2, Chapter 10, need to be applied for this purpose.

**Public transport** facilities are provided based on proposals provided in **Map 14**

**Pedestrian Facilities:** It is recommended that a pedestrian walkway of 1.5-2.0m is provided along the Class U4b roads within the proposed developments to facilitate pedestrian movement.



**Map 14: Recommended Taxi Lay-byes**

The Traffic Engineer concluded as follows in respect of the Traffic Impact Assessment:

***“It is thus recommended that the proposed development be supported from a traffic engineering point of view given the above recommendations are implemented”.***

The comprehensive Traffic Impact Assessment is attached as **Annexure P** to the application for township establishment.



## CHAPTER 5: PROVISION OF ENGINEERING SERVICES

### 5.1 INTRODUCTION

NEP Consulting Engineers (Pty) Ltd was appointed to investigate and report on the provision of civil engineering services to the proposed township area.

The provision of services to the proposed development areas will be addressed as follows:

- Section 5.2: Water Supply
- Section 5.3: Sanitation
- Section 5.4: Roads and Stormwater
- Section 5.5: Solid Waste

### 5.2 WATER SUPPLY

#### 5.2.1 BULK WATER SUPPLY

Bloemhof's water is abstracted from the Vaal River at the weir near the Bloemhof Dam where the existing abstraction works is situated. Water is conveyed to the existing water treatment works (WTW). The Dr Ruth Segomotsi Mompati District Municipality, as the Water Service Authority (WSA), is prioritizing the provision of potable water throughout its area of jurisdiction. They are in process of the Upgrading of Bloemhof Raw Water Abstraction and Water Treatment works to 24.4 ML/day to supply Bloemhof and Schweizer-Reneke. By making sure that the bulk water supply for these areas has the necessary capacity to include the existing households and future developments.

Currently the Bloemhof WTW is operating at 14ML/day to supply water to the existing 4.5 and 2.6 ML ground reservoirs, water is then pumped into a 450kl Concrete tower reservoir to supply Bloemhof town and Boitumelong.

Bloemhof and Boitumelong have a total reservoir storage of 7.2ML excluding the tower reservoir. The current total theoretical 48 hour required storage capacity is 10.462ML including the new developments. Therefore, there is a shortfall of 3.262 ML of storage. However, the existing storage as a 33-hour storage capacity which will be able to provide sustainable bulk water supply for the existing and new developments.

**Table 9: Water Demand**

AREA	Stands	Persons per stand	Population	Ave Daily Consumption	ADDD	Municipal Losses@10%	GAADD	Summer Peak Demand @2.4
	number	number	capita	l/c/day	m <sup>3</sup> /day	m <sup>3</sup> /day	m <sup>3</sup> /day	m <sup>3</sup> /day

Bloemhof town	817	2.5	2043	292	596.41	59.64	656.05	1574.52
Boitumelong Ext 1-5	5487	3.9	21399	100	2139.93	213.99	2353.92	5649.42
Boitumelong Ext 10	1000	3.9	3900	100	390.00	39.00	429.00	1029.60
Coverdale	654	3.7	2420	100	241.98	24.20	266.18	638.83
<b>Bloemhof Ext 12 &amp; 13</b>	<b>2711</b>	<b>3.9</b>	<b>10573</b>	<b>100</b>	<b>1057.29</b>	<b>105.73</b>	<b>1163.02</b>	<b>2791.25</b>
<b>Bloemhof Ext 11</b>	<b>827</b>	<b>3.9</b>	<b>3225</b>	<b>250</b>	<b>806.33</b>	<b>80.63</b>	<b>886.96</b>	<b>2128.70</b>
<b>Grand Total</b>	<b>11496</b>		<b>43560</b>		<b>5231.94</b>	<b>523.19</b>	<b>5755.13</b>	<b>13812.31</b>

The hydraulic load predictions were done, based on the following assumptions:

- Demand figures are for current and proposed developments.
- persons per stand figures as per Stats SA 2001-2011.
- **Bloemhof Town and Bloemhof Ext 11** are identified as a middle-income community, allowing for 292-250 l/c/day. As per Guidelines for Human Settlement and Planning
- **Boitumelong, Bloemhof Ext 12-13 & Coverdale** are identified as a low-income community, allowing for 100 l/c/day. As per Guidelines for Human Settlement and Planning Design

### 5.2.2 INTERNAL WATER RETICULATION

A ring feeder system with a 200-90mm diameter uPVC pipe is proposed for the new developments. This will be connected to the existing water line along Boitumelong and Coverdale. The waterlines that connect the houses to the ring feeder line are 75mm diameter uPVC pipe line. (Refer **Map 15**)



Map 15: Water layout plan for Bloemhof Extensions 12 and 13

## 5.3 SANITATION

### 5.3.1 BULK SEWER

All sewerage generated in Bloemhof and Boitumelong is from a full waterborne system. The sewerage generated gravitates in a southerly direction to a dedicated sewer pumpstation where it is pumped to the existing 5.6MI WWTw. The WWTw is located south of Boitumelong. Currently only 2.4 MI biofilter system is operational and the activated sludge plant is out of operation. There are plans by the Dr Ruth Segomotsi Mompoti District Municipality to refurbish the activated sludge plant.

Sewage generated in Bloemhof Ext 12 & 13 will gravitate towards the northern part of Boitumelong Ext 10 and Coverdale where it will connect to the existing sewer and or ultimately connect with sewer north of Bloemhof Ext 11. Sewer from Bloemhof Ext 11 will gravitate towards the south-eastern border of the proposed development. Due to the topography of the area a Pumpstation is required to pump sewer to ultimately connect to the existing WWTW.

A theoretical capacity of 4.1MI is needed to treat sewerage generated by the existing township as well as the proposed developments of Bloemhof Ext 11, 12 & 13. Therefore, the total capacity of the treatment works is adequate to serve the existing and proposed developments, however both the Biofilter system and activated sludge plant should be operational. See **Table 10 and 11** for Hydraulic calculations.

**Table 10: Bulk sewer Hydraulics**

Description	Unit	Area						Total
		Bloemhof town	Boitumelong Ext 1-5	Boitumelong Ext 10	Coverdale	Bloemhof Ext 12 & 13	Bloemhof Ext 11	
sewer /person	l/c/day	125	83	83	83	83	125	
Existing Stands	No	817	5887	1000	654	2711	827	11896
Persons/stand	No	3.7	3.9	3.9	3.9	3.9	3.9	
Population	No	3023	22959	3900	2551	10573	3225	46231
ADWF	ℓ/day	377863	1913275	325000	212550	877551	403163	4109401
					Total AADWF m <sup>3</sup> /day			4109
Peak Factor	2.5							
PWWF	ℓ/s	10.93	55.36	9.40	6.15	25.39	11.67	118.91
Infiltration	15%							
IPWWF	ℓ/s	12.57	63.67	10.81	7.07	29.20	13.42	136.74

The hydraulic load predictions were done, based on the following assumptions;

- Demand figures are for current and proposed developments.
- Persons per stand figures as per Stats SA 2001-2011.
- **Bloemhof Town and Bloemhof Ext 11** are identified as a middle-income community, allowing for 125ℓ/sewage per person per day. As per Guidelines for Human Settlement and Planning Design

- **Boitumelong, Bloemhof Ext 12, 13 & Coverdale** are identified as a middle-income community, allowing for 83.33l /sewage per person per day. As per Guidelines for Human Settlement and Planning Design

**Table 11: Pumpstation Hydraulics**

PUMPSTATION CAPACITY CALCULATION					
<b>1. Stands, population and hydraulic load</b>					
			<b>Ext 11</b>	<b>Ext 12&amp;13</b>	
1.1	Number of stands @ 2017	each	827	2711	
1.2	Persons per stand.	persons/stand	3.9	3.9	
1.3	Number of persons.	each	3225	10572.9	
1.4	Sewage per stand.	l/stand/ day	750.000	500.00	
	Sewage per capita.	l/person/ day	125.00	83.33	
1.5	Daily avg.hydraulic load.	m <sup>3</sup> /d	403.163	881.039757	
		l/s	4.666	10.197	
1.6	Hydraulic peak.	-	<b>2.063</b>	2.0625	
1.7	Emg. storage = 4 x Q <sub>avg</sub>	m <sup>3</sup>	<b>67.194</b>	<b>146.840</b>	<b>214.034</b>
<i>Guidelines for the provision of engineering services and amenities in township development</i>					
1.7	Peak hydraulic load.	l/s	30.656	Q <sub>Peak</sub>	
1.8	% Infiltration.	%	20	% <sub>Infil</sub>	
1.9	Maximum hydraulic load.	l/s	36.787	Q <sub>Max</sub>	
<b>2. Sump Storage Capacities</b>					
			V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>
2.1	Sump Storage Capacities	l	6185.53	0	0.000
2.5	<b>Total volume.</b>	l			<u>6185.5</u> V <sub>Tot</sub>
<b>3. Pump Performance</b>					
					<b>% of Q<sub>Avg</sub></b>
3.1	Pump <sub>(1)</sub> capacity	l/s	40.466	Q <sub>1</sub>	867.2%
3.2	Pump <sub>(1+2)</sub> capacity	l/s	0.000	Q <sub>2</sub>	0.0%
3.3	Pump <sub>(1+2+3)</sub> capacity	l/s	0.000	Q <sub>3</sub>	0.0%

**5.3.2 CONNECTOR AND INTERNAL SEWER NETWORK**

Sewer generated from the proposed developments will gravitate towards the south-eastern corner of Bloemhof Ext 11 to a proposed pumpstation. The proposed developments will require a sewage pump station and a rising main to be constructed to transport sewage to the existing WWTw. The following components are proposed:

- A Sewer pumpstation will be situated south east of the site between Salamat and the proposed Boitumelong Ext 11. The capacity of the pumpstation will be able to handle 36l/s of sewer flow from Ext 11, 12 & 13 as well as portions of Boitumelong Ext 10. A 250mm diameter rising main to transport sewer to the existing WWTw.
- New internal sewer reticulation will be 160mm gravity sewerage system laid at a gradient of approximately 1:200 as midblock 1m from the stand boundary. (refer **Map 16**)





Map 16: Sewer Layout Plan for Bloemhof Extensions 12 and 13

## 5.4 ROADS AND STORMWATER

The proposed developments are located on the northern side of the N12 national route between Wolmaransstad and Christiana, as well as west of road R34 to Schweizer-Reneke. Primary access to the proposed developments will be provided via the existing road network. Secondary Access to the proposed Ext 13 will be provided along Road R34 to Schweizer-Reneke. This secondary access route requires a T-junction with National road. When this access road is considered as an option, authorization from the relevant authorities, including Sanral will have to be gained to construct the intersection.

All internal roads surfaces for the developments will be constructed according to the proposed pavement design in **Table 12**. The majority of the residential development is proposed to drain towards and ultimately to discharge south of the development to follow the natural water course.

Traditionally all stormwater in Lekwa-Teemane areas have been allowed to run off surfaces and to drain towards the edge of road. A two-way two lanes road with 2% cross fall is proposed, this is to facilitate drainage of the road surface to the edge of the road. The Kerb to the side serves as an open channel type flow to collect runoff and to discharge flow in a controlled manner to limit traffic risks.

The vertical alignment is designed to address storm water drainage within the road reserve. Therefor the final surfaced level of the roads is as far as possible below natural ground level as to ensure storm-water drainage in the most efficient way. The roads have a maximum cross-fall to one side of 2% and minimum longitudinal slope of 0.5%.

The design norms for the roads are given in **Tables 12 and 13**.

**Table 12: Pavement Design for Internal Roads**

Design	Description
Surfacing	60 mm Paving blocks (See Roads Layout Plan for applicable areas)
Base C4	150mm thick stabilized gravel compacted to 97% of modified AASHTO density. Minimum UCS>1000kPa at 97% of modified AASHTO density. GM>1.75, PI<4
Subbase G5	150mm thick natural gravel compacted to 95% of modified AASHTO density. CBR>50 at 95% of modified AASTHO density. GM>1.5 (Min), PI<6
Roadbed Preparation	150mm thick natural gravel compacted to 90% of modified AASHTO density. Minimum CBR > 7 at 90% of modified AASHTO density.

**Table 13: Geometric Design Standards for internal roads**

Standards	
Design Speed	40km/h
Travel Width	7/6m
Crossfall	2%
Favoured maximum gradient	10%
Vertical Curve k-value: Crest	6
Sag	6

Refer to **Map 17** for typical roads and stormwater details.



**Map 17: Road Layout Plan for Bloemhof Extensions 12 and 13**

## 5.5 SOLID WASTE

Solid waste removal is a function of the Lekwa-Teemane Local Municipality.



## CHAPTER 6: MOTIVATION

### 6.1 INTRODUCTION

This need and desirability in respect of the application for township establishment will be motivated based on the following criteria:

- National Development Plan: Vision for 2030
- Constitution of the Republic of South Africa (Act 108 of 1996)
- National Housing Code, 2006
- A Comprehensive Plan for the Development of Sustainable Human Settlement (BNG)
- Urban (UDF) and Rural Development (RDF) Frameworks, 1997
- White Paper on Local Government, 1998
- Municipal Demarcation Act, 1998 (Act 27 of 1998)
- Municipal Systems Act, 2000 (Act 32 of 2000)
- National Housing Act, 1997 (Act 107 of 1997)
- Rental Housing Act, 1999
- White Paper on Wise Land Use, 2001
- Millennium Development Goals (MDG)
- National Spatial Development Perspective, 2006
- North West Provincial Spatial Development Framework, 2017
- Lekwa-Teemane Spatial Development Framework, 2011
- Lekwa-Teemane Housing Sector Plan, 2014
- Spatial Planning and Land Use Management Act Development Principles
- General

In terms of section 9(1) of the National Housing Act (107 of 1997), every municipality must, as part of the municipality's process of integrated development planning (IDP) take all reasonable and necessary steps to ensure that the inhabitants within its area of jurisdiction have access to adequate housing on a progressive basis by setting housing delivery goals, identifying suitable land for housing development and planning, facilitating, initiating and co-coordinating housing development in its area of jurisdiction.

Housing comprises a series of complex interrelationships between people, their needs and values and resources within a political and legal environment. This complexity requires a focused approach to efforts aimed at providing housing. National Government has started to respond by putting the necessary policy and legislative environment in place.

This framework outlines the roles and responsibilities of different spheres of government in relation to housing, as well as dealing with aspects relating to the design and content of housing policy and legislation. In the context of this framework the Lekwa-Teemane



Local Municipality is required to take all reasonable steps to ensure the provision of adequate housing to its residents.

The core legislation and policies guiding housing planning and development are set out in Sections 6.2 to 6.17 below.

## **6.2 NATIONAL DEVELOPMENT PLAN: VISION 2030**

The National Planning Commission (NPC) (2011) published the NDP: Vision for 2030. Its contents will impact directly and indirectly on the provision of housing within the national spatial system.

Its core focuses include:

- The active efforts and participation of all South Africans in their own development
- Redressing the injustices of the past effectively
- Faster economic growth and higher investment and employment
- Rising standards of education, a healthy population and effective social protection
- Strengthening the links between economic and social strategies
- An effective and capable government
- Collaboration between the private and public sectors
- Leadership from all sectors in society.

## **6.3 CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA (ACT 108 OF 1996)**

The Constitution of the Republic of South Africa (Act 108 of 1996) is the supreme law of the country. The sections/schedules of the Constitution that are relevant with respect of the delivery of housing are the following:

- Sections 26, 27 and 29 of Chapter 2 – Bill of Rights states that everyone has the right to access to adequate housing, health care services, social security and education.
- Schedules 4 and 5, states that the Province has legislative competence in regard to (inter alia): Environment; Urban and Rural Development; Welfare; Housing; Health Services; Regional planning and development; (concurrent competence with national) and Provincial Planning and Provincial Roads and Traffic (exclusive competence)

In terms of the provisions (Schedule 4) of the Constitution, housing is a functional area of concurrent national and provincial competence. This provision of legislative and administrative powers necessitates alignment between all spheres of government in terms of the IDP process and especially the preparation of the SDF and thus the Housing Chapter.

## 6.4 NATIONAL HOUSING CODE (2006)

The National Housing Code (2006) identified the primary role of the municipality as taking all reasonable and necessary steps, within the framework of national and provincial legislation and policy, to ensure that the inhabitants within its area of jurisdiction have access to adequate housing. This entails the following:

- Initiating, planning, facilitating and coordinating appropriate housing development.
- Promoting private sector development and playing the role of developer.
- Preparing a housing delivery strategy and setting up housing development goals.
- Setting aside, planning and managing land for housing.
- Creating a financially and socially viable environment for housing delivery.
- Facilitating the resolution of conflicts arising from housing delivery initiatives.
- Facilitating the provision of bulk services.
- Administering national programmes.
- Exploring land for housing development.

## 6.5 A COMPREHESIVE PLAN FOR THE DEVELOPMENT OF SUSTAINABLE HUMAN SETTLEMENT (BNG STRATEGY)

The new "Human Settlements Plan" promotes the achievement of a non-racial, integrated society through the development of sustainable human settlements and quality housing. Housing is to be utilized for the development of sustainable human settlements in support of spatial restructuring.

The aim is to move beyond the provision of basic shelter towards achieving the broader vision of sustainable human settlements and more efficient towns, cities and regions. The following factors will be taken into consideration in order to achieve this vision:

- Progressive Informal Settlement Eradication: These settlements must be integrated into the broader urban setup so as to overcome spatial, social and economic exclusion. The plan encourages the eradication of informal settlements through in-situ upgrading in desired locations coupled with the relocation of households where development is not possible or desirable.
- Promoting Densification and Integration: The aim is to integrate previously excluded groups into the city so as to enable them to enjoy the benefits it offers and to create more integrated, functional and environmentally sustainable human settlements, towns and cities.
- Enhancing Spatial Planning: Greater co-ordination and alignment of various planning instruments and economic policies lies at the heart of sustainable human settlements.

This requires more than mere co-ordination between departments but there needs to be a single overarching planning authority and/or instrument to provide macro-level guidance to support the development of sustainable human settlements.

- Enhancing the location of New Housing Projects: The location of past housing projects was said to reinforce apartheid spatial settlement patterns. Spatial restructuring aims to achieve a more decisive Intervention In land markets. The following interventions are envisaged viz. accessing well located state-owned and parastatal land: acquisition of well-located private land for housing development, funding for land acquisition and fiscal incentives.
- Supporting Urban Renewal and Inner City Regeneration: Urban renewal and inner city regeneration often result in the current inhabitants being excluded as a result of the construction of dwelling units they cannot afford. Some municipalities are trying to avoid this by promoting affordable inner city housing. The "Human Settlements Plan" will support this by encouraging social housing.
- Developing Social and Economic Infrastructure: The need to move away from a housing-only approach towards a more holistic development of human settlements which includes the provision of social and economic infrastructure is emphasized.
- Enhancing the Housing Product: The aim is to develop more appropriate settlement layouts and housing products and to ensure appropriate housing quality.

## **6.6 URBAN (UDF) AND RURAL DEVELOPMENT (RDF) FRAMEWORKS (1997)**

The UDF aims to promote a consistent urban development policy approach for effective urban reconstruction and development, to guide development policies, strategies and actions of all stakeholders in the urban development process and to steer them towards the achievement of a common vision. The UDF is engaged in four key programmes, namely integrating the city, improving housing and infrastructure, building habitable and safe communities and promoting urban economic development.

The RDF co-ordinates integration of government programmes in rural areas and is aimed at: poverty alleviation through institutional development; investment in basic infrastructure and social service; improving income and employment opportunities; restoration of basic economic rights to marginalized rural areas; and finally justice, equity and security.

## **6.7 WHITE PAPER ON LOCAL GOVERNMENT (1998)**

The White Paper on Local Government adopts development policy guidelines and principles and advocates the developmental role of local government.

The guidelines and principles can be summarized as follows:

- Orientation towards people's needs;
- Poverty alleviation with special consideration of marginalized and disadvantaged groups and gender equity;
- Environmentally sustainable development and a safe and healthy environment;

- Economic growth with creation of income and employment opportunities;
- Involvement of residents, communities and stakeholders;
- Sustainability of services, municipalities and settlements.

## **6.8 MUNICIPAL DEMARCATION ACT, 1998 (ACT 27 OF 1998)**

Demarcation objectives: The Demarcation Board determines a Municipal boundary with the objective that it must be able to enable the municipality for that area to fulfil its constitutional obligations in line with the provision of a democratic and accountable government for communities within a specific geographic area inclusive of:

- The provision of services to the communities in an equitable and sustainable manner.
- The promotion of social and economic development.
- The promotion of a safe and healthy environment.
- Enable effective local governance.
- Enable integrated development.
- Have a tax base as inclusive as possible for the user of municipal services in the municipality.

## **6.9 MUNICIPAL SYSTEMS ACT, 2000 (ACT 32 OF 2000)**

A municipality must undertake developmentally-orientated planning so as to ensure that it:

- Strives to achieve the objectives of local government set out in Section 152 of the Constitution;
- Gives effect to its development duties as required by section 153 of the Constitution; and
- Together with other organs of state contribute to the progressive realisation of the fundamental rights In respect of, among others, housing.

In the spirit of our democratic dispensation no development can take place without the effective participation of the communities it affects. Section 29(1) (b) of the local Government: Municipal Systems Act 32 of 2000 requires municipalities to follow certain procedures to consult with communities and procure their participation in the planning process. As these structures have to be in place, they will be available and should be used to involve the relevant communities in the process of upgrading of informal settlements.

## **6.10 NATIONAL HOUSING ACT, 1997 (ACT 107 OF 1997)**

The National Housing Act (NHA) sets out three general principles, namely: giving priority to the needs of the poor in respect of housing development; consultation with individuals



and communities affected by housing development; and ensuring that housing development is economically, fiscally, socially and financially affordable and sustainable.

The NHA lays down general principles applicable to housing development in all spheres of government, defines the functions of national, provincial and local governments in respect of housing development, and promotes the role of the state as a facilitator of housing development.

National government must establish and facilitate a sustainable national housing development process, provincial government must do everything in its power to promote and facilitate the provision of adequate housing in its province within the framework of national housing policy, while municipalities must take reasonable and necessary steps within the framework of national and provincial housing legislation and policy to ensure that the right of access to adequate housing is realised on a progressive basis.

### **6.11 RENTAL HOUSING ACT, 1999**

The stated purpose of the RHA reveals that government regards rental housing as an available alternative to homeownership, especially for poor people and historically disadvantaged people.

### **6.12 WHITE PAPER ON WISE LAND USE (2001)**

This White Paper intends to show practical ways in which South Africa may move to this approach. The system should satisfy the following specific needs:

- The development of policies which will result in the best use and sustainable management of land.
- Improvement and strengthening planning, management, monitoring and evaluation.
- Strengthening institutions and coordinating mechanisms.
- Creation of mechanisms to facilitate satisfaction of the needs and objectives of communities and people at local level

Integrated planning for sustainable management of land resources should thus ensure:

- That development and developmental programmes are holistic and comprehensive so that all factors in relation to land resources and environmental conservation are addressed and included.
- In considering competing needs for land, and in selecting the "best" use for a given area of land, all possible land-use options must be considered.
- That all activities and inputs are integrated and coordinated with each other, combining the inputs of all disciplines and groups.
- That all actions are based on a clear understanding of the natural and legitimate objectives and needs of individual land users to obtain maximum consensus.

- That institutional structures are put in place to develop, debate and carry out proposals.

Of core importance in the planning and development of housing is the normative planning principles identified in the White Paper:

Principles. The basis of the system will be principles and norms aimed at achieving sustainability, equality, efficiency, fairness and good governance in spatial planning and land use management. The decisions of planning authorities, whether related to the formulation of plans such as IDPs or the consideration of land development applications such as rezoning, must all be consistent with these principles and norms. A failure by an authority to affect this enables the Minister to intervene in the decision, either to require that it is reconsidered or in extreme cases to take the decision him or herself.

### **6.13 MILLENNIUM DEVELOPMENT GOALS (MDG)**

The MDG include the following: The eradication of informal settlements by 2014 as one of the policy imperatives of government (Goal 7, Target 11) implies that government and the private sector would have to implement the Social Contract (Social Contract for Rapid Housing Delivery, 2005) commitments to aid the removal of slums in South Africa.

The targets included in the Social Contract consist of:

- The removal or improvement of all slums in South Africa as rapidly as possible, but not later than 2014.
- The fast tracking of the provision of formal housing within human settlements for the poorest of the poor and those who are able to afford rent and/or mortgages.
- The creation of rental stock for a rapidly growing, mobile (migrant) and urban population within inner city and other locations close to employment opportunities.
- To remove administrative blockages that prevent speedy developments and to strive to reduce the time to grant various permissions relating to the built environment to 50% of the current time;
- To ensure consumer education and understanding in all housing development projects.

### **6.14 NATIONAL SPATIAL DEVELOPMENT PERSPECTIVE (2006)**

The NSDP consists of a set of five normative principles for development:

- Principle 1: Rapid economic growth that is sustained and inclusive is a pre-requisite for the achievement of other policy objectives, among which poverty alleviation is key.
- Principle 2: Government has a constitutional obligation to provide basic services to all citizens wherever they reside.
- Principle 3: Government spending on fixed investment should be focused on localities of economic growth and/or economic activities and to create long-term employment opportunities.

- Principle 4: Efforts to address past and current social inequalities should focus on people, not places. In localities where there are both high levels of poverty and demonstrated economic potential, this could include fixed capital investment beyond basic services to exploit the potential of those localities. In localities with low demonstrated economic potential, government should beyond the provision of basic services, concentrate primarily on human development.
- Principle 5: In order to overcome the spatial distortions of apartheid, future settlement and economic development opportunities should be channelled into activity corridors and nodes that are adjacent to or that link the main growth centres. Infrastructure investment should primarily support localities that will become major growth nodes in South Africa and the SADC region to create regional gateways to the global economy.

### **6.15 NORTH WEST PROVINCIAL SPATIAL DEVELOPMENT FRAMEWORK, 2017**

In terms of the development guidelines set forth in the North West Provincial Spatial Development Framework, 2017 in respect of the Lekwa-Teemane urban area, it was stated that public sector investment in Christiana and Bloemhof will enable the municipality to increase its economic growth rate and create more employment opportunities in order to limit the number of people leaving the municipality seeking job opportunities in larger urban concentrations.

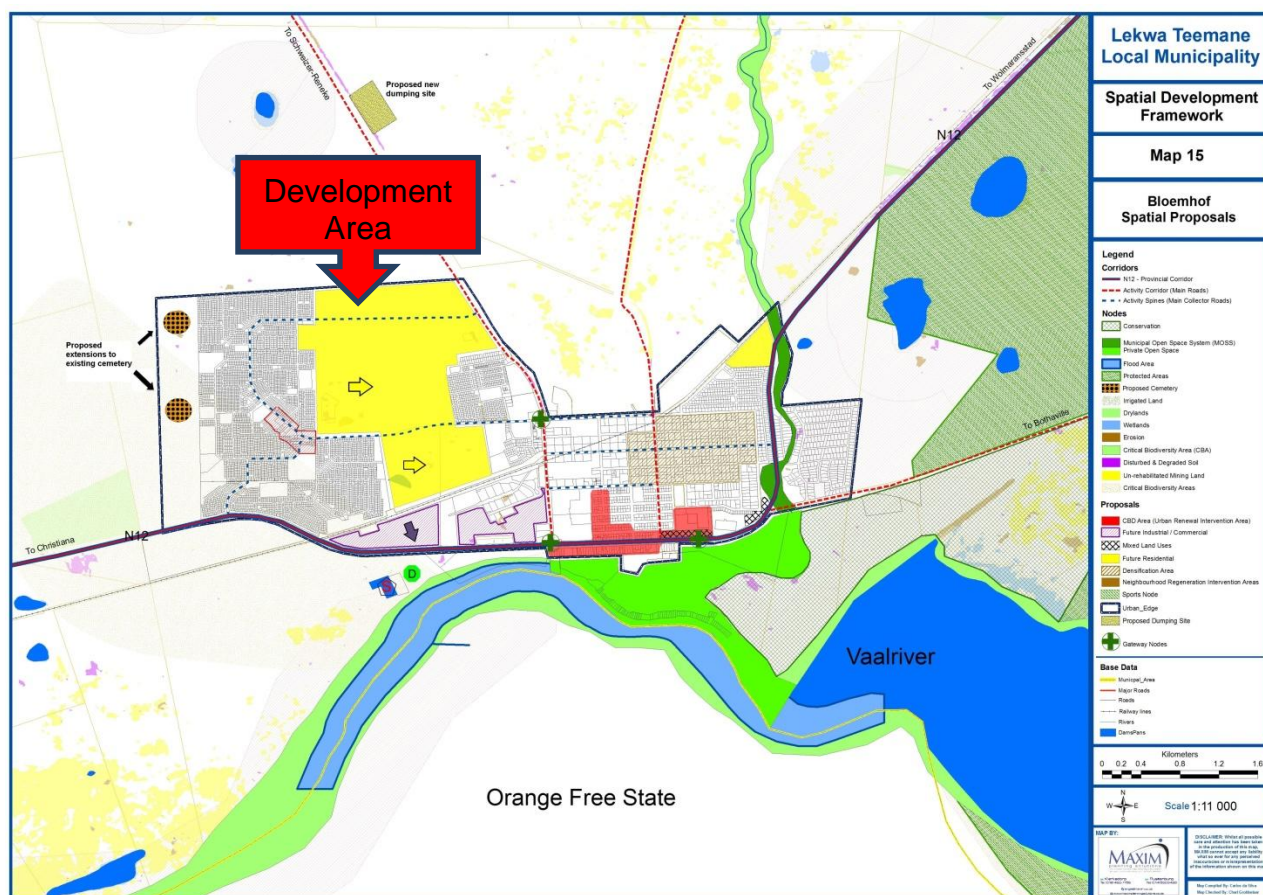
In terms of development guidelines it was stated that the focus should be on the backlog eradication and providing access to basic services whilst also formalizing housing and ensuring land tenure security.

### **6.16 LEKWA-TEEMANE LOCAL MUNICIPALITY SPATIAL DEVELOPMENT FRAMEWORK, 2011**

According to the Lekwa-Teemane Local Municipality Spatial Development Framework, 2011, the population of Lekwa-Teemane area was estimated to reach 51 140 by the year 2014 with an increase of 12 608 people between 1996 and 2014 (a 32.72% increase over this period).

With regard to residential development, the main objectives for residential development within the towns of Bloemhof and Christiana are to promote more compact towns through densification as well as the infilling of the land between these former towns created as a result of "Apartheid" planning.

The areas earmarked for future residential development purposes are indicated in yellow on the Bloemhof Spatial Proposals map as contained in the Lekwa-Teemane Local Municipality Spatial Development Framework, 2011 (refer **Map 18**).



**Map 18: Bloemhof Spatial Proposals**

In terms of the Bloemhof Spatial Development Framework, all the areas proposed for future residential development purposes on the Bloemhof Spatial Proposals map are situated on municipal land and will be sufficient for the short / medium and longer term based on the annual growth rate.

The total residential needs based on income categories (2010 – 2020) were determined as follows:

**Table 14: Total Residential needs based on income categories (2010 – 2020)**

Housing Type	Categories	%	Bloemhof
Subsidized stands	R0 – R3 500	96%	1211
Institutional Housing	R3 501 – R7 500	3%	38
Bonded Housing	R7 501 +	1%	13
<b>TOTAL</b>			<b>1262</b>

**6.17 NORTH WEST MULTI YEAR HOUSING DEVELOPMENT PLAN, 2014**

In terms of the North West Multi Year Housing Development Plan, 2014, an estimated **14 358 new households** will seek accommodation in the Dr. Ruth Segomotsi Mompati District Municipality area between 2013 and 2018, resulting in an annual growth in demand of approximately **2 872 units** (across the full housing spectrum, including



informal and subsidy). Under present market conditions, the finance-linked and bonded segment (21.3%) will yield a take-up rate of 612 units per annum.

Figure 6 indicates the take-up rate per housing typology.

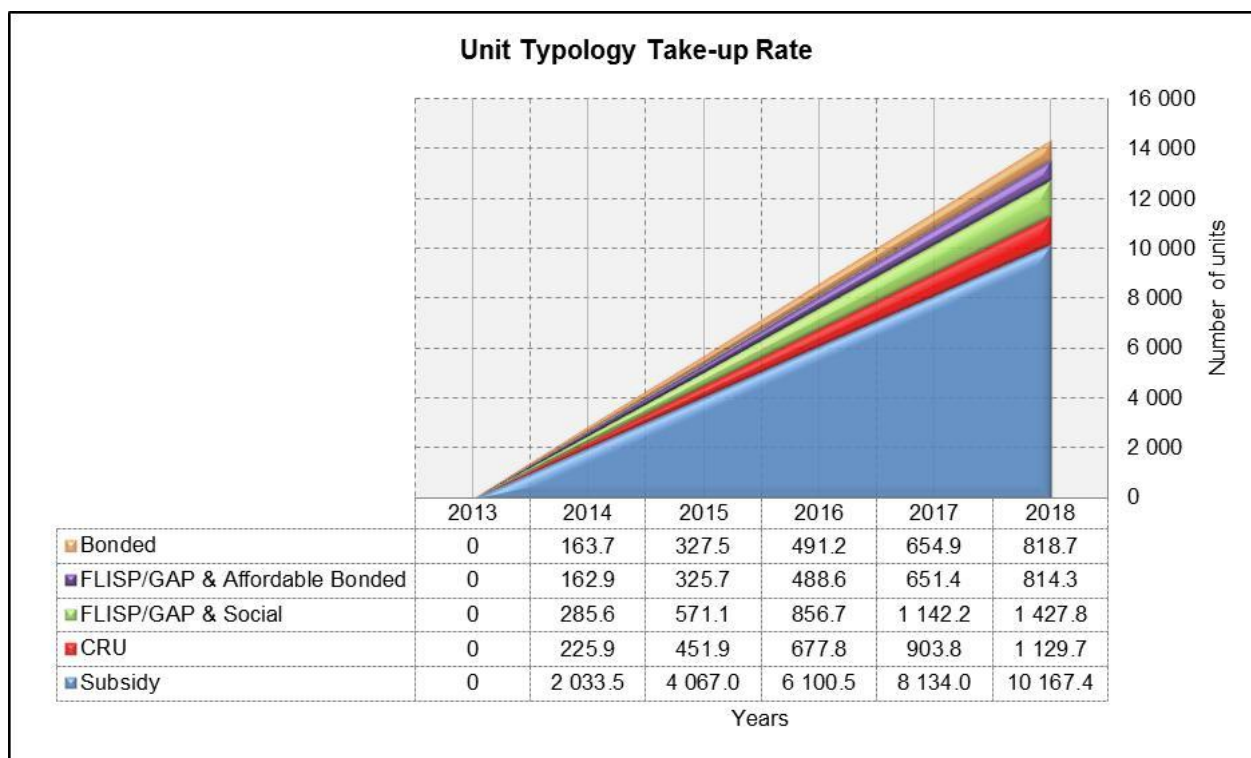


Figure 6: Unit typology take-up rate

The total demand for Dr Ruth Segomotsi Mompati District Municipality can be summarised as follows:

Table 15: Total demand for Dr. Ruth Segomotsi Mompati District Municipality

Income bracket	Housing typology	Total demand (next 5 years)
R0 – R3 500	Subsidy	10 167
R800 – R3 500	CRU	1 130
R3 500 – R7 500	FLISP / GAP & Social	1 428
R7 500 – R15 000	FLISP / GAP & Affordable bonded	814
R15 000+	Bonded	819

### 6.18 LEKWA-TEEMANE HOUSING SECTOR PLAN, 2014

In terms of the Housing Sector Plan of the Lekwa-Teemane Local Municipality it was indicated that there are an estimated 2735 backyard shacks, rooms in backyard and shacks not on residential stands as indicated in Table 14 below.

**Table 16: Status Quo of Housing in Lekwa-Teemane**

Wards	Towns	Formal brick house on stand	Backyard shack on stand	House/ flat/ Room in Backyard	Traditional/ Mud house on stand	Shack not on stand Informal settlement	Informal On Stand
Ward 1	Lekwa-Teemane Proper.	1884	1000	45	0	60	7
	Boitumelong,						
	Boitumelong Ext 1,						
	Boitumelong Ext 4						
Ward 2	Boitumelong proper.	797	400	0	0	0	3
	Boitumelong Ext 1						
	Boitumelong Ext 5						
Ward 3	Boitumelong Ext 1	2199	1200	30	0	0	10
	Boitumelong Ext 2						
	Boitumelong Ext 5						
Ward 4	Bloemhof Proper	1788	0	0	0	0	30
	Bloemhof Ext 1						
	Bloemhof Ext 2						
	Bloemhof Ext 3						
	Bloemhof Ext 4						
	Bloemhof Ext 5						
	Bloemhof Ext 6						
	Bloemhof Ext 8						
	Bloemhof Ext 9						
	Salamat						
<b>TOTAL</b>		<b>6668</b>	<b>2600</b>	<b>75</b>	<b>0</b>	<b>60</b>	<b>50</b>

Source: Lekwa-Teemane Municipality - September 2014

It is against the background of the fore-mentioned goals and objectives that the Lekwa-Teemane Local Municipality intends establishing a new sustainable human settlement within the Integrated Residential Development Programme (IRDP) and Upgrading of Informal Settlements (UIS) Programme. In order to ensure a proper integrated human settlement, it is imperative to also address the need for a wide variety of housing typologies together with the necessary social and economic facilities within the new settlement area. For this purpose, consideration should also be given to the Provision of Social and Economic Facilities (PSEF) Programme. These housing programmes entail the following:

**Table 17: Housing Programmes**

<p style="text-align: center;"><b>UPGRADING OF INFORMAL SETTLEMENTS (UIS)</b></p>	<p>Informal Settlements are common to most developing countries which undergo a process of rapid urbanization and have limited resources to address the housing needs of all its citizens and in particular the poor, who flock to cities in search of a better life and future for their families.</p> <p>Hence the Informal Settlement Upgrading Programme is one of the most important programmes of government which seeks to upgrade the living conditions of millions of poor people by providing secure tenure and access to basic services and housing.</p> <p>Experience has shown that housing access to basic services, secure tenure and a house provides a springboard to households to improve their social and economic circumstances.</p> <p>To ensure that fragile community survival networks are not compromised and to empower communities to take charge of their own settlements, one of the basic tenets of the programme is that beneficiary communities must be involved throughout the project cycle. All members of the community, also those who do not qualify for subsidies, are included.</p> <p>The Programme therefore aims to bring about social cohesion, stability and security in integrated developments and to create jobs and economic well being for communities which did not previously have access to land and business services, formal housing and social and economic amenities.</p>
<p style="text-align: center;"><b>PROVISION OF SOCIAL AND ECONOMIC FACILITIES (PSEF)</b></p>	<p>Owing to backlogs in existing settlements and the need to prioritize those, authorities responsible for the provision of social and economic facilities, such as schools, clinics, community halls, recreational facilities and trading facilities, have not been able to provide facilities in most new housing projects.</p> <p>In line with the policy to establish quality, sustainable human settlements, a programme has been introduced to fund primary social and economic amenities, where funding is not available from other Data Sources.</p>

The development of the proposed new integrated human settlement of Bloemhof Extension 12 will take place against the background of Outcome 8. Outcome 8 determines that human settlements in future in South Africa must at least consist of:

- The development of suitable located and affordable housing (shelter) and decent human settlements;
- An understanding that human settlements are no longer about building houses;
- Transforming our cities and towns (moving towards efficiency, inclusion and sustainability); and
- Building cohesive, sustainable and caring communities with improved access to work and social amenities, including sports and recreation facilities.

In terms of Outcome 8, sustainable human settlements and improved quality of household life are defined by:

- Access to adequate accommodation that is suitable, relevant, appropriately located, affordable and fiscally sustainable;
- Access to basic services (water, sanitation, refuse removal and electricity);
- Security of tenure irrespective of ownership or rental, formal or informal structures; and
- Access to social services and economic opportunity within reasonable distance.

This outcome is of critical importance as it is a requirement of the Constitution and Bill of Rights. It is secondly core to human dignity and social stability and is a key enabler of health, education and social cohesion outcomes. With good planning it can also serve as a catalyst for economic development and job creation.

## **6.19 SPATIAL PLANNING AND LAND USE MANAGEMENT ACT, 2013 (SPLUMA) DEVELOPMENT PRINCIPLES**

The act applies to spatial planning, land development and land use management. The following five (5) primary development principles referred to in SPLUMA and explained in SPLUMA: A Practical Guide compiled by Nic Laubscher, Lizette Hoffman, Ernst Drewes and Jan Nysschen, 2016, need to be taken into consideration:

- “7. (a) the principle of spatial justice, whereby-**
- (i) past spatial and other development imbalances must be redressed through improved access to and use of land;**  
The focus of the principle would be on integration or development of rural and/or traditional settlements and urban integration strategies. This development specifically aims at redressing past spatial imbalances in combatting the past planning principles of providing low income residential areas on the periphery of urban areas. This development specifically entails the integration of the urban areas of Boitumelong and Bloemhof and addressing past spatial imbalances. As mentioned in the preceding sections, cognisance should be taken of the fact that the development area has already been occupied by approximately 1400 people clearly highlighting the need for residential erven for the housing of the landless community of Boitumelong. This township establishment will afford the landless community of Boitumelong the opportunity to access land for formalized housing provision.
  - (ii) spatial development frameworks and policies at all spheres of government must address the inclusion of persons and areas that were previously excluded, with an emphasis on informal settlements, former homeland areas and areas characterised by widespread poverty and deprivation;**  
In terms of the Lekwa-Teemane Local Municipality Spatial Development Framework, 2011, the area to which this application applies was already earmarked for residential development purposes. This was specifically done to limit further urban sprawl and to enhance integration. This development will also have at its core the establishment of an integrated human settlement providing for a variety of housing typologies (even though provided throughout the three (3) township areas of Bloemhof Extensions 11, 12 and 13.
  - (iii) spatial planning mechanisms, including land use scheme, must incorporate provisions that enable redress in access to land by disadvantage communities and persons;**  
The local municipality identified portions of land within the local municipal area, through the Spatial Development Framework, that will redress access to land by previously disadvantaged people. The proposed



development of Bloemhof Extension 11 will focus on the bonded / middle income requirements of the community whilst the proposed township areas of Bloemhof Extension 12 and 13 will provide for subsidized housing as well as opportunities for social and rental housing.

- (iv) land use management systems must include all areas of a municipality and specifically include provisions that are flexible and appropriate for the management of disadvantaged areas, informal settlements and former homeland areas;**

Land uses within the Lekwa-Teemane Local Municipality municipal area are governed by a wall-to-wall land use management system. The proposed land uses in the township area of Bloemhof Extension 11 will be regulated by the Lekwa-Teemane Land Use Scheme, 2011. The opinion is held that the provisions of this scheme that will relate to this development will be totally appropriate for the management of the land uses to be provided within this development.

- (v) land development procedures must include provisions that accommodate access to secure tenure and the incremental upgrading of informal areas; and**

According to the Lekwa-Teemane Housing Sector Plan the need for housing was estimated to total 2735 housing units in 2014. The township establishment process has at its core the intent to create additional residential erven that can, after proclamation of the township area, be alienated to the beneficiaries thereof. This new township development will afford the community of Boitumelong/ Bloemhof the opportunity to access land and secure tenure thereof.

- (vi) A Municipal Planning Tribunal considering an application before it, may not be impeded or restricted in the exercise of its discretion solely on ground that the value of land or property is affected by the outcome of the application;**

This project entails the development of land that has been vacant for a number of years with no economic or social advantage for the community.

- 7. (b) the principle of spatial sustainability, whereby spatial planning and land use management systems must –**

The principle of spatial sustainability should allow for flexibility in dealing with applications and proposals, which may not have been anticipated.

- (i) promote land development that is within the fiscal, institutional and administrative means of the Republic;**

In terms of the sub-principle, the opinion is held that the Lekwa-Teemane Local Municipality has sufficient fiscal, institutional and administrative capacity and resources to administer the development. The Lekwa-

Teemane Local Municipality will ensure that the development complies with the requirements contained in the Lekwa-Teemane Land Use Scheme, 2011 and the Lekwa-Teemane Local Municipality Spatial Development Framework, 2011. In this regard it is pertinent to also note that the fiscal capacity of the Lekwa-Teemane Local Municipality is also enhanced through the assistance of the Department of Local Government and Human Settlement who is currently funding this project

**(ii) ensure that special consideration is given to the protection of prime and unique agricultural land;**

The area where the concerned property is situated is not regarded as prime or unique agricultural land, in terms of the Lekwa-Teemane Land Use Management Scheme, 2011 and the Lekwa-Teemane Local Municipality Spatial Development Framework, 2011. The agricultural value of the concerned portion is negligible specifically due to its size and location within an already existing urban area.

**(iii) uphold consistency of land use measures in accordance with environmental management instruments;**

Environmental sustainability refers to the relationship between the settlement and the natural landscape.

The development is planned with a full level of infrastructure elements including sewer, water, electricity, access and refuse removal services, thereby reducing the effect that the development will have on the natural surrounding area. For an area to be environmentally sustainable, it should protect the unique amenity and character of the surrounding environment and also prevent degradation. The development will not be situated in an ecological sensitive area or in places of hazard or high risk, such as within the flood plain. The proposed development further excludes noxious activities.

In considering the environmental management instruments applicable to the proposed development, it is pertinent to note that the activity does indeed constitute a listed activity in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014.

The township applicant appointed a qualified independent Environmental Practitioner to conduct the necessary Environmental Impact Assessment and public participation process as prescribed in terms of the fore-mentioned Act and Regulations.

The development of this township area as well as the activities conducted from the erven in the township area during the operational phase will be

subject to the conditions imposed by the Department and set out in the relevant Environmental Authorisation.

**(iv) promote and stimulate the effective and equitable functioning of land markets;**

The local municipality is in favour of on-going dialogue with private investors and relevant government departments, to promote integrated economic growth.

Principle 7 (b)(iv) recognizes the need for land development to be based on competition and the principle of a competitive economy. The development will contribute to the economic growth of the municipal area. The development represents a public sector initiative, planned and applied for in the context of open market competition. This development will further not be in competition with any other private sector development within the concerned area.

**(v) consider all current and future costs to all parties for the provision of infrastructure and social services in land developments;**

The local municipality needs to comply with the guidelines for the provision of emergency-, social-, education- and engineering services, in terms of the provision of infrastructure and social services.

The development will contribute to a more efficient usage of the concerned property and will also ensure the effective usage of the existing infrastructure network available in the direct vicinity of the concerned property. The provision of services to the proposed development has been addressed in detail in Section 5 supra and it was indicated that the development can be provided with the necessary services. The infrastructure details set out in Section 5 also prove that the Lekwa-Teemane Local Municipality has sufficient capacity and resources to accommodate the development.

**(vi) promote land development in locations that are sustainable and limit urban sprawl; and**

The area between Boitumelong , Boitumelong Extension 1 and Boitumelong Extension 4 bordered to the south by Gopane Street and to the east by Provincial Road P12-1 (R34) (Bloemhof - Schweizer Reneke road) was specifically earmarked for future residential development purposes in terms of the Lekwa-Teemane Local Municipality Spatial Development Framework, 2011 to limit further urban sprawl of the built up urban area of Boitumelong / Bloemhof and due to the fact that this area can function in a sustainable manner due to the availability of services to this area.

This development intends to promote a more compact city and to prevent the expansive provision of social and engineering services. The Spatial Development Framework addresses the scale of urban growth through planned extensions, infill and redevelopment strategies. In this regard it should be noted that the proposed township area of Bloemhof Extension 12 is located within the demarcated urban edge as set out in the Lekwa-Teemane Local Municipality Spatial Development Framework, 2011. This township further entails the development of land between the urban areas of Bloemhof and Boitumelong that has always been unutilized and serves no purpose for the local community. The local municipality is aware of the need to integrate urban settlements, with a view to reduce travel distances to the areas of employment opportunities.

The planning practices of the past have resulted in sprawling urban areas that are un-economical. Today, planning policies transformed to mainly focus on infill development on vacant land within an urban environment, in order to combat urban sprawl. The principle also calls for a balance in land development processes. The development is in line with the sub-principle and will combat urban sprawl. The development will also ensure maximum utilization of the concerned property.

**(vii) result in communities that are viable;**

For any development to be sustainable and viable to the community, land development and planning should ensure that communities are located close to job opportunities, social facilities and basic services. This development aims specifically at providing residential development opportunities that are closer to the economic activities of Bloemhof.

**(c) the principle of efficiency, whereby -**

**(i) land development optimizes the use of existing resources and infrastructure;**

The granting of development permissions should be coupled with the provision of adequate infrastructure. The efficient usage of existing resources can promote high density growth, alleviate urban sprawl and optimise the use of land.

The development will ensure the optimum utilization of one of the most valuable resources being land, if used to its full potential, and it was indicated in Section 5 that the development can be supplied with the full spectrum of infrastructure elements such as water, sewer, refuse removal, and access roads; thus reducing the effect of the development on the natural surrounding area.

**(ii) decision-making procedures are designed to minimize negative financial, social, economic or environmental impacts; and**



The opinion is held that the development will not have a negative financial, social, economic or environmental impact on the surrounding properties, as this development will be of a formal and non-noxious nature fitting in with the land uses surrounding the proposed development area.

**(iii) development application procedures are efficient and streamlined and timeframes are adhered to by all parties;”**

This township establishment application will be processed in accordance with both the prescriptions of the Town Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986) and the Lekwa-Teemane By-law on Spatial Planning and Land Use Management which prescribes in detail the township establishment application and approval processes. The processes prescribed in terms of this legislation make provision for the necessary community involvement through a public participation process.

**(d) the principle of spatial resilience, whereby flexibility in spatial plans, policies and land use management systems are accommodated to ensure sustainable livelihoods in communities most likely to suffer the impacts of economic and environmental shocks; and -**

Standards for the protection of natural resources, agricultural land, open spaces and ecosystems have been compiled on a national and regional level. The local municipality compiled a Spatial Development Framework to increase resilience for human settlements, focusing on vulnerable and informal areas. The Spatial Development Framework needs to be flexible to adapt to social, economic and technological trends. This development is specifically aimed at providing opportunities for people that are currently devoid of land for proper housing purposes. In this regard it should be noted that the township area of Bloemhof Extension 12 forms part of a larger development plan in respect of the development of the urban area of Bloemhof / Boitumelong and in terms of this larger development plan, provision is also made for the provision of housing opportunities to middle income / bonded / FLISP housing as well as rental / social housing purposes. The provision of proper housing for the landless community of Bloemhof will alleviate the plight of a community who is most vulnerable to suffer the impacts of environmental and economic shock.

**(e) principle of good administration, whereby-**

**(i) all spheres of government ensure an integrated approach to land use and land development that is guided by the spatial planning and land use management systems as embodied in this Act;**

The Lekwa-Teemane Local Municipality has both a land use management scheme and a Spatial Development Framework as part of their land use management system. In terms of the Spatial Development Framework the area to which this development applies was specifically earmarked for residential development which renders this proposed development in line with the Spatial Development Framework. The development will also be

incorporated into the Lekwa-Teemane Land Use Scheme, 2011 in terms of applicable legislation following the opening of the required township register. This land use management scheme will effectively regulate the land uses to be established within this township area as well as the extent of development.

**(ii) all government departments must provide their sector inputs and comply with any other prescribed requirements during the preparation or amendment of spatial development frameworks;**

Integration between the different levels of government assists to create complimentary and mutually reinforcing policies, while integration between the different sectors will result in positive benefits. Government departments have been consulted during the compilation of the Spatial Development Framework of the local municipality. In addition to the fore-mentioned consultation, it should be noted that this application for township establishment was also referred to the following government and non-government departments as integral part of the public participation process:

- ✧ Department of Public Works and Roads
- ✧ Openserve (former Telkom SA Limited)
- ✧ Eskom
- ✧ Dr. Ruth Segomotsi Mompati District Municipality
- ✧ Department of Minerals Resources
- ✧ Department of Agriculture, Forestry & Fisheries (DAFF)
- ✧ Department of Water and Sanitation
- ✧ Department of Local Government and Human Settlements
- ✧ Department of Education
- ✧ Department of Health
- ✧ South African Post Office
- ✧ Transnet Freight Rail
- ✧ South African Heritage Resources Agency (SAHRA)
- ✧ South African National Roads Agency Limited (SANRAL)
- ✧ Department Rural, Environment and Agricultural Development (READ)

**(iii) the requirements of any law relating to land development and land use are met timeously;**

The Minister of Rural Development and Land Reform has prescribed timeframes to which land development applicants and decision makers must adhere to. Following approval of the application for township establishment, the further processes in finalizing the township establishment process will be government by the timeframes set out in the Town Planning and Townships Ordinance, 1986 as well as the Lekwa-Teemane By-Law on Spatial Planning and Land Use Management.

- (iv) the preparation and amendment of spatial plans, policies, land use schemes as well as procedures for development applications, include transparent processes of public participation that afford all parties the opportunity to provide inputs on matters affecting them; and;**

Effective procedures for public participation are in place, to afford the residents and other parties the opportunity to provide inputs on development applications and other matters affecting them.

The public participation process undertaken as part of this township establishment application includes the following:

- The application in respect of the establishment of the proposed township Bloemhof Extension 12 will be advertised in accordance with Section 98(1)(a) of the Lekwa-Teemane By-Law on Spatial Planning and Land Use Management and Section 108(1)(a), Regulation 26(1) and Annexure 16 of the Town Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986) in the Stellalander Newspaper on 15 and 22 November 2017 as well as in the North West Provincial Gazette on 14 and 21 November 2017. Objectors will be afforded a period of 30 days from 15 November 2017 to submit objections or comments in respect of the proposed township area to the Municipal Manager and the authorised agent.
- The application will also, in accordance with the prescriptions of Section 99(1)(c) of the Lekwa-Teemane By-Law on Spatial Planning and Land Use Management read with Section 108(1)(b) of the Town Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986) be referred to the following external organizations / departments for comments or objections:
  - ✘ Department of Public Works and Roads
  - ✘ Openserve (Telkom SA Limited)
  - ✘ Eskom
  - ✘ Dr. Ruth Segomotsi Mompati District Municipality
  - ✘ Department of Minerals Resources (DMR)
  - ✘ Department of Agriculture, Forestry & Fisheries (DAFF)
  - ✘ Department of Water and Sanitation
  - ✘ Department of Local Government and Human Settlements
  - ✘ Department of Education
  - ✘ Department of Health
  - ✘ South African Post Office
  - ✘ Transnet Freight Rail

- ✧ South African Heritage Resources Agency (SAHRA)
- ✧ South African National Roads Agency Limited (SANRAL)
- ✧ Department Rural, Environment and Agricultural Development (READ)

The fore-mentioned organizations / departments will be afforded a period of 60 days to comment in this matter in accordance with the prescriptions of Section 108 (1) of the Town Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986) read with paragraph (l) of Schedule 1 of the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013).

- In addition to the fore-mentioned notices, notices will also be served on all adjacent property owners in accordance with the prescriptions of Section 99(1)(c) of the Lekwa-Teemane By-law on Spatial Planning and Land Use Management.
- To ensure the greatest extent of public participation, notices will also be posted on the subject properties in accordance with the prescriptions of Section 101(1)(a) of the Lekwa-Teemane By-law on Spatial Planning and Land Use Management.

**(v) policies, legislation and procedures must be clearly set in order to inform and empower members of the public;**

The procedures prescribed in terms of the Town Planning and Townships Ordinance, 1986 and the Lekwa-Teemane By-Law on Spatial Planning and Land Use Management clearly sets out the process to be followed during the establishment of a township area and said procedures afford members of the public the opportunity to not only participate in this process but also to scrutinize the documentation relating to the application. Members of the public will be afforded a period of 30 days to comment or object against this development.

## **6.20 GENERAL**

From a land use and town planning point of view the proposed development areas are ideally suited for residential purposes due to the following:

- The purpose of the application for township establishment is to provide sufficient erven within the Bloemhof / Boitumelong urban complex to address the urgent short term need for residential erven that can be utilized for low income / subsidized housing purposes.



- The proposed development area is located directly adjacent to existing township areas and constitutes the logic extension of the existing built-up urban area of Boitumelong/Bloemhof and constitutes infill development.
- The proposed township area is easily accessible through numerous connector roads linking the township area through the existing street network of the adjacent township areas of Bloemhof Extension 10 and Boitumelong Extension 4 whilst also connecting to Provincial Road P12-1 (R34) (Bloemhof – Schweizer Reneke road) through the proposed township area of Bloemhof Extension 13. The proposed township area is therefore easily accessible.
- The proposed township area of Bloemhof Extension 12 will also be linked to the economic activities offered within the Bloemhof urban area through the existing road network of Bloemhof which links with the proposed road network of the proposed township area.
- The layout plan that was compiled in respect of the township area comprehensively addresses the issues identified during the pre-planning studies relating inter alia to the following:
  - Geotechnical restrictions encountered on site;
  - Topographical features encountered on site;
  - Incorporating the road network with that of the adjacent township areas;
  - Incorporating the building restriction areas;
  - Incorporating all existing servitudes and Eskom powerlines within the layout plan of the township area;
  - Incorporating the results of the geotechnical investigation which indicated that the development area is suitable for township establishment purposes;
  - Engineering services can be provided to the proposed township area.
  - Traffic generated by the development can be accommodated within the existing road network.

In view of the fore-mentioned, we trust that this application will be considered favourably.

**K. RAUBENHEIMER**  
**Pr. PIn A/924/1996**