

# MOTIVATION REPORT

06 August 2021

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## PROPOSED TOWNSHIP ESTABLISHMENT, SUBDIVISION AND REMOVAL OF RESTRICTIVE TITLE CONDITIONS ON:

- A Portion of the Remaining Extent of Portion 25 (a portion of Portion 23) of the farm Rietfontein 372, Registration Division J.Q., North West Province

## PROPOSED TOWNSHIP DERBY EXTENSION 4

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- Development Management
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# MOTIVATION REPORT

***PROPOSED SUBDIVISION AND TOWNSHIP ESTABLISHMENT (DERBY EXTENSION 4 COMPRISING ERVEN 1316 TO 1433) ON A PORTION OF THE REMAINING EXTENT OF PORTION 25 (A PORTION OF PORTION 23) OF THE FARM RIETFONTEIN 372, REGISTRATION DIVISION J.Q., NORTH WEST PROVINCE, IN TERMS OF SECTION 71(1) AND SECTION 59(1) RESPECTIVELY, OF THE KGETLENGRIVIER BY-LAW ON SPATIAL PLANNING AND LAND USE MANAGEMENT (2016) AS WELL AS APPLICATION FOR THE CONSENT OF THE CONTROLLING AUTHORITY IN RESPECT OF THE LAPSING OF CONDITIONS 1 TO 4 IN DEED OF TRANSFER T95692/2017 IN TERMS OF SECTION 45(6) OF THE SPATIAL PLANNING AND LAND USE MANAGEMENT ACT, 2013 (ACT 16 OF 2013)***

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

## 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 to attend to the establishment of the proposed township Derby Extension 4, which comprises 118 erven as part of a formalisation project. The project constitutes a collaboration between the Department of Human Settlements, King and Associates (as Programme Management Unit (PMU) of the Department of Human Settlements) and the Kgetlengrivier Local Municipality to create a formal neighbourhood through a proper township establishment process to allow for the co-ordinated installation of services and the transfer of erven to the beneficiaries thereof. The proposed township will form an extension of the existing township areas of Derby Extension 2 and Derby Extension 3 located to the east of the development and will integrate well with the surrounding land uses.

The proposed township is residential in nature in order to provide decent housing opportunities for the existing informal dwellers on site. Upon completion the proposed township will integrate well with the existing urban area of Derby located to the south of the development area and will function as an integrated human settlement.

The planning of the proposed new township area at Derby was conducted in an integrated manner and focussed on the entire designated development area. Upon completion, the township will comprise of Erven 1316 – 1433 that will be zoned as follows:

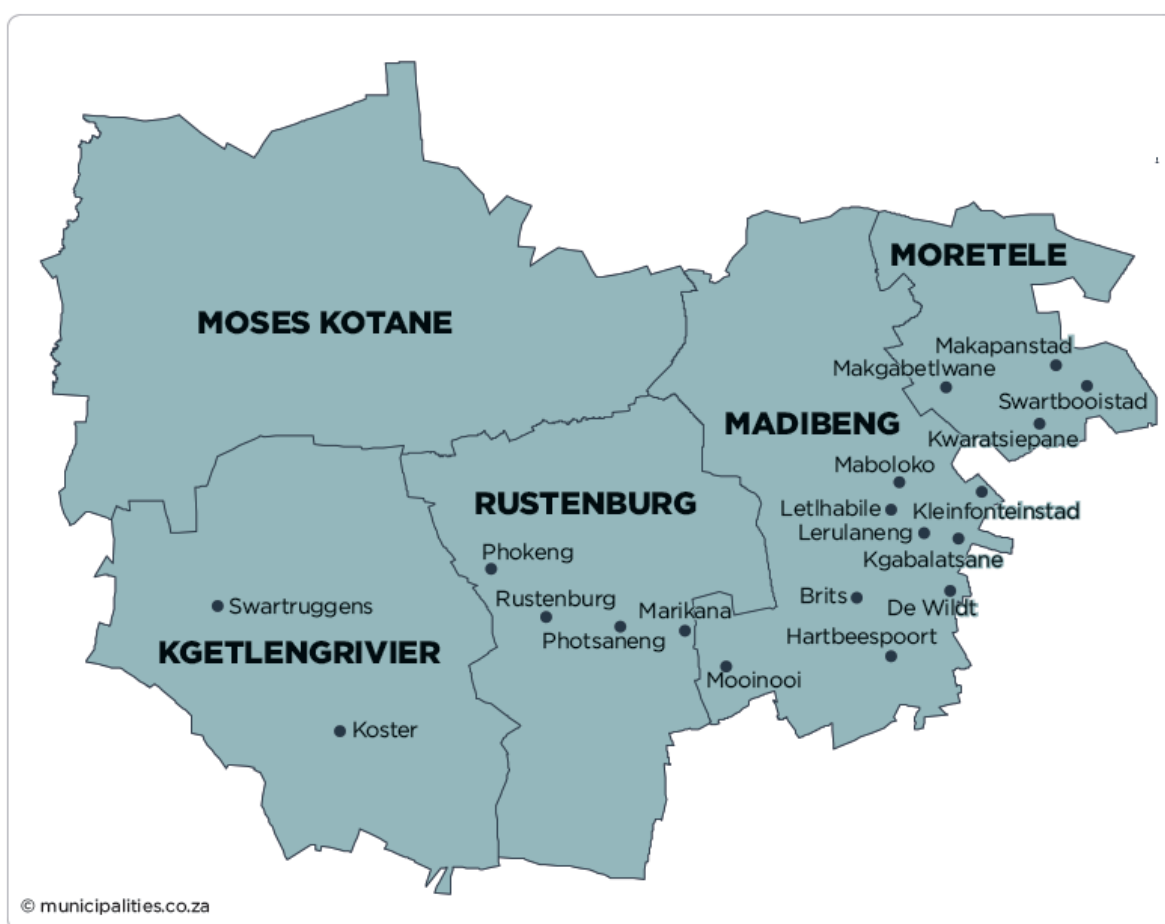
LEGEND					
Land Use		Number of Erven	Erf Numbers	Area in Ha	% of Area
Residential 3		112	1317-1339; 1341-1429	3.5237ha	28.53%
Authority		1	1316	0.7122ha	5.77%
Institutional (Creche)		1	1340	0.0452ha	0.37%
Public Open Space		4	1430-1433	6.4640ha	52.33%
Street				1.6065ha	13.00%
<b>TOTAL</b>		<b>118</b>	<b>1316-1433</b>	<b>12.3516ha</b>	<b>100%</b>

## 1.2 BACKGROUND OF KGETLENGRIVIER LOCAL MUNICIPALITY

### 1.2.1 REGIONAL LOCALITY

The Kgetlengrivier Local Municipality (NW374) is a category B plenary type municipality, located in the south-eastern part of the North West Province and forms part of Bojanala Platinum District Municipality (DC37). It borders Moses Kotane in the north and Rustenburg in the west. The municipality is situated on the N4 toll road from Pretoria to Botswana and acts as a gateway from Johannesburg to Botswana. It is one of five municipalities located in the Bojanala Platinum District Municipality area. It consists of three towns, namely; Koster, Derby and Swartruggens. The municipal area covers a total of 3 973.31 km<sup>2</sup> and the latest population figures show that there were 59 562 persons residing in the municipal area by 2016.

Map 1: Regional locality of Kgetlengrivier Local Municipality

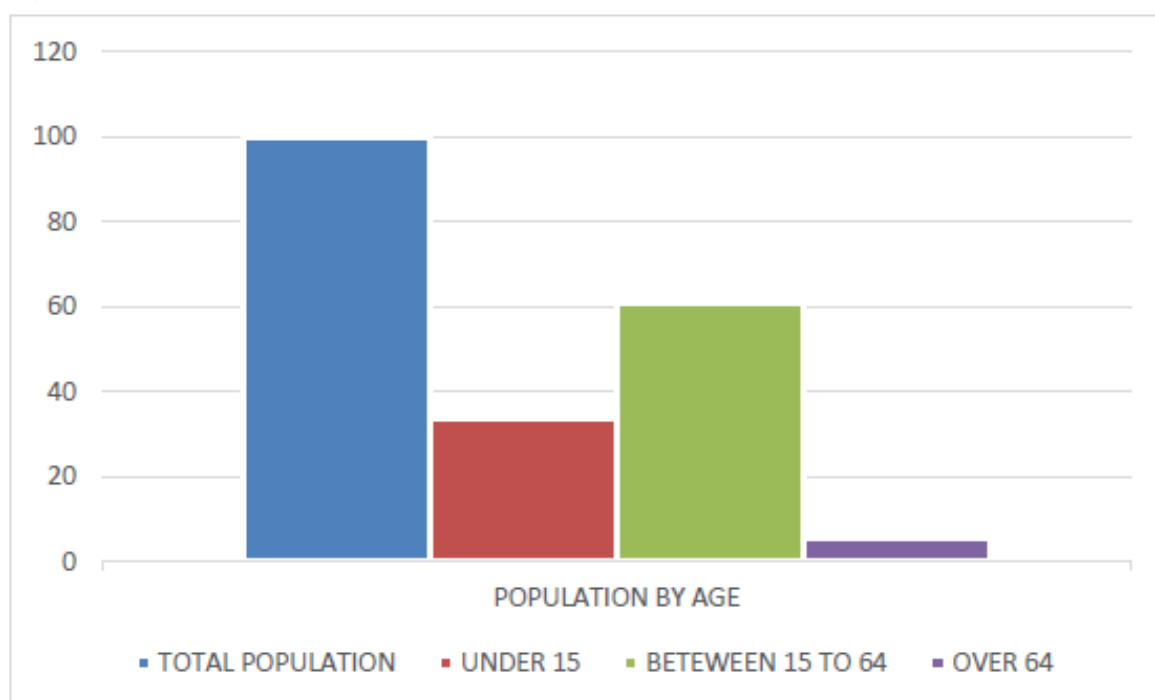


The area's rich environment and natural resource base provides opportunities for agriculture and slate quarry development. The area's mining activities are those related to diamonds, slate and aggregate sand. It has a strong competitive advantage in terms of its climate, biodiversity and numerous dams. Key economic sectors are Agriculture and Mining.

## 1.2.2 DEMOGRAPHICS

According to the Community Survey of 2016 (by StatsSA) the population of Kgetlengrivier Local Municipality increased from 51 049 people in 2011 (Census 2011) to 59 562 in 2016. These figures indicate that the population in the municipality continues to grow significantly, and that has an impact on the provision of housing and service delivery. The municipality must improve planning in order to meet the new challenges that has manifested itself from the population growth. The average growth of the municipality is 3.51% per annum.

The majority of this population falls within the 15 – 64 years age group, as seen in Figure 1 below:



Source: STATS SA Community Survey 2016

Figure 1: Age Distribution: Kgetlengrivier LM

This age group is typically considered economically active. However, as can be seen below the municipality battles with unemployment figures.

### 1.2.2.1 Economic Overview

The data from census 2011 indicates that 18 859 people are economically active (employed or unemployed but looking for work), and of these, **20,5% are unemployed**. Of the 9 142 economically active youth (15 – 34 years) in the area, 26,7% are unemployed. According to the municipal Integrated Development Plan,



the current situation has worsened since 2011 and more needs to be done with regard to sustainable job creation and skills transfer.

Table 1 below illustrates the average household income within the municipality:

**Table 1: Individual monthly income within Kgetlengrivier LM**

Individually Monthly Income	Total	Total %
No Income	18913	37.05%
R1-R400	7222	14.15%
R401-R800	2207	4.32%
R801-R1 600	8281	16.22%
R1 601-R3 200	2838	5.56%
R3 201-R6 400	1627	3.19%
R6 401-R12 800	1297	2.54%
R12 801-R25 600	787	1.54%
R25 601-R51 200	292	0.57%
R51 201-R102 400	104	0.20%
R102 401-R204 800	70	0.14%
R204 801 or more	16	0.03%
Unspecified	5807	11.38%
Not applicable	1587	3.11%
Total	51049	100.00%
<b>Source: stats SA 2011</b>		

The data indicates that most of the people (90% +) residing within the municipal boundaries earn less than R3 500.00 per month, with 37% of the population earning no income. These figures clearly indicate the demand for free basic service delivery and housing provision within the municipality.

In respect of housing provision, the following three monthly income ranges are used:

- R0 – R3 500 (qualify for government subsidy and CRU units)
- R3 500 – R7 500 (qualify for social housing)
- R7 500 and higher (qualify for bonded houses)

### 1.2.2.2 Population Overview

As indicated, the 2016 estimated population figures for Kgetlengrivier LM were 59 562 people. The average household size is indicated as 3.1 people (StatsSA) with a growth rate of 3.51% per annum. The estimated population figure for 2021 is therefore ± 70 740 people. The population density for the municipality is estimated

at 13 persons per km<sup>2</sup> and approximately 29,3% of households in the municipality are headed by women.

### 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:

- Aerial survey of the development area conducted by TMK Professional Land Surveyors;
- Generation of contour based on aerial survey conducted by TMK Professional Land Surveyors;
- Engineering Geological Investigation conducted by Geoset CC;
- Phase 1 Heritage Impact Assessment conducted by A Pelser Archaeological Consulting CC;
- Detail civil engineering services investigation conducted by EPS Consulting Engineers;
- Detail electrical engineering services investigation conducted by AMPcon Consulting Electrical Engineers;
- Environmental Impact Assessment conducted by AB Enviro-Consult;
- Ecological Fauna and Flora Habitat Survey conducted by Reinier F Terblanche;
- Traffic Impact Study conducted by Route<sup>2</sup> Transport Strategies.

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

In terms of current policy directives, 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.

The approach to ensuring that sustainable human settlements are achieved should include:

- Spatial transformation and economic integration
- Viable infrastructure provisioning and life-cycle management

- Functional, responsive and innovative design
- Easy and close access to range of services and amenities
- Affordable urban living
- Financial viability
- Effective urban management and municipal financial sustainability
- Environmental sustainability
- Local job creation and empowerment

## 1.4 APPLICATION

Koot Raubenheimer (Id No. 700305 5192 089) of the company Maxim Planning Solutions (Pty) Ltd (2002/017393/07), being the authorised agent of the Kgetlengrivier Local Municipality (NW374), is hereby applying to the Kgetlengrivier Local Municipality in terms of:

- i. Section 71(1) of the Kgetlengrivier By-Law on Spatial Planning and Land Use Management (2016) for the subdivision of the Remaining Extent of Portion 25 (a portion of Portion 23) of the farm Rietfontein 372, Registration Division J.Q., North West Province into 1 portion together with a remainder;
- ii. Section 59(1) of the Kgetlengrivier By-Law on Spatial Planning and Land Use Management (2016) for the establishment of the proposed township Derby Extension 4 on a portion of the Remaining Extent of Portion 25 (a portion of Portion 23) of the farm Rietfontein 372, Registration Division J.Q., North West Province comprising approximately 112 erven zoned “Residential 3”, one (1) erf zoned “Institutional” for a crèche, one (1) erf zoned “Authority”, four (4) erven zoned “Public Open Space” as well as streets; and
- iii. Section 45(6) of the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013) for the consent of the Controlling Authority in respect of the lapsing of conditions 1 to 4 as contained in Deed of Transfer T95692/2017.

## 1.5 PUBLIC PARTICIPATION

The proposed township establishment application will be advertised in terms of Section 98(1)(a), 98(1)(d) and 98(1)(h) of Kgetlengrivier By-Law on Spatial Planning and Land Use Management (2016). The public participation process will include the following:

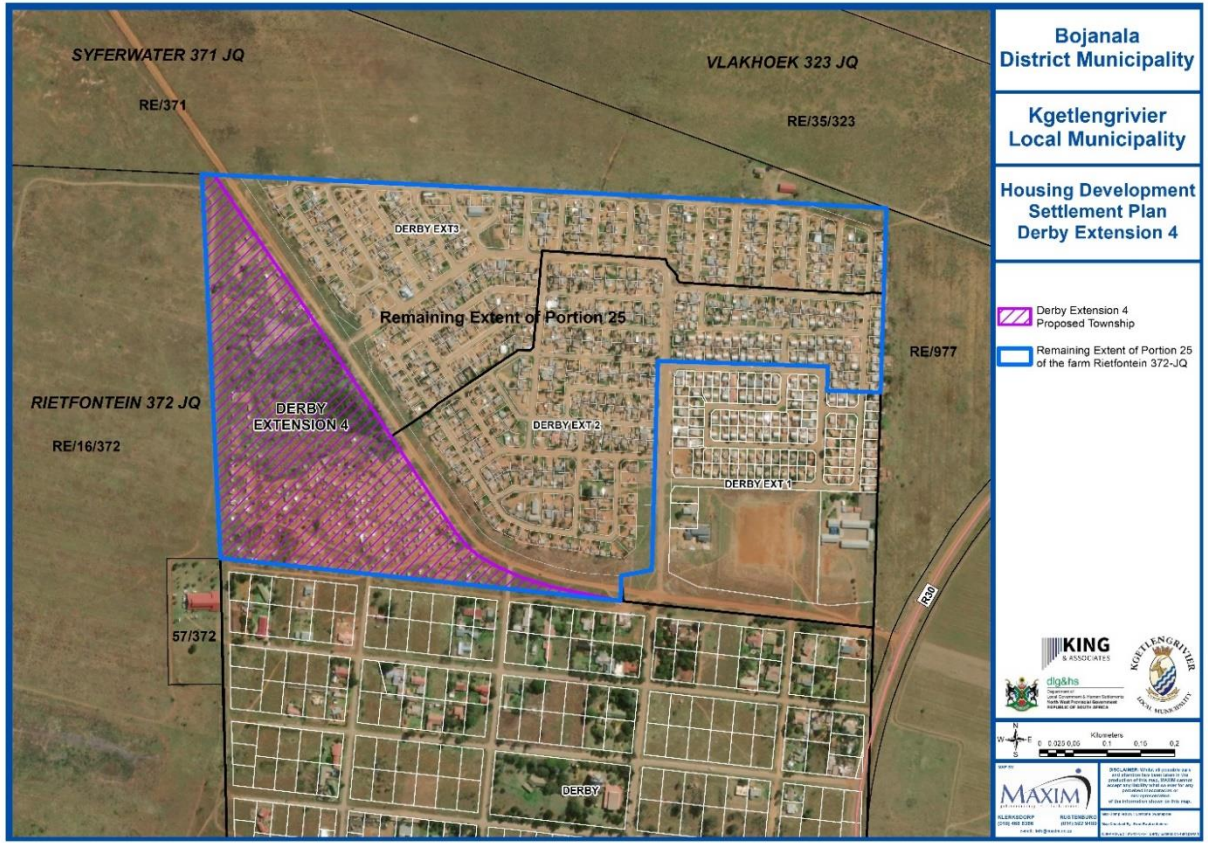
- Publishing notices of the application (as set out in **Annexure C1** of the comprehensive Land Development Application) in a local newspaper in Afrikaans & English as contemplated in Section 98(2)(a) of the Kgetlengrivier By-Law on Spatial Planning and Land Use Management (2016);
- Appending notices of the application (as set out in **Annexure C2** of the comprehensive Land Development Application) on the notice board situated at the library as contemplated in Section 98(2)(b) of the Kgetlengrivier By-Law on Spatial Planning and Land Use Management (2016);

- Displaying a notice (as set out in **Annexure C3** of the Comprehensive Land Development Application) in a conspicuous place on the land to which the application applies as contemplated in Section 101(1)(a) and 101(2) of the Kgetlengrivier By-Law on Spatial Planning and Land Use Management (2016);
- Notices to adjacent property owners (as set out in **Annexure C4** of the comprehensive Land Development Application) as contemplated in Section 99(1)(c) of the Kgetlengrivier By-Law on Spatial Planning and Land Use Management (2016).
- Notices to the following external departments / organizations (as set out in **Annexure C5** of the comprehensive Land Development Application) in order to obtain letters of consent / objection as contemplated in Section 99(1)(d) of the Kgetlengrivier By-Law on Spatial Planning and Land Use Management (2016):
  - o Department of Co-operative Governance and Traditional Affairs (COGHSTA)
  - o Department of Agriculture, Forestry and Fisheries (DAFF)
  - o North West Department of Education
  - o Department of Health
  - o Department of Roads and Public Works
  - o Department of Water & Sanitation
  - o Eskom
  - o Bojanala Platinum District Municipality
  - o Department Agriculture, Land Reform and Rural Development (DALRRD)
  - o Openserve (former Telkom SA Limited)
  - o South African Heritage Resources Agency (SAHRA)
  - o South African National Roads Agency Limited (SANRAL)
  - o SA Post Office Limited (SAPO)
  - o Transnet Freight Rail
  - o Department of Mineral Resources (DMR)

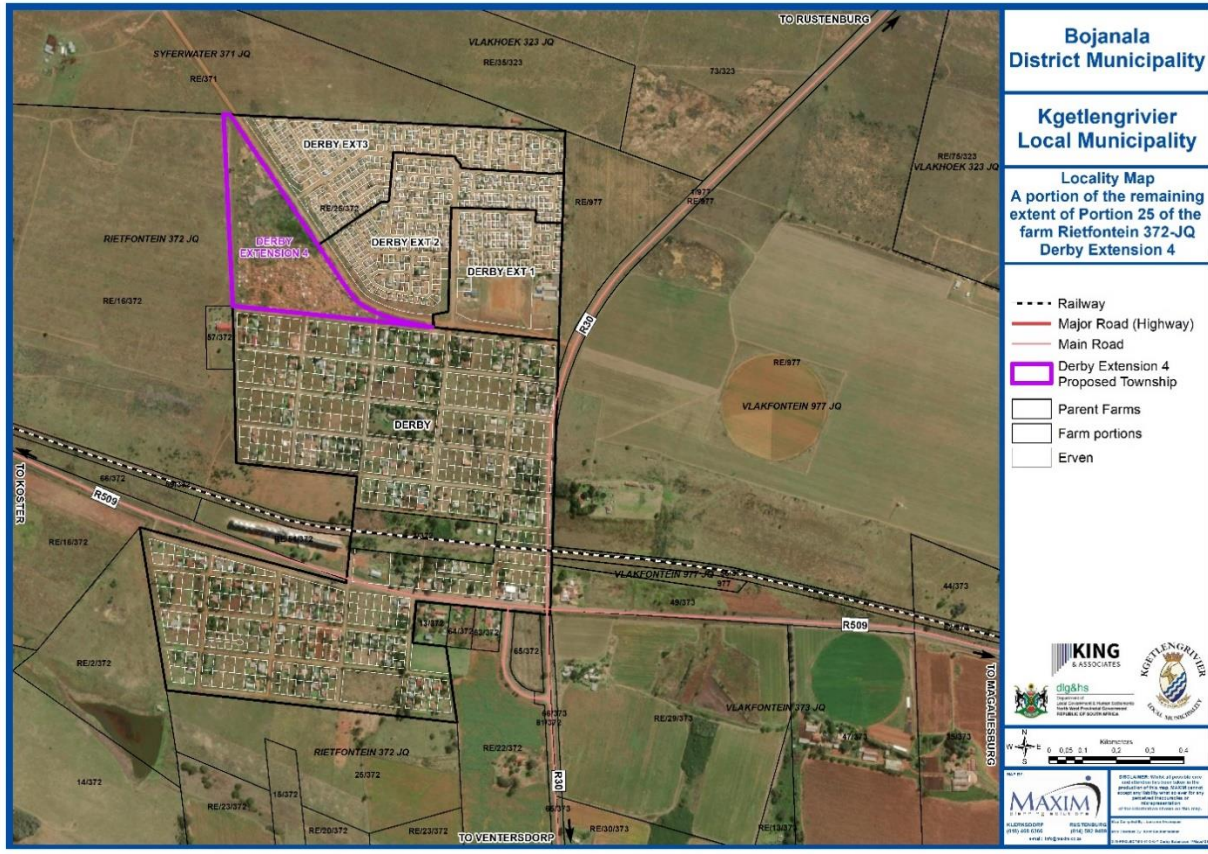
The public will be afforded a period of 30 days to comment in this matter whereas the external organisations / departments that will be approached for comments will be afforded a period of 60 days to furnish us with their comments in respect of the application. Following receipt of the said comments we will forward same to your Municipality for your further attention and record purposes.

## 1.6 **STUDY AREA DELINEATION**

The proposed development area comprises a portion of the Remaining Extent of Portion 25 (a portion of Portion 23) of the farm Rietfontein 372, Registration Division J.Q., North West Province. The locality of the parent farm is reflected on **Map 2** below whereas the specific application site is reflected on **Map 3** below:



Map 2: Locality of Remaining Extent of Portion 25 (a portion of Portion 23) of the farm Rietfontein 372, JQ, NW



Map 3: Application Site (Outside Figure)

## 1.7 REPORT OUTLINE

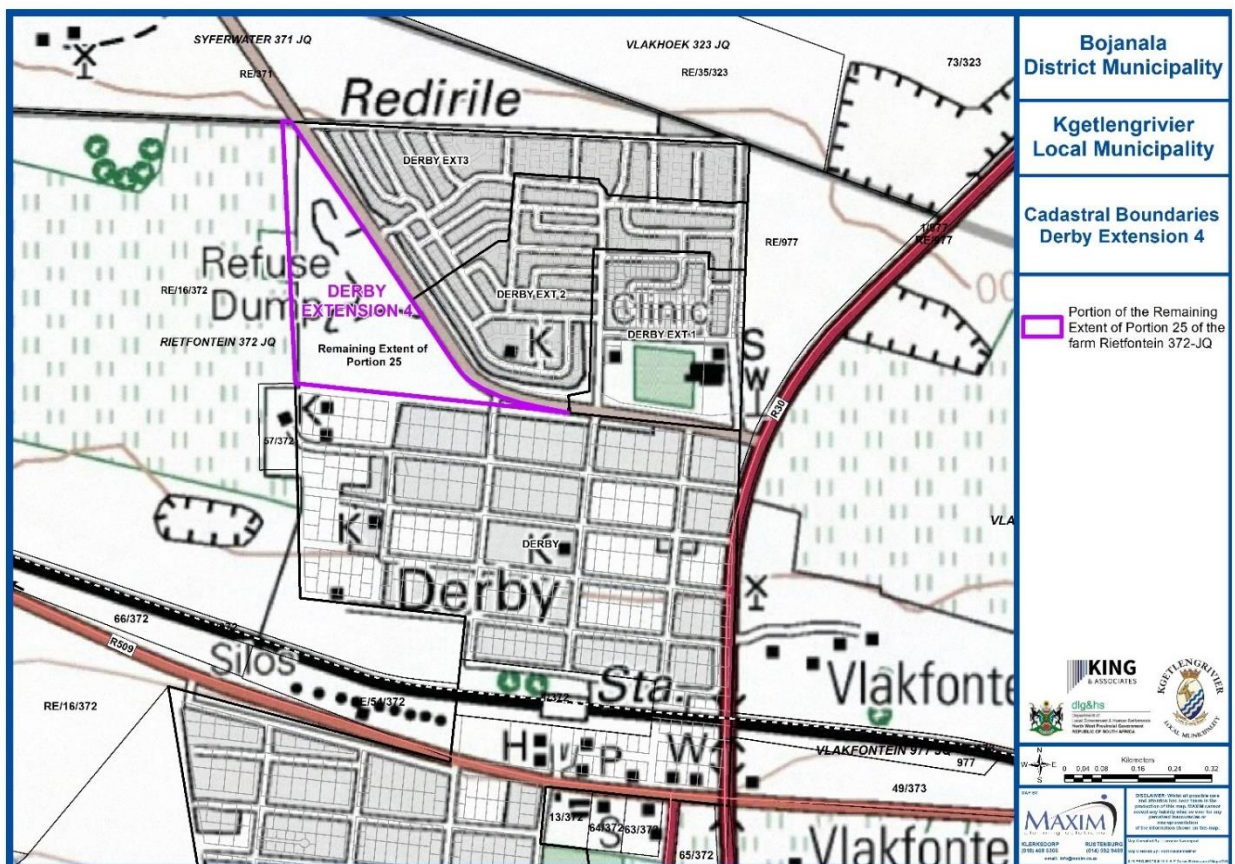
The remainder of the report is structured in terms of the following main headings:

- 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 AREA

### 2.1 LOCALITY

The application site is located north of Derby and west of the existing township areas of Derby Extension 2 and Derby Extension 3 and is bordered to the north and north-east by District Road D1616 that links to the R30 in the east (Map 4 below). The proposed development will be accessed from North Street, which runs along the southern boundary of the application site.



Map 4: Locality Map

An orientation locality plan of the proposed township/development area is attached to the comprehensive Land Development Application as **Annexure H1 – H4**.

### 2.2 SG DIAGRAM

The Remaining Extent of Portion 25 (a portion of Portion 23) of the farm Rietfontein 372, Registration Division J.Q., North West Province is reflected on diagram SG No. A915/1920 (attached as **Annexure F1** to the comprehensive Land Development Application).

## 2.3 OWNER

The application site is currently registered as follows:

Table 2: Ownership details

Property Description	Registered Owner	Deed of Transfer Number
Remaining Extent of Portion 25 (a portion of Portion 23) of the farm Rietfontein 372, Registration Division J.Q., North West Province	Kgetlengrivier Local Municipality	T95692/2017

(Refer **Annexure E1** of the comprehensive Land Development Application for a copy of the Windeed Deeds Office Enquiry conducted in respect of the above-mentioned property as well as **Annexure E2** for the relevant Deed of Transfer T95692/2017).

## 2.4 BONDHOLDER

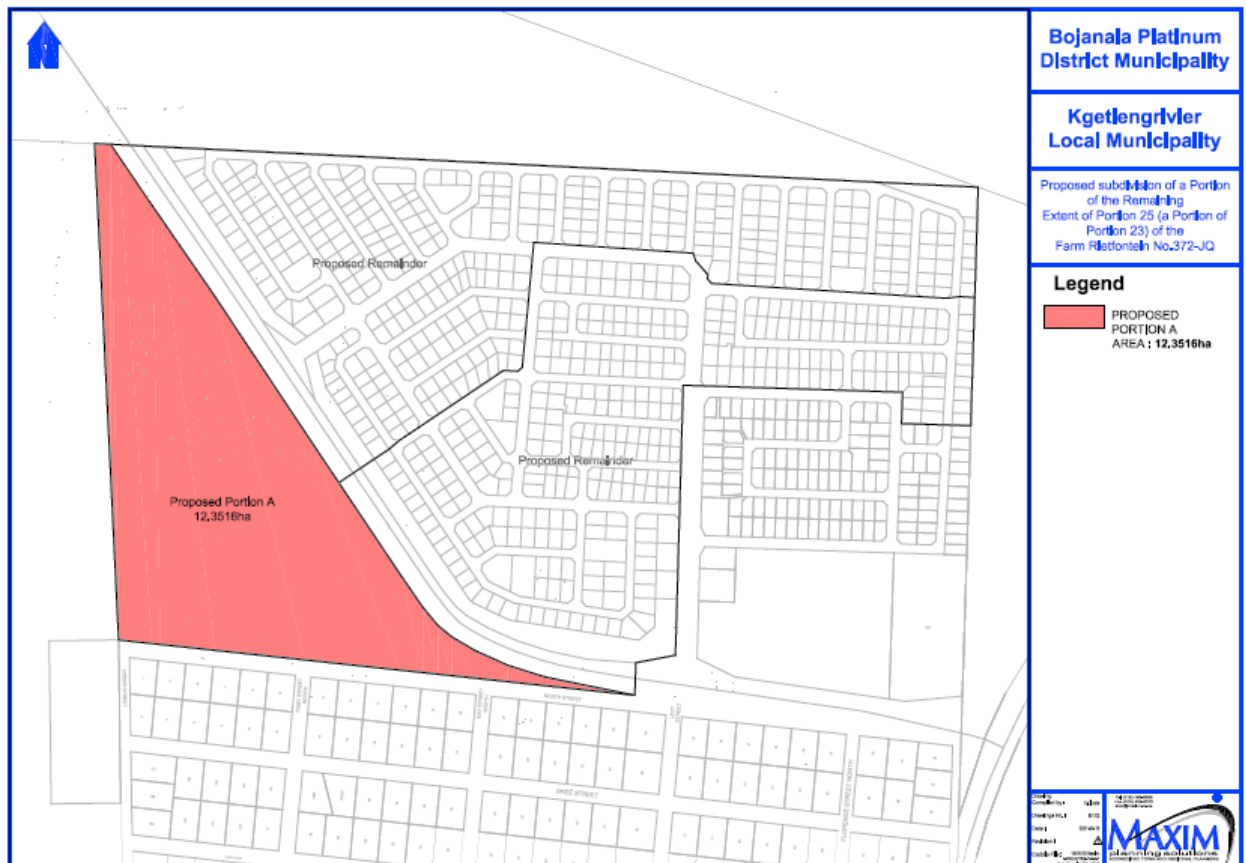
The application property is not currently subject to any bond (refer **Annexures E1** of the comprehensive Land Development Application for Windeed Deeds Office Enquiry that confirms the absence of any bonds as well as **Annexure K** for the Conveyancer Certificate to the same effect).

## 2.5 AREA

As discussed, the application only applies to a portion of the parent farm. Approximately 12.3516ha of the Remaining Extent of Portion 25 (a portion of Portion 23) of the farm Rietfontein 372, Registration Division J.Q., North West Province will be utilised for the proposed township area, as seen in Map 5 below, indicating the outside figure of the proposed township.



Map 5: Subdivision Map



## 2.6 EXISTING LAND USE AND ZONING

### 2.6.1 CURRENT LAND USES

As can be seen below, there is currently an informal settlement present on the northern and southern portions of the application site. From aerial photography (Google Earth) it seems that the informal settlement on site started towards the end of 2017.

Map 6: Aerial view of informal settlement on site



Photo 1: Informal Settlement on Site

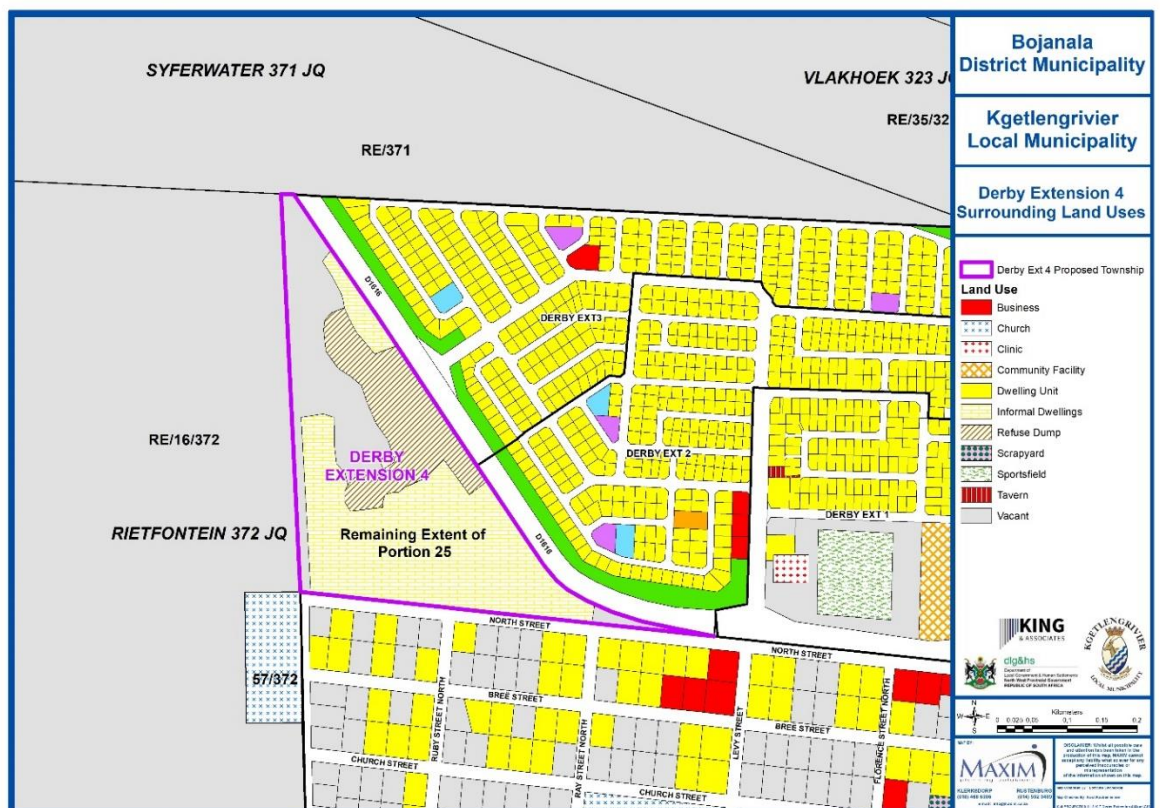
In the centre of the site there is an extensive illegal dumping site. The area was previously mined and the subsequent quarry has been used for dumping as can be seen in the photographs below. This area has been identified as unsuitable for development during the geotechnical investigation (discussed in more detail in Section 3.8 of this report) and will need to be fenced off from the proposed residential uses.



Photo 2: Illegal Dumping on Site

## 2.6.2 SURROUNDING LAND USES

As indicated in the Map below, the application site is situated adjacent to the existing Derby and Derby Extensions 2 and 3 township areas. The land uses to the east of the application site are therefore primarily residential in nature (with complementary land uses), with residential and vacant residential stands found to the south of the proposed development. The land to the west of the site is still undeveloped and used for agricultural purposes.



Map 7: Surrounding Land Uses

The proposed development will integrate with the surrounding land uses. Provision has been made for the proposed road network to integrate with existing roads (Grens Street and Ruby Street North) to the south of the development. The residential nature of the proposed township is well suited to the surrounding townships.

### 2.6.3 CURRENT ZONING

The property to which the land development application applies is currently zoned “Agricultural” in terms of the Kgetlengrivier Land Use Scheme, 2017.

(Refer to Zoning certificates attached as **Annexure N** to the comprehensive Land Development Application).

## 2.7 MINERAL RIGHTS

No mineral rights are registered against the property. The reservation of rights to minerals is 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 land development application will subsequently also be referred to the Department of Mineral Resources for its consent in terms of Section 53 of the fore-mentioned Act in respect of the proposed development.

## 2.8 RESTRICTIVE TITLE CONDITIONS

As discussed, application is also being made in terms of Section 45(6) of the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013) for the consent of the Controlling Authority (in this instance the Kgetlengrivier Local Municipality) in respect of the lapsing of conditions 1 to 4 on page 2 of Deed of Transfer T95692/2017, which read as follows:

1. *“The land may not be sub-divided without the written approval of the Controlling Authority as defined in Act 21 of 1940.*
2. *Not more than one dwelling house together with such outbuildings as are ordinarily required to be used in connection therewith, shall be erected on the land except with the written approval of the Controlling Authority as defined in Act 21 of 1940.*
3. *The land shall be used for residential and agricultural purposes only and no state a place of business or industry whatsoever may be opened or conducted on the land without the written approval of the Controlling Authority as defined in Act 21 of 1940.*
4. *No building or any structure whatsoever shall be erected within a distance of 300 cape feet, from the centre line of the road without the written approval of the Controlling Authority as defined in Act 21 of 1940.”*

## 2.9 SERVITUDES

There are no formal servitudes registered against the property.

## CHAPTER 3: PHYSICAL ASPECTS

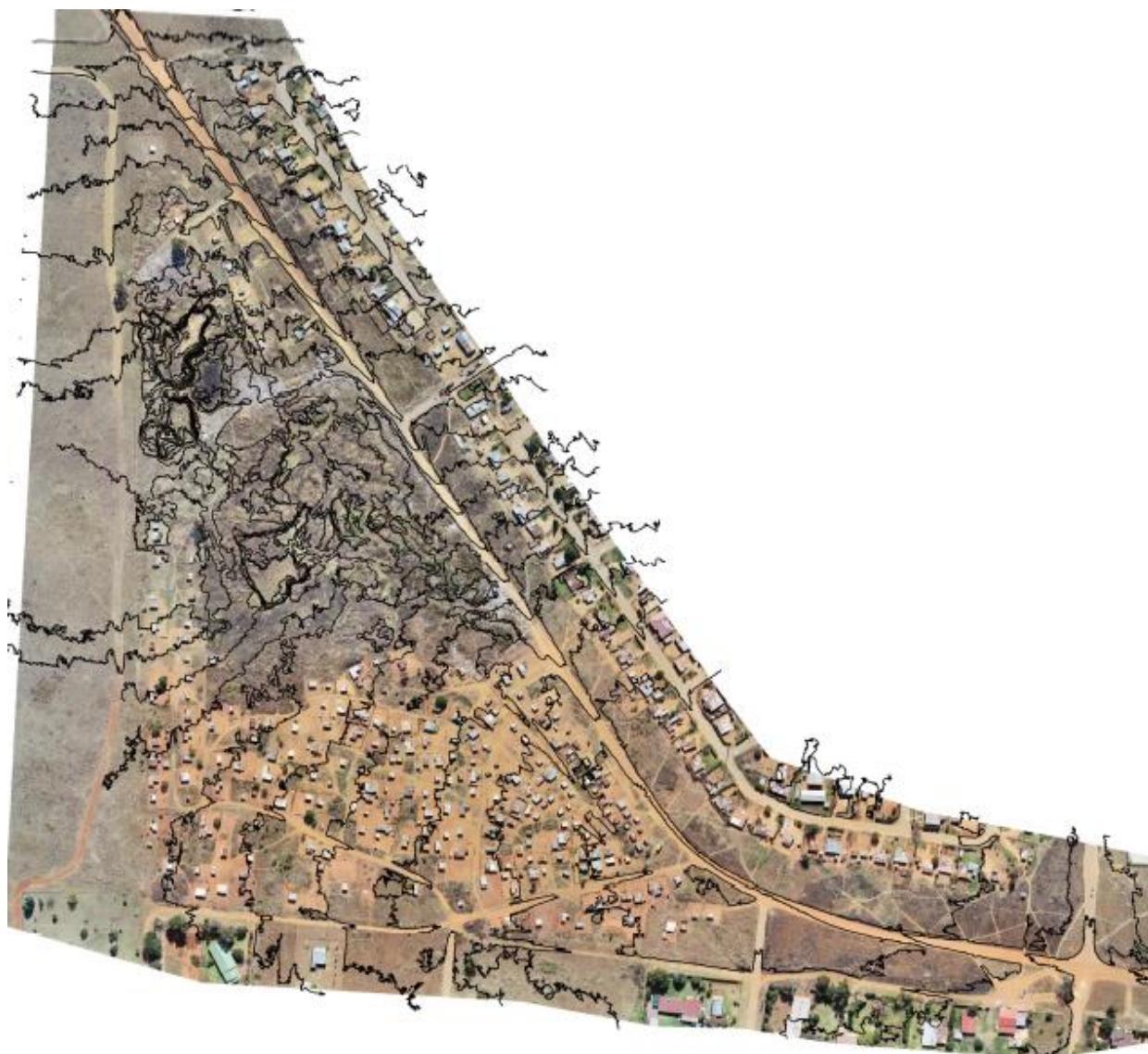
### 3.1 TOPOGRAPHY & DRAINAGE

As part of the pre-planning studies that were conducted in respect of the development area, an aerial survey was conducted by TMK Professional Land Surveyors. This aerial survey included:

- High resolution aerial photography and the creation of digital aerial photo images (**Map 8** refers) (refer also to **Annexure G1** of the comprehensive Land Development Application)
- Fieldwork and ground control points
- Line mapping (**Map 8** refers):
  - Cadastral information
  - Contour mapping (0,5m contour intervals)(refer also to **Annexure G2** of the comprehensive Land Development Application).

The results of the aerial survey and the subsequent line mapping are reflected on Map 8.

Map 8: Aerial photograph & contour mapping of application site



The site is located on a shallow slope towards the north, with a large quarry or waste dump present in the central portion of the site.

### 3.2 CLIMATE

The region is characterized by summer rainfall with thunderstorms, with annual low rainfall figures of 685 mm (Rustenburg) and 703 mm (Buffelspoort) 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 2,4 for Rustenburg. 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.

### 3.4 1:100 YEAR FLOODLINE

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 sourish mixed bushveld *veld type* (Acocks, 1988). The site itself is covered by sparse grasslands of which some was used as agriculture land, and few indigenous trees are present on site.

### 3.6 FAUNA AND FLORA ASSESSMENT

To establish the possibility that threatened flora and fauna known to occur in North West Province are likely to occur within the proposed development site (and the immediate surrounding area) or not, an Ecological Fauna and Flora Habitat Survey was commissioned and said survey was conducted by Reinier F Terblanche (refer **Annexure O3** to the comprehensive Land Development Application). The assessment of Species which are not threatened but of conservation concern, for example near threatened, data deficient or declining species also received attention in the survey.

#### 3.6.1 **Ecological Sensitivity:**

Vegetation at the site appears to be extensively degraded, modified and transformed. Alien invasive weeds are common at the site. Threatened species appear to be absent. The scope for the site to be a corridor of particular conservation importance is small. The scope for the vegetation at the site to be restored and conserved is small. Ecological sensitivity at the site is Low, as seen below in Map 9.



Map 9: Ecological Sensitivity



### 3.6.2 Conclusion:

The Ecological Fauna and Flora Habitat Survey concluded as follows:

- Informal developments, diggings and extensive informal dumping at large parts of the site have led to extensive transformation, modification and degradation of vegetation at the site.



Figure 2: Illegal dumping on site



Figure 3: Extensive diggings on site

- Indigenous grass species, forbs and a few shrubs or small trees remain at some isolated patches at the site. The alien invasive tree species *Acacia decurrens* and the alien invasive reed species, *Arundo donax* are present at the site. Alien invasive weeds are conspicuously abundant at the site.



Figure 4: Alien invasive weeds on site

- **Wetlands and rocky ridges appear to be absent at the site.**
- Vegetation type Rand Highveld Grassland (Gm 11) (Mucina & Rutherford 2006) is listed as a Threatened ecosystem, Vulnerable, by the National List of Threatened Ecosystems (2011). Owing to developments at some adjacent areas, the extensive degradation and transformation of vegetation at the site, the small scope for any restoration of the site to its former vegetation type, the overall scope for conservation of this vegetation type at the site, is small.
- **No Threatened or Near Threatened plant or animal species appear to be resident at the site. No other plant or animal species of particular conservation concern appear to be present at the site.**
- **The scope for the site to be a corridor of particular conservation importance, is small.**
- **Ecological sensitivity at the site is low.**
- Based on the present survey at the site and adjacent areas the ecological sensitivity of the area where informal developments took place would probably have been medium-low. There are no distinct indications that the area where the informal developments took place would have contained sensitive species.
- Following the mitigations which will be upheld and planned footprint for development all the impact risks listed above are low.
- If the development is approved a key issue would be continued monitoring and eradication of alien invasive plant species. It is in particular alien invasive species

such as *Melia azedarach* (*Syringa*) and alien invasive Australian *Acacia* species which should not be allowed to establish.

- If the development is approved an opportunity presents itself to cultivate indigenous plant species which would benefit urban nature conservation.

### 3.7 GROUNDWATER & DRAINAGE

Plate flow is the dominant drainage pattern on site, and no drainage channel intersects the site. Drainage occurs in a northerly direction and then northwards towards the Selons River and later into the Elands River.

The permanent or perched water table on site is deeper than 1,5m below ground surface.

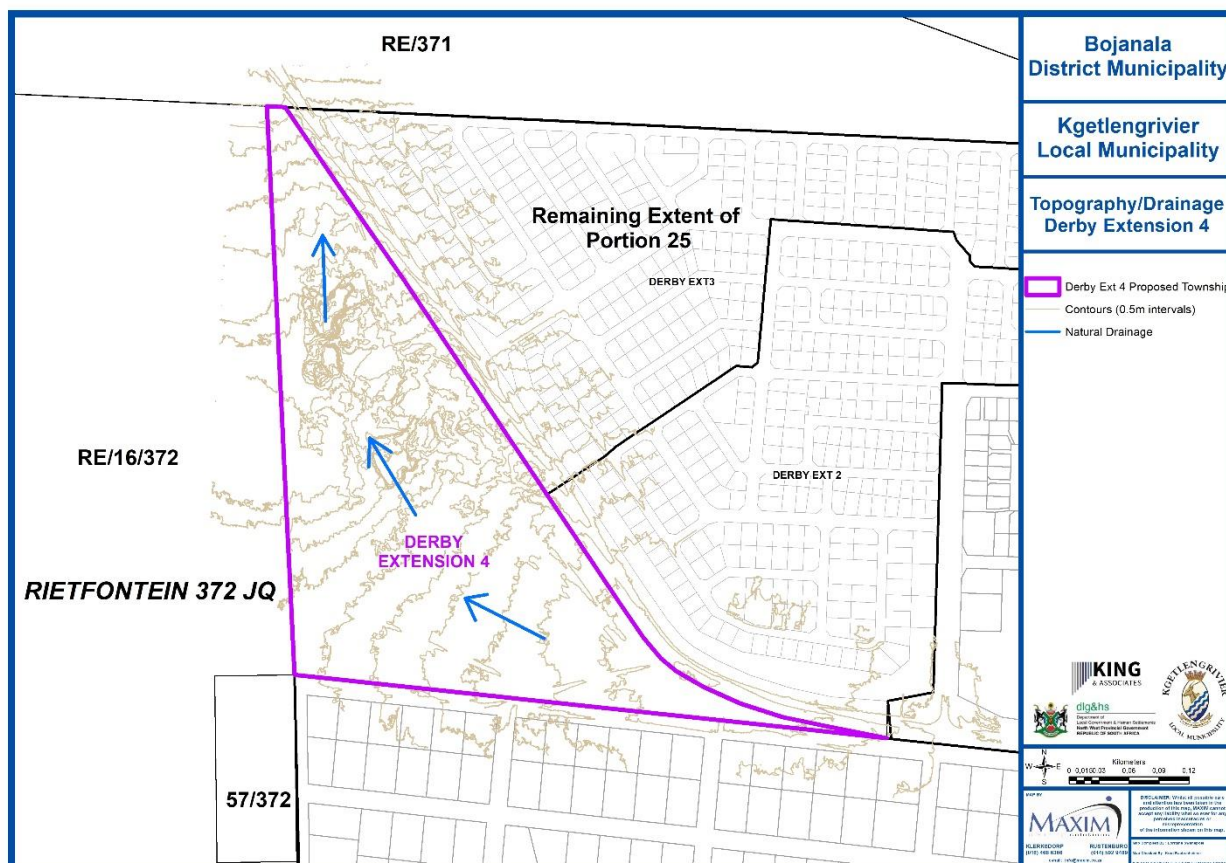


Figure 5: Drainage on site

### 3.8 GEOLOGY

(Extract from Engineering Geological Investigation Report compiled by Geoset attached as Annexure R to the comprehensive land development application)

### 3.8.1 LOCAL GEOLOGY

The site is underlain by Pretoria Group sediment comprising the typical slastone or iron rich shale or slate of the Strubenkop formation, Pretoria Group, Transvaal Supergroup, underlain by Hekpoort formation andesitic lava. Surficial deposits include the colluvium covering the lithology.

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

**On account of the field observations, laboratory results, previous experience and engineering properties of the soil, it is zoned as follows:**

#### **Modified Normal to Special Development**

##### **Site Class C1H1/2A2C:**

A medium collapsible and compressible soil, with low to marginally medium expansive properties, with a thickness up to 0,75m, and an expected range of up to 15mm of total soil movement measured at surface, underlain by a competent ferruginized pebble marker or hard rock ferruginized shale or quartzite form this zone. Foundations will therefore require modified normal to special foundation techniques such as stiffened strip footings, stiffened or cellular rafts, lightly reinforced strip footings or reinforced boxed steel in slightly widened strip foundations, the use of split construction techniques or articulation joints at all internal and external doors and openings with light reinforcement (brickforce) in masonry, or soil replacement by an engineered fill soil raft by removing all or part of the expansive horizon to 1,0m beyond the perimeter of the structure and replacing with inert backfill, compacted to 93%MOD ASSHTO density at or near optimum moisture content, where after normal strip footing foundations can be used. Site drainage, a concrete apron of 1,0m around all structures and plumbing and service precautions are advised. It is classified as C1H1 in terms of the NHBRC guidelines (1995) or the SAICE Code of practice (1995) and 2A2C as per the classification for urban development (Partridge, Wood & Brink).

##### **Site Class PQ:**

A large quarry where construction material was mined is now used as dumping site and development should be restricted to outside this area and it must be fenced off to prevent entrance of unauthorized persons and children. The rehabilitation of this area with material of G5 quality or better is advised before it can be used as development site, but this may prove to be uneconomic.

The zones listed above are illustrated on Map 10 below:

Map 10: Engineering Geological Zone Map

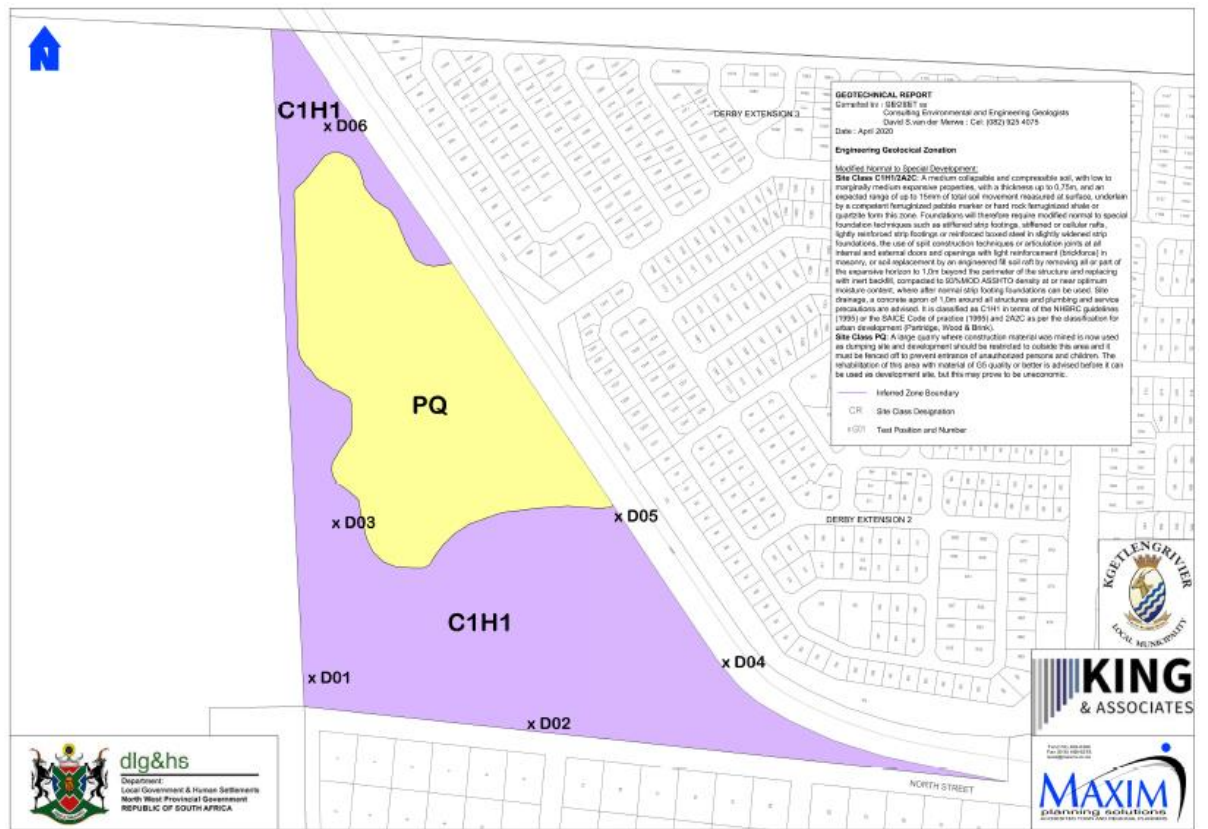
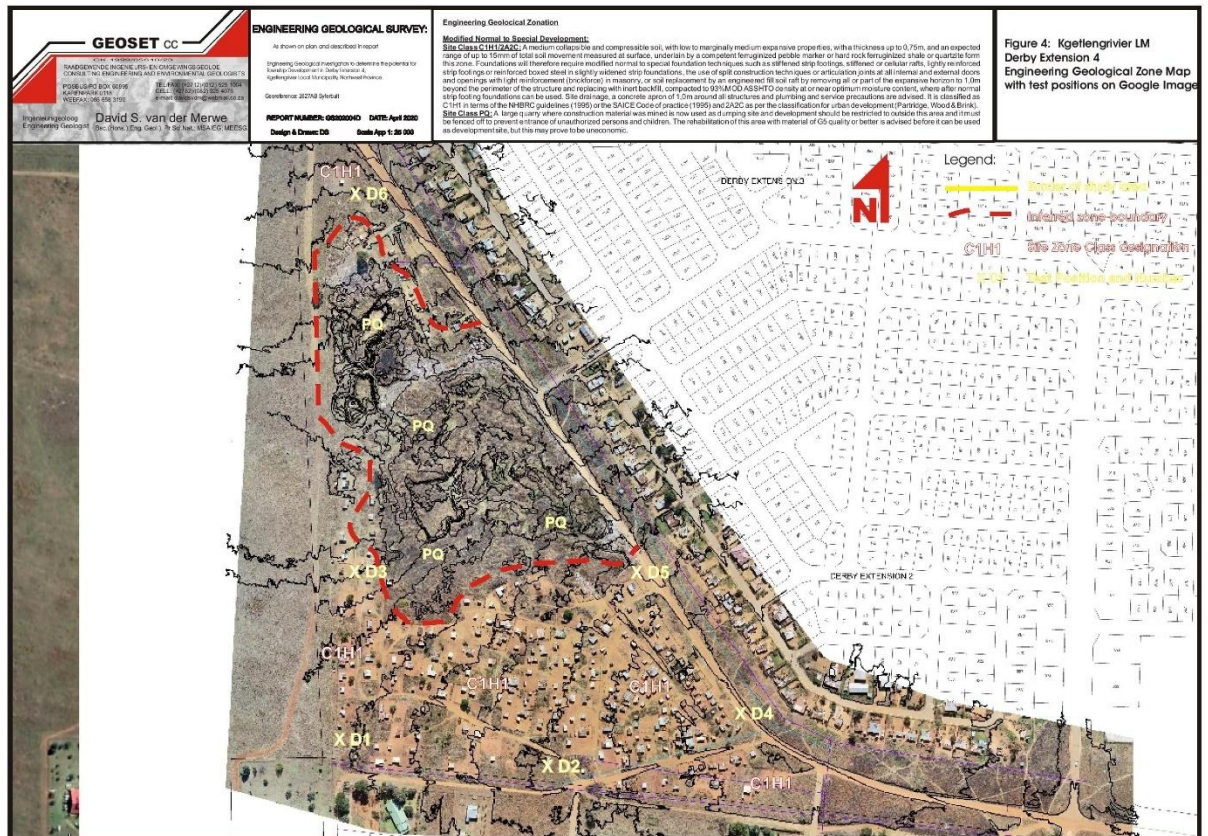


Figure 6: Engineering Geological Zone Map 2

### 3.8.2 DRAINAGE

- The site is located on a moderate to shallow slope towards the north.
- Plate flow is the dominant drainage pattern on site, and no drainage channel intersects the site. Drainage occurs in a northerly direction towards the Selons River and later the Elands River.
- No seepage but the presence of perennial fluctuations of ground water were encountered on site, proving that a seasonal perched water table may exist. A ferruginised 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 a closed water borne sewage system is recommended for these areas.
- 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.

### 3.8.3 CONCLUSIONS

- The site is underlain by Pretoria Group sediment comprising the typical slastone or iron rich shale or slate of the Strubenkop formation, Pretoria Group, Transvaal Supergroup.
- Severe problems are foreseen regarding the excavatability to 1,5m depth on portions of the site, and a large quarry in the centre portion must be rehabilitated before township development can be initiated.
- Zoning of the site revealed zones with constraints regarding the compressibility, collapse potential as well as the expansive potential of the soil, as well as some drainage features.
- **Special construction techniques must be used to enable proper development. This includes the use of compaction techniques with steel reinforcement or soil rafts as described.**
- These 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.

### 3.9 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.

An Environmental Screening Process was conducted by the EAP to ensure that all the relevant Environmental Legislation is taken into consideration. In addition to desktop studies and assessed alternatives and site inspections carried out to verify outcomes of the desktop studies, a full Public Participation Process was followed to obtain inputs from interested and affected parties.

The Application for Environmental Authorisation was submitted to the North West Department of Economic Development, Environment, Conservation and Tourism in February 2021 (DEDECT, Ref nr: NWP/EIA/77/2020) and did not identify any fatal flaws pertaining to the proposed development (please refer Basic Assessment Report attached as **Annexure O1** to the comprehensive Land Development Application).

The required Environmental Authorisation was issued by the Department Economic Development, Environment, Conservation and Tourism (DEDECT) on 21 June 2021 and is attached to the comprehensive Land Development Application as **Annexure O4**.

### 3.10 CULTURAL HERITAGE AREAS

A Pelsers Archaeological Consulting was commissioned to conduct a Cultural Heritage Resources Impact Assessment in respect of the proposed development area. The fore-mentioned assessment indicated that 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 and none was identified and recorded during the recent assessment.

The topography of the study area is in general flat and open, with no real rocky outcrops or ridges present. Grass cover in some sections was relatively dense, while tree cover is fairly limited. The largest part of the study area has been extensively disturbed and developed through informal and more formal residential settlement. Some sections have been heavily disturbed through quarrying, while informal dumping of residential refuse and building rubble also occurs throughout the area. During recent historical times the area would also have been utilized for agricultural purposes. If any cultural heritage (archaeological and/or historical) sites, features or material did occur in the study area in

the recent past it would have been heavily disturbed or destroyed to a large degree as a result of the above-mentioned activities.



Photo 3: Photo of informal housing on application site

No sites, features or material of cultural heritage (archaeological and/or historical) nature, origin or significance was identified and recorded in the study area during the field assessment. The area has been nearly completely transformed from its original landscape in recent years through both informal and more formal settlement activities. Earlier agricultural activities, as well as evident quarrying have also impacted on the area.

Aerial images (Google Earth) of the study area indicates that in 2004 there was still traces of earlier farming, as well as quarrying activities and that residential settlement had not yet encroached into the area. Between 2004 and 2017 this situation stayed fairly similar, but by 2017 the informal settlement of the land had commenced.

If any cultural heritage sites did occur here in the past, it would have been extensively disturbed or destroyed as a result of the activities mentioned above.

The Heritage Resources Impact Assessment concluded that although all efforts are made to locate, identify and record all possible cultural heritage sites and features (including archaeological remains) there is always a possibility that some might have been missed as a result of grass-cover and other factors. The subterranean nature of these resources (including low stone-packed or unmarked graves) should also be taken into consideration. Should any previously unknown or invisible sites, features or material be uncovered during any development actions then an expert should be contacted to investigate and provide recommendations on the way forward.

The Heritage Consultant concluded that *“from a cultural heritage point of view the proposed Township Establishment should therefore be allowed to continue, taking cognizance of recommendations”* contained in the report.



## CHAPTER 4: PROPOSED DEVELOPMENT

### 4.1 LAND USES

The intention of the township applicant is to formalize the existing informal settlement on site and create a proper township with basic services and tenure for residents. The proposed township will comprise of 112 erven that will be zoned “Residential 3” and which will be suitable for subsidised housing provision. The proposed development also makes provision for an Authority and Institutional zoned property (creche), to support the residential function of the township.

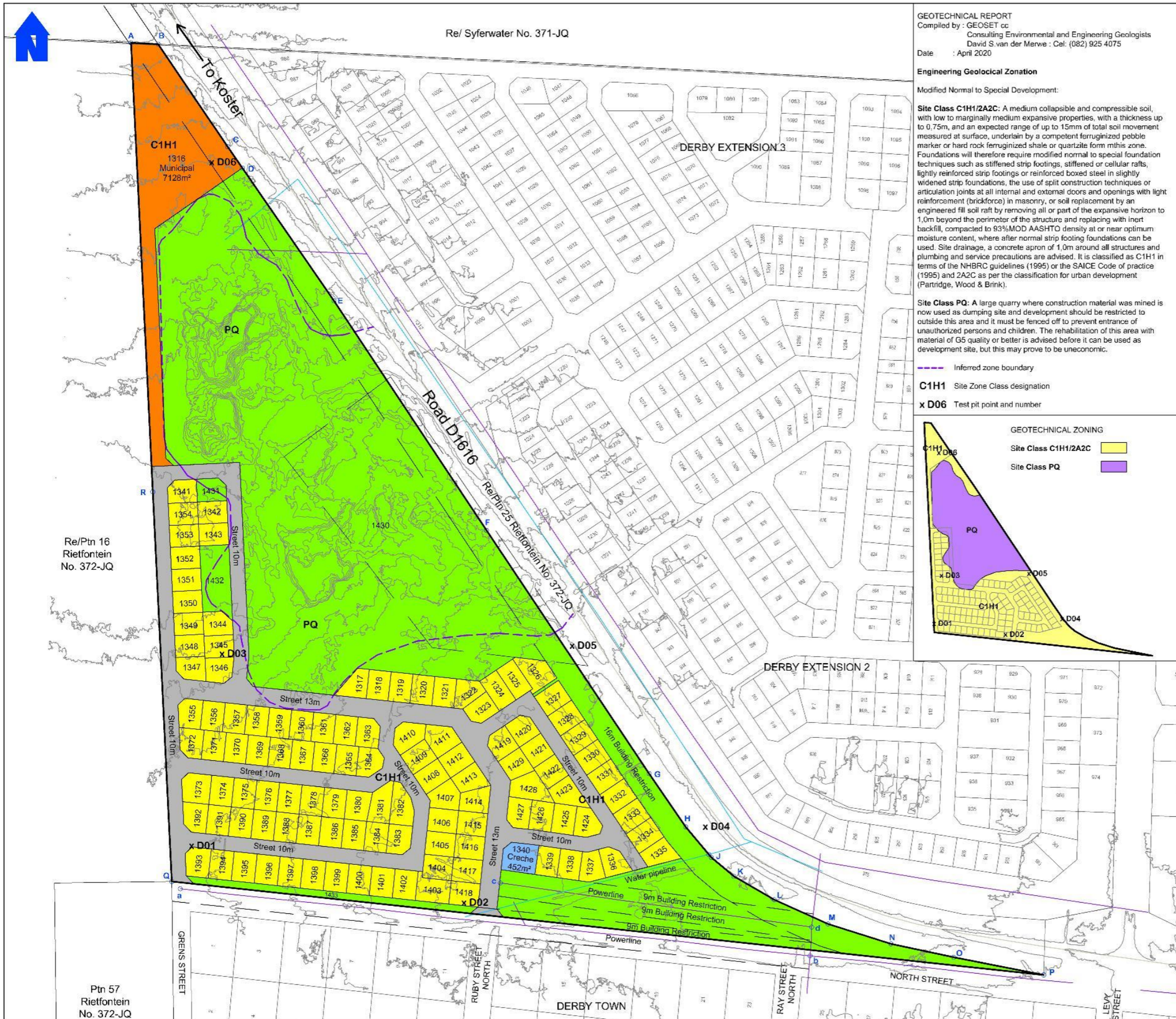
As alluded to in Section 1.1, the planning of the proposed integrated human settlement area, was conducted in an integrated manner. This integrated planning yielded a township area comprising 112 residential erven together with an additional 6 erven earmarked for non-residential support functions (exclusive of streets). The layout plan of the proposed township areas is reflected on **Map 11** below.

The layout plan makes provision for the following erven/land uses:

**Table 3: Proposed zonings and land uses – Derby Extension 4**

Land Use	Number of Erven	Erf Numbers	Area in Ha	% of Area
Residential 3	112	1317-1339; 1341-1429	3.5237ha	28.53%
Authority	1	1316	0.7122ha	5.77%
Institutional (Creche)	1	1340	0.0452ha	0.37%
Public Open Space	4	1430-1433	6.4640ha	52.33%
Street			1.6065ha	13.00%
<b>TOTAL</b>	<b>118</b>	<b>1316-1433</b>	<b>12.3516ha</b>	<b>100%</b>

Map 11: Derby Extension 4 Layout Plan



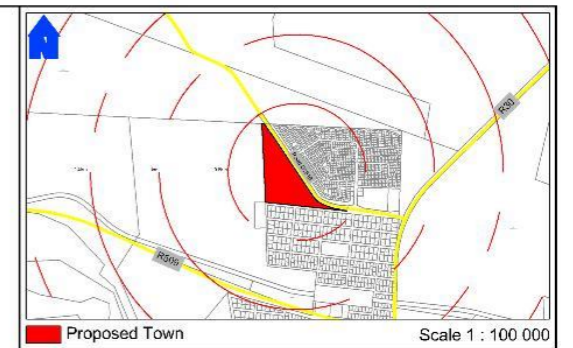
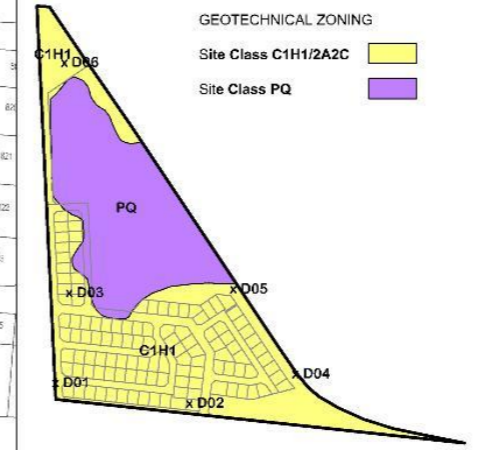
**GEOTECHNICAL REPORT**  
 Compiled by : GEOSSET cc  
 Consulting Environmental and Engineering Geologists  
 David S van der Merwe : Cal: (082) 925 4075  
 Date : April 2020

**Engineering Geological Zonation**  
 Modified Normal to Special Development:

**Site Class C1H1/2A2C:** A medium collapsible and compressible soil, with low to marginally medium expansive properties, with a thickness up to 0,75m, and an expected range of up to 15mm of total soil movement measured at surface, underlain by a competent ferruginized pebble marker or hard rock ferruginized shale or quartzite from mthlis zone. Foundations will therefore require modified normal to special foundation techniques such as stiffened strip footings, stiffened or cellular rafts, lightly reinforced strip foundations, the use of split construction techniques or articulation joints at all internal and external doors and openings with light reinforcement (brickforce) in masonry, or soil replacement by an engineered fill soil raft by removing all or part of the expansive horizon to 1,0m beyond the perimeter of the structure and replacing with inert backfill, compacted to 93%MOD AASHTO density at or near optimum moisture content, where after normal strip footing foundations can be used. Site drainage, a concrete apron of 1,0m around all structures and plumbing and service precautions are advised. It is classified as C1H1 in terms of the NHBRC guidelines (1995) or the SAICE Code of practice (1995) and 2A2C as per the classification for urban development (Partridge, Wood & Brink).

**Site Class PQ:** A large quarry where construction material was mined is now used as dumping site and development should be restricted to outside this area and it must be fenced off to prevent entrance of unauthorized persons and children. The rehabilitation of this area with material of G5 quality or better is advised before it can be used as development site, but this may prove to be uneconomic.

--- Inferred zone boundary  
**C1H1** Site Zone Class designation  
**x D06** Test pit point and number



**LEGEND**

Land Use	Number of Erven	Erff Numbers	Area in Ha	% of Area
Residential 3	112	1317-1339; 1341-1429	3.5237ha	28.53%
Authority	1	1316	0.7122ha	5.77%
Institutional (Creche)	1	1340	0.0452ha	0.37%
Public Open Space	4	1430-1433	6.4640ha	52.33%
Street			1.6065ha	13.00%
<b>TOTAL</b>	<b>118</b>	<b>1316-1433</b>	<b>12.3516ha</b>	<b>100%</b>

**STREETS**

Reserve Width	Length in metre	% of Street Length
13metre	340m	22.52%
10metre	1170m	77.48%
<b>TOTAL</b>	<b>1510m</b>	<b>100%</b>

**NOTES:**  
 The figure A-B-C-D-E-F-G-H-J-K-L-M-N-O-P-Q-R-A represents the proposed town Derby Extension 4.  
 16m Building Restricting along the line(s) lettered B-C-D-E-F-G-H-J-K-L-M-N-O-P as indicated on the layout plan.  
 9m Building Restricting applicable along the line(s) lettered a-b and c-d (centre line of powerline) as indicated on the layout plan.  
 No ingress to or egress from Road D1616 along the line(s) lettered B-C-D-E-F-G-H-J-K-L-M-N-O-P as indicated on the layout plan.

**STREETS:** Residential Erven: Average stand sizes - 315sqF  
 Maximum slope 1 : 35  
 Minimum slope 1 : 96

**DESIGN OF TOWN LAYOUT**  
 MAXIM PLANNING SOLUTIONS (PTY) LTD  
 K. RAUBENHEIMER P. P. No. A324/1995  
 TEL: (018) 468 4366

**CONTROLS:**  
 It is hereby certified in terms of the provisions of Section 144 of the National Water Act, 1998 (Act No. 36 of 1998) that the township is not affected by a public stream.  
 The contour survey is in accordance with the standards laid down by the Regulations relating to Township Establishment and Land Use.  
 Digital Orthophoto by: TMC Professional Land Surveyors  
 PO Box 1785  
 Vryburg  
 0815  
 Tel: 0525750167  
 Date of photography: May 2020  
 System: Hartbeesthoek 94  
 Central meridian: 10 27'

**PROPOSED TOWN  
 DERBY EXTENSION 4**

50m 25m 12.5m 0m 75m  
 1cm = 25m  
 SCALE 1 : 2 500

THE PROPOSED TOWN IS SITUATED ON A PORTION OF THE REMAINING EXTENT OF PORTION 25 (A PORTION OF PORTION 23) OF THE FARM RIEFTONTEIN No. 372-JQ

KGETLENGRIVER LOCAL MUNICIPALITY NORTH WEST PROVINCE

Drawing Compiled by : A. Roussouw  
 Drawings Nr. : 8/11/3/K/T  
 Date : 2021-02-25  
 Revision : 0

Tel (018)468-4366  
 Fax (018)468-4378  
 kool@maxim.co.za

**MAXIM**  
 planning solutions

Caddie file : USER\ER1\Maxim\PROJECTS\8-11-3-K-T Derby Extension 4\Map 11

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

#### 4.1.1 Residential 3

The layout plan of the proposed township area makes provision for 112 “Residential 3” erven, approximately 314m<sup>2</sup> in size on average. These properties are well suited to government housing schemes. A housing subsidy is a grant by government to qualifying beneficiaries for housing purposes. This is one of the Department of Human Settlement’s areas of responsibility in the delivery of human settlements to the bottom-most end of the market, where it provides housing subsidies to the poor. This is where the bulk of the housing backlog exists, affecting mainly those who earn below R3500 a month. The following subsidy programmes are available from the Department of Human Settlements:

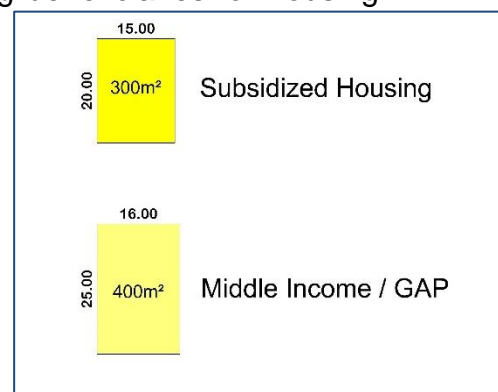


Figure 7: Residential stand sizes

#### ❖ Integrated Residential Development Programme

The Integrated Residential Development Programme replaced the Project Linked Subsidy Programme. The programme provides for planning and development of integrated housing projects. Projects can be planned and developed in phases and provides for holistic development orientation:

- Phase 1: Land, Services and Township Proclamation
- Phase 2: Housing Construction (this also includes the sale of stands to non-qualifying beneficiaries and to commercial interests)

#### ❖ Individual Subsidy

This programme provides access to state assistance where qualifying households wish to acquire an existing house or a vacant serviced residential stand, linked to a house construction contract through an approved mortgage loan. These properties are available in the normal secondary housing market or have been developed as part of a project not financed through one of the National Housing Programmes

#### ❖ Enhanced People’s Housing Process

The Enhanced People’s Housing Process aims to support households who wish to enhance their housing subsidies by funding their own homes. The Enhanced People’s Housing process can be

accessed through the Integrated Residential Development Programme, Project Linked Consolidation or Institutional Subsidies.

❖ **People’s Housing Process**

This subsidy is given to people who want to build or manage the building of their own homes. Unlike the Project Linked Subsidy where a contractor builds houses for a number of people, the People’s Housing Process allows people or beneficiaries to build or organize the building of their homes.

The proposed 112 erven will be aimed at subsidised housing provision to address the housing backlog of Kgetlengrivier Local Municipality resulting from the non-availability of vacant residential erven and which gave rise to the current informal settlement present on site. The creation of more dense settlements without raising the cost of land and housing for the poor is one of the operational principles in the National Development Plan.

Urban studies in South Africa identified low density development as one of the critical factors inhibiting the creation of sustainable settlements. Low density settlements are problematic in that they generate:

- Inadequate population thresholds which are unable to support viable public transport and social facilities.
- High costs for municipalities who must deliver service.
- Infrastructural inefficiencies.

Apart from abovementioned the disadvantages of large stands in comparison with smaller stands can be summarised as follows:

- More cost-effective provision of services

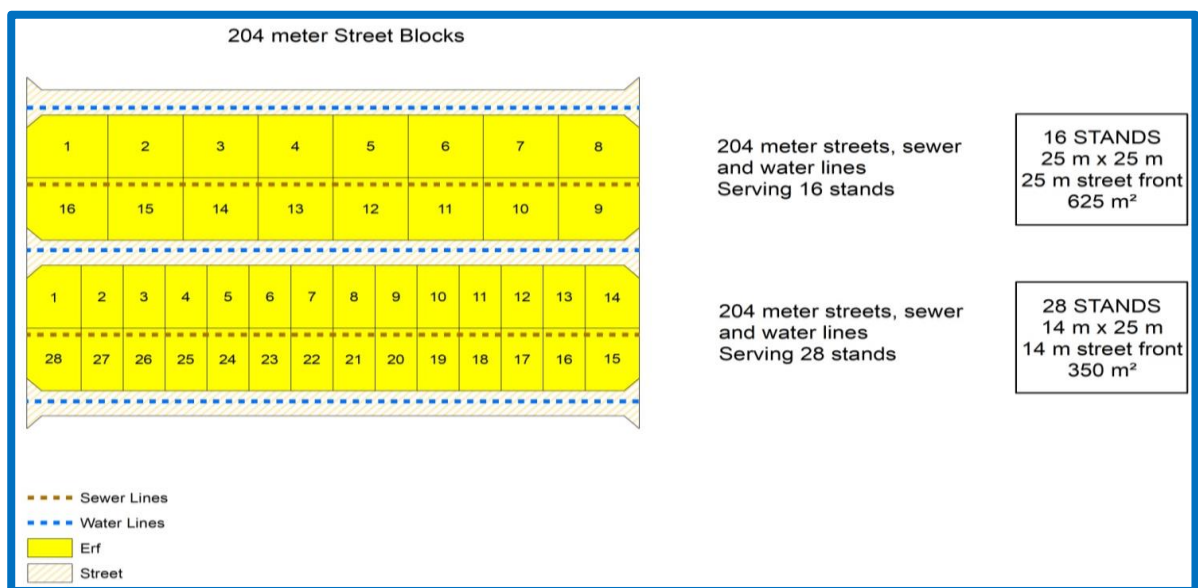


Figure 8: Comparative number of erven provided per fixed linear distance

- Cost breakdown of municipal engineering services (water, sewer and roads – According to National Department of Human Settlements, April 2018)

**Table 4: Cost breakdown of Municipal Engineering Services - Direct Costs**

COST BREAKDOWN OF MUNICIPAL ENGINEERING SERVICES - DIRECT COST								
IMPLEMENTATION DATE: 01 APRIL 2018								
A GRADE SERVICES: DIRECT COST								
Zoning	Size in m <sup>2</sup>	Street front	Cost of water	Cost of sewer	Cost of road	Cost of stormwater	Cost of high mast	Total cost per unit
Res1	243	9m	R4140.11	R7210.41	R23570.60	R4153.81	R0.00	R 39074.94
	294	10m	R4471.07	R7795.38	R26516.53	R5019.15	R0.00	R 43802.13
	122	5m	R2803.64	R4869.48	R11784.77	R2076.38	R0.00	R 21534.27
	236	10m	R4471.07	R7795.38	R26516.53	R4027.33	R0.00	R 42810.32

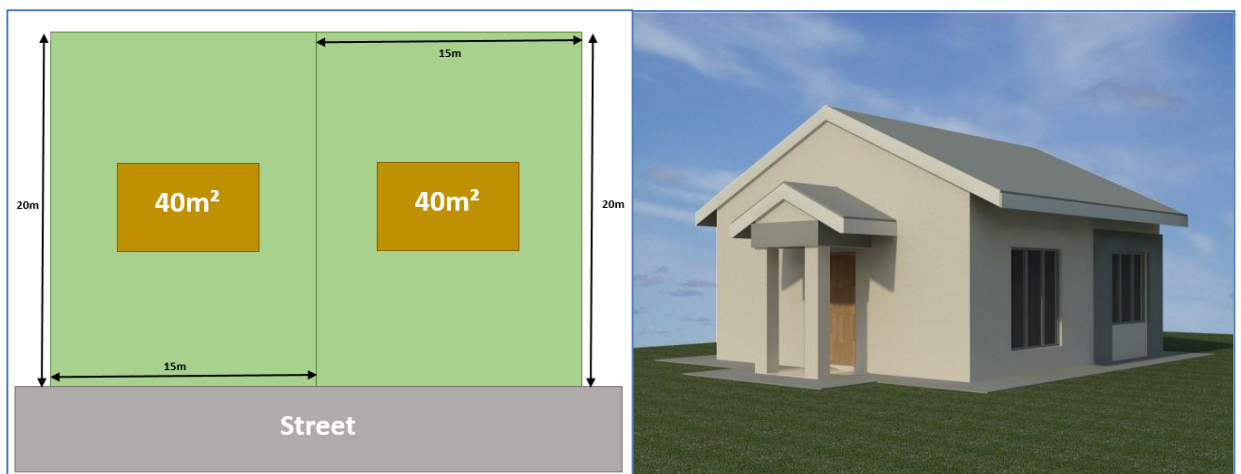
The cost comparison between large stands of 625m<sup>2</sup> (25m X 25m) and smaller stands of 350m<sup>2</sup> (14m X 25m) based on quantum amounts is set out in **Table 5** below.

**Table 5: Cost comparison between larger and smaller stands**

Street Front	Water	Sewer	Roads	Total
<b>25 metre</b>	R 11 177-00	R 27 283-00	R 66 291-00	R 104 751-00
<b>14 metre</b>	R 6 259-00	R 10 913-00	R 37 123-00	R 54 295-00

- Other disadvantages of large residential stands:
  - Higher municipal service tariffs for residents
  - Maintenance costs of outdoor living areas (example: gardens) and fencing

A stand of 300m<sup>2</sup> with a subsidised house of 40m<sup>2</sup> provides more than sufficient outdoor space as well as potential for additions over time.



**Figure 9: Schematic presentation of 40m<sup>2</sup> subsidised house on 300m<sup>2</sup> erf**

The proposed “Residential 3” erven will be subject to the following development parameters imposed in terms of the Kgetlengrivier Land Use Scheme, 2017:

Table 6: "Residential 3" development parameters

Development parameter	Development Parameter Detail
Primary Use	<b>Dwelling House</b> Defined as: <i>a free-standing dwelling unit.</i> <b>Additional Dwelling</b> <b>Home Occupation</b> <b>Medical Rooms</b>
Consent Uses	Institutional Use Place of Instruction Place of Worship Tavern Special Usage.
Coverage	Maximum 70%
Height	Maximum 2 storeys
Building lines	1m
Minimum Erf size	300m <sup>2</sup>
Maximum density	40 units per hectare

#### 4.1.2 Authority

The layout plan of the proposed township area makes provision for one (1) erf to be zoned as “Authority”. The property is located to the north of the proposed township and will be subject to the following development parameters imposed in terms of the Kgetlengrivier Land Use Scheme, 2017:

Table 7: "Authority" development parameters

Development parameter	Development Parameter Detail
Primary Use	<b>Authority Use</b> <b>Cemetery</b> <b>Dwelling House</b> <b>Electrical Purposes</b> <b>Municipal Purposes</b> <b>Nursery</b> <b>Offices</b> <b>Public/Private Open Space</b> <b>Agricultural Uses</b>

	<b>Parking</b> <b>Place of Assembly</b> <b>Sports &amp; Recreation</b> <b>Caravan Parks</b> <b>Sewage treatment works</b>
Consent Uses	Special Usage Urban Agriculture Transmission Tower.
Coverage	MD
Height	MD
Building lines	MD

### 4.1.3 Institutional

The layout plan of the proposed township area makes provision for one (1) erf to be zoned as “Institutional”:

For this development area to function as a proper integrated human settlement, it is of critical importance to also address the needs of the community for education facilities in the form of early learning centres / crèches, primary schools and public places of worship.

In terms of the CSIR Guidelines for the Provision of Social Facilities in South African Settlements, the following norm is proposed in respect of social facilities:

**Table 8: CSIR Guideline for social facilities**

Proposed facility	CSIR Guideline	Number of erven required	Number of erven provided
Small Crèche / Early childhood development centre	1 per 2400 – 3000 inhabitants	0	1
Primary School	1 per 7000 inhabitants	0	0
Place of Worship	1 per 3000 – 6000 inhabitants	0	0

(Based on estimated 112 households, 3.1 average household size and total estimated inhabitants of 347)

The proposed “Institutional” erf will be subject to the following development parameters imposed in terms of the Kgetlengrivier Land Use Scheme, 2017:

Table 9: "Institutional" development parameters

Development parameter	Development Parameter Detail
Primary Use	<p><b>Place of Instruction</b>                      Defined as <i>land and/or building(s) used as a place for education at pre-school, school or post-school levels, including a <b>child care centre</b>, primary school, secondary school, college, technical institution, university, research institute, lecture hall, as well as a civic facility for the promotion of knowledge to the community such as a public library, public art gallery, museum and may include associated uses such as boarding hostels, monastery, convent and all uses which are ancillary, directly related to and subservient to this main use.</i></p> <p><b>Dormitory Establishment</b>  <b>Institutional Use</b>  <b>Place of Assembly</b>  <b>Place of Worship</b>  <b>Sport &amp; Recreation</b>  <b>Authority Use</b>  <b>Community Facility</b></p>
Consent Uses	Special Usage and Transmission Tower.
Coverage	Maximum 50%
Height	Maximum 3 storeys
Building lines	Street: 5m Side & Rear: 2m
Parking	1/ Classroom and office // 1/100m <sup>2</sup>

#### 4.1.4 Public Open Space

The proposed layout makes provision for four (4) erven to be zoned as "Public Open Space": These properties coincide with the areas not suitable for development due to

- Building line restrictions alongside Road D1616 (along the eastern boundary of the development)
- Existing powerlines located adjacent to North Street (south of the development)
- Building restrictions on either side of the municipal powerline in the southern portion of the layout.



- Municipal water pipeline found in the southern portion of the layout.
- Unsuitable geotechnical conditions on the centre of the site (classified as zone PQ)

The proposed “Public Open Space” erven will be subject to the following development parameters imposed in terms of the Kgetlengrivier Land Use Scheme, 2017:

Table 10: "Public Open Space" development parameters

Development parameter	Development Parameter Detail
Primary Use	Public Open Space Public Str. /Parking Sport & Recreation Urban Agriculture.
Consent Use	Special Usage

#### 4.1.5 Streets

As detailed in the layout plan the erven will be serviced by a road network (discussed in further detail in Section 4.3), providing access to all the erven in the township. The network will be used as “Street(s)”, defined as follows in the Kgetlengrivier Land Use Scheme, 2017:

*“land, which is primarily utilised for traffic movement and may include land set aside for parking, pedestrian movement or landscaping purposes for business purposes.*

## 4.2 FACTORS INFLUENCING THE LAYOUT PLAN

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

- ★ The district road D1616 that runs alongside the application site on the eastern boundary. Adequate provision has been made for building lines (16m) to the west of this road;
- ★ With regards to the above-mentioned road, a line of no access will be registered along the road and no ingress or egress will be allowed along this route;
- ★ In addition, a 9m building line has also been incorporated along the southern boundary of the application site, along North Street, to accommodate the existing powerlines located along this boundary;
- ★ Access to the township has been aligned with the existing road network to the south of the application site. Ruby Road North in the existing

- township Derby will be extended in order to provide access to the proposed township;
- ★ Provision has been made for the powerlines found on the southern portion of the application site, by including it in a “Public Open Space” erf and including a 9m building restriction on either side of the powerlines within the layout plan;
  - ★ Similarly, the municipal water pipeline that runs through the southern portion of the application site has been accommodated in a “Public Open Space” erf;
  - ★ Unsuitable soil conditions (due to illegal dumping in a former quarry) have also been accommodated in a “Public Open Space” erf and the recommendation is made that this erf be fenced off for the safety of the residents;
  - ★ Increasing the density of the development though the reduction in the sizes of the erven to increase the economic development potential of the township area;
  - ★ The average stand size will be  $\pm 314\text{m}^2$ . These stand sizes have been approved by the local authority and the relevant community;
  - ★ Provision has been made for the establishment of an “Authority” and “Institutional” zoned erf, to service the proposed township; and
  - ★ Providing access to possible future development to the west;

### 4.3 ACCESS

The street layout used in the proposed layout plan aims to create a functional road network that can accommodate public / private transport as well as pedestrian movement. Access to the proposed township area will be provided from North Street, located along the southern border of the property and linking to the R30 in the east.

The main road network in the township area will consist of 13m primary collector roads and 10m internal roads.

In order to assess the impact of the proposed township area on the surrounding road network, Route<sup>2</sup> Transport Strategies CC was commissioned to conduct a Traffic Impact Study in respect of the proposed township area. The results of the Traffic Impact Study can be summarized as follows:

#### 4.3.1 STUDY AREA

The extent of the study area is driven by an estimation of the traffic generated by the proposed development of Derby Ext 4 and the intersections likely to be affected by the additional traffic.

The study includes the following external intersection which is in line with the 1,5km study area as defined in the COTO Manual TMH16:

- **R30 and North Street – priority controlled.**

#### 4.3.2 TRAFFIC FLOWS & TRIP GENERATION

##### 4.3.2.1 Trip Generation (Private Trips)

The COTO *Trip Generation Manual (September 2012 TMH 17 Volume 1)* recommends a peak hour trip rate of 1,0 trips per unit for Residential 1 which is the primary land use although the following trip rates as per the EMM for low cost housing and what SANRAL allows countrywide was used.

- Public primary school: 0,072 and 0,026 trip / student during the AM and PM peak period respectively.
- Public secondary school: 0,034 and 0,021 trip / student during the AM and PM peak period respectively.
- Shopping centre: 0,451 and 2,558 trips /100m<sup>2</sup> for AM and PM peak periods respectively. (these are base rates for formula as per COTO manual)
- Residential 1: 0,306 trips /unit for both AM and PM peak periods.
- Residential 4: 0, 251 trips / units for both AM and PM peak periods.

The predicted peak hour traffic to and from the site is summarised in the tables below:

**Table 11: AM Peak Hour Trip Generation**

Land use	Extent	Units	Trip Rate	Split		Trips		External Total in & out
				In	Out	In	Out	
Residential	112	Stands	0.31	25%	75%	9	26	35

**Table 12: PM Peak Hour Trip Generation**

Land use	Extent	Units	Trip Rate	Split		Trips		External Total in & out
				In	Out	In	Out	
Residential	112	Stands	0.31	70%	30%	25	10	35

#### 4.3.2.1 Trip Generation (Public Transport Trips)

The expected number of vehicles per public transport and non-motorised transport modes to and from the development during the peak hours has been calculated and is presented in Table 13 below:

Table 13: Modal Split AM & PM Peak Hour\*

Mode AM Peak	Modal Split	Occupancy	Number of Vehicle Trips
Minibus-taxi	50%	13	2
Bus	5%	48	0
Cycling & Walking	10%	N/A	N/A
Mode PM Peak	Modal Split	Occupancy	Number of Vehicle Trips
Minibus-taxi	50%	13	2
Bus	5%	48	0
Cycling & Walking	10%	N/A	N/A

\* It should be noted that the trip generation as used in the analysis should still be seen as the worst-case scenario.

#### 4.3.3 CAPACITY ANALYSIS

For the purpose of the capacity analysis, the following intersections were assessed in terms of current and future traffic operations and capacity (the 2020 traffic volumes were grown with a compound of 3% per annum to calculate the future traffic demand).

- **R30 and North Street Intersection**
- For all of the scenarios the intersection operates at acceptable LOS with ample spare capacity. **No upgrades are therefore required.**

#### 4.3.4 ROAD HIERARCHY & ACCESS TO PROPERTIES

The following road hierarchy is proposed for all internal roads:

- **Class 5a:** 13m wide road reserves (providing access to Residential 1 and Creche).
- **Class 5b:** 10m wide road reserves (providing access to Residential 1 and Crèche).

#### 4.3.5 CONCLUSION

In addition to the conclusions drawn in sections 4.3.1 to 4.3.4 above, the Traffic Impact Assessment concluded as follows:

***“Based on our site observations, the existing and base traffic volumes shown in the figures, as well as the capacity analysis, it is concluded that the proposed development will have little to no impact on the external road network.*”**

The Traffic Impact Assessment made the following proposal and conclusion:

- *The surfacing of North Street from the R30 to the site should be investigated.*

## CHAPTER 5: PROVISION OF ENGINEERING SERVICES

### 5.1 INTRODUCTION

EPS Consulting Engineers and Ampcon Consulting Electrical Engineers [A1] were appointed to investigate and report on the provision of civil and electrical engineering services, respectively, to the proposed township area.

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

- Section 5.2: Civil Engineering Services
- Section 5.3: Electrical Engineering Services

### 5.2 CIVIL ENGINEERING SERVICES

(Extract from the civil engineering services report compiled by EPS Consulting Engineers (attached as Annexure P1 to the comprehensive Land Development Application))

#### 5.2.1 WATER

##### 5.2.1.1 Bulk Water Supply

There is an existing municipal owned water reticulation system installed in Derby Extension 2, the system consists of elevated storage and reticulation pipes. The system is fed by boreholes. The proposed Derby Extension 4 development can connect directly to this system. Certain upgrades will have to be identified by the Kgetlengrivier Local Municipality to accommodate the extra demand.

##### 5.2.1.2 Water Demand

The water demand for the proposed development will be based on Table 9.11 and Table 9.14 of the “Guidelines for Human Settlement Planning and Design” – Red Book. Provision is made for full-flush sanitation and irrigation.

The table below reflects the estimated water consumption from Table 9.11 and Table 9.14 to be applied once the development is approved:

**Table 14: Proposed Water Demand**

Land Use	Units	Annual Average Daily Demand (AADD)	Water Demand (kℓ/d)
Residential 1 (Low Income)	112	800ℓ/day/unit	89.6
Creche	1	1400ℓ/day/unit	1.4
Municipal / Institutional	1	1200ℓ/day/unit	1.2
<b>Total</b>			<b>92.2</b>

### 5.2.1.3 Internal Water Layout

The internal layout of the water reticulation system will be designed to accommodate peak demands in terms of the “Guidelines for Human Settlement Planning and Design”.

### 5.2.1.4 Design Criteria and Materials

- Annual average daily demand l/day (AADD)
  - Residential and other - refer to Section 2.2 above
  - Instantaneous Peak - 4 (AADD)
  - Daily Peak - 2.4 (AADD)
  - Losses - 10%
- Fire protection
  - Fire Hydrants - Quick coupler fittings or as requested by the fire department, maximum distance 180m apart
  - Development - 1500 l/min @ 7m residual head.
  - Water network uPVC pipes Class 9 minimum, (SABS approved) minimum pipe diameter of 110mm
    - Maximum pressure - 90 meter
    - Minimum pressure - 24 meter
    - Maximum flow velocity - 2.0m/s
  - Valves and fittings - Class 12 or a class higher than the required pipe class

## 5.2.2 SEWER RETICULATION

### 5.2.2.1 Bulk Sewer

The existing sewerage reticulation in the area is partly non-functional. It is proposed to install a new packaged sewer treatment system for the proposed Derby Extension 4 development. Such system treats sewerage through biological process by manipulating oxygen levels in

the sewerage. The plant is best situated along the northern extents of the proposed development to facilitate gravity flow towards the plant.

### 5.2.2.2 Sewerage Run-Off

The sewer flow for the proposed development will be estimated at 80% of the average daily water demand. Provision is made for full-flush sanitation.

The table below reflects the estimated sewer flow determined as indicated above.

**Table 15: Proposed Sewerage Run-Off**

Land Use	Units	Annual Average Daily Flow (AADF)	Sewerage Outflow (kℓ/d)
Residential 1 (Low Income)	112	640ℓ/day/unit	71.68
Creche	1	1120ℓ/day/unit	1.12
Municipal / Institutional	1	960ℓ/day/unit	0.96
<b>Total</b>			<b>73.76</b>

### 5.2.2.3 Internal Sewer Layout

The internal sewerage system will be designed to accommodate the average annual daily flow (AADF) and to service every unit and development structure within the development.

The topography found at the proposed development is of such a nature that all sewerage will be adequately transported via a gravity line to the proposed sewer treatment plant situated in the northern corner of the development.

The design criteria accepted by the Kgetlengrivier Local Municipality will be implemented as discussed below.

### 5.2.2.4 Design Criteria and Materials

uPVC Class34 Free-flow pipe material as well as pre-cast concrete manholes to SABS standards will be used in the construction of the sewer network with the following minimum requirements:

- **Annual average daily flow l/day (AADF)**
  - o Commercial and other - refer to Section 5.2.2.2 above



- o Peak Factor - 2.5
- o Infiltration Allowance - 15%
- **Network and Main Sewer:**
  - o Minimum diameter pipe 160mm;
  - o Minimum depth of cover 1m
  - o Minimum Gradient 1/200
  - o Maximum Depth of Flow 0.85D
  - o Minimum Velocity 0.7m/s
- **Materials:**
  - o Pre-cast concrete manholes from 1000mm diameter;
  - o Manhole frames and covers – Polymer Concrete
  - o Maximum spacing of manholes - 75 meters;
  - o Building connections (110mm) will be supplied (1 meter from erf boundary);
  - o Bedding and Backfill – SANS 1200

### 5.3.1 STORM WATER MANAGEMENT

#### 5.3.1.1 Bulk Storm Water

There is no formal storm water system to connect to in the vicinity. It is proposed that new field inlets be constructed with energy breakers to discharge storm water from low points towards natural undeveloped areas along the eastern border of the proposed development.

#### 5.3.1.2 Internal Layout

The natural drainage pattern of the terrain is towards north-east. The area drains via sheet flow.

The storm water design will be done in accordance with the “Guidelines for Human Settlement Planning and Design” compiled under the patronage of the Department of Housing by the CSIR, DWAF and design specifications of the Local Authority.

Run-off and peak flow rates will be calculated according to selected return periods and outflow points. The 1:50-year recurrence interval will be used for the major system design and the 1:5-year recurrence interval will be used for storm water design of the subsurface system. A formal drainage system of pipes or canals will be provided to convey storm water and to discharge this water into natural water courses or similar

systems connecting to natural water courses near the proposed development.

Erosion protection will either be in the form of open drains and shallow side drains, or they could consist of standard municipal type kerbs or mountable kerbs. Energy dissipaters will be provided at the lower end of each watercourse and at sites where the drainage is diverted away from roads.

The drainage system will be designed to minimize the impact of the development on the storm water characteristics of the property and adjacent properties by utilizing:

- Surface drainage where possible.
- Sub-surface (underground) pipe systems to convey storm water from higher laying areas.
- Erosion protection, stabilisation of erodible materials, and sediment control.
- Retention where applicable.

#### **5.3.1.3 Design Criteria & Materials**

The storm water design will be done in accordance with the “Guidelines for Human Settlement Planning and Design” compiled under the patronage of the Department of Housing by the CSIR. The rational design method will be applied to smaller drainage areas to calculate storm flows.

Please refer to the complete report (attached as Annexure P1 in the comprehensive Land Use Application) for Proposed Construction Methods.

#### **5.2.4 SOLID WASTE**

The solid waste that will be generated by the proposed development will be in the region of 2000kg of solid waste per week. The Kgetlengrivier Local Municipality can collect the waste on a weekly basis.

#### **5.4 ELECTRICAL ENGINEERING SERVICES**

**(Extract from the electrical engineering services report compiled by Ampcon Consulting Electrical Engineers (Pty) Ltd (attached as Annexure P2 to the comprehensive Land Development Application)**

#### 5.4.1 DEMAND ESTIMATION

The after diversity maximum demand is based on the prescriptions of the NRS 034 and general accepted norms. The estimated increase in demand because of the Development is 250kVA.

#### 5.4.2 BULK SUPPLY

The existing town of Derby is currently supplied by the 11kV Koster Mex (KME) feeder which is supplied from the Koster 88/11kV Substation. The feeder at Derby is approximately 15 kilometers in length and stops at Derby and its immediate surroundings.

The KME feeder is equipped with ACSR code name Mink conductor which can safely accommodate loads of up to 5MVA.

Undervoltage has recently been experienced on the line which was resolved by the installation of a voltage regulator at the entrance to Derby (from Koster).

From the information available, we are positive that the additional load because of the development can be accommodated on the existing networks. The township will in all probability be connected to the existing medium voltage network within Derby.

A study will however have to be undertaken by Eskom which is part of a standard procedure to be followed by all new developments.

#### 5.4.3 INTERNAL ELECTRICAL INFRASTRUCTURE

The new network for Derby Extension 4 will be taken over by Eskom after the completion thereof and will have to conform to the latest Eskom Standards and will in all probability be similar to the existing network which can be summarized as follows:

- Overhead medium voltage distribution
- Pole mounted distribution transformers.
- Aerial bundle conductor for low voltage distribution on poles in the street front or mid-block configuration.
- Overhead or underground service connections in the form of airdac or low voltage cable.,
- Pre-paid electricity meters.

## CHAPTER 6: MOTIVATION

### 6.1 INTRODUCTION

This need and desirability in respect of the proposed township establishment on a portion of the Remaining Extent of Portion 25 (a portion of Portion 23) of the farm Rietfontein 372, Registration Division J.Q, North West Province will, in addition to the motivational statements already discussed in Sections 1 to 5 above, 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)
- White Paper on Wise Land Use, 2001
- Millennium Development Goals (MDG)
- National Spatial Development Perspective, 2006
- North West Province Spatial Development Framework, 2016
- Bojanala Platinum District Spatial Development Framework, 2011
- Kgetlengrivier Local Municipality Spatial Development Framework, 2015
- Outcome 8 - 2014-2019 Medium Term Strategic Framework (MTSF)
- Spatial Planning and Land Use Management Act Development Principles, 2013
- 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 Kgetlengrivier 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 6.22 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.

Where we live and work matters. Apartheid planning consigned the majority of South Africans to places far away from work, where services could not be sustained, and where it was difficult to access the benefits of society and participate in the economy.

The physical and social environment in which we are born and grow up is one of the most important determinants of every person's wellbeing and life chances.

This environment has a bearing on access to opportunities, good schools, useful social networks, public services and safe environments. Separation between social groups, long distances between jobs and housing, and poor

public services exacerbate poverty and inequality. Location affects communities, local economies, /labour markets and infrastructure networks. Businesses are also affected by where they are situated. Access to markets and suppliers determines their survival and profitability. This is hugely significant for South Africa's society, economy and environment.

To fundamentally reshape human settlements by 2050 (with significant progress by 2030), South Africa needs:

- To address inequities in the land market that makes it difficult for the poor to access the benefits of life in towns and cities.
- Stronger measures to reconfigure towns and cities towards more efficient and equitable urban forms.
- Housing and land policies that accommodate diverse household types and circumstances.
- Municipalities that put economic development and jobs at the heart of what they do and how they function.

The establishment of the proposed township specifically aims at redressing the injustices of the past by ensuring proper integrated planning in respect of the location of new residential developments in well-located places that are conducive to the health and wellbeing of the community. The proposed development aims to formalise the existing informal township on site, providing the residents with basic services and access to tenure. The proposed township is well linked with the surrounding land uses through North Street and will integrate well.

### **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.

The development of the proposed township constitutes a collaboration between the local authority and private developers to provide access to adequate housing for the inhabitants of this community. It is the objective of this project to provide opportunities for people to access proper housing through one of Government's subsidized housing programmes.

#### **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.
- Administrating national programmes.
- Exploring land for housing development.

The project under discussion specifically aims at providing access to housing for the inhabitants of the informal settlement currently on site. Through the provision of formalised erven, provision is made for the sector of the community who cannot access adequate housing due to financial circumstances coupled with the lack of serviced erven to accommodate said individuals. One of the objectives of the National Housing Code is for national and provincial legislation and policy to initiate, plan, facilitate and coordinate appropriate housing development. The proposed development directly aims at addressing this objective.

## **6.5 A COMPREHENSIVE 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.

This project from the onset aimed at providing a proper integrated human settlement that ascribes to the BNG Principles set out above. This was achieved as follows:

- The project is aimed at in-situ upgrading of an existing informal settlement which is well located in terms of surrounding land uses. The application site is in close proximity to existing residential neighbourhoods and economic activities and will link to the existing town of Derby in the south via Ruby Street North.
- The township will be aimed at the subsidized housing sector through the implementation of one of Government's subsidized housing. In doing so, the informal settlement can be upgraded to include basic service delivery and residents will have access to tenure.
- As detailed in previous sections, the proposed development focusses on promoting densification through the creation of smaller economical erven to optimise the provision of services to this area. Due to the locality of this development, integration with the existing Derby extensions to the east and south will also be achieved.

## 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.

The development of the proposed integrated human settlement addresses the majority of the guidelines and principles set forth in the White Paper on Local Government (1998) as:

- The proposed development is specifically aimed at addressing the needs of the people of the existing informal settlement, who are deemed the most vulnerable of the community;
- In addition to addressing the safety concerns of the community through the provision of proper durable housing structures, this project will also ensure a sustainable healthy environment for the inhabitants through the provision and availability of proper engineering services offering safe drinking water, proper sanitary infrastructure and facilities and a safer environment to live in.
- In addition to the above, the existing illegal dumping site should be fenced off as per the recommendation of the geotechnical study to create a safer environment for the residents.
- The application will be advertised to the local community through the publication of notices in a local newspaper, the posting of site notices on the subject properties, the notification of all adjacent property owners of the development as well as the involvement of a number of external organizations and departments as integral part of the township establishment process. Concerns raised by the community and stakeholders as part of the public participation process will be considered and addressed.

## **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)**

Chapter 5 of the Local Government Municipal Systems Act, 2000 calls upon municipalities to 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.

## **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.

This project will, at its core, aim at addressing the needs of the poor in respect of the provision of housing, targeting the existing informal settlement on site. This will ensure that the right of access to adequate housing is realised on a progressive basis.

## **6.11 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:

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.

## 6.12 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.

This project has at its core the provision of formal housing through the establishment of an integrated human settlement, thereby eradicating the existing informal settlement on site.

### 6.13 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.

### 6.14 NORTH WEST PROVINCIAL SPATIAL DEVELOPMENT FRAMEWORK, 2016

The North West Provincial Spatial Development Framework provides guidance for provincial development. **Providing for the integration of the objectives of sustainable housing** is listed as the 7<sup>th</sup> policy objective of the NWSDF. Specifically, the NWSDF states the following with regards to housing:

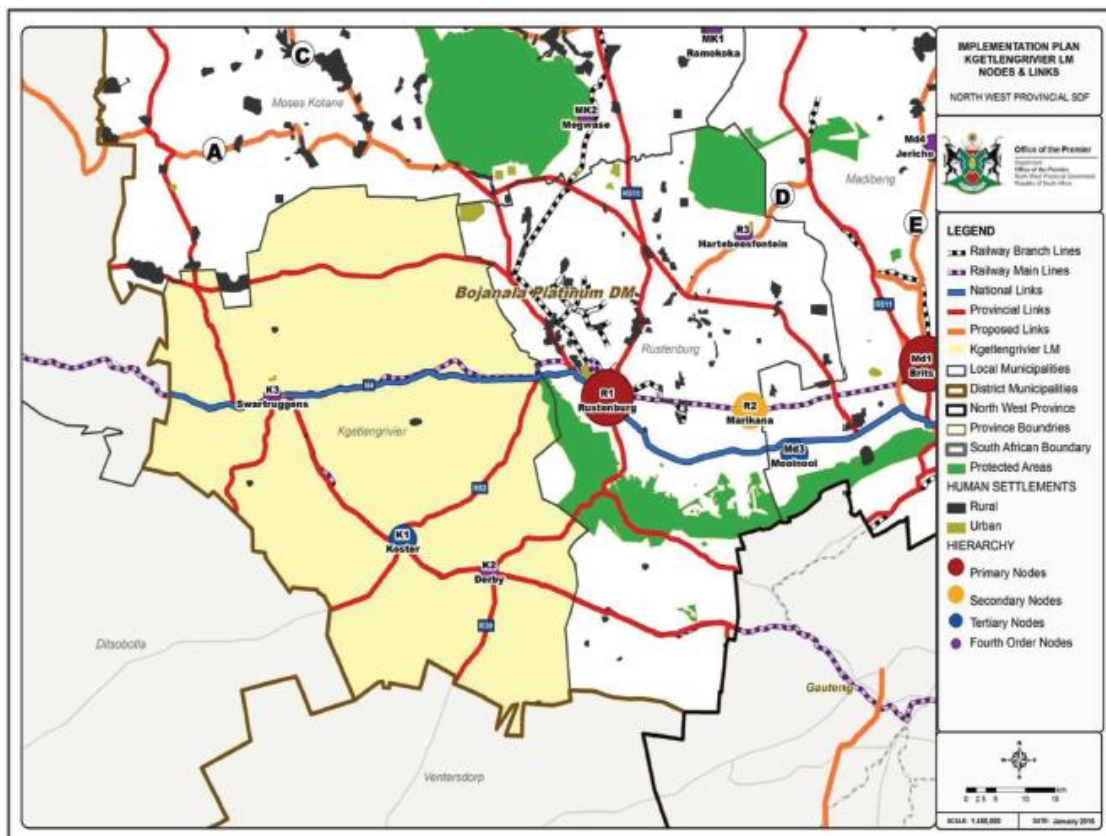
*“The strong urbanisation trend causing an influx of people into towns and dense human settlements puts pressure on housing delivery. All municipalities already experience housing backlogs, which exacerbate the already dismal housing situation. This large demand for housing resulted in the development of informal housing areas on the periphery of existing towns and settlements adding pressure on the existing dysfunctional engineering and social*

infrastructure and roads. The timely provision of housing is of cardinal importance to the general well-being of urban areas and its people.

The provision of housing needs to consider a variety of housing choices involving high, medium and low-density developments to provide in the housing typology needs of all individuals. Sustainable neighbourhoods require the integration of all social and economic facilities to serve the daily needs of its people”.

There is therefore a strong emphasis on sustainable housing provision across the province. The provincial scale of the Framework means that site specific recommendations cannot be provided. However, Derby is identified as a fourth order node (see Map 12 below) within the Municipality.

**Map 12: Bojanala Platinum District Implementation Framework (Nodes & Links) – Kgetlengrivier LM**



The 10 year land budget for the Local Municipality for subsidised housing is estimated at 84.60 ha according to the NWSDF. The proposed development will address a portion of the predicted housing need by making provision for fully serviced erven that can be developed as part of the housing subsidy program in future.

The following is listed as one of the development guidelines for Kgetlengrivier LM:

- Provide **adequate housing opportunities** close to employment opportunities and services

The aim of the township establishment application is to create a formal township that adheres to development standards (especially in terms of services). This township will alleviate the pressure created by the current informal settlement on site as registered erven could be utilised in the subsidy program and adequate housing can be built for residents. The proposed development is therefore aligned with the development principles contained in the NWSDF.

### **6.15 BOJANALA PLATINUM DISTRICT MUNICIPALITY SPATIAL DEVELOPMENT FRAMEWORK, 2012**

Settlement hierarchy is a way of arranging settlements in order, i.e. according to the population or settlement, or the number of services and functions the settlements has, or the area the settlement covers. Within the Bojanala Platinum District Municipality SDF, Kgetlengrivier Local Municipality is identified as a Priority Three Investment Area.

With regards to informal settlements, the BPDM SDF states that:

*“The bulk of these settlements occur in environmentally unsafe areas, located on ash dumps, next to mine dumps, open shafts, sink holes, etc. The informal settlements are characterized by no security of tenure, a poor-quality environment, inadequate services, and lack of bulk infrastructure and social and community facilities.”*

The proposed development aims to correct the above-mentioned statement with regards to the informal settlement on site. The environment and safety of residents will be improved by the proposed fencing around the illegal dump site. The provision of formal erven will create opportunities for tenure for residents and bulk services will be made available.

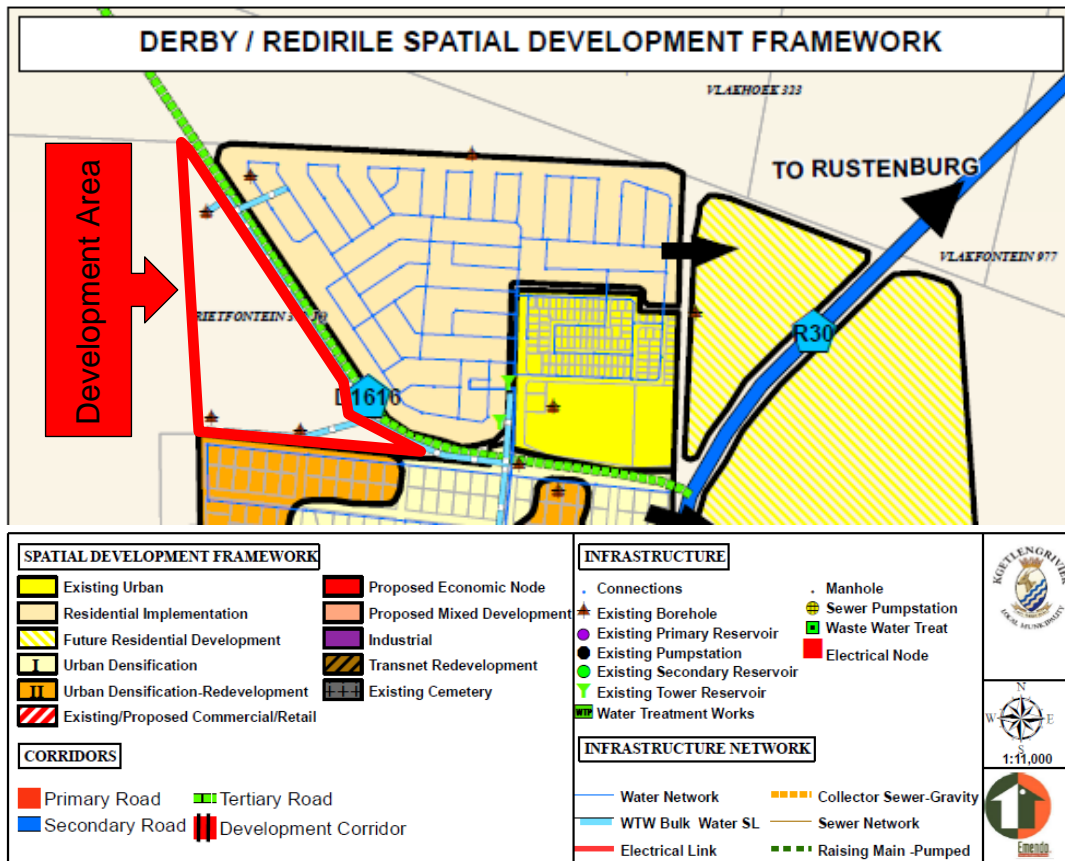
### **6.16 KGETLENGRIVIER LOCAL MUNICIPALITY SPATIAL DEVELOPMENT FRAMEWORK, 2015**

According to the Kgetlengrivier Local Municipality SDF *“the Derby/Redirile urban node should be considered as a large rural node which fulfills a limited economic and social service to the residents and surrounding rural area.”*

As can be seen in Map 13 below (taken from the SDF), the application site is not earmarked for future residential development.



Map 13: Derby / Redirile Spatial Development Framework Map



Furthermore, regarding housing development in Derby the SDF states: “The remaining area to the south of Derby Ext 3 is not suitable owing to the presence of existing bulk infrastructure and a dumping site.” The proposed development is therefore not in line with the Spatial Development Framework of the local municipality.

However, it should be taken into consideration that the document was compiled in 2015 and is yet to be reviewed since then. From Google imagery it is clear that the informal settlement only started in 2017, when the SDF had already been finalised. The impact of the existing informal settlement could therefore not be adequately addressed in the SDF at that time.

Section 22(2) of the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013) makes provision for a land development decision to depart from the provisions of a municipal spatial development framework, only if site-specific circumstances justify said departure. Given the presence of the informal settlement on site, and the housing need that accompanies it, we would argue that the proposed development is in fact justified. The proposed development has taken into account the concerned dumping site and has made the necessary precautions to include it in the proposed layout. The necessary

specialist studies were also completed with regards to the proposed land uses and the proposed layout was deemed acceptable by the various specialists.

## **6.17 OUTCOME 8 – 2014-2019 MEDIUM TERM STRATEGIC FRAMEWORK (MTSF)**

Outcome 8 (sustainable human settlements and improved quality of household life) of government's 2014-2019 Medium Term Strategic Framework (MTSF) guides the Department of Human Settlement's work over the medium term towards ensuring that poor households have access to adequate housing in better living environments, and that institutional capacity and coordination is improved.

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.

## **6.18 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 the Spatial Planning and Land Use management Act, 2013 (Act 16 of 2013) (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 will provide residents access to land and the use of such land to better their living conditions whilst similarly providing the necessary security of tenure. This project aims at providing 112 residential erven with the necessary complementary land uses.

#### **(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;**

Unfortunately, the informal settlement was not yet present when the current SDF of the local municipality was compiled and could therefore not be addressed accordingly. However, subject to Section 22(2) of the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013), site specific conditions exist on the application site (specifically the informal settlement) which justifies the proposed development.

#### **(iii) spatial planning mechanisms, including land use scheme, must incorporate provisions that enable redress in access to land by disadvantage communities and persons;**

The proposed development will provide access to land by previously disadvantaged people in terms of the subsidized housing programmes of government. The development will

include access to tenure and basic services, that are currently lacking in the informal settlement.

- (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 Kgetlengrivier Local Municipality municipal area are governed by a functional land use management system. The proposed land uses in the proposed township areas will be regulated by the Kgetlengrivier Land Use Scheme, 2017. 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**

This project has at its core the provision of adequately zoned properties for future expansion of Derby. This township establishment process will afford inhabitants of this area the opportunity to obtain access to secure tenure on the development area. The township establishment process aims to create 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 Derby 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;**

The proposed development will positively affect not only the value of this property but also those of the surrounding areas.

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;**  
The Kgetlengrivier Local Municipality will ensure that the development complies with the requirements contained in the Kgetlengrivier Land Use Scheme, 2017.
- (ii) **ensure that special consideration is given to the protection of prime and unique agricultural land;**  
The area where the concerned development is proposed is not regarded as prime or unique agricultural land. The land use has already been disturbed by the informal dwellings and dumping site present on site.
- (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 the existing dumping site. 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.

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 relevant Department and set out in the relevant Environmental Authorisation. In this regard it is pertinent to note that the Department of Economic Development, Environment, Conservation and Tourism (DEDECT) issued an Environmental Authorisation in respect of this development on 21 June 2021. The Environmental Authorisation is attached as **Annexure O4** to the comprehensive Land Development Application.

**(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 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 subject to the bulk infrastructure upgrades proposed.

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

The proposed development will formalise an existing informal settlement adjacent to existing built up areas in Derby. This development will be sustainable and will limit further urban sprawl.

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 and will lead to the integration with the existing Derby extensions in the south and east.

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

The proposed development is deemed viable as there is currently a community settled there in the form of an informal settlement. The proposed development will address the needs of this community through the provision of tenure and basic services.

**(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 land development application in respect of the establishment of the proposed township will be processed in accordance with the prescriptions of the Kgetlengrivier By-law on Spatial Planning and Land Use Management (2016). 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. The provision of proper housing for the landless community 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;**

Kgetlengrivier Local Municipality has a Spatial Development Framework and uses the Kgetlengrivier Land Use Scheme, 2017, as part of their land use management system. The Kgetlengrivier Land Use Scheme, 2017, will effectively regulate the land uses to be established within the township.

**(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. This application for township establishment will also be referred to the following government and non-government departments as integral part of the public participation process:

- Department of Co-operative Governance and Traditional Affairs (COGTA)
- Department of Agriculture, Forestry and Fisheries (DAFF)
- North West Department of Education
- Department of Health
- Department of Roads and Public Works
- Department of Water & Sanitation
- Eskom
- Bojanala Platinum District Municipality
- Department Agriculture, Land Reform and Rural Development (DALRRD)
- Openserve (former Telkom SA Limited)
- South African Heritage Resources Agency (SAHRA)
- South African National Roads Agency Limited (SANRAL)
- SA Post Office Limited (SAPO)
- Transnet Freight Rail
- Department of Mineral Resources (DMR)

**(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.

**(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:

- Publishing notices of the application (as set out in **Annexure C1** of the comprehensive Land Development Application) in a local newspaper in Afrikaans & English as contemplated in Section 98(2)(a) of the Kgetlengrivier By-Law on Spatial Planning and Land Use Management (2016);
- Appending notices of the application (as set out in **Annexure C2** of the comprehensive Land Development Application) on the notice board situated at the library as contemplated in Section 98(2)(b) of the Kgetlengrivier By-Law on Spatial Planning and Land Use Management (2016);
- Displaying a notice (as set out in **Annexure C3** of the Comprehensive Land Development Application) in a conspicuous place on the land to which the application applies as contemplated in Section 101(1)(a) and 101(2) of the Kgetlengrivier By-Law on Spatial Planning and Land Use Management (2016);
- Notices to adjacent property owners (as set out in **Annexure C4** of the comprehensive Land Development Application) as contemplated in Section 99(1)(c) of the Kgetlengrivier By-Law on Spatial Planning and Land Use Management (2016).
- Notices to the following external departments / organizations (as set out in **Annexure C5** of the comprehensive Land Development Application) in order to obtain letters of consent / objection as contemplated in Section 99(1)(d) of the Kgetlengrivier By-Law on Spatial Planning and Land Use Management (2016):
  - Department of Co-operative Governance and Traditional Affairs (COGTA)
  - Department of Agriculture, Forestry and Fisheries (DAFF)
  - North West Department of Education
  - Department of Health
  - Department of Roads and Public Works
  - Department of Water & Sanitation
  - Eskom
  - Bojanala Platinum District Municipality
  - Department Agriculture, Land Reform and Rural Development (DALRRD)
  - Openserve (former Telkom SA Limited)
  - South African Heritage Resources Agency (SAHRA)
  - South African National Roads Agency Limited (SANRAL)
  - SA Post Office Limited (SAPO)
  - Transnet Freight Rail
  - Department of Mineral Resources (DMR)

The fore-mentioned organizations / departments will be afforded a period of sixty (60) days to comment in this matter. The adjacent property owners and the general public will be afforded a period of thirty (30) days to lodge comments or objections in this matter.

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

The procedures set out in Kgetlengrivier By-Law on Spatial Planning and Land Use Management (2016) 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.

## 6.19 GENERAL

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

- The purpose of this land development application is to formalise the existing informal settlement on site and provide for the establishment of a proper human settlement. The proposed township will address the short-term need for residential erven for the community currently situated on the application site and provide both tenure and basic services.
- The proposed development area is located between existing Derby extensions and constitutes the logical extension of the existing built-up urban area of Derby. The proposed township will link with the existing Derby to the south via the proposed road network.
- The proposed township area is easily accessible due to its locality directly adjacent to District Road D1616 that links onto the Derby-Rustenburg Provincial Road
- 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:
  - Provision was made for a 16m building line along Road D1616.
  - Provision was made for 9m building lines either side of powerlines traversing the property in the southern portion.
  - A water pipeline found on site was accommodated in a Public Open Space erf (south eastern portion of the application site).

- Integrating the proposed road network with that of the existing Derby township to the south;
- Unsuitable soil conditions due to illegal dumping on site have been taken into account and accommodated accordingly in the layout plan.
- Providing for the development of complementary land uses on site to provide essential social services to the community;
- Engineering services can be provided to the proposed township area.
- Traffic generated by the development can be accommodated within the existing road network subject to the necessary road and intersections upgrades proposed in terms of the Traffic Impact Study.

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

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