co-operative governance & traditional affairs
MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

PHASE 2: SPATIAL CHALLENGES AND OPPORTUNITIES REPORT

Review of the Municipal Spatial Development Framework (MSDF) for Dipaleseng Local Municipality within a Period of 12 Months

19 July 2019

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1 INTRODUCTION

1.1 BACKGROUND AND PURPOSE

The Dipaleseng SDF is a spatial policy document that identifies the main challenges and opportunities confronting the municipality. The document sets out the municipal spatial Vision for the future and identifies a number of spatial strategies towards achieving this Vision.

The DLM is reviewing the existing municipal spatial development framework (MSDF) in order to compile a credible and updated Municipal SDF aligned with the provisions set out in the Spatial Planning and Land Use Management Act (SPLUMA). The objectives of SPLUMA in the context of Municipal Spatial Development Frameworks are to:

- provide spatial goals and supporting policies to achieve positive changes in the spatial organization of Municipal areas to better ensure a sustainable development future;
- promote the sound planning principles according to the relevant legislation;
- promote the general well-being of its inhabitants, thereby ensuring that the most effective and orderly planning is achieved for an area whereby changes, needs and growth in the area can be managed to the benefit of its inhabitants;
- provide direction for strategic developments, infrastructure investments, taking cognizance of environmental management mechanisms; and
- Represent the municipal spatial development vision statement through integration and implementation of all relevant sector policies and plans.

The MSDF must also be underpinned by and give expression to the key principles of planning as expounded in SPLUMA, namely, spatial justice, spatial sustainability, efficiency, spatial resilience and good administration. The MSDF should also serve the purpose of integrating necessary functionalities and linkages within local government, delivering a multitude of services linked to an integrated development approach in the municipal area. It must equally indicate the desired spatial growth and development patterns as well as sufficiently provide for an economically and socially balanced development between rural and urban areas in the municipality.

In view thereof, the Dipaleseng MSDF must:

- provide spatial expression of the coordination, alignment and integration of sectorial development policies, strategies and objectives of all municipal departments; prioritise land use development patterns;
- translate developmental needs;
- unpack spatial directives and objectives for implementation;
- provide investment guidance and the mechanisms for implementation; and
- provide guidance on sectoral development needs, investments and programme implementation.

SPLUMA further acknowledges the status of the MSDF in that no land development decision may be taken if it is inconsistent with the MSDF. Where the MSDF is inconsistent with the PSDF, the Premier should take the necessary steps to ensure that a revision of the MSDF is done so that it is consistent with the PSDF. Hence, the need for this Dipaleseng SDF review, not only to be aligned with SPLUMA Principles but also to be consistent with the 2019 Mpumalanga PSDF.

2 BIOPHYSICAL THEME ANALYSIS

The Biophysical analysis aims to provide a comprehensive overview of Dipaleseng Local Municipality's natural resource base and identifies key challenges and opportunities that will inform the main themes of the Spatial Development Framework (SDF).

2.1 TOPOGRAPHY AND LANDSCAPES

Dipaleseng which means the pink and white cosmos flowers "Cosmos bipinnatus", is located in the southwest corner of Mpumalanga and covers an area of approximately 2644,81 km2 and has a population of 45 232. Dipaleseng Local Municipality is the smallest and one of the seven local municipalities that make up Gert Sibande District Municipality. Dipaleseng Local Municipality borders Gauteng province to the west and the Free State province to the south. Lekwa LM and Govan Mbeki LM are located along the Eastern and Southern boundary of the Municipality, respectively.

Dipaleseng Local Municipality is located in south east of the Suikerbosrand Nature Reserve. The N3 and R23 corridor are two strong structuring element of the Municipality, which connects the municipal area with Gauteng and Free State. The Dipaleseng Local Municipality landscape is a varied one comprising of relatively flat areas and a fair amount of moderate to steep areas. Mountainous areas occur in the northern part alongside the Greylingstad - Balfour railway line and south of Greylingstad. Fairly flat areas occur in the south western part (the Vaal River catchment area) and the northern parts of the municipality. The Municipality's drainage is southwards towards the Vaal River in the south. The steep areas are therefore, not suitable for crop production, grazing and housing development. The southern western part of Dipaleseng Local Municipality has fairly flat areas which is more ideal for cultivation and game farms.

2.2 GEOLOGY AND MINERALS

2.2.1 Geology and Soil

2.2.1.1 Geology

Map 1 below illustrates the geology and mineral potential of the Municipality. Large parts of the Municipality is underlain by the Karoo Super Group. Map 1 shows the spatial distribution of the dominant underlying rock types forming part of the Karoo Super Group. A large portion of Dipaleseng is underlain with Arenite (46%)[1]. Dolerite and Andesite are the second most dominant geology types in the municipality. The least occurring geology types are Quartzite, Shale, Granite, Migmatatite and Lutaceous Arenite. The south western part of the municipality is predominantly underlain with Arenite. The Balfour/ Siyathemba areas is underlain with Andesite, Dolerite covers most of the eastern side of the municipality, which underlains Grodehoop and Grootvlei is underlain with Arenite. There is some isolated Shale patches occurring in the Balfour/Greylingstad area. The geological composition above provides the municipality with numerous economic opportunities through mining. Dipaleseng Local Municipality is predominantly underlain by coal and gold deposits. Coal mining occurs along the coal belt on the south, which gives way to other coal related activities found in the municipality such as the coal powered Power Station in Grootvlei. Gold deposits which are

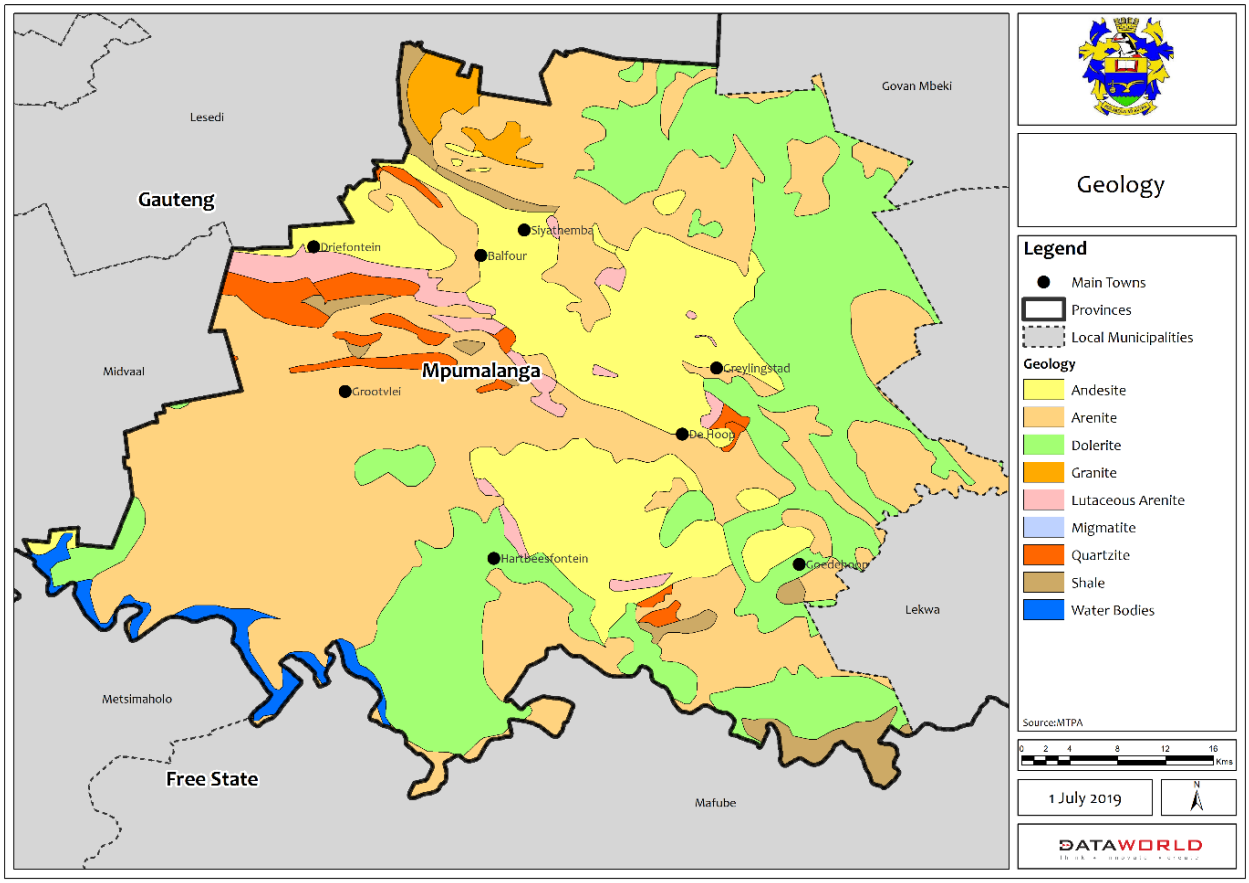
[1] Mpumalanga Tourism and Parks Agency, 2018

evenly spread throughout the Municipality also provide mining opportunities in the municipal area.

2.2.1.2 Soil

Dipaleseng Local Municipality has 4 broadly defined soil types which are the red and yellow massive or weak structured soils; the red-yellow and greyish soils with low to medium base status; the soils with a marked clay accumulation (strongly structured and a reddish colour); and the soils with minimal development, usually shallow on hard or weathering rock with or without intermittent diverse soils.

The most dominant soil patterns is the red and yellow massive or weak structured soils, these soils underlie the largest part of Dipaleseng Local Municipality. In general the soil and geological formations are fairly stable and do not pose significant geotechnical constraints to the region in terms of infrastructure development. In terms of agriculture, the soil potential or land capability of the Municipality is extremely patchy, with different levels of soil suitability. Generally, most of the land within the municipality is moderately suitable, for agricultural purposes. However, there is areas where land is highly suitable for agriculture purposes within the municipality. This areas in located in the vicinity of Grootvlei, and Driefontien.



Map 1: Geology *Source: MTPA*

2.2.2 Minerals

Dipaleseng is rich in minerals and metals such as coal and gold deposits originating from the geology types above. There are valuable quantities of minerals that are available in the Municipality which include chrome, coal, gold, iron ore, nickel and platinum group metals. There are gold deposits present in the area but have not been sufficiently explored. The south rand basin gold mine and the burn stone mine are the only gold mines in the municipality.

2.3 CLIMATE

2.3.1 Temperature

Dipaleseng falls under the Highveld climatic conditions which are generally associated with moderate temperatures and rainfall. The temperatures are highest on average in January, at around 20.5 °C – 25 °C. In June, the average temperature is 8.4 °C. It is the lowest average temperature of the whole year. The warm season in 2018 lasts for 5.8 months, from September 25 to March 20, with an average daily high temperature above 26 °C. The cold season lasts for 3 months, from May 29 to August 1, with an average daily high temperature below 19°C. The coldest day in the year 2018 was around the first week of July, with an average low of -0.9°C and high of 17°C. The average temperatures vary during the year by 12.1 °C[2] . The area often experiences very cold weather conditions and frost which can cause widespread damage to crops and wildlife.

2.3.2 Rainfall

Dipaleseng Local Municipality like most places experience much less rainfall in winter than in summer. The annual rainfall occurs mainly during summer in the form of heavy thunderstorms. The area falls within the summer rainfall region with an annual rainfall of between 575 - 710mm per annum3. Evaporation rates are between 1300 – 1700 mm per year. ±99% of Dipaleseng has an average annual rainfall of 595-794mm, while ±1% of the area has an average annual rainfall of 314-595mm.

The relatively high rainfall and available water resources open up economic opportunities for extensive agriculture and irrigated agricultural opportunities along the banks of the Vaal River. The Highveld area is comparatively much cooler, due to its altitude and it produces much of the summer grains, such as maize and grain sorghum.

2.4 NATURAL RESOURCES

2.4.1 Air

Air is important for all living animal and plant species. Air quality within the Highveld area, has been declining over the years and today it counts amongst the poorest in South Africa. Home to 12 of Eskom's 15 coal-fired power stations; petrochemical plants like Sasol's giant refinery; metal smelters; hundreds of primarily coal mines; brick manufactures; fertiliser and chemical producers; the Highveld is one of South Africa's industrial heartlands (CER, 2017). Due to the industrial activities, Balfour one of the Highveld towns feature on the list of 15 most polluted towns of South Africa. The poor quality of air is caused by the presence of industrial activities, petrochemical plants and coal fired power plants in the region. These plants and industries emit not only a range of greenhouse gases but also some toxic pollutants. The Highveld region accounts for approximately 90 percent of South Africa's scheduled emissions of industrial dust, sulphur dioxide and nitrogen oxides (Wells et al. 1996, as cited in Josipovic et al. 2009). It is probably the country's most significant contributor of pollutants associated with acid deposition. Acid deposition is a primary contributor to acid rain which changes standard soil composition and eventually affects biodiversity and human health. Available monitoring also confirmed that the areas of concern are in the vicinity of Witbank 2, Middelburg,

[2] Climate-Data.org, 2018

3

Secunda, Ermelo, Standerton, Balfour, and Komati where exceedances of ambient SO2 and PM10 air quality standards occur (Table E2).

2.4.2 Water

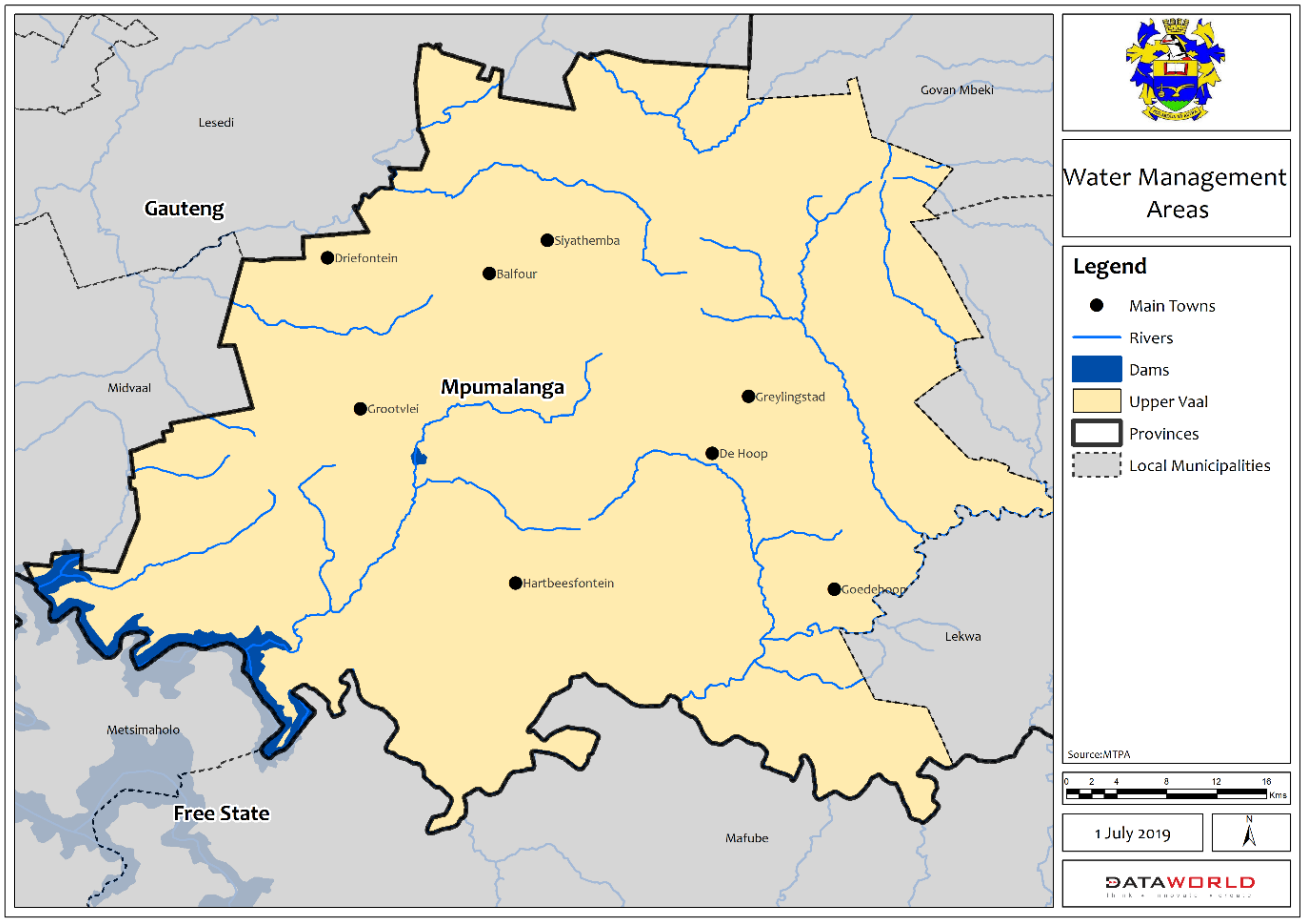
Water is essential for the survival of all living organisms, both a way of direct consumption and maintaining the environment. Water resources available in the municipality consist of surface water and groundwater. The Vaal River along with the Grootvlei dam are the main surface water sources for the municipality. Dipaleseng Local Municipality is drained by the Vaal River system which form part of the Upper Vaal Water Management Areas (WMAs). The water resources in all catchments within the Municipality are over committed with current demands on the available water outstripping the water available in the system (MPSoER, 2008; MEGDP, 2011).

2.4.2.1 Vaal Water Management Area (WMA)

The Vaal River System is augmented from the upper Orange (Senqu) by the Lesotho Highlands Water Project, and supplies the economic heartland of South Africa. It also supplies water to thermal power stations on the Highveld and irrigation schemes covering large areas along the Vaal, middle and lower Orange Rivers. Some 15 million people are dependent on secure water supplies from this basin. Both the flow regime and water quality within the WMA have been severely impacted upon by extensive upstream developments. The poor quality of water can be attributed to the presence of a high proportion of irrigation return flows, mining drainage as well as poorly treated urban effluent.

Present water demands are broadly in balance with supply. Any further demand will have to be met either by increasing the supply (by building more storage) or improving the management of existing uses. However, water resources in the Upper Vaal river system are fully utilised, which implies a high cost for future water intensive developments.

The present ecological state of the Upper Vaal River is moderately to largely modified (C and D ecological categories), with an improvement to moderately modified to a largely natural state (C and B category) from Augrabies to the Orange River Mouth. The present ecological condition of many of the smaller tributaries are in a moderately modified state (category C) and largely modified state (D category) with a small percentage of smaller tributaries in less developed areas in the catchment in largely natural state (B present ecological condition).



Map 2: Water Management Areas *(Source: MTPA)*

2.4.3 Agriculture

2.4.3.1 Agriculture

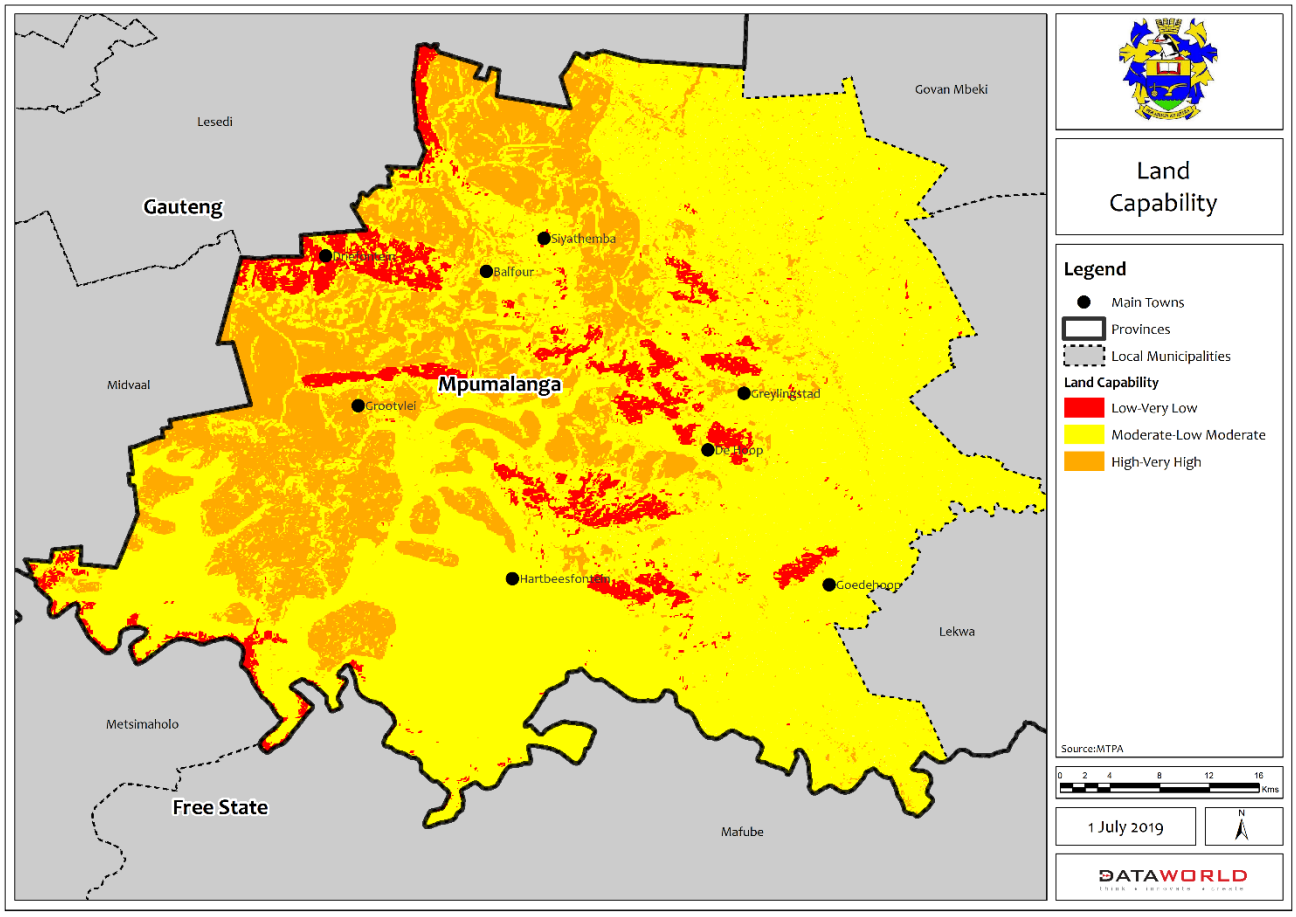
The agriculture sector plays an essential role in the fight against poverty and securing food security for people. The current land utilization for farming is determined by the both natural resources such as soils, water and climate, and land ownership. Agriculture in Dipaleseng Local Municipality is one of the major drivers of the area.

Dry land farming is utilized for agricultural production in the Municipality. Agricultural products produced in Dipaleseng include maize, sunflower, grain, sorghum, wheat, mutton (cattle and sheep) dairy and wool. In total 42.9% of the Dipaleseng's land surface is under cultivation, of which constitutes commercial dry land under grains. Besides the cultivation of crops, Bethal is one of the large producers of sheep and cattle in the country. Agriculture potential throughout the study area is medium to high. There is a mix of commercial farming with crop production occurring on higher potential soils, supplemented by beef and sheep farming.

2.4.3.2 Land Capability

Land capability is defined as the most intensive long-term use of land for purposes of rain-fed farming determined by the interaction of climate, soil and terrain. Therefore, the farming potential of land can be depicted through the term "Land Capability". The contributing factors towards determining "land capability" are soil capability (30% weight), climate capability (40% weight) and terrain capability (30% weight).

As Illustrated in Map 3, most of the land in Dipaleseng Local Municipality is classified as moderate to low moderate (71.7%) in terms of land capability. 6% of the land is regarded as low- very low and 22% as high- very high potential. Areas with high- very high capability are located on the north western part of the Municipality (Balfour and Grootvlei).



Map 3: Land Capability *(Source: MTPA)*

2.5 BIODIVERSITY AND ECOSYSTEMS

2.5.1 Biodiversity

Dipaleseng falls into more temperate and higher- altitude regions of the Highveld region. The diverse topography and climatic conditions has created and shaped a range of ecosystems suitable for different animal and plant species to thrive. The muncipality is experiencing some biodiversity losses. The key drivers of biodiversity loss include destruction of natural habitat as a result of cultivation, mining, urban sprawl; urban and dense rural development; invasive alien species; over-abstraction of water and alteration of flow in the freshwater environment; pollution; climate change and so forth.

Although many of the 'natural' areas in the municipality has been degraded to some extent, these could be classified as untransformed, i.e. the loss of biodiversity was likely to be minimal. Land that has been transformed is likely to have lost a large number of plant species, as well as most of the larger mammals that previously occurred in the area. Conversely the manmade irrigation dams and the wetlands that feed them might still contain a significant number of species, including some of high conservation significance.

2.5.2 Ecosystems

Ecosystems are when animals, microorganisms, communities and their non-living environment, all function together as one unit but at different scales. They range from a small area to a larger scale. Groups of ecosystems that have similar characteristics are called Biomes.

2.5.2.1 Terrestrial ecosystems

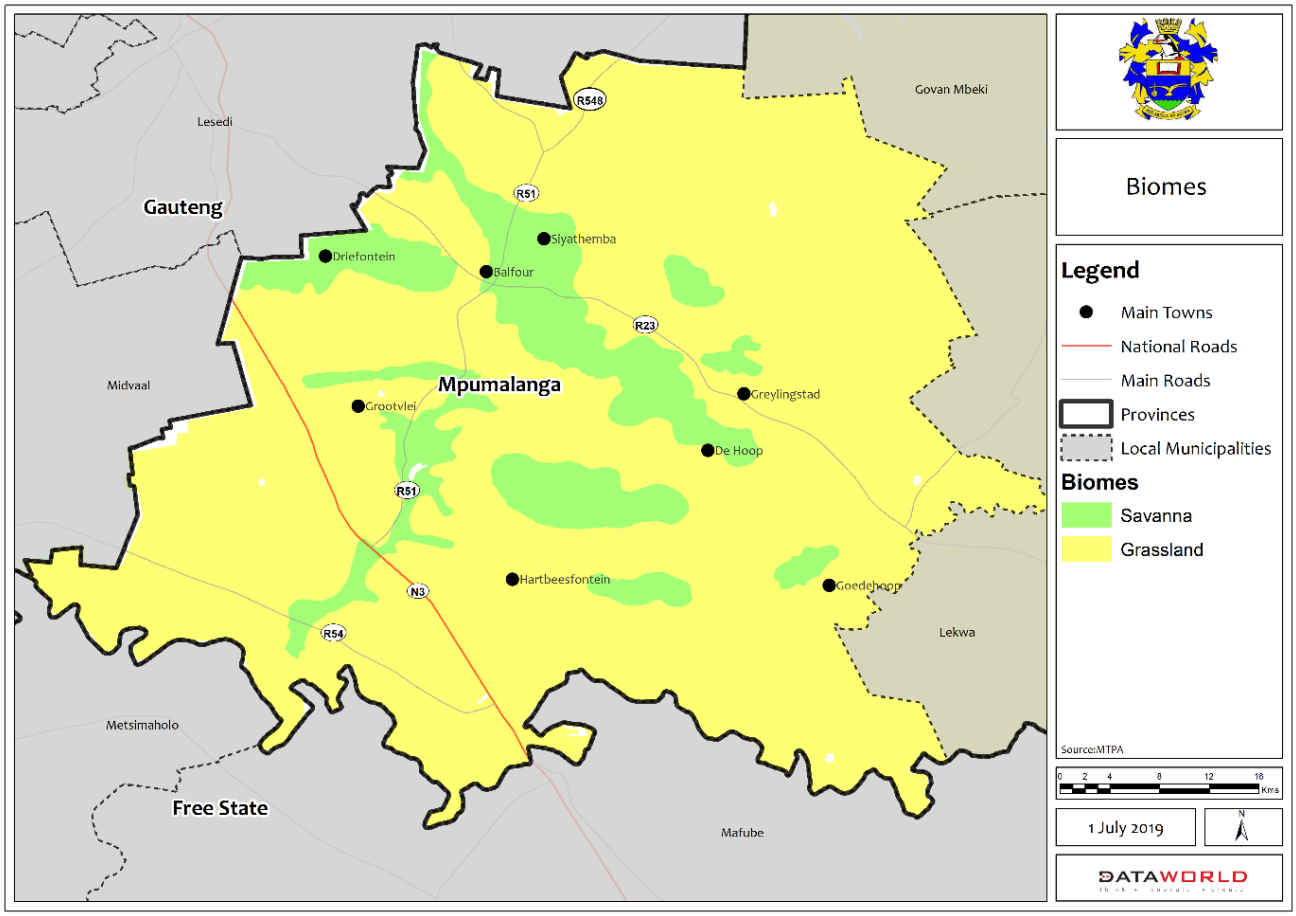
Terrestrial ecosystems in Dipaleseng Local Municipality consist of 2 biomes (**Error! Reference source not found.**), the savanna and the grassland biome. They indicate the topography of the land and provide an understanding of the biodiversity in the area. Biomes are ecological areas that are used by animals and plants species. Majority of the land in Dipaleseng Local Municipality are under the grassland biome.

i Savanna Biome

Savanna biome are usually a mixture of trees, grass and shrubs. It has tall dense wooden areas, grassy plains, hill slopes, dense thickets and scattered trees. Savanna biomes are the ideal landscape for cattle breeding, and wildlife as the broadleaf plant species provide a valuable food source for animals. There are a high occurrence of rainfall in these areas, which will lead to erosion and flooding, which then decreases the nutritional value of the plant species. During the dry periods there are low cultivation, grazing and a high risk of fires. Savanna biome are important for livestock breeding and game farming.

ii Grassland Biome

The grassland biomes have a high diversity of plants and grass. These landscapes have a high diversity of rare, endemic and threatened species and significant wetlands. Grasslands are mostly long–lived, slow growing plants they can be easily destroyed. They can be replaced by alien species which can easily have damaging effects on the biome. These alien species can take up land space, water and nutrients from the indigenous species. Large parts of the grassland grows on fertile soil with a high agricultural value and can be used for crop production. Grasslands require agricultural strategies to sustain livestock production and cultivation to bridge the gap in spatial economic productivity.



Map 4: Biomes *(Source: MTPA)*

2.5.2.2 Freshwater Ecosystems

i Rivers and Wetlands

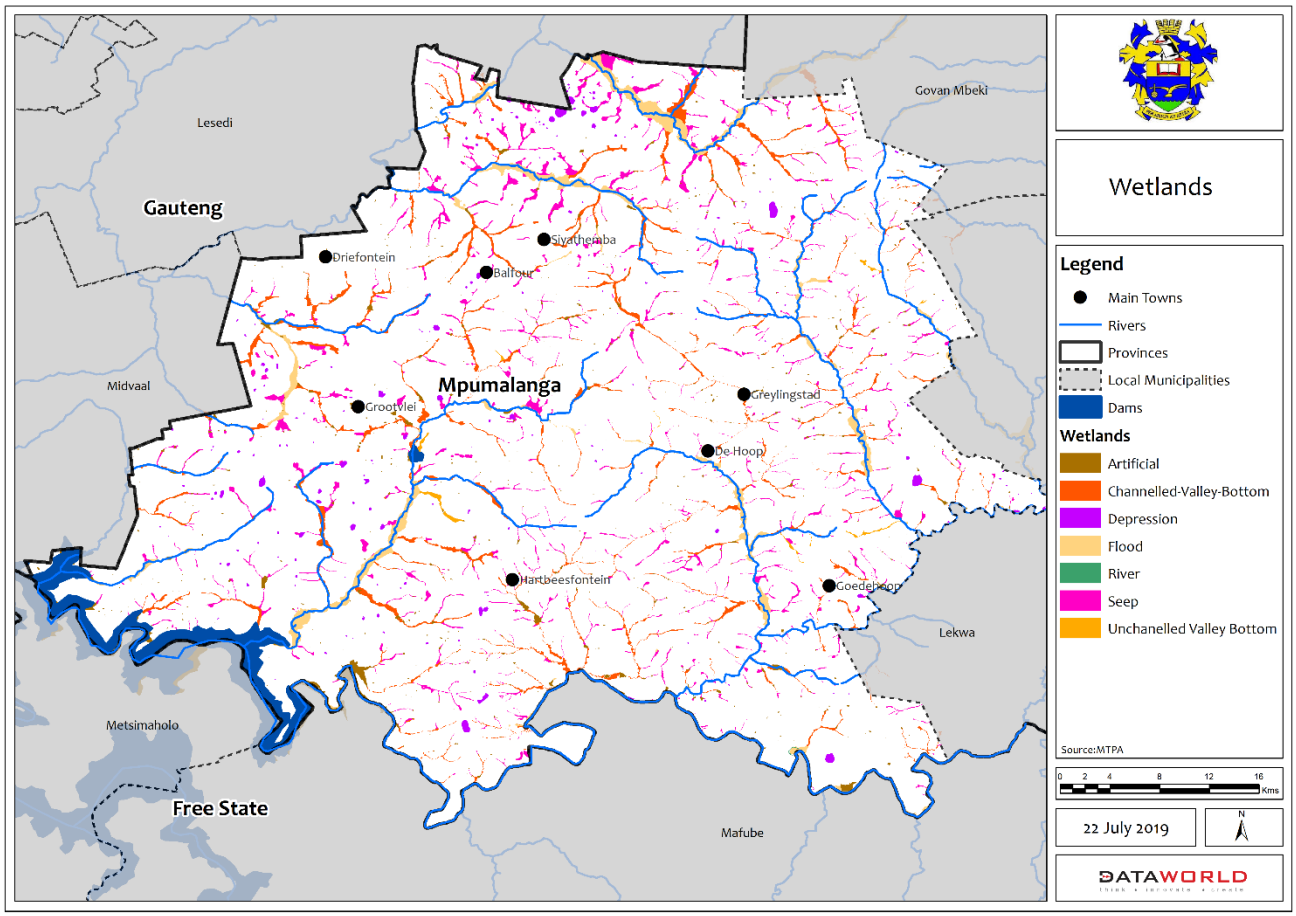
Dipaleseng contains over 2000 wetlands and numerous river systems, which includes five major catchment areas. Wetlands have a high value in ecological infrastructure to supply water for human consumption. Wetlands also provide special habitats and breeding ground for many species of plants and animals. Most of the wetlands occur in the grassland biome region of the municipality, with the concentration pans and catchments found in various parts of the municipality. Most of the wetlands and catchments in the municipality have been transformed due to mining and agricultural activities. These wetlands are under threat from agricultural activities, erosion and draining of wetlands that disturbs the biodiversity of the wetlands.

Two significant wetland systems were identified in Dipaleseng, namely the Grootvlei Wetland located just outside Grootvlei and the Balfour Wetland located to the north east of Balfour Town. Legislation dictates (as per the National Water Act 36 of 1998) that wetland areas are protected areas and therefore development within 30 m of the wetland is prohibited. Dipaleseng is also located in the catchment of the Suikerbos River with the Water Val River being one of its major tributaries. The Suikerbos River flows into the Lekwa River which is one of the major rivers in the Highveld Water Management Area (WMA). Five main catchments areas form part of the Municipality. This includes the:

- The Vaal River catchment, which ultimately forms part of the Suikerbos River system;
- the Water Val River where it meets the Vaal River (Vaal Catchment);
- the Suikerbos River where it meets the Vaal River (Vaal Catchment);

- the Suikerbos River where it meets the Water Val River (Additional Suikerbos Catchment, which includes the upstream Water Val and Vaal River Catchments); and
- the Water Val River at its confluence with the Vaal River (Vaal Catchment);

Two significant dams were identified, namely that of the Haarhoff Dam, located to the West of Dipaleseng within the Suikerbos River catchment, and the Grootvlei Dam located to the north east of Dipaleseng within the Val River catchment.

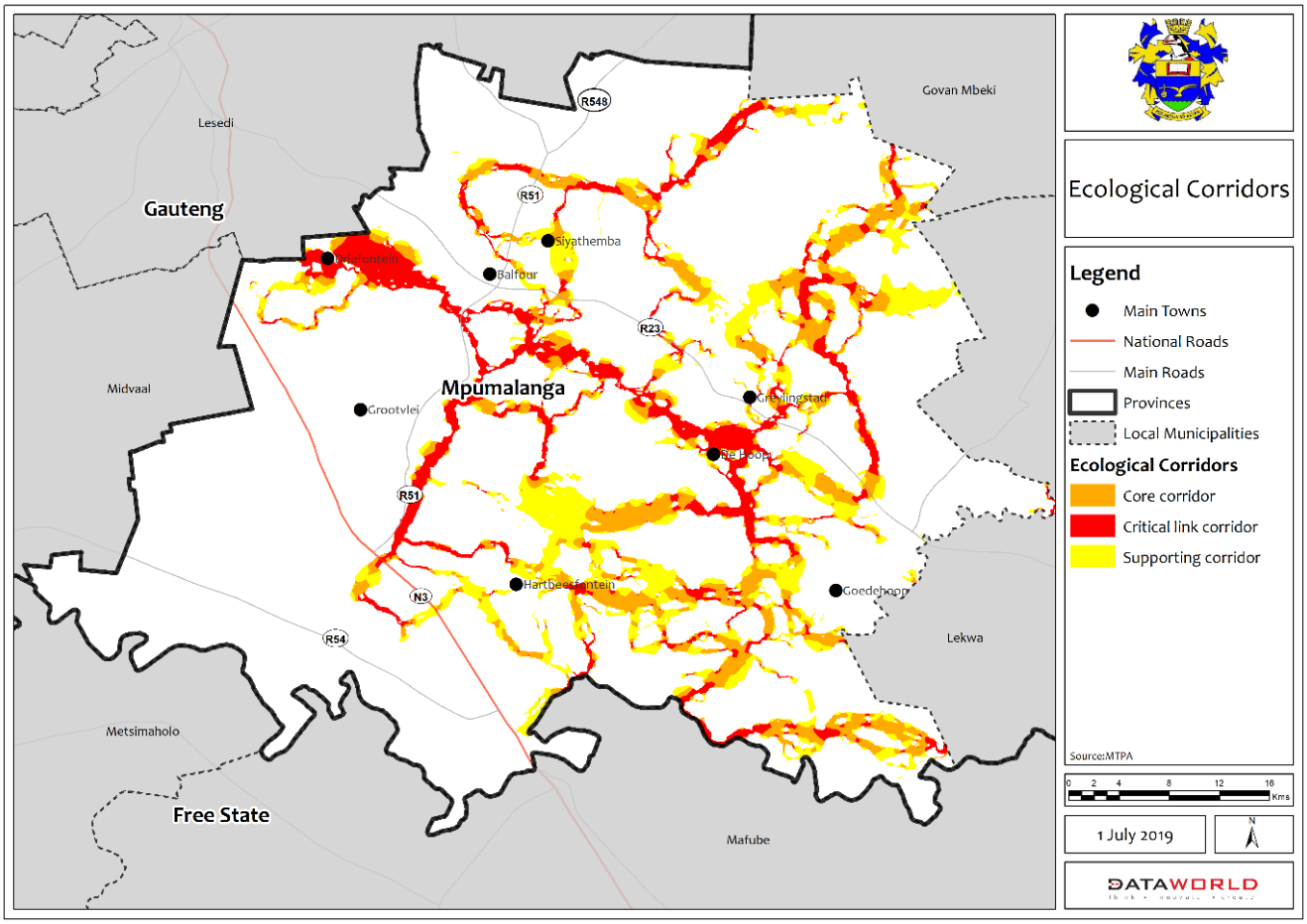


Map 5: Wetlands *(Source: MTPA)*

2.5.2.3 Ecological Corridors

Ecological corridors are pathways long term and large scale movement of species from one area to another. The corridors are selected along the rivers and gradients of the land to provide for the advance of animals and plants in response to environmental change. It is therefore used to create pathways between different biodiversity areas. Ecological corridors are used to minimize the loss of natural habitat and to keep the environment intact. Habitat fragmentation, caused by a variety of impacting activities, has been identified as one of the greatest threats to biodiversity. As amongst other things, it increases the vulnerability of ecosystems to climate change, maintaining or enhancing habitat connectivity, so that plant and animal communities can move in the most recommended response to climate change. There are three identified key ecological corridors in Dipaleseng Local Municipality, which are important to the maintenance of the biodiversity of the Municipality:

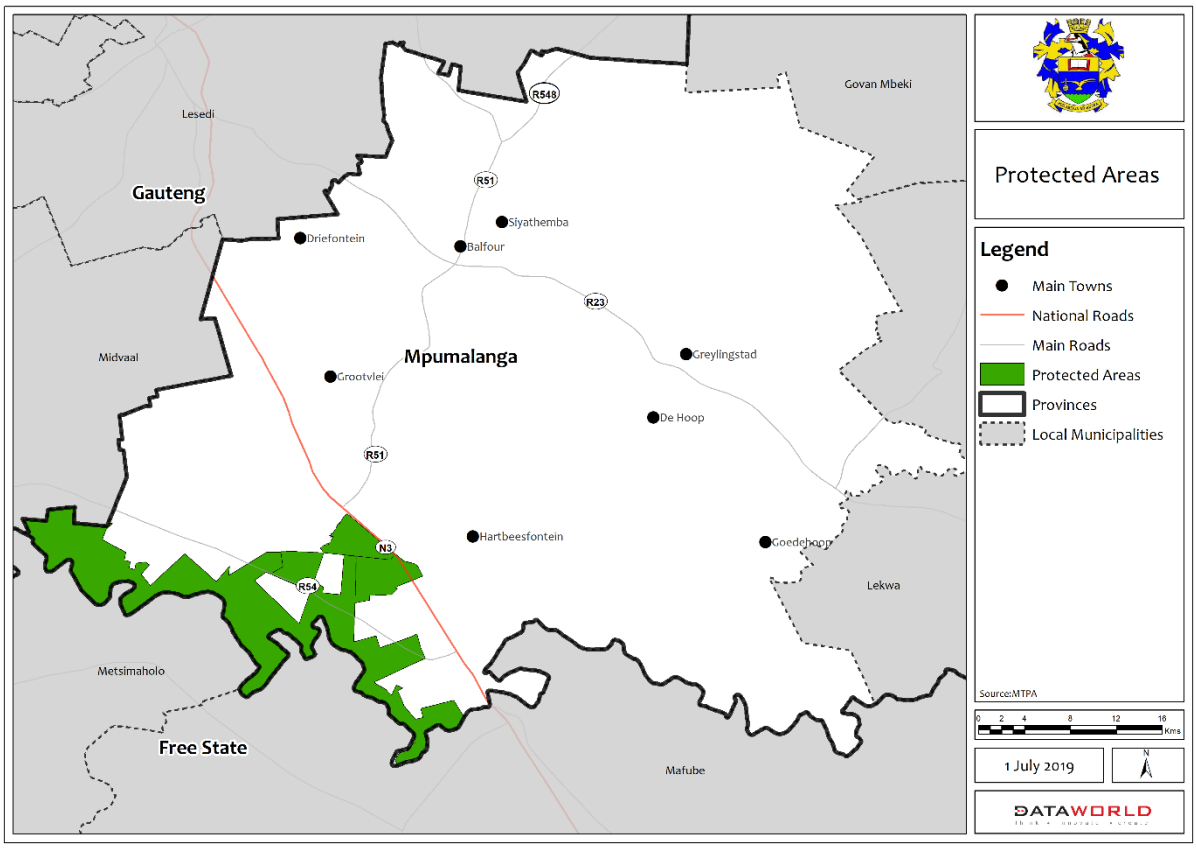
- Core Corridor
- Critical Link Corridor
- Supporting Corridor



Map 6: Ecological Corridors *(Source: MTPA)*

2.6 PROTECTED AREAS

Protected areas are used to conserve and sustain biodiversity. They are used to maintain natural ecosystems and ecosystem functions. Well managed protected areas are the most common system that is used to secure biodiversity in the long term. Protected areas are an effective way of mitigating the impacts of climate change. There are 4 protected areas in Dipaleseng that are under formal protection. There is a total of 17959.30 Ha of land that are under protection. Private nature reserves and nature reserves cover 0, 97% and 5, 82% of protected land in the municipality (see Map 7).



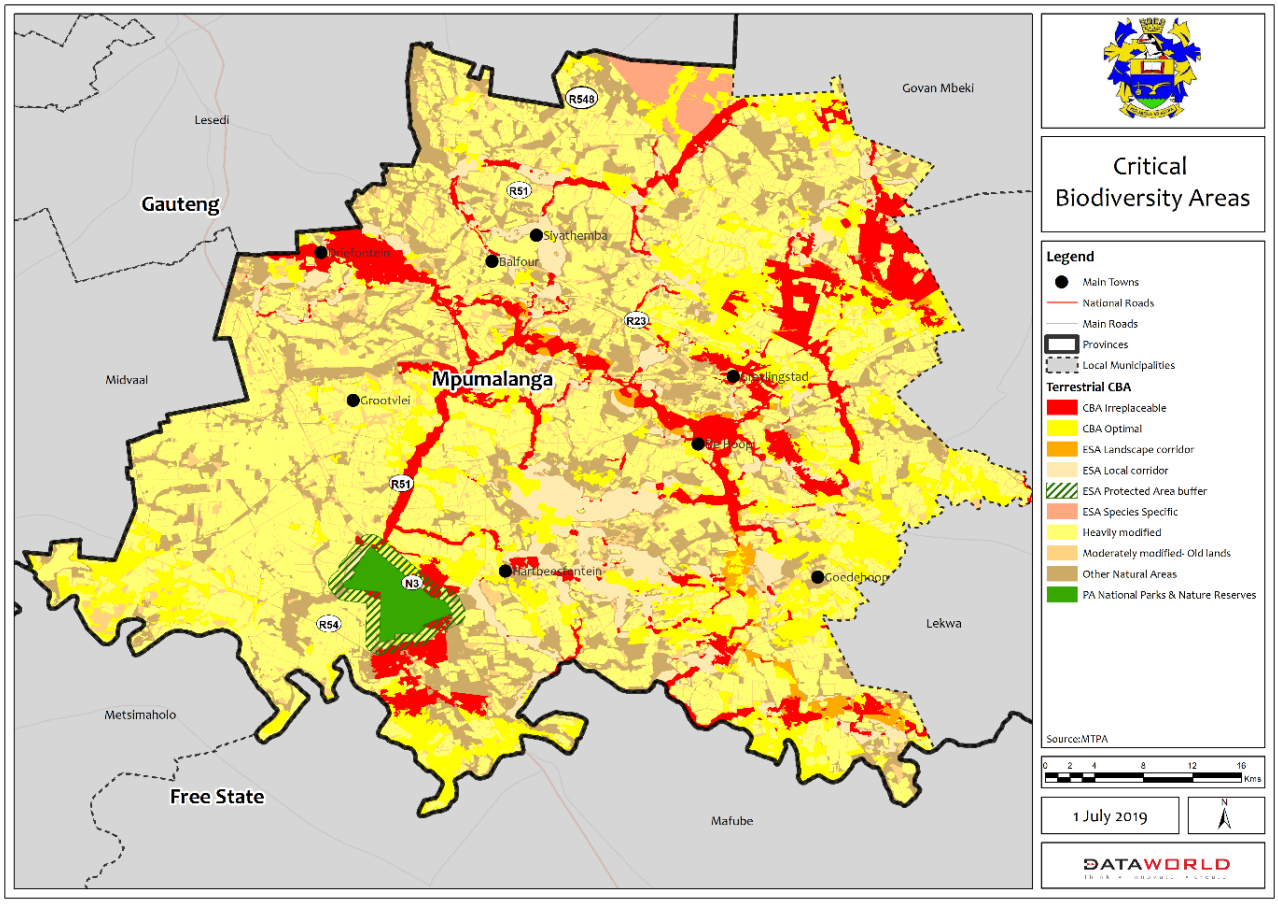
Map 7: Protected Areas *(Source: MTPA)*

2.7 CRITICAL BIODIVERSITY AREAS

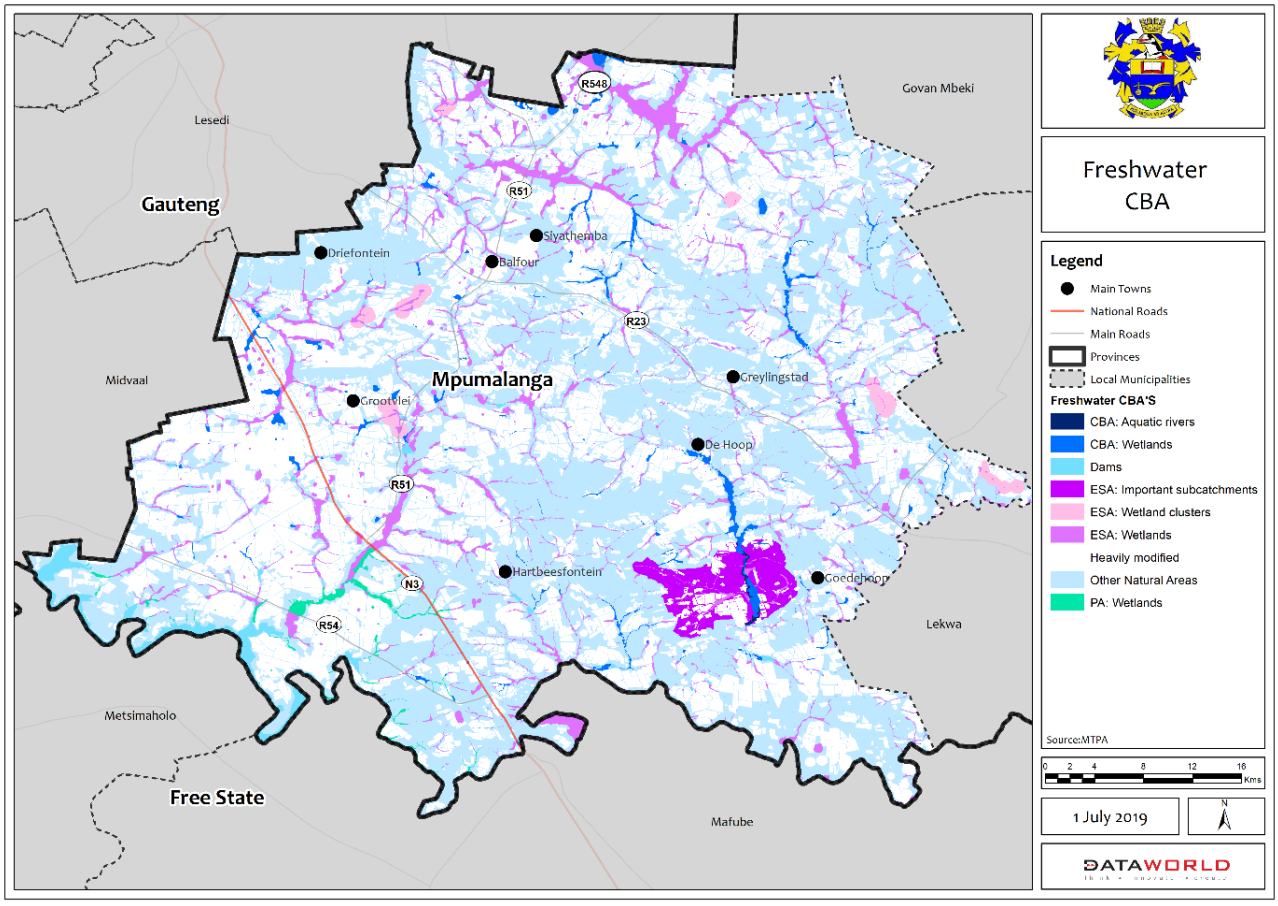
Critical Biodiversity Areas (CBAs) can be defined as terrestrial and aquatic features in the landscape that are critical for conserving biodiversity and maintaining ecosystem functioning (Berliner et al. (2007). In general, CBAs represent areas that should be kept in a natural to near natural state to ensure sustainable development. The Mpumalanga Biodiversity Sector Plan Handbook has identified the CBAs and classified them into two categories viz. Irreplaceable CBAs and Optimal CBAs. Critical diversity areas are required to meet biodiversity targets to maintain the land in a natural state. Heavily modified land which covers 43, 21% are the largest type of CBA in Dipaleseng Local Municipality. Heavily modified land is land that had complete loss of natural habitant due to activities like ploughing, cultivation and mining. These land parcels have none or little biodiversity value left for future generations to use. Most of the nutrients in this land has been destroyed due to the excessive use of the land. Dipaleseng Local Municipality has a high cultivation area, it shows that most of the land has been transformed from natural to cultivation. *(Mpumalanga Biodiversity Sector Plan Handbook)*

"ESA landscape corridor" and "PA national parks and nature reserves" have the least coverage with 0, 89% and 0, 96% respectively. The ESA landscape corridor supports ecological processes, this allows the terrain to adapt to the impacts of climate change.

Map 8 And 9 depict spatial locations of the CBAs, ESAs, ONAs and protected areas



Map 8: Critical Biodiversity Areas *(Source: MTPA)*



Map 9: Freshwater CBA's *(Source: MTPA)*

3 SOCIO ECONOMIC THEME ANALYSIS

The demographic structure of a country or region has a bearing on the socio-economic development of that particular area. Understanding the population dynamics is necessary to assess the magnitude of the effects on any section of the society by any prospective policy, project or development. Thus, it is imperative for policy makers and planners to have a clear understanding of the demographic profile of the area under consideration. The Socio-economic theme analysis aims to provide a comprehensive overview of Dipaleseng's demographics, existing economy and social facilities, as well as identifying challenges and opportunities that will contribute to the key objectives to support the review of this SDF.

3.1 POPULATION DISTRIBUTION

Dipaleseng Local Municipality comprises of 6 wards and covers an area of approximately 2644, 81 km2. Table 1 shows the total population of the Municipality in 2016 as 45 232 people. In contrast, the Municipalities total population in 2011 was recorded as 42 390 people and in 2001 the total population was recorded as 38 618 people. The comparison of the three periods indicate that there has been an increase in the Municipalities population. During the 2001 – 2011 period Dipaleseng LM experienced an annual growth rate of 0.93% and during the 2011 – 2016 period a positive annual growth rate of 1.47%, which amounted to a total addition of 2842 people to the total population in 2016.

Table1: Population Growth

Area	Population			Growth Rate	
	2001	2011	2016	2001-2011	2011-16
Dipaleseng LM	38 618	42 390	45 232	0,93	1,47
Gert Sibande DM	900 007	1 043 194	1 135 409	1,48	1,92
Mpumalanga	3 365 554	4 039 939	4 335 964	1,83	1,61

Source: Statistics South Africa, Census 2011 & Community Survey, 2016

Figure 1 below illustrates the population race distribution of the municipality amongst the 6 wards. Black Africans dominate the racial composition of the Municipality, contributing 89.83% to the total population. White people are the second largest group in the Municipality contributing 8.57% to the total population and then Indian/Asian people with 0.93% and Coloured people being the lowest group contributes 0.50% to the Municipalities total population.

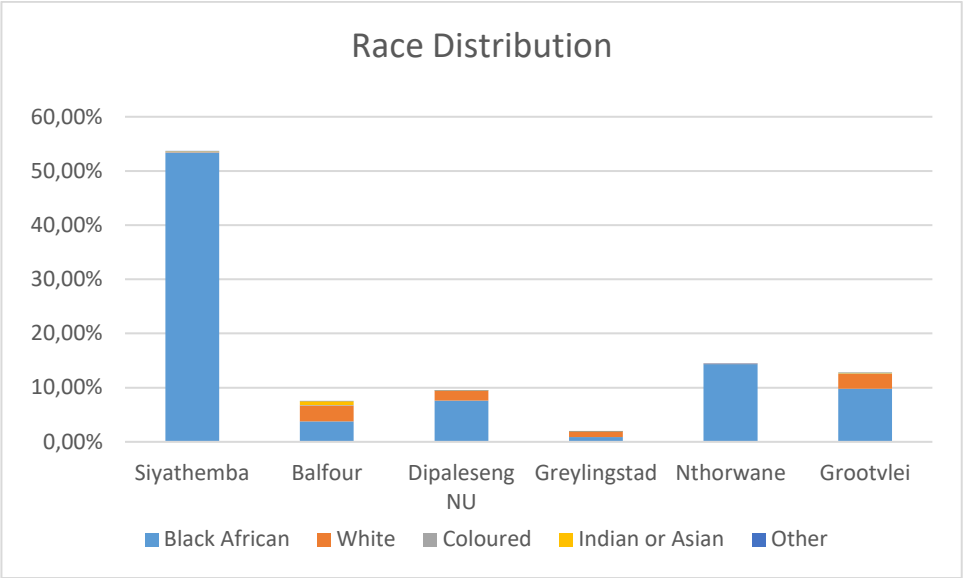


Figure 1: Population Race Distribution
Source: Census 2011, StatsSA

3.2 POPULATION AGE AND GENDER COMPOSITION

Table 2 and Figure 2 illustrate the general population by "age bracket" (children, youth, working age, old, etc.) and "gender" for Dipaleseng LM area based on the 2016 Community Survey. The statistics reveals that children (age less than 15), youth (aged 15-34) account for 25.46% and 39.46% respectively of the total population. The shares of working age and elderly population are 28.85% and 6.23% respectively. Males contribute 51.74% of the total population of the Municipality, whereas females contribute 48.26% only.

Table 2: Population Age and Gender

Age Bracket	Male Population	%	Female Population	%	Overall Population	%
Children (less than 15)	5759	12,73%	5757	12,73%	11516	25,46%
Working Age Youth Population (15-34)	9489	20,98%	8359	18,48%	17848	39,46%
Working Age Non-Youth Population (35-64)	6999	15,47%	6050	13,38%	13049	28,85%
Elderly Population (64+)	1155	2,55%	1665	3,68%	2820	6,23%
Total	23402	51,74%	21831	48,26%	45233	100,00%

Source: StatsSA Community Survey, 2016

As illustrated in Figure 2, the Municipalities population pyramid depicts a bell shape pyramid, clearly depicting a substantial share of children and youthful population. But after age 34 onwards it starts tapering off. This shows signs of a healthy and growing population which is mostly common in developed nations like China. Th is also indicates that the Municipality experiences lower death rates, which results in higher life expectancy of its population. The increase in population over time also indicates that there is less migration of adult population from the LM.

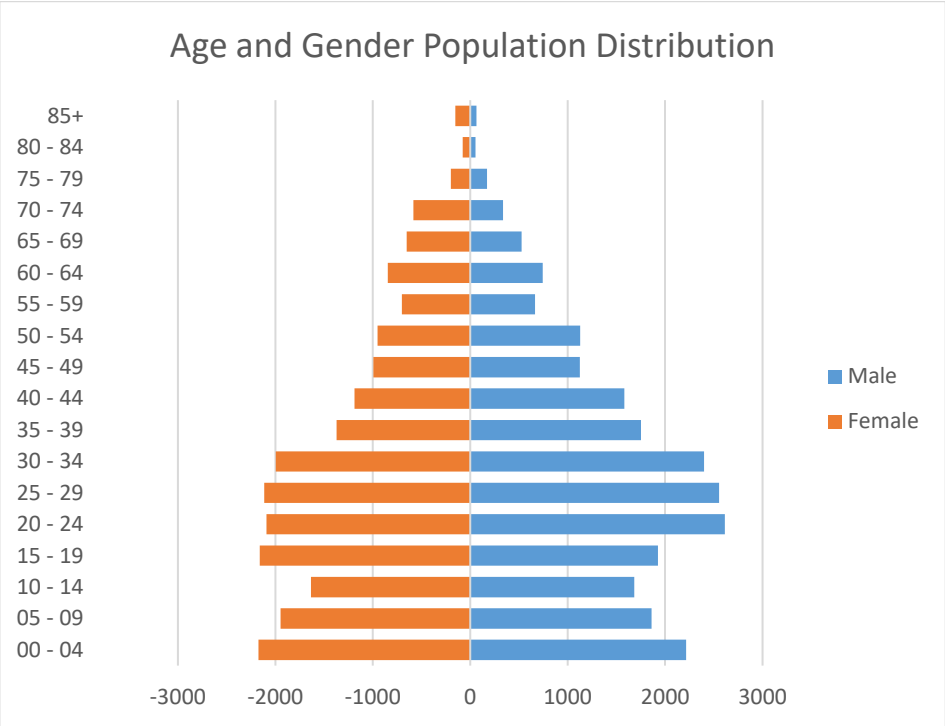


Figure 2: Age and Gender Population Distribution
Source: StatsSA, Community Survey, 2016

3.3 HOUSEHOLD SIZE

Table 3 highlights the total number of households in the municipality being 12637 with an average household size for being 3. 35 persons per household in the 2011 Census and calculated as 3 persons per household in 2016 Community Survey, therefore indicating a slight decrease. The average household size is the highest in Greylingstad recorded as 3.87 and lowest in Grootvlei with 3 persons per households.

Table 3: Household Size

Area	Population	Number of Households	Average Household Size
Siyathemba	22768	6739	3,38
Balfour	3201	972	3,29
Dipaleseng NU	4046	1079	3,75
Greylingstad	840	217	3,87
Nthorwane	6120	1826	3,35
Grootvlei	5415	1804	3,00
Dipaleseng LM	42390	12637	3,35

Source: Census 2011, StatsSA

3.4 EDUCATION

The level of education has significance on the employment potential and income of the communities. It has a direct and indirect relationship with the local economy and the quality of life of people, as well as the ability of communities to afford municipal services. An unskilled labour force results in low paying jobs and difficulty in securing better employment opportunities. This means that investment in education and skills development is a prerequisite for people to improve their livelihoods.

3.4.1 Level of Education

Table 4 illustrates the levels of education attainment for Dipaleseng Local Municipality. According to the Community Survey, 2016, 13.53% of the population 20 years and older has no formal school education. Whereas only 22.57 of the population have some primary education; 35.29% of the population have some secondary education and 19.07% have obtained grade twelve. Only 4.15% of the municipal population has higher education and 0.06% of the population is unspecified in terms of education level.

Table 4: Level of Education

Education Level	Dipaleseng LM	Gert Sibande DM	Mpumalanga
No Schooling	13,53%	16,79%	17,57%
Some Primary	22,57%	23,49%	23,73%
Completed Primary	4,78%	3,74%	3,76%
Some Secondary	35,29%	28,44%	27,07%
Grd 12/Std 10	19,07%	20,29%	20,72%
Higher	4,15%	5,67%	5,66%
Other	0,03%	0,26%	0,32%
Unspecified	0,06%	0,11%	0,09%
No Applicable	0,52%	1,22%	1,07%

Source: Community Survey 2016, StatsSA

3.4.2 Literacy Rates

According to the Department of Social Development, people between the ages of 20 years and older are defined as functionally literate if successfully completed 7 years of formal education and illiterate if not. Functional literacy is used to indicate the minimum education level attained and measures a person's ability to read and write, but it is more strictly defined as the successful completion of a minimum of 7 years of formal education. The functional literacy rate of Dipaleseng Local Municipality stands at 70.16% in 2018 which is an improvement from the 69.47% functional literacy rate that was recorded in 2016[4].

3.5 EMPLOYMENT STATUS

The employment and unemployment rates are very useful in the compilation of the Spatial Development Framework in order to determine the extent of planning and decision making in addressing relevant issues and formulating appropriate strategies.

3.5.1 Employment

Table 5 indicates the employment figures related to Dipaleseng LM. In 2017, 12493 people were employed and 7392 people were unemployed. The unemployment rate for the municipality increased from 35.9% in 2016 to 37.2% in 2017. In 2017 12129 people were classified as not economically active. In 2017, Dipaleseng's unemployment rate was the 4th highest among all the municipal areas of Mpumalanga. In 2017, the unemployment rate for females was 42.4% and that of males 30.2%.[5]

[4] Quantec Database, 2019

[5] Gert Sibande District- Dipaleseng Socio-Economic Profile

Table 5: Employment

Indicator	2011	2016	2017
Working age population (15-64 years)	27937	31427	32015
Labour Force	2068	2061	2081
Employed	10613	12202	12493
Unemployed	5087	6855	7392
Not economically active	12237	12370	12129
Unemployment rate (%)	32.4%	35.9%	37.2%

Source: Quantec Database, 2019

3.5.2 Poverty

Dipaleseng low employment levels are also coupled with low income levels. In 2017, approximately 42.4% of the municipalities population earned below the lower-bound poverty line (between R1 and R400) which makes it as total of 18 663 people living in poverty. In 2017, Dipaleseng's share of population below the lower-bound poverty line was the 8th lowest among the other municipalities in the Gert Sibande District areas. Dipaleseng share of income of the poorest 40% of households of 9.1% was ranked 5th most equal in the province.

3.5.3 Income Inequality

Income inequality is one of the important parameters to assess the all-inclusiveness of an economy as it shows the disparities between the rich and the poor. Gini coefficient is used to measure inequality in the distribution of income. A Gini coefficient of zero expresses perfect equality i.e. all households earn equal income and the value 1 represents the situation where one household earns all the income and other households earn nothing.

Table 6 shows the Gini coefficients of Dipaleseng LM, Gert Sibande DM, Mpumalanga and South Africa. The Municipality's Gini coefficient has always been lesser than the national and provincial figures. Nevertheless it is still remained constant throughout the years.

Table 6: Gini coefficients based on total income (including social grants)

Area	2008	2009	2010	2011	2012	2013	2014
Dipaleseng LM	0,60	0,60	0,60	0,60	0,60	0,60	0,60
Gert Sibande DM	0,62	0,62	0,62	0,61	0,61	0,61	0,60
Mpumalanga	0,67	0,67	0,66	0,66	0,66	0,65	0,65
South Africa	0,69	0,69	0,69	0,68	0,68	0,67	0,67

Source: Quantec Database 2015

3.6 SOCIAL AMENITIES

3.6.1 Health Facilities

Access to healthcare facilities is directly depended on the number and spread of such facilities within a geographic space. Table 7 shows the availability of health facilities in the Dipaleseng Local Municipality. There are currently a total of 7 healthcare facilities in operational in the entire municipal area, of which 4 are clinics and 3 mobile clinics. There are currently no hospitals in the Dipaleseng LM.

Table 7: Health Facilities

Health Facilities	Siyathemba	Balfour	Dipaleseng NU	Greylingstad	Nthorwane	Grootvlei
Clinic	1	1	1	-	1	-
Mobile Clinic	1	1	-	-	1	-
Hospitals	-	-	-	-	-	-

Source: Dipaleseng Spatial Development Framework, 2010

3.6.2 Education Facilities

According to the Department of Education, the existing school facilities within the municipal area can currently accommodate and service the area, although there is a need to improve the existing facilities. There is also a need to direct the focus on developing more tertiary or equivalent institutions in the area, which can offer different skills that can help empower the DLM communities and more likely to get them employment within and outside the municipal area. There are currently 51 schools in Dipaleseng Local Municipality[6]. The educational facilities include 23 ECD facilities, 21 primary schools, 6 secondary schools and 1 independent schools. There are currently no FET or tertiary facilities in the municipality.

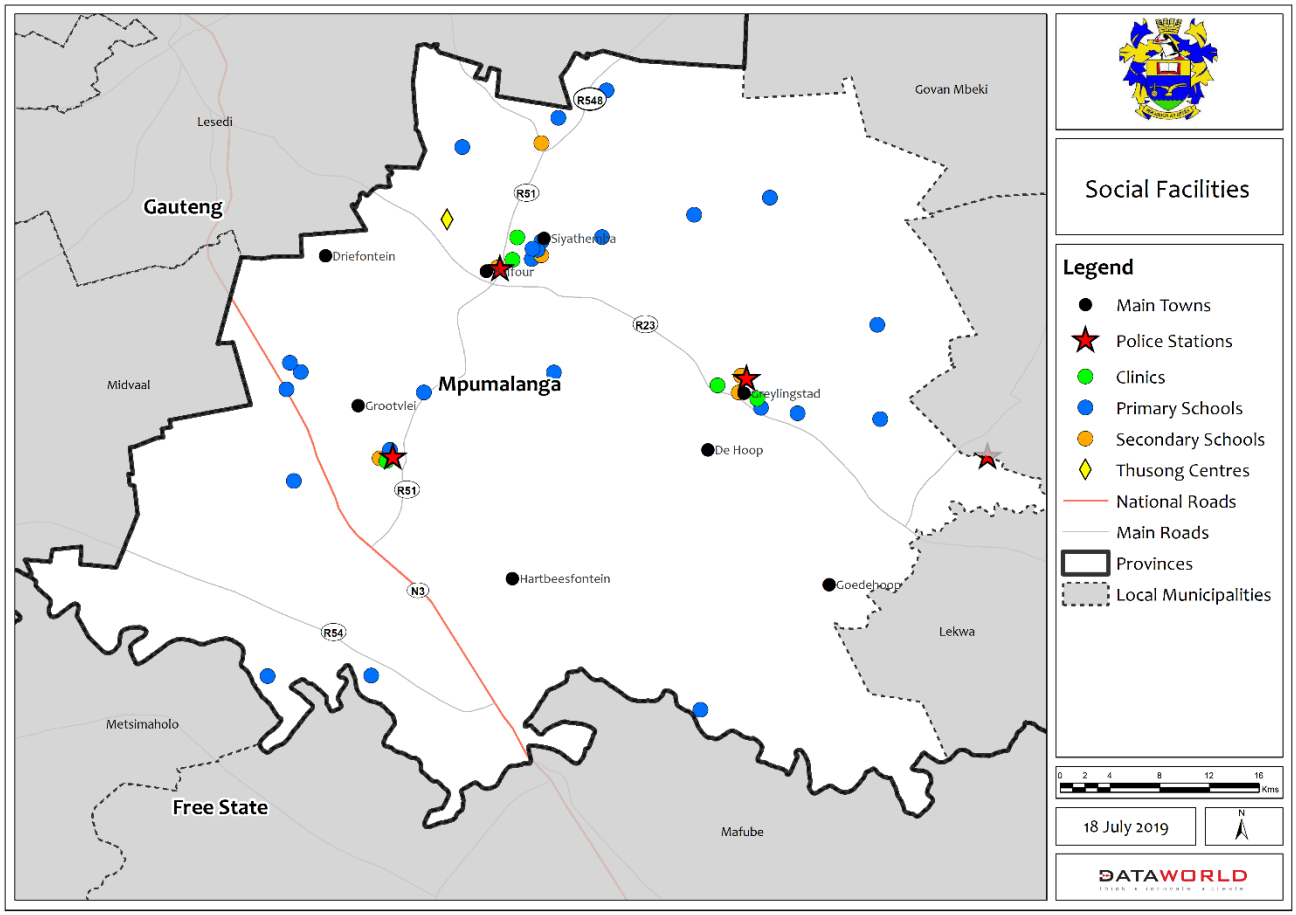
3.6.3 Thusong Centres

A Thusong Service Centre is a one-stop service centre providing information and services to communities, through the development communication approach, in an integrated manner. These centres provide a hub of activities and a variety of services, organised according to the Six-Block Service Model. The model reflects an "ideal" Thusong Service Centre. Since community needs are the driving factor in service provision, this model is modified to suit the context and environment of each Thusong Service Centre. There are 4 planned Thusong Centres for Dipaleseng Local Municipality, however to date only one centre has been developed, which is located in Siyathemba.

3.6.4 Police Stations, Community Halls and Post Offices

It is estimated that the Municipality is serviced by 4 police station, 4 community halls and 3 post offices. Map10 indicates that these facilities are fairly effectively distributed throughout the municipal area, with the highest concentration of stations coinciding with the areas experiencing higher population densities, namely Balfour, Greylingstad and Grootvlei.

[6] Gert Sibande District SDF, 2014



Map 10: Social Facilities

3.7 MUNICIPAL ECONOMY

3.7.1 Size and Growth Rate

Size of an economy is measured by gross domestic product (GDP), and gross value added (GVA). GVA is the sum of the value of goods and services produced an economy. GDP is GVA plus the value of taxes generated, minus subsidies provided by the economy. In 2016, the GDP and GVA of Dipaleseng Local Municipality were R 1 611 million and R 1 434 million (at 2010 constant 2010 Prices) respectively. The municipality's GVA was R 1 432 million in 2011 indicating that during 2011-16, the GVA of the municipality grew by a mere 0.03% annually. During the same period the annual GVA growth rate for the district was 1.38% and for the province was 1.35%.

In terms of the size of the economy, Dipaleseng is the smallest municipality in the province. The municipality accounts for only 5.15% of Gert Sibande District's and 0.72% of Mpumalanga's GVA. Similarly, among all municipalities, Dipaleseng's contribution to both the district's population (3.98%) and the province's population (1.04%) is the least.

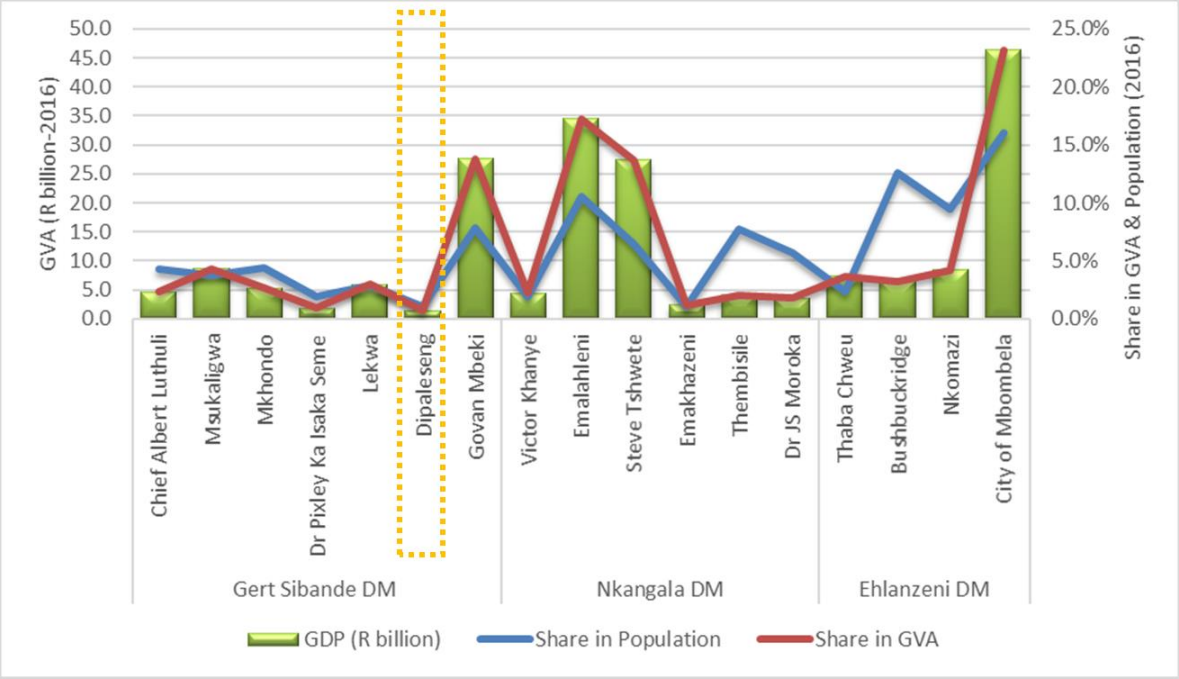


Figure 3: Comparative Contribution of Municipalities to GDP and Population
Source: Global Insight & StatsSA

3.7.2 Economic Sectors

Economic sectors are broadly divided into three major sectors viz. Primary, Secondary and Tertiary. The Primary Sector is related to direct exploitation of natural resources. The Secondary Sector includes industries that produce a finished, usable product or are involved in construction. The Tertiary Sector also termed as service sector consists of the production of services instead of the end product. These three major sectors can be subdivided into the following subsectors.

- Primary Sector
  - Agriculture (including Forestry and Fishing)
  - Mining
- Secondary Sector
  - Manufacturing
  - Utilities (Electricity, Gas and Water)
  - Construction
- Tertiary Sector
  - Trade
  - Transport
  - Finance
  - Community Services

The Tertiary Sector contributes 60% to the municipal GVA, followed by the Secondary (24%) and Primary Sector (16%). Among the subsectors of the key sectors, Trade (25%), Community Services (18%) are the largest contributors to the GVA. The other key subsectors are Utilities (11%), Agriculture (10%), Manufacturing (9%) and Finance (9%). The figure below shows the contribution of each economic subsector to the total GVA of the Municipality in 2001 and 2016. For comparative analysis, Mpumalanga and Gert Sibande District are also included. As is indicated in the figure, every economy is dominated by the Tertiary Sector. In all economies, the contribution of this sector has increased, and the Primary Sector's contribution has decreased- a prima facie sign of evolving economy where service and

knowledge-based sectors grow faster than manufacturing and agriculture. However, the rate of change in the municipality is slower than of the district and province.

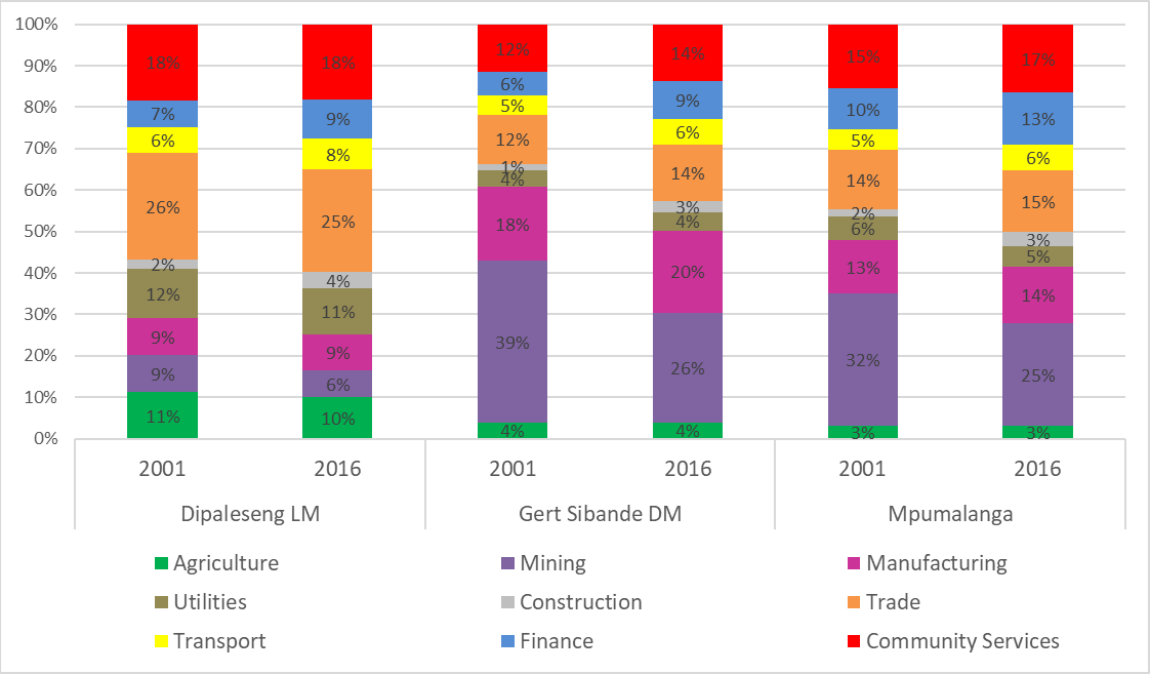


Figure 4: Contribution of Economic Subsectors in Gross Value Addition
Source: Global Insight

The following table provides an overview of the employment generated by the economic subsectors. The key employment generating activities are Trade (24%), Community Services (22%), and Finance (17%). The activities with the least effect on employment generation are Utilities (1%0, Mining (1%) and Transport (5%).

Table 8: Contribution of Economic Subsectors in Employment Generation

Key Sector	Economic Subsector	No of Employment Generate	Share
Primary	1 Agriculture	874	8.1%
	2 Mining	109	1.0%
Secondary	3 Manufacturing	771	7.2%
	4 Utilities	63	0.6%
	5 Construction	860	8.0%
Tertiary	6 Trade	2 558	23.7%
	7 Transport	525	4.9%
	8 Finance	1 804	16.7%
	9 Community services	2 323	21.6%
Households		886	8.2%
Total		10 774	100.0%

Source: Global Insight

3.7.3 Economic Diversification

Tress Index measures the level of diversification of an economy. The value of tress index ranges from 0 to 100. A tress index value zero indicates that the region's economy is completely diversified, but a value closer to 100 shows the economy is much more vulnerable to exogenous factors such as climatic conditions and price fluctuations, and that the economy is considered to be more concentrated. The table below shows the level of economic diversification in terms of tress index in the municipality, Gert Sibande DM and Mpumalanga. It can be noticed in the table that the municipality's tress index increased between 2011-18. This is a clear sign of a lack of economic diversification in the municipality.

It may be pertinent to mention that during the same period, the index value reduced in the district and remained almost unchanged in the province.

Table 9: Tress Indices for Dipaleseng, Gert Sibande DM and Mpumalanga

Geography	2011	2015	2018
Mpumalanga	39.4	39.3	39.5
Gert Sibande DM	43	42.3	42
Dipaleseng LM	42.9	44.9	46.2

Source: Quantec 2019

3.7.4 Space Economy

A significant portion of Dipaleseng's land is utilised for cultivation and farming. Needless to say, agriculture is a key economic sector for the municipality, especially in its rural areas. A substantial portion of the municipality's land area is classified as having high to very high agricultural potential. The agricultural land is utilised to cultivate maize, soybean and sunflower. The areas not suitable for farming are mainly grasslands utilised for grazing of cattle. In addition to cattle farming, pig and poultry farming is also practised in the municipality. Though the municipality is considered good for agricultural production, it lacks in providing agricultural beneficiation and processing facilities. Dipaleseng's mining sector mainly comprises gold mining. Though there are few coal mines in the municipality but these are closed. As a result, the power station Goortvlei imports coal from outside of the municipality.

The municipality has a small manufacturing sector which is mainly engaged in processing of agricultural commodities. These production plants are located at Balfour, Greylingstad, and Goortvlei. There exists a significant opportunity in developing this sector, especially in brick making and small scale industrial activities. As the municipality is located in close proximity of well-established industrial hubs such as Gauteng and Secunda, necessary improvement in infrastructure and enabling policies would attract industrial investors who usually go these places to the municipality. An opportunity also exists in the development of the utilities sector in the municipality. The municipality has access to water (Vaal Dam) and is surrounded by coal producing regions. The strategic location of the municipality can make it a power generation hub. Also, agricultural waste can be utilised for energy generation (biomass).

The vast rural space is dotted with a few small settlements viz. Balfour, Greylingstad, and Goortvlei. These settlements are slightly urbanized and act as economic centres providing retail, business and financial services to the vast rural hinterland. These towns are the main places where tertiarily economic activities are taking place.

The main economic centre in the municipality is Balfour (including Siyathemba). Balfour, the seat of the municipality, is classified as a Service Town by CSIR. The town is known for gold mining and surrounded by maize farming areas. Balfour is the main business and retail centre in the municipality. Balfour offers the opportunity for extracting and processing of mineral (mainly gold), processing of agricultural products, small scale industrial activities, transport activities, retail activities and tourism.

Greylingstad (including Nthorwane) is a Dense Rural Settlement (CSIR classification) located 20 south-east of Balfour. Greylingstad is a historic town bearing relic of the Anglo Boer War Battlefields and the historic graves of the Scottish Regiment in Greylingstad. The presence of such sites offers the opportunity to develop the town as a tourism node. The town is also surrounded by farmlands offering the opportunity to the development of agro-processing industries.

Goortvlei categorised a Dense Rural Settlement by CSIR, is power producing town located 18 km south of Balfour. The town hosts an ESKOM's coal fired power plant with a capacity of 1200 MW and an oil extraction plant. The town also hosts the residential quarters built for the power plant employees. The town offers the opportunity to develop retail centres to be used by the residents. Also, Goortvlei dam presents opportunities for tourism development.

3.8 TOURISM

Dipaleseng is situated in the Highveld region comprising of lush grassland and wooded hills. The tourism industry within the Dipaleseng area is relatively small due to the lack of a major attraction and the expectation of high standard tourist products and services. However, the area is also rich in historical sites, such as early African stone age settlement ruins and Anglo-Boer war sites

There is some opportunities for eco-tourism development in the DLM. Game farms in the area hold various species of game and there are also a variety of bird species. The rare Heidelberg Copper Butterfly can also be observed in the area. The Vaal River and Grootvlei dam also present ample opportunities for the establishment of eco-tourism developments such as offering water sport, hiking trails and adventure tourism.

Grootvlei, Greylingstad and Balfour are a host the following tourism attractions:

- The **Grootvlei** area is host to bird species such as the black korhaan and the blue crane. The areas where the birds occur provide an opportunity for bird watching activities and eco-tourism related activities in and en route to these areas.
- The mountains in **Greylingstad** is historically significant. It is host to the Anglo Boer War Battlefields and the historic graves of the Scottish regime. The town has a unique church that was built in the 1800s.
- The town of **Balfour** has a guest house facility to cater for visitors and offers retail facilities for shopping. Currently, there is a proposed tourism development north of the Bluesky industrial area to cater of conferencing, events, recreation and accommodation needs for the town.

The main tourism attractions in Dipaleseng include:

- Archaeological terrains
- Agri-tourism
- Bird watching -
- Guided tours
- Historical houses
- Cultural experiences
- Game farms
- Hiking trails
- Water sport
- Golf
- Cycling
- Fishing

4 BUILT ENVIRONMENT THEME ANALYSIS

4.1 SPATIAL STURCTURE AND SETTLEMENTS PATTERNS

4.1.1 Spatial Structure/ Structuring Elements

There are numerous factors that influence where and how people settle and organise themselves in an area. The following elements impact directly on the formation and development of settlements in South Africa:

- Government policies – Land policies have a long lasting effect on settlement patterns. Municipalities across the county make use of zoning rules to control settlements growth by prescribing where development must happen and where it should not.
- environmental factors such as resources, climate, landforms (topography) and water features i.e. agriculture, availability of minerals and metals, Vaal River;
- spatial characteristics and location of, for example the distance between activities, i.e. where people stay and where they work; and
- other factors including cultural factors, economies of scale, political, economic and transportation systems.

The following structuring elements mainly influenced the spatial form of the Dipaleseng Municipality as it exists today:

1. **Past Political Ideologies**

During apartheid the former white areas were situated within the urban centres and the former black townships outside the urban centres thereby depriving the people residing in the townships of opportunities for economic growth. Generally the black townships were under-serviced in comparison to the former white areas. The issue of providing services to former black areas still persists thus far. This is evident in the number of backlogs within the municipality in terms of water, sanitation and electricity. The three main areas of Dipaleseng consist of former black townships namely, Siyathemba, Nthorwane and Grootvlei Extension1.

2. **Main Roads**

The N3 linking Gauteng to Kwa-Zulu Natal plays a significant role in commuting goods and people through the Dipaleseng Municipality. This corridor plays an important role in the development of towns located along the route.

3. **Vaal River**

The Vaal River which is the southern boundary of the municipality plays a significant role in terms of the possibilities it provides for agriculture and the livelihood of the rural areas of the municipality. The river is regarded as conservation vicinity and therefore no major development should take place around the river.

4. **Grootvlei Dam**

The Grootvlei Dam is considered an environmentally sensitive area that provides a pristine natural feature. The dam presents opportunities for the development of tourism and related initiatives due to its unique bird species. The areas around the dam might experience pressure from the development of high income housing. In addition, the Eskom power station will also exert much pressure for the development of low and high income housing. The management of this vicinity is therefore critical.

4.1.2 Settlement Patterns

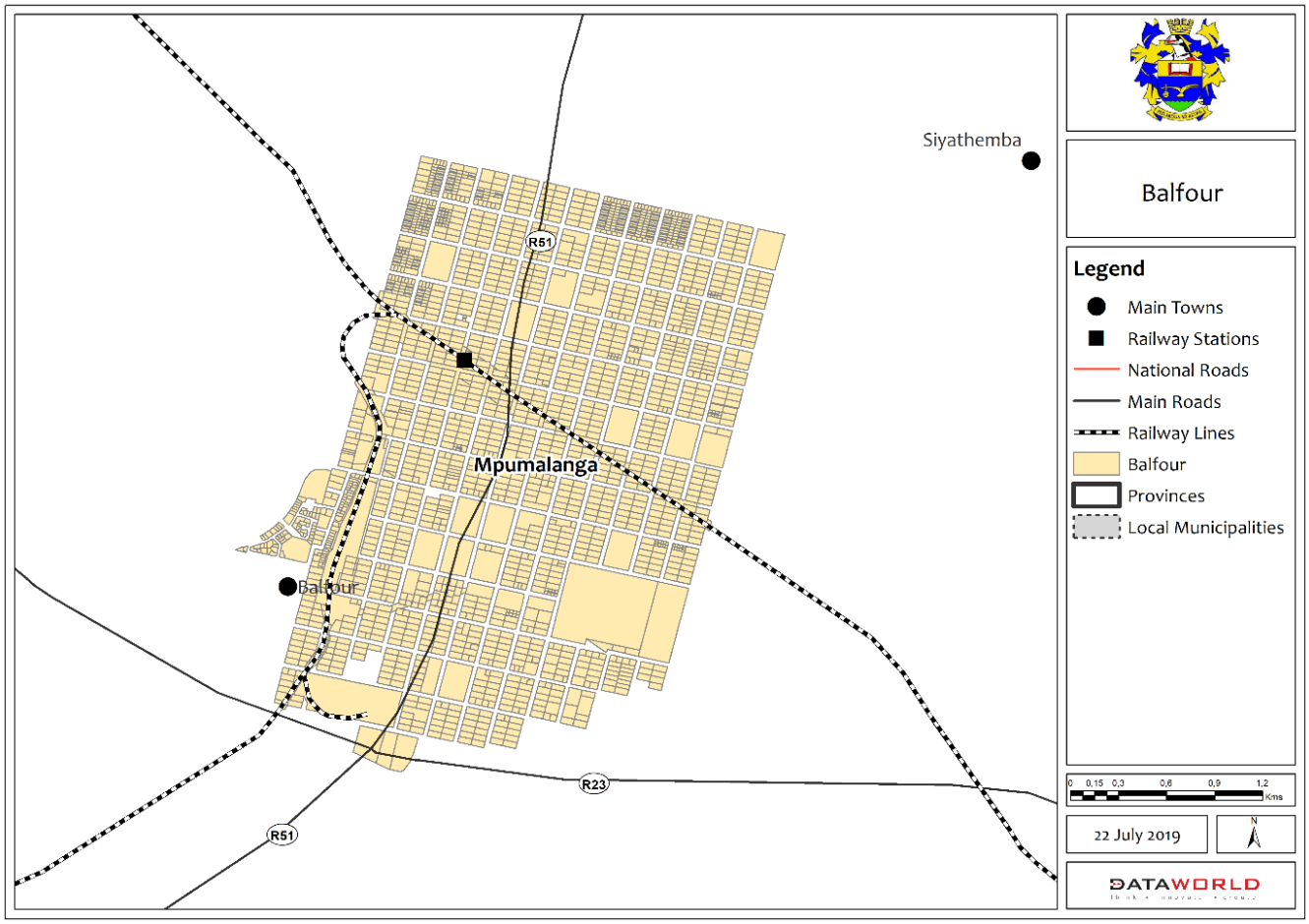
4.1.2.1 Settlement Analysis

i Balfour and Siyathemba

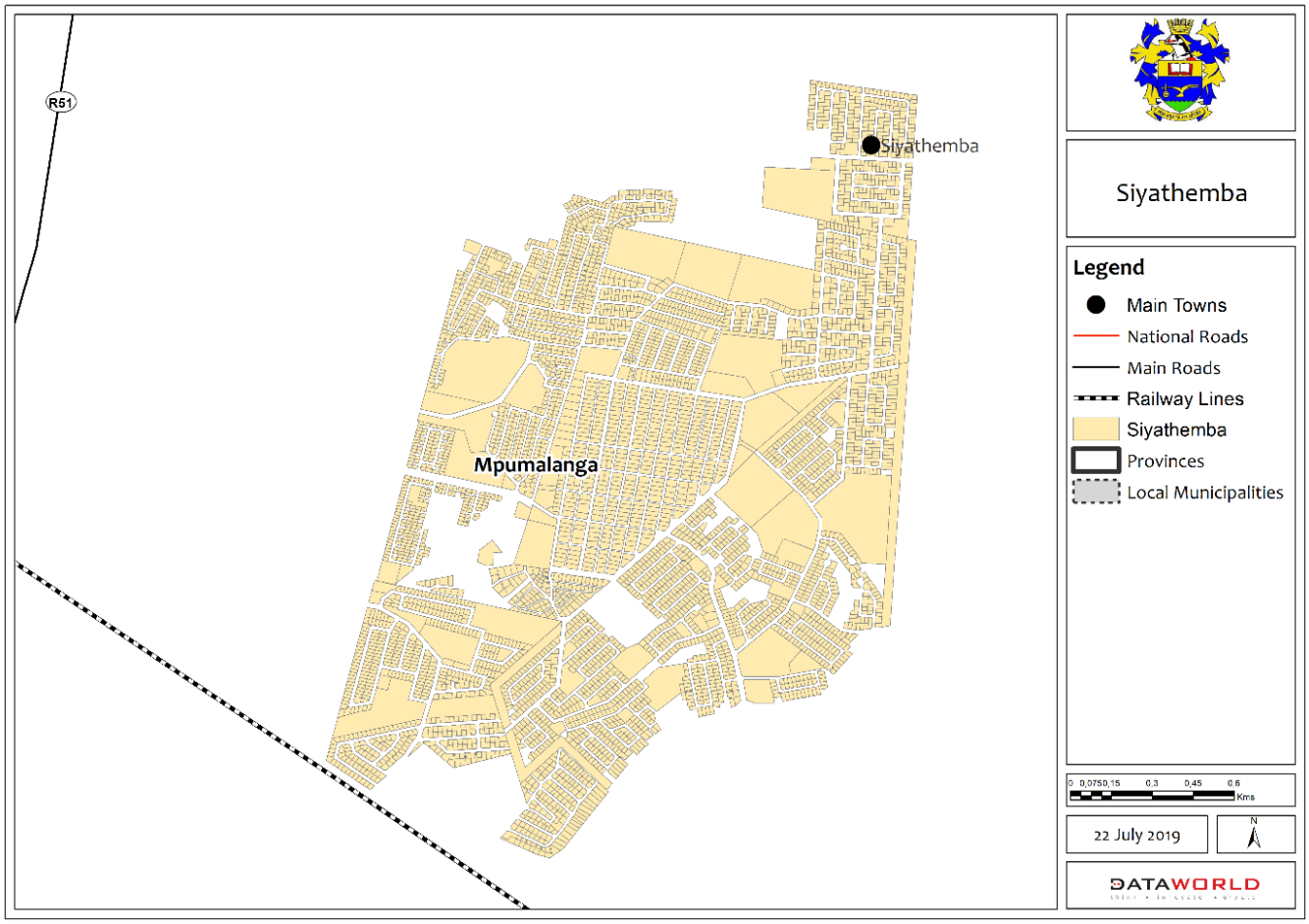
Balfour is located in the north-western part of Dipaleseng Local Municipality. It is predominantly an industrial town located approximately 80km from Johannesburg and 340km from Nelspruit. The 2017/18 IDP states that apart from the internationally known abattoirs, the "Biggest abattoir in Africa" is found in Dipaleseng (Balfour town) with a vast number of by-products including products, inorganic chemicals, fertilizers, etc which are manufactured in the area.

In terms of the CSIR Settlement Typology, Balfour is regarded as a Service Town. The Balfour CBD has various retail outlets, stores and cafes. At a glance the buildings look outdated, dull and neglected - this highlights opportunity for urban regeneration. Outside the CDB, there are a number of guest houses and industries. The residential areas are characterised by large erven of which a majority of them have not yet been developed

Siyathemba Township is located on the eastern side of Balfour town. The township is a fully serviced, previously disadvantaged traditional township that was established in terms of the pre-1994 planning legislations. The township features residential areas with formal dwellings as well as larger informal settlements adjacent to the edges and on open spaces within the township. The informal settlements are characterised mainly by informal dwellings.



Map 11: Balfour

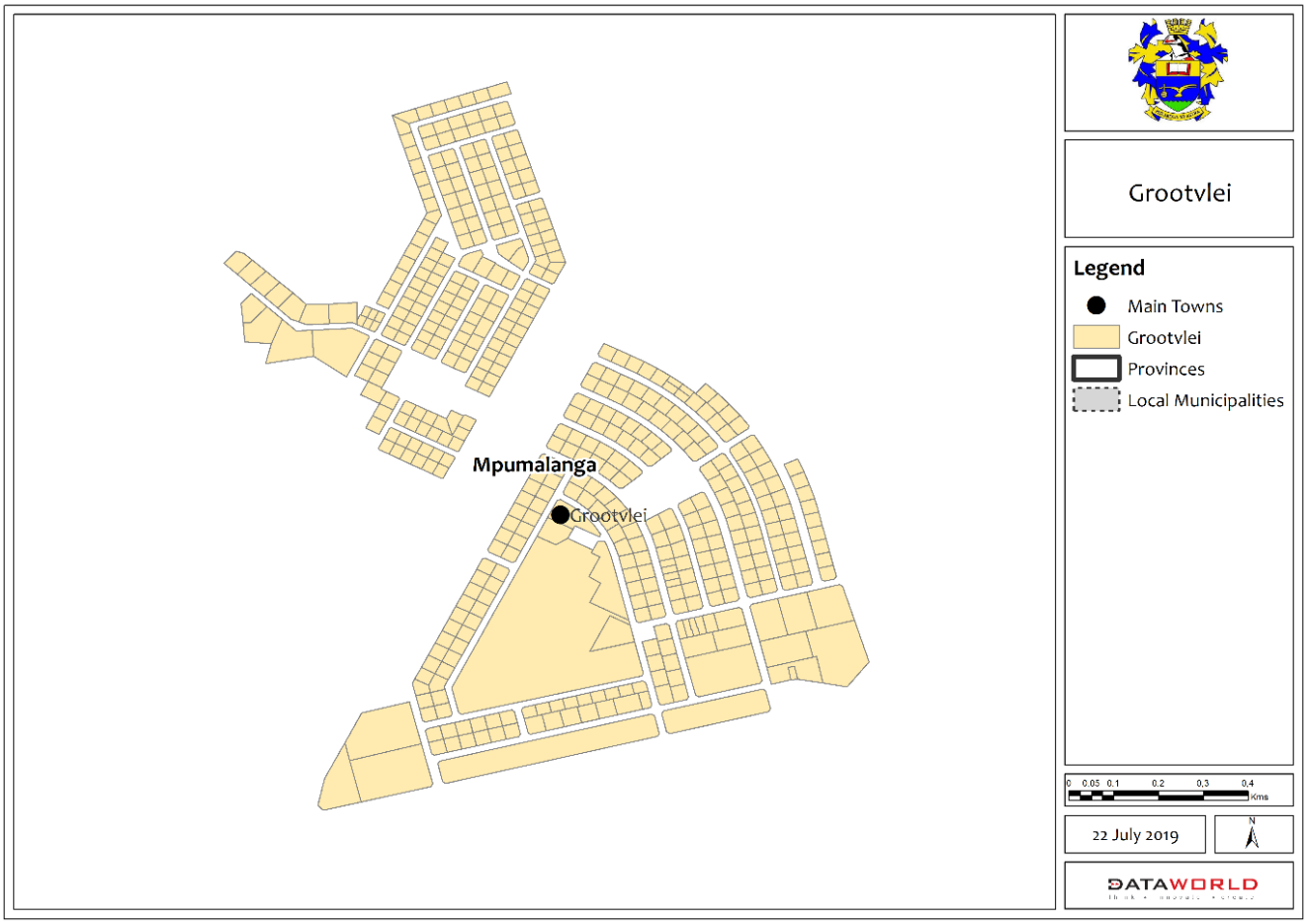


Map 12: Siyathemba

ii Grootvlei Extension 1 and 2 & Dasville

Grootvlei is located in the western part of the Dipaleseng Local Municipality and 18 km south west of Balfour and accessible via the R51 provincial road. The formal economy of the area is dependent on the surrounding agricultural activity and the re-commissioned Grootvlei Power Station. Typical land uses associated with Grootvlei are formal residential settlements with few businesses and office uses.

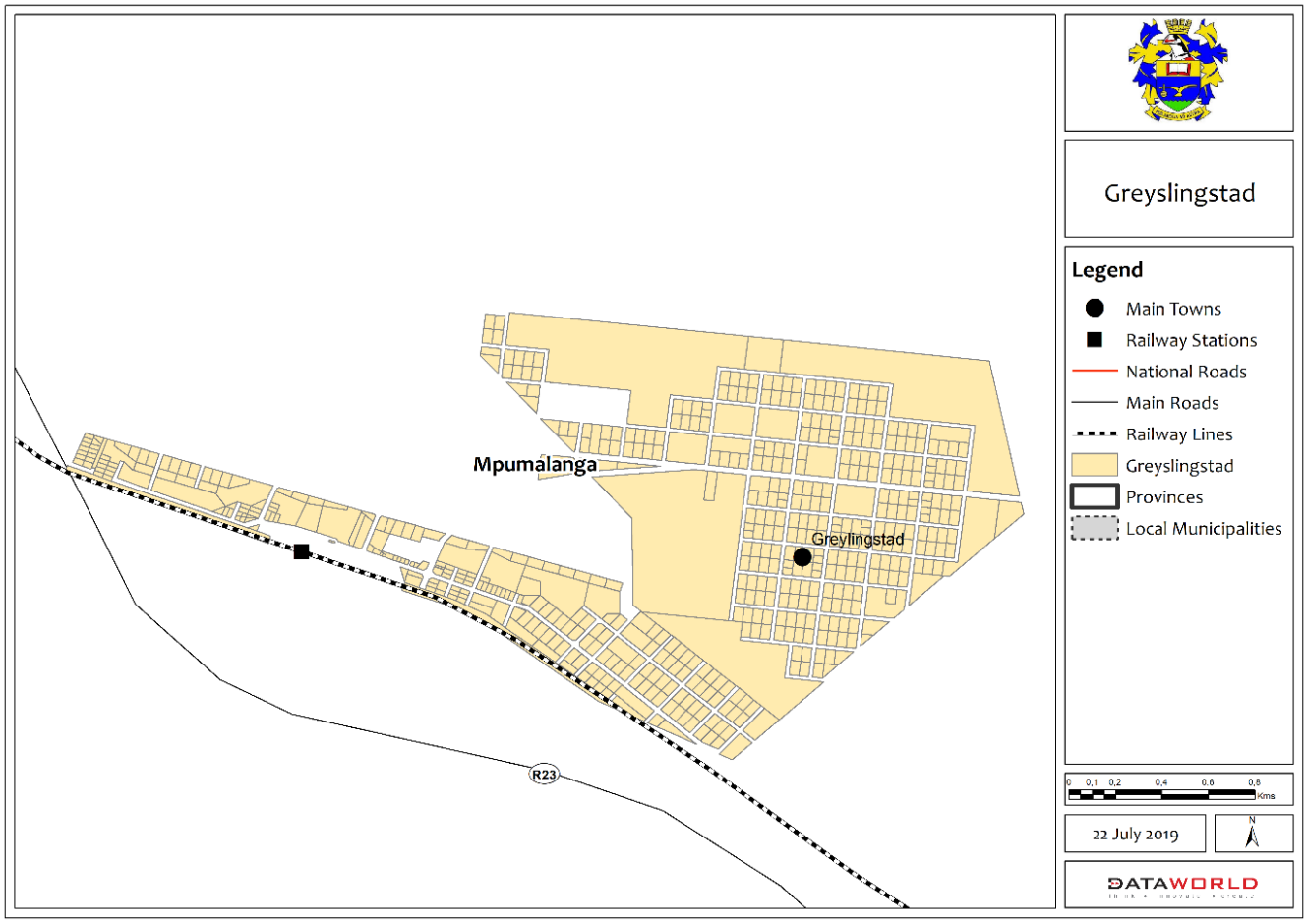
The township of Dasville is located south west of Grootvlei and comprises of both formal and informal settlements. The southern section of the township is formalised and features fully serviced infrastructure. In addition, there is also a neglected golf course. The northern section of Dasville is characterised mainly by informal settlements with few industries. The informal settlements originated from people seeking employment opportunities from industries in Dasville and at the Grootvlei Eskom power station.



Map 13: Grootvlei

iii Greylingstad and Nthorwane

Greylingstad and Nthorwane are located in the eastern section of the Dipaleseng Local Municipality, approximately 21 km east of Balfour. Greylingstad is mostly residential in character featuring large parcels of undeveloped land. There are limited business activities and buildings along the main road which are dilapidated. Nthorwane is a fully serviced, previously disadvantaged traditional township established in terms of the old apartheid planning policies. Like in all urban areas within the Dipaleseng Local Municipality, there has been an increase of informal settlements and this need to be addressed as informal development of land results in uncoordinated settlements that are not serviceable.



Map 14: Greylingstad

4.1.2.2 Vacant land analysis

Vacant land parcels are a common feature throughout the Dipaleseng Municipal Area and could ideally be used as a catalyst for densification, integration and mixed land use orientated development in both the residential and typically non-residential earmarked areas.

i Balfour

Vacant land is abundant in Balfour. There are strategically located vacant land parcels suitable for business use scattered along the main access route as well as strategically positioned vacant land parcels towards the outskirts of town suitable for industrial use. Large residential erven are readily available throughout town. The vacant land parcels should be viewed as a resource for well-planned and sustainable development in Balfour town.

ii Grootvlei

Originally established for the workers at the Grootvlei Power Station, houses were supplied by demand. Residential dwellings were later sold to workers as a direct result of the power station closing down, therefore Grootvlei favours no vacant residential, business or other use land parcels.

iii Greylingstad & Nthorwane

Greylingstad is a well-planned, but underdeveloped town. The town has numerous vacant land parcels within the Business, Industrial and Residential orientated areas. The vacant land parcels offer opportunities for integration and densification.

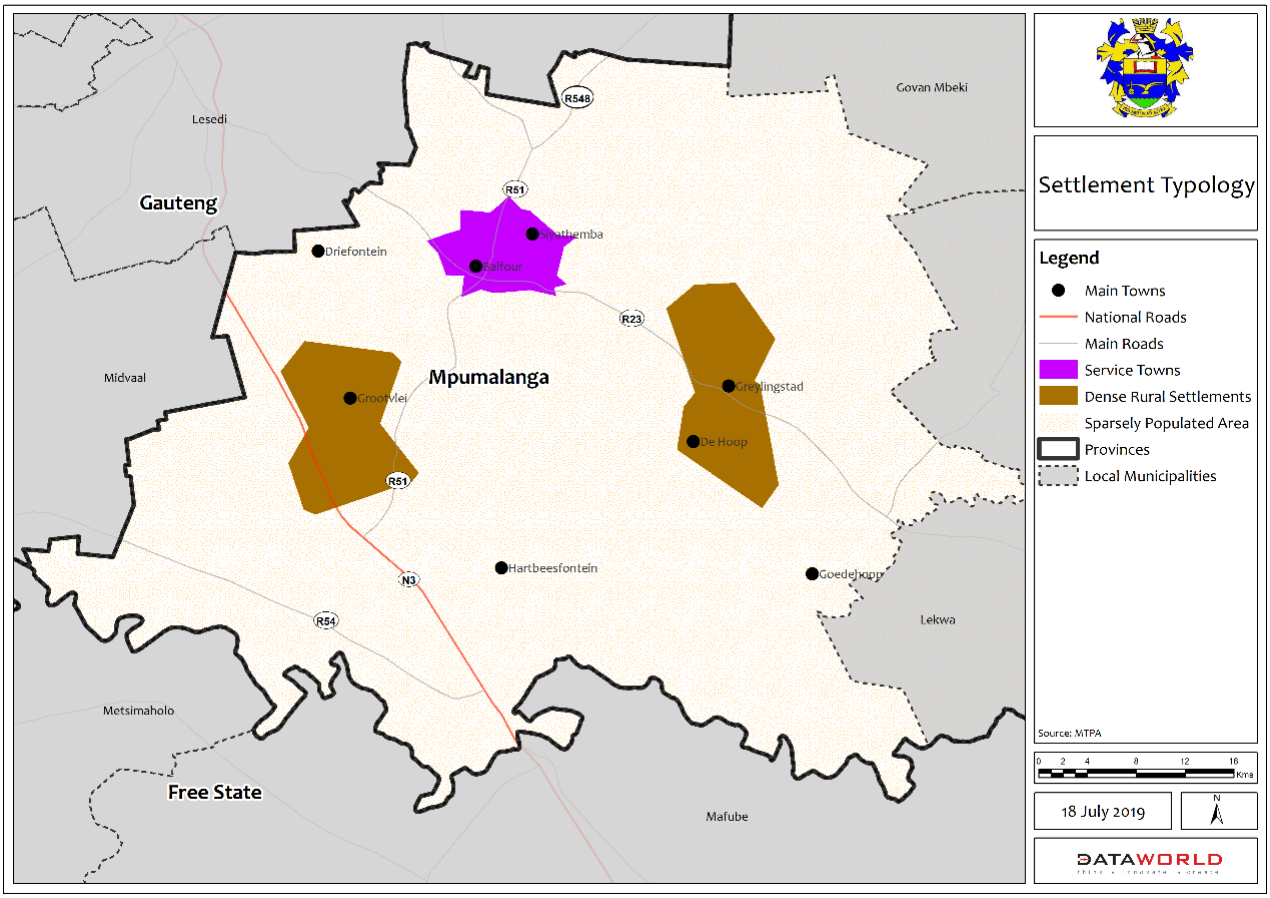
4.1.2.3 Urban-rural spatial relationship

In general, rural and urban development takes place in close proximity and should be mutually beneficial. However, in Dipaleseng the spatial configuration between rural and urban is characterised by dispersed settlements, in that way resulting in unbalanced services and infrastructure development between urban and rural areas. The towns of Balfour, Grootvlei and Greylingstad provide a variety of services to the surrounding farmers and communities, but these rural or farm areas are isolated from these service centres. These service centres also fail to provide specialised services and lack proper health care and educational facilities such as tertiary institutions (i.e. colleges).

On the other hand the opportunities for employment are limited and not balanced between rural and urban areas. This has resulted in people concentrating in towns, creating a condition for further sprawling of squatter settlements within the municipal area. This places enormous pressure for residential development on the agricultural land. It is therefore necessary to include development measures outside agriculture to safeguard against the development of non-agricultural economic activities and other rural developments. With Dipaleseng comprising of a number of dispersed settlements, it is necessary to define growth boundaries around these settlements in terms of rural and urban to accommodate and control future growth.

4.1.3 Settlement typology

The CSIR/ StepSA settlements typology (2018) identifies a set of development information and trends pertaining to the range of towns and cities, as well as high density rural settlements across South Africa. In the Dipaleseng municipality, 5 (five) areas have been identified as part of this typology as shown in Map 15

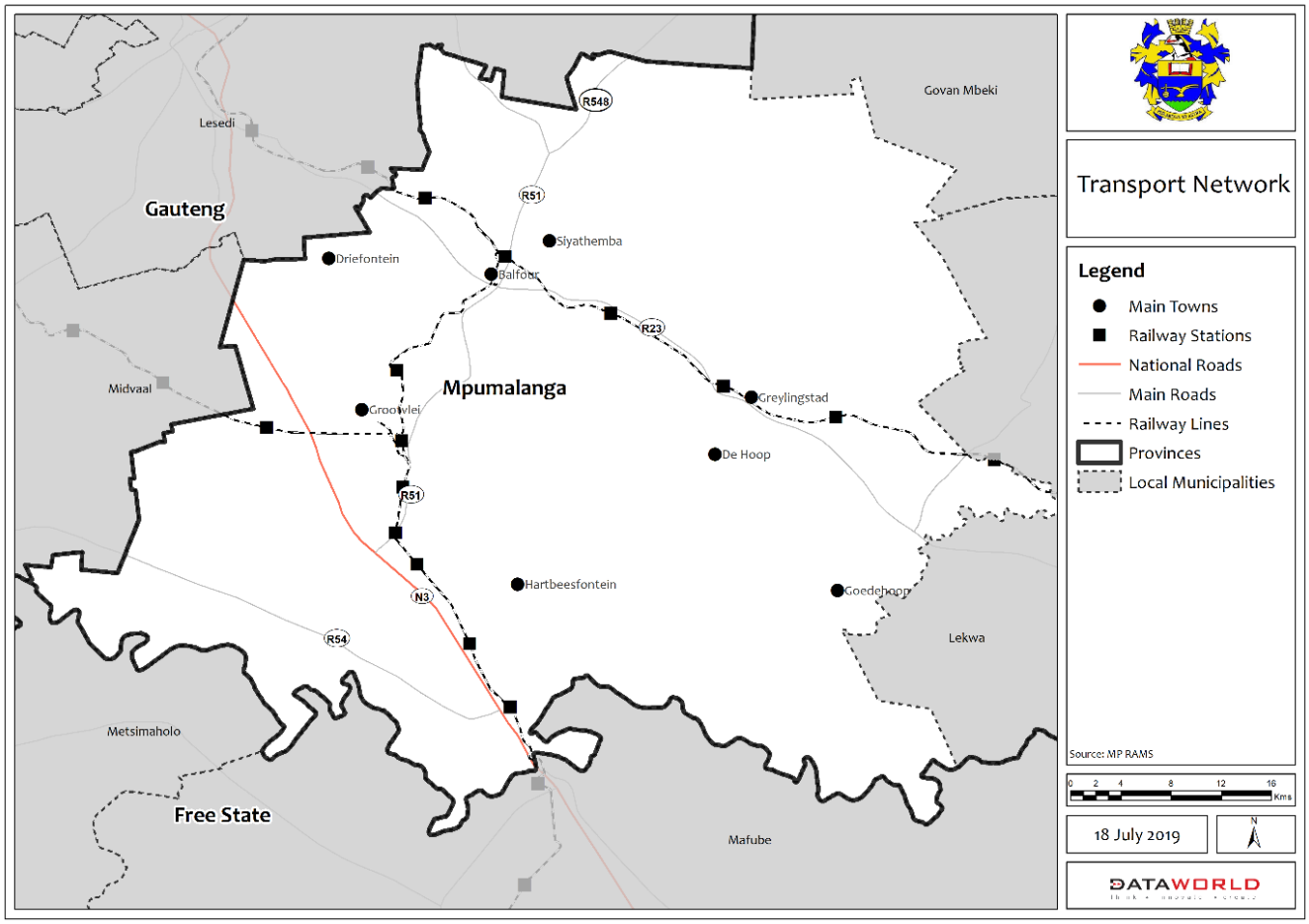


Map 15: Settlement Typology

4.2 TRANSPORT MOVEMENT SERVICES

4.2.1 Corridors and Transport

The major roads that transverse the municipal area are the N3, which runs from Johannesburg to Durban, and the R23 from Pretoria to Volksrust. The N17 and R23 transportation routes establish excellent links with Gauteng and Richards Bay. Furthermore, the R23 is an important linkage from Gauteng via Newcastle to Durban. These road links are important for the industries located in the TEKS area (Trichardt, Evander, Kinross and Secunda. Due to its strategic location, Dipaleseng has the N3, R23 and R51 roads cutting across the municipal area thereby linking the municipality with economic centres from other local Municipalities.



Map 16: Transportation Network

The development initiative that takes place in these local municipalities has direct and indirect impact in Dipaleseng. Therefore planning and development that takes places in adjoining Lesedi, Midvaal, Lekwa, Metsimaholo and Mafube local municipalities needs to be taken into consideration to ensure coordinated and integrated development action to achieve common objectives and maximisation of development impact.

4.2.2 Movement Linkages and Travel Patterns

In terms of movement linkages between the municipality and major centres in neighbouring municipalities, Dipaleseng is well accessible via road and rail. The N3 national road is the most important northwest to southeast corridor linking Johannesburg and Durban traversing though Dipaleseng thereby ensuring that the municipality is connected with these major economic centres. The R23 provincial road is a significant provincial corridor linking Balfour to Secunda. The municipality is linked to Witbank and Middleburg by provincial roads R51 and R548 which are further linked with other roads leading to these towns.

The rail network links the municipality's main towns with Heidelberg which is situated towards Johannesburg to the north, Secunda to the east, Villiers to the south and Vereeniging to the west. Within the municipality and the district, there is no significant airport, except for minor airstrips. The OR Tambo International Airport situated in the north of the municipality is the only major airport that provides air services to the municipalities needs. The different movement linkages within the municipality are indicated below:

Table 10: Movement Linkages

Access	Distance (km)	Route	Travel Time
Balfour – Greylingstad	20.6	R23	19 min
	23	R23 and R51	20 min
Balfour – Grootvlei	21.4	R51	20 min
Grootvlei – Greylingstad	38.1	R23 and R51	29 min
	30.8	Other Unnamed	30 min
	28.5	R23	32 min

In terms of National Household Travel Survey 2015, the usage of different modes of transport in Dipaleseng is indicated in the table below:

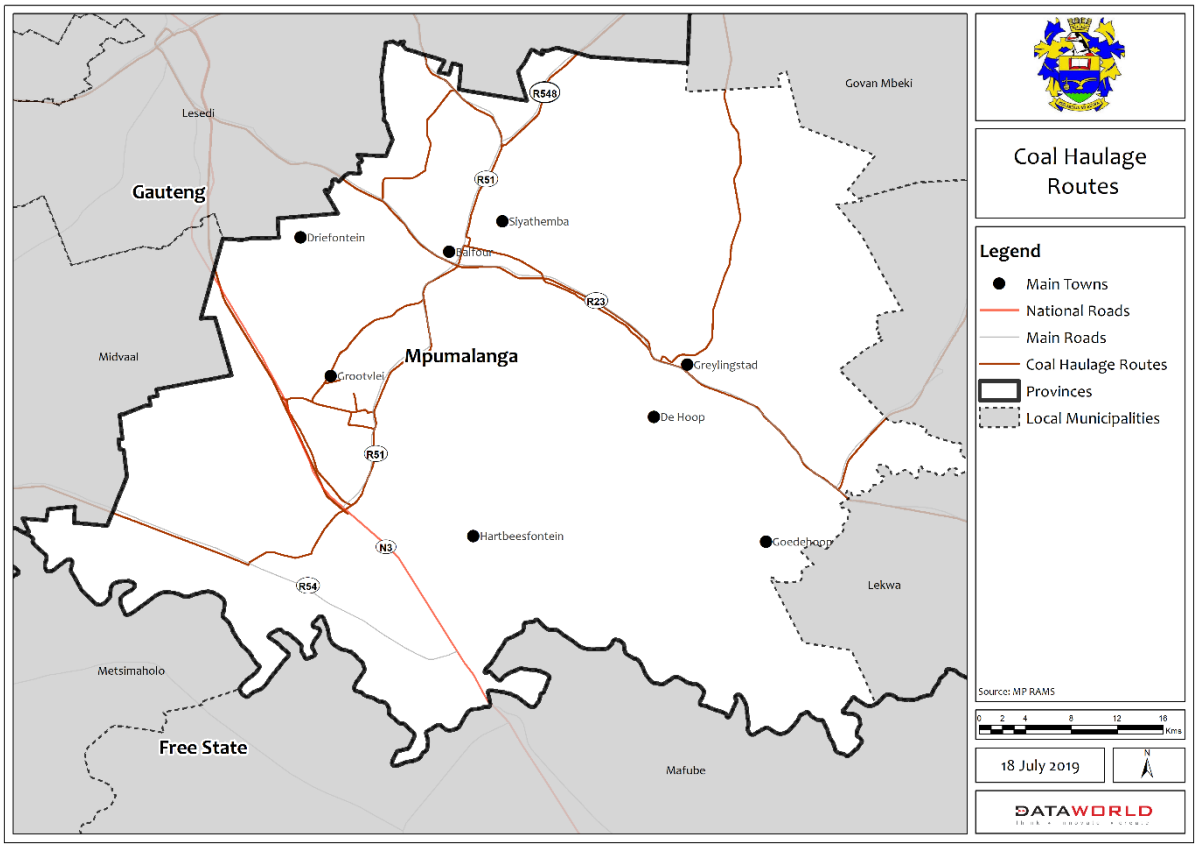
Table 11: Total time travelled to place of work main mode

Mode	Count
Walk all the way	
Mean (minutes)	*43*
1-30	57.9%
31-60	29.5%
61+	12.5%
Car driver	
Mean (minutes)	*34*
1-30	70.6%
31-60	14.4%
61+	15.0%
Car passenger	
Mean (minutes)	*54*
1-30	45.7%
31-60	34.0%
61+	20.4%
By minibus/taxi	
Mean (minutes)	*38*
1-30	62.6%
31-60	27.5%
61+	9.9%

By bus	
Mean (minutes)	*47*
1-30	53.5%
31-60	17.7%
61+	28.8%

4.2.3 Road Freight and Railway Network

The Gauteng to Durban N3 and the R23 routes are categorised as road freight corridor. This corridors are pertinent to the Dipaleseng Municipality as it facilitates accessibility and mobility. Nodes such as Balfour where the R23 passes through are directly supported by the movement of goods and people in the corridor. Gert Sibande and Nkangala Districts has the highest heavy vehicles traffic which is high in coal haul roads. In terms of coal haulage routes across the municipality, the R51 and the R23 are coal haulage routes the carry most of the heavy traffic as indicated in Map 18



Map 17: Coal haulage routes

4.3 HUMAN SETTLEMENTS

4.3.1 Informal Settlements and Basic Services

According to the NUSP informal settlements defined as settlements formed illegally, informal in nature and are located in close proximity to urban areas (near economic opportunities) and usually within the urban edge. According to the Mpumalanga Informal settlement database, some of the informal settlements in the Province are located in rural areas. A total of 11 informal settlements have been identified in the municipal area and the estimated number of households of those informal settlement was 2532, of which none of those settlements are classified as rural.

The Mpumalanga Informal Settlements database has recorded the level of access to services in these settlements as follows[7]:

- Majority of the settlement use self-dug pits as the sanitation systems;
- Majority of the settlement have access to communal taps, however they are sometimes inadequate;
- Most of the informal settlements are characterized by dirt roads which are in a poor state and some areas are clustered closely that only narrow gravel passages are visible.
- All of the informal settlements in Dipaleseng LM do not have access to electricity, with the exception of Esibayeni and Thembalethu settlements.

The following is a list of informal settlements in the districts

Table 12: Informal Settlements

Name of the informal settlements	Estimated number of households	Type of Settlement
Phomolong	300	Urban Settlement
Zenzele	1000	Urban Settlement
Joe Slovo	195	Urban Settlement
Mandela Ext	260	Urban Settlement
Siyathemba Ext. 2	60	Urban Settlement
Extension 2	50	Urban Settlement
Zone 7	63	Urban Settlement
Ezibayeni	87	Urban Settlement
Ntsantsana	208	Urban Settlement
Thembi Khumalo	198	Urban Settlement
Themba Lethu	111	Urban Settlement

Source: Mpumalanga Informal Settlements Database

4.3.2 Housing

4.3.3 Access to dwelling housing

According to the 2016 Community Survey Census Data, 63.2% of households in Dipaleseng have access to formal/ brick dwelling. Only 23% of households still live in informal dwellings, which is an estimated 3 832 households which is an improvement from the 3 985 household in 2011. Dipaleseng has the highest percentage of households living informal settlements in the province.

Table 13: Access to Housing

Dwelling Type	Dipaleseng LM	Gert Sibande	Mpumalanga
Formal dwelling/house or brick/concrete block structure on a	63,2%	69,9%	79,1%
Traditional dwelling/hut/structure made of traditional mater	0,2%	7,4%	3,4%
Flat or apartment in a block of flats	0,1%	0,7%	0,7%
Cluster house in complex	0,0%	0,1%	0,3%
Townhouse (semi-detached house in a complex)	0,3%	0,2%	0,4%
Semi-detached house	0,9%	0,3%	0,5%

[7] Mpumalanga Informal Settlement Database, 2018

Formal dwelling/house/flat/room in backyard	12,0%	7,6%	5,6%
Informal dwelling/shack in backyard	12,5%	5,2%	3,5%
Informal dwelling/shack not in backyard (e.g. in an informal	10,4%	6,6%	5,0%
Room/flat let on a property or larger dwelling/servants quart	0,1%	0,2%	0,5%
Caravan/tent	0,0%	0,0%	0,0%
Other	0,3%	1,8%	1,0%

4.3.3.1 Housing Backlogs and Demand

According to the National Housing Needs Register (2018) Dipaleseng Local Municipality stands at an estimated housing demand of 4 645 units, with 1 115 approved beneficiaries, 182 applications declined, mainly due to not meeting the minimum requirements for housing subsidy, 18 application are in process, 3 273 application are not registered on to the Housing Subsidy System.

Table 14: Housing Demand

Area	Approved	Declined	In Process	Not on HSS	Received	Grand Total
Albert Luthuli Local Municipality	2 170	409	106	11 564	320	14 569
Bushbuckridge Local Municipality	3 536	704	66	21 427	269	26 002
City of Mbombela Municipality	2 790	2 248	176	25 892	182	31 288
Dipaleseng Local Municipality	**1 115**	**182**	**18**	**3 273**	**57**	4 645
Dr J S Moroka Local Municipality	1 582	3 909	16	5 063	44	10 614
Emakhazeni Local Municipality	525	1 338	17	2 271	57	4 208
Emalahleni Local Municipality	3 728	2 797	76	47 431	156	54 188
Govan Mbeki Local Municipality	3 691	1 227	48	9 733	265	14 964
Lekwa Local Municipality	1 680	479	12	1 635	19	3 825
Mkhondo Local Municipality	1 073	392	88	6 276	40	7 869
Msukaligwa Local Municipality	1 896	259	15	17 660	31	19 861
Nkomazi Local Municipality	1 372	1 065	48	6 976	21	9 482
Pixley Ka Seme Local Municipality	979	215	18	1 495	7	2 714
Steve Tshwete Local Municipality	1 176	2 112	37	16 318	81	19 724
Thaba Chweu Local Municipality	739	411	35	2 933	15	4 133
Thembisile Hani Local Municipality	2 504	2 899	7	9 214	36	14 660
Victor Khanye Local Municipality	513	2 369	7	5 181	33	8 103
Mpumalnga	**31 069**	**23 015**	**790**	**194 342**	**1 633**	**250 849**

Source: Department of Human Settlement Housing Needs Register, 2018

4.4 INFRASTRUCTURE

4.4.1 Water

4.4.1.1 Access to water

According to the 2016 community survey DLM is the second municipality in the Gert Sibande District with the lowest number of water backlogs (5.1%). The number of households in Dipaleseng with access to piped water is 13 479 households which is a share of 90.6% of households having access to water. However, it is recorded that 1 397 or 9.4% of households in the municipality still are without access to piped water as per StatsSA 2016 community survey.

Table 15: Access to Water

Water Services	Dipaleseng Municipality	GERT SIBANDE DISTRICT	Mpumalanga
Total number of HH	14877	333815	1238861
HH with access to piped water inside yard	13480	275921	811767
HH with access through communal standpipes	551	19353	178957
HH with access through boreholes	89	12942	362368
Total HH with access to water	14120	308216	1121361
HH with access to water as %	94.9%	92.3%	90.5%
HH below basic level of service	757	25599	117500
Backlogs as %	5.1%	7.7%	9.5%

Source: StatsSA Community Survey, 2016

4.4.1.2 Dipaleseng Blue Drop Compliance

In terms of water treatment plants, there are two water treatment plants within Dipaleseng Local Municipality, namely:

- **Balfour Fortuna Water Treatment Plant** – Water is treated and pumped to a reservoir in Balfour and to the town of Greylingstad. The plant also supplies communities in Siyathemba, Nthorwane and Willemsdal with water.
- **The Grootvlei Water Treatment Plant-** is situated on Eskom and it is operated and maintained by Eskom. Water from the treatment plant supplies water to Grootvlei Ext 1 and the mine.

In regards to the municipalities Blue Drop score, the DWS recorded Dipaleseng Local Municipalities score at 10%, making it the second lowest score in the province.

4.4.2 Wastewater and Sanitation

4.4.2.1 Access to Sanitation

In 2016, of the 14 877 households in the Municipality, 130976 (93.9%) reported to have access to sanitation (flush/Chemical toilets) services including ventilated pit latrines. Of the total number of households, 73.9% of households had access to flush/chemical toilets and 20% used VIP toilets. The percentage of households without access to basic sanitation in the municipality was recorded at 6.1% in 2016.

Table 16: Access to Sanitation

Sanitation Services	Dipaleseng Municipality	Gert Sibande District	Mpumalanga
Total Number of HH 2016 (Community Survey)	14877	333815	1238861
Households with Access to Flush/Chemical toilets	10996	234267	607081
Households with Access to sanitation as a %	73.9%	66.9%	49.0%
Households with Access to VIP toilets	2980	90786	593603
Households with Access to VIP as %	20.0%	27.2%	47.9%
Households below basic level of service / backlogs	901	8762	38177
Households below basic level of service / backlogs as %	6.1%	2.6%	3.1%

4.4.2.2 Wastewater Backlogs and Green Drop Score

Wastewater services delivery in Dipaleseng is managed by 2 wastewater treatment systems, namely the Balfour Plant and the Grootvlei Eskom Plant. According to the Department of Water and Sanitation's water service knowledge system, Dipaleseng is one of the Municipalities in Mpumalanga that have the largest sanitation backlogs. A total of 901 households are not connected to a wastewater collection systems.

Dipaleseng Local Municipality has performed unsatisfactory during the 2014 Green Drop assessments indicating that the wastewater services are not being managed according to the expectations and regulations. The Green Drop requirements are largely not met and result in a low overall municipal score of 26.1% for the Municipality. As per the COGTA state of basic service delivery report the average CRR% score for the municipality stands at 100%, indicating that the wastewater treatment plants of the Municipality are at critical risk capacity.[8]

4.4.3 Energy and Electricity

In Dipaleseng an estimated 73.4% people have access to electricity for cooking, 57.6% for heating and 83.1% for lighting. Electricity is the main energy source for lighting all the Dipaleseng LM. There are however 15.4% of households still use candles as their main lighting energy source in the municipalities. (Figure 22). However, 2 655 households are still not connected to electricity at all (none).

Table 17: Access to Electricity

Electricity Source	Cooking	Heating	Lighting
Electricity	73,4%	57,6%	83,1%
Gas	2%	1,8%	0%
Paraffin	6%	3,2%	0,8%
Solar	0,1%	0,2%	0,3%
Candles	0%	0%	15,4%
Wood	7,9%	9,2%	0%
Coal	10%	20,3%	0%
Animal Dung	0,3%	0,3%	0%
Other	0%	0%	0%
None	0,2%	7,3%	0,3%

[8] COGTA state of basic service delivery for municipalities, 2018