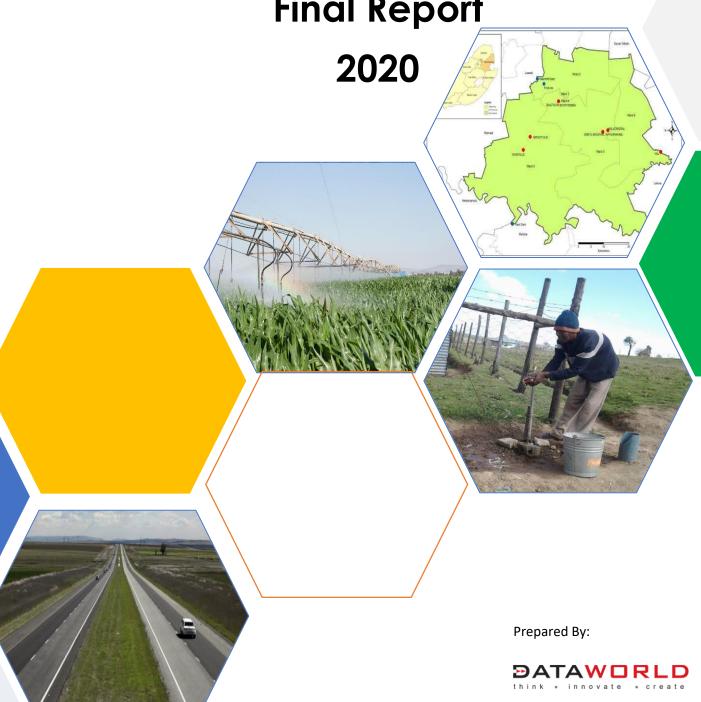




# **Dipaleseng Municipality Spatial Development Framework**

**Final Report** 



#### **Restrictions**

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## **List of Abbreviations**

CDDD	Comprehensive Burgl Davelopment Programme
CRDP	Comprehensive Rural Development Programme
DLM	Dipaleseng Local Municipality
DRDLR	Department of Rural Development and Land Reform
IDP	Integrated Development Plan
MSDF	Municipal Spatial Development Framework
LUMS	Land Use Management Scheme
LSDF	Local Spatial Development Framework
LUF	Land Use Framework
LUS	Land Use Scheme
MBCP	Mpumalanga Biodiversity Sector Plan
NSDF	National Spatial Development Framework
MEGA	Mpumalanga Economic Growth Agency
MP	Mpumalanga Department of Cooperative Governance and
COGTA	Traditional Affairs
MTPA	Mpumalanga Tourism and Parks Authority
NEMA	National Environmental Management Act
NDP	National Development Plan 2030
PSDF	Provincial Spatial Development Framework
RDP	Rural Development Plan
SDF	Spatial Development Framework
SPLUMA	Spatial Planning and Land Use Management Act (Act No 16 of 2013)

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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 Dipaleseng Local Municipality (DLM) is reviewing the existing municipal spatial development framework (MSDF) in order to compile a credible and updated Municipal SDF that is aligned to 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 ensure a better sustainable development future;
- promote the sound planning principles according to the relevant legislation;
- promote the well-being of its inhabitants, through effective and orderly planning
- 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.

## 1.2 LOCALITY: DIPALESENG LOCAL MUNICIPALITY

The Dipaleseng Municipality is situated in the south western part of the Gert Sibande district municipality and it is the smallest of the seven local municipalities in the district. It is located south east of the Suikerbosrand Nature Reserve, just off the R23 that leaves the N3 north of Heidelberg heading into the province of Mpumalanga. Dipaleseng Local Municipality borders Gauteng province to the west and the Free State province to the south. The municipality also borders Govan Mbeki local municipality to the north east and Lekwa local municipality to the south east.

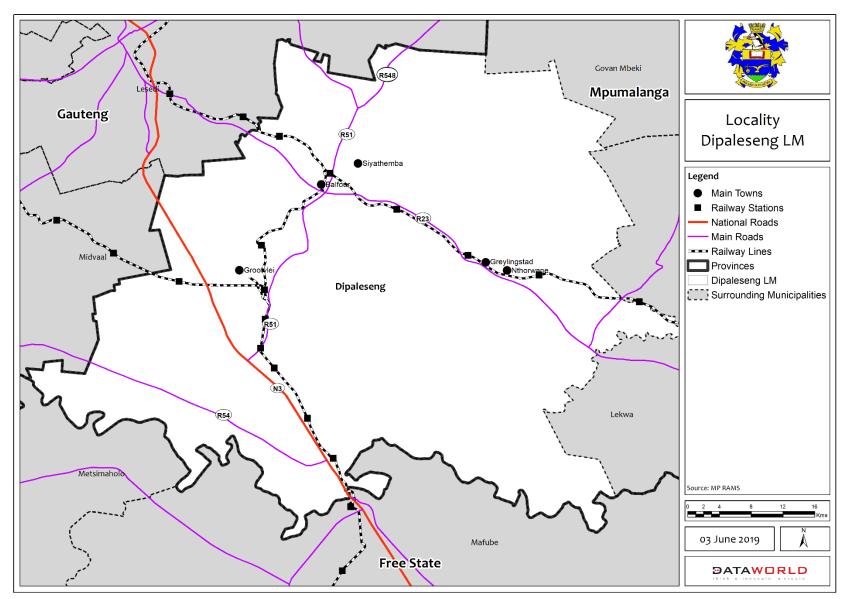
The municipal area comprises a geographic area of 2,644 km<sup>2</sup>. Balfour is the seat of the municipality and is its major town. It is situated approximately 80km south-east of Johannesburg. It is a small coal mining and mostly a maize farming town. The three major urban nodes in the area are Balfour/Siyathemba, Greylingstad/Nthorwane and Grootvlei.

The major roads that transverse the municipal area is the N3, which runs from Johannesburg to Durban, and the R23 from Pretoria to Volksrust. The Johannesburg—KwaZulu-Natal railway system runs through the municipal area. The total population of the municipality is 45 232 people as per the 2016 Stats SA Community Census, indicating a growth of 6.7% from 2011 (42 390 people). Dipaleseng accounts for 4% of the district's population<sup>1</sup>.

The area is predominantly rural with Agriculture and Mining being the main economic sectors. The Municipality has a generally low-income population with a large number of people living in abject poverty as they do not have a reliable source of income. The municipality also has a high dependence on grants funding such as welfare grants and pension. The locality of the municipality and its context within the surrounding local municipalities is depicted in Map 1.

Dipaleseng Municipality Spatial Development Framework

<sup>&</sup>lt;sup>1</sup> Mpumalanga Department of Economic Development and Tourism, Socio-economic Profile of Dipaleseng, 2018



Map 1: Locality: Dipaleseng LM

## 2 POLICY AND LEGISLATIVE CONTEXT

## 2.1 NATIONAL LEGISLATION, POLICIES, AND PLANS

### 2.1.1 South African Constitution

The Constitution of the Republic of South Africa, contained in Act 108 of 1996, is the supreme law of South Africa. Amongst other things, it prescribes different functions to different tiers of government to ensure the equitable and functional distribution of roles, responsibilities and duties.

Section 152 of the Constitution clearly mandates that it is the responsibility of Local Government:

- To provide a democratic and accountable government for local communities;
- To ensure provision of services to communities in a sustainable manner;
- To promote social and economic development;
- To promote a safe and healthy environment; and
- To encourage the involvement of communities and community organizations in the matters of local government.

Section 153 also states that a municipality must:

- Structure and manage its administration, and budgeting and planning process to give priority to the basic needs of the community, and to promote the social & economic development of the municipality; and
- Participate in national & provincial development programmes.

Chapter 3 of the Constitution is dedicated towards 'Co-operative Government', which concerns the involvement, participation and sharing of information across the different tiers of government. It recognises that all levels of government are important and play a critical role in taking the country forward. Therefore, there should be a free flow of information between all spheres of the government.

#### IMPLICATIONS FOR THE DIPALESENG SDF:

The Dipaleseng Local Municipality is constitutionally mandated to undertake local planning for its municipal area, as well as achieve co-operative governance. This SDF review seeks to provide a modernised and holistic spatial plan that will guide the development of the municipality into the future while also facilitating coordination between the different sector departments and government spheres to achieve coherent and integrated development.

## 2.1.2 Spatial Planning and Land Use Management Act (SPLUMA)

The Spatial Planning and Land Use Management Act 16 of 2013 (SPLUMA) aims to develop a new framework to govern planning permissions and approvals, sets parameters for new developments and provides for different lawful land uses in South Africa. SPLUMA also provides clarity on how planning law interacts with other laws, frameworks and policies.

SPLUMA aims to redress the fragmented and historical spatial imbalances of the past and promote integration of principals of sustainable development. Section 3 of SPLUMA states that the Act aims to develop a 'uniform, effective and comprehensive system' of planning that 'promotes social and economic inclusion'.

The role of local government in spatial planning has therefore been re-energized through the introduction of the Spatial Planning and Land Use Management Act (SPLUMA). The intention of this national legislation is to introduce the norms and standards for spatial planning; to specify the relationship between spatial planning, land use management and land development; provide for the sustainable and effective use of land; redress spatial imbalances of the past and ensure that there is equity, uniformity and consistency in the application of spatial development planning and land use management systems.

Chapter 2 of the SPLUMA outlines a host of development principles that should apply in the preparation of the MSDF for spatial planning, land use management and land development in the municipal area. These are:

## a) The principle of **Spatial Justice**:

- Deal with spatial imbalances and include areas that were previously excluded.
- Redress access to land for the previously disadvantaged/ excluded areas
- Plan for incremental upgrading and secure tenure
- Incorporate land use management systems for previously disadvantaged/ excluded area
- Ensures equitable distribution and increase access to social infrastructure and addresses the injustices of the past.

### b) The principle of **Spatial Sustainability**:

- Promote land development that is within the fiscal, institutional and administrative means of the country
- Protect prime agricultural land and environmental resources
- Promote consistency of land use measures in accordance to environmental management systems
- Promote and stimulate the effective and equitable functioning of land markets
- Carefully consider social and infrastructural costs of land development
- Promote development in sustainable locations and limit urban sprawl
- Establish viable communities:

### c) The principle of **Spatial Efficiency**:

- Land Development optimise efficient use of resources and infrastructure
- Minimise negative financial, social, economic or environmental impacts
- Efficient and streamlined development application procedures and timelines

#### d) The principle of **Spatial Resilience**:

• promote 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.

### e) The principle of Good Governance:

- An integrated approach to land use and land development guided by spatial planning and land use management systems
- Free flow of information plans and policies between and within tiers of government
- All land use and land development requirements met timeously
- Empowering citizens

#### **IMPLICATIONS FOR THE DIPALESENG SDF:**

The compilation of this SDF review will be guided by the SPLUMA key provisions that seek to promote efficient and effective spatial planning and land-use management practices. Ultimately, the implementation of Dipaleseng's reviewed SDF should give effect to the SPLUMA development principles as elucidated above. The Act further states that municipal spatial development frameworks should integrate and be aligned with various plans and policies from both national and provincial sector departments that have a spatial implication or significance on the municipal area.

## 2.1.3 National Development Plan 2030

The National Planning Commission (NPC) has developed the National Development Plan: Vision 2030 (NDP) for South Africa. It integrates previous strategic policies with new approaches to make the country's economy work better for all. The NDP offers a long-term perspective. It defines a desired destination and identifies the role different sectors of society need to play in reaching its aims to eliminate poverty and reduce inequality by 2030. The plan focuses on addressing three core challenges which are: (a) reducing poverty, (b) inequality and (c) unemployment.

The NDP provides for spatial development proposals as part of the national spatial development interventions referenced schematically in Figure 2

- Primary Transnational Development Corridors and cross border infrastructure connections.
- Gauteng as a national Node of Competitiveness which strongly associates with the nearby economic activity nodes in proximity to Gauteng, which relates to eMalahleni, Middelburg, Secunda and Nelspruit as part of the Maputo Development Corridor.
- The **National Competitiveness Corridor** building on the Durban-Gauteng Freight Corridor, providing for logistics hubs, road, rail and fuel transportation.
- **Rural Restructuring Zones**: These zones include the more densely occupied parts of the previous homelands where there are sufficient numbers of people to provide the basis for viable markets through the Comprehensive Rural Development Programme (CRDP). The rural restructuring zones within Mpumalanga as part of the provincial CRDP programme.
- Resource critical zones: These have valued mineral resources and are areas of great importance to biodiversity and critical water production. The

sustainability of these areas is crucial and needs specific policies to protect them.

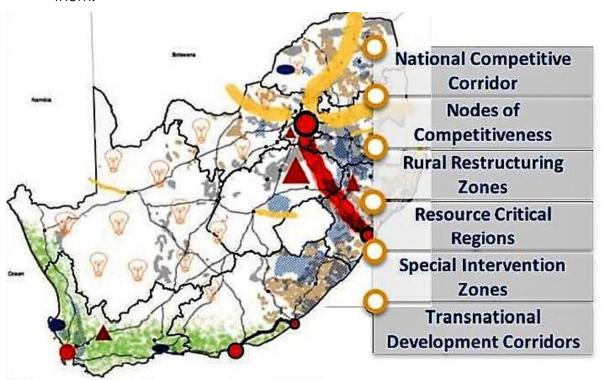


Figure 1: The NDPs Proposed National Schema for Spatial Targeting

(Source: National Development Plan, 2030)

#### IMPLICATIONS FOR THE DIPALESENG SDF:

The SDF will identify explicit spatial restructuring strategies which must include the identification of priority precincts for spatial restructuring.

## 2.1.4 National Spatial Development Framework (2018)

The National Spatial Development Framework (NSDF) seeks to make a bold and decisive contribution to bringing about the peaceful, prosperous and a truly transformed South Africa, as articulated in the Freedom Charter, the Reconstruction and Development Programme and the NDP.

The appointment of the National Planning Commission in 2010, and the subsequent preparation and adoption of the 2030- National Development Plan in 2012. It was especially Chapter 8 of the NDP – Transforming Human Settlement and the National Space Economy – that made specific reference to the need for a "national spatial development framework".

The NSDF must accelerate the spatial transformation and ensure that equitable outcomes are achieved. It must do so in full recognition of (1) the need for urgency to act on redressing the apartheid spatial legacy, and (2) the scale of what the redress requires in terms of approach, resource use, and state capability. It needs to ensure that segregated development is reversed, and fundamentally improve the spatial quality, liveability vibrancy and productive capacity of places in which Black families live. The NSDF must provide guidance on the minimum amenities, functions and services that different types of settlements in the country must have or provide.

The NSDF must ensure that the ecological base on which all livelihoods and economic growth depend is protected and harnessed. As such, it must provide for (1) the development of sustainable human settlements in the national space with the long-term future in mind, and (2) the wise effective and inclusive use and enjoyment of the country's land, water and energy resources. The Spatial Development Vision and Mission that is proposed for the country, based on these drivers, builds on the overarching goal of equity, unity and connectedness, and reads as follows:

**NSDF Vision Statement:** 

"All Our People Living in Shared and Transformed Places in an Integrated, Sustainable and Competitive National Space Economy"

**NSDF Mission Statement:** 

"Making our Common Desired Spatial Future Together Through Better Planning, Investment, Delivery and Monitoring"

Guided by the normative principles contained in SPLUMA and the NDP directives as set out in the previous section, as well as the fourteen strategic outcomes of the Medium Term Strategic Framework, the vision will be realised by achieving the following set of mutually reinforcing high-level spatial frames as indicated in **Figure 2** 

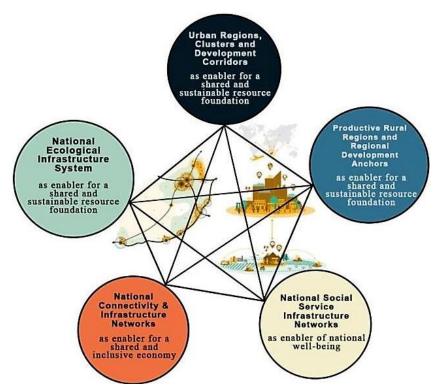


Figure 2 Five frames to achieve our desired future spatial pattern

(Source: National Spatial Development Framework, 2018)

### IMPLICATIONS FOR THE DIPALESENG SDF:

The high-level frames of the NSDF will be incorporated into the Dipaleseng SDF review, thereby establishing the vertical linkage to the national spatial development plan (NSDF).

## 2.1.5 Medium Term Strategic Framework (2014-2019)

The Medium-Term Strategic Framework (MTSF) is Government's strategic plan for the 2014-2019 electoral term. It reflects the commitments made in the election manifesto of the governing party, including the commitment to implement the National Development Plan (NDP). The MTSF sets out the actions Government will take and targets to be achieved. It also provides a framework for the other plans of national, provincial and local government.

The MTSF notes that Government is committed to improving access to housing and basic services, including the provision of approximately 1.495 million housing opportunities, the upgrading of informal settlements, and the expansion of access to water, sanitation and electricity. To give effect to the two key pillars of the MTSF, it is structured around fourteen (14) Priority Outcomes which includes:

- Quality basic education
- Long and healthy life for all South Africans
- All people in South Africa are and feel safe
- Decent employment through inclusive growth
- A skilled and capable workforce to support an inclusive growth path
- An efficient, competitive and responsive economic infrastructure network
- Vibrant, equitable, sustainable rural communities contributing towards food security for all
- Sustainable human settlements and improved quality of household life
- Responsive, accountable, effective and efficient local government
- Protect and enhance our environmental assets and natural resources
- Create a better South Africa and contribute to a better Africa and a better world
- An efficient, effective and development-oriented public service
- A comprehensive, responsive and sustainable social protection system
- A diverse, socially cohesive society with a common national identity

Fourteen appendices to the MTSF contain detailed plans for the 2014-2019 period for each of the Outcome areas. They set out the core objectives, the major challenges that have been identified and programmes and actions to be implemented during that period. Each outcome is broken down into sub-outcomes containing a set of actions together with indicators for measuring progress, targets and timeframes.

## 2.1.6 National Infrastructure Plan

The South African Government adopted a National Infrastructure Plan in 2012. The aim is to transform our economic landscape while simultaneously creating significant numbers of new jobs and strengthen the delivery of basic services. The plan also supports the integration of African economies.

The National Infrastructure Plan (NIP) seeks to promote:

- re- industrialisation through manufacturing of inputs, components and machinery;
- skills development aimed at critical categories;
- greening the economy; and
- Empowerment.

The NIP comprises 18 identified Strategic Integrated Projects (SIPs) which integrate more than 150 municipal infrastructure plans into a coherent package. The proposed SIPs entail both social and economic infrastructure across all nine provinces, but with an emphasis on lagging regions. They comprise catalytic projects that can fast-track development and growth. Note that many of the components within the SIPs have a national footprint such as the infrastructure programmes for school building, healthcare facilities and expanding access to broadband. However, the SIPs that impacts on Dipaleseng Local Municipality are:

#### **IMPLICATIONS FOR THE DIPALESENG SDF:**

- SIP 2: Durban- Free State- Gauteng Logistics and Industrial Corridor
- SIP 9: Electricity generation to support socio-economic development
- **SIP 11:** Increased investment in Agri-logistics and rural infrastructure (high impact catalytic and differentiated service).
- **SIP 18:** Water and sanitation infrastructure in the form of addressing water backlogs and the provision of a sustainable supply of water and sanitation services to meet social needs and support economic growth.

## 2.1.7 Industrial Policy Action Plan

The Industrial Policy Action Plan 2017/18 (IPAP 1) 2019/20 (IPAP2) is in its ninth annual iteration based on the National Industry Policy Framework and its objectives. IPAP1 placed emphasis on job creation with a continuously strengthening focus on labour intensity, especially in labour intensive sectors that link to the productive sectors of the economy, across integrated value chains. The major weakness identified in South Africa's long-term industrialisation process is that the decline in the share of employment in the traditional tradable sectors, particularly mining and agriculture has not been offset by a sufficiently large increase in the share of relatively labour-intensive employment in non-traditional tradable goods and services, particularly manufacturing. Consequently, the objectives of the IPAP2 are:

- To facilitate a shift away from reliance on traditional commodities and nontradable services and promote value-added goods and services that compete in export markets (against imports).
- To intensify the industrialisation process and move towards a knowledge rich economy.
- To promote a more labour-absorbing industrialisation path, with particular emphasis on tradable labour-absorbing goods and services and economic linkages that enhance employment creation.
- To promote a broader-based industrialisation path characterised by increased participation of historically disadvantaged people and marginalised regions in the mainstream of the industrial economy.

## 2.1.8 The Regional Industrial Development Strategy

The Department of Trade and Industry formulated a Regional Industrial Development Strategy (RIDS) in 2006. The aim was to promote regions based on their economic comparative advantages and to design support measures appropriate to each region to:

- Respond to persistent inequalities between the first and second economies;
- Encourage regions to seize current and potential opportunities presented by both the national and the international market economies; and
- Encourage the country's most successful economic regions to consolidate and improve on their current economic potential.

In view of the fact that the South African economy is a resource-based economy the purpose of RIDS is to respond in broad terms to issues of spatial differentiation in economic welfare levels. A key challenge is both to simultaneously support lagging regions and to assist leading regions to capitalise on their inherent strengths and potential. The RIDS provides a spatially referenced development perspective schematically. A key feature of the national space economy is the economic dominance of the three primary economic cores of Gauteng, greater Cape Town and eThekweni-uMsunduzi. Outside the three primary economic cores there are at least 16 other prominent economic regions, based primarily on gross value added and key mineral, energy and manufacturing linkages.

### IMPLICATIONS FOR THE DIPALESENG SDF:

Regarding regions, the RIDS identifies large parts of the GSDM area being part of the Witbank-Middelburg-Secunda "Diversified Mining Region" with mining and manufacturing being the main economic activities and supplemented by the infrastructure and services/tourism sectors and limited agriculture. Furthermore, Dipaleseng's critical advantage is its agricultural and mining and energy complexes. In a nutshell, it has a well-developed primary sector which is its national advantage over other and in particular the adjoining municipalities. In addition, strategic and functional linkages with Gauteng, Durban and Free State via the N3 corridor are important directives

## 2.1.9 Agricultural Policy Action Plan

The Agriculture Policy Action Plan (APAP) seeks to assist in the achievement of Outcome 4 (Decent Employment through Inclusive Growth), Outcome 7 (Comprehensive Rural Development and Food Security) and Outcome 10 (environmental assets and natural resources that are well protected and continually enhanced) of the MTSF (2014-2019) and aligns itself to the New Growth Path (NGP) and the National Development Plan (NDP).

APAP focuses on a discrete number of value chains identified as strategic in meeting the objectives of the NGP, NDP and IPAP and these are:

- Contribution to food security;
- Job creation:
- Value of production;
- Growth potential; and
- Potential contribution to trade balance (including via export expansion and import substitution).

APAP recognises agriculture as a sector with significant job creation potential and with strategic links to beneficiation opportunities. When exploring the different models of rural development, there seems to be coherent global evidence that agriculture presents the best opportunities for the advancement of rural development agenda.

Agriculture plays a strategic role in respect of food security, agrarian transformation and rural development.

#### IMPLICATIONS FOR THE DIPALESENG SDF:

As a recommendation, the impact of APAP could also be intensified by exploring opportunities in the sectors outside of rural development and land reform. For example, Dipaleseng could mobilise for development schools offering Agriculture as an assessed subject and support those schools. In this way, the Municipality is in a position to make a social capital investment for the advancement of APAP.

## 2.1.10 National Transport Master Plan (NATMAP), 2050

The NATMAP (2050) was approved by the South African Government in 2011. The focus of the project is to ensure that by 2050 transportation development will meet the needs of freight and passenger customers; to ensure accessible, affordable, safe, frequent, high quality, reliable, efficient and seamless transport operations and infrastructure provision and development.

The project makes provision for a process of continued upgrading, innovative, flexible, economically and environmentally sustainable transportation that will support and enable government strategies, growth, development, redistribution, employment and social integration within the national spatial system. The project endeavours to address this distorted land use and transportation situation provincially and nationally.

The core directives or paradigm shifts emanating from the Master Plan are to:

- Place greater emphasis on developing rail as a transportation medium,
- Ensure greater integration between land use development and transportation planning; and
- Put more emphasis on enhancing the development of several priority national transport corridors.

Figure 6 conceptually depicts the major corridors identified in South Africa as part of the NATMAP.

#### IMPLICATIONS FOR THE DIPALESENG SDF:

Freight rail infrastructure expansion from Lephalale via Rustenburg to Pretoria and Johannesburg to transport the coal reserves to other areas of the country – also the power stations in Mpumalanga (Eskom Station in Grootvlei); Combined Road and Passenger rail infrastructure development from Mpumalanga to facilitate daily passenger mobility- (Moloto Corridor and Phalaborwa-Mbombela Corridor).

## 2.1.11 Integrated Urban Development Framework (IUDF)

The Integrated Urban Development Framework (IUDF) is a policy initiative of the South African government, coordinated by the Department of Cooperative Governance and Traditional Affairs (CoGTA). The IUDF seeks to foster a shared understanding across government and society about how best to manage urbanisation and achieve the goals of economic development, job creation and improved living conditions in South African cities.

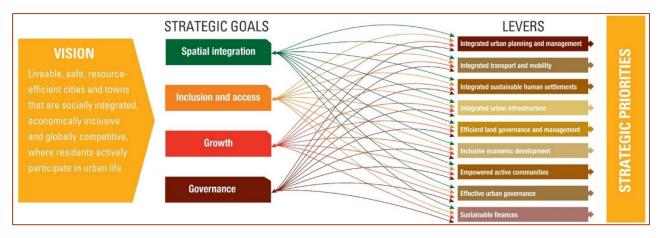


Figure 3: Core Elements of the IUDF (Source: Integrated Urban Development Framework)

## 2.1.12 National Environmental Management Act, (1998)

Section 24 of the Constitution provides the right to every person for a non-harmful environment and simultaneously mandates the government to protect the environment. The framework is set to enforce Section 24 of the Constitution is the National Environmental Management Act (Act 107 of 1998) (NEMA).

NEMA is a progressive environmental management legislation in South Africa. It has provided the framework for decision-making for individuals, institutions, and government. The NEMA's key principles are aimed at promoting co-operative governance and ensuring that the rights of people are upheld, while at the same time recognising the importance of economic development. The predecessor to the NEMA, the Environmental Conservation Act, was largely unsuccessful or inadequate to deal with enforcement, administration, governance and so forth. The NEMA was developed to succeed in these aspects and more.

#### IMPLICATIONS FOR THE DIPALESENG SDF:

Any EIA needs to look at existing planning tools (like the SDF) to motivate for the development. The SDF is focused on sustainability and the protection of the natural environment, therefore development not in line with the SDF, and the protection of the natural environment, will not be allowed in the municipality.

# 2.2 PROVINCIAL SPATIAL PLANS, POLICIES AND DIRECTIVES

## 2.2.1 Mpumalanga Vision, 2030

The Mpumalanga Vision, 2030 is a strategic implementation framework that was developed as a direct implementation response to the NDP whilst reflecting the spatial and socio-economic needs of Mpumalanga. The framework describes the Province's approach to realizing the objectives of the NDP in the provincial context and seeks to achieve the MPG's Provincial Strategic Objectives (PSO's). Mpumalanga Vision, 2030 provides a provincial expression of the key priorities, objectives and targets that enumerated in the NDP and expressed within the policy. The Vision, 2030 seeks to affirm the provincial approach towards realising the national vision.

The Vision, 2030 has identified key drivers to formulate a spatial rationale for the province based on the nine Key Drivers. Key Drivers 1 to 6 is focused towards promoting economic development and job creation according to the space economy of Mpumalanga province from which priority nodes/areas for economic development have been identified. Key Drivers 7 and 8 are focused on human settlement in and around these priority nodes/areas identified. Key Driver 9 is focused on the conservation and sustainable management of the natural environment.

- **Key Driver 1:** Nodal Development
- **Key Driver 2:** Business, Commercial and Industrial Development
- **Key Driver 3:** Tourism Development
- Key Driver 4: Forestry Development
- Key Driver 5: Agricultural Development
- Key Driver 6: Mining and Energy Related Development
- **Key Driver 7:** Urban Development
- Key Driver 8: Rural Development
- **Key Driver 9:** Environmental Management and Conservation

### IMPLICATIONS FOR THE DIPALESENG SDF:

Dipaleseng key economic sectors are agriculture and mining. As per this Vision, these sectors form part of the key drivers (Key Driver 5 and 6) for economic development and job creation. The SDF will therefore have to explore the various opportunities in terms of how they can be leveraged to achieve these imperatives.

# 2.2.2 Mpumalanga Economic Growth and Development Path, 2011 (MEGDP)

The Mpumalanga Economic Growth and Development Path (MEGDP) is informed by the National Economic Growth Path. The Mpumalanga Province is committed to increasing local economic development and job creation in the agricultural, industrial, manufacturing, green economy, tourism and mining sectors. The MEGDP provides a detailed framework for the realisation of these objectives. The focal point of the Mpumalanga Economic Growth and Development Path is the creation of appropriate labour absorbing jobs which will have a positive direct, indirect and induced effect on the Provincial economy and the living standards of its people.

The primary objective of the MEGDP is to grow the economy of the province; balance growth and development in order to create jobs, reduce poverty and inequality and improve the socio-economic conditions of the province. The growth plan is anchored on a few factors which include sector development, inclusive & shared growth, spatial distribution, regional integration, sustainable human development and environmental sustainability with clearly defined strategic targets over a medium to long term period.

The following job drivers will be utilised to realise the objectives of the MEGDP and to secure strong and sustainable growth for the next decade. The Dipaleseng local municipality also has a key role to play in facilitating the achievement of these drivers.

- Infrastructure for Employment & Development
- Job Creation in Economic Sectors
- Seizing the Potential for New Economies

- Investing in Social Capital & the Public Service
- Spatial Development

## 2.2.3 Mpumalanga Provincial Spatial Development Framework, Draft (2019) (PSDF)

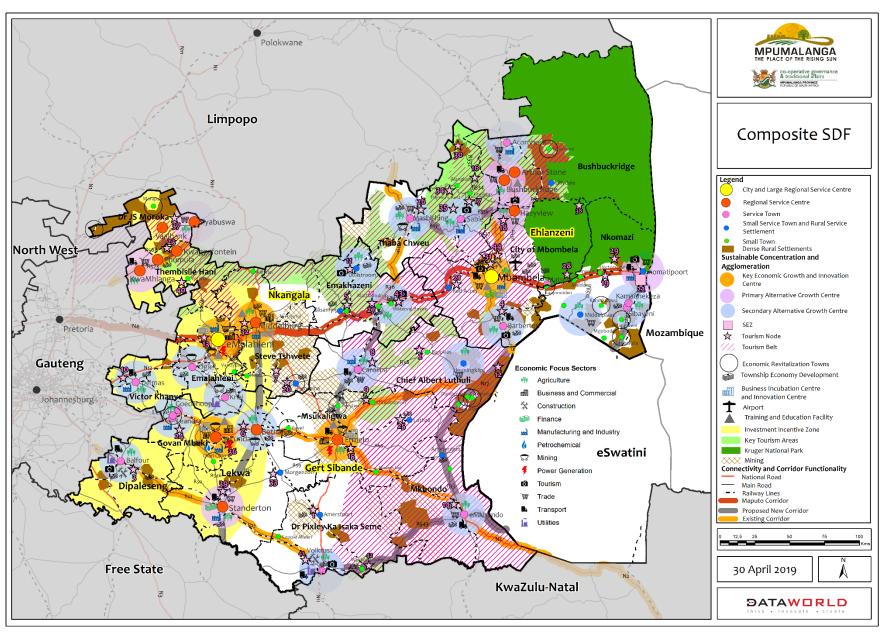
The Mpumalanga Provincial Spatial Development Framework was developed as one of the requirements mandated by SPLUMA. The objectives of the Mpumalanga PSDF is to cover the following aspects at provincial level; integration of development policies, strategies and objectives; prioritize land use development patterns; translate developmental needs; unpack spatial directives and objectives for implementation; provide investment guidance and the mechanisms for implementation; provide guidance on sectoral development needs, investments, integration and programme implementation.

The Mpumalanga PSDF has identified five strategic spatial development objectives to be carried out in order to achieve the overall development vision of the province and will have an influence on the spatial patterns and overall growth of Mpumalanga:

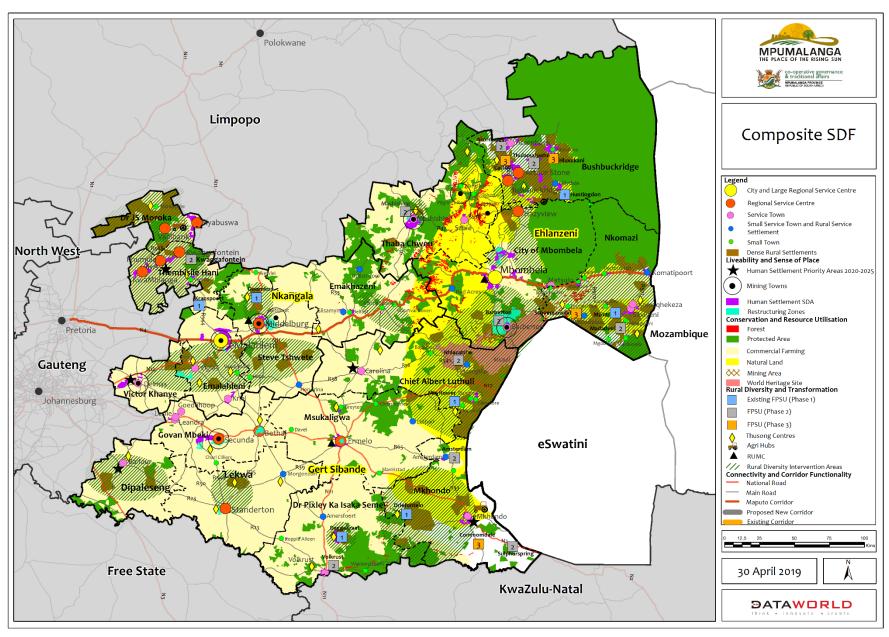
- 1. Connectivity and Corridor Functionality
- 2. Sustainable Concentration and Agglomeration
- 3. Conservation and Resource Utilisation
- 4. Livability and Sense of Place
- **5.** Rural Diversity and Transformation

#### IMPLICATIONS FOR THE DIPALESENG SDF:

- Road improvements and rehabilitating projects of provincial corridors including R23.
- Decongestion of the coal haul roads and Improvement of Freight Network, by improving and upgrading freight railway network and coal haulage roads within Gert Sibande District Municipality. Increase the volume of rail freight network near coal mine areas
- Promote the economic development of the alternative growth centres with Balfour identified as one of the secondary alternative growth centre for development, which will be centred on the agricultural, agro-processing, construction, tourism and transport economic sector development.
- Promote Economic Growth through Incentives by creating an investment incentive zone on the western peripheral area of the province, with Balfour being one of the towns identified to benefit from this incentive zone.
- Promote the development of township economic development in townships like Siyathemba and Nthorwane in the Municipality
- Develop "Special Control Zones" to regulate mining activities.
- Promote compaction and densification in urban areas through the application of designated nodes, sustainable development and infill areas
- Create a Functional Rural Economic Nodes by Rural Restructuring and Linkage of Rural Economies.
- Protect biodiversity and ecosystem services in the municipality
- Promote a low carbon and climate resilient economy and climate change adaptation.



Map 2: Mpumalanga Provincial Spatial Development Framework 1



Map 3: Mpumalanga Provincial Spatial Development Framework 2

## 2.2.4 Mpumalanga Infrastructure Master Plan

The Mpumalanga Infrastructure Master Plan intends to guide and provide directive for infrastructure development as well as a programme of action with a detailed list of projects in the Province. The MIMP aims to set out a vision of the provincial infrastructure that will strive to be resilient, coordinated and contributes to economic growth and increased quality of life by 2020.

The MIMP proposes that the following development principles be paramount in terms of guiding and directing decisions regarding infrastructure investment in the Province:

- Principle 1: Balance economic growth and social upliftment
- Principle 2: Respond to regional differences in development potential
- Principle 3: Recognise roles and responsibilities of stakeholders
- Principle 4: Build on existing initiatives
- Principle 5: Preserve existing assets
- Principle 6: Align investment with available resources
- Principle 7: Build a heritage

#### IMPLICATIONS FOR THE DIPALESENG SDF:

The Mpumalanga infrastructure master plan principles have an influence on the SDF and should potentially be considered as another baseline when proposals are being made in the later phases of the project.

## 2.2.5 Mpumalanga Sustainable Human Settlement Master Plan, (2013)

The Mpumalanga province aims to eradicate current housing backlogs through the development of the Sustainable Human Settlement Master Plan (SHSMP). The intent is assisting in providing guidance in prioritising housing projects for urban, rural and agrivillages. Thus, one of the fundamental roles of the SHSMP is guide the provincial government through the preparation and maintenance of strategic housing plans which targets housing challenges and delivery schedules. These plans therefore need to be in line with the National Housing Policy.

The SHSMP also endorsed various human settlement programmes/strategies and guidelines in order to facilitate and enhance special focus of rural and informal development through the provision of sustainable housing and formalisation of such areas. The goal is to promote mixed use, mixed density housing projects which offer a variety of tenure alternatives and providing economic and social integration.

#### IMPLICATIONS FOR THE DIPALESENG SDF:

Providing continued cooperation from all stakeholders to realise the swift and smooth process of housing provision as well as new and existing formalisation programs while also providing appropriate mechanisms for further engagements with stakeholders and community members, particularly those affected.

## 2.2.6 Mpumalanga Tourism Strategy, (2018)

The aim of the Mpumalanga Tourism Strategy is to elaborate a framework that will guide tourism initiatives and development in the Province. The ultimate objective is to attain sustainable benefits for the people of Mpumalanga by creating additional economic activity. The strategy's objectives are in line with national tourism objectives as well as those indicated in other provincial and local tourism policies. These objectives are:

- Develop the tourism sector as a driver of economic activity
- Product expansion & diversification
- Implement responsible & sustainable tourism practices
- Enhance the general competitiveness of the province
- Structure of effective institutional relationship
- Grow domestic tourism for a sustainable economy

Therefore, the implementation of the above listed objectives is expected to increase spending in the province through international and domestic tourist thus creating new job opportunities within this sector. The provincial tourism sector is so diversified, hence the objectives/ guidelines that support the economic growth, procedures and transformation within the sector have somewhat influenced the vision statement. Realising the objectives of the tourism strategy, a few key strategies need to be developed and prioritised in order to improve the tourism sector, below are the key strategies identified:

- 1. Marketing and Promotion
- 2. Destination Accessibility
- 3. Visitor Experience
- 4. Product innovation
- 5. Destination Management
- 6. Transformation and Development of SMMEs

## 2.2.7 Provincial Comprehensive Rural Development Programme

The Comprehensive Rural Development Programme (CRDP) is third planned priority for rural development within the government's current Medium-Term Strategic Framework which was drafted for 2014-2019. The strategic design of the programme is established on experiences from pilot sites designated through socio-economic profiling, community participatory processes and intergovernmental co-operation. The CRDP is based on a positive participatory community-based planning approach rather than an interventionist approach to rural development.

The CRDP aims to be an effective response to poverty alleviation and food insecurity by maximizing the use and management of natural resources to create "vibrant, equitable and sustainable rural communities. The vision of the CRDP is to be achieved through a **three-pronged strategy** based on:

- A coordinated and integrated broad-based Agrarian Transformation;
- Strategically increasing **Rural Development** through infrastructure investment; and
- An improved Land Reform Programme.

#### **Outcome 7**

Vibrant, equitable and sustainable rural communities and food security for all will be achieved through the following outputs:

Following are the Projects and Provincial output of CRDP:

- Output 1: Sustainable agrarian reform with a thriving small and large farming sector services to support livelihoods
- Output 2: Improved access to affordable and diverse food
- Output 3: Improved rural services to support livelihoods
- Output 4: Improved employment opportunities and economic livelihoods
- Output 5: Enabling institutional environment for sustainable and inclusive growth

#### IMPLICATIONS FOR THE DIPALESENG SDF:

Four municipalities in Gert Sibande District form part of the Mpumalanga CRDP Pilot initiative. These include Mkhondo, Chief Albert Luthuli, Dr Pixley ka Isaka Seme and Dipaleseng.

## 2.2.8 Mpumalanga Biodiversity Sector Plan, (2014)

The Mpumalanga Biodiversity Sector Plan (MBSP) is a Guideline (maps) that informs permissible land-uses that upkeep biodiversity patterns and ecological processes therefore allowing for species to adapt to climate change. The plan is specifically used to support land-use decisions in order to reduce ecological loss, prioritise management intervention such as wetland rehabilitation and alien plant control.

The purpose of the MBSP is to inform land use planning, environmental assessment, land and water authorisations as well as natural resource management. The MBSP is therefore, the official reference for biodiversity priorities to be taken into account in land-use planning and decision-making by all sectors. The objective of the MBSP is to identify the minimum spatial requirements by identifying an efficient set of CBAs that are required to meet biodiversity management objectives. In a spatial configuration that conflicts as little as possible with other land use activities.

Its specific objectives are to:

- Serve as the primary source of biodiversity information for all land-use planning and decision-making in Mpumalanga, to be used in conjunction with information from other sectors.
- Ensure that Mpumalanga's ecological infrastructure is maintained, ecosystem fragmentation and loss is avoided, and the resilience of ecosystems and human communities to the impacts of climate change is strengthened.
- Provide a spatial framework for environmentally sustainable development and resource-use.
- Inform municipalities and other land-use planners and regulators about spatial biodiversity priorities in order to promote the wise management of biodiversity, and to streamline and monitor land-use decision-makina.

- Focus on-the-ground conservation and restoration action in biodiversity priority areas, thus supporting the MTPA in implementing its biodiversity mandate, including working with landowners to consolidate and expand the provincial protected area network.
- Mainstream biodiversity conservation into the day-to-day activities of a range
  of development and production sectors whose primary business is not
  biodiversity conservation, thus promoting greater synergy between biodiversity
  conservation and development through implementation of the MBSP.

## 2.2.9 Mpumalanga Industrial Development Plan

The Mpumalanga Industrial Plan (MIDP) as an integrative strategy that aims to build robust partnerships between government, industry sector and interested stakeholders to alter the structure and distribution of the industrial activity to promote economic growth, development together with job creation. Therefore the provincial Industrial Development Strategy provides a framework for state-led plans and intervention areas thus building productive capability to place the province on a more reasonable and labour absorptive growth path.

The MIDP has therefore further identified Industrial Centres of Competence that establish innovative platforms required for supporting sustainable industrial development in the targeted sectors, which shall form a central hub to be effectively marketed, promoted and coordinated. Such promising centres have been identified as follows:

- Mining and Metals Technology Park- A comprehensive facility for promoting industrial development within the mining and metals manufacturing sectors.
   This should be logistically well-positioned, adjacent to the N4 between eMalahleni and Middleburg. The preferred size of this park is 600 hectares.
- Forestry Technology Park- It will provide a platform for inter-firm cooperation, and lead to specialisation and improvement in quality standards for exports out of the Province. The park will be based at Sabie.
- International Fresh Produce Market- A site has been identified on the Sabie/Mashishing Road close to Nelspruit and the Riverside Park mixed-use regional node.
- Petrochemicals Technology Park- One of the major industrialisation initiatives in the Province, aimed at stimulating economic growth and job creation, both through Small, Medium and Micro-sized Enterprise (SMME) incubation and large-scale production. This park is based at Secunda. Land for the development of the proposed Technology Park has already been allocated by the Local Municipality.
- Agro-processing Technology Park- The Park has been proposed within the Nkomazi SEZ. The proposed Technology Park will serve as a hub for the development of other rural nodes, such as the proposed agro-processing hub in Bushbuckridge linked to the Dumphries C Irrigation Scheme and the Giba Community Property Association farming development new Hazyview.

In addition to intensification of industrial activities within the Industrial Centres of Competence, the MIDP advocates for the industrialisation of rural nodes to promote holistic socio-economic development in the province. The importance of developing

priority rural nodes in order enable business flows, technology transfer and capacity development. To promote rural industrialisation, the plan proposes to develop activity links between the priority rural nodes with the Industrial Centres of Competence to enable business flows, technology transfer and capacity development.

# 2.3 **DISTRICT SPATIAL PLANS, POLICIES AND DIRECTIVES**

## 2.3.1 Gert Sibande Spatial Development Framework (GS SDF), 2014

In 2014 the Gert Sibande Municipality undertook the review of the District SDF. The aim of the Gert Sibande SDF is to address integration and alignment between spatial, engineering, environmental and socio-economic issues confronting the district and local municipalities; and facilitate implementation of the IDP and all related government intentions to reduce poverty and facilitate urban and rural development in the GSDM area.

The Gert Sibande District SDF vision is as follows

#### "STRIVING TO EXCEL IN GOOD GOVERNANCE AND QUALITY INFRASTRUCTURE"

The Gert Sibande District SDF also outlines 12 development principles which are to be achieved in order to realise the district's vision. The principles are:

- **Development Principle 1:** Actively protect, enhance and manage the natural environmental resources of the District by way of the guidelines provided in the GSDM Environmental Management Framework (EMF).
- **Development Principle 2:** Optimally capitalise on the strategic location of the District through strengthening of the five national/provincial economic corridors, and to functionally link all towns and settlements to one another and to surrounding regions.
- Development Principle 3: Establish a functional hierarchy of nodal points in the Gert Sibande District area to optimise the delivery of social and engineering infrastructure/services, promote local economic development, and protect valuable agricultural land.
- Development Principle 4: Provide a full range of social services at all the identified nodal points, in accordance with the nationally approved Thusong Centre concept.
- **Development Principle 5:** Consolidate the urban structure of the District around the highest order centres by way of residential infill development and densification in Strategic Development Areas (SDAs) identified in Municipal Spatial Development Frameworks.
- Development Principle 6: Ensure that all areas in the GSDM (urban and rural)
  are at least provided with the constitutionally mandated minimum levels of
  services as prescribed by the NDP and enshrined in the Constitution.
- **Development Principle 7:** Utilise the Chrissiesmeer-Heyshope-Wakkerstroom precincts as Tourism Anchors around which to develop and promote the eastern parts of the District (around route R33) as a Primary Tourism Corridor.
- **Development Principle 8:** Promote forestry within and along the identified Primary Tourism Corridor

- **Development Principle 9:** Promote small-scale and extensive commercial farming activities throughout the District and facilitate Agrarian Transformation within the CRDP priority areas.
- **Development Principle 10:** Facilitate and accommodate mining in the District in a sustainable manner in order to support local electricity generation and industrial development.
- **Development Principle 11:** Unlock the industrial development potential of existing towns through developing industry specific Special Economic Zones/Economic Clusters throughout the District, in line with the Mpumalanga SDF and the Mpumalanga Vision 2030 Strategy in accordance with the following sectors:
  - Agricultural Cluster
  - Forestry Cluster
  - Industrial Cluster
- **Development Principle 12:** Enhance business activities (formal and informal) in the identified nodal points in the District.

#### IMPLICATIONS FOR THE DIPALESENG SDF:

- **Development Principle 2-** The R23 Corridor represents the old route between Gauteng Province and Durban/eThekwini in KwaZulu-Natal, linking prominent towns and settlements such as Balfour, Standerton and Volksrust to one another. This route virtually runs parallel and to the north of the N3 freeway, which is the main link between Gauteng and KwaZulu-Natal.
- **Development Principle 3-** in terms of settlement hierarchy, Balfour and Greylingstad are identified as tertiary node within the district and Grootvlei and Driefontein are identified as rural nodes.
- Development Principle 11- Agricultural Cluster should be focused on agriindustries, and more specifically agri- processing of livestock and crop farming products in Standerton, Bethal, Ermelo and Mkhondo. Secondary Clusters could include Amersfoort, Volksrust and Balfour.

## 2.3.2 Gert Sibande Integrated Development Plan (GS IDP)

The District Integrated Development Plan was formulated and adopted to serve as a guide to all of the local municipalities within the GSDM area, in the preparation of their respective Review Process. The IDP outlines clear objectives and strategies which serve to guide the allocation and management of resources thus improving coordination and integration of planning, budgeting and development within the district.

The Gert Sibande IDP proposes the following vision and mission of the District area:

### **GSDM IDP Vision**

"A community driven district of excellence and development"

### **GSDM IDP Mission**

"To support and coordinate our local municipalities to provide excellent services and development"

The Gert Sibande District IDP has adopted the following strategic goals in order to assist in realising the vision of the District. The Strategic goals of the District are:

- Provide equitable, consistent and sustainable services to the community
- Improve Socio-economic Growth
- Achieve and Sustain Financial Viability within all 8 Municipalities
- Strengthen Municipal capability

The above translates into six Key Performance Areas for the District as listed below:

- KPA 1: Municipal Transformation and Organizational Development
- KPA 2: Basic Service Delivery and Infrastructure Development
- KPA3: Local Economic Development
- KPA 4: Municipal Financial Viability and Management
- KPA 5: Intergovernmental Relations, Good Governance and Public Participation
- KPA 6: Spatial Rationale and Municipal Planning Alignment

### **IMPLICATIONS FOR THE DIPALESENG SDF:**

Must form part of the basket of plans to assist the municipality to deliver on its service delivery and development mandate as per the above KPAs and goals.

## 2.3.3 Gert Sibande Rural Development Plan (GS RDP)

The Gert Sibande Rural Development Plan is a plan seeking to achieve enhanced rural production and productivity, greater socio-economic equity, and aspiration, balance in social and economic development. The Rural Development Plan aims to also improve the impact of intensified and targeted government and private investments in rural areas through an assessment of current developmental realities and potential in these areas. The main objective of GSDM Rural Development Plan (RDP) is to addresses the needs of people who live in extreme poverty and who are subjected to underdevelopment in the rural areas of the District.

The District RDP has also been prepared to ease integration of the Agri-Park Initiative and the implementation of DRDLR projects into the various Local Municipalities of the District. They also intended to assist the LMs, GSDM and other sector departments and the private sector to invest and enable the development and functioning of Agri-Parks. The Gert Sibande Agri-Parks Business Plan identifies eMkhondo (Piet Retief) as the most suitable site for the establishment of an Agri Hub within the district. Ermelo town is allocated to perform the function of a Rural Urban Market Centre in the district.

### **IMPLICATIONS FOR THE DIPALESENG SDF:**

The Gert Sibande Agri-Parks Business Plan also outlines that the proposed Agri-Hub in eMkhondo is to be supported by 28 FPSU's, of which 3 of those FPSU's are situated in Dipaleseng LM, in Balfour, Greylingstad and Grootvlei. Dipaleseng LM is also classified as priority 1 intervention for Rural Intervention Areas.

## 2.3.4 Gert Sibande District Municipality Integrated Transport Plan, 2014

The Integrated Transport Plan (ITP) aims to integrate transport planning with land development planning and provides for a 5 year implementation programme for transport infrastructure and services. The purpose of the plan is to solve transport issues and problems in line with Gert Sibande District Municipality goals and objectives, and to effectively communicate how transport will be arranged, executed and operated

in a manner that is transparent and accountable to enhance the transport system for the benefit of all its citizens.

The Gert Sibande ITP transport goals for the GSDM are to:

- o Co-ordinate, facilitate and provide efficient and effective transport infrastructure for all private, public passenger and freight transport.
- o Ensure a sustainable financial allocation for the transport function.
- o Ensure that transport is managed within a sound institutional framework.
- Ensure that municipal transport planning and coordination is maintained across all spheres of Government.
- o Co-ordinate, implement, monitor and regulate efficient and effective public transport services.
- o Ensure that transport is regulated in line with legislative requirements.
- o Improve traffic management and safety through co-ordinated planning, maintenance, and education and law enforcement actions.

Freight transport, specifically coal haulage, was identified as the major transportation issue in the district. The reliance of on road based coal transport and its negative effect on the existing road infrastructure is recognized. Therefore, the plan calls for programmes and projects that will assist in the decongestion of these routes and the upgrade of all road infrastructure In the District.

#### IMPLICATIONS FOR THE DIPALESENG SDF:

The SDF will have to explore opportunities that can be leveraged from existing and potential transportation routes/corridors, such as the R23, R59 etc.

## 2.3.5 Gert Sibande Local Economic Development Strategy, 2014

The Gert Sibande Local Economic Development (LED) Strategy offers local government, the private and local communities the opportunity to work together to improve the local economy. It is prepared as a sector plan of GSDM Integrated Development Plan (IDP). The purpose of this strategy is to build up the economic capacity of a local area and enhance its economic future and improve the quality of life for all.

The following are strategic development goals identified in the GSDM LED Strategy:

- Ensuring that the local investment climate is functional for local businesses;
- Supporting small and medium sized enterprises;
- Encouraging the formation of new enterprises;
- Attracting external investment (nationally and internationally);
- Investing in physical (hard) infrastructure;
- Investing in soft infrastructure (educational and workforce development, institutional support systems and regulatory issues);
- Supporting the growth of particular clusters of businesses;
- Targeting particular parts of the city for regeneration or growth (areas based initiatives);
- Supporting informal and newly emerging businesses;
- Targeting certain disadvantaged groups.

#### IMPLICATIONS FOR THE DIPALESENG SDF:

Local economic development strategies as well as competitive advantages of the municipality from an economic perspective. These issues will be explored in detail in the ensuing phases as part of the status quo-analysis and spatial proposals.

## 2.3.6 Gert Sibande Environmental Management Framework (EMF) (2011)

The development of the EMFs for the GSDM and its local municipalities provide guidelines for future planning and development by identifying sensitive environments, highlight potential conflict areas for development. The EMFs were developed in accordance with the EMF Regulations, 2010 (GNR547 of 2 August 2010) promulgated in terms of Section 24(5) and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998). The EMF is an environmentally focused spatial development tool that can be used to assist in achieving Integrated Environmental Management (IEM). The tool looks at social and economic considerations through an environmental lens and attempts to guide development in a specific geographic area

The GSDM is an important area for mining and power generation with much of the municipality being underlain with coal reserves. The GSDM area is also a key agricultural area with forestry covering extensive areas to the east of the municipality. These economic drivers within the District have impacted on the air, water, land and ecological functioning of the natural resources thus posing a threat to the environment, its people and future economic growth in the area.

## IMPLICATIONS FOR THE DIPALESENG SDF:

Mapping of the ecological integrity of the municipal area by considering impacts of invasive developments and harmonizing conflicting between land use imperatives, identifying different interests, and understanding how the costs and benefits of conservation are distributed. EMFs are therefore a testament to and the embodiment of IEM, focusing on strategic and pre-emptive measures that guide stakeholders and raise awareness in biodiversity conservation

# 2.4 LOCAL SPATIAL PLANS, POLICIES AND DIRECTIVES

# 2.4.1 Dipaleseng Local Municipality Integrated Development Plan (DLM IDP)

The Dipaleseng LM IDP was compiled following consultation with stakeholders in government, civil society and the private sector. The IDP outlines clear objectives and strategies which serve to guide the allocation and management of resources thus improving coordination and integration of planning, budgeting and development within the municipal area.

The Dipaleseng IDP proposes the following vision, mission and corporate values of the municipality:

IDP VISION:

The vision of the Dipaleseng Local Municipality is to be "a centre of quality, affordable, good governance and sustainable economic opportunities"

IDP MISSION:

The Dipaleseng SDF mission "is to provide sustainable services to communities and ensure that they are served by accountable and effective Municipality."

Dipaleseng Local Municipality Priorities:

- Enhancement of revenue collection
- Basic Service Delivery (Water, sanitation, electricity & refuse removal)
- LED and Job Creation
- Attraction of investors
- Public Participation and Good Governance
- Institutional Development
- Social Services (Education, Health, HIV/AIDS, Crime and Drugs Prevention)

Dipaleseng' development plans are mostly geared towards infrastructure upgrades and economic growth. In particular, housing, water and sanitation are key focus areas. Given the dependence on non-employment income, many households cannot afford services (infrastructure or social), the IDP has therefore Identified 4 KPA in order to address this challenge in the municipality. The KPA's are:

- KPA 1: MUNICIPAL TRANSFORMATION AND ORGANISATIONAL DEVELOPMENT
- KPA 2: SERVICE DELIVERY AND INFRASTRUCTURE DEVELOPMENT
- KPA 3: LOCAL ECONOMIC DEVELOPMENT
- KPA 4: MUNICIPAL FINANCIAL VIABILITY AND MANAGEMENT

# 2.4.2 Dipaleseng Local Economic Development Strategy, 2011

The Dipaleseng LM is legally bound to promote social and economic development within its community. This implies that public investment should largely focus on developing the Municipal area in terms of Local Economic Development and providing for the basic needs of the community. The purpose of the Dipaleseng LED strategy is to direct and align as many stakeholders as possible towards accelerated economic development, increased job creation and improved standards of living in the Municipal area. The LED vision is to create a conclusive environment for economic growth, stability and development within Dipaleseng LM.

The LED strategy has identified several opportunities and potential development projects to be prioritised in accordance to their economic impact on the municipal area. The LED has a set of Strategic Development Pillars which serve as the point of alignment with the municipal IDP, SDF and other development policies. The Aim of the Pillars is to utilise existing strengths and opportunities by transforming workable programmes and actions that will assist in reducing threats and alleviate weakness in the local economic environment. The Pillars to be implemented are:

- o Pillar 1: Rural Development
- o Pillar 2: Human Resource Development
- o **Pillar 3**: Institutional Development
- Pillar 4: Tourism Development

Below are the identified Strategic Goals as per the LED Vision:

- The Protection of Natural Capital: Ensuring sustainable long-term local economic development through the protection and maintenance of natural capital.
- The Reduction in Income Disparity: Reducing the income Disparity in Dipaleseng by focusing on skills training, capacity-building initiatives, local competitive advantages and development of the informal sector.
- Improvement of Institutional Capacity: Ensuring sustainable local economic development by improving the capacity of the Municipality through the establishment of an Economic Development Agency.
- The Promotion of the Retention of Local Wealth: Retaining wealth and increasing the circulation of the wealth in the Municipality by promoting local savings, investment and entrepreneurship.
- Promotion of Public, Private Partnerships: Ensuring that relations between the
  public and private sector are improved in an effort to better leverage LED
  support and resources at a local level by engaging all the sectors about their
  roles in LED.
- The Promotion of Business/Investment Attraction and Job-Creation: Ensuring
  effective job-creation strategies by focusing on specific occupations and
  industry sectors.
- **Innovation**: Creative and inclusive Rural Development and the application of Information Communication Technologies (ICT) in LED (e.g. Knowledge Economy).

#### IMPLICATIONS FOR THE DIPALESENG SDF:

As a forward planning instrument, the SDF must promote new and existing initiatives / projects that facilitate socio-economic and environmental benefits for people of the Dipaleseng municipality. The principles alluded to in this Strategy are crucial in achieving some of these imperatives.

# 2.4.3 Dipaleseng Land Use Management Scheme,

The Dipaleseng Local Municipality Land Use Management Scheme was prepared under the provisions of section 18 of the Town Planning and Townships Ordinance, 1986 (15 of 1986). Dipaleseng Local Municipality is the responsible authority for enforcing and/or executing the provisions of this Scheme. The intent of this scheme is to have a well-coordinated and harmonious development of the scheme area in order to effectively promote the economy, sustainable environment, health, safety and good order of the municipal area.

The principles of the Dipaleseng Land Use Management Scheme are to:

- Ensure sustainable and orderly development in the municipal area.
- To allow for a healthy and clean environment.
- Allow for a healthy economic environment with access to opportunities for all residents.
- Ensure equity to all in terms of land management.
- Allow for a democratic administrative and participatory process in land management.

- Ensure the optimal usage of resources such as agriculture, land, minerals, infrastructure and social facilities.
- Promotion of diversity of land uses.
- Promote the concept of compact urban areas.
- Contribute to the correction of historically distorted spatial patterns of settlement.
- Encourage environmentally sustainable land development.
- Promote the establishment of viable communities.
- Aspire to meet the basic needs of all communities in an affordable way.

#### IMPLICATIONS FOR THE DIPALESENG SDF:

This tool is used by Dipaleseng Local Municipality to guide and manage development according to the vision, strategies and policies of the Integrated Development Plan (IDP) and Spatial Development Framework (SDF). Each land use zone in the Scheme has its own development requirements, conditions and restrictions which must be adhered, these also include density, height, coverage, floor area restrictions, building lines and building restriction areas, parking requirements, loading, as well as the site development plans.

# 2.4.4 Dipaleseng Environmental Management Framework, 2011

The Dipaleseng Environmental Management Framework (EMF) 2011 is a sectoral policy that guides the protection and management of the environment in the municipality. The EMF was developed in terms of NEMA EMF Regulations, which serves as a management and decision-support tool to assist authorities with the planning parameters and environmental status quo. The purpose Dipaleseng EMF is to identify and spatially represent areas of potential conflict between sensitive environments and development proposals. Chapter 6 of the framework covers the Strategic Environmental Management Plan (EMP) which identified development zones based on environmental opportunities and constraints thus providing practical guidelines for land use management and informed decision-making within each development zone. The following is a list of the identified guidelines and zones:

- General Guidelines & Existing Planning/Policy Documents
- Environmental Constraint Guidelines
- Environmental Management Zone

As a result of the above a priority rating was assigned based on their conservation and development potential to ensure that the desired land uses in each area do not compromise the integrity of the environment. Therefore, five Environmental Management Zones were identified within the DLM, namely:

- Conservation/Ecotourism,
- Agriculture,
- Urban/Residential,
- Industrial/ Commercial, and
- Rural/Mining.

# IMPLICATIONS FOR THE DIPALESENG SDF:

The information contained within the EMF can be used to proactively guide planning at the broader district and local authority levels as well as to guide site-specific development plans and the authorization thereof. The Dipaleseng local municipality was mandated to manage not only the environmental impacts resulting from their activities such as service provision but also to proactively implement measures to ensure environmental deprivation does not occur.

# 3 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).

# 3.1 TOPOGRAPHY AND LANDSCAPES

Dipaleseng which means the pink and white cosmos flowers "Cosmos bipinnatus", is 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 elements 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.

# 3.2 **GEOLOGY AND MINERALS**

# 3.2.1 Geology and Soil

# 3.2.1.1 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%)<sup>2</sup>. 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

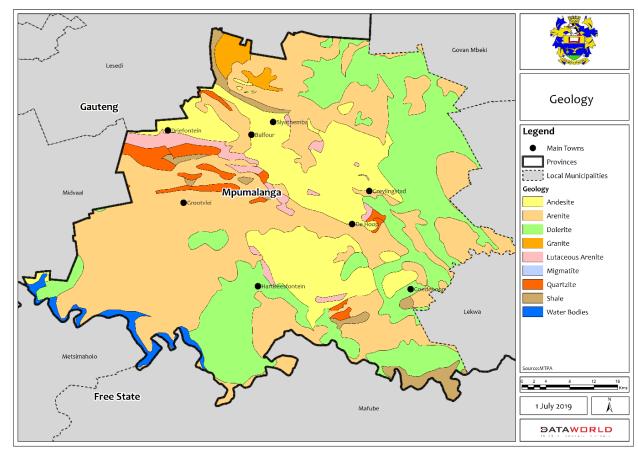
<sup>&</sup>lt;sup>2</sup> Mpumalanga Tourism and Parks Agency, 2018

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

#### 3.2.1.2 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 are areas where land is highly suitable for agriculture purposes within the municipality. These areas are located in the vicinity of Grootvlei, and Driefontein.



Map 4: Geology (Source: MTPA)

#### 3.2.2 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.

# 3.3 **CLIMATE**

# 3.3.1 **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 1st, with an average daily 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 °C3. The area often experiences very cold weather conditions and frost which can cause widespread damage to crop and wildlife. In 2050 the Municipalities projected average mean temperature is recorded to be between RCP 4.5: 1.92°C — 2.74°C and RCP 8.5: 2.38°C — 3.06°C<sup>4</sup>.

#### 3.3.2 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 annum. Evaporation rates are between 1300 - 1700 mm per year.  $\pm 99\%$  of Dipaleseng has an average annual rainfall of 595-794mm, while  $\pm 1\%$  of the area has an average annual rainfall of 314-595mm.

The relatively high rainfall and availability of 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. The average mean rainfall for the municipality is projected to be between RCP 4.5: 59.33mm — 144.15mm and RCP 8.5: 7.10mm — 207.06mm<sup>6</sup> by the year 2050.

<sup>&</sup>lt;sup>3</sup> Climate-Data.org, 2018

<sup>&</sup>lt;sup>4</sup> Riskprofiles.greenbook.co.za

<sup>&</sup>lt;sup>5</sup> Mpumalanga Tourism and Parks Agency

<sup>&</sup>lt;sup>6</sup> Riskprofiles.greenbook.co.za

# 3.4 NATURAL RESOURCES

# 3.4.1 **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 is one of the Highveld towns featured on the list of 15 most polluted towns in South Africa. The poor quality of air is caused by the presence of industrial activities, petrochemical plants (Sasol) and coal fired power plants (Grootvlei) 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, Secunda, Ermelo, Standerton, Balfour, and Komati where exceedances of ambient SO2 and PM10 air quality standards occur.

# 3.4.2 **Water**

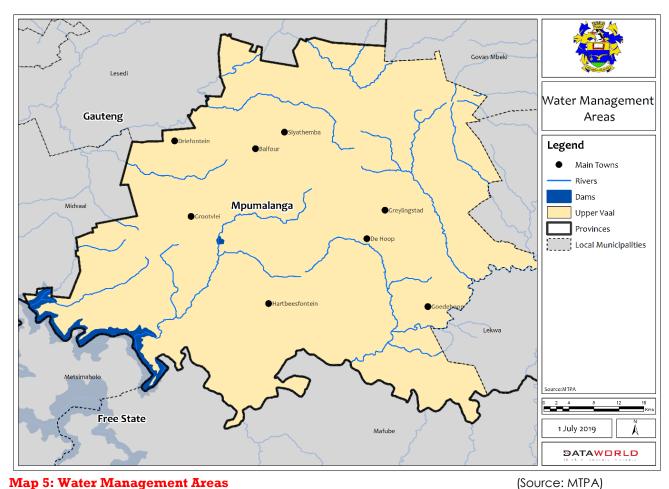
Water is essential for the survival of all living organisms, both a way of direct consumption and maintaining the environment. Water resources available in the municipality consist of surface water and groundwater. The Vaal River along with the Grootvlei dam are the main surface water sources for the 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).

#### 3.4.2.1 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. Approximately 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).

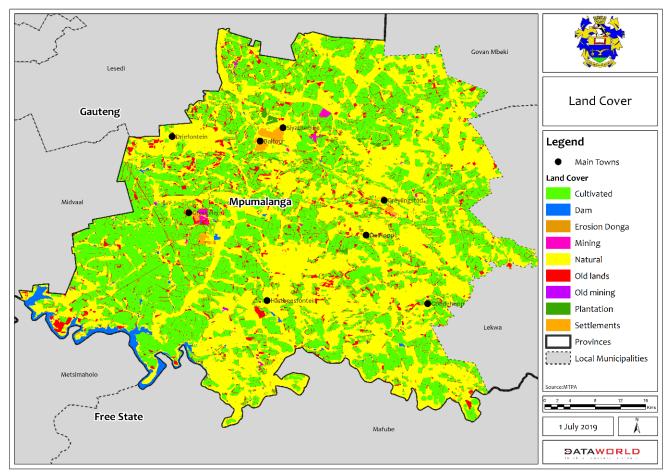


**Map 5: Water Management Areas** 

#### 3.4.3 Land

There has been an outright loss of natural vegetation over 18% of the countries land surface, mostly as a result of the cultivation of crops (such as maize, wheat and sugar cane), but also as a result of mining, forestry plantations and urban development (Driver et al. 2012). In some regions, the percentage is much higher and the rates of loss are alarming.

Dipaleseng covers an area of 2644, 81 km<sup>2</sup>. Majority of the land in Dipaleseng is classified as natural land, which indicates that most of the land in the municipality is still in its natural vegetation state. 43% of the municipalities land is covered by farming related activities. The farming related land covers are dry land cultivation, irrigated cultivation and subsistence cultivation. Natural land (47.32%) is the largest land cover class in the municipality, followed by cultivation (43%), Old lands (6.29%), Dams (1.43%) and settlements (1.05%) (Map 3). Erosion donga (0.01%), old mining (0.06%) and mining (0.26%) have the least coverage of land.



Map 6: Land Cover (Source: MTPA)

# 3.4.4 Natural Resources

# 3.4.4.1 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.

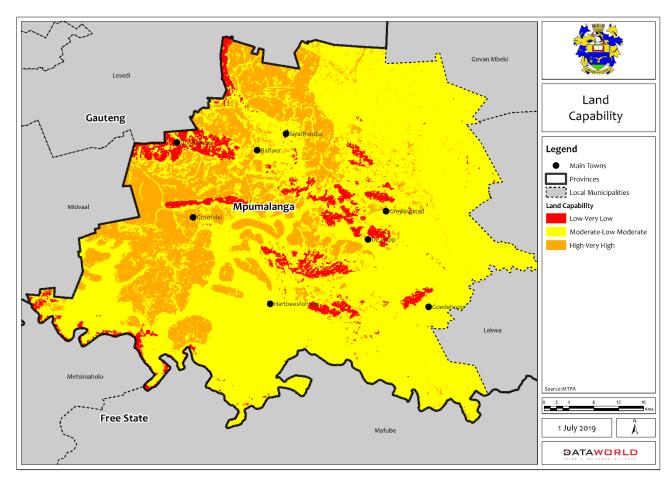
Dry land farming is utilized for agricultural production in the Municipality. Agricultural products produced in Dipaleseng include maize, sunflower, grain, sorghum, wheat, mutton (cattle and sheep) dairy and wool. In total 42.9% of the Dipaleseng's land surface is under cultivation, of which constitutes commercial dry land under grains. Besides the cultivation of crops, Balfour 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.

#### 3.4.4.2 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 7: Land Capability (Source: MTPA)

# 3.5 **BIODIVERSITY AND ECOSYSTEMS**

# 3.5.1 **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.

# 3.5.2 **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.

# 3.5.2.1 Terrestrial ecosystems

Terrestrial ecosystems in Dipaleseng Local Municipality consist of 2 biomes, 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.

#### a. Vulnerability to Climate Change

Climate in the savanna biome is projected to become ~2-4°C hotter and probably somewhat wetter (Engelbrecht et al., 2009; Engelbrecht and Landman 2010). Possibly

the seasonal timing of the rainfall and the types of rainfall events (cyclonic vs thunderstorm) will also change. Threats of high temperatures to large herbivores will be exacerbated by increased temperatures predicted for large parts of southern Africa. Trees play a critical role in providing shade for both wild animals and domestic livestock. The expansion of the savannah biome might offer positive benefits for domestic livestock keepers in hotter areas as long as trees do not encroach to the point of suppressing herbaceous vegetation productivity. Trees will also offer new opportunities for fuel wood and fencing materials for people residing in landscapes that were previously dominated by grasses

Table 1: Savanna: Top climate-related risks by 2050

Table 1. Savailla. Top Cliffiale-Telated HSRS by 205	<b>U</b>
Nature of the risk	Assessment
Extremely high temperatures will make domestic livestock challenging and may lead to a sudden switch to other nature-based ventures	Very likely under RCP 8.5, likely under RCP4.5
More summer rain and rising CO2 will lead to an increase in bush encroachment and expansion of the savannah into grassland and Indian Ocean Coastal Belt biomes	Very likely under RCP 8.5, more evidence required
Rising CO2 will also lead to high risk of alien woody plant invasion particularly in highly degraded rangelands	Likely under RCP 8.5 and RCP4.5

#### 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.

#### a. Vulnerability to Climate Change

The regional climate in the current area of the grassland biome is projected, by end of the 21st century, to be 4-6°C hotter than in the 1960-1990 period. Rainfall projections are less consistent but projected that the western part (the dry and perhaps the mesic grasslands) will be 10-15% drier. The distribution of grasslands is projected to shrink under future climate change. This prediction is confirmed by observations of native trees encroaching, particularly on the eastern and western margins of the grassland biome. The main perceived risks to the grasslands are summarised in Table 1.

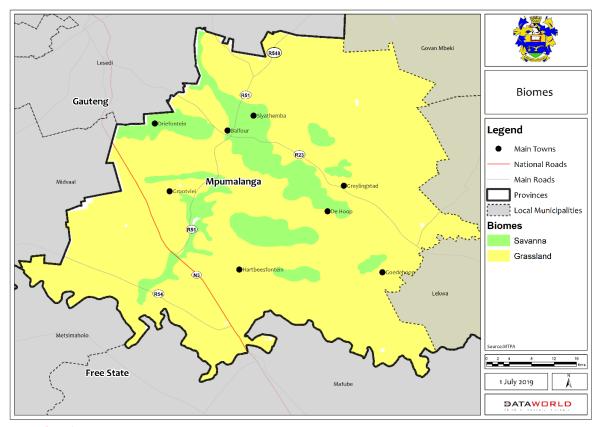
The grassland biome has proven susceptible to invasion by a range of alien species, many of which have been deliberately introduced. As the grasslands become disrupted by climate change, acid deposition, mining, settlements and fragmentation

by transport corridors these risks increase, with negative impacts on grazing, water yield, biodiversity and possibly on nature-based tourism.

Rainfall variability is projected to increase. Crop agriculture is seldom viable below an average annual rainfall of 600 mm. On the dry grassland margins a historic trend of retreat from riskier cropping areas may be continued; on the other hand, in the presence of high food prices or subsidies, farmers may reopen these marginal lands to cropping.

Table 2: Grassland: Top climate-related risks by 2050

Tuble 1: Orabbiana: 10p onniate related fibrib	
Nature of the risk	Assessment
Increased temperature and CO2 will result in invasion of savanna-like condition and major shrinkage of the spatial area of the biome	Very likely under RCP 8.5, likely under RCP4.0
Increased fire intensity and likely mega fires	Very likely under RCP 8.5, likely under RCP4.0
Increased temperature may limit livestock, and in particular dairy	Likely under RCP 8.5, possible under RCP4.0
More intense rainfall especially if coupled with overgrazing will intensify erosion	Likely under RCP 8.5 and RCP4



Map 8: Biomes (Source: MTPA)

#### 3.5.2.2 Freshwater Ecosystems

#### i Rivers and Wetlands

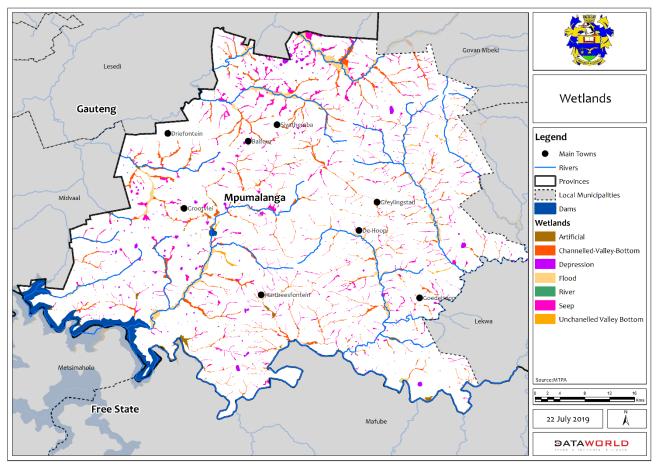
Dipaleseng contains over 2000 wetlands and numerous river systems, which includes five major catchment areas. Wetlands have a high value in ecological infrastructure

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.

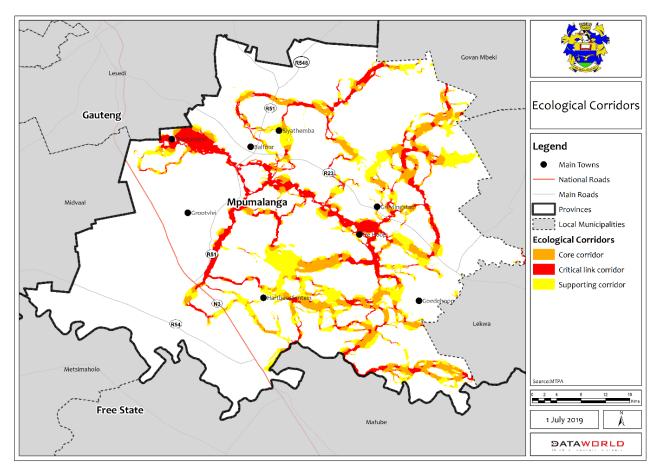


Map 9: Wetlands (Source: MTPA)

#### 3.5.2.3 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. 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:

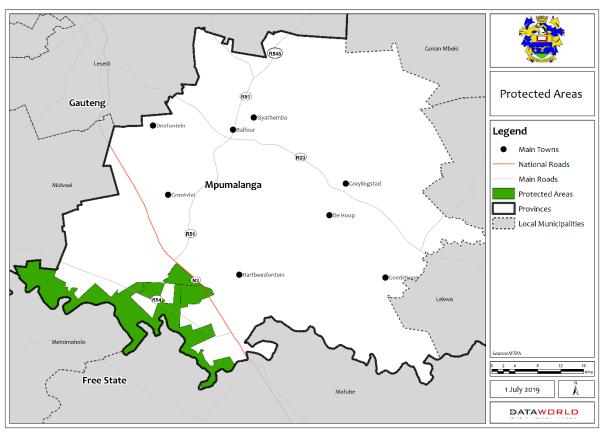
- Core Corridor
- Critical Link Corridor
- Supporting Corridor



Map 10: Ecological Corridors (Source: MTPA)

# 3.6 **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).



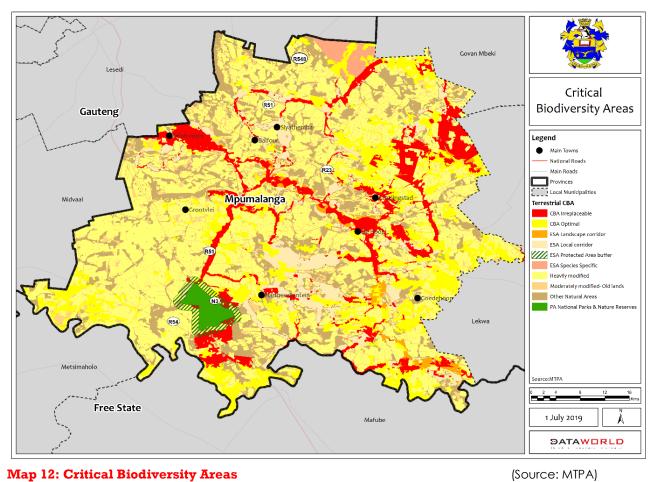
Map 11: Protected Areas (Source: MTPA)

# 3.7 **CRITICAL BIODIVERSITY AREAS**

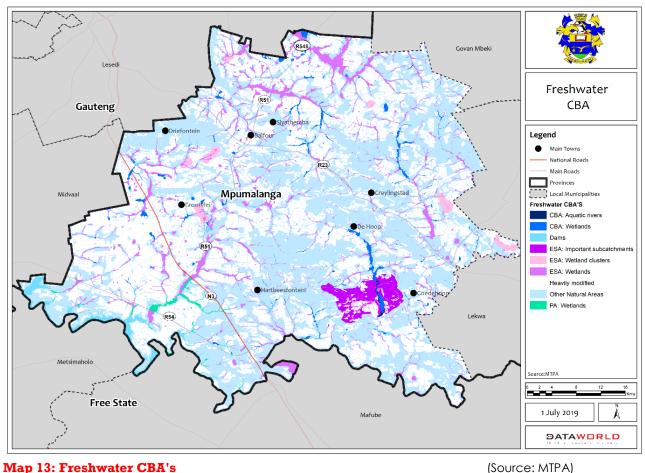
Critical Biodiversity Areas (CBAs) can be defined as terrestrial and aquatic features in the landscape that are critical for conserving biodiversity and maintaining ecosystem functioning (Berliner et al. (2007). In general, CBAs represent areas that should be kept in a natural to near natural state to 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 has 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 12: Critical Biodiversity Areas** 



Map 13: Freshwater CBA's

# **BIOPHYSICAL CHALLENGES AND OPPORTUNITIES**

#### **Table 3: Biophysical Challenges and Opportunities**

#### **Key Opportunities**

- Rich in biodiversity scenic and mountainous areas that can develop the tourism industry
- Municipality is home to a number of wetlands and protected areas with immense tourism potential
- Availability of high potential soil and diverse climatic condition help grow a range of crops
- The Suikerbos dam is an important water source and present significant opportunities for tourism
- Abundance of coal and availability of mineral resources impact positively on the municipal economy
- Support of subsistence farming in rural regions

#### **Key Challenges**

- The protected areas and wetlands are threatened by a number of activities including agriculture, mining, and urbanization
- Climate change poses threat to Dipaleseng natural environment, biodiversity, water availability and agriculture.
- Mining and industrial activities negatively impact on Dipaleseng's environment, natural resources (air, water, and land), human health and biodiversity
- Dipaleseng is predicted to experience water shortage in future. Most of the rivers' health is poor and there is a lack of water sources
- High potential agricultural lands are increasingly being converted into mining, agriculture and other uses.
- Extensive agriculture is polluting water and land at several parts of the municipality
- Mountainous areas is not suitable for new housing development and agricultural production

# 4 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.

# 4.1 **POPULATION DISTRIBUTION**

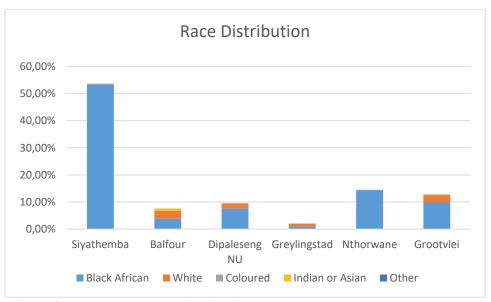
Dipaleseng Local Municipality comprises of 6 wards and covers an area of approximately 2644, 81 km2. Table 1 shows the total population of the Municipality in 2016 as 45 232 people. In contrast, the Municipalities total population in 2011 was recorded as 42 390 people and in 2001 the total population 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.

**Table 4: Population Growth** 

Area		Population	n Growth Rate				
	2001	2011	2016	2001-2011	2011-16		
Dipaleseng LM	38 618	42 390	45 232	0,93	1,47		
Gert Sibande	900 007	1 043 194	1 135 409	1,48	1,92		
DM							
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 4: Population Race Distribution** 

Source: Census 2011, StatsSA

# 4.2 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 5: 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. This 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.

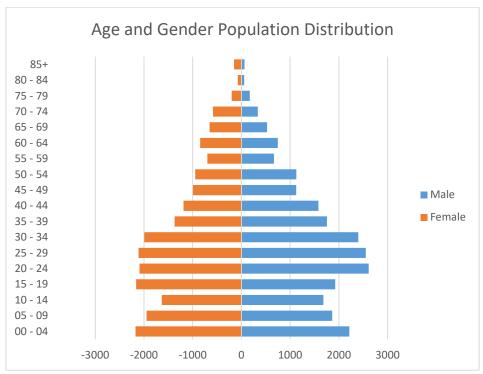


Figure 5: Age and Gender Population Distribution

Source: StatsSA, Community Survey, 2016

# 4.3 **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 6: 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

# 4.4 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.

#### 4.4.1 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 7: 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

# 4.4.2 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 20167.

# 4.5 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.

# 4.5.1 **Employment**

Table 5 indicates the employment figures related to Dipaleseng LM. In 2017, 10 703 people were employed, and 7 111 people were unemployed. The unemployment rate for the municipality increased from 34.8% in 2016 to 36.9% in 2017. In 2017 19 292 people were classified as economically active population. In 2017, Dipaleseng's unemployment rate was the 4<sup>th</sup> highest among all the municipal areas of

<sup>&</sup>lt;sup>7</sup> Quantec Database, 2019

Mpumalanga. In 2017, the unemployment rate for females was 42.4% and that of males 30.2%.8

**Table 8: Employment** 

i date of Employment						
Indicator	2011	2016	2017			
Economically active population (15-64 years)	16 328	18 729	19 292			
Employed	9 585	10 716	10 703			
Unemployed	5 596	6 511	7 111			
Unemployment rate (%)	34.3%	34.8%	36.9%			

Source: IHS Markit, 2019

# 4.5.2 **Poverty**

The lower-bound poverty line (LBPL) currently stands at R785 (in April 2018 prices) per person per month. This refers to the food poverty line plus the average amount derived from non-food items of households whose total expenditure is equal to the food poverty line.

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 (R785) 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 is one of the lowest (favorable) 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 5<sup>th</sup> most equal in the province.

# 4.5.3 **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 and Mpumalanga. The Municipality's Gini coefficient has always been lesser than the province and district figures. Nevertheless, it is still remained constant throughout the years.

Table 9: Gini coefficients based on total income (including social grants)

Area	2010	2011	2012	2013	2014	2015	2016	2017	2018
Dipaleseng LM	0.57	0.56	0.57	0.57	0.58	0.58	0.58	0.59	0.59
Gert Sibande	0.62	0.62	0.62	0.62	0.61	0.61	0.60	0.60	0.60
DM									
Mpumalanga	0.62	0.61	0.62	0.61	0.61	0.61	0.60	0.60	0.60

Source: IHS Markit, 2019

<sup>&</sup>lt;sup>8</sup> Gert Sibande District- Dipaleseng Socio-Economic Profile

<sup>9</sup> IHS Markit, 2019

# 4.6 **SOCIAL AMENITIES**

#### 4.6.1 **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 10: 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

#### 4.6.2 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<sup>10</sup>. 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.

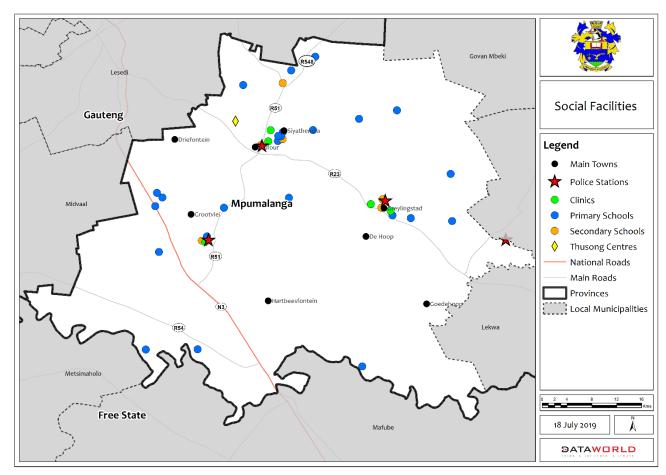
# 4.6.3 Thusong Centres

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.

# 4.6.4 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.

<sup>&</sup>lt;sup>10</sup> Gert Sibande District SDF, 2014



**Map 14: Social Facilities** 

# 4.7 MUNICIPAL ECONOMY

# 4.7.1 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 while GDP denotes economic output from the consumers' side. Simply put, GDP is GVA plus the value of taxes generated, minus subsidies provided by the economy.

In 2018, the GDP of Dipaleseng Local Municipality was R 1 648 million<sup>11</sup> (2010 constant prices) or R 2 892 million when expressed in current prices. The municipality's GDP was R 1 609 million (2010 constant prices) in 2011, indicating that during 2011-18, the GDP of the municipality grew by a mere 0.36% annually. During the same period the annual GDP growth rate for the Gert Sibande District was 1.23% and for the Mpumalanga province was 1.25%.

The municipality's GVA, measured in 2010 constant prices, was R 1 475 million in 2018 and R 1 403 million in 2011. Hence, the municipality's GVA grew by only 0.62% annually between 2011 and 2018. The annual growth rate of GVA during the same period was 1.25% for the district and 1.32% of the province.

<sup>&</sup>lt;sup>11</sup> Global Insight REX, 2019

The figure below compares the Mpumalanga municipalities' contribution to the provincial GVA and population. As can be seen in the figure, in terms of the size of the economy, Dipaleseng is the smallest municipality in the province. The municipality accounts for only 2.59% 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. Dipaleseng's per capita GVA is R 31 709 (2016, in 2010 constant prices) which is higher than the provincial per capita GVA (R 23 138) but lower than the district per capita GVA (R 48 818).

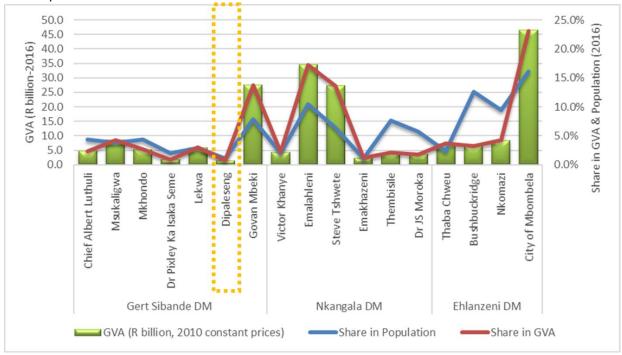


Figure 6: Comparative Contribution of Municipalities to GVA and Population, 2016 Source: IHS Markit & StatsSA

# 4.7.2 **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
  - Electricity (including Gas and Water)- also known as "Utilities"
  - o Construction
- Tertiary Sector
  - Trade
  - Transport
  - Finance

#### Community Services

The Tertiary Sector contributes 56% to the municipal GVA, followed by the Secondary (27%) and Primary Sector (17%). Among the subsectors of the key sectors, Trade (23%), Community Services (17%) are the largest contributors to the GVA. The other key subsectors are Electricity (15%), Agriculture (11%), Finance (9%), and Manufacturing (8%). The figure below shows the contribution of each economic subsector to the total GVA of the Municipality in 2011 and 2018. 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 the district and province, the contribution of this sector has marginally increased, and the Primary Sector's contribution has slightly decreased- a prima facie sign of an evolving economy where service and knowledge-based sectors grow faster than manufacturing and agriculture. However, in Dipaleseng the Tertiary Sector's contribution remained constant at 56% and there is a marginal increase in the Primary Sector's contribution i.e. 15% in 2011 to 17% in 2018. The growth of the Primary Sector is propelled by the Agriculture subsector which grew from R 131 million in 2011 to R 162 million in 2018 (2010 constant prices) in terms of gross value added.

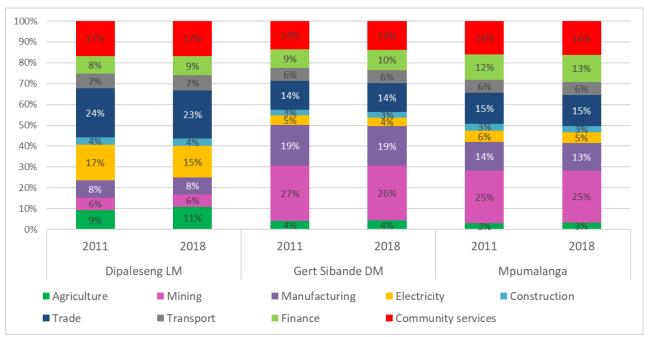


Figure 7: Contribution of Economic Subsectors in Gross Value Addition, 2001 & 2018 Source: IHS Markit, 2019

It must be noted that Dipaleseng does not have an advanced economy propelled by tertiary sector activities such as business, finance, banking, education, research and knowledge-based services. The tertiary sector in the municipality is rather an outcome of the basic tertiary sector services required by the citizens. Thus, the growth of the Tertiary sector depends on the performance of the other two sectors. It can be said until the time the municipality evolves into a knowledge-based advanced economy; the primary and secondary sectors will play major roles in the municipality's economic development. Therefore, the initial focus should on the development of these two sectors.

The following table provides an overview of the employment generated by the economic sectors and subsectors. The key employment generating activities are

Trade (24%), Community Services (20%), and Finance (17%). The activities with the least effect on employment generation are Electricity (1%), Mining (1%) and Transport (4%). Though the Agriculture subsector contribution to the municipal GVA recorded growth between 2011 and 2018, its contribution to employment generation decreased during the same period. A similar decrease in employment generation can be observed for Mining, Trade and Households subsectors. While the subsectors registered growth in contribution to employment generation are manufacturing, Construction, Finance and Community Service.

Table 11: Contribution of Economic Subsectors in Employment Generation, 2011 & 2018

<b>Economic Se</b>	Economic Sectors and Sub-sectors			2018	
		No of employment	Share	No of employment	Share
Primary	Agriculture	913	9.5%	936	8.7%
	Mining	142	1.5%	131	1.2%
Secondary	Manufacturing	652	6.8%	806	7.5%
	Electricity	63	0.7%	80	0.7%
	Construction	641	6.7%	793	7.4%
Tertiary	Trade	2 597	27.1%	2 625	24.4%
	Transport	417	4.3%	467	4.3%
	Finance	1 428	14.9%	1 822	16.9%
	Community services	1 812	18.9%	2 184	20.3%
Households		921	9.6%	909	8.5%
Total		9 585	100%	10 753	100.0%

Source: IHS Markit, 2019

# 4.7.3 Comparative Advantages of Economic Sectors

The comparative advantage of an economic sector enjoys within a municipal economy is measured by location quotient. It is measured as the ratio of the percentage share of a sector in the municipal economy to the share of the same sector in the national economy. A municipality is considered to have a comparative advantage if the location quotient is greater than one. However, location quotient does not consider the hidden or underlaying potential of the economic sectors. The table below provides location quotients of the economic sectors in them. As it can be seen in the table, Dipaleseng has a very high comparative advantage in Electricity (5.57) and Agriculture (4.34) and an average comparative advantage in Trade (1.42) and Construction (1.1). The high comparative advantages of Electricity and Agriculture display the relative importance of these sectors as drivers of the municipal economy.

Table 12: Comparative Advantages of Economic Subsectors, 2018

Sector	Mpumalanga	Ger Sibande DM	Dipaleseng				
Agriculture	1.16	1.50	4.34				
Mining	2.93	3.20	0.70				
Manufacturing	0.99	1.34	0.59				
Electricity	1.99	1.67	5.57				
Construction	0.75	0.64	0.76				
Trade	0.98	0.93	1.42				
Transport	0.68	0.70	0.69				
Finance	0.59	0.44	0.39				
Community services	0.70	0.60	0.67				

Source: IHS Markit, 2019

#### 4.7.4 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 is lesser than that of the district and province. This is a clear sign the Dipaleseng's economy is more diversified than Gert Sibande District's and Mpumalanga's economies.

Table 13: Tress Indices for Dipaleseng, Gert Sibande DM and Mpumalanga

Geography	Tress Index, 2018
Mpumalanga	39.66
Gert Sibande DM	39.65
Dipaleseng LM	35.42

Source: IHS Markit, 2019

# 4.7.5 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, 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 to these places. An opportunity also exists in the development of the utility 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 tertiary 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 as a Dense Rural Settlement by CSIR, is a 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 local residents. Also, Goortvlei dam presents opportunities for tourism development.

A sizeable portion of the municipality's GVA comes from electricity generation. According to a recent media report,<sup>12</sup> ESKOM will shut down the Goortvlei Power Station in 2020. The shutting down of power station will have a strong negative impact not only on the municipality's GVA but also on the employment situation. Please note, though the electricity sector does not generate many direct employments, but it helps generating indirect employments in the tertiary sector. It is, therefore, necessary to find alternative economic sources to compensate for the loss of economic value and jobs caused by the expected closure of the power station.

# 4.8 **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 are 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 attraction:

 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.

<sup>&</sup>lt;sup>12</sup> https://www.fin24.com/Economy/eskom-starts-shutting-down-old-coal-power-plants-20190301-2

- 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

# 4.9 SOCIO ECONOMIC CHALLENGES AND OPPORTUNITIES

#### Table 14: Socio-Economic Challenges and Opportunities

#### **Key Opportunities**

- Rich biodiversity and landscapes pose significant opportunities for eco-tourism and to contribute towards the welfare of surrounding poor rural communities
- Strategically located between industrial hubs, mining areas and urban centers
- Availability of raw agricultural products (crop and animal) throughout the municipality
- Availability of gold, coal and flint clay deposits in the municipality
- The municipality can establish itself as a mineral beneficiation hub as it strategically located within close proximity to industrial hubs and mineralrich areas.
- The presence of historic sites near Greylingstad also offers tourism development opportunities
- Manufacturing and utility sectors can be promoted as the municipality is within close proximity to industrial bases, water, and mineral resources
- Potential SMME development for trade near tourism destinations and urbanized settlements
- Development of the tertiary sector in the urban settlements

#### **Key Challenges**

- low skills base and high unemployment rates
- The lack or very limited tourism opportunities therefore result in low economic growth for the municipality
- Poor economic base
- Lack of economic diversification
- Lack of beneficiation facilities
- Poor infrastructure to transport mineral products
- Lack of proper tourism infrastructure and marketing
- Proper industrial infrastructure is lacking
- ESKOM has a plan to shutdown Grootvlei power station in 2020. The closure will hurt the municipality's economic prospects.
- Lack of skilled human resources
- The success of the tertiary sector depends on the success of the tourism, primary and secondary sectors, which will increase the population base and disposable income of people. The increased population and income levels in turn fuel the growth of trade and tertiary sector activities
- Economic competition from surrounding areas
- Population growth exceeding expected and current economic growth
- Increasing population numbers are putting pressure on available municipal recourses and service delivery i.e. basic services.

# 5 BUILT ENVIRONMENT THEME ANALYSIS

# 5.1 SPATIAL STURCTURE AND SETTLEMENTS PATTERNS

# 5.1.1 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 settlement 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 therefore 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 a 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.

#### 5.1.2 **Settlement Patterns**

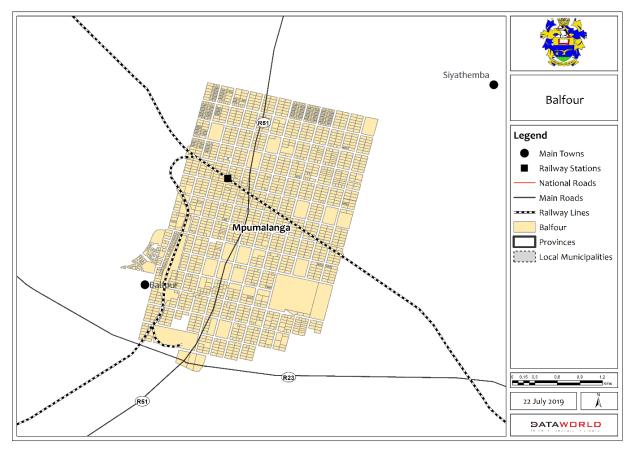
#### 5.1.2.1 Settlement Analysis

#### i Balfour and Siyathemba

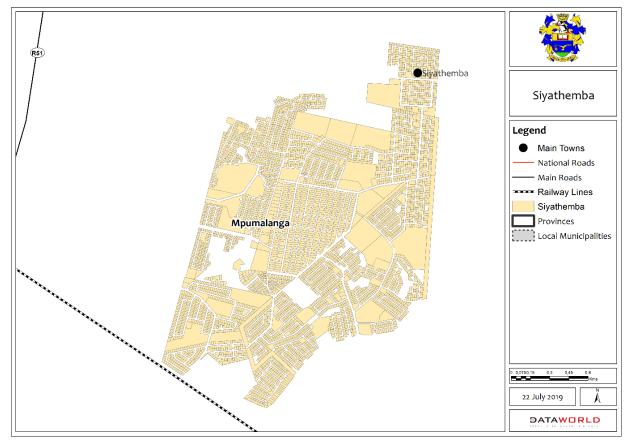
Balfour is located in the north-western part of Dipaleseng Local Municipality. It is predominantly an industrial town located approximately 80km from Johannesburg and 340km from Nelspruit. The 2017/18 IDP states that apart from the internationally known abattoirs, the "Biggest abattoir in Africa" is 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 under 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 15: Balfour

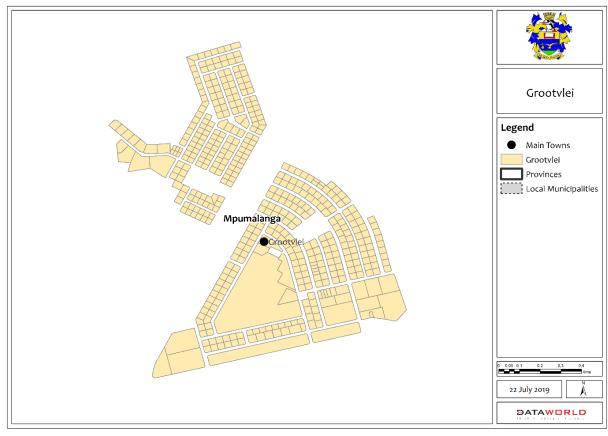


Map 16: Siyathemba

#### 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.

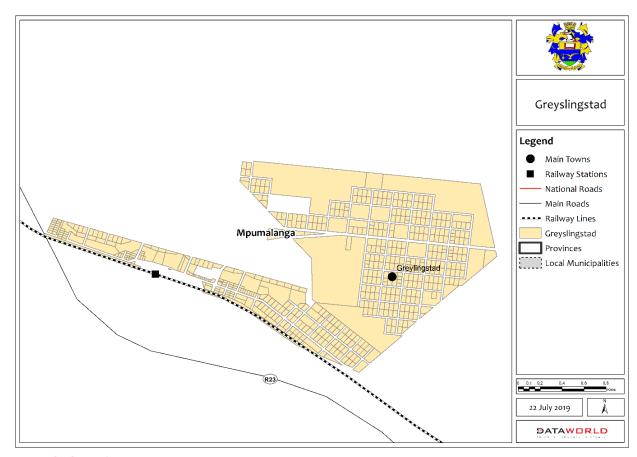
The township of Dasville is located south west of Grootvlei and comprises of both formal and informal settlements. The southern section of the township is formalised and features fully serviced infrastructure. In addition, there is also a neglected golf course. The northern section of Dasville is characterised 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 17: 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 18: Greylingstad

#### 5.1.2.2 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

It was 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.

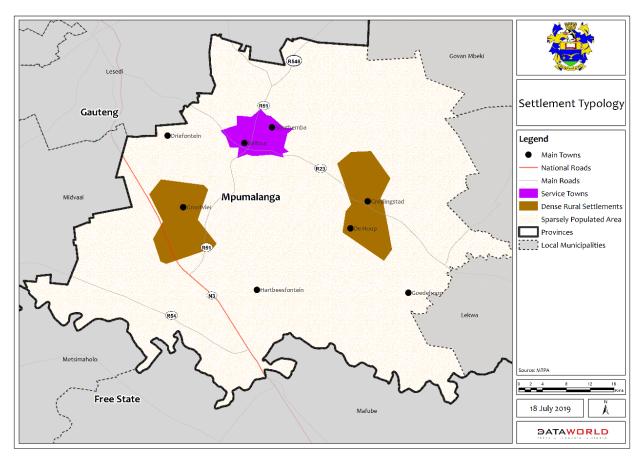
#### 5.1.2.3 Urban-rural spatial relationship

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.

#### 5.1.3 **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

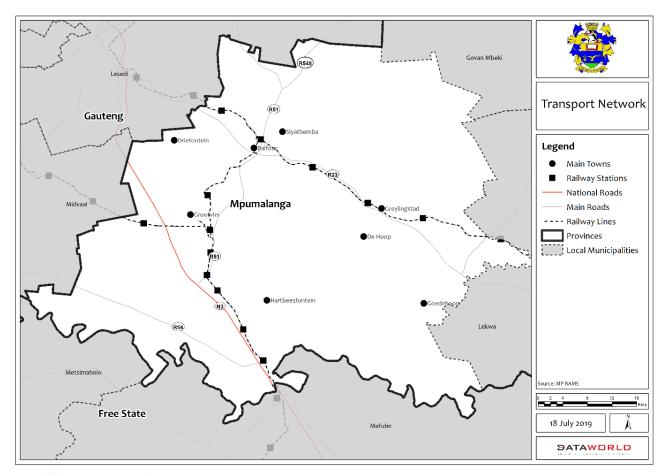


**Map 19: Settlement Typology** 

#### 5.2 TRANSPORT MOVEMENT SERVICES

#### 5.2.1 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 20: 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.

#### 5.2.2 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 through 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.

Within the municipality and the district, there is no significant airport, except for minor airstrips. The different movement linkages within the municipality are indicated below

**Table 15: 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 –	38.1	R23 and R51	29 min
Greylingstad	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 16: Total time travelled to place of work main mode

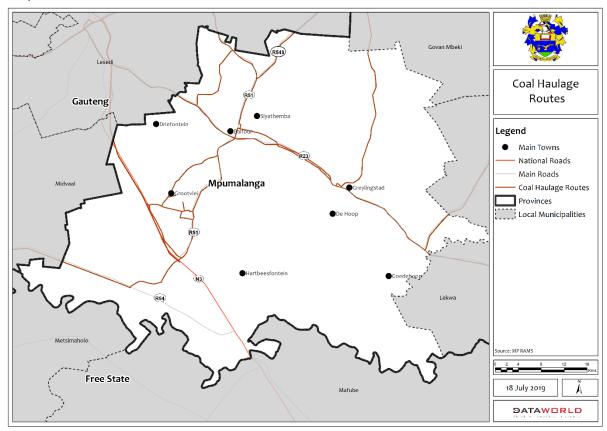
Mode	Count
Walk all the way	
Mean (minutes)	43
1-30	57.9%
31-60	29.5%
61+	12.5%
Car driver	
Mean (minutes)	34
1-30	70.6%
31-60	14.4%
61+	15.0%
Car passenger	
Mean (minutes)	54
1-30	45.7%
31-60	34.0%
61+	20.4%
By minibus/taxi	
Mean (minutes)	38
1-30	62.6%
31-60	27.5%
61+	9.9%
By bus	
Mean (minutes)	47
1-30	53.5%
31-60	17.7%
61+	28.8%

Bus and minibus taxi transport are the two primary systems that anchor the municipality's public transport. Access to these systems is however a real challenge due to the low densities within the municipality, especially in the rural communities. This challenge inadvertently perpetuates the entrapment of these communities in poverty, and also limits their access to existing facilities and economic opportunities of the municipality.

#### 5.2.3 Road Freight

The Gauteng to Durban N3 and the R23 routes are categorised as road freight corridor. These 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 that carry most of the heavy traffic as indicated in Map 17.



Map 21: Coal haulage routes

It should however be noted that the haulage trucks passing through the municipality have severely affected the condition of the municipality's roads. The IDP states that while efforts have been made to upgrade the road infrastructure of the municipality thorugh the Municipal Infrastructure Grant, it has however not yielded significant results due to haulage trucks which are causing major damage.

#### 5.2.4 Rail Network

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. With regards to freight, the Johannesburg–Richards Bay freight rail line passes through Balfour, and Greylingstad, and there are stations in all these towns. This rail infrastructure is owned and operated by Transnet Freight Rail. There is also a line that passes through Grootvlei from Balfour, which serves the Free State south of the municipality.

#### 5.3 **HUMAN SETTLEMENTS**

#### 5.3.1 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 an 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<sup>13:</sup>

- 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 17: Informal Settlements** 

Name of the informal	Estimated number of	Type of Settlement
settlements	households	
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

#### 5.3.2 **Housing**

#### 5.3.2.1 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 18: 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%

<sup>&</sup>lt;sup>13</sup> Mpumalanga Informal Settlement Database, 2018

Tree difference of the oral development of			
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%
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%

#### 5.3.2.2 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 19: Housing Demand**

Source: Department of Human Settlement Housing Needs Register, 2018

#### 5.4 **INFRASTRUCTURE**

#### 5.4.1 **Water**

#### 5.4.1.1 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 20: 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

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	2714
Steve Tshwete Local Municipality	1 176	2112	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
Mpumalanga	31 069	23 015	790	194 342	1 633	250 849

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

#### 5.4.1.2 Dipaleseng Blue Drop Compliance

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.

The 2014 water demand for Dipaleseng was recorded to be 16.8 MI/day which included the requirements of the wet industries. Due to the increase in population over the years it can be deduced that the current infrastructure is unable to meet demands.

The municipality's water demand of 16.8 ML/day is currently supplied by 6.5 ML/day Fortuna Water treatment works (WTW). The municipal IDP therefore projects that the water demand by the year 2034 will be approximately 19.5 ML/day. Which indicates that the future demands are far greater than what Fortuna WTW can treat, and supply and it is therefore necessary for the upgrade its infrastructure in order to augment the water supply to the Fortuna WTP and possibly meet future water demands. In regard to the municipalities Blue Drop score, the DWS recorded Dipaleseng Local Municipalities score at 10%, making it the second lowest score in the province.

#### 5.4.2 Wastewater and Sanitation

#### 5.4.2.1 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 21: 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%

#### 5.4.2.2 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.<sup>14</sup>

#### 5.4.3 Energy and Electricity

Power stations are normally powered by coal, there are some impacts that are caused by the burning of coal. It produces pollutants being emitted into the atmosphere. These pollutants can cause serious issues for the communities living close to the Grootvlei power station, like poor air quality and health problems. Some of the rural areas are still using traditional methods for energy like burning of candles. Electricity (83,1%) has the highest percentage of energy in the municipality, this shows that most of the communities has electricity (Eskom 2019).

The Grootvlei eskom power station aims to contribute to the livelihood of the local communities like funding of schools and churches. There are donating computers to schools, donatation of park homes to business communities and construction of a centre in Nthorwane. They are helping to uplift the communities in the area.

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 22: 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%

<sup>&</sup>lt;sup>14</sup> COGTA state of basic service delivery for municipalities, 2018

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%

#### 5.4.4 **Waste Management**

Mpumalanga generates 9.1% of the general waste produced in South Africa. The province is also the largest producer of hazardous waste in South Africa and it is suspected that very little of its hazardous waste is disposed off appropriately<sup>15</sup>. All municipalities in the province were mandated to develop Integrated Waste Management Plans (IWMP). Dipaleseng's IWMP is not fully implemented due to lack of pre-requisite resources required to implement the plan. However, refuse removal in the municipality has improved. Of the 12637 households in Dipaleseng, 81.8% have access to refuse removal services with only a backlog of 5.5%. Majority of the waste generated in the municipality is a result of the concentration of mining and agricultural activities. It is also suspected that very little of the hazardous waste is disposed of appropriately.

The municipality has three landfill sites in Greylingstad, Balfour and Grootvlei. All three sites are licenced but not all sites are compliant with Waste Licence conditions. There is no proper access control to the sites and both the Grootvlei & Greylingstad sites are not fenced. There is no signage on the route to the landfill sites. In Balfour there is a Weigh Bridge present but not yet operational. All three landfill sites are also experiencing operational difficulties. The collection of waste and refuse in the Municipality poses a great challenge which might lead to community protest and litigation as a result of unhealthy environment. Illegal dumping sites are mushrooming everyday due to inconsistence in the collection of waste as a result of insufficient resources16.

#### 5.5 BUILT ENVIROMENT CHALLENGES AND **OPPORTUNITIES**

#### **Table 23: Built Environment Challenges and Opportunities Key Opportunities Key Challenges** Urban regeneration in and The Municipality is faced with a challenge of around the Balfour CBD; ageing infrastructure which impacts local Use of strategically located economic development and tourism vacant land parcels as a development catalyst for densification, Fragmented spatial configuration between integration and mixed land use rural and urban areas which is characterised orientated development; mostly by dispersed settlements, resulting in Maximisation of development unbalanced services and infrastructure impact from surrounding development between these areas.

<sup>&</sup>lt;sup>15</sup> DARDLEA Provincial Environmental Implementation Plan, 2016

<sup>&</sup>lt;sup>16</sup> Dipaleseng IDP, 2019-2020

- municipalities such as Lesedi, Midvaal, Lekwa, Metsimaholo and Mafube;
- The main corridors passing through the municipality not only present important spatial structuring elements, they also facilitate enhanced accessibility and mobility to the wider regional context.
- Investments in the transport and communications network will have spinoffs on local economic development in the region supporting the main and large concentrations of people as well as the smaller dispersed communities.
- A considerable amount of well-located land belongs to the state, which present opportunities for spatial restructuring
- Rural housing programmes which are to be clustered around FPSU can provide easy access to services.
- Development of new settlements in the high growth greas
- Well located social services

- Water, sanitation and electricity service delivery backlogs in the former black townships such as Siyathemba, Nthorwane and Grootvlei Extension1;
- Deteriorating road infrastructure and buildings in the Balfour CBD;
- Potential mushrooming of informal settlements (migrational patterns) around areas of economic opportunity and on high potential agricultural land as a result of poor accessibility (transport movement linkages) in mostly low density and poor residential communities.
- There is a lack of efficient public transport system. And there is no commuter rail network in the municipality
- Congested coal haulage roads and increasing travel time
- Increasing backlogs of basic services.
- Low water capacity that won't meet future demands.
- Inconsistency in the collection of waste and refuse removal which poses major threats to the health of communities
- The rural settlements are dispersed and highly fragmented as a result these settlements have limited access to economic opportunities and municipal services
- Competing land uses i.e. mining, agriculture and human settlements expansion

# 6 DRAFT SPATIAL VISION AND DEVELOPMENT OBJECTIVES

#### 6.1 **DEVELOPMENT OBJECTIVES**

SPLUMA requires municipalities to prepare SDFs that will establish a clear vision which must be developed, through a thorough inventory and analysis based on national and provincial spatial planning principles and local long-term development goals and plans. The Dipaleseng SDF aims to give spatial expression to the vision encapsulated in the PSDF, Municipal IDP – and other relevant local policies. As such both have a long term planning horizons in terms of overall vision and strategies to achieve them. Dipaleseng SDF provides the framework for the municipal spatial vision.

#### 6.1.1 Spatial Goals

To address the identified spatial challenges and give effect to the relevant policies, the Dipaleseng SDF should focus on development towards:

- Explore and maximize its inherent economic opportunities;
- Protection and utilization of resources such as the rich agricultural land and diverse natural environment;
- Development of sustainable settlements where residents can lead enriched, healthy and convenient lives; and
- Improved effectiveness in governance.

#### 6.2 **SPATIAL VISION**

The following Spatial Vision was formulated and adopted for Dipaleseng Local Municipality:

"Providing quality affordable services, good governance, rural development and sustainable economic opportunities, while protecting the natural environment"

#### 6.3 SPATIAL OBJECTIVES

Working towards the development of spatial proposals and the drafting of the SDF six spatial objectives were formulated with subsequent development principles to structure the proposals. The following objectives were identified:

**Strategic Objective 1:** Movement and Transportation Corridors

Strategic Objective 2: Sustainable Economic Development and Concentration

**Strategic Objective 3:** Environmental Conservation and Utilisation

Strategic Objective 4: Sustainable Human Settlement Development

**Strategic Objective 5:** Infrastructure Investment

**Strategic Objective 6:** Rural Development and Transformation

# 7 SPATIAL DEVELOPMENT CONCEPT AND OBEJECTIVES

# 7.1 SPATIAL DEVELOPMENT CONCEPT FOR DIPALESENG

The Strategic Development Concept identifies how the spatial form of Dipaleseng Municipality should be formed, based on the identified spatial objectives and development principles. The Spatial Development Concept is structured around the following structural elements, which are interrelated:

- Nodes and Activity Areas
- Movement and Connectivity
- Environmental Structuring Elements

The aim of the concept is to reconstruct and integrate the urban and rural landscape of Dipaleseng into a more rational, compacted and manageable structure. Dipaleseng is one of the municipalities in Gert Sibande which are lagging in development in comparison to other municipalities. Widespread poverty is one of the major challenges facing the municipality making it difficult for the municipality to achieve its vision of providing quality services, rural transformation and sustainable economic development. However, due to its location in close proximity to major economic hubs, the municipality has the potential to achieve its vision. The municipality has the R23, R51 and N3 and various railway network as the major structuring elements that can be utilised to restructure the spatial pattern in a manner that creates liveable environments and sustainable employment opportunities.

#### **Nodes and Activity Areas**

Nodes are activity areas that have been identified within Dipaleseng for focused economic, infrastructural and social development, with a view to rationalizing resources and concentrating public and private investment is appropriate locations.

The benefits of concentrated activities at identified locations in the municipality is to act as a structuring mechanism in support of a viable public transport system, the concentration and intensification of various activities (diversity) at appropriate locations that are highly accessible, creating economic opportunities, and the management of these areas to address spatial equity, sprawl and the management of development pressure. Residential densification and infill developments in and around nodal areas are one of the strategies to ensure the viability of these areas and ensure a consolidated, compact development system.

#### **Movement and Connectivity**

Movement and connectivity within Dipaleseng LM are influenced by the need for well-connected spatial structure based on the nodal development approach which is supported by public transport and corridors. An efficient spatial form will address matters of spatial restructuring and socio-economic inequality. The need for mobility is an essential element in promoting access to economic and social opportunities within the municipal area.

Movement in Dipaleseng is characterised by insufficient public transportation, corridors (R23, R51 and N3) and various railway network. Movement is dominated by regional connections. The concept of movement and connectivity is intended to ultimately define movement between nodal areas whilst promoting public transport connections and systems between them. This is also to enhance mobility as a fundamental move towards access to social services and economic opportunities.

These roads also form a backbone of the corridors that link the municipality with adjoining local municipalities. The municipality has not yet capitalised on the economic development opportunities offered by these roads.

The municipality should look at providing a better business-enabling environment to promote investments in agriculture, agro-processing, mining and related activities. Furthermore, the development orientation of the Municipality needs to be more closely aligned with the development corridors identified in the Gert Sibande District SDF. Possibly, more direction and strategic planning needs to take place with other municipalities and the District to better enhance the municipality's position in order to take advantage of the economic opportunities.

This concept seeks to identify the key roles of existing movement connections and how they influence movement within the municipality and its surroundings. Through this, areas with good connectivity and those without can be identified for the necessary interventions.

#### **Environmental Structuring**

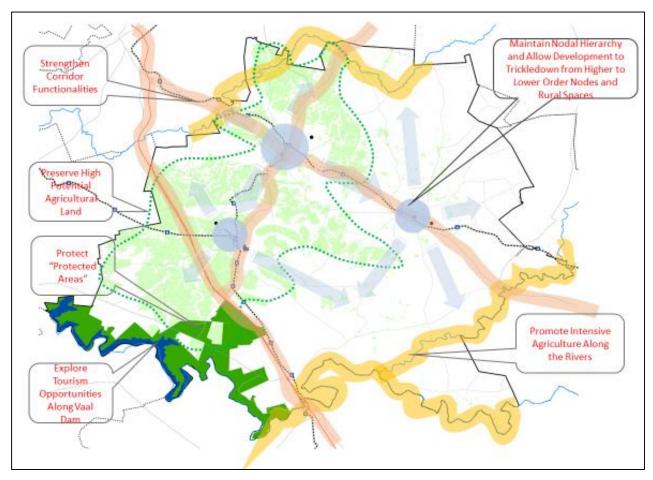
This Concept is built around creating linkages between the different spatial elements of the municipality which include the built form, natural environment and cultural heritage. Dipaleseng Local Municipality generally lies within an area of environmental significant areas, high agricultural potential land and mining activities. The environmental significant areas include major river channels and catchments, steep slopes, natural habitats and indigenous vegetation. The goal of this plan is to direct and manage the use of the built and natural environment to ensure sustainable and integrated growth and development of Dipaleseng Local Municipality.

One of the key challenges currently confronting most development initiatives is the ability to utilise natural resources in a manner that is not detrimental for future generations. This approach acknowledges the need to engage with natural resources but at the same time discouraging uses that have a negative impact on the environment.

Elements which make up the environmental structuring concept include high potential agricultural land, river systems (and catchments areas), unprotected biodiversity and ecological zones. Such areas would require different levels of protection and optimal utilization as part of the creation of an integrated open space system. The Dipaleseng SDF, therefore, seeks to adequately conserve and manage environmental elements which support the proper functioning of the Municipal biodiversity and eco-systems, and contribute to climate change mitigation and adaptation.

The proposed Dipaleseng development concept feeds right into the overarching polycentric development concept that the Mpumalanga PSDF and NSDF has adopted. The frameworks envision a system of strong and functioning polycentric network of nodes

and their hinterlands connected by corridors. The identified structuring elements, therefore, bring it in to effect at a more localized level.



**Map 22: Spatial Development Concept for Dipaleseng** 

# 7.2 SPATIAL DEVELOPMENT OBJECTIVES AND STRATEGIES

#### 7.2.1 Movement and Transportation Corridors

Corridor development denotes the intensification of land uses along route sections, comprising a mix of uses that typically benefit from visual exposure to regional traffic. The most prominent movement network feature in the Dipaleseng LM is the R23 and the N3 corridor which traverses the municipal area from east to west, linking Gauteng Province and Durban/eThekwini in KwaZulu-Natal and furthermore linking prominent towns and settlements such as Balfour, Standerton and Volksrust to one another. In addition to the R23 the other major strategic routes through Dipaleseng is the R51 corridor which links Balfour to Heidelberg and Nigel in Lesedi Local Municipality. Corridor development is supported along the R23, R51, R54 and the N3 to optimise the development potential of especially the sections within and close to Dipaleseng Local Municipality.

## Spatial Development Strategy 1: Ensure connectivity between settlements, as well as nodes and connectivity within settlements

Enabling the mobility of people and goods between different service areas is central to socio-economic development. Without adequate transport systems, which play a fundamental role in facilitating this mobility, the quality of life within communities is drastically reduced and the challenges associated with marginalisation are exacerbated. In Dipaleseng, buses and minibus taxis are the two primary transport systems that anchor the municipality's public transport. Access to these systems is however a real challenge due to the low densities within the municipality, especially in the rural communities. Promoting local access to foster public transport, non-motorised transport (pedestrian/cyclist) and private transport is therefore crucial.

- Strengthen and integrate existing public transport networks, services and modes between Balfour, Siyathemba, Grootvlei, Greylingstad and Nthorwane to facilitate the optimal and efficient movement of passengers from origin to destination points in the shortest time possible.
- Facilitate and promote public transport links between Grootvlei, Greylingstad, and outlying farming and rural areas and the main economic nodes of the Municipality such as Balfour.
- The provision of integrated modal interchanges supported by infrastructure which includes taxi-bus ranks, amenities, footpaths and security facilities in all Activity Nodes of the municipality.

# Spatial Development Strategy 2: Ensure and maintain a high standard in terms of accessibility to the wider regional context and accommodate freight, private vehicles, mini-bus taxis and buses

Dipaleseng is affected by the R23 Corridor which represents the old route between the Gauteng Province and Durban/eThekwini in KwaZulu-Natal, linking prominent towns and settlements such as Balfour, Standerton and Volksrust to one another. This corridor including the others forms the base of a strategic road network for the municipality and District at large and should therefore be maintained as a top priority. Other Provincial

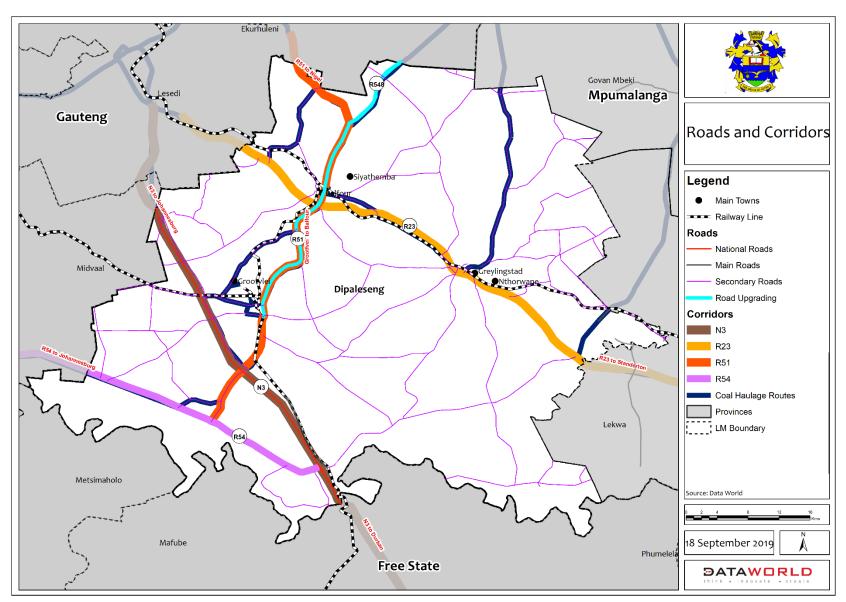
roads (R54 and R51) and the National road (N3) cross through the Municipality. This creates high potential for nodal development and tourism development as these roads are linking Dipaleseng with Kwa-Zulu Natal (via the N3), Free State (via the R54) and Gauteng (via N3 and R23) and the Eastern part of Mpumalanga Province (via the R23).

 Thorough maintenance and upgrading of the national and provincial road network to ensure that roads can continue to handle the loads and frequency of vehicles and other heavy traffic on these routes. The upgrade of aging roads also provides an opportunity to invest in resilient infrastructure.

#### Spatial Development Strategy 3: Decongestion of coal haulage roads

The Mpumalanga Provincial SDF (2019) proposes the following strategic approach to decongest coal haulage routes within the Gert Sibande District. Gert Sibande has concentrated mining areas with coal haul roads. There is a flow of heavy vehicles on these roads leading to congestion of these roads. Therefore the PSDF emphasises the need to upgrade the identified coal haulage roads and initiate an alternative transportation mode in order to aid with the decongestion of these routes. Reviving rail freight network for coal haulage is one crucial element that the PSDF proposes as a means to assist in the decongestion of these coal haul roads.

- Definition of a Coal Network Grid for Dipaleseng LM, which will be ring-fenced and coal movements to be restricted to this network. Any movement of coal outside of this network should be penalised;
- Stepping up of overload control through the introduction of a dedicated overload control enforcement capacity; and
- Increased investment in rail infrastructure to minimise the impact of coal freight on the road.
- Road upgrading and maintenance is proposed, to cater for coal haulage:
  - o Priority 1 R23 from Balfour to Volkrust
  - o Priority 2 R51/R548 from Balfour to Devon and N17
  - o Priority 3 R51 from Grootvlei to Balfour



**Map 23: Movement Corridors and Transportation Networks** 

#### 7.2.2 Sustainable Economic Development and Concentration

In Dipaleseng, the tertiary sector contributes 56% to the municipal GVA, the secondary sector 27% and primary sector 17%. Though the tertiary sector is the largest economic sector, the municipality's economy is largely dependent on the primary and secondary sectors. The reason behind this is that Dipaleseng does not have an advanced economy propelled by tertiary sector activities such as business, finance, banking, education, research and knowledge-based services. Rather, the tertiary sector is an outcome of the basic tertiary sector services required by the citizens engaged in primary and secondary sectors. Therefore, until the time the municipality evolves into a knowledge-based advanced economy; the primary and secondary sectors will play major roles in the municipality's economic development. Therefore, the initial focus should be on the development of the primary and secondary sectors while taking the necessary steps to transform the municipality's economy to an advanced and knowledge-based one. The following strategies are being proposed to realise the objective of sustainable economic development in the municipality.

#### Spatial Development Strategy 1: Strengthen Economic Bases of the Existing Urban Centres

Dipaleseng is primarily a rural municipality with large extents of farming land dotted with small settlements and three urban centres-Balfour (including Siyathemba), Grootvlei and Greylingstad (including Nthorwane). The municipality's economic activities (other than farming and mining) are concentrated in these three urban centres. These three urban centres house more than 80% of the municipality's population. Therefore, it is important for these urban centres to have sound economic bases. The strategy to strengthen the economic bases is spatial targeting, i.e. taking advantage of the available resources and economic opportunities and target the sectors with high growth potential. It is proposed to focus on the following sectors in the identified urban centres:

- Balfour: Agriculture (Beneficiation), Mining (Beneficiation), Construction, Transport,
   Small Scale Manufacturing
- Grootvlei: Utilities (Power Generation), Tourism, Retail, Agriculture (Beneficiation), Mining (Beneficiation),
- Greylingstad: Tourism, Retail, Agriculture (Beneficiation)

It is pertinent to mention that the Dipaleseng Local Economic Development Strategy has identified some economic development projects based on the underlying economic potential of the towns. The successful implementation of the LED projects will help increase the municipality's economic condition substantially. The following are the LED proposed projects that should be considered for implementation:

 Balfour: Dipaleseng Development Agency, Soybean Crusher Plant, Cattle Feedlot, Organic Compost Production Plant, Food Production Plant, Truck Body Manufacturing Plant, Serviced Industrial Park, Waste Management Centre, Retail Shopping Centre

There is a proposal for the closure of the Grootvlei power station. The closure will result in job losses and subsequent economic downturn of the town. To avoid any untoward socio-economic situation, the municipality should focus on creating jobs from other sectors. To create jobs in the town and municipality, the Agriculture and Tourism sectors should be encouraged to grow as these sectors have potential to create jobs.

#### Spatial Development Strategy 2: Economic Infrastructure Restructuring

#### **Agriculture Development**

The Dipaleseng LED acknowledges the role of agriculture in alleviating poverty and advocates for increasing agriculture productivity to uplift rural communities' economic condition. The municipality produces maize, sunflower, grain, sorghum, wheat, and livestock. Though agriculture occupies a distinct position in the municipality's economy, this sector can contribute more to enhance the municipality's overall economic health. To enhance this sector's economic potentials, the focus should be placed on processing and beneficiation of agriculture products and promotion of extensive commercial farming activities. Though the municipality has extensive commercial farming areas; agriculture output can still be increased by providing irrigation facilities and providing necessary training and support to emerging farmers. Possibilities of providing intensive irrigation facilities exists along the Vaal and Waterval river banks. These areas should be utilised for intensive farming.

At present, Karan Beef is the only large-scale beneficiation facility located in the municipality (in Balfour). More beneficiation facilities focusing on the processing of maize, soybean, sunflower and meat products will be required to add the value of agriculture products and generate employment opportunities. In addition to the benefaction facilities, necessary logistics, storage and transport infrastructure and soft capital (human and financial resources) need to be developed. Creating downstream linkages with the agriculture production areas and farms and upstream linkages with the market is also crucial for enhancing agriculture sector's economic performance.

To enhance the agriculture sector's output, the Rural Development Plan (RDP) for Gert Sibande District proposes initiatives including focusing on maize and cattle farming and developing Farmer Production Support Units (FPSU) in Balfour, Grootvlei and Greylingstad. These FPSUs will provide the necessary infrastructure for beneficiation activities. It is, therefore, recommended to take the necessary steps to implement the RDP proposals.

#### **Tourism Development**

The tourism sector is not considered an important economic sector for the municipality, perhaps due to the fact the economic potential of this sector is not exploited. Therefore, the strategy is aimed at identifying the underlying tourism potential and creating the necessary infrastructure and plans to attract tourists and generate employment and revenue for the municipality.

The Vaal River dam and Grootvlei dam offer opportunities for marina development, water sports, adventure sports and leisure accommodation development. These dams host many bird species, thereby offering the opportunity to develop eco-tourism facilities. In addition to these dams, Greylingstad can be promoted as a tourist attraction point due to the town's historical importance. This town hosts Anglo Boer War Battlefields and the historic graves of the Scottish regime. The town has a unique church that was built in the 1800s.

To exploit the municipality's tourism potential, the following steps are being proposed:

- Package tourism products: Develop a diverse range of special interest tourism products and routes such as water sports, birding, fishing, history, jock, leisure, adventure, and rural tourism.
- Develop tourist infrastructure: Develop tourist infrastructure such as lodging and boarding facilities and tourist information centres in the main tourism areas (Vaal dam, Grootvlei dam and Greylingstad). Also, develop road infrastructure connecting these places with the surrounding regions
- Involve local communities: encourage the participation of local communities in the tourism industry. Their involvement will ensure the generation of local employment and adding value to the local economy. However, the communities must be trained in the operation and running of tourist facilities.

#### **Provide Investment Incentive**

The realisation of economic development requires more than mere earmarking of land for industrial or commercial development. The development objectives need to be supported by a robust development support framework. The framework requires the municipality to adopt a pro-economic development policy and consider providing incentives to investors who are willing to invest in the municipality. It may be pertinent to mention that both the Draft Mpumalanga PSDF 2019 and the Dipaleseng Local Economic Development Strategy 2012 advocate for providing incentives for investment. The incentives can be of the following nature:

- Development of infrastructure (road, water supply, power supply etc.)
- Tax incentive
- Regulatory and Approval
- Financial incentives

The Department of Trade and Investment (DTI) provides incentives to investors under various schemes. The municipality must consider collaborating with the DTI to solicit investment to the municipality. Incentives can be targeted for the development of any of the proposed projects contained in the LED or any housing projects that promote or include some inclusionary housing for low income households.

#### **Township Economy Development**

Siyathemba and Nthorwane are the two major townships in the municipality. Although these two townships contribute a significant portion to the municipality's urban population, they have poor economic bases and high levels of poverty and unemployment. The lack of economic opportunities within these townships results in a lower level of economic output, impacting the overall economic health of the municipality. Therefore, it is important to strengthen the economic bases of these townships. The Mpumalanga PSDF (2019) also recognises the importance of township economies in achieving an inclusive economy.

A multipronged approach would be required to enhance the economic bases of the townships. The approach should include the following initiatives;

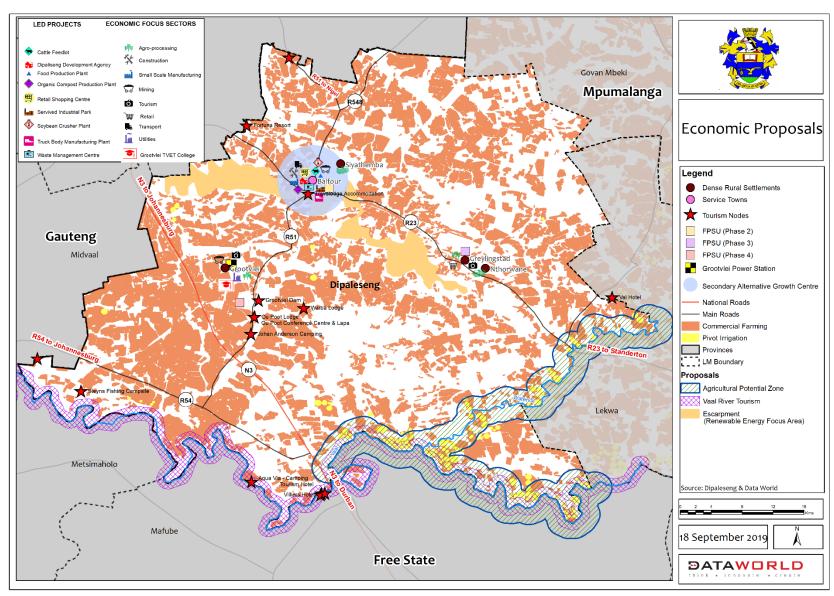
 Discourage the development of large malls in and around townships. Instead, focus on developing small retail centres and shops that can be run by local people.

- Relax development restrictions and encourage small scale non-polluting industrial activities and services (such as furniture making and appliance repair centres) in the townships.
- Build capacity of township residents and provide vocational training.
- Increase government procurement from township enterprises
- Create market access for products and services originated in the townships.
- Provide necessary resources and infrastructure to township entrepreneurs

#### **Skills Development and Capacity Building**

The realisation of the above stated economic development strategies requires skilled human resources. The emerging farmers, township entrepreneurs or the people to be employed in the proposed economic development projects need to have the requisite skills. As many of them are coming from previously disadvantaged communities, they did not have fair access to education and training facilities. As a result, they do not possess the skills to run a successful business or work on a shop floor. Therefore, capacity building and skills development must be considered a pillar for achieving sustainable economic development. The strategy for capacity building and skills development entails the following activities:

- Development of a vocational training centre in Grootvlei
- Organise periodic skills development and capacity building workshops for emerging farmers, township entrepreneurs, tourism centre/ business operators
- Impart soft skills such as finance, marketing and operation
- Provide financial and infrastructural support to the emerging farmers and township entrepreneurs



**Map 24: Sustainable Economic Development Proposals** 

#### 7.2.3 Environmental Conservation and Utilisation

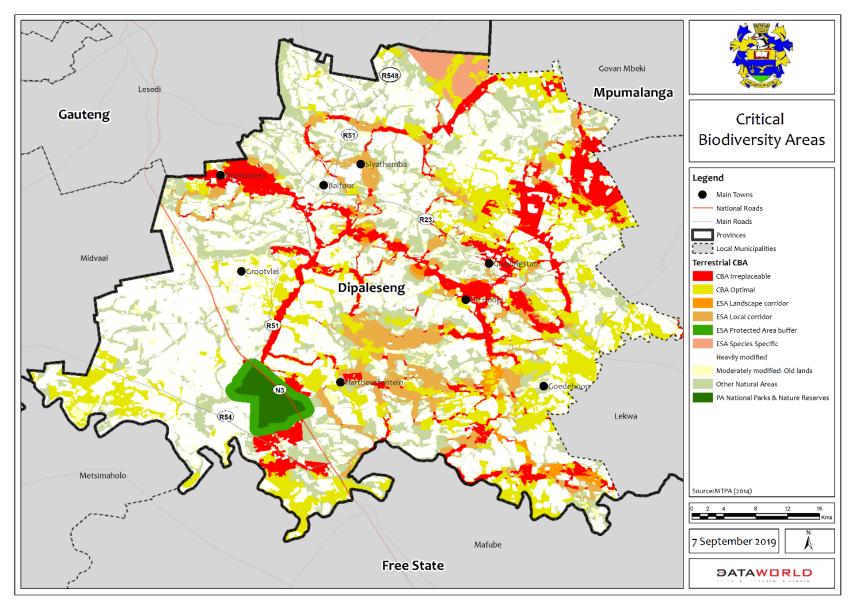
The objective of this strategy is to ensure that land use and settlement growth is directed and managed to protect and rehabilitate the functionality of Dipaleseng's environmental services and systems - natural assets. These support life and livelihoods offer the potential for further prosperity, as well as buffer the impacts of climate change and extreme events to life and property. In other words, the intention is to secure a sustainable and resilient base for Dipaleseng to function and prosper.

### Spatial Development Strategy 1: Protection of the Municipal Biodiversity & Ecosystem Services

Land transformation (i.e. conversion from natural to man-made landscapes), is the primary cause of biodiversity loss and deteriorating ecosystems. The main threat is in the lowlands, particularly in areas intensively cultivated and subject to urban growth pressures. If biodiversity threats are not reduced some ecosystems could collapse, requiring expensive intervention to maintain or replace them. Towards securing fragmented natural habitats, it is necessary to prevent further intrusion of agricultural activity or urban expansion into key Critical Biodiversity Areas and ecological support areas. The Highveld lands are most at threat given a concentration of competing for agricultural, mining, power generation and settlement development pressures.

Development Strategies applying development controls and supporting mechanisms in critical biodiversity areas are important to protect and enhance these valuable assets. Critical biodiversity areas must be protected and preserved; with the value of ecosystem services they provide maximized.

- Developments within critical biodiversity areas must be limited to those that add value to the public realm, and that preserve the vital ecosystem services these areas provide.
- Ensuring all new development and redevelopment take into consideration the environmental management guidelines and policies of this SDF.
- The critical biodiversity layer should be seen as a municipal asset that provides valuable infrastructure services and not merely as unused land available for development
- Extending the role of the public environment, through streets and public spaces, in a broader, integrated, open space network.
- Integrating natural ecological systems with urban development through green corridors and the extension of an urban open space network to emphasize more on Green Building Practices
- Local spatial development framework and land use schemes should acknowledge the special requirements for development within the vicinity ecological infrastructure.
- Identify high potential soils and implement the Mpumalanga Biodiversity Sector Plan or bioregional plans
- The environmental heritage and conservation areas, biodiversity hotspots and ecological corridors should be treated as a special Biodiversity Management Zone to be actively protected, managed and enhanced so as to ensure that these are not degraded by mining, forestry, agricultural and human settlement activities



**Map 25: Critical Biodiversity Areas** 

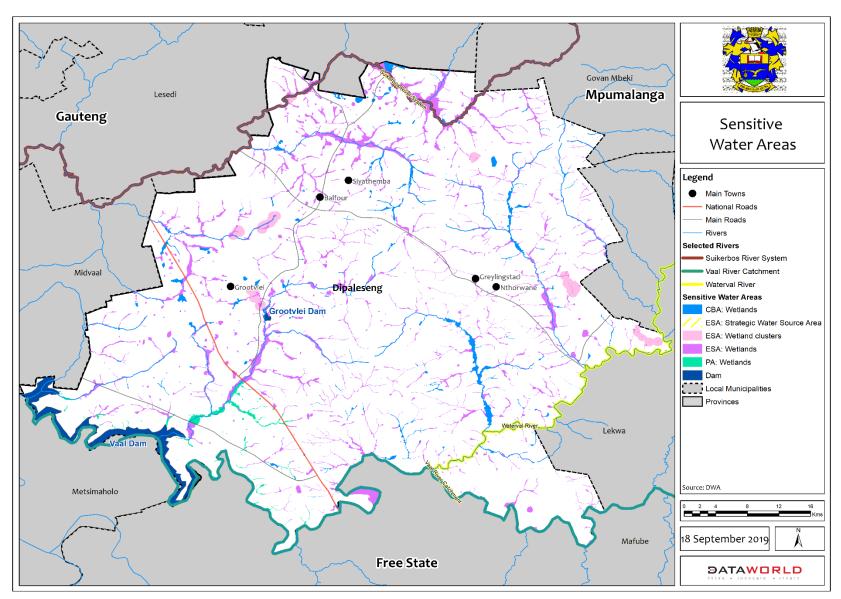
### Spatial Development Strategy 2: Conservation of Water Resources and Catchment Areas

Hydrological systems (rivers, and wetlands), topography and critical biodiversity assets provide the primary structure guiding where settlement can take place and grow in the Dipaleseng. Dipaleseng contains over 2000 wetlands and numerous river systems, which includes five major catchment areas. Wetlands and their prime ecosystems are at risk due to the growing impact of farming and urbanization.

Therefore, there is a need to rehabilitate and protect rivers, wetlands and their catchments (Vaal's hydrological systems) - from pollution, increased surface run-off and siltation, unmanaged extraction and the impact of reduced run-off and/or clogging as a result of alien vegetation infestation. A precautionary approach supported by strong land use management and enforcement should be applied to activity and development within the catchments of the following priority water resource units.

- There is a need to prioritize the rehabilitation of the catchment areas of wetlands and the following rivers:
  - The Vaal River catchment, which ultimately forms part of the Suikerbos River system;
  - o the Water Val River where it meets the Vaal River (Vaal Catchment);
  - o the Suikerbos River where it meets the Vaal River (Vaal Catchment); and
  - the Suikerbos River where it meets the Water Val River (Additional Suikerbos Catchment, which includes the upstream Water Val and Vaal River Catchments);
- Manage unlicensed water and sand extraction
- Implement water loss control measures such as pressure management and leakage control programmes, Recycle wastewater and Harvest rainwater
- Control all forms of pollution in catchment areas.
- Control all alien plants infestations in river courses.
- Regulate modification of riverbeds and natural flow patterns
- Minimise return flows from irrigated fields. Minimize the pollution and degradation
  of surface and groundwater by the optimal application of pesticides, herbicides
  and fertilizers (farmers).
- Monitor and measure water quality upstream and downstream of the irrigation areas to protect the aquatic ecosystem and the downstream users
- Develop a water security plan

Water, sanitation and storm water infrastructure master planning and budgeting must ensure timeous maintenance and upgrading to secure the integrity of the hydrological systems / eco-services and mitigate risk to public health. Poor maintenance or where facilities operate at overcapacity can result in the pollution of rivers, which has an adverse impact on human health and the environment and presents a considerable social and economic cost. This can be exacerbated by both drought and high rainfall periods. Legislation governing the control of invasive species on land must be enforced as this contributes to reduced runoff into the rivers, clogging the rivers and /or siltation of rivers and wetlands downstream. Settlements alongside rivers and wetlands must use sustainable urban drainage systems to avoid polluted run-off and be managed to mitigate against unsustainable water extraction.



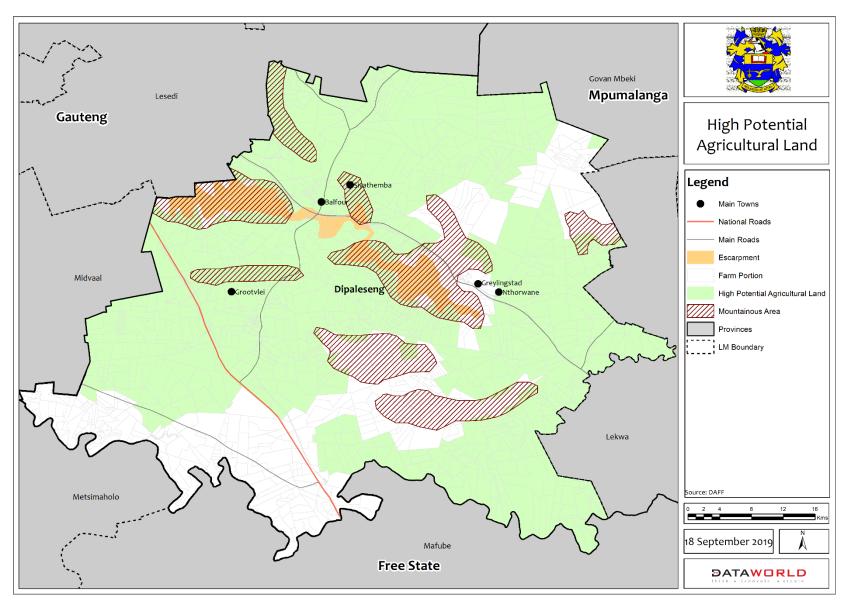
**Map 26: Sensitive Water Areas** 

#### Spatial Development Strategy 3: Sustainable Agriculture

Mpumalanga has a diverse climate that makes it possible to practice various agricultural activities with the main agricultural products being, maize, sunflower, grain, wheat, sorghum, beef, mutton, and dairy and wool. The Dipaleseng Integrated Development Framework (IDP), 2019/20 further highlights that the agricultural crop potential of land in Dipaleseng allows for the cultivation of crops such as maize, wheat and sorghum and livestock farming of cattle and sheep. The SDF depicts that 6% of the land is regarded as of high cultivation and 24% being medium while 4% of the municipal area is undetermined in terms of the agricultural crop potential.

The agricultural land should, therefore, be protected to ensure continuous production and for the area to serve as the main agricultural service centre supplying the surrounding agricultural communities and towns with commodities and services. There is, therefore, a need for the municipality to promote a sustainable agriculture sector by:

- Entrenching the status of the natural environment and its resources as the determining factor in sustainable agriculture.
- Reforming agricultural legislation to support sustainable farming practices.
- Drafting and apply integrated management systems for natural areas within agricultural zones
- Regulating the clearing of land for agricultural development in accordance with applicable legislation.
- Protecting agricultural resources and manage the productive use of high value agricultural land
- Development of an agricultural protection and management framework
  - Identify and map all protected agricultural land.
- The approving of applications to convert intensive agricultural land to other uses should be a provincial responsibility
- Promoting small-scale and extensive commercial farming activities. (Focused approach by the provincial Agriculture department and the municipal sector department to promote and enhance commercial farming in the municipality and to ensure that the local communities within the Municipality are sufficiently capacitated by way of skills and equipment to maximise the benefits
- Avoid the irreversible loss and degradation of biodiversity.
- Promoting the skills of, and support to, small-holder farmers through the provision of capacity building, mentorship, farm infrastructure, extension services, production inputs, and mechanization inputs.



Map 27: High Agricultural Land

#### Spatial Development Strategy 4: Climate Change Adaptation

Climate change is a current inevitability and its manifestations are unpredictable. Whether it will involve gradual shifts in temperature (up or down), changes in rainfall patterns, altered groundwater salinity or changes in the frequency and/or severity of extreme weather events is yet to be confirmed. South Africa is the only African country among the world's top 25 emitters of carbon dioxide over the past several decades. The share of mining and energy-intensive industries and the countries coal intensive energy supplies are partly responsible for this climate change, but the transportation sectors also largely widely contribute to this.

Dipaleseng, like all Municipalities, is extremely vulnerable to impacts of climate change. Temperature increases and weather variability threaten to directly or indirectly disrupt systems critical to the survival of Municipality. The sub-region is warming, and increased droughts are possible in the future. Heat island effects and changing disease patterns are key challenges for inland urban areas. Unguided urbanisation, degradation of freshwater resources, lowered levels of food security and failure of climate change adaptation strategies are among the most significant global environmental risks in Africa.

The challenge for Dipaleseng will be to respond to the impacts of climate change is particularly serious, due to the often-precarious nature of living conditions and livelihoods of many. For those living just outside of poverty, but still with very low incomes very slight external changes can prompt a shift to poverty. These may include social, economic, political or environmental changes such as droughts, increasing food or fuel prices or damage to property due to unexpected events.

Many of Dipaleseng's poor residents live in informal settlements and informal backyard dwellings. Informal living environments are at times located in high-risk locations (such as flood plains) and often with minimal bulk and public services, such as waste collection and management, public transport, access to potable water, sanitation, and health facilities. As such, it is clear that certain portions of the population are more at risk to the seemingly slight and gradual changes that climate change poses. Climate change is a significant threat to a sustainable future in the short, medium and long term. As such, Dipaleseng must introduce the Climate Change Adaptation and Mitigation Plan and the Energy and Climate Change and Action Plan.

In the context of the significant role urban form plays in carbon emissions, Dipaleseng must: build resilience within communities; promote a compact carbon-efficient urban form; and preserve the natural environment that provides irreplaceable ecosystem services for the municipality.

The current climate system may have significant effects on the region's agricultural production and the world's food security. The pattern will also affect both water availability and water quality. Higher temperatures will increase the rate of evapotranspiration and exacerbate droughts. The Municipality must: -

- Conduct Awareness on climate change and its impact on the environment
- Develop a climate change adaptation strategy/plan and action plan
- Develop a climate change mitigation strategy/plan
- Have a council committee that deals specifically with environmental and climate change issues

- Have an Environmental Management strategy (air pollution control, waste management, water quality management, EIA"s, biodiversity conservation etc.)
- Enhance ecosystems, diversify crop and livestock production, and build farmers' knowledge base to confront changes in climate. The municipality together with DARDLEA and DRDLR must design a climate change Adaption and Agriculture Programme Capacity Building
- Integrate climate change adaptation within existing development planning and implementation processes

#### 7.2.4 Sustainable Human Settlement Development

The legacy of apartheid left dire consequences in the form of spatial distortion. This is particularly evident in former black townships and rural areas. The effects were farreaching, leaving South Africa with three distinctive spatial patterns, namely, low-density sprawl, fragmentation and segragation.

A sustainable human settlement should not only refer to the provision of housing but rather developing communities which enable societies to live in a way that encourages the notion of creating a sense of place. A sustainable human settlement should support harmonious settlements, characterised by a sense of safety and belonging. Fundamental to sustainable human settlements is the ability to improve quality of life and human development. Developing sustainable human settlements should guarantee employment opportunities, safety, affordable housing, green open space and resilient communities. It involves investment in the public realm, public transport, infrastructure, housing and adequate service delivery.

The National Development Plan: Vision 2030, proposes a revised approach to human settlement to guarantee the development of high-quality public infrastructure and environments, while also supporting impoverished households in acquiring adequate shelter. In essence, human settlement patterns within Dipaliseng should strive to meet the needs of their citizens by reducing travelling distance and placing citizens closer to employment opportunities.

## Spatial Development Strategy 1: Promote spatial integration of settlements within the municipality

Dipaleseng is characterised by a fragmented spatial configuration between rural and urban areas which results in unbalanced services and infrastructure development between these areas. There is a great need to facilitate integration and densification through well-located sustainable development and infill; which will ultimately promote integration between communities and enable more efficient access to facilities and opportunities.

- Locating new developments closer to activity spines and corridors; economic opportunities and social amenities;
- Infill sites for new development within Siyathemba, Balfour, Grootvlei, Dasville, Nthorwane and Greylingstad should be a priority. Infill development must focus on well-designed public spaces, with the provision of pedestrian lanes, public open spaces and greening.
- Increase the development of housing in gap markets by establishing partnerships with the private sector and encouraging greater investment in social housing projects and integrated housing and mixed-use development. As stated in the sustainable economic development and

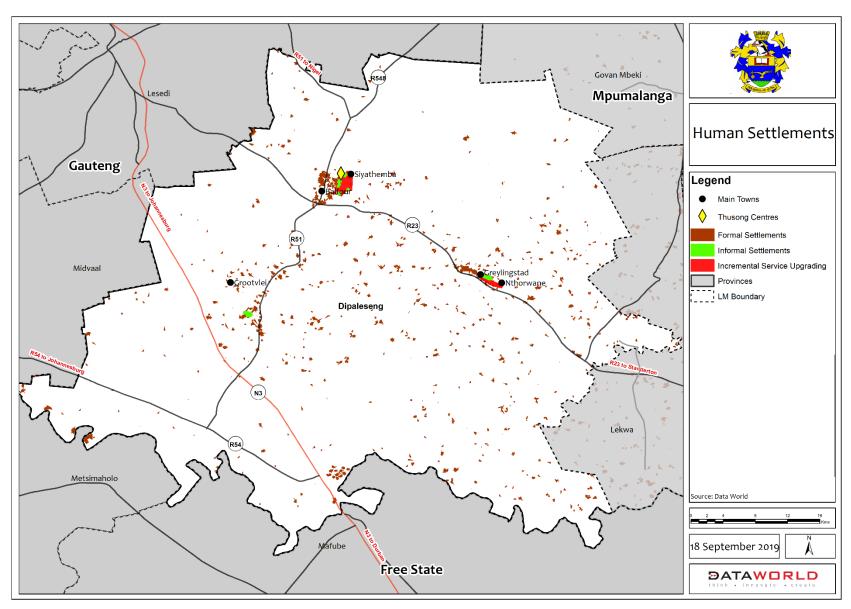
**concentration objective**, the municipality should look in to providing some type of incentive in order to promote such investments with the municipality.

- Acquisition of strategically located land for sustainable housing development
- Relocation of informal settlement and backyard dwellers, encroaching in environmental sensitive areas and settlements that are outside the urban edge and are far from any economic opportunities to the identified formalization areas and infill development areas in Balfour, Siyathemba, Greylingstad, Grootvlei and Nthorwane
- Promote the security of tenure through more efficient transfer of properties and embark on a sustained drive to eliminate the title deed backlog.
- Dipaleseng local municipality and service providers should explore and make greater use of alternative, energy-efficient materials, methods, technologies, layouts in order to reduce the carbon footprint of new housing developments.
- Incorporation of renewable energy for electricity generations in settlement development.
- The formalisation of informal settlements in Siyathemba, Dasville, Nthorwane, Grootvlei and Balfour through relocation, in-situ and incremental upgrading.

#### Spatial Development Strategy 2: Spatial Restructuring

In order to achieve sustainable human settlements, spatial interventions tools are incorporated to radically change the trajectory of a settlement /town, as well as the lives of its citizens. Ultimately, spatial interventions are essential to transform struggling municipal areas such as Dipaleseng, in which untapped socio-economic potential can be unlocked and further contributing to the sustainable human settlements. The municipality should consider the following interventions in order to facilitate spatial restructuring:

- Smart growth invests time, attention and resources in restoring viability in older towns; it encourages urban regeneration of dilapidated CBDs and settlement growth in areas with high development and economic growth potential;
- Use of strategically located vacant land parcels in the Balfour CBD, Greylingstad
   Nthorwane, as a catalyst for densification, integration and mixed land use orientated development;
- Increased attention should be given to creating, maintaining and activating quality public spaces, such as parks, squares, playgrounds and transport interchanges. These spaces should be shared centres of community life and generators of social inclusion and cohesion and also introduce Adopt-A-spot programme which will be a community initiative that will aim to minimize illegal development and dumping sites.
- Within Dipaleseng, there are three nodal points, namely, Balfour, Greylingstad and Grootvlei, these should provide a full range of community amenities, promote local economic development, provide opportunities for people to establish their own businesses; and benefit from the markets created in these nodes.
- Optimise the use of existing resources including bulk infrastructure, roads, transportation and social facilities.



**Map 28: Sustainable Human Settlements** 

#### 7.2.5 Infrastructure Investment

The provision of water, electricity, sanitation and refuse disposal etc, should be fashioned toward achieving the objectives of sustainable development. According to the Dipaleseng IDP 2019/2020, development plans should be structured towards infrastructure upgrades, predominantly, water, sanitation and electricity. Infrastructure provision, good governance and sustainable development are inseparable.

The Dipaleseng IDP 2019/20 states that, infrastructure development in Dipaleseng has not received adequate attention. As a result, existing infrastructure is generally in a poor condition. Local municipalities across the country are tasked with providing basic services and fostering development under their area of jurisdiction. Even though local municipalities have made tremendous efforts over the past few decades in the delivery of basic services. Many households especially those residing in the rural areas (e.g. Phomolong, Willemsdal, Springfield Collier, Rowersdam and Balfour North) are still without access to basic and social services. This is further exuberated by the practical constraints of extending bulk infrastructure in rural areas.

The aim of this objective is to emphasise the need to make sufficient provision for infrastructure investment in Dipaleseng within a reasonable distance of all communities, both urban and rural. In order to support the notion of compact development and redress spatial fragmentation, these services need to be consolidated for maximum efficiency as there is some benefit to be derived from such a consolidation

# Spatial Development Strategy 1: Upgrading and maintenance of existing infrastructure: - Water

The 2011 population of the study area is 42,500 people (based on the 2011 Census) and the projected population by the year 2040 will be 63436 (based on a 0.93% growth rate per annum). The water demand for Dipaleseng is16.8 MI/d, which includes the requirements of the wet industries. It can be deduced from above that the existing infrastructure capacity is unable to meet the current demand. DLM water demand of 16.8 ML/day is supplied by 6.5 ML/day Fortuna Water treatment works (WTW). It is projected that the water demand in year 2040 will be approximately 13.73 ML/day. It is evident that the current and future water demands are greater than what Fortuna WTW can treat and supply. It is against this background that it has become necessary to augment the water supply to the Fortuna WTP in order to reduce the area's susceptibility to dry periods and to cater for current and future growth in water demands by:

- Balfour Fortuna Water Treatment Works requires a necessary upgrade to its infrastructure in order to augment the water supply and possibly meet future water demands.
- Construction of additional storage reservoirs in Balfour, Siyathemba, Greylingstad, Nthorwane
- Rainwater harvestina
- Carry out a hydro census and establish water available.
- Refurbishment of boreholes
- Raising the Suikerbosrand Dam wall to create more storage capacity

# Spatial Development Strategy 2: Upgrading and maintenance of existing infrastructure: Wastewater and Sanitation

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. COGTA's state of basic service delivery report also indicated that the average CRR% score for the municipality stands at 100%, indicating that the wastewater treatment plants of the Municipality are at critical risk capacity. Therefore the need to improve sanitation levels by upgrading existing facilities and construction of new treatment work.

- Upgrading of wastewater treatment works in Balfour from 4MI/day to 12MI/day
- Construction of a new 1.5Ml/day wastewater treatment works in Grootvlei
- Upgrade wastewater treatment works in Greylingstad from 0.5MI/day to 1.5MI/day
- Desludging of pit toilets in farm areas (strategic area)
- Eradication of septic tanks in Greylingstad
- Replacement of old and asbestos mainline and reticulation
- Provision of Sewer reticulation in Grootvlei Ext 1, Balfour North, Siyathemba Ext 5 & 6 and Nthorwane
- Maintaining the sewer network daily to ensure unrestricted flow purification plant.

# Spatial Development Strategy 3: Upgrading and maintenance of existing infrastructure: Renewable Energy and Electricity

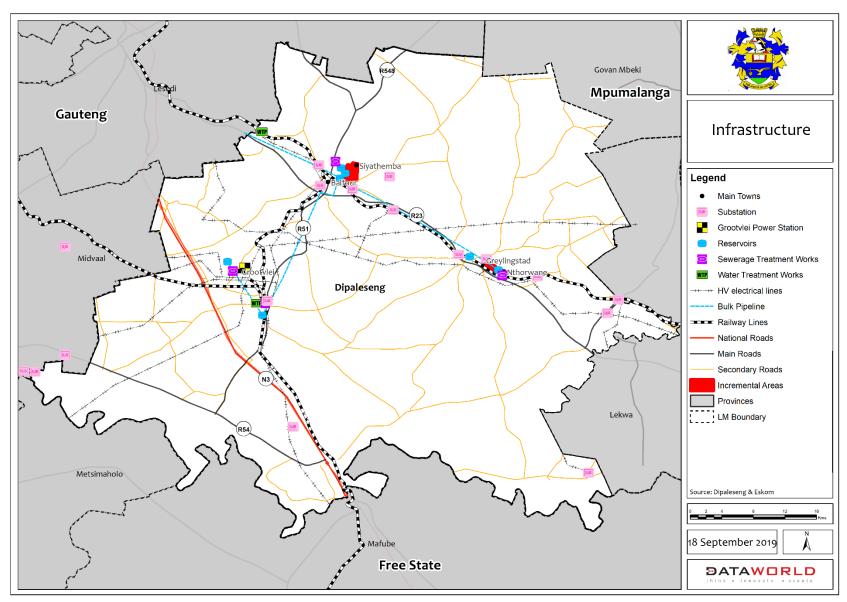
Deployment of renewable energy initiatives combined with improved energy efficiency (and maintenance) for existing substations in the municipality:

- Explore the possibility of generating energy from renewable sources in the municipality, e.g. Biomass plant from agricultural waste.
- Planned housing developments should install solar panels to relief pressure on-grid supply.
- Upgrading of an electricity substation in Balfour and Greylingstad
- Grootvlei and Klipspringer substations will require refurbishment
- Electrification to be expanded in rural areas
- Solar energy development for new developments

# Spatial Development Strategy 4: Upgrading and maintenance of existing infrastructure: Waste Management

- Establish proper access control and fence the site (Grootvlei & Greylingstad).
- Ensure that cover material applied on the waste and compacted in each and every cell to increase the life span of the landfills
- Construct the weighbridge in Balfour
- Procurement of new trucks to address waste and refuse collection backlog
- Development of a waste management recycling hub on vacant land identified Balfour and Greylingstad
- Priority to clear all illegal dumping sites
- Waste management collection points must be established
- Develop ablution at all landfill site

<sup>&</sup>lt;sup>17</sup> COGTA state of basic service delivery for municipalities, 2018



**Map 29: Infrastructure Services** 

#### 7.2.6 Rural Development and Transformation

Rural Development is a proactive process of change and transformation of rural communities through social and economic development. Rural communities in Dipaleseng are still characterized by poverty, inequality, limited access to basic social infrastructure, underdevelopment, lack of economic opportunities and incoherent spatial patterns. The Comprehensive Rural Development Plans are government's strategic efforts to promote sustainable rural communities and economies.

The NSDF, NDP together with the Mpumalanga PSDF and the Gert Sibande RDP puts emphasis on the development of rural areas, in which agriculture development plays a key role in addressing poverty, unemployment and inequality. These policies and frameworks also promote the establishment of rural regions and/ or rural nodes<sup>18</sup> as a key instrument for spatial transformation and economic development in rural areas.

The large scale of agricultural activity in Dipaleseng, together with the numerous opportunities i.e. supporting livelihoods, small scale farming, food production and security and the potential development of agri-industries; presents prospects of developing well-functioning rural settlements.

# Spatial Development Strategy 1: Rural nodal development through rural restructuring, agrarian transformation and strategic investment in economic and social infrastructure

Rural settlements have always relied on agricultural production and activities to survive. The concept Rural nodal development emphasizes on the need to create well-functioning, connected and serviced nodes and/ or clusters of rural settlements.

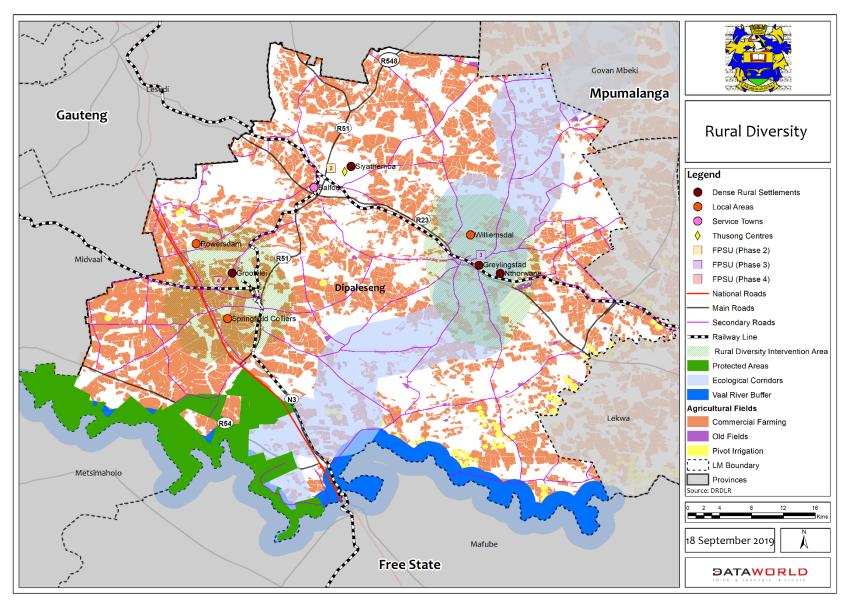
The PSDF proposes that the focus of achieving transformation in rural areas should be through the development of what they term as "Rural Economic Nodes" which is a concept centered on the proposed service towns and small service centres/ rural service settlements approach of the NSDF. It further elaborates that these nodes should be developed by consolidating and clustering rural settlements around a rural economic activity linked by established transportation networks which aid in providing opportunities and access to markets and provision of high-quality services. Dipaleseng should also focus on the diversification and agglomeration of the rural economy, not only through agricultural development, but also on agrarian transformation, tourism, and government promotion of rural development and land reform projects.

Therefore, there is a need to develop the rural settlements of Phomolong, Willemsdal, Springfield Collier, Rowersdam and Balfour North into these "Rural Economic Nodes" therefore the following programmes aim to develop these "Rural Economic Nodes":

 Consolidation and renewal of Phomolong, Willemsdal, Springfield Collier, Rowersdam and Balfour North settlements in order to prevent further sprawl/ fragmentation and sustainable provision of basic and social services. This can be done by the delineation of a development boundary which will assist in preventing sprawl and encouraging compaction and densification of the areas. The

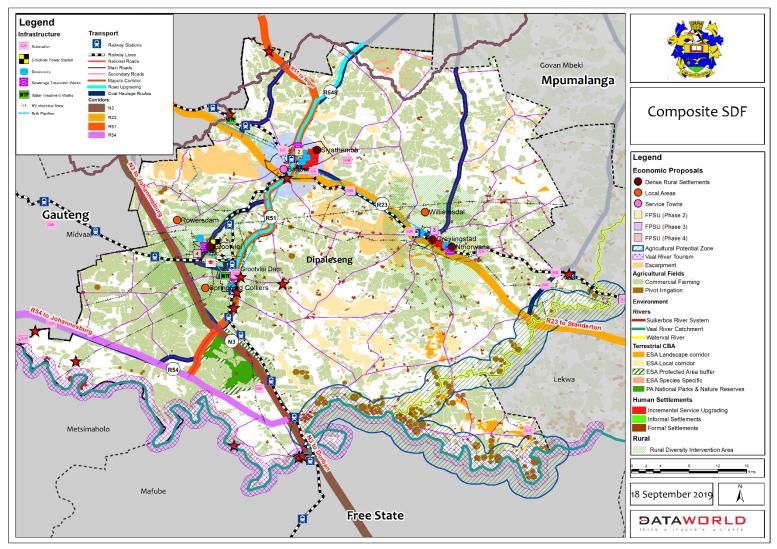
<sup>&</sup>lt;sup>18</sup> Mpumalanga PSDF, 2019

- development boundary can therefore be expanded when need be as the settlements grow.
- Development of RDP intervention areas and value chains that will assist in the facilitation of for agrarian transformation and land reform.
  - o Optimising the Potential of identified FPSU's in the municipality
  - Implementation of identified agricultural projects that are linked to the FPSU/ RDP programme in order to promote agricultural production and market which in turn the rural economic sector
  - Development of detailed business plans for the implementation of Rural Intervention Areas in the municipality, focusing on grain and cattle framing and tourism of cultural and water sport activities in southern extents of the municipality- close to Vaal River
- Beneficiation of agricultural products to provide opportunities to emerging farmers and create more employment opportunities
- Development of Eco-tourism around the identified ecological corridors
- Develop adequate infrastructure that will assist in the operation of the FPSU's and RDP linked projects.
- Providing of basic level services to rural communities,
- The establishment of business initiatives, agro industries, cooperatives, cultural initiatives and vibrant local markets in rural settings;
- Revitalization and revamping of old, and the creation of new economic, social and information communication infrastructure and public amenities;



**Map 30: Rural Development and Transformation** 

### 7.3 COMPOSITE DIPALESENG SPATIAL DEVELOPMENT FRAMEWORK



Map 31: Composite SDF

# 7.4 LOCAL SPATIAL DEVELOPMENT FRAMEWORKS (LSDF)

The Local Spatial Development Frameworks are formulated for the three main nodes of the Dipaleseng Local Municipality namely:

- Balfour/Siyathemba
- Greylingstad/Nthorwane
- Grootvlei (Extension 1, 2 and Dasville)

The key objectives of the local strategic development concept is to achieve objectives such as integration of different neighbourhoods (communities), improved access to social amenities and economic development, optimising existing infrastructure and integrating development with public transport.

#### 7.4.1.1 Spatial planning tools

The spatial planning tools most appropriate to municipalities such as Dipaleseng tend to require more attention to curbing urban sprawl, which enables the municipality to maximize on its economies of scale in the distribution of basic services.

The following spatial planning tools will ensure the development of sustainable settlements in Dipaleseng.

Table 24: Spatial planning tools

Tool	Definition	Location	Why
Urban edge	The urban growth boundary indicates the interface between urban and rural environments. It therefore indicated the area where urban growth should not be allowed	As indicated on Local Spatial Development Framework (LSDF)	A major spatial problem is uncontrolled, low-density sprawling of settlements into the surrounding rural area. This has a number of disadvantages:  • It results in a settlement pattern that has neither urban nor rural advantages.  • In terms of infrastructure investment, it is impossibly expensive to serve.  • It could compromise valuable natural environments and high potential agricultural land
Densification	Densification is the process whereby densities, i.e. the number of dwelling units per hectare, increase in a planned and sustainable manner. It can take place by means of:  • Apartment buildings (flats)  • Cluster housing (group housing)  • Subdivision and second dwelling	As indicated on Local Spatial Development Framework (LSDF)	Densification creates more compact environments that improve access to work, services. It also provides for more efficient use of infrastructure
Infill/Extension	Is the process whereby vacant land, within the urban edge, is used for infill development, of which type of development that can take place by means of:	As indicated on Local Spatial Development	Infill development creates more compact environments that improve access to work, services. It also provides for

	<ul> <li>Development of vacant erven that are already surveyed</li> <li>"Greenfields" development, being the natural extension of town.</li> </ul>	Framework (LSDF)	more efficient use of infrastructure
Mixed use	The mixing of different land uses within a specific location or precinct. Mixed uses can comprise a combination of residential (mostly higher density residential), businesses, offices and community facilities. Mixed uses can either comprise different land uses on different erven but within the same locality or mixed use in the same building	As indicated on Local Spatial Development Framework (LSDF)	Nodes are important urban elements which can be used to restructure areas where activity is disperse and where there is no sense of place legibility or special focus.

#### 7.4.1.2 Balfour/ Siyathemba Local Spatial Development Framework

Balfour/Siyathemba is classified as a primary node in Dipaleseng and is characterised by the development of municipal offices, retail facilities, industrial, residential and agriprocessing and manufacturing uses, and a taxi rank. There are other mixed land use developments and some vacant land that is suitable for higher residential densities and human settlement formulisation.

Balfour/Siyathemba node is developed around the intersection between R51 to Grootvlei and R23 to Greylingstad in the east. There is a railway from Gauteng passing through the town to Greylingstad in the east which divides Balfour, the main town and Siyathemba the Township. Main roads that transverse through Balfour provide good access to the town. Balfour has a lot of available land for extension in any direction due to its relatively flat landscape.

The built-up area of Balfour will largely dictate the location of future land uses. Business uses tends to locate around the R51 and Steward Street linking with the R23 road. Higher density subsidised housing occurs to the north-east, with lower residential densities to the south. Industrial developments are located to the west and south of the town. Use of vacant land within the Urban Edge will largely be supported to avoid urban sprawl and to deliver better basic services to communities.

### i Development Plan Mixed Use Development

The focus on this area should be centred on enhancing and protecting economic development within the urban edge. Promote the expansion and development of new business investments and the protection and enhancement of existing investment by creating an enabling environment.

- Support and promote mix use developments within the mix use area which will including business, offices, community facilities and social services and any other business that complement each other.
- Support and promote residential densification.
- Support facilities that attract expenditure from the increasing traffic flow on the main roads.
- Vacant public spaces should be planned for informal traders that characterize the Balfour neighborhood

- Balfour CBD vacant land parcels should be utilised for mixed use, business use, scattered along the R23 and R51 route.
- Improve accessibility and functionality of the mixed-use precinct through the upgrading and maintenance of local roads, linkages and pedestrian friendly areas.

Within mixed use precinct, a mixture of land uses is promoted namely; commercial, administration and residential. The proposed uses need to complement each other and comply with environmental requirements.

The mixed use precinct is proposed to be developed around the R51 intersection. It is suggested to provide facilities that attract expenditure from the increasing traffic flow of the R51. The grid road network of CDB provides good access to the business strip that IS developed along the main access roads. This presents an ideal opportunity to confine mixed land uses, improve legibility and initiate urban renewal strategies.

#### **Residential Development**

Densification of existing low-density residential areas should be prioritised through subdivisions and development of vacant properties. Higher densities must be allowed in proximity to schools and in the mixed use precinct.

Residential development is proposed to the west, south-east and north-east of Balfour and includes:

- The development of existing residential areas through infill and densification.
- The extension of existing residential areas.
- Identification of strategically located land in the Balfour CBD and Siyathemba township for low income and affordable housing with increased densities and various housing typologies.

Residential development in Siyathemba is proposed on the east and includes:

- Formalisation of informal settlements through in-situ and incremental upgrading of tenure. Relocation of settlements should only occur where upgrades are not possible or desirable for the community in question, i.e. when settlements are not well located regarding public transport and/or pedestrian access to economic opportunities and social amenities and bulk services
- The development of existing residential areas through infill and densification

#### **Industrial Development**

The industrial component of Balfour is confined to the west and southern parts of town.

- Further industrial development should be supported near existing industrial uses.
- Future industrial development is proposed to the south of town, along the R23 road.
- Support and promote heavy and light industrial enterprises, however not noxious industries
- Development of the proposed FPSU in the industrial zones indicated on the south of town, along the R23 which will be near industries i.e. Karan Beef to reduce travel distance.

#### Integration

The railway line traversing through the town provides a physical barrier between Balfour the main centre where all the socio-economic activities occur and Siyathemba Township which is mainly a residential area with limited socio-economic opportunities. In an attempt to break this barrier and provide more socio-economic opportunities to the residents of Siyathemba, the municipality should consider the following:

• fostering the mixed use of social facilities, amenities, commercial, office and higher density residential land uses within CBD to bring social cohesion.

- improve access to public transport linking both areas and opportunities for employment within the CBD.
- new residential developments should comply with Breaking New Ground (BNG)
  policy of 2004 whose aim is to promote the achievement of non-racial integrated
  society through the development of sustainable human settlements and quality
  housing.
- within Siyathemba, an Urban Development Framework Plan should be established
  to provide an integrated urban design vision for the development of Siyathemba.
  This will stimulate socio-economic development for the locals with programmes
  such as township economic developments as proposed in the Mpumalanga PSDF.

# 7.4.1.3 Greylingstad & Nthorwane Local Spatial Development Framework (LSDF)

Greylingstad is situated to the east of Balfour along the R23 road leading to Standerton. The town is regarded as a secondary node due to its size and the level of diversification of the local economy is limited, compared to Balfour. The town is characterised by the development of retail, transportation terminus, agricultural facilities, and residential development. There has been an increase in the number of informal settlements over the years, due the slow delivery of housing.

Greylingstad is developed around the convergence of the R23 to Standerton and the road links to Villiers to the south, Devon to north and R547 to the north-east.

The railway line from Gauteng to Standerton -Volksrust, running parallel to the R23 road, forms a strong structuring element for the town.

#### i Development Plan

#### Mixed Use Development

The focus on this area is to enhance and protect economic development within the demarcated area.

- Confine the development of new business investments within the mixed use precinct.
- Support and promote mix use developments including business, community facilities and social services.
- Support residential densification.
- Support facilities that attract expenditure from the increasing traffic flow on the main roads i.e. tourist and motor related facilities.
- Provision of infrastructure, development of, service centres, clinics and bus/taxi stations.
- Vacant public spaces should be planned for informal traders
- Improve accessibility and functionality of the precinct through the provision of proper road linkages and pedestrian friendly areas.

Within mixed use areas, a mixture of land uses are promoted namely; commercial, administration and residential. The proposed uses need to complement each other comply with environmental requirements.

#### Residential development

Densification of existing low-density residential areas should be prioritised through subdivisions and development of vacant properties. Higher densities must be allowed in proximity to schools and in infill and densification areas and the mixed use precinct.

Identification of strategically located land in Greylingstad and Nthorwane township for low income and affordable housing with increased densities and various housing typologies

Formalisation of informal settlements through in-situ and incremental upgrading of tenure. Relocation of settlements should only occur where upgrades are not possible or desirable for the community in question, i.e. when settlements are not well located regarding public transport and/or pedestrian access to economic opportunities and social amenities and bulk services

#### **Tourism Development**

The rich cultural heritage offered by the Greylingstad Mountain in the form the Anglo Boer War Battlefields and the historic graves of the Scottish regime should be promoted as a tourist attraction site. The possibilities for establishing guest houses/ bed & breakfast facilities should considered as a viable initiative for the town to boost its tourism development.

#### 36.4.7 Industrial development

New industrial developments should be supported in close proximity to the OTK silo.

#### 7.4.1.4 Grootvlei & Dasville Local Spatial Development Framework (LSDF)

Grootvlei is situated next to the N3 road leading to the Free State. The town is categorised as a secondary node due to its size and local economic diversification. The town is characterised by the Power Station, retail, taxi rank and residential development.

The railway line and the main R51 road from the N3 to Balfour provides a barrier for further development towards the east. The road from the R51 leading to Dasville at the intersection with the N3 divides Grootvlei Extension 1 into clear segments. The northern segment is the higher density subsidised housing and the low density in the southern part. Business uses tend to be located at the intersection of N3 in Dasville with the road linking with the R51.

Grootvlei Extension 1 is mainly residential and does not have a highly developed business area except for a few retail outlets that provide basic commodities. Dasville is regarded as the business area for Grootvlei Extension 1. Industrial type uses and sports fields are located to the north of the subsidized housing area and to the west of the railway line.

#### i Development Plan

#### **Mixed Use Development**

- The focus on this area must be to enhance and protect economic development.
- Confine the development of new business investments within the mixed use precinct.
- Support and promote mix use developments including business, community facilities and social services.
- Support residential densification.
- Support facilities that attract expenditure from the traffic flow on the main roads i.e. tourist and motor related facilities.
- Consolidate density and intensify land uses within secondary nodes such as Grootvlei along with key public transport networks and connection points
- Improve accessibility and functionality of the precinct through proper road linkages.
- Within mixed use areas, a mixture of land uses are promoted namely; commercial, administration and residential. The proposed uses need to complement each other comply with environmental requirements.

#### **Residential Development**

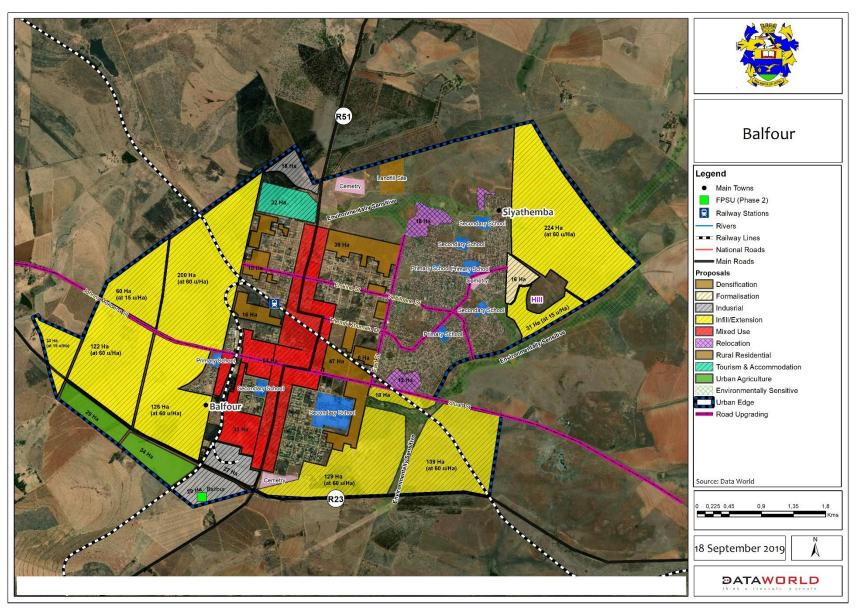
Densification of existing low-density residential areas should be prioritised through subdivisions and development of vacant properties. Higher densities must be allowed in proximity to schools and in the mixed-use precinct.

Residential development is proposed to the north-west (adjacent to the Power Station) in Grootylei extension 2 and south of Balfour and includes:

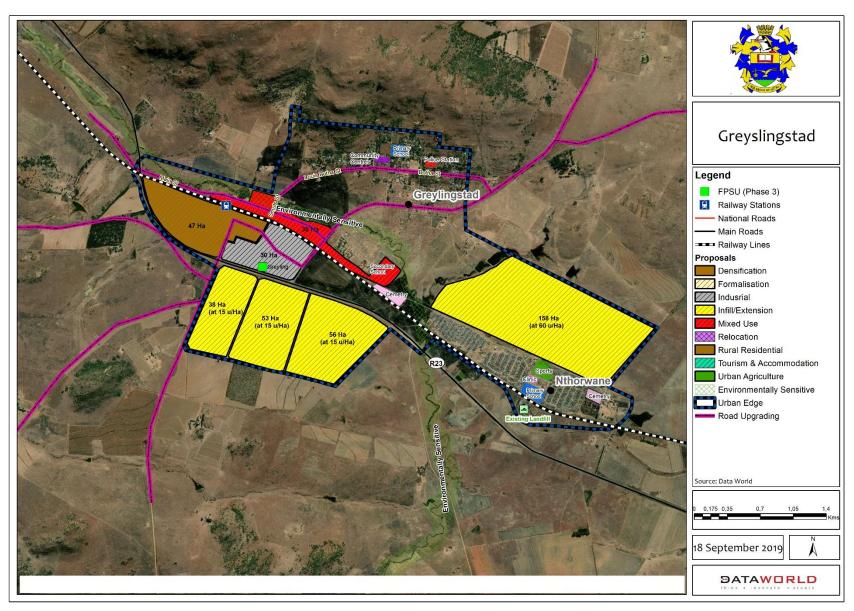
- The development of existing residential areas through infill and densification.
- The extension of existing residential areas.
- Formalization of informal settlements

#### **Industrial Development**

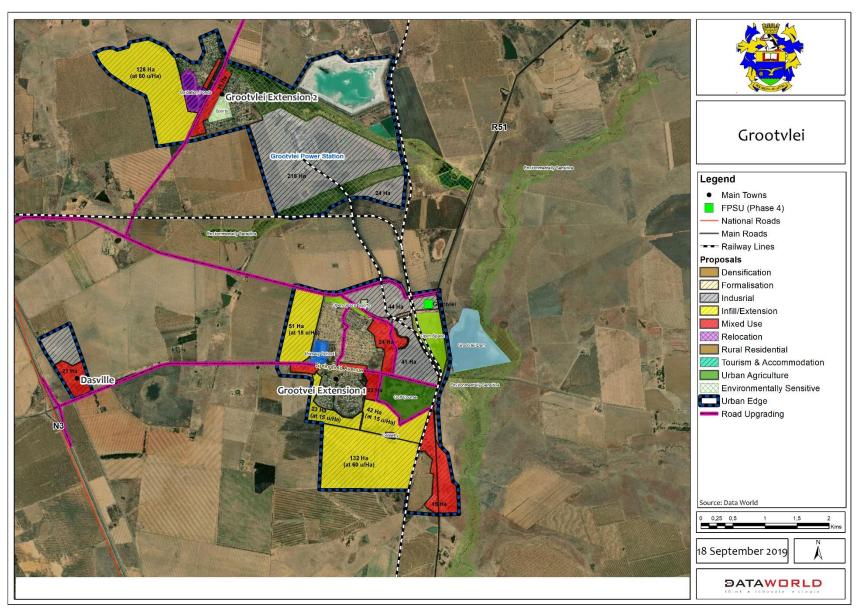
Lighter industrial developments and service industries should be located north and east of the informal settlement between the road leading to the power station and the open space. Heavier industrial uses should be located in proximity to the Eskom power station and the proposed industrial area in Dasville in order to minimise the possible negative impacts to communities. Industrial activities can therefore be used as a means continue for economic development in the area as this will be required due to the tentative closure of the Grootvlei Power Station.



Map 32: Balfour/ Siyathemba LSDF



Map 33: Greylingstad LSDF



Map 34: Grootvlei LSDF

# 8 ASSESSMENT OF FUTURE LAND REQUIREMENT AND INFRASTRUCTURE DEMAND

### 8.1 **POPULATION PROJECTION**

The growth of population creates additional demand for land to develop new urban services such as residential complexes, socio-economic facilities, economic opportunities and infrastructure. For this reason, it is essential to estimate the population of an area to develop plans for it. The table below reflects the projected population for the municipality and its main areas viz. Siyathemba, Balfour, Greylingstad, Nthorwane, Grootvlei and Rural Settlements (rest of the municipal area). The population is projected for two scenarios- medium growth which is based on CSIR Green Book's population projection and high growth which is based on the observed population growth in the municipality. It is expected that the municipality's population will grow to 47310 (medium growth scenario) or 72227 (high growth scenario) in 2050. As can be seen in the table, in the medium-growth scenario the growth of population is minuscule i.e. an increase of only 282 persons in 2050 from 2019. Whereas, the growth of population under the high growth scenario is much higher (25199 persons) for the same period.

**Table 25: Population Projections 2016-2040** 

Area	2019	2030	2040	2050							
Medium Growth											
Siyathemba	25259	25289	25350	25411							
Balfour	3551	3555	3564	3573							
Rural/ Settlement	4489	4494	4505	4516							
Greylingstad	932	933	935	937							
Nthorwane	6790	6798	6814	6830							
Grootvlei	6007	6014	6029	6043							
Dipaleseng LM	47028	47083	47197	47310							
		High Growth									
Siyathemba	25259	29925	34072	38794							
Balfour	3551	4291	5012	5815							
Rural/ Settlement	4489	5234	5833	6533							
Greylingstad	932	1104	1257	1431							

Nthorwane	6790	8044	9158	10428
Grootvlei	6007	7117	8103	9226
Dipaleseng LM	47028	55715	63436	72227

Source: StatsSA Community Survey 2016, Data World calculations based CSIR Green book and StatsSA population figures

### 8.2 LAND BUDGET / FUTURE LAND REQUIREMENTS

As mentioned earlier, population is a key driver for land demand. The future land requirement will closely follow future population. The miniscule growth of population in the medium growth scenario will not create any substantial demand for additional urban services and facilities. As a result, no significant change in the municipality's land use pattern arising from population growth is expected. But the growth of population under the high growth scenario will create significant demand for land for future development. Hence, there will be noticeable changes in the municipality's land use pattern from the growth of population.

To estimate future land requirements in the municipality, all activities that are influenced by population change have been considered for both medium and high growth scenarios. The first step of the estimation process is ascertaining the number of additional units/facilities required per use category. The following table highlights the estimated number of units for some key socioeconomic facilities.

Table 26: Additional Unit/Facilities Requirements (2019-2040)

Area	Pre- primary School	Primary School <sup>19</sup>	High School	Clinics	Religious Places	Community Centres	Post Office	Fire Station	Library	Home Affairs	SASSA Pay Point	Thusong Center
					Medium	Growth						
Siyathemba	0	3	2	1	0	1	1	1	2	1	1	1
Balfour	0	0	0	0	0	0	0	0	0	0	2	0
Rural/ Settlement	0	0	1	0	0	0	0	0	1	0	0	0
Greylingstad	0	0	0	0	0	0	0	0	0	1	1	0
Nthorwane	0	2	0	1	0	0	0	1	1	0	0	0
Grootvlei	0	1	0	0	1	0	0	0	1	0	1	0

<sup>&</sup>lt;sup>19</sup> Including existing backlogs

Dipaleseng	0	6	3	2	1	1	1	2	5	2	5	1		
	High Growth													
Siyathemba	4	8	5	3	6	1	1	1	2	1	1	1		
Balfour	0	0	0	0	0	0	0	0	0	0	2	0		
Rural/ Settlement	0	0	1	0	0	0	0	0	1	0	0	0		
Greylingstad	0	0	0	0	0	0	0	0	0	1	1	0		
Nthorwane	0	1	0	1	2	0	0	1	1	0	0	0		
Grootvlei	0	0	0	0	1	0	0	0	1	0	1	0		
Dipaleseng	4	9	6	4	9	1	1	2	5	2	5	1		

The second step involves determining land requirement to accommodate the ascertained number of units/facilities per category. The number of units are then converted into land requirements by multiplying the numbers with average unit size per category. In addition, the demand for land to accommodate Economic Development (LED) and Rural Development Plan (RDP) projects, and SDF's socio-economic and community development projects (see-Local Spatial Development Frameworks), are considered to estimate total land requirement. The land required to accommodate the above-mentioned projects and activities will be the same for both scenarios. The following table provides an overview of the total land requirement.

Table 27: Additional Land Requirements (2019-2040)

Area	ea Additional Land Requirements (Ha)										
	Residential	Education Facilities	Health Facilities	Community and Recreation al Facilities	Government Facilities	Industrial Activities, LED & RDP Projects	Office and Business	Trade and Commercial	Open Spaces	Roads	Total
	Medium Growth										
Siyathemba	1.20	18.00	1.10	90.50	24.10	0.13	0.04	0.04	9.13	38.34	182.6

Balfour	0.29	6.00	-	33.50	11.00	64.02	0.01	0.01	7.76	32.58	155.2
Rural/ Settlement	0.29	4.80	-	23.00	-	0.02	0.01	0.01	1.90	7.98	38.0
Greylingstad	0.08	-	-	16.50	1.50	4.00	0.00	0.00	1.49	6.27	29.8
Nthorwane	0.33	17.60	0.10	59.50	20.00	4.04	0.01	0.01	6.86	28.83	137.3
Grootvlei	0.34	8.80	-	51.20	10.50	0.03	0.01	0.01	4.79	20.12	95.8
Dipaleseng	2.53	55.20	1.20	274.20	67.10	72.25	0.07	0.08	31.93	134.12	638.7
		I			High Growth		ı				
Siyathemba	108.29	46.92	1.30	91.70	24.10	11.96	3.16	3.61	19.66	82.59	393.3
Balfour	21.96	6.00	-	33.50	11.00	66.00	0.53	0.60	9.43	39.61	188.6
Rural/ Settlement	19.85	4.80	-	23.50	-	1.81	0.48	0.55	3.44	14.47	68.9
Greylingstad	4.87	-	-	16.50	1.50	4.44	0.12	0.13	1.86	7.82	37.2
Nthorwane	29.10	14.80	0.10	59.90	20.00	3.21	0.85	0.97	8.71	36.59	174.2
Grootvlei	31.26	6.00	-	51.20	10.50	6.84	0.75	0.86	7.26	30.48	145.1

Dipaleseng	215.31	78.52	1.40	276.30	67.10	94.26	5.88	4 72	50.37	211.56	1007.4
	213.31	70.32	1.40	270.50	07.10	74.20	3.00	0.72	30.37	211.50	1007.4

Source: Data World calculations based on population projection and CSIR Red Book

As per the medium growth scenario, the municipality will require 638.7 ha land by 2050, and as per the high growth scenario the requirement for land will be 1007.4 ha. In the medium growth scenario, 487.6 ha additional land in 2019-30, 138.3 ha in 2030-40, and 13.3 ha in 2040-50 is required for development. Whereas in the high growth scenario the municipality will require 610.77 ha additional land in 2019-30, 251.7 ha in 2030-40, and 144.9 ha in 2040-50 for the same purpose. The land requirement assessment study does not consider non-urban land uses such as mining, agriculture and natural land. Detailed additional land requirements per use category for both scenarios for 2019-30, 2030-40, and 20140-50 are provided in annexure.

For the municipality to ensure provide efficient services, the municipality must be ready to meet the maximum demand. It is, therefore, recommended that the municipality follow the high growth scenario to allocate land for future development. Besides the high growth scenario is more realistic as it is based on historic growth trends. However, for comparison purposes, results of both medium and high growth scenarios are provided in this document.

#### 8.3 **HOUSING DEMAND**

By 2050, there will be a requirement of 7198 additional housing units to accommodate the growing population. It is assumed that in the townships (Siyathemba and Nthorwane), low cost/RDP houses will meet 80% of the additional demand, whereas in other areas it will be 40%. In addition to the additional demand, the current housing demand/shortfall in the municipality is 4645 units (National Housing Needs Register, 2018). It is assumed that 80% of the current demand is for RDP/low cost houses. Considering the both additional and current demands, the total housing requirements in Dipaleseng is 11843 of which 72% units will be of low cost/RDP in nature. The following table provides a detail account of the additional housing requirements per area and housing type.

Table 28: Additional Housing Demand-High Growth Scenario (2019-2040)

Area	Total Units	Low Cost/RDP Units	General Residential Units
	Additional Deman	d due to Population Growth	
Siyathemba	3867	3094	773
Balfour	646	258	388
Rural/ Settlement	584	234	350
Greylingstad	143	57	86

Nthorwane	1039	831	208						
Grootvlei	919	368	551						
Dipaleseng	7198	4842	2356						
Current Demand/ Shortfall (National Housing Needs Register, 2018)									
Dipaleseng	4645	3716	929						
Total Demand (Additional + Current)									
Total- Dipaleseng	11843	8558	3285						

Assuming that the average stand sizes of low cost/RDP units and general residential units are 250 and 400 sq.mt respectively. Please note, this document considers only additional demand created by population growth in land usage and infrastructure requirements calculations.

#### 8.4 INFRASTRUCTURE DEMAND

The following section provides an overview of the additional infrastructure requirements viz. water supply, and sewerage system in the municipality. Similar to land requirement, infrastructure requirement is greatly influenced by population growth. Land use patterns also influence infrastructure demand.

### 8.4.1 Water Supply

The following assumptions have been made to estimate future water demand:

- Domestic
  - o General residential-800 lt/household/day
  - Low Cost residential- 350 lt/household/day
- Non-domestic (Kilo It/ha of land occupation/day)
  - Educational Facilities 20
  - o Health Facilities -20
  - o Community Facilities- 12
  - Government Facilities -13
  - Office, Business, Trade and Commercial establishments- 21
  - o Industrial (including RDP & LED projects) establishments- 13
  - o Open Space- 12

The water demand has been calculated based on the expected increase in population, land use pattern and assumptions described in earlier section. In 2050, there will be an additional demand of 6.66 MLD (medium growth scenario) or 11.46 MLD (high growth scenario). It is recommended that the municipality develop infrastructure for meeting the additional highest demand i.e. 11.46 MLD. Most of the additional demand will be generated by Siyathemba (4.61 MLD) and Balfour (2.06 MLD). The current demand is 16.8 MLD. Hence, the total capacity for the water supply network should be 28.26 MLD in 2050. The following table provides a summary of additional water demand per area.

Table 29: Additional Water Demand in MLD (2019-2040)

Area	2019-2030	2030-2040	2040-2050
	Mediu	m Growth Scenario	
Siyathemba	1.63	1.90	1.91
Balfour	1.30	1.57	1.60
Rural/ Settlement	0.26	0.40	0.40
Greylingstad	0.29	0.29	0.29
Nthorwane	1.00	1.47	1.47
Grootvlei	0.60	0.86	0.99
Dipaleseng	5.08	6.48	6.66
	High	Growth Scenario	
Siyathemba	2.57	3.65	4.61
Balfour	1.46	1.87	2.06
Rural/ Settlement	0.42	0.68	0.83
Greylingstad	0.32	0.36	0.39
Nthorwane	1.08	1.72	1.92
Grootvlei	0.83	1.29	1.65
Dipaleseng	6.68	9.56	11.46

The following table provides a summary of water demand per use category. It can be noticed that the most water consuming activities are residential, industrial, government facilities, educational facilities, and government facilities.

Table 30: Additional Water Demand in MLD per Use Category (2040)

Area	Domestic	Education Facilities	Health Facilities	Community and Recreational Facilities	Government Facilities	Industrial Activities, LED & RDP Projects	Office and Business	Trade and Commercial	Open Space/ Park	Total (mld)
	Medium Growth									
Siyathemba		0.36		1.09	0.31	0.00		0.00		
	0.02		0.02				0.00		0.11	1.91

Balfour	0.01	0.12	-	0.40	0.14	0.83	0.00	0.00	0.00	1.40
	0.01						0.00		0.09	1.60
Rural/		0.10	-	0.28	-	0.00		0.00		0.40
Settlement	0.01			0.00	0.00	0.05	0.00	0.00	0.02	0.40
Greylingstad	0.00	-	-	0.20	0.02	0.05	0.00	0.00	0.02	0.29
Nthorwane		0.35		0.71	0.26	0.05		0.00		
	0.01		0.00				0.00		0.08	1.47
Grootvlei		0.18	-	0.61	0.14	0.00		0.00		
	0.01						0.00		0.06	0.99
Dipaleseng	0.04	1.10	0.00	3.29	0.87	0.94	0.00	0.00	0.00	
	0.04		0.02		High Gro	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	0.00		0.38	6.66
<b>A</b> 1 11 1		0.04		1.10			1	0.00		
Siyathemba	1.70	0.94	0.03	1.10	0.31	0.16	0.07	0.08	0.24	4.61
Balfour	.,, 0	0.12	-	0.40	0.14	0.86	0.07	0.01	0,2 .	
	0.40						0.01		0.11	2.06
Rural/		0.10	-	0.28	-	0.02		0.01		
Settlement	0.36						0.01		0.04	0.83
Greylingstad		-	-	0.20	0.02	0.06		0.00		
	0.09						0.00		0.02	0.39
Nthorwane		0.30		0.72	0.26	0.04		0.02		
	0.46		0.00				0.02		0.10	1.92
Grootvlei		0.12	-	0.61	0.14	0.09		0.02		
	0.57						0.02		0.09	1.65
Dipaleseng	2.50	1.57	0.00	3.32	0.87	1.23	0.10	0.14	0.40	11.47
	3.58		0.03				0.12		0.60	11.46

### 8.4.2 **Sewerage Infrastructure**

It is assumed that 80% of the supplied water will reach the sewage system. The municipality currently supply 16.8 MLD water; hence, 13.4 MLD water reaches wastewater treatment plants. But the combined capacity of the wastewater treatment plants is only 6 MLD. Hence, there is a current gap of 7.4 MLD wastewater treatment facilities. In addition, due to the increase in demand

for water supply, additional 9.17 wastewater water will be generated. The following table highlights the additional wastewater to be generated due to increase in water supply.

Table 31: Additional Wastewater Generation in MLD per Use Category (2040)

Area	2019		2040-50
	Medium Gro	wth	
Siyathemba	1.30	1.52	1.53
Balfour	1.04	1.25	1.28
Rural/ Settlement	0.21	0.32	0.32
Greylingstad	0.23	0.23	0.23
Nthorwane	0.80	1.17	1.17
Grootvlei	0.48	0.69	0.79
Dipaleseng	4.07	5.18	5.33
	High Growl	h	
Siyathemba	2.06	2.92	3.69
Balfour	1.17	1.49	1.65
Rural/ Settlement	0.34	0.54	0.66
Greylingstad	0.26	0.28	0.31
Nthorwane	0.86	1.37	1.53
Grootvlei	0.66	1.03	1.32
Dipaleseng	5.35	7.65	9.17

Considering the current gap and future demand for wastewater treatment facilities, the municipality needs to develop infrastructure to treat additional 16.57 MLD wastewater.

#### 8.4.3 **Electricity**

Based on the assumption that 30kwh electricity per day is required for every household, 214940 kwh electricity will be required in 2050. However, the total demand for electricity will be higher than this as the other land usages (educational, government, industrial etc.) consume electricity but their consumption is not included in the calculation. The following table provides a breakup of electricity requirement for domestic purposes.

Table 32: Electricity Requirement for Domestic Purposes (kwh/day)

Area	2019-30	2030-40	2040-50
	Medium Growth		
Siyathemba	270	690	1200
Balfour	60	90	180
Rural/ Settlement	60	90	180
Greylingstad	0	0	30
Nthorwane	60	180	330
Grootvlei	60	120	240
Dipaleseng	510	1170	2160
	High Growth		
Siyathemba	39990	75540	116010
Balfour	6330	12510	19380
Rural/ Settlement	6390	11520	17520
Greylingstad	1470	2790	4290
Nthorwane	10740	20280	31170
Grootvlei	9510	17940	27570
Dipaleseng	74430	140580	215940

# 9 LAND USE MANAGEMENT GUIDELINES

It is stated in section 26(e) part 2 of the Municipal Systems Act, (Act 32 of 2000) that a spatial development framework of a municipality must include the provision of basic guidelines for the land use management system for the municipality. The guidelines mentioned should be used to guide development s in Dipaleseng Local Municipality and should furthermore be merged in their land use management system. The approach taken in the Land Use Scheme should be as follows:

#### 1. Subdivision of Agricultural Land

It is important that development on agricultural land in Dipaleseng should be utilised in a sustainable manner in order to obtain long term benefit.

- The Subdivision of Agricultural Land Act 70 of 1970 should be enforced to protect high value agricultural land in the municipality.
- This Act is of relevance for agricultural land that is still viable for farming purposes. In most cases for farm portions greater than 20 hectares in extent
- The subdivision of agricultural land should not result in units smaller than:
  - o A unit able to carry 60 livestock units on land used for grazing
  - o A unit of 100 hectares on land used for dry crop production
  - A unit of 20 hectares on irrigated land with the proviso that of validated water rights from a recognisable source, such as a water scheme or borehole, for 10 hectares is available
- These standards will also apply to the notion of small holdings small holdings may not be established on productive or high potential agricultural land
- If piped water is not available (excluding borehole water), the minimum size for subdivision of farm portions that are on medium or low potential agricultural land, is 5 hectares. If piped water is available (excluding borehole water), the minimum size for subdivision of farm portions that are on medium or low potential agricultural land, is 1 hectare.
- An agricultural holding can be subdivided to a minimum size of 8565m2, as stipulated in the Agricultural Holdings Act No 22 of 1919.
- Subdivision of farm portions smaller than 1 hectare or holdings smaller than 8565m2, where piped water is available (excluding borehole water), are not supported. In such cases township establishment applications will need to be submitted in terms of the Dipaleseng Spatial Planning and Land Use Management By-laws. Further, the by-laws do not guarantee approval of any application. Each application will be treated on its own merit.
- Land uses on agricultural land should be limited to agricultural activities and tourism activities which will not harm it e.g. hiking trails and game farming. A site development plan with the design and functional utilisation of the land should be provided to Dipaleseng local Municipality.
- The following table identifies land uses that may be permitted on agricultural land.

No.	Land Use	Description
1.	Agri-village	<ul> <li>The size of agricultural potential of the land and settlements taking into consideration provision of infrastructure</li> <li>Access to public transport and proper road infrastructure should determine the location of agri-villages</li> </ul>
2.	Agri-industry	<ul> <li>Physical suitability, location, availability of infrastructure, access to services, economic and financial constraints are factors that should be taken into consideration when establishing an agri-industry</li> <li>Establishing a agri-industry will not harm the agricultural potential of the land</li> </ul>

#### 2. Residential Developments

Infill developments and densification of residential developments mentioned in the local spatial development frameworks should be prioritised to achieve sustainable residential developments. The following guidelines should be used in order to achieve sustainable residential developments

- Residential developments should be guided by the Housing Act No 107 of 1997
- Allocate high density residential within close proximity to public transport systems
- There must have access to social amenities such as schools, health care facilities and public facilities and economic opportunities
- Guest houses, businesses, offices, restaurants and hostels may be permitted with the consent of the municipality

#### 3. Environment

The following guidelines are guided by the South African National Biodiversity Institute and the Mpumalanga Biodiversity Conservation Plan with respect to specific land use regulation therefore development within these areas should adhere to the following guidelines:

Y= Yes, land use is permitted, therefore encouraged

Broad Land use		Associated SDF category	Associated land use activities	CBA	ESA 1	ESA
1	Conservation	Environmental Conservation	Conservation management, low- intensity eco-tourism activities and sustainable consumptive activities	Υ	Y	Υ
2	Recreation	Tourism and Accommodation	Low Impact Tourism/Recreation accommodation	R	Y	Y

N= No, land use is not permitted, therefore discouraged

R= Restricted to compulsory, therefore not usually permitted

			High Impact Tourism/Recreational	N	N	R
			and accommodation			
3	Agriculture	Agriculture	Extensive Game	Υ	Υ	Υ
			Farming			
			Extensive Livestock	Υ	Υ	Υ
			Production			
			Game Breeding/	N	N	N
			Intensive Game			
			Farming		_	
			Arable Land – Dryland	N	R	Υ
			and Irrigated Crop			
			Cultivated	N 1	N 1	
			Plantation Forestry:	N	N	R
			Timber Production	N.I.	N.I.	N.I.
			Agricultural	N	N	N
			Infrastructure - Intensive Animal			
			Farming (e.g. feedlot,			
			dairy, piggery, chicken			
			battery).			
		Municipal	Local agri-economic	N	R	Υ
		Commonage	development.	• `		
4	Rural Settlement	Rural Residential	Low density rural	R	R	R
			housing or eco-estates			
			Traditional Areas	N	R	R
			(existing) and Rural			
			Communal Settlement			
			(New).			
5	Urban	Residential	Low, low-medium,	N	N	N
			medium-high, and			
			high density urban			
			residential			
			development. (= NW =			
			Urban & Business			
		Rusinoss /Urban	Development)	N	N	N
		Business/Urban Influence	An amalgamation of land use zones,	IN	IN	IV
			including Institutional,			
			Urban Influence,			
			General Mixed Use,			
			Low Impact Mixed Use,			
			Suburban Mixed Use			
			and General Business.			
			(= NW = Urban &			
			Business Development			
		Open Space	Public or Private Open	R	Υ	Υ
			Space, including			
			recreational areas,			
		I .	parks etc.			

6	Transport	Transport Services	Transportation service land uses e.g. airports, railway stations, petroports and truck stops, bus and taxi ranks and other transport depots.  = NW = Linear Engineering Structures)	R	R	R
		Roads and Railways	Existing and planned linear infrastructure such as hardened roads and railways, including activities and buildings associated with road construction and maintenance, e.g. toll booths, construction camps and road depot sites. (Linear Engineering Structures	R	R	R
7	Industrial	Low or High Impact and General Industry	Low Impact, General Industry and High Impact Industry (Urban & Business Development).	N	N	Z
8	Mining	Mining and Quarrying		Ν	Ν	Ν

The associated land uses that will have not disturb the environment may include nature conservation, tourist facilities, stock farming with the implementation of grazing management guidelines, hunting safaris, scientific research, religious ceremonies and environmental education. Low impact tourism may also be included. All mining operations must go through an Environmental Impact Assessment which will be approved by the Department of Mineral Resources with the consent of the municipality.

# 10 INSTITUTIONAL FRAMEWORK

The institutional framework sets out important elements of implementing spatial development programmes, objectives and land use management guidelines that were identified in the previous section for Dipaleseng Local Municipality. The framework also includes the elaboration of the Capital Investment Framework, which outlines all the important actions and/or projects that need to be developed in order to realise the vision of the Dipaleseng SDF. x

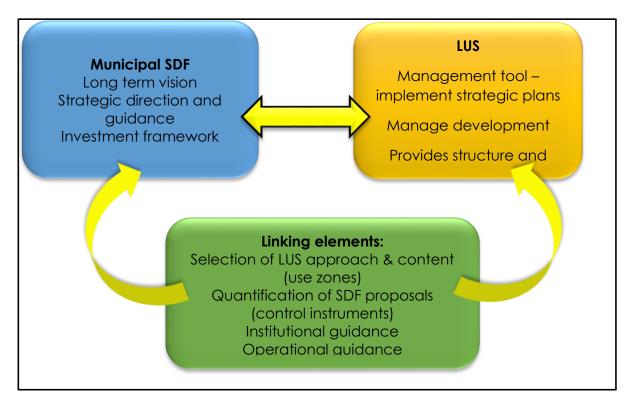
As part of the Municipal IDP, the SDF and its implementation elements are crucial for the progressive development of the municipal area and its communities. Implementation of the SDF will be achieved through further detailed planning of the identified development areas and the formulation of municipal land use management tools.

#### 10.1 **LAND USE MANAGEMENT**

# 10.1.1 Linkages between the Spatial Development Framework and the Land Use Scheme

A Land Use Framework (LUF) is one of the components of land use management system of a municipality. A LUF is used as a linking framework to bridge the gap between the municipal SDF and Land Use Scheme (LUS). It bridges this gap by providing additional information and guidelines that can assist the municipality in decision-making processes, while a Scheme is being formulated. Its main purpose is to provide a basis for the preparation of a Scheme.

As such, the SDF provides strategic direction, i.e. the "Linking Elements" which is the LUF than provides a more detailed spatial plan and the Land Use Schemes (LUS) provides the statutory basis for land use decision-making. To ensure consistent decision making the LUS must reflect the vision, strategies and guidelines of the SDF. The use of statements of intent in a LUS must assist the municipality and its planners to link the LUS to the broader vision, strategies and policies contained in the SDF, as does promoting the projects identified in the IDP within the LUS through shortened land use application procedure. However, SDFs do not always provide enough guidance for preparing a Scheme. Therefore, a set of linking elements enabling a more effective link between the SDF and the Scheme must be developed during the formulation of the LUS.



**Figure 8: Land Use Framework Process** 

### 10.1.2 Alignment with the DLM Land Use Scheme

During the development of the SDF the Dipaleseng Local Municipality is also in the process of developing its Land Use Scheme (LUS). Essentially the LUS must cover the entire municipal area as prescribed in SPLUMA and will be used to perform the following functions:

- Assess and verify existing development rights on individual properties in the municipal area;
- Compare existing land use rights as recorded in the LUS to potential land uses as earmarked in the Spatial Development Framework for any given property under investigation;
- Determine the most appropriate procedure to follow to obtain the rights to be applied for, based on the directives contained in the LUS.

Applications for changes in land use rights are submitted to the DLM Town Planning Department for consideration and circulated to relevant departments e.g. Infrastructure Department, Community Services and Local Economic Development. Shortened land use application procedures should be considered which will essentially make it easy for developers to comply with the directives set out in the SDF, for example applications related to densification within activity nodes, corridor development along selected routes/route sections, and township establishment and housing developments within incremental areas. Incentives in the form of lessened bulk contributions can also be enforced within the Scheme.

#### 10.2 **IMPLEMENTATION POLICIES**

The following policies will assure the effective implementation of the Dipaleseng Spatial Development Framework

### 10.2.1 **Nodal Policy**

Nodes are areas of concentrated activities which are often associated with the presence of employment opportunities, residential development and supporting social infrastructure located on or adjacent to mobility roads and spines, and as such act as destinations for public transport.

The previous SDF has clearly defined all the nodes within the Dipaleseng LM. There has been no change in delineation of nodes from the previous SDF; however, there is some change in the classification and hierarchy of the nodes which will take place following the publication of the SDF and through a nodal policy review process. The nodal review should contextualise the role and function of each node as per the proposed typology from both the NSDF and PSDF (i.e. CSIR Settlement Typology). It is prudent to note that the CSIR is still working on expanding the typology to include more localised areas e.g. DLM rural areas.

The table below describes the unique characteristics and qualities of the different nodes, categorising them accordingly, and offering a set of recommended interventions for each. This offers directions for gradual development of all the relevant nodes in DLM, reflecting the main characteristics of the nodes and guidelines for development or intervention. The urban design concepts and public environment guidelines are relevant to the nodes and should be further refined in the various proposed precinct plans.

Table 33: Nodal Hierarchy

Classification	Characteristics	Development Guidelines	Interventions
Primary Activity Node: Balfour	<ul> <li>Main economic center</li> <li>Provides a variety of services and functions.</li> <li>Accommodates a variety of developments and social support infrastructure.</li> <li>Strategically located on mobility spines and roads such as R23 and R51 road.</li> <li>Largest population size</li> <li>Fulfil a variety of functions with sufficient mixed uses</li> </ul>	<ul> <li>Provision of adequate public transport facilities</li> <li>Provision of informal trading facilities</li> <li>Provision of inclusionary business</li> <li>Pedestrian friendliness and access within the town</li> <li>Provision of social facilities and parks.</li> </ul>	<ul> <li>Facilitate the development of Balfour into an economic growth center.</li> <li>Attract private and public investments.</li> <li>Promote urban renewal/ revitalization strategies.</li> <li>Increase economic and social opportunities.</li> <li>Accommodate regional and subregional growth.</li> <li>Provide a full range of services and goods</li> </ul>
Secondary Activity Node: Greylingstad and Nthorwane	<ul> <li>Agricultural function (Greylingstad)</li> <li>Activities are of a local nature providing for convenience, daily needs and social services.</li> <li>Pedestrian activity is relatively easy</li> <li>Crippled by a lack of engineering and social infrastructure services.</li> <li>Relatively small populations in both towns.</li> </ul>	<ul> <li>Provision of adequate public transport facilities</li> <li>Provision of informal trading facilities</li> <li>Provision of social facilities and parks</li> <li>Interface with surrounding environment</li> <li>Design approach should focus on creating attractive spaces.</li> </ul>	<ul> <li>Improve the provision of basic engineering.</li> <li>Provide rural communities with a range of lower order (day to day) services and facilities.</li> <li>Improve main roads</li> <li>Integrate nodes within its surrounding environments with pedestrian linkages</li> </ul>
Secondary Activity Node: Grootvlei (Ext1, 2 and Dasville)	<ul> <li>Industrial function (Grootvlei Power Station).</li> <li>Activities are of a local nature providing for convenience, daily needs and social services.</li> <li>Pedestrian activity is relatively easy</li> <li>Crippled by a lack of engineering and social infrastructure services.</li> <li>Relatively small populations in both towns.</li> </ul>	<ul> <li>Economic feasibility (Grootvlei Power Station)</li> <li>Provision of adequate public transport facilities</li> <li>Provision of informal trading facilities</li> <li>Provision of social facilities and parks</li> <li>Interface with surrounding environment</li> <li>Design approach should focus on creating attractive spaces.</li> </ul>	<ul> <li>Promote revitalization strategies and marketing for Grootvlei Power station</li> <li>Improve the provision of basic engineering.</li> <li>Provide rural communities with a range of lower order (day to day) services and facilities.</li> <li>Improve main roads</li> <li>Integrate nodes within its surrounding environments with pedestrian linkages</li> </ul>

#### 10.2.1.1 Nodal development guidelines

The guidelines and management approach of Nodal Hierarchy suggest a broad framework for directing a longer-term development of nodal areas, however characteristics of different nodes should be taken into account when developing the nodal review policy. The distinction that is important to note, is that the Nodal Hierarchy provides a high level "placement" of nodes relative to one another, whilst the Nodal Strategy proposed here should provide a more immediate direction to shorter term growth priorities for each node.

- Community benefits: Nodal development encourages people to walk by placing shopping, services and housing in close proximity to one another. This revitalizes community life by helping streets, public spaces and pedestrian-oriented retail to become places where people gather and shop. Enhancing neighborhood life can boost the perceived security too, of an area by increasing the number of people on the street. It also makes neighborhoods more attractive to visit, providing tourists with a welcoming environment in which to dine shop or stay over.
- **Environmental benefits:** Nodal development is compact development. It reduces sprawl and traffic and preserves limited open spaces and environmentally sensitive areas. In addition, natural features can be integrated into nodal developments and used as recreation areas and greenways.
- **Agricultural benefits:** Compact development helps preserve important agricultural land and reduce development pressures on them.
- Public health benefits: With shops, services and housing in such proximity to one
  another, nodal development helps make active transportation options like walking
  or biking more realistic for a broader range of community members. This helps
  reduce the number of automobile trips residents have to make and pedestrianfriendly environments are recognized as improving community health by making
  them more active and reducing obesity and stress.
- **Economic benefits:** Nodal development has substantial fiscal and economic benefits for municipalities, developers, community businesses and residents. By concentrating growth in areas that are already serviced with water and sanitation, municipalities are able to reduce infrastructure servicing costs, while diversifying and growing their tax base. For developers, nodal development can reduce the cost of infrastructure and increase the efficiency of land use.

## 10.2.2 Movement Policy

A movement policy should aim to promote the following:

- Support public transport;
- Promote accessibility of communities to employment, recreation and social opportunities;
- Promote mobility of major arterials and roads;
- Ensure that the movement system directly links with, and is supported by, strong high intensity nodes and higher density residential development;
- To create an effective transportation corridor; and
- Promote public transport and Transit Oriented Development (TOD) in both urban and rural areas.

Balfour, Grootvlei and Greylingstad are the three major towns in Dipaleseng Local Municipality and are economically dependent on one another. Mobility and accessibility are seen as the key structuring elements within the Dipaleseng Municipal area to ensure functional urban and rural integration. The efficiency of the towns is directly related to the efficiency of the movement system.

The Dipaleseng Local Municipality movement policy should therefore focus on:

- Creating regional linkages by:
  - (i) Ensure and maintain a high standard of regional accessibility (R23, R51, R54 and railway line);
  - (ii) Orientate regional accessibility to the N3 and N17 main roads;
  - (iii) Encourage improved linkages between municipalities; and
  - (iv) Promote and retain the mobility function of existing regional linkages (R23, R54 and R51).
  - (v) Improve accessibility and functionality of the urban and rural through the provision of proper road linkages
- Maintenance and upgrading of internal road linkages and activity spines by:
  - (i) Upgrading and maintenance of local roads, linkages and pedestrian friendly areas.
  - (ii) Ensure and maintain a high standard of local access within the municipality (R51 between Balfour and Grootvlei and the R23 between Balfour and Greylingstad); and
- Proper Road access in towns:
  - (i) Roads need to be upgraded and maintained in accordance with the Local Spatial Development Framework Plans.

The identified Gauteng-Balfour-Standerton-Volksrust-KZN corridor, consisting of the R23, is an important inter-nodal corridor that facilitates access to the municipality's primary node, Balfour.

The roads, R23 between Balfour and Greylingstad and the R51 between Balfour and Grootvlei, are prioritised for road upgrading to ensure connectivity between the nodes. The upgrading of the road should reduce the total travel time between the nodes.

## 10.2.3 **Urban Edge Policy**

In the context of this SDF an "Urban Edge" is a defined line drawn around the urban and rural areas off the Municipality as the growth boundary i.e. the outer limit of the municipal areas. Urban edges are intended to include an adequate supply of land that can be efficiently provided with municipal services (roads, water, sewerage etc.) to accommodate the expected growth of the municipal area for a defined period (in the case of SDF's – 10 years).

The intention of an urban edge is to contain urban development activities and limit urban sprawl and therefore focus on promoting infill development, densification and concentration of urban development within the urban edge, thereby maximising on the use of existing infrastructure.

The urban development boundary (UDB) indicates the interface between urban and rural environments. It therefore indicates the area where urban growth should not be allowed.

#### 10.2.3.1 Demarcation Objective

The following objectives of the Urban Edge remain important and should be applied in the demarcation of the Dipaleseng Municipality Urban Edge:

- Conservation of Environmental Resources specifically conservation areas, heritage sites, open space, high potential agricultural land and sensitive areas;
- Optimum utilisation of engineering services and community facilities.
- Optimization of public transport systems with resultant reduction in pollution (air, water, noise etc.) and travelling time and cost;
- Prevention of urban decay. By drawing a boundary around the existing urban area, development is focused inward, resulting in all opportunities being explored, especially the regeneration of decaying areas;
- Promotion of opportunities for redevelopment, infill development and densification.
- Creating affordable cities for residents shorter travelling distances (costs) and efficient use of infrastructure.
- Upgrading/re-use of infrastructure rather than expansion. Proper maintenance and upgrading of existing infrastructure is more cost-efficient than expanding and creating more maintenance costs
- Develop a sustainable urban region through promoting equitable access to basic services, the protection of natural and cultural resources, and an urban form that supports greater efficiencies in land use and service provision

#### 10.2.3.2 Demarcation Criteria

Within the context of the guidelines contained in the above section, it is suggested that Dipaleseng LM consider the following generic criteria in the demarcation of the Urban Edge:

- Protection of the agricultural resource.
- Present growth trends at a regional and local level.
- Creating a compact urban footprint.
- Allowance for realistic urban growth.
- Reduction of peripheral urban growth.

#### 10.2.3.3 Guidelines

Land uses which can be allowed in the rural areas outside the urban edge will include, inter alia, the following:

- Extensive and intensive agriculture;
- Conservation areas and nature reserves, tourism and related activities, i.e. accommodation establishments, guest houses, conference centres, tea gardens, craft markets, etc.;
- Recreational facilities and venues, e.g., hiking, hunting, adventure sports, horse riding schools and stables, etc.;

- Tourism and related activities e.g. curio markets, resorts;
- Farm stalls, home industries and small-scale agri-industries, e.g., cheese making, meat processing, etc.;
- Rural residential/agricultural holdings in specific areas;
- Agri-villages or agricultural accommodation; and
- Community facilities and business uses clustered in rural areas

#### 10.2.3.4 Urban Development Boundary Regulations

The following regulations are applicable to the Dipaleseng urban development boundary.

- Existing and new rights: Amending the UDB each time an application is approved beyond its delineation would be impractical. Similarly, a scattered series of properties bounded by individual boundaries is not desirable. Where large portions of land are involved and or a cluster of properties form a logical extension of the UDB, a realignment of the UDB post-approval of rights may be considered via the SDF review cycle (every 5 years).
  - Where rights have been historically approved or are newly approved by municipality beyond the UDB, these rights remain intact. It will not however necessitate a formal amendment to the UDB (unless deemed prudent by Director: Development Planning or via the SDF review cycle).
- Infrastructure Provision: The focus for Dipaleseng in the short to medium timeframe is to upgrade and refurbish existing infrastructure within the UDB. In order to effectively do this and minimise current backlogs within the municipality, infrastructure beyond the UDB cannot and should not be supported.
- 3. Township Establishment and Land Development Areas beyond the UDB: A proliferation of developments beyond the boundary, facilitated via Township Establishment applications is not desirable for Dipaleseng. However, the formal establishment of a township to facilitate an appropriate and acceptable development (in relation to guidelines prescribed in this section) and without placing an obligation on the municipality to extend services and infrastructure may be acceptable in certain instances (e.g. where legal issues prohibit the granting of consent uses, where a township application becomes most appropriate to address development concerns i.e. traffic impact & geotechnical analysis)
- 4. Subdivision of land outside the Urban Development Boundary:
  - The subdivision of land outside the UDB will only be allowed if it complies with the following criteria and the subdivision of agricultural land guidelines:
    - o Compliance with land use criteria noted above;
    - Division is within the parameters of the Subdivision of Agricultural land guidelines
    - An existing second dwelling is not the primary motivation for the subdivision;
    - Subdivision of productive agricultural areas with agricultural potential should only be allowed in special circumstances and only with the written consent from DARDLEA;

- Where a subdivision is motivated because of a road, river or servitude physically severing land, the reason for the severance should be proven. The provision of services and registration of servitudes should be to the satisfaction of the Municipality
- o There shall be no obligation on Municipality to render services in any form whatsoever.

### 10.2.4 Residential Densification Policy

One of the tools available to Dipaleseng LM to keep up with the needs of the growing population and to address the challenges of urban sprawl, congested infrastructure, etc. is densification.

Densification is the process whereby densities, i.e., the number of dwelling units per hectare; is increase in a planned and sustainable manner.

Densification locations:

- Along Transit Oriented Development (TOD) and railway;
- Brownfield sites;
- Subdivision of properties
- Greenfield developments;
- In and around nodes; and
- On the periphery of open spaces to increase surveillance.

#### 10.2.4.1 Objectives of Densification

Densification creates a more compact environment that improves accessibility to work, services and public transport. It also provides for more efficient use of infrastructure. Promoting higher urban densities primarily aims to restructure the urban environment in such a way that it becomes more efficient, more equitable and more convenient for its residents to live in.

Based on the aforementioned, the objectives of densification in Dipaleseng LM should be to:

- Minimise the Municipalities urban footprint;
- Prevent the destruction of agricultural land and sensitive high-quality environments by preventing sprawl;
- Reduce travel and transaction costs through appropriate infrastructure planning;
- Ensures a diversification of housing typologies;
- Promotes adequate provision of social and economic amenities to ensure better quality of life; and
- New settlements/developments must promote the optimal use of infrastructure and resources;

#### 10.2.4.2 Proposed Densification Areas

**Balfour** – the total proposed densification area is approximately 900 hectares at 60 dwelling units per hectare as per the land sizes depicted on the Balfour LSDF

**Greylingstad -** the total proposed densification area is approximately 158 hectares at 15 dwelling units per hectare as per the land sizes as depicted on the Greylingstad LSDF

#### 10.2.4.3 Guidelines

The following matters should be considered when considering applications for a higherdensity land use for a residential or non-residential

- Residential amenity should in general be protected, specifically, but not exclusively, from:
  - significant changes to traffic conditions in local streets including an increase walkability and cycling areas, this will help reduce transport related emission and increase the use of public transport;
  - o noise, light or odors emitted from the site; and
  - o disturbance associated with the hours of operation.
- Low scale, non-intrusive, non-residential uses should be permitted in residential areas, i.e., shopping facilities, home offices, home industries, etc. to promote mixed use and economic development
- Higher residential densities along main roads, around major nodes, social amenities (schools) and employment areas should be promoted and actively supported.
- The density of proposed and existing built-up areas should correlate with the availability of productive open spaces and public amenities in close proximity thereto, the higher the density/intensity of residential developments, the more productive open space and public amenities are warranted.
- Areas designated for public use should be incorporated within high-density developments and larger public open spaces should be provided in close vicinity to these developments.
- Medium-density residential development should promote a mixture of cluster housing.
- Densification of existing residential areas should take place without compromising the quality of living principles.
- Subdivisions of farm portions should correlate with the availability of public infrastructure. Subdivisions of farm portions should be subjected to the following conditions (and in correlation to section 11.2.3.4):
  - The owner can prove to have adequate water supply from local sources, such as boreholes or the Municipality;
  - The subdivision does not pose any pollution problems related to air quality and sanitation,
  - The existing road infrastructure can handle the increased traffic volumes,
  - Proposed subdivision is not located on high potential agricultural land or sensitive environmental protection areas.

#### 10.2.5 **Infrastructure Policy**

The provision of basic infrastructure such as water, electricity, and sanitation and refuse disposal should be developed towards achieving the objectives of sustainable development. Infrastructure development in Dipaleseng has not received adequate

attention. As a result, existing infrastructure is generally in a poor condition. Therefore, there is a need to update and review the Dipaleseng infrastructure masterplan in order to assist in the development and provision of basic infrastructure within Dipaleseng LM and provide milestones and targets to the provision of services in the municipality.

#### 10.2.5.1 Phasing of Engineering Services

A phased approach shall be followed in the provision of engineering services as indicated in the infill and densification area as indicated on the Local Spatial Development Concept Plans.

The phasing is based on the following priorities:

- The upgrade of existing engineering services in all towns to eradicate the backlog and simultaneously to rural areas,
- Upgrade of the Suikerbosrand dam to increase storage capacity
- Increase engineering capacities to provide for projected growth; and
- To increase the capacity to attract future economic growth in all the towns.

# 10.3 INSTITUTIONAL ARRANGEMENTS FOR IMPLEMENTATION

As per Section 26 of the Municipal Systems Act the Spatial Development Framework is one of the legal components of the Integrated Development Plan (IDP). As such, the SDF thus becomes part of the statutory processes associated with the IDP which includes, the processes related to Inter Governmental Relations (IGR), Community Consultation and Participation, and the Budgeting process of the local municipality.

Therefore, the proposed that the Dipaleseng Local Municipality SDF should be incorporated into the DLM IDP process during the 2020/21 IDP Review. The Dipaleseng SDF should then serve as the backdrop against which all developmental needs, and projects and forthcoming initiatives, should be measured and assessed. All projects and programmes to be implemented by the various spheres of government, parastatals organisations, and/or the private sector should then firstly be evaluated in order to ensure that these are in support/aligned with the principles of the SDF, and will contribute towards the achievements of the spatial vision for the municipal area, before being included into the IDP for the next financial year.

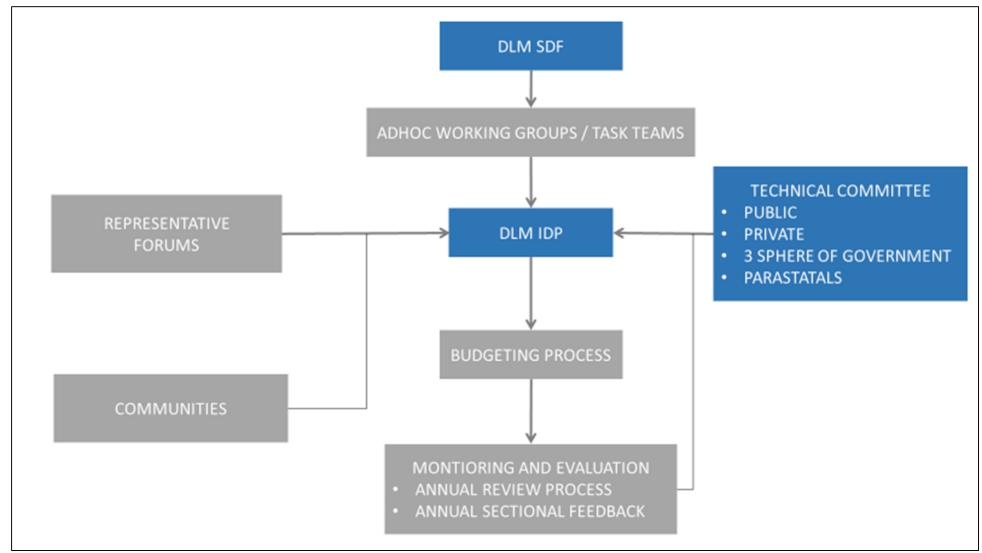
The two consultation mechanisms of the IDP process i.e. the IDP Technical Committee and the IDP Representative Forum, which involves all technical and political stakeholders of the municipality, public and private partnerships is the ideal medium that can be used to promote and market the development objectives and projects reflected in the Dipaleseng SDF (Figure 20). There is also opportunity to utilise existing or new Working Groups/ Task Teams to implement aspects of the SDF even outside the official IDP structures.

Representatives of all departments from all three spheres of government participate in the IDP process, and if they all work in accordance with the principles contained in the SDF, the alignment and synchronisation of the programmes of sectoral departments can be significantly improved. This will specifically be of critical importance in the establishment of Thusong Centres where several stakeholders have a role to play.

By incorporating the DLM SDF into the IDP process, this will ensure that the proposed projects and programmes emanating from the SDF process are incorporated into the IDP, from where it feeds into the Budgeting process of the Municipality. In this way the effective linkage of the SDF to the Municipal Budget is achieved.

Monitoring and evaluation of the Dipaleseng SDF is required in order to manage and track the implementation of the SDF proposals. The IDP process is subject to a cyclical review on an annual basis. It is advisable that as part of the annual IDP Review Process, an assessment/audit should be done each year to determine to what degree the goals and objectives of the SDF were achieved during the preceding year. This also leaves enough time to rectify the shortcomings identified, and to include these in the Revised IDP and Budget for the next financial year.

As the IDP Review process involves all development partners in the municipal area, it will also be possible to grant each partner an opportunity during the SDF assessment process to report on progress made in implementing their respective spatial initiatives, and for the various stakeholders to illustrate how their initiatives support the realisation of the spatial vision as contained in the Dipaleseng SDF.



**Figure 9: DLM SDF Implementation Strategy** 

#### 10.4 **CAPITAL INVESTMENT FRAMEWORK**

The Capital Investment Framework (CIF) as a component of the Municipal Spatial Development Framework (MSDF) is a requirement in terms of Section 4(e) of the Municipal Planning and Performance Management Regulations, 2001 as promulgated in terms of the Municipal Systems Act. The CIF also fulfils the function of a Capital Expenditure Framework (CEF) as required in terms of Section 21(n) of the Spatial Planning and Land Use Management Act, 2013. The purpose of the CIF is therefore to strategically and spatially guide, align and co-ordinate municipal capital expenditure across all sectors that will make provision for balanced spending of the municipal budget so as to promote economic growth and meet the infrastructure and services needs for the Dipaleseng Municipality residents.

The ensuing section identifies a set of programmes and projects essential for realising the spatial development strategies and plans. This section also identifies the parties responsible for implementing the projects and programmes. The projects and programmes have been categorised into three broad timeframes to indicate their time of implementation. These timeframes are short term (2030), medium term (2030-40) and long term (2040-50). However, the implementation framework of the SDF should be amended on an annual basis to measure implementation.

Principle	Responsibility	Estimated	Timeline								
		Cost	Short	Medium	Long						
			Term	Term	Term						
Movement and Transportation Corridors Objective											
Spatial Development Principle 1: Ensure connectivity between settle	ements, as well as n	odes and conne	ctivity within	settlement							
Development of the Dipaleseng Transport Master Plan	Provincial Dept. of Public Works, Roads and	R 900 000	X	X	X						
	Transport; DLM										
Upgrading of class 2 and 3 roads between Balfour, Grootvlei, Greylingstad, and outlying farming and rural areas.	Provincial Dept. of Public Works, Roads and Transport; DLM	R 500 000		х	X						
Upgrading of movement infrastructure such as taxi-bus ranks, footpaths and security facilities	DLM	R 300 000	X	X	X						

Principle	Responsibility	Estimated	Timeline			
		Cost	Short Term	Medium Term	Long Term	
Spatial Development Principle 2: Ensure and maintain a high accommodate freight, private vehicles, mini-bus taxis and buses	standard in terms o	of accessibility to	the wider	regional c	ontext and	
Maintenance and upgrading of the national and provincial road networks (N3, R51, R54 and R23)	SANRAL; Provincial Dept. of Public Works, Roads and Transport	R 600 000		x	X	
Spatial Development Principle 3: Decongestion of coal haulage roo	ads	1	L			
Definition of a Coal Network Grid within the LM	DLM		Х			
Stepping up of overload control facility	DLM			Х		
Increased investment in rail infrastructure to minimise the impact of coal freight on the road.	PRASA; DLM	R 800 000		Х	Х	
Road upgrading and maintenance is proposed, to cater for coal haulage:  Priority 1 – R23 from Balfour to Volkrust Priority 2 – R51/R548 from Balfour to Devon and N17 Priority 3 – R51 from Grootvlei to Balfour	SANRAL; Provincial Dept. of Public Works, Roads and Transport	R 600 000		Х	Х	
Sustainable Economic Development and Concentration Obje	ctive					
Spatial Development Principle 1: Strengthen Economic Bases of the	Existing Urban Cent	res				
Undertake detailed studies to identify the latent economic potential of the key urban centres, such as:  • Balfour: Agriculture (Beneficiation), Mining (Beneficiation), Construction, Transport, Small Scale Manufacturing  • Grootvlei: Utilities (Power Generation), Tourism, Retail, Agriculture (Beneficiation), Mining (Beneficiation),  • Greylingstad: Tourism, Retail, Agriculture (Beneficiation)	DLM; DRDLR; DEDT; ESKOM; GSDM		х	х	X	

Principle	Responsibility	Estimated	Timeline			
		Cost	Short Term	Medium Term	Long Term	
Invest in the key economic sectors such as the Agriculture and Tourism	DLM;			X	Х	
Sector for job creation.	DRDLR					
Implement relevant economic development projects of the Dipaleseng	DLM, GSDM;	R 800 000	Х	X	Х	
LED strategy such as:	DEDT					
Balfour: Dipaleseng Development Agency; Soybean Crusher	MEGA					
Plant; Cattle Feedlot; Organic Compost Production Plant;						
Food Production Plant; Truck Body Manufacturing Plant;						
Serviced Industrial Park; Waste Management Centre; Retail						
Shopping Centre						
Grootvlei: Coal Mine						
Spatial Development Principle 2: Economic Infrastructure Restructu						
Agriculture Sector Development by:	DEDT; DLM;	R 100 000 – R1 000	Х	X	X	
<ul> <li>Development of irrigation facilities the along the Vaal and</li> </ul>	DRDLR;	000				
Waterval riverbanks,						
<ul> <li>Providing necessary training and support to emerging farmers</li> </ul>						
<ul> <li>Development of beneficiation facilities focusing on the</li> </ul>						
processing of maize, soybean, sunflower and meat products						
Development of logistics facilities, storage and transport						
infrastructure and soft capital (human and financial						
resources)						
Implementation the GSDM RDP proposals, by developing the						
proposed FPSU's in Balfour, Grootvlei and Greylingstad	5-5-5-1	7.100.000				
Tourism Sector Development by:	DEDT; DLM;	R 100 000 –	X	X		
Package tourism products: Develop a diverse range of	DRDLR; MTPA;	R1 000 000				
special interest tourism products and routes such as water	14111 7 4,					
sports, birding, fishing, history, jock, leisure, adventure, and						
rural tourism.						

Principle	Responsibility	Estimated	Timeline			
		Cost	Short Term	Medium Term	Long Term	
<ul> <li>Develop tourist infrastructure such as tourist information centres in the main tourism areas (Vaal dam, Grootvlei dam and Greylingstad).</li> <li>Development of LUS conditions and guidelines that will enable more investment in lodging and boarding facilities</li> <li>Develop road infrastructure connecting the identified Tourism areas with the surrounding regions</li> <li>Training programmes for communities in the operation and running of tourist facilities</li> </ul>						
Create an investment incentive zone.  Develop strategies and marketing plan for investment zones.  Development of infrastructure (road, water supply, power supply etc.)  Incorporation of Tax incentive and Financial incentives in Municipal Land Use Development policies and frameworks	DEDT; DLM;	R 100 000 – R1 000 000	х			
<ul> <li>Township Economic Development by:</li> <li>Development of small retail centres in townships.</li> <li>Relax LUS and development restrictions in order to encourage small scale non-polluting industrial activities and services (such as furniture making and appliance repair centres) in the townships.</li> <li>Build capacity provide vocational training programmes.</li> <li>Create market access for products and services originated in the townships. (Manufacturing and retail centres)</li> </ul>	DEDT; DLM; MEGA; DTI;	R 100 000 – R1 000 000	Х	х	х	
<ul> <li>Skills Development and Capacity Building</li> <li>Development of a vocational training centre in Grootvlei</li> <li>Organise periodic skills development and capacity building workshops for emerging farmers, township entrepreneurs, tourism centre/ business operators</li> <li>Impart soft skills such as finance, marketing and operation</li> </ul>	DEDT; DLM; MEGA; DTI;	R 100 000 – R1 000 000	Х	х	Х	

Principle	Responsibility	Estimated	Timeline			
		Cost	Short Term	Medium Term	Long Term	
<ul> <li>Provide financial and infrastructural support to the emerging farmers and township entrepreneurs</li> </ul>						
Environmental Conservation and Utilisation					•	
Spatial Development Principle 1: Protection of the Municipal Biodiv	ersity & Ecosystem	Services				
Development controls and supporting mechanisms in critical biodiversity areas in order to ensure the protection and enhancement of valuable environmental assets	DARDLEA; DLM; MTPA		Х	Х		
Review of the Dipaleseng environmental management framework and policies	DLM; DARDLEA; MTPA	R 700 000	Х			
Map important ecological infrastructure for use in spatial planning and for restoration/rehabilitation.	DLM; MPTA	R 300 000	Х	Х		
Integration of natural ecological systems with urban development frameworks and planning through green corridors and the extension of an urban open space network	DLM; DARDLEA; MTPA		Х	Х	Х	
Local spatial development framework concepts and land use schemes should acknowledge special requirements for developing anything within the vicinity ecological infrastructure.	DLM; MPTA		х			
Identify high potential soils and implement the Mpumalanga Biodiversity Sector Plan or bioregional plans for Dipaleseng Municipality	DLM; DARDLEA; MTPA		Х	х		
Delineation of environmental heritage and conservation areas, biodiversity hotspots and ecological corridors as special biodiversity management zones in the municipality				Х	Х	
Spatial Development Principle 2: Conservation of Water Resources	and Catchment A	reas	<u> </u>			
Rehabilitation of the catchment areas of wetlands and the following rivers:  • The Vaal River catchment, which ultimately forms part of the Suikerbos River system;	DLM; DARDLEA; MTPA			Х	х	

Principle	Responsibility	Estimated	Timeline			
		Cost	Short	Medium	Long	
			Term	Term	Term	
<ul> <li>the Water Val River where it meets the Vaal River (Vaal</li> </ul>						
Catchment);						
<ul> <li>the Suikerbos River where it meets the Vaal River (Vaal Catchment);</li> </ul>						
• 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);						
Manage unlicensed water and sand extraction	DLM; DARDLEA			Х	Х	
Implementation of water loss control measures such as pressure	DLM;		Х	Х	Х	
management and leakage control programmes, Recycle wastewater	DARDLEA					
and Harvest rainwater						
Develop mechanism to control all forms of pollution in catchment areas	DLM;		Х	Х	Х	
	DARDLEA; MTPA					
Develop mechanism to control all alien plants infestations in river courses.	DLM;			Х	Х	
	DARDLEA; MTPA					
Regulate modification of river beds and natural flow patterns	DLM		Х	Х	Х	
Minimize the pollution and degradation of surface and groundwater by	DLM;		Х	Х	Х	
the optimal application of pesticides, herbicides and fertilizers (farmers).	DARDLEA; MTPA					
Monitor and measure water quality upstream and downstream of the	DLM;		Х	Х	Х	
irrigation areas to protect the aquatic ecosystem and the downstream	DARDLEA; MTPA					
users						
maintenance and upgrading of the hydrological systems / eco-services	DLM;		Х	Х	Х	
to mitigate against risk to public health	DARDLEA; MTPA					
Spatial Development Principle 3: Sustainable Agriculture						
Reforming agricultural legislation to support sustainable farming	DLM;			Х		
practices.	DRDLR					

Principle	Responsibility	Estimated	Timeline			
		Cost	Short Term	Medium Term	Long Term	
Draft and apply integrated management systems for natural areas within	DLM;		Х	Х		
agricultural zones	DRDLR					
Regulate the clearing of land for agricultural development in	DLM;		Х	X		
accordance with applicable legislation.	DRDLR					
Development of an agricultural protection and management framework	DLM;		X			
	DRDLR					
dentify and map all protected agricultural land.	DLM; DRDLR		X	X		
The approving of applications to convert intensive agricultural land to	DLM;		Х			
other uses should be a provincial responsibility	DRDLR					
Develop policies mechanisms that will assist in promoting small-scale and	DLM;		Х			
extensive commercial farming activities.	DRDLR					
Avoid the irreversible loss and degradation of biodiversity.	DLM; DRDLR			Х	Х	
Promote the skills of, and support to, small-holder farmers through the	DLM;		Х	Х		
provision of capacity building, mentorship, farm infrastructure etc.	DRDLR					
Spatial Development Principle 4: Climate Change Adaptation						
Conduct Awareness on climate change and its impact on the	DARDLEA; DLM		Х	Х	Х	
environment						
Developed a climate change adaptation strategy/plan and action plan	DARDLEA; DLM		Х	Х	Х	
Developed a climate change mitigation strategy/plan	DARDLEA; DLM		Х	Х	Х	
Establish a council committee that deals specifically with environmental	DARDLEA; DLM		Х			
and climate change issues						
Development of an Environmental Management strategy/ framework	DARDLEA; DLM;		Х	Х		
<u>-</u>	MTPA					
Design a climate change Adaption and Agriculture Programme and	DARDLEA; DLM		Х	Х	Х	
Capacity Building						
ntegrate climate change adaptation within existing development	DARDLEA; DLM		Х	Х		
olanning and implementation processes						

Principle	Responsibility	Estimated		Timeline	
		Cost	Short Term	Medium Term	Long Term
Spatial Development Principle 1: Promote spatial integration of settle	ements within the	municipality			
CEstablishing partnerships with the private sector for investment in social housing projects	DLM		Х		
Acquisition of land parcels for sustainable housing development	DLM			Х	Х
Relocation of informal settlement and backyard dwellers	DLM; DHS			Х	Х
Formalisation projects of informal settlements in Siyathemba, Dasville, Nthorwane and Balfour	DLM; DHS			Х	Х
Development of a Densification Policy	DLM		Х		
<ul> <li>Development of Precinct plans for the following nodes</li> <li>Balfour</li> <li>Greylingstad</li> <li>Grootylei</li> </ul>	DLM, COGTA		X		
Delineation of the Dipaleseng Urban Edge	DLM		Х		
Review of Nodal (Settlement) Policy	DLM; COGTA		Х		
Spatial Development Principle 2: Spatial Restructuring		-			1
Urban regeneration and well-located human settlement projects and plans to accelerate the spatial transformation.	DLM		Х		
Higher density residential development in and around selected nodes as well as along public transport routes.	DLM			Х	Х
Implement urban greening programmes to promote quality of life in urban areas	DLM		X	X	
Development of smart growth initiatives and resources in order to encourage urban regeneration of dilapidated CBDs and settlement	SLM		X		
Develop and promote local economic development programmes	DLM; DEDT		Х	Х	
Infrastructure Investment Objective					
Spatial Development Principle 1: Upgrading and maintenance of e	xisting infrastructu	re			
Upgrade of the Balfour Fortuna Water Treatment Works	MIG Fund		Х	Х	Х

inciple	Responsibility	Estimated	Timeline			
		Cost	Short	Medium	Long	
			Term	Term	Term	
Construction of additional storage reservoirs in Balfour, Siyathemba,	MIG Fund			Х	Х	
Greylingstad, Nthorwane						
Refurbishment of boreholes in Dipaleseng LM	DLM		Х			
Raising the Suikerbosrand Dam wall to create more storage capacity	MIG Fund		Х	Х	Х	
Upgrading of wastewater treatment works in Balfour from 4MI/day to 12MI/day	MIG Fund		Х	Х	Х	
Construction of a new 1.5MI/day wastewater treatment works in Grootvlei	MIG Fund		Х	Х	X	
Upgrade wastewater treatment works in Greylingstad from 0.5MI/day to 1.5MI/day	MIG Fund		Х	Х	X	
Desludging of pit toilets in farm areas	DLM		Х			
Eradication of septic tanks in Greylingstad	DLM		Х	Х		
	MIG Fund		Х	Х		
Ext 5 & 6 and Nthorwane	DIM					
Maintaining the sewer network on a daily basis to ensure unrestricted flow purification plant.	DLM		X	Х	X	
Explore the possibility of generating energy from renewable sources in the	DLM, MIG Fund			Х	Х	
municipality, e.g. Biomass plant from agricultural waste.	ESKOM					
Upgrading of an electricity substation in Balfour and Greylingstad	DLM; ESKOM		Х	Х		
Refurbishment of Grootvlei and Klipspringer substations	DLM; ESKOM		Х	Х		
Electrification of settlements in rural areas	DLM; ESKOM		Х	Х		
Construction of a weighbridge in Balfour	DLM; DARDLEA		Х	Х		
Procurement of new trucks to address waste and refuse collection backlog	DLM		Х			
Development of a waste management recycling hub on vacant land	DLM; DARDLEA			Х	X	
identified Balfour and Greylingstad			I		1	

Principle	Responsibility	Estimated		Timeline	
		Cost	Short Term	Medium Term	Long Term
Spatial Development Principle 1: Rural nodal development throug	h rural restructuring,	agrarian transfor	mation an	d strategic in	vestment in
economic and social infrastructure					
Development of spatial plans focusing on the consolidation and renewal	DLM;		Х		
of rural settlements and sustainable provision of basic and social services	DRDLR				
to rural communities					
Development of RDP anchor project that will assist in the facilitation of for	DLM;		Х	Х	
agrarian transformation and land reform	DRDLR				
Beneficiation of agricultural products to provide opportunities to	DLM;		Х	Х	Х
emerging farmers	DARDLEA				
Implementation of vital land reform programmes e.g. Farms located in	DLM;			Х	Х
the south along the Vaal River Catchment area, along the N3 and R51	DRDLR				
Development of Eco-tourism around the ecological corridor	DLM, DEDT			Х	Х
Develop adequate infrastructure that will assist in the operation of the	DLM;		Х	Х	Х
FPSU's and RDP linked projects.	DRDLR				
Upgrading of major roads in all wards to improve access to amenities	DLM; Provincial		Х	Х	Х
	Dept. of Public				
	Works, Road and				
	Transport				
Establishment of irrigation facilities	DLM; DARDLEA			Х	Х
Providing a basic level of service to rural communities	DLM		Х	Х	Х
Establishment of business initiatives, agro industries, cooperatives, cultural	DLM;			Х	Х
initiatives and vibrant local markets	DRDLR				

## 11 ANNEXURE 1: DETAILED LAND REQUIREMENTS

## Additional Land Requirements (2019-2030)

Area				Add	ditional Land Red	quirements (	(Ha)				
	Residential	Education Facilities	Health Facilities	Community and Recreational Facilities	Government Facilities	Industrial Activities, LED & RDP Projects	Office and Business	Trade and Commercial	Open Spaces	Roads	Total
Medium Growth											
Siyathemba	0.26	18.00	1.10	80.50	14.00	0.03	0.01	0.01	7.70	32.32	153.91
Balfour	0.08	6.00	-	23.50	10.50	53.00	0.00	0.00	6.29	26.42	125.79
Rural/ Settlement	0.08	4.80	-	12.50	-	0.00	0.00	0.00	1.17	4.93	23.50
Greylingstad	-	-	-	16.50	1.50	4.00	0.00	0.00	1.49	6.24	29.73
Nthorwane	0.05	11.60	-	44.00	10.00	4.01	0.00	0.00	4.71	19.77	94.14
Grootvlei	0.08	2.80	-	31.00	10.50	0.01	0.00	0.00	3.00	12.60	59.99
Dipaleseng	0.55	43.20	1.10	208.00	46.50	61.05	0.01	0.01	24.35	102.28	487.06
High Growth											
Siyathemba	37.33	28.66	1.10	80.90	14.00	4.12	1.09	1.24	11.38	47.80	227.63
Balfour	7.17	6.00	-	23.50	10.50	53.65	0.17	0.20	6.84	28.72	136.74

Rural/				13.00							
Settlement	7.23	4.80	-		-	0.66	0.17	0.20	1.76	7.40	35.22
Greylingstad				16.50							
_	1.68	-	-		1.50	4.15	0.04	0.05	1.62	6.79	32.31
Nthorwane				44.00	10.00						
	10.02	8.80	-			1.11	0.29	0.33	5.04	21.16	100.74
Grootvlei				31.00	10.50						
	10.78	-	-			4.98	0.26	0.30	3.91	16.41	78.12
Dipaleseng				208.90	46.50						
	74.19	48.26	1.10			68.67	2.03	2.32	30.54	128.26	610.77

## Additional Land Requirements (2030- 2040)

Area	Additional Land Requirements (Ha)										
	Residential	Education Facilities	Health Facilities	Community and Recreational Facilities	Government Facilities	Industrial Activities, LED & RDP Projects	Office and Business	Trade and Commercial	Open Spaces	Roads	Total
Medium Growth											
Siyathemba	0.47	-	-	9.5	10.1	0.1	0.0	0.0	1.4	5.7	27.2
Balfour	0.11	-	-	10.0	0.5	9.0	0.0	0.0	1.3	5.6	26.5
Rural/ Settlement	0.11	-	-	10.5	-	0.0	0.0	0.0	0.7	3.0	14.4
Greylingstad	0.04	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.1
Nthorwane	0.14	6.00	0.10	15.5	10.0	0.0	0.0	0.0	2.1	9.0	42.9
Grootvlei	0.13	-	_	20.0	-	0.0	0.0	0.0	1.4	5.7	27.2

Dipaleseng											
	0.99	6.00	0.10	65.5	20.6	9.1	0.0	0.0	6.9	29.0	138.3
High Growth											
Siyathemba	33.18	7.73	0.10	9.9	10.1	3.7	1.0	1.1	4.5	18.9	90.2
Balfour	7.01	-	-	10.0	0.5	9.6	0.2	0.2	1.9	7.8	37.2
Rural/ Settlement	5.82	-	-	10.5	-	0.5	0.1	0.2	1.2	4.9	23.2
Greylingstad	1.49	-	-	-	-	0.1	0.0	0.0	0.1	0.5	2.3
Nthorwane	8.91	6.00	0.10	15.7	10.0	1.0	0.3	0.3	2.9	12.0	57.1
Grootvlei	9.56	-	-	20.0	-	0.9	0.2	0.3	2.1	8.8	41.8
Dipaleseng	65.97	13.73	0.20	66.1	20.6	15.8	1.8	2.1	12.6	52.9	251.7

## Additional Land Requirements (2040- 2050)

Area	Additional Land Requirements (Ha)											
	Residential	Education Facilities	Health Facilities	Community and Recreational Facilities	Government Facilities	Industrial Activities, LED & RDP Projects	Office and Business	Trade and Commercial	Open Spaces	Roads	Total	
Medium Growth												
Siyathemba												
	0.47	-	-	0.5	-	0.1	0.0	0.0	0.1	0.3	1.4	
Balfour												
	0.11	-	-	-	-	2.0	0.0	0.0	0.1	0.6	2.9	
Rural/												
Settlement	0.11	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.2	

Greylingstad											
	0.04	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.1
Nthorwane	0.1.4					0.0	0.0		0.0	0.0	0.0
	0.14	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.2
Grootvlei	0.13	6.00	_	0.2	-	0.0	0.0	0.0	0.4	1.8	8.6
Dipaleseng											
	0.99	6.00	-	0.7		2.1	0.0	0.0	0.7	2.8	13.3
High Growth											
Siyathemba											
	37.78	10.53	0.10	0.9	-	4.2	1.1	1.3	3.8	15.8	75.5
Balfour											
	7.78	-	-	-	-	2.7	0.2	0.2	0.7	3.1	14.7
Rural/											
Settlement	6.80	-	-	-	-	0.6	0.2	0.2	0.5	2.2	10.5
Greylingstad											
	1.70	-	-	-	-	0.2	0.0	0.0	0.1	0.6	2.6
Nthorwane											
	10.17	-	-	0.2	-	1.1	0.3	0.3	0.8	3.4	16.4
Grootvlei											
	10.92	6.00	-	0.2	-	1.0	0.3	0.3	1.3	5.3	25.2
Dipaleseng											
	75.15	16.53	0.10	1.3	-	9.8	2.1	2.3	7.2	30.4	144.9