



# THE REVIEW OF THE DR PIXLEY KA ISAKA SEME LOCAL MUNICIPALITY'S SDF - PHASE 3: SPATIAL PROPOSALS

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## 1. INTRODUCTION

The spatial proposals are informed by two key principles emanating from the development of Provincial, Regional and Municipal Spatial Development Frameworks and Precinct Plans Guidelines, compiled in 2014. These are the spatial concept and spatial strategies. These concepts and strategies are adapted and inform the development of the Pixley ka Isaka Seme Local Municipality's Spatial Development Framework. The development of the MSDF encompasses the following:

- Areas that are identified for future development and expansion, with primary focus on residential, business, industrial and social infrastructure;
- Guiding principles for environmental management;
- Priority areas; and
- Utilising the urban edge to control and manage expansion.

As discussed in Chapter 1 of the review of this MSDF, the development of this policy adopts a periodical and phased approach to both implementation and realisation. Thus, despite the 5-year set period to review, the developmental concept will be for over a period of 20 years. Meaning that the set developmental proposals for this policy will be set for a time span of 2020-2040.

## 2. A CREDIBLE SDF

A credible SDF must be able to achieve the following:

- a) agreed vision and planning principles that promote equity and sustainability; for example:
  - assisting with restructuring spatially inefficient settlements;
  - promoting sustainable use of land resources;
  - channelling resources to areas of greatest need (social investment) and development potential (economic investment); and,
  - stimulating economic opportunities in rural and urban areas.
- b) is aligned with relevant national and provincial policy;
- c) reflects a clear understanding of the reality of the municipal spatial environmental, social and economic systems, particularly with regard to urban infrastructure needs and capacity;
- d) provides sufficient detail to inform Council decisions that have a spatial dimension;
- e) includes an implementation plan, with measurable targets;
- f) is realistic in terms of growth prospects and the financial and institutional capacity of the municipality to implement the proposals;
- g) is aligned with the municipal Environmental Management Framework (EMF), where applicable;

- h) provides guidance for sector plans and development initiatives from all government agencies, e.g. land reform programmes, and private sector projects that will contribute towards the municipality's vision;
- i) enjoys a high level of buy-in from all stakeholders (i.e. the process of formulation is as important as the product);
- j) provides guidance for the Municipality's Land Use Management System (LUMS); and,
- k) is clear, succinct and accessible to a wide audience.

(CS Consulting 2013: 12-13)

These principles, in developing a credible SDF, are also vital in addressing spatial justice resulting from the apartheid-era racial segregation approach to spatial planning.

### 3. UNDERSTANDING SPATIAL JUSTICE

Spatial Justice has become a prominent term in recent years after geographers saw the need to include it in planning processes. "Spatial turn" is the primary reason for the conceptualization of spatial justice. The definition of the latter became rather narrow because of the single notion it was addressing until modern scholars re-worked the concept to explore the generative effects of urban agglomerations. Spatial Justice refers to an intentional and focused emphasis on the spatial or geographical aspects of justice and injustice. As a starting point, this involves the fair and equitable distribution, in space, of socially valued resources and the opportunities to use them (Soja, 2009).

The definition shows that spatial justice covers a diversity of aspects/processes such as economic development, technological innovations, social change as well as environmental degradation, widening income gaps, social cohesion or polarization, artistic creativity and international politics. Although a number of aspects are addressed through spatial justice, perfectly even development, complete socio-spatial equality, pure distribution justice, as well as universal human rights are never achievable because every geography in which communities live in has some degree of injustice embedded in it (Soja, 2009).

Having to understand the concept of spatial justice, it is evident that in order to bring about spatial justice, spatial development planning should be seen as a prerequisite to driving change. Spatial development planning comprises of several strategies to reshape existing and emerging spatial patterns of a divided area and to subsequently influence the present and future spatial distribution of activities. It aims to create a more rational organization of land

uses and the linkages between these, to achieve the social and economic objective, which is directly linked to social justice and space. The even distribution of activities tries to redress the social inequality, mostly amongst the rich and the poor, to create sustainable human settlements, where every urban planning aspect is balanced without compromising the future generation to meet their needs.

### 3.1. Spatial Justice Aspects Addressed Through Spatial Development Planning.

#### 3.1.1. Economic Development

One of the main aims of spatial development planning on a national and regional scale is to achieve the optimum organization and use of land resources in order to meet the social environmental and economic needs of present and future generations (Department of Economic Development, 2013).

In order to achieve this, it is essential to understand flows of capital, labour, produce, raw materials, value chains and information on a spatial level across nations and regions. All the mentioned facets are distributed through spatial development planning where spatial locations of activities, people and amenities are taken into consideration during the planning processes and the decision making processes.

Spatial development planning policies and acts guide economic development through planning. The National Spatial Development Framework aims to co-ordinate public expenditure and infrastructure development. The New Growth Path aims to put the country on a new growth path to drive job creation and economic inclusion through the revitalization of rural areas and poor local areas, identifying viable economic opportunities in these areas and boost with public investments (calls for the finalisation of a spatial perspective economic development to inform government spending).

The New Growth Path advocates for job creation through the following spatial job drivers; infrastructure, energy, efficient transportation, adequate housing, agriculture, green economy and spatial opportunities.

The National Development Plan has spatial development intentions that are focused on the need to address inherited spatial divisions as SA's spatial structure exacerbates exclusion (Department of Economic Development, 2013). The NDP calls for a spatial targeting structure to include national competitiveness corridors (to create efficient spatial linkages between economic growth nodes in order to support flows of goods and services and optimise value chains), rural restructuring zones, resource critical regions,



transnational development corridors, and special interventions zones including job intervention zones for regions that have lost 20 per cent of their jobs over the last decade. A closer engagement with both sector-specific private capital and with the private sector investments community, in general, will yield valuable information that enables the government to plan, regulate, incentivise and implement more appropriately and in a more sustainable manner (Department of Economic Development, 2013). Space economy is also mentioned because it includes the full range of activities and the use of resources that create and provide value and benefits to human beings in the course of exploring, understanding, managing and utilizing space (Strada, 2018)

### 3.1.2. Land and Housing

The land is a scarce resource, while human needs and desires are infinite. Spatial development planning is often accused of not being up to the tasks it is supposed to deal with: more parsimonious use of natural resources; conservation of regional identities in the face of global standardization processes; promotion of integrated transport infrastructures; reduction of socioeconomic disparities among territories, but all these factors happen on land. More land is needed.

One of the crucial indicators of spatial justice is the lack of access to land and tenure, mostly for disadvantaged communities and people. Spatial development planning provides principles to guide the processes of accessing land and adequate housing. It was provided in the Constitution that everyone has the right to adequate housing, therefore, it means that planners should use space efficiently to address the issues of lack of housing and access to affordable land.

These all affect mostly poor/low-income people, which is regarded as social injustice in space (spatial injustice). In most South African urban areas, poor (and mostly Black) people live in locations far removed from where vibrant economic growth is occurring. To assist in rectifying this situation, social housing will be located in specific, defined localities (mostly urban) which have been identified as areas of opportunity (largely economic) where the poor have limited or inadequate access to accommodation, and where the provision of social housing can contribute to redressing this situation.

Spatial planning provides housing policies that help to address the issues of lack of access to land and adequate housing by low-income communities. The “Breaking New Ground” of 2004 is a policy that speaks to the provision of housing in South Africa. Its main aims are the acceleration of the delivery of housing as key strategy for poverty alleviation, utilising provision of housing

as a major job creation strategy, and utilizing housing as an instrument for the development of sustainable human settlements, in support of spatial restructuring. The new human settlements plan adopts a phased in-situ upgrading approach to informal settlements, in line with international best practices. Thus, the plan supports the eradication of informal settlements through in-situ upgrading in desired locations, coupled to the relocation of households where development is not possible or desirable. This process is described in greater detail in the Informal Settlements Upgrading Programme Business Plan. Several interventions are required to support this process (Department of Human Settlements).

### 3.1.3. Income Gap

The income gap, especially in developing countries, is getting wider and wider. Inclusionary planning is a form of spatial development planning that can serve to reduce the gap between rich and poor, including imbalances in the services and infrastructure available to these marginalised communities. These instruments require private developers to incorporate social housing or/and services and infrastructure for less advantaged groups when building housing for upper-income groups. Inclusionary planning suggests that building more adequate housing for the poor/middle income is the first step to closing the economic gap. The process includes the development/redevelopment of infrastructure, efficient transportation and mix land uses (to create convenience and job opportunities).

Spatial planning is used to identify where to build new train lines or roadways, how to redevelop existing towns or business districts and how to use and preserve scarce natural resources. Speaking of developing business districts, improving methods of engaging with local communities and businesses in the planning, implementation, operation and monitoring phases of intervention is of importance in the creation of economic opportunities for the poor. The principles of accessible roads, lower crime rate, inclusive public spaces for business are very crucial, therefore, local communities should be revitalized to create more accessibility, convenience, safe public spaces, and a friendly environment. The method will eventually lead to sustainable human settlements.

Urban Renewal is a fundamental base, for planning, that supports an expanding economy to better the lives for generations of impoverished citizens and immigrants (Regional Plan Association, 2015). Both the building and regeneration of the transit system are essential to the region's economy and provide low and moderate-income residents with affordable transportation and access to land for the people's benefit. The obvious example of Alexandra comes in hand, where the Municipality decided to build a mall in the township

to ensure job creation and convenience. The benefits of the construction of the mall include the redevelopment of Roosevelt Road, London Road and some of the township's infrastructure. This provides evidence that urban renewal closes the income gap by providing affordable transportation, affordable/adequate housing, vibrant public spaces and redeveloped schools.

#### 3.1.4. Social Growth and Technological Innovations

Social cohesion is one of the indicators of social growth. The latter has been slow in South Africa considering apartheid planning and legislation, which led to the widening income gap between the rich and the poor. The removal of the concept of gated communities will create social cohesion through densification which will lead to addressing possible urban sprawl. A better life for communities is the first step to eradicating high crime rates both in the periphery of cities and within the cities and further addressing socio-economic issues. A lower crime rate means more communication, more business affiliation and more harmony amongst the rich and poor.

The other spatial way to bring about social cohesion is through the usage of public transportation and public spaces. Modern planning objectives are based on revitalizing public open spaces for people to use on a daily basis without the fear of crime and pollution. Greening has been part of the process of making public spaces usable, and so far, the process has been effective as more people visit parks for social and professional reasons. The usage of public transportation has increased in numbers amongst the poor and rich as more efficient and effective transportation are being introduced, for example, Rea Vaya in the City of Johannesburg, Areyeng in City of Tshwane and Gautrain & Gaubus around the province of Gauteng. These modes of transportation are being prepared to be used in rural areas.

Smart Planning is a new technological innovation for planning. The main advantage is that the poor can also experience smart planning in their smart cities. The latter include smart mobility (creates a huge social cohesion), smart living (which can be also utilized in cities of any form), smart environment and smart economy (will also influence the rich and the poor to partake in the economy).

#### 3.1.5. Environment

This Green Paper indicates that there are many areas which the Government needs to address in its environmental policy. These include, amongst others: improved pollution and waste control, focusing on people and their participation in environmental decision making, developing an improved

system of governance, and ensuring that environmental decision making employs an integrated and macroeconomic perspective.

Greening is a general term for the appropriate selection and planting of plants on, in, or next to buildings and in public parks. The goal of greening is usually a combination of environmental benefits and improving the visual design of surfaces, for example, green roofs especially in places that are built around tar, as well as the creation of green spaces.

Furthermore, permanent care and irrigation are usually necessary to maintain a green environment. In some areas there are normative requirements for the planning and execution of the greening, for example roadsides greening. The reason why spatial planning policies are there in terms of a sustainable environment is because the environment includes many things; the land, water and air, all plants, animals and microscopic forms of life on Earth, the built environment and our social, economic, political and cultural activities that form part of everyday life. For this reason, an effective environmental policy must cover a wide range of issues.

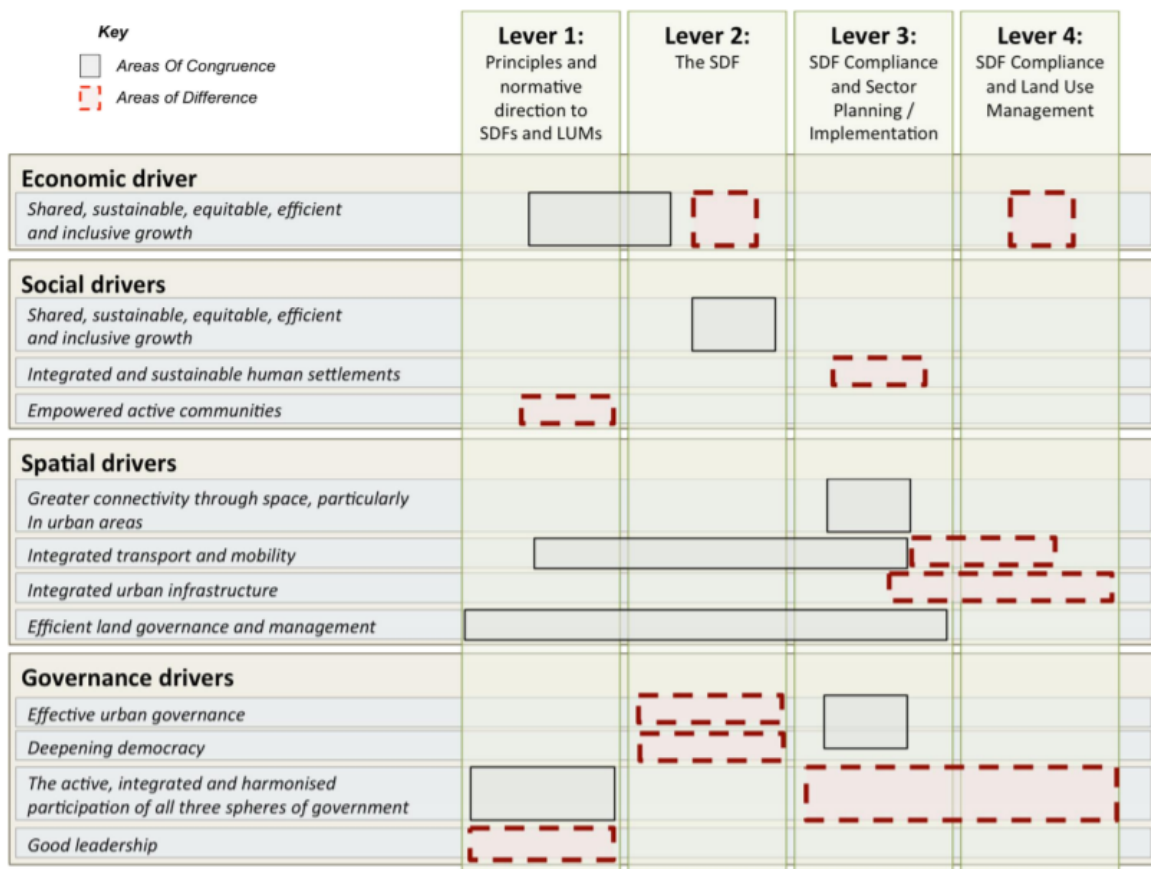
#### **4. AN SDF AS AN INSTRUMENT FOR SPATIAL TRANSFORMATION**

In 2015, the South African Cities Network carried out a study to identify the Spatial Planning and Land Use Management Act as an instrument for spatial transformation. The study developed four drivers that were used as a lens for understanding the concept of spatial transformation. Four levers were developed that were seen as vital in aiding spatial transformation. These are:

- Principles and normative direction to SDFs and LUMs;
- The SDF;
- SDF Compliance and Sector Planning and Implementation; and
- SDF Compliance and Land Use Management.

The attached figure depicts how the lens and levers are plotted abstractly to identify areas of similarity and difference. Areas of similarity are where the intentions and outcomes of the lenses and levers intersect and align. Areas of difference are where the intentions and outcomes of lenses and levers intersect but do not align.

Figure 1 Levers & Lenses



Source: SACN 2015

#### 4.1. Defining Spatial Transformation

There is no single definition of *spatial transformation*. The term is broad and used loosely in public policies and academic research. The international definitions of the concept do not resonate with the South African landscape.

Geoffrey Bickford (2014) quotes Williams (2000) who described *spatial transformation* as “tension-ridden planning-in-motion”. The description recognises that *spatial transformation* is contentious, continuous and “requires reinvention, re-imagination and exploration”. It is further considered to be complex, multidimensional, open-ended and heterogeneous. The Integrated Urban Development Framework (2014) considers spatial transformation as one of its four strategic goals. It says that spatial transformation should “forge new spatial forms in the settlement, transport, social and economic areas”. It also recognises that these should be achieved through the seven levers that it proposes (SACN 2013).

#### 4.1.1. Key Drivers of Spatial Transformation

The key drivers of *spatial transformation* are:

**Graph 1** Drivers of Spatial Transformation



**Source:** Own Construction (2019)

These drivers have a vital role to play in the spatial development framework of the Dr Pixley ka Isaka Local Municipality due to its transformative approach. More on this in the later sections of this report.

## 5. MAKING SENSE OF A SPATIAL DEVELOPMENT FRAMEWORK

The planning approach is one that adopts both technical and academic approach. Planning is driven by the need to optimally use existing instruments and concepts to improve efficiency, ensure that there is a balance between both the public and private interests, make a wide range of choices available, encourage and enhance decision-making that is driven by the need to serve the interests of the public and to also ensure public participation in municipal planning processes.

As a profession rooted in social sciences, planning must conscientise the participants and be seen as a problem solver to many of the ills that affect development. With South Africa's history of apartheid-spatial planning, a spatial development framework plays a leading role in enabling development,

managing expansion and ensuring that service delivery remains at the core of addressing societal and developmental problems.

The early approaches to urban planning utilised urban master plans as a planning tool to guide and manage growth in urban centres. These master plans became a driver for redevelopment after the destruction caused by World War II when many European countries went on a drive to revitalise war-ravaged cities and villages. The concept of master planning, adopted in the United Kingdom in 1947, utilised spatial planning based instruments like land use maps, zoning and planning laws to ensure integration and development.

Buch (1987) sees a master plan as one of the important planning documents to facilitate and encourage the optimal growth of dominant functions of urban centres, strengthening the intra-urban linkages and provide an elbow room for spatial growth. That is basically the definition of and what is expected of a spatial development framework.

But then, what informs the development of a spatial development framework both legislatively and in terms of policy?

### 5.1. Legislative Framework

The now-defunct Development Facilitation Act of 1995 was seen as the first post-apartheid piece of legislation that dealt specifically with spatial planning. The result thereof was the introduction of guiding principles to address the spatial challenges facing South Africa. From this legislation, the Constitution of South Africa, 1996, introduced guiding principles to the development and running of local government. Emanating from this, the Legislature had to ensure that there were laws that dealt specifically with local government.

#### 5.1.1. The Municipal Systems Act

Section 26(e) of the Systems Act sees a spatial development framework as a core component of the integrated development plan of the municipality. For municipalities, the spatial development framework must include the provision of basic guidelines for a land use management system within a municipality.

#### 5.1.2. The Spatial Planning and Land Use Management Act

SPLUMA was enacted to legislate for a single, integrated planning system for South Africa. The objectives of the legislation are to:

- provide for a uniform, effective and comprehensive system of spatial planning and land use management for South Africa;
- ensure that the system of spatial planning and land use management promotes social and economic inclusion;
- provide for development principles and norms and standards;
- provide for the sustainable and efficient use of land;
- provide for cooperative government and intergovernmental relations amongst the national, provincial and local spheres of government; and
- redress the imbalances of the past and to ensure that there is equity in the application of spatial development planning and land use management systems.

The legislation recognises that the spatial planning system of South Africa consists of the following components:

- spatial development frameworks to be prepared and adopted by national, provincial and municipal spheres of government;
- development principles, norms and standards that must guide spatial planning, land use management and land development;
- the management and facilitation of land use through the mechanism of land use schemes; and
- procedures and processes for the preparation, submission and consideration of land development applications and related processes.

Municipal planning, as part of the South African planning system, has the following elements:

- the compilation, approval and review of integrated development plans;
- the compilation, approval and review of the components of an integrated development plan prescribed by legislation and falling within the competence of a municipality, including a spatial development framework and a land use scheme; and
- the control and regulation of the use of land within the municipal area where the nature, scale and intensity of the land use do not affect the provincial planning mandate of the provincial government or the national interest.

Section 21 goes on to set the required components of a Municipal SDF:

- a) give effect to the development principles and applicable norms and standards set out in Chapter 2 of SPLUMA;
- b) include a written and spatial representation of a five-year spatial development plan for the spatial form of the municipality;
- c) include a longer-term spatial development vision statement for the municipal area which indicates a desired spatial growth and development pattern for the next 10 to 20 years;
- d) identify current and future significant structuring and restructuring elements of the spatial form of the municipality, including development corridors, activity



spines and economic nodes where public and private investment will be prioritised and facilitated;

- e) include population growth estimates for the next five years;
- f) include estimates of the demand for housing units across different socio-economic categories and the planned location and density of future housing developments;
- g) include estimates of economic activity and employment trends and locations in the municipal area for the next five years;
- h) identify, quantify and provide location requirements of engineering infrastructure and services provision for existing and future development needs for the next five years;
- i) identify the designated areas where a national or provincial inclusionary housing policy may be applicable;
- j) include a strategic assessment of the environmental pressures and opportunities within the municipal area, including the spatial location of environmental sensitivities, high potential agricultural land and coastal access strips, where applicable;
- k) identify the designation of areas in the municipality where incremental upgrading approaches to development and regulation will be applicable;
  - i. identify the designation of areas in which—
  - ii. more detailed local plans must be developed; and
  - iii. shortened land use development procedures may be applicable and land-use schemes may be so amended;
- l) provide the spatial expression of the coordination, alignment and integration of sectoral policies of all municipal departments;
- m) determine a capital expenditure framework for the municipality's development programmes, depicted spatially;
- n) determine the purpose, desired impact and structure of the land use management scheme to apply in that municipal area; and
- o) include an implementation plan comprising of—
  - i. sectoral requirements, including budgets and resources for implementation;
  - ii. necessary amendments to a land use scheme;
  - iii. specification of institutional arrangements necessary for implementation;
  - iv. specification of implementation targets, including dates and monitoring indicators; and
  - v. specification, where necessary, of any arrangements for partnerships in the implementation process.

## 5.2. Policy Framework

### 5.2.1. The National Development Plan 2030

The transformative nature of the NDP 2030 requires State interventions that include improving infrastructure; ensuring that there is an inclusive and integrated rural economy, reversing the effects of the apartheid-era spatial planning approach and promoting competitiveness.

No.	Item	Requirements
1.	Improving Infrastructure	Increase in capital investment spending in economic infrastructure in order to crowd in private investment rather than consumption. These include capital investment in roads, rail, ports, electricity, water sanitation, public transport and housing. The upgrading of informal settlements, public transport infrastructure and systems, water schemes and renewable energy are some of the prioritised investments.
2.	Inclusive & Integrated Rural Economy	Jobs need to be created through effective land reform and the growth of irrigated agriculture and land production. Basic services that will enable people to develop the capabilities they need to take advantage of economic opportunities throughout the country and so contribute to the development of their communities through remittances and the transfer of skills. This includes ensuring food security and the empowerment of farmworkers. Industries such as agro-processing, tourism, fisheries and small enterprises should be developed where the potential exists.
3.	Reversing the Spatial Effects of Apartheid	<p>Settlement patterns should meet the needs and preferences of the citizens, taking into account broader social, environmental, and economic interests. Travel distances need to be shorter. This means ensuring that a larger proportion of workers live closer to their places of work and that public transport is safe, reliable, affordable and energy-efficient. It means building denser and more liveable cities and towns. In rural areas, settlement patterns must balance the social, cultural and agricultural needs of families with the need to provide cost-effective services to households. Three complementary strategies are proposed:</p> <ul style="list-style-type: none"> <li>▪ Increasing urban population density, while improving the liveability of cities by providing parks and other open spaces, and ensuring safety.</li> <li>▪ Providing more reliable and affordable public transport with better co-ordination across municipalities and between different modes.</li> <li>▪ Moving jobs and investment towards dense townships that area on the margins of cities.</li> </ul> <p>Rural spatial planning should focus on sensible and sustainable land reform, support to farmers, the rollout of household services and appropriate economic infrastructures such as roads and irrigation schemes.</p>
4.	Spatial Targeting	<p><b>The National Competitiveness Corridor</b> The corridor of logistic hubs, road, rail fuel and others connect and includes Gauteng and eThekwin accounting for about 46% of the national GDP.</p> <p><b>Nodes of Competitiveness</b> These include localities that account for at least 5% of GDP or jobs, which have experienced higher than average growth since 1994, or which have the potential for high growth in future.</p> <p><b>Rural Restructuring Zones</b> These rural areas have large populations that are experiencing change. Such areas need management, institutional development, land and tenure reform,</p>

		<p>infrastructure provision and economic stimuli. These include the more densely populated parts of the previous homelands, where there are population dynamics and sufficient numbers of people to provide the basis for viable markets. There may also be areas with agricultural, tourism or mining potential.</p> <p><b>Transnational Development Corridors</b>  These corridors are critical to creating an integrated southern African economy, which requires specific interventions around economic stimulus and trade and transport networks. The corridors between Gauteng and Zimbabwe, Botswana and Mozambique are likely to be recognized as the primary transnational development corridors.</p> <p><b>Special Intervention Areas</b>  <i>Job Intervention zones</i> - Areas that have lost more than 20 % of their jobs over the past decade, with significant losses to the national economy. The state may seek to stimulate the growth of new sectors, develop new skills or, in extreme cases, promote out-migration.  <i>Growth management zones</i> - areas of rapid anticipated growth that may require special planning and management  Green economy zones - These are zones with proven potential to create "green jobs", where short-term state intervention could leverage significant private development.</p>
5.	Transforming Society & Uniting the Country.	<p>The NDP 2030 requires all SDFs to be translated into spatial contracts that bind national, provincial and local governments into a collaborative process of addressing the country's spatial challenges that came about as a result of the apartheid-era spatial approach that continues to affect the country twenty-five years after democracy. The National Planning Commission's Diagnostic Report identified the following as key challenges:</p> <ul style="list-style-type: none"> <li>▪ Dysfunctional settlement patterns across the country;</li> <li>▪ Challenges facing towns and cities;</li> <li>▪ Uncertain prospects of rural areas;</li> <li>▪ Challenges of providing housing and basic services and reactivating communities; and</li> <li>▪ Weak spatial planning and governance capabilities.</li> </ul> <p>The NDP sees transportation networks as vital to spatial transformation within urban centres and thus a need to ensure that there are interconnection and free movement of people and goods. Urban centres are seen as vital to growth and development and thus should be developed and maintained to ensure that communities are accommodated and provided with access to services. The NDP requires an approach that strategically places a developmental approach that not only enhances earmarked areas but improves the economy too. Areas that have the potential for growth and development should, as a result, be prioritized so that resources can be channelled there. This can be achieved through an MSDF, as the policy is able to identify nodes, transnational development corridors, activity spines or special intervention areas and nodes. This does not necessarily mean that other areas are neglected. It simply means that the efficient utilization of resources will be channelled in a way that ensures sustainability. Ultimately, this is the role of the Dr Pixley ka Isaka Seme</p>

		Local Municipality's spatial development framework...to be transformative, encourage development, reinvigorate the community and ensure that officials perform their duties diligently.
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### 5.2.2. The National Spatial Development Framework 2018

To move the country forward and address past apartheid-era challenges, the National Spatial Development Framework (NSDF) developed the Theory of Change. The Theory proposes the following four steps to address the country's challenges:

**Step 1:** The existing National Development Paradigm, including the Constitution, the NDP and the existing legal and policy framework, notably SPLUMA and the IUDF, is used to:

- Articulate a compelling and persuasive Post-Apartheid Spatial Development Logic and identify the 'shifts' from the old and existing logics that this new logic requires; and
- Craft a strong and credible Post-Apartheid National Spatial Development Vision;

**Step 2:** The new logic and vision is used together with an analysis of the current and unfolding 'national spatial development landscape', to develop a set of National Spatial Development Concepts, and craft a desired Post-Apartheid National Spatial Development Pattern consisting of (1) a National Spatial Development Frame, and (2) a series of NSDF Sub-Frames;

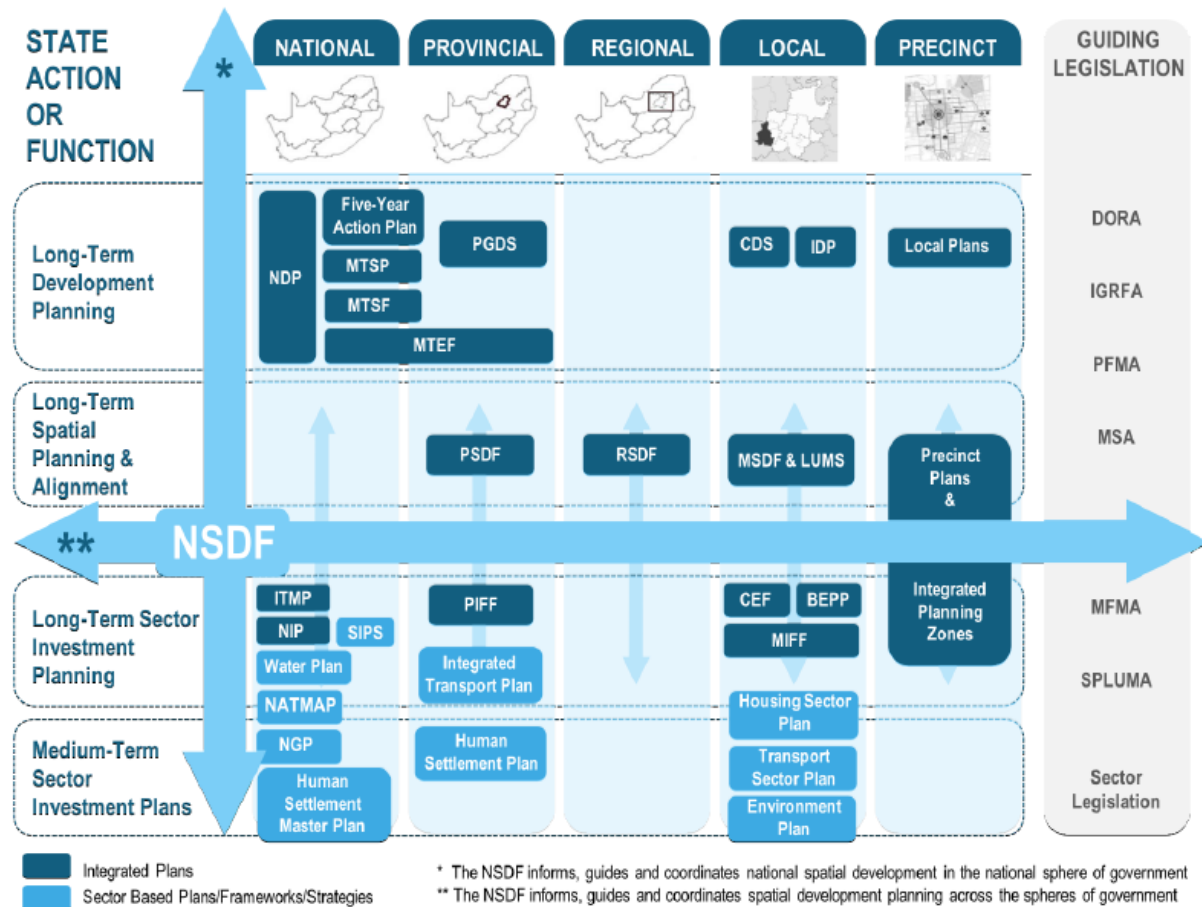
**Step 3:** The National Spatial Development Frame and NSDF Sub-Frames are used to indicate what Interventions and Priority Actions are required to bring about the desired Post-Apartheid National Spatial Development Pattern; and

**Step 4:** The (1) desired Post-Apartheid Spatial Development Pattern, (2) National Spatial Development Frames and NSDF Sub-Frames, and (3) associated series of Interventions and Priority Actions are used to prepare clear Implementation Guidance for realising the desired national spatial transformation.

The NSDF is seen as a policy framework that informs other policies at both provincial and local government levels as it feeds into the processes that must be undertaken to ensure that there is a transformative approach to planning and implementation. The policy ensures the alignment amongst all sectors of Government as a way of addressing spatial challenges and ensuring infrastructure development and economic growth.

This is depicted in the Figure below.

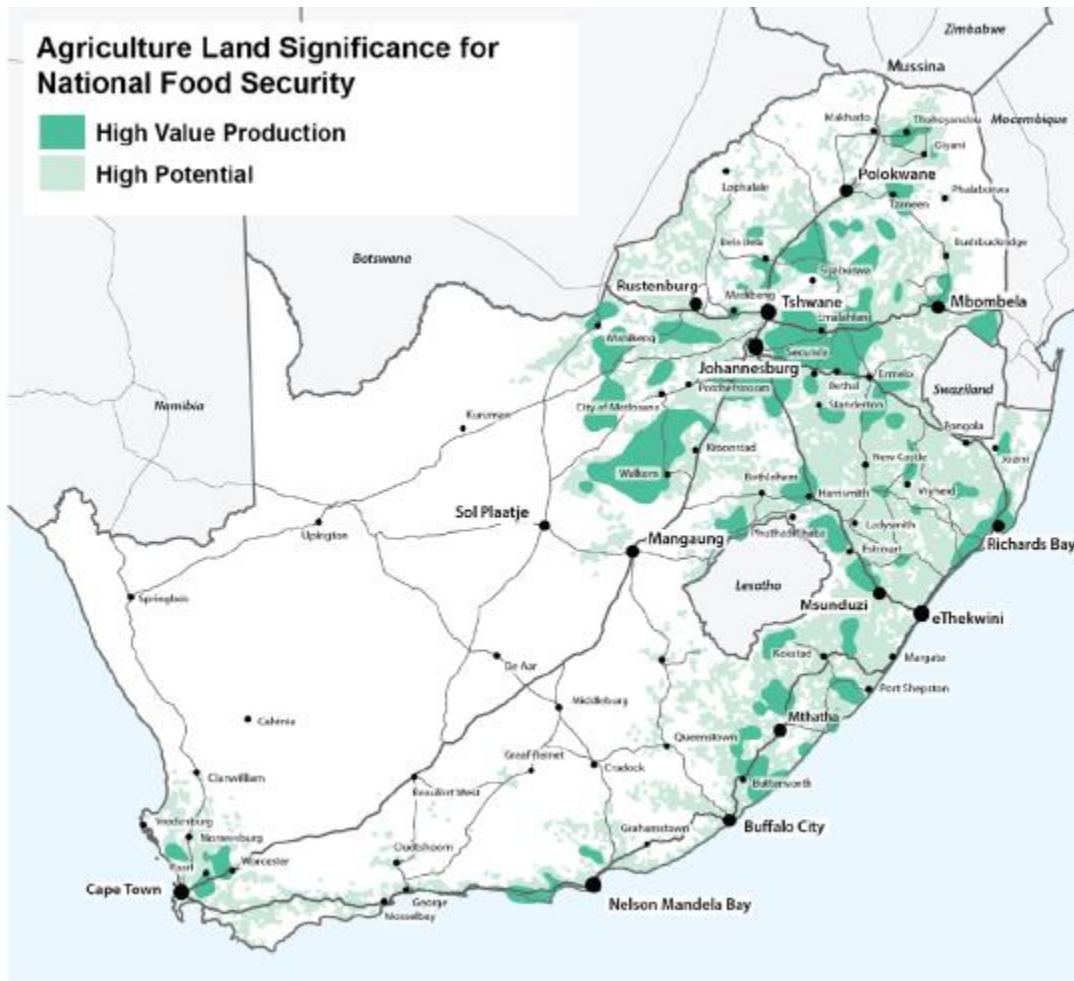
**Figure 2** The Role of the NSDF in bringing together Sectoral Policies



**Source:** National SDF (2018)

The NSDF identifies the Dr Pixley ka Isaka Seme LM region as one that falls under areas with huge potential for agricultural development, something that was also identified and articulated in the previous chapter that focused on Spatial Challenges and Opportunities. This offers immense opportunities for investment in this sector as it would be further articulated in the section of Rural Development Plans within the Gert Sibande District Municipality.

Map 1 Agricultural Significance Areas

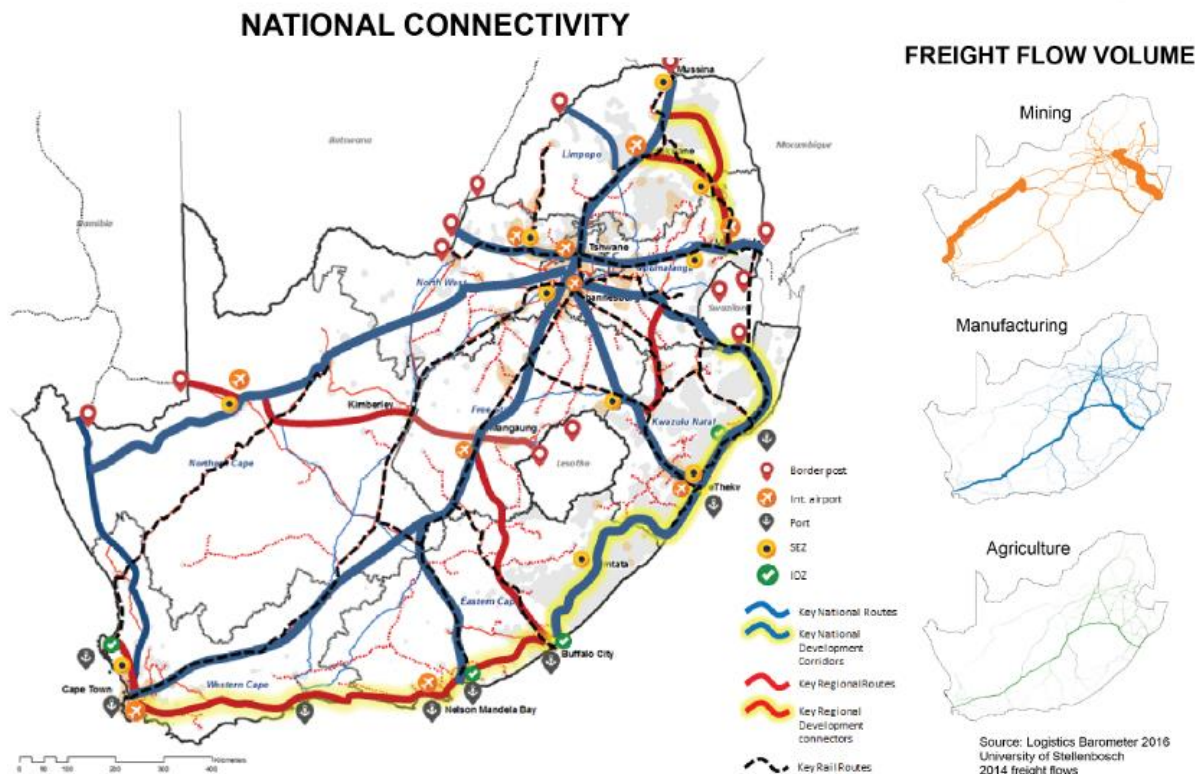


**Source:** National SDF (2018)

With the N11 cutting across the municipal area, linking it with Kwazulu-Natal in the south and other Mpumalanga Provincial Municipalities in the north, the NSDF identifies the area as having a huge potential for freight movement. By investing in agriculture infrastructure, there is more potential for further growth and movement through the municipality.



Map 2 NSDF National Connectivity Map



**Source:** National SDF (2018)

The NSDF identified the following as the main challenges currently facing South Africa:

- Providing life chances and a decent quality of life for an additional 17 to 22 million people between now and 2050, within the context of (1) an ever-smaller habitable land area due to climate change, (2) ever-more stressed, threatened and compromised ecological spaces and systems, and (3) ever-fewer natural resources;
- Ensuring rapid redress at scale to Black South Africans (1) robbed of their land, (2) systematically excluded from the economy, and (3) severely restricted and stunted in their life chances, while at the same time rapidly growing and transforming the economy and transforming national, provincial and local space;
- Maintaining national biodiversity and ecosystem integrity for global, national and local resilience within an environment of a young, dynamic and aspirational population;
- Managing competition between human activity and nationally important ecosystems and the essential services they provide, notably so with regards to

water production, energy generation, mining, manufacturing and food production in the central and eastern parts of the country;

- Managing surface and groundwater use and potentially harmful land-uses in surface-water production areas, preventing contamination of water bodies and sources by human activities, rehabilitating contaminated water bodies, streams and rivers and maintaining bulk and local reticulation water infrastructure;
- Making the shift to a greener, low-carbon, more service-based economy through (1) compact, mixed land-use well-connected urban and rural settlement development, (2) the provision of enabling municipal services, and (3) efficient and affordable ICT and transport infrastructure investment and development;
- Optimising the enormous economic growth and job creation opportunities that dense, compact and diverse urban agglomerations and development corridors offer in the areas of human-to-human service provision, trade, entertainment, and the creative industries, especially so in an ICT-rich, but also job threatening 4<sup>th</sup> Industrial Revolution environment;
- Improving the quality of life and human capability in a fiscally constrained environment through (1) the well-located, planned and integrated provision of social services, and (2) the optimisation of the economic and employment benefits of such service provision in all our cities, towns and villages;
- Transforming the current highly financialised commercial farming agricultural sector into a mixed system, including hundreds of thousands of small and medium-sized producers, and optimising the economic dividends from the research, marketing, financing and equipment development opportunities that this transition will create in both urban and rural South Africa;
- Competing in the global economy through innovative product and service development in especially our large cosmopolitan urban regions, with an emphasis on (1) the creative industries, and (2) the cultural and entertainment sectors, and utilising both of these to bolster our tourism offering;
- Optimising the enormous economic opportunities that SADC offers for (1) trade, (2) collaborative research and knowledge development, packaging and distribution, (3) water-sharing, and (4) energy generation;
- Identifying and utilising opportunities for the beneficiation of minerals, metals and agricultural products where it is economically viable and ecologically sustainable; and
- Optimising our existing national transport infrastructure network by (1) prioritising rail over the road, and (2) investing in and maintaining the most crucial components of the network, with an emphasis on connecting global gateways, core urban nodes and regional anchors throughout the country.

In order to (1) give spatial expression to the National Spatial Development Vision, and (2) support the shifts that need to be made in accordance with the new National Spatial Development Logic, a series of 'National Spatial Development Concepts' were developed. These concepts have their home in:

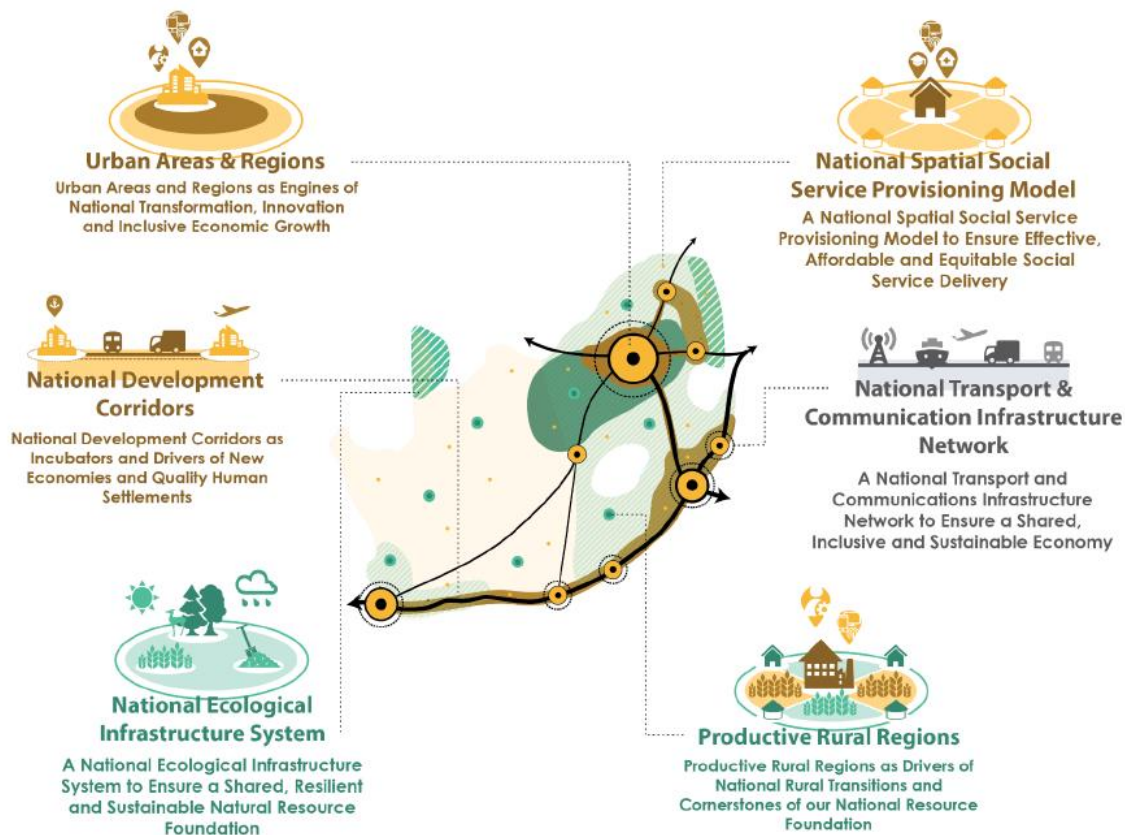
- The contextual realities, challenges and opportunities, as set out in the NSDF;



- The drivers, levers and principles as set out in the NDP, the IUDF and SPLUMA;
- What is considered 'good spatial and settlement planning' in local and international planning policy frameworks, guidelines and practice; and
- The theoretical domains of spatial development planning, urban design, regional and rural development planning, institutional economics, agglomeration economies and ecological resource planning and management.

Six such National Spatial Development Concepts were developed.

**Map 3** National Spatial Development Concepts



**Source:** National SDF (2018)

For the transformation of areas such as the DPKIS LM, the NSDF identifies the following as vital drivers for National Transformation Corridors:

- Consolidate settlement development and support the development of new cities in areas (1) of significant population growth, and (2) that are facing significant challenges and offer sizeable opportunities for transformation.
- Develop regional and municipal urban-rural and eco-agro development strategies in strategic national water and agriculture production regions.

- iv. Accelerate small harbour development in support of the fishing, tourism and maritime economy in Regional Development Anchors and Rural Service Centres along the coast.
- v. Undertake integrated human capital development, to enable a generation of young people to reap the benefits of urbanisation through (1) human capital development, and (2) the opening-up of urban economies to enable and support a multiplicity of livelihood options.
- vi. Use land administration and urban land reform to guide the interface between settlement planning, land-use, development and infrastructure planning in fast-growing formal and traditional settlement areas.
- vii. Introduce and upgrade sustainably built environment infrastructure as a stimulus to enterprise development, with a focus on (1) housing, (2) basic service delivery, (3) public transport, and (4) rural-urban connections.
- viii. Introduce and/or strengthen effective regional collaboration, partnerships and
- ix. cooperative governance models, to ensure (1) mutually beneficial natural resource use and land-development, and (2) optimise national, regional and local economic development benefits.

### 5.2.3. The Mpumalanga Provincial Spatial Development Framework 2019

The Spatial Vision of the MSDF 2019 is: "A Mpumalanga that has a sustainable, vibrant and inclusive economy developing all resources and promoting a healthy environment through innovation." The policy sets its objectives as the following:

Table 1 MSDF Objectives

No.	Objective	Theme
1.	Connectivity and corridor functionality	<ul style="list-style-type: none"> <li>▪ Ensure connectivity between nodes and connectivity from surrounding areas, for example, lower nodes, and major industrial concentrations with areas of concentration, which implies a hierarchy of movement routes – linking to the functionality of the road network.</li> <li>▪ Accommodate connectivity through provincial roads to connect marginalised areas with main corridors.</li> <li>▪ Incorporate connectivity to a green open space system – ideally linked to tourism corridors.</li> <li>▪ Recognise secondary towns as part of the overall settlement and economic network of the province, with functional linkages between the urban conurbation and the hinterland.</li> <li>▪ Enhance the effectiveness of the N4 Maputo Corridor – linked to the approach of identifying and stimulating smaller "intermediate" nodes – corridor/node concept.</li> </ul>
2.	Sustainable Concentration and Agglomeration	<ul style="list-style-type: none"> <li>▪ Focus on the creation of agglomeration economies and clustering linked to nodes and potential nodes.</li> <li>▪ Allow the concentration of opportunities in key nodes and along key corridors and of public investment in and around these nodes or connectors – N4, N17, and R40</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Allow for broadening the economic base in the concentration areas through infrastructure investment, land release and skills development.</li> <li>▪ Optimise the utilisation of existing infrastructure and social amenities, particularly in areas where spare capacity exists – also linked to areas of potential opportunity in proximity to corridors and possible smaller nodes on the corridors.</li> <li>▪ Bring more people closer to a greater number of opportunities in the areas of concentration through increased densities, implying a need for affordable and lower-income housing as directed through social housing zones.</li> <li>▪ Ensure that densification takes place according to the nature and scale of the node or corridor and in relation to the location of these places in the broader urban environment. This would then guide the types of densities (medium or higher densities) that would be suitable in different locations – CSIR nodes</li> </ul>
3.	<p>Conservation and Resource utilisation</p> <ul style="list-style-type: none"> <li>▪ Allow for the maintenance of healthy natural environments, ecosystems and biophysical processes which support life, and which must be allowed to continue without significant change.</li> <li>▪ Ensure that stresses that affect environmental integrity are avoided, or at the very least limited and mitigated through appropriate mitigations and offsets -</li> <li>▪ Focus on maximising the use of scarce natural resources through recycling, the transformation of existing consumption patterns, the use of zero-emission transportation systems and the reduction of waste.</li> <li>▪ Create a functional and aesthetically pleasing integrated open space system across the province that will not only add essential cultural services but also contribute to the enhancement of the other types of ecosystems as well.</li> <li>▪ Protect high-potential agricultural land to ensure future food security. Development proposals for should therefore not impact on this valuable and irreplaceable resource – linked to the land capability assessment to protect category 8 – 15.</li> <li>▪ Mining, especially coal mining remains one of the provinces key economic sectors, realising the contestation of resources through mining the negative impacts requires management and positive mitigation interventions – environment, water, air pollution and agricultural land.</li> </ul>
4.	<p>Liveability and Sense of place</p> <ul style="list-style-type: none"> <li>▪ It should lead to the creation of settlements in which people live in a way that is worthy of human beings and healthy social interaction.</li> <li>▪ Include those spatial, social and environmental characteristics and qualities that uniquely contribute to people's sense of personal and collective wellbeing and to their sense of satisfaction in being the residents of a settlement;</li> <li>▪ Confirm functional integration between human settlement planning, economic opportunity and public transport is the key driving factor for spatial transformation – elements of smart growth.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Allowing people to reclaim public spaces through improved safety and security.</li> <li>▪ Address the spatial marginalisation of townships and the overwhelming tendency to locate government-funded housing projects on the periphery through spatial integration and development of housing on well-located land parcels. Not lead to further spatial fragmentation.</li> <li>▪ All areas in the province should not be the same. Different zones would be suitable for different types of development.</li> <li>▪ Pursue the most efficient, sustainable and equitable urban development, but at the same time acknowledge the reality that it may not be possible to accommodate a significant proportion of households in a compact urban footprint.</li> </ul>
5.	<p>Rural Diversity and transformation</p> <ul style="list-style-type: none"> <li>▪ Introduce the development of various types of environments that are linked to the spatial characteristics of that geographic location – recognition of the rural concept and developmental initiatives through the RDPs.</li> <li>▪ Create choices for residents within the rural economy linked to access to markets, food security and security of land tenure.</li> </ul>

**Source:** Mpumalanga SDF (2019)

In adopting its spatial development strategies, the Mpumalanga SDF identifies the following as directly affecting the DPKIS LM area:

- a) Strategic Objective 1: Leverage the N4 corridor to facilitate regional and provincial connectivity;
- b) Strategic Objective 2: Development of the existing corridors and building new linkage corridor to increase capacity and economic opportunities and ensure connectivity to the surrounding areas;
- c) Strategic Objective 3: Upgrade of tourism, and rural economy road networks with linkages to transportation corridors;
- d) Strategic Objective 4: Development of the public transportation network and corridor by emphasizing on passenger rail network; and
- e) Strategic Objective 5: Decongestion of the coal haul roads and improvement of Freight Network.

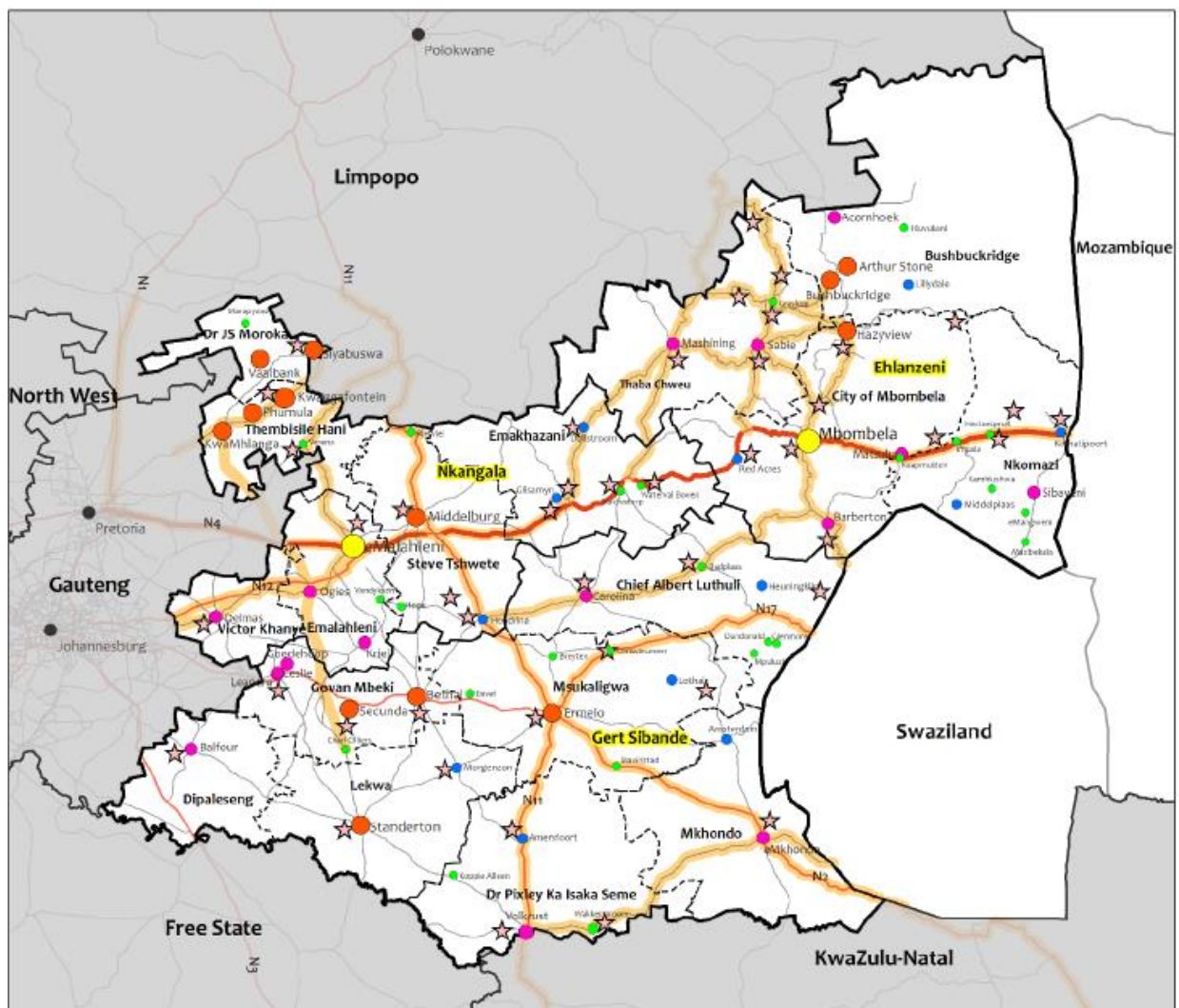
The application of the Strategic Objective 1 can be seen through ensuring that the N11, which towards Middelburg bypasses the N4, can utilise this as a major corridor to positively move people and goods around. This can also be utilised to shortcut through to KwaZulu-Natal in order to avoid traffic congestion and longer trips through the province of Gauteng.

The application of the Strategic Objective 2 will ensure corridor development of the N11 to become a feeder between northern municipalities and KwaZulu-Natal and Free State Provinces in the south. The investment in this corridor has the potential for sustainable economic growth and opportunities,

considering that the rural development plan also considers it vital to the development of the region.

The application of Strategic Objective 3 seeks to utilise interconnecting road networks to promote tourism and accessibility. Areas like Perdekop and Wakkerstroom are fairly accessible, with the latter though having been identified by the CSIR's Green Book as having challenges with regional connectivity. The town of Amersfoort, with its historical sites, is seen as a vital area for tourism within the Municipality. The Mpumalanga SDF requires upgrades to roads so that these interconnecting road networks are kept in acceptable conditions to promote accessibility (Map 4).

**Map 4** Proposed Economic, Tourism & Rural Roads

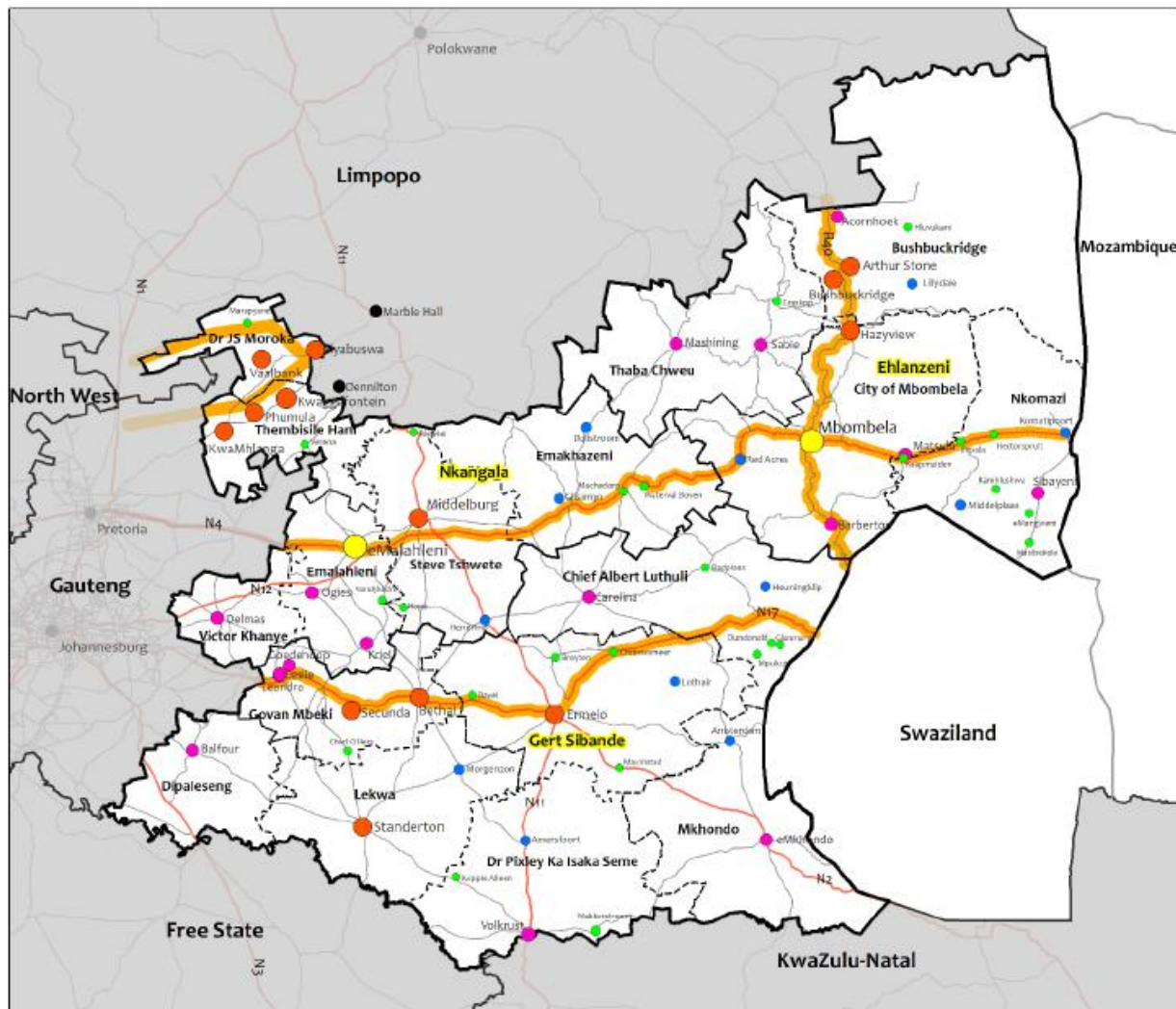


**Source:** Mpumalanga SDF (2019)



The application for the Strategic Objective 4 in that Ermelo is located only 100 kilometres from Volksrust. With Ermelo earmarked for railway upgrades to ensure that there is continued passenger movement to and from the town, it is vital that the DPKIS LM's SDF ensures that the connection with its northern neighbour is both encouraged and strengthened (Map 5).

**Map 5** Proposed Passenger Rail Corridors

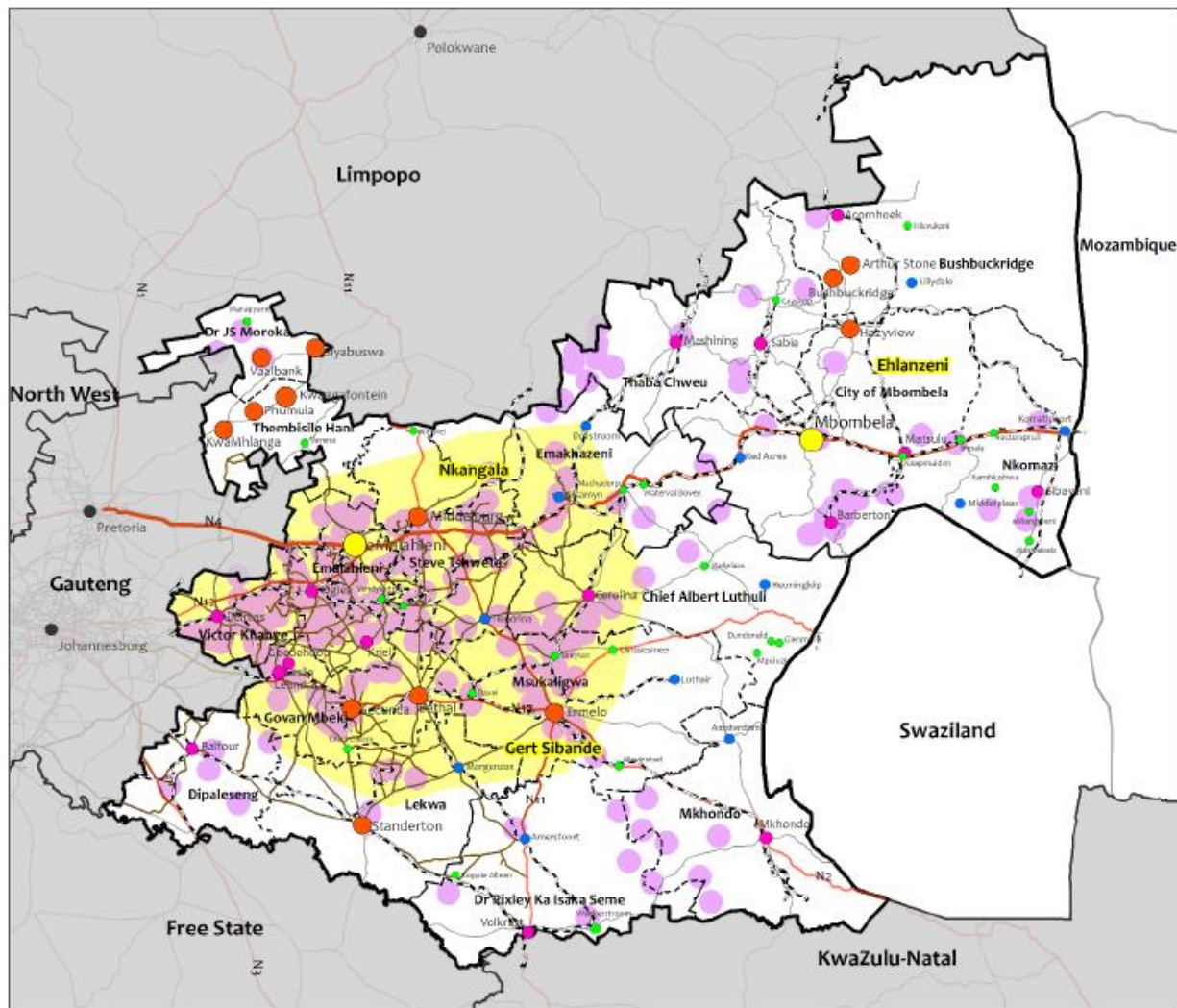


**Source:** Mpumalanga SDF (2019)

The application of Strategic Objective 5 can be dealt with by ensuring that there are upgrades and usage of the coal haul roads and the improvement of the freight network. The municipality's 2010 SDF identified that the District roads were in a bad state due to a lack of maintenance and high volumes of coal haulage trucks that transport coal to the power stations within and beyond its jurisdictional area. Volksrust is the junction for the main

Johannesburg-Durban railway line with other towns in the eastern part of Mpumalanga. A fairly good rail network exists within the municipality, but due to the high cost of this system of transport, the use thereof is limited.

**Map 6** Freight Movement



**Source:** Mpumalanga SDF (2019)

Amongst the key principles of the Mpumalanga SDF is the concept of ensuring that communities enjoy liveability and a sense of place. To ensure that this is a reality, the following strategic objectives were adopted:

- Strategic Objective 1: Promote compaction and densification in urban areas through the application of designated nodes, densification and infill areas;
- Strategic Objective 2: Sustainable development of Human Settlements; and
- Strategic Objective 3: Infrastructure Investment.

These objectives have been applied to the spatial proposal of the DPKIS Local Municipality's SDF and will be discussed in detail in the later parts of this report.

#### 5.2.4. The Gert Sibande Spatial Development Framework 2014

The Gert Sibande District Municipality adopted the following developmental principles:

**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). The SDF had proposed for the protection of the following:

The sensitive upper catchments and wetlands of the Wakkerstroom area.  
The irreplaceable and highly significant areas of biodiversity that run in a north-south alignment from Carolina to Wakkerstroom.

**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.

The N11 National Corridor extends from Limpopo Province in the vicinity of the Lephalale National Growth Point, southwards past Middelburg/Steve Tshwete, and through the Gert Sibande District where it links Ermelo to Volksrust before extending further southwards into the KwaZulu-Natal midlands. This is the main road link between Limpopo Province and KwaZulu-Natal. The R23 Corridor represents the old route between Gauteng Province and Durban/eThekweni 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:** 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.

The SDF proposed that a hierarchy of towns be established in the District, in line with the guidelines provided in the Mpumalanga Spatial Development Framework and Mpumalanga Vision 2030. The proposed hierarchy comprises Primary Nodes (Large Towns), Secondary Nodes (Medium Towns), Tertiary Nodes (Small Towns) and Rural Nodes. Volksrust is seen as a primary node, whereas the towns of Amersfoort and Wakkerstroom are seen as tertiary nodes, with Perdekop and Daggakraal classified as rural nodes.



**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. The development of a Thusong Centre takes place over time and is based on an incremental growth process guided and stimulated by a number of strategic investments by various spheres of government within and around a strategically selected spatial point in order to stimulate local economic development activity. Essentially, a Thusong Centre is “a focal point at which a comprehensive range of essential services can be obtained by people living in its vicinity”.

Establishing a hierarchy of services centres in the District in the form of Thusong Centres holds the following advantages:

- Provides a one-stop comprehensive service to members from surrounding communities which are in many cases very poor and cannot afford multiple trips.
- It promotes nodal development which is conducive to targeted infrastructure spending, local economic development and corridor development;
- Consolidates human settlement around nodal points and protect valuable agricultural land from urbanisation pressures;
- Provides guidance for the development and provision of engineering services;
- Indicates where to provide tarred road infrastructure and multi-modal transport facilities;
- Basic services are provided by the government in a financially sustainable manner;
- Provides a platform for entrepreneurship and small business development (LED); and
- Provides the government with a platform from which to develop telecentres in rural areas, as well as rural energy centres.

In developing Thusong Centres, the District proposes an approach that allows for accessibility, integration and mixed-use. This is depicted in Graph 1 hereunder. Over a period of time, the earmarked node can expand incrementally, and as more functions and associated residential activities are added, it may eventually also accommodate a fresh produce market, agro-industries and even some commercial activities like hardware stores, offices etc.

**Graph 2** Thusong Centre Conceptual Development



**Source:** Gert Sibande SDF 2014

**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.

It is essential that each of the towns and settlements within the District is developed in a manner aimed at consolidating the urban form, limiting further expansion by way of the introduction of an urban edge/urban development boundary, and by so doing correcting the development patterns of the past. The DPKIS LM's proposed Municipal Spatial Development Frameworks has to support this principle. It is also important that development follows in line with these guidelines.

Housing and more specifically subsidised housing is a very powerful instrument at the disposal of government to influence development patterns in and around towns and to give effect to the spatial restructuring objectives of municipalities. In line with the guidelines provided in the Mpumalanga Human Settlement Master Plan, the

following housing programmes should be favoured in the Strategic Development Areas located in the urban and rural parts of the District respectively:

a) Urban Areas

- Land Acquisition with a focus on acquiring land located within Strategic Development Areas;
- IRDP projects on land suitable for mixed-income development, including GAP market housing and rental stock;
- Upgrading of Informal Settlements in areas where the location of an existing informal settlement complies with the principles of spatial justice, sustainability and efficiency and/or these settlements are located within the existing urban footprint or an identified Strategic Development Area;
- Social Housing and Community Residential Units close to economic activity areas like commercial areas or Central Business Districts, or in areas earmarked for urban renewal.
- Inclusionary Housing projects are driven by the private sector and which comprises both bonded and subsidised housing, and which caters for full ownership and rental stock.

b) Rural Areas

- Rural Housing and Peoples Housing Programmes (PHP) within the rural fabric in the CRDP pilot areas in the District with emphasis on areas closest to rural nodes in order to add to the “critical mass” required to sustain economic activity in these areas; and
- Upgrading of Informal Settlements and IRDP projects around identified rural nodal points in support of Principle 4 of the GSDM SDF.

All the built-up areas within the DPKIS LM have been identified as Strategic Development Areas. The above principles have been applied to the spatial proposals of the municipality.

**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.

The key challenge is to create a balance in terms of improving services in the deep rural areas and at the nodal points in the municipal area simultaneously. Sufficient infrastructure capacity at the nodal points is crucial in order to ensure that it can facilitate and enhance the processes of local economic development. It is proposed that this should be done in accordance with an unbiased prioritisation model for the municipal area, based on the priorities identified in the GSDM and/or Municipal Infrastructure Master Plans and the nodal hierarchy delineated in the SDF.

**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.

The majority of existing tourism activities within the District are concentrated along the eastern extents of the District, in a broad north-south oriented strip along the zone of high biodiversity which links Wakkerstroom in the south to Chrissiesmeer and Carolina towards the north. The tourism potential of this broadband stems from the presence of various complimentary use and environmental elements, namely

forestry, existing and proposed conservation areas and cultural-historic sites, mountainous topography, and areas of high biodiversity.

Furthermore, the proposed R33 Corridor traverses the area from north to south, and links to two internationally renowned tourist destinations in South Africa: Kruger National Park to the north and the iSimangaliso/St Lucia Wetland to the south. Adding to the suitability of the area for tourism development is the presence of lower potential agricultural land in the eastern extents of the GSDM.

The Wakkerstroom and Chrissiesmeer Product Development Nodes. Significantly, Chrissiesmeer is the largest freshwater lake in South Africa, and together with a plethora of other smaller lakes and wetlands towards Wakkerstroom provide a home to a wide diversity of birds (especially water birds such as Flamingos) and other animal life. Consequently, the Wakkerstroom and Chrissiesmeer areas are now considered as two of Africa's key ornithological sites.

Furthermore, apart from the wildlife associated with the lakes and wetlands, the region offers other tourist attractions, which includes the Nooitgedacht Dam Nature Reserve, the historic village of Chrissiesmeer, numerous Anglo-Boer War battlefield sites, stone ruins dating back to 1500BC at places such as Legoya near Ermelo, and the towns of Volksrust and Wakkerstroom situated along the beautiful Drakensberg escarpment. Consequently, the Mpumalanga Tourism Growth Strategy (MTGS) suggests that these nodes should be the focus area for developments such as International Convention Centres (ICC), sports stadiums, sports academies, leisure estates and resorts, arts and crafts centres, museums, and interpretive centres.

**Development Principle 8:** Promote forestry within and along the identified Primary Tourism Corridor.

Given the beneficial relationship that exists between forestry and tourism (e.g. birding, hiking and mountain biking trails), and amidst all EIA requirements are complied with, the SDF proposes that land suitable to forestry within the proposed tourism corridor be optimally utilised for such purposes. This approach would contribute to enhancing the economic sustainability of the area by adding to the economic base of the surrounding poor communities. The proposed tourism corridor and forestry belt host two of the largest concentrations of poor communities within the Gert Sibande District: the traditional authority areas in the north-eastern parts of Chief Albert Luthuli Municipality; and the communities towards the south-east around the Driefontein-KwaNgema area in Mkhondo Municipality).

**Development Principle 9:** Promote small-scale and extensive commercial farming activities throughout the District, and facilitate Agrarian Transformation within the CRDP priority areas.

In terms of agriculture, the soil potential or land capability of the Gert Sibande District is patchy, with various levels of soil suitability. Generally, land within Gert Sibande is moderately suitable for agricultural purposes, with the least suitable areas occurring towards Volksrust. Some high potential pockets occur within the eastern extents.

The agricultural products pose opportunities for agro-processing which could further enhance economic development and job creation in the area by adding further value to agricultural products before exporting it to other regions. Linked to this, it is proposed that fresh produce markets be established at the identified business nodes in rural parts of the District to provide a platform for local farmers, small-scale industrialists and entrepreneurs to sell their goods and gain entry to the regional economy.

**Development Principle 10:** Facilitate and accommodate mining in the District in a sustainable manner in order to support local electricity generation and industrial development.

One of the key features of the Gert Sibande District Municipality area is the availability of coal deposits. This has resulted in an extensive network of power stations in the broader region and associated with these the development of a number of petrochemical industries (especially around Secunda). In the contemporary, Gert Sibande accommodates four power stations (at Camden, Grootvlei, Majuba and Tutuka), as well as the most prominent petrochemical plant in South Africa which is located at Sasol, Secunda. It is therefore imperative that the coalfields within the District be utilised in a sustainable manner to serve both the electricity and the industrial sectors which are major sources of employment in the GSDM.

**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 provincial Vision 2030 Strategy and in accordance with the following sectors: - Agricultural Cluster - Forestry Cluster - Industrial Cluster.

Apart from business, agriculture, forestry, and tourism, the industrial sector is a major contributor to the economy of the GSDM. The GSD SDF noted that the GSDM holds some 1073 industrial erven, collectively covering about 2436 hectares of land. Approximately 243 of these erven are still vacant of which 92 are located in Govan Mbeki, 68 in Msukaligwa, 50 in Lekwa and 25 in Dr Pixley ka Isaka Seme.

The Mpumalanga SDF projected an incremental demand of 1209 hectares of land in the GSDM which implies that, apart from the existing vacant industrial land in the GSDM, approximately 1111 hectares of industrial land will be required by 2032. The bulk of this land (1090 ha) will be required in Govan Mbeki Municipality (mostly in the TEKS area); 61 hectares in Msukaligwa (Ermelo); 30 hectares in Lekwa; and 16 hectares in Mkhondo. The projected incremental demand in Chief Albert Luthuli (7 ha) and Dr Pixley ka Isaka Seme (1 ha) is very low.

The District SDF proposes that the Agricultural Cluster be focused on agri-industries, and more specifically agro-processing of livestock and crop farming products in Standerton, Bethal, Ermelo and Mkhondo. Secondary Clusters could include Amersfoort, Volksrust and Balfour. The agricultural/food processing clusters could revolve around the following: summer grain, deciduous fruit, forestry, sheep, beef,

dairy, poultry, maize, sunflowers, grain, sorghum, wheat, potatoes, sweet potatoes, groundnuts, soybeans, abattoirs, sawmills, etc.

**Development Principle 12:** Enhance business activities (formal and informal) in the identified nodal points in the District.

The Central Business District (CBD's) of all towns in the Gert Sibande District not only play an important role in serving the retail and office needs of communities but also represent significant opportunities for economic development and job creation to both the formal and informal sectors. Central Business Areas of towns should be treated as special precincts requiring dedicated and continuous management in order to prevent urban decay and/or the relocation of economic activities to decentralised economic nodes. Decentralised nodes normally establish closer to the middle and higher-income residential areas of towns which marginalise the disadvantaged communities of such towns even further.

When CBD areas in the GSDM show signs of urban decay and economic decline, special precinct plans (Urban Revitalisation/Urban Renewal Plans and Strategies) should be compiled for these areas. Such plans should be compiled in close liaison with local business in these areas as the success of such strategies/plans depends on public-private partnerships and cooperation.

### 5.3. The Gert Sibande Rural Development Plan 2017

The Gert Sibande Rural Development Plan defines *rural development* as "A process of improving the quality of life and economic well-being of people living in a relatively isolated and sparsely populated area, through focused skills development, improvement of rural institutions and systems, expansion of rural infrastructure and growth in rural economic activities."

The Spatial Vision for the urban and rural parts of the Gert Sibande District provides important directives towards the GSDM Rural Development Plan as noted below:

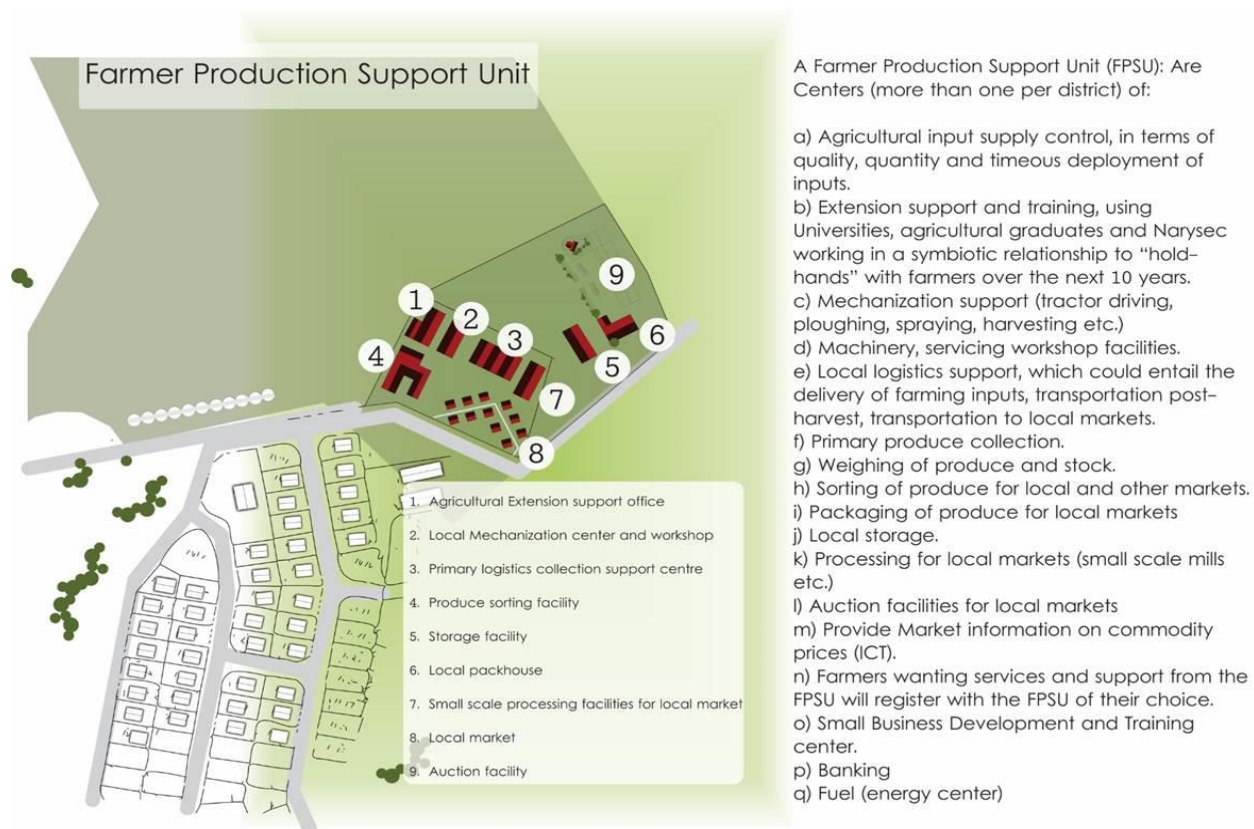
- Continuation of regional ecological corridors into surrounding districts of Ehlanzeni, Nkangala, Sedibeng, Fezile Dabi, Thabo Mofutsanyane, Amajuba and Zululand District Municipalities and protection of wetland and high biodiversity areas within the GSDM area;
- Strengthening of sub-continental road and rail corridors with specific reference to the N17-N2 corridor between Gauteng Province and the export harbours of Richards Bay and Durban-eThekweni in KwaZulu-Natal; route N11 between Botswana, Limpopo province, Mpumalanga and KwaZulu-Natal; and enhancement of the Gauteng-Maputo, Gauteng-Swaziland-Richards Bay and Gauteng-Durban-eThekweni rail corridors;
- Optimising interaction between South Africa and Swaziland via seven border posts;



- Functional linkage of sub-continental tourism corridor extending from Kruger National Park in Ehlanzeni District, through the eastern tourism belt in GSDM, and linking up with the iSimangaliso Wetland Park in Umkhanyakude District around St Lucia in KwaZulu-Natal;
- Providing for a four-tier nodal hierarchy in the district ranging from the two largest economic hubs around Secunda and Ermelo, up to smaller rural nodes like Elukwatini, Driefontein, KwaNgema and Manzana;
- Developing industry-specific economic clusters around nodal areas based on local potential;
- Focusing economic and social infrastructure development towards these nodal areas and containing urban sprawl by way of an urban edge;
- Providing for Environmental Management mechanisms to ensure that mining areas are sufficiently rehabilitated to continue agricultural activity/production on the land in future.

The GSDM RDP identifies the towns of Volksrust, Perdekop and Daggakraal for Farmer Production Support Units (FPSU). The FPSU will assist farmers by providing logistical needs such as setting up of a mechanisation unit, a pack house and training workshop facilities (Graph 2).

**Graph 3** Farmer Production Support Unit Concept Plan



**Source:** DRDLR (n.d.: Online)

The rural development plan aims to formulate a comprehensive plan of action for rural communities living in extreme poverty. It, therefore, makes sense to spatially identify where poor communities are located within the Gert Sibande District Municipality. The town of Daggakraal has been identified as one of those with poverty pockets.

Although Standerton is known for its dairy, the majority of cattle farming activity occurs within the Dr Pixley ka Isaka Seme Local Municipality. Tourism plays an important role in this region. The north-eastern portion of the District is characterised by breath-taking views and pristine wildlife, in addition, the area is home to some interesting fossil discoveries preserved within the geology of the mountains. The central portion of the District includes areas such as Wakkerstroom and Chrissiesmeer, which is now considered as two of Africa's key ornithological sites. The western portion of the District, on the other hand, is characterised by heavy industry and mining activities. Hence, due to the extensive commercial agricultural and mining activities, two new forms of tourism have begun to developed, namely agricultural and industrial tourism. The GSDM Highveld area, characterised by coal mining, electricity generation and maize livestock farming is demarcated as Functional Region 1 in the RDP.

The report recommends that Community Based Plans be compiled for Rural Intervention Areas like Perdekop and Daggakraal. Such a planning process will bring about proposals pertaining to community/ social organisation and a Business Plan for the area comprising a number of projects earmarked for implementation. Daggakraal is the focal point for this Rural Intervention Area which mainly covers the area between Wakkerstroom, Volksrust, Amersfoort and Driefontein. Perdekop, as a Rural Node, serves a large number of rural communities in the surrounding area.

To ensure that the RDP is implemented, the following are proposed:

**Action 1:** Approval and integration of RDP into District and Local SDFs

The Gert Sibande District Rural Development Plan needs to be incorporated and refined as the rural component of the District and Local Municipality Spatial Development Frameworks.

**Action 2:** Institutional Arrangements: Planning and Implementation

It is imperative that the government takes the lead in managing the continuous planning and implementation of projects in the respective Functional Regions and/ or Rural Intervention Areas identified in the Gert Sibande District Municipality. Municipalities contribute to and facilitate rural development but it is not a primary function of the third tier of government. Hence, the management and coordination



function should be performed by the Provincial Government, and more specifically the Department of Rural Development and Land Reform.

### **Action 3:** Land Conservation and Reform

One of the key requirements for sustainable rural development in the Gert Sibande District is the protection and conservation of high potential agricultural land. From the situational analysis in this report, it became evident that the continuous encroachment of mining activities on high potential agricultural land poses a serious threat to long term food security and the empowerment of rural communities through agriculture.

### **Action 4:** Fast-Tracking Land Reform in Rural Intervention Areas

Apart from conserving and preserving all high potential agricultural land in the province (especially land located on underground water sources and/ or land under irrigation), a special effort should also be made towards fast-tracking processes giving people access to land as a resource/ means towards a sustainable livelihood. Hence, all Land Reform initiatives located within Rural Intervention Areas should be prioritised in terms of the settlement.

### **Action 5:** Skills Training and Mentorship

Apart from programmes generally aimed at providing technical equipment and infrastructure, stakeholders in the Gert Sibande District highlighted specific needs towards more programmes aimed at the following:

- Training and Skills Development specific to the most suitable commodities in each RIA;
- Continuous Mentorship and Advice on Production, Harvesting and Marketing;
- Skills Development on Maintenance of Equipment;
- Business Skills Development towards becoming commercial farmers: Financial Management/ Farming Business Plan, Production Target, Monitoring and Evaluation and Marketing.

### **Action 6:** Implementation/ Finalisation of Projects

Identified projects should be implemented in order to realise the RDP's full potential.

## **5.4. The Mpumalanga Biodiversity Sector Plan – MBSP 2015**

Compiled by the Mpumalanga Tourism and Parks Agency (MTPA), the Mpumalanga Biodiversity Sector Plan is a vital policy plan for environmental management and protection of biodiversity throughout the Province. The report gives an assessment of the environmental status and thus allows the planning function to not only approach development from a perspective of environmental management but also to apply land use management principles that will ensure the protection of the very same environment.

With climate change being a reality that is currently facing the globe, the report recommends the development of climate change adaptation corridors. These corridors allow for movement between most nature reserves and across the greater part of the Mpumalanga landscape and were also used to inform the identification of Ecological Support Areas (ESAs) in areas that were not already identified as Critical Biodiversity Areas.

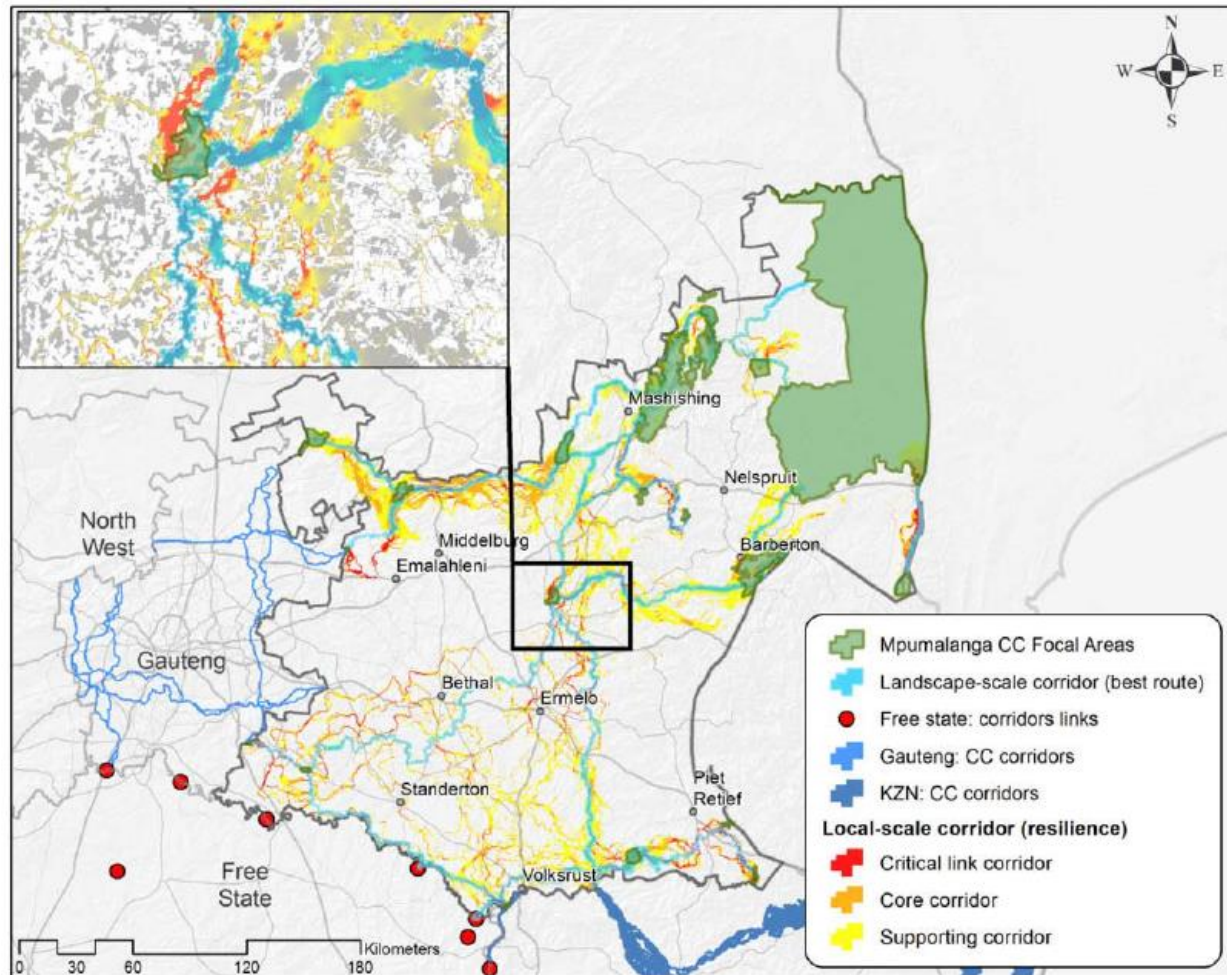
With the fragmented nature of the Province's landscape and grassland habitats, connectivity has been heavily compromised. The report identifies finer-scale corridors with a fear that there may be future disruptions that would limit further growth. Thus, the local corridors must be developed to support the corridor networks. The report recommends the following steps for corridor development:

**Table 2** Steps for the development of Landscape-Scale & Local-scale Corridors

	<i>Landscape-scale Corridor Network</i>	<i>Local-scale Corridor Network</i>
<b>Step 1</b>	Identify important focal areas to link up within a corridor network.	
<b>Step 2</b>	Create a raster surface which represents a resistance or friction surface across which organisms need to move.	
<b>Step 3</b>	Identify proposed least-cost path (LCP) corridors linking up all focal areas. Assess proposed paths visually against local-scale corridor network (to identify unfeasible corridors as LCP corridors do not consider corridor width).	Use a graph-theory approach (such as Circuitscape) to identify a variety of alternative fine-scale corridors, linking up focal areas and building resilience to network.
<b>Step 4</b>	Create a cost-distance surface (based on Step 2) for each of the corridor paths; the result identifies required corridor width and converts to a shapefile.	Categorise output into three classes: (1) Critical linkage, (2) Core corridor, and (3) supporting corridor.

**Source:** MBSP (2015)

**Map 7** Mpumalanga Corridor Development



**Source:** MBSP (2015)

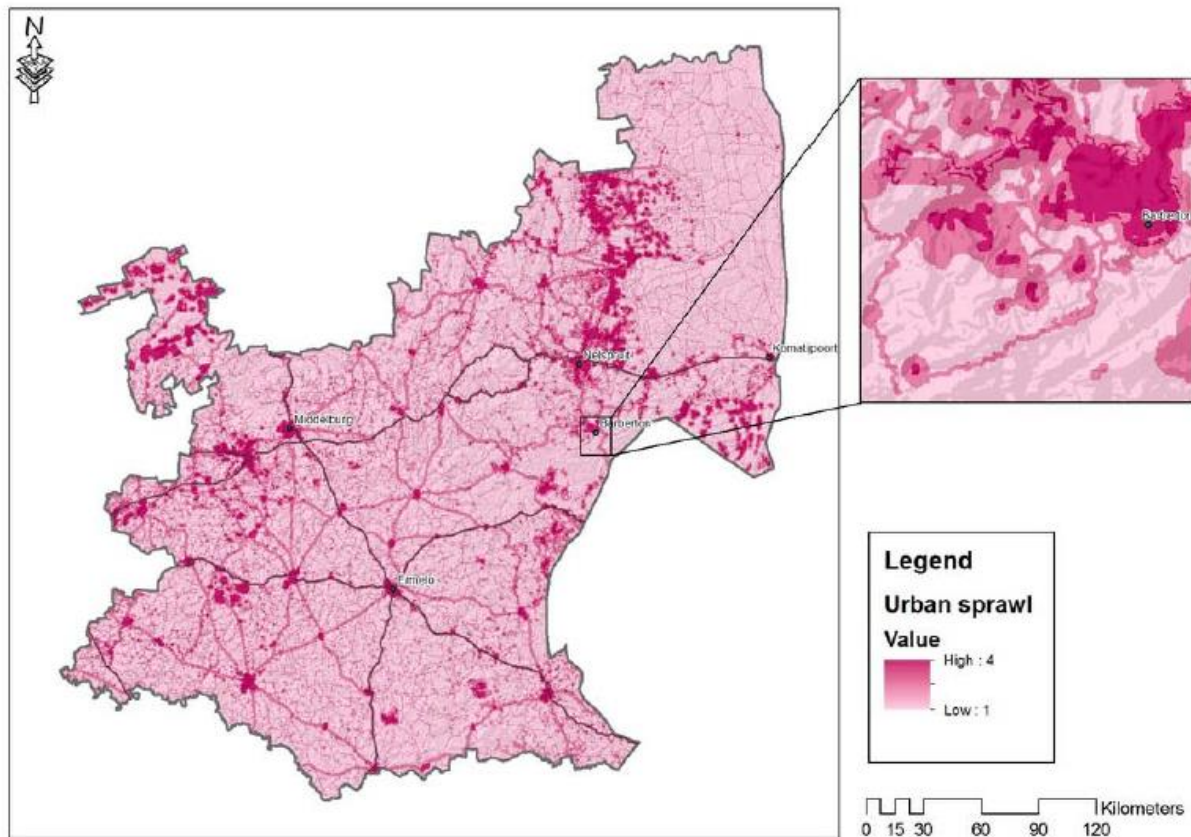
The report's analysis identified areas which are likely to play an important role in supporting the ability of species and ecosystems to adapt to a changing climate, including:

- Local refugia (e.g. kloofs and south-facing slopes);
- Areas important for landscape connectivity (e.g. riparian corridors);
- Areas with steep temperature, precipitation and altitude gradients;
- Areas of high biotic diversity where many different habitats and biome types are found in close proximity; and,
- Areas of high plant endemism.

The report went further to identify areas affected by urban sprawl (Figure 3). Hayden (2004, 8) defines sprawl as a process of large-scale real estate development resulting in low-density, scattered, discontinuous car-dependent

construction, usually on the periphery of declining older suburbs and shrinking city centres. Areas around DPKIS LM are affected. The role of the SDF is to discourage urban sprawl.

**Map 8** Mpumalanga Urban Sprawl



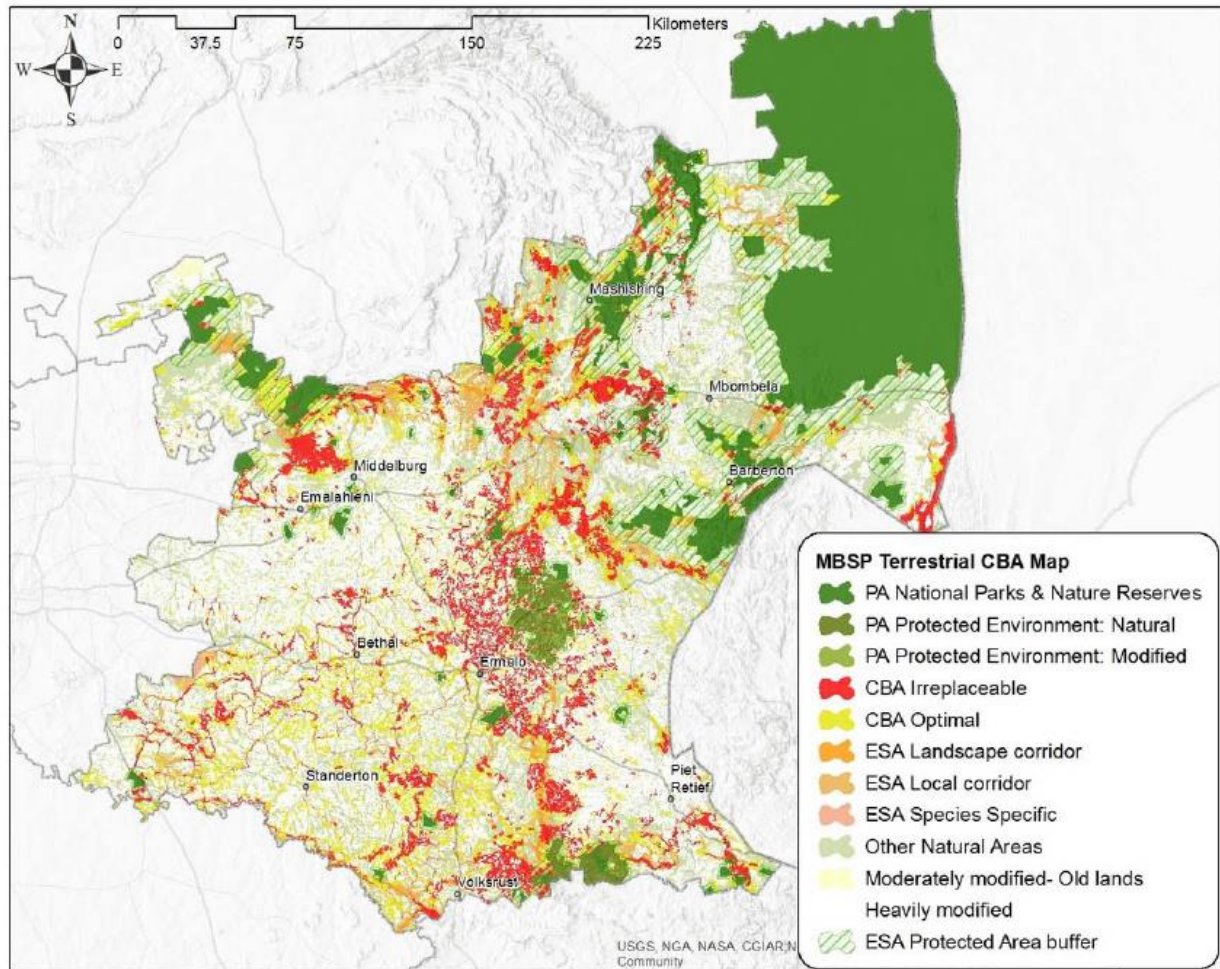
**Source:** MBSP (2015)

The MSBP identifies Protected Areas as areas, recognised in terms of the National Environmental Management Protected Areas Act, 2003, (Act No. 57 of 2003) that are currently considered to meet biodiversity targets in the MBSP. Critical Biodiversity Areas are those areas (outside of Protected Areas) that are required to meet biodiversity targets for biodiversity pattern (species and ecosystems) and ecological processes.

They should remain in a natural state that is maintained in good ecological condition. CBAs are areas of high biodiversity value but are often also at risk of being lost through biodiversity-incompatible land-use practices. CBAs include, inter alia, Critically Endangered Ecosystems and critical linkages (corridor pinch-points) to maintain connectivity. Wakkerstroom remains an area of concern in the DPKIS LM.



**Map 9** Mpumalanga Terrestrial CBA Map



**Source:** MBSP (2015)

In support of this, a Strategic environmental management plan was developed for the municipal area. The main purpose of the SEMP is to establish management zones for the PKISLM geographic area. It highlights existing activities on the impact assessment list that could be excluded from having an EIA and also identifies some additional activities that need to be listed for impact assessment. The EMF is not meant to replace the EIA Regulations but rather to provide decision-makers, whether a developer or an authority, with an early indication of possible environmental constraints to a proposed development.

In addition to consulting the maps and tables related to the EMZs, administrative guidelines need to be consulted to determine whether there are specific requirements that apply to development in specific geographic areas.

Administrative documents that need to be consulted include but are not limited to IDPs; SDFs; other EMFs; zoning schemes; land claims; mining activities; transport and roads; linear developments; servitudes; social receptors; visual, noise and air quality impact assessments; removal of alien vegetation; wetland delineation; geotechnical constraints and areas of conflict. The majority of these were mapped and attached to the Spatial Challenges and Opportunities Report in Phase 2.

## 6. SPATIAL DEVELOPMENT STRATEGIES

The formulation of a spatial development strategy for the Dr Pixley Ka Isaka Seme Spatial Development Framework is informed by the following proposed framework:

- Identify future areas for expansion of residential, community facilities, industrial, business, resort development and other activities;
- Indicate the urban edge for each built-up area;
- Provide guidance with respect to the management of environmental areas;
- Promoting and encouraging densification;
- Management and control; and
- Addressing housing and infrastructure backlog.

### 6.1. SPLUMA Development Principles

#### 1. The principle of ***spatial justice***, whereby—

- past spatial and other development imbalances must be redressed through improved access to and use of land;
- spatial development frameworks and policies at all spheres of government must address the inclusion of persons and areas that were previously excluded, with an emphasis on informal settlements, former homeland areas and areas characterised by widespread poverty and deprivation;
- spatial planning mechanisms, including land-use schemes, must incorporate provisions that enable redress in access to land by disadvantaged communities and persons;
- land use management systems must include all areas of a municipality and specifically include provisions that are flexible and appropriate for the management of disadvantaged areas, informal settlements and former homeland areas;
- land development procedures must include provisions that accommodate access to secure tenure and the incremental upgrading of informal areas; and
- a Municipal Planning Tribunal considering an application before it, may not be impeded or restricted in the exercise of its discretion solely on the ground that the value of land or property is affected by the outcome of the application.

#### 2. The principle of ***spatial sustainability***, whereby spatial planning and land use management systems must—

- promote land development that is within the fiscal, institutional and administrative means of the Republic;
- ensure that special consideration is given to the protection of prime and unique agricultural land;
- uphold consistency of land use measures in accordance with environmental management instruments;
- promote and stimulate the effective and equitable functioning of land markets;
- consider all current and future costs to all parties for the provision of infrastructure and social services in land developments;
- promote land development in locations that are sustainable and limit urban sprawl; and
- result in communities that are viable;

3. The principle of **efficiency**, whereby—

- land development optimises the use of existing resources and infrastructure;
- decision-making procedures are designed to minimise negative financial, social, economic or environmental impacts; and
- development application procedures are efficient and streamlined and timeframes are adhered to by all parties;

4. The principle of **spatial resilience**, whereby flexibility in spatial plans, policies and land use management systems are accommodated to ensure sustainable livelihoods in communities most likely to suffer the impacts of economic and environmental shocks.

5. The principle of **good administration**, whereby—

- all spheres of government ensure an integrated approach to land use and land development that is guided by the spatial planning and land use management systems as embodied in SPLUMA;
- all government departments must provide their sector inputs and comply with any other prescribed requirements during the preparation or amendment of spatial development frameworks;
- the requirements of any law relating to land development and land use are met timeously;
- the preparation and amendment of spatial plans, policies, land use schemes as well as procedures for development applications, include transparent processes of public participation that afford all parties the opportunity to
- provide inputs on matters affecting them; and
- policies, legislation and procedures must be clearly set in order to inform and empower members of the public.

The development of the Dr Pixley ka Isaka Seme Local Municipality's spatial development framework will be guided by these aforementioned principles.

**Table 3** Applying the SPLUMA Development Principles in the SDF

<b>No.</b>	<b>Principle</b>	<b>SDF Incorporation</b>
<b>1.</b>	Spatial Justice	An SDF that covers the whole municipal area and further ensure development applications are addressed by the Municipal Planning Tribunal.
<b>2.</b>	Spatial Sustainability	Application of environmental management in the SDF to ensure that the environment is protected.
<b>3.</b>	Efficiency	A realistic approach to spatial development with due consideration to available resources to ensure implementation.
<b>4.</b>	Spatial Resilience	Spatial development that ensures that community concerns are addressed so as to improve livelihoods.
<b>5.</b>	Good Administration	Sectoral inputs through the Intergovernmental Steering Committee.

**Source:** Own Construction (2019)

## **6.2. Applying Climate Change Principles to Spatial Development**

In earlier discussions, climate change was discussed as a phenomenon that impacts on the globe due to its devastating effects. South Africa has experienced general warming over the last 40 years. The local warming trend in many areas of South Africa is roughly double the mean global temperature trend, which suggests that increased warming has been evident since the latter part of the 20th century.

Climate change has an impact on rain patterns, temperature, the environment and the health of communities. The graph below (Graph 3) shows the projected impact that the ever-rising temperature will have for the country.



**Graph 4** Projected Impact of Increasing Temperatures in RSA



**Source:** Department of Environment, Forestry and Fisheries (n.d.: Online)

The solid black lines link the different impacts while the broken-line arrows indicate impacts continuing with increasing temperature. The left-hand text indicates the approximate level of warming that is associated with the onset of the impact. It is clear from this figure that many of the impacts start at less than a one-degree centigrade rise in temperature. With a two degrees centigrade rise in average global temperature, which is considered to be inevitable given current commitments to the mitigation of greenhouse gases, climate change will impact South Africa, and the planet significantly<sup>1</sup>.

To address these challenges, the proposed SDF has adopted a greening approach. Studies have proven that open spaces can act as carbon sinks that

<sup>1</sup> [https://www.environment.gov.za/sites/default/files/reports/environmentoutlook\\_chapter11.pdf](https://www.environment.gov.za/sites/default/files/reports/environmentoutlook_chapter11.pdf)

can store greenhouse gas emissions that would otherwise contribute to climate change. The trees and plants within parks and open spaces remove carbon pollution from the air humans breathe<sup>2</sup>.

The environmental sensitivity of the Municipality has required an approach that requires land-use management that is able to protect the natural environment. The result thereof is the application of open spaces, especially in areas that are abated by waterbodies. This is depicted in the maps on spatial proposals later.

## **7. THE SPATIAL DEVELOPMENT FRAMEWORK**

A Spatial Development Framework (SDF) is a document that promotes a pragmatic approach to future developmental opportunities and challenges. The SDF has multiple functions but the most important and common purpose of the SDF is to promote the general well-being of its inhabitants, thereby ensuring that the most effective and orderly planning is achieved for an area whereby changes, needs and growth in the area can be managed to the benefit of its inhabitants.

The SDF is an integrated and coherent framework and strategy within which private and public sector, as well as donor support, can be successfully mobilised to support economic reform and socio-economic development.

The spatial framework envisions Dr Pixley Ka Isaka Seme Local Municipality as a hierarchy of dense mixed-use transformation areas, corridors and nodes, that integrate the natural ecological system as a structuring layer, and that are connected by efficient transportation routes.

The spatial proposal phase is said to be the most crucial section of the SDF as it outlines all the spatial plans and proposals to guide growth in Dr Pixley Ka Isaka Seme Local Municipality. Spatial proposals indicate an integrative approach to regional planning and management that endeavours to promote sustainable development; conservation of environmental protected areas around the municipal area especially Wakkerstroom.

### **7.1. Spatial Structuring Elements**

The spatial proposals show future developments. The proposed spatial development of the DPKIS LM is informed by the following key elements:

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<sup>2</sup> <https://www.greenbelt.org/blog/how-parklands-and-open-space-can-counteract-climate-change/>

#### 7.1.1. Nodes

Nodes are areas where a higher intensity of land uses and activities are supported and promoted. Typically, any given municipal area would accommodate a hierarchy of nodes that indicates the relative intensity of development anticipated for the various nodes, their varying sizes, and their dominant nature (DRDLR, 2011).

The Dr Pixley Ka Isaka Seme Local Municipality currently has 6 nodes and all are strategically located on grasslands where there is a lot of agricultural opportunities. In order for agriculture and other economic activities to take place, the development/redevelopment of nodes is supposed to occur. The concept of nodes is related to the concept of a path since junctions are typically the convergence of paths, events on the journey (Lynch, 1960). The statement by Kevin Lynch simply confirms that nodes and corridors are interlinked; there must be access to nodes through corridors to enhance nodal economic activities.

The SDF advocates for the development of nodes through sustainable developments. The latter can be defined as development needs of present generations should be met without the ability of future generations to meet their own needs, being comprised. Sustainable development encompasses the integration of social, economic and ecological factors into planning decision-making and implementation so as to ensure that development serves present and future generations (PSDF, 2009).

The nodal hierarchies of the Municipality are as follows:

##### 7.1.1.1. Primary Node: Volksrust and Vukuzakhe

The area is a Primary Node for the municipal area. The Gert Sibande District Municipality sees the town as a vital service centre for the surrounding communities and is the most populated area within the Local Municipality. The District sees the town, with its strategic location, as a second-order service centre essentially there to fulfil the function of a central place to surrounding rural areas and small villages. In terms of business-related activities, Volksrust makes the largest contributions to both private sector services and retail activities, and public services and administration activities as well.

These activities are predominantly concentrated in the Central Business Districts of the town and represent some major nodes of economic activity and job opportunities within the Municipality. The CBD nodes usually also comprise some community facilities e.g. post office, clinic, church etc. and

residential uses, and should be well-maintained and strengthened in order to serve the needs of the entire surrounding community.

Identified by the Mpumalanga SDF as a Secondary Alternative Growth Centre, the following economic activities are seen to be crucial to the growth and development of the Volksrust area: agriculture and related activities, utilities, construction, tourism and transport.

The growth potential of the town is informed by the need to include the following for inclusive growth and development:

**Table 4** Volksrust Growth Potential Sectors

No.	Sector	Potential Growth Commodities
1.	Agriculture	Livestock Grains Fruit (Apples, Berries) Vegetables
2.	Utilities	Electricity generation Construction
3.	Tourism	Accommodation
4.	Transport	Transport of Coal

**Source:** Mpumalanga SDF 2019

#### 7.1.1.2. Secondary Nodes: Amersfoort / Ezamokuhle, Perdekop / Siyazenzela and Wakkerstroom / Esizameleni

Secondary Nodes are much smaller and do not offer the same variety of services as the Primary Node. Some settlements might even be too small to have a secondary node due to the low level of services provided in the town and the spatial distribution of the economy.

The main node for Amersfoort is situated at the existing CBD of the town between Plein and Scheiding Street. This area should be promoted for future retail and services industries. The main node for Ezamokuhle is proposed at the existing business hub of the town. This is where investment in the area should be channelled. Amersfoort is considered to be a town that can act as a service centre for the surrounding areas. Also, its central location makes the town a viable option for upgrades and services as the N11 cuts across to lead to Ermelo in the north as well as Volksrust in the south.

The growth potential of Amersfoort is informed by the need to include the following for inclusive growth and development:

**Table 5** Amersfoort Growth Potential Sectors

No.	Sector	Potential Growth Commodities
1.	Tourism	Historic Tourism (Boer War Sites)
2.	Agriculture	Livestock

**Source:** Mpumalanga SDF 2019

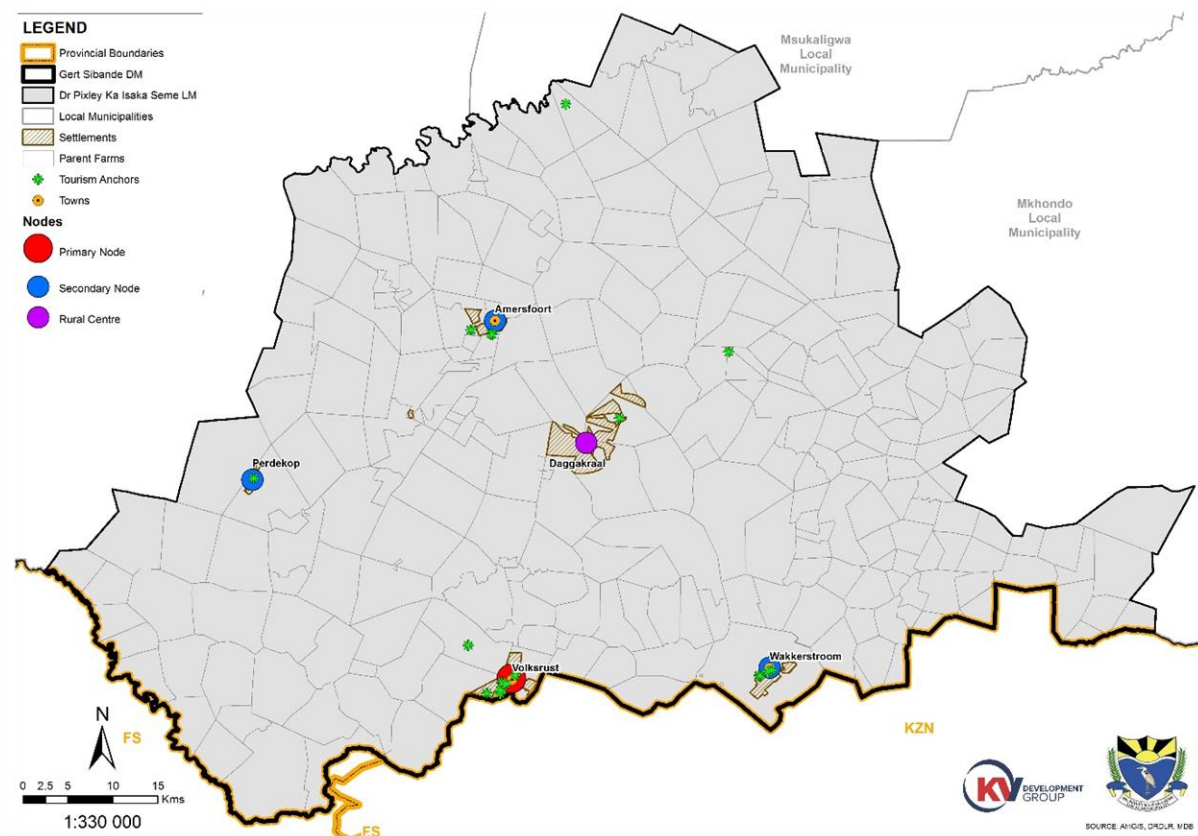
The main node for Perdekop is proposed at the intersection with Durban and Main Street where some existing business activity is present on the main activity spine through the town. Perdekop and Siyazenzela are integrated so the previous SDF proposed a node towards the entrance to the township. Vitally important the integration allows for a holistic approach to future development to address the past apartheid-era spatial planning results.

#### 7.1.1.3. Rural Node: Daggakraal/Sinqobile

The main node for this town is at the intersection with the Amersfoort and Volksrust road. This area already has some business activity and after the construction of the road, the area needs to be promoted as the primary node for the area. Perdekop is considered a rural node within the DPKIS Local Municipality. The Gert Sibande District Municipality's Rural Development Plan (RDP) has earmarked the town for Farmer Production Support Units (FPSU). The RDP goes on to further identify the area where rural activities can be consolidated and the main focus is set on agriculture with agro-industries. Mining may become more prominent in future.

The map depicting the municipal nodes is contained hereunder.

**Map 10 DPKIS LM Nodal Hierarchy Map**



### 7.1.2. Corridors

Corridors are links between nodes, along which an increased intensity of development will naturally be attracted and should be encouraged. Similar to nodes they improve access to opportunities (DRDLR, 2011). Corridors can also be defined as pathways for industrial sites, raw materials passing along highways, railways, canals, and pipelines to ports. The concept of corridors is where future development occurs especially along with expansive public transport network (corridor development) linking peripheral marginalised areas of the municipal area, through vast development corridors to the bigger cities/towns. As a result, consolidating growth and development opportunities around existing and future public transport nodes through infrastructure development along these routes.

Establishing a strategic connection between the northern, southern parts of the municipal area and the surrounding areas is of importance to bring about convenience leading to economic growth. Volksrust is situated along a provincial road to KwaZulu-Natal and this can be used as a corridor. More than

one corridor within Dr Pixley Ka Isaka Seme will result to a liveable mixed-use area that is well-connected into the surrounding urban opportunities (Volksrust) creating a regional logic for the development of strategic land using current development technics to drive growth and reduce expansion pressure on the periphery thus avoiding urban sprawl.

The SDF emphasis on developing these transportation corridors not only as transportation routes linking in resource-rich areas with coastal ports, or even linking a few nodes along a transportation route but rather on simultaneously exploiting the variety of other development opportunities that arise along the route (De Beer, 2001). The N11 in Dr Pixley Ka Isaka Seme Local Municipality connecting/linking to KwaZulu-Natal in the south and Ermelo in the north is the main corridor within the Municipality.

The N11 national route with its north-south alignment throughout the Municipality is currently the only route that functions as a mobility spine/fast-moving access way, although the R23, R543 and R35 also act as mobility spines of lower order in the local context. The primary purpose of these fast-moving mobility spines is to provide mobility for high volumes of traffic linking in with the broader region. Land uses which benefit from high levels of visibility and regional accessibility would locate along mobility spines. The N11 was also identified in the Gert Sibande District Municipality as a development corridor along which development should be encouraged due to the character of the road as a fast-moving access way in the district.

Volksrust is situated on the intersection of one National Road (N11) and two Provincial Roads (R23 and R543). Amersfoort is also situated at the intersection of the N11 and the R35 from Bethal. Wakkerstroom is situated on the R543 that can also be seen as a mobility spine. These roads act as main transport corridors from east to west and north to south in the municipal area. Daggakraal is the only settlement that does not have direct access to these mobility spines.

These provincial roads are important communication routes along which the majority of activities at a local scale and movement are concentrated. The provision of social and other facilities along these routes will improve the accessibility of the surrounding rural areas to these types of facilities. The proposed northern bypass which is a proclaimed road could also function as a mobility spine for Volksrust but it seems as if the municipality does not want to encourage traffic to by-pass the town at this stage out of fear of reducing the economic activity provided by travellers on the existing mobility spine through the town.

Volksrust is further located on the junction for the main Johannesburg-Durban railway line with other towns in the eastern part of Mpumalanga. The location of the town on the N11 and 20 Pixley Ka Isaka Seme Local Municipality Spatial Development Framework (November 2010) the intersection of the R23 and R543 and the railway line connection led to the diversified development of the area.

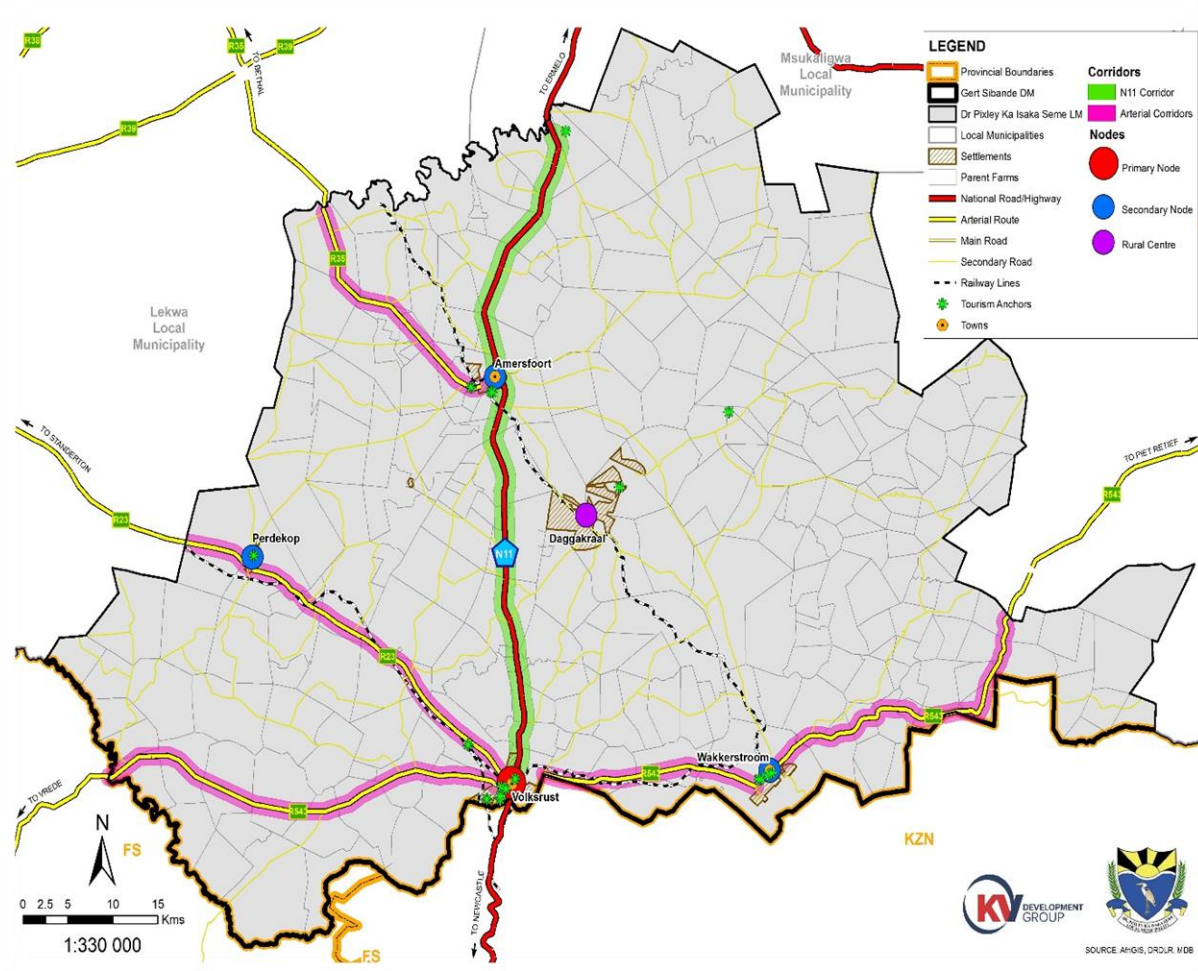
Mpumalanga consists of 49% of the rural area, which requires necessary prioritization for public transport infrastructure. Buses and minibus taxis are the main mode of public transportation in Mpumalanga. 29% of the rural population and 31% of the urban dweller use taxis to commute. There is no provision of local rail service in the province. However, long-distance intercity passenger trains are available. The existing public transportation system in the province is as a result of the existing settlement pattern which is a result of pre-democracy planning. This has had an impact on the transport system of the province (Mpumalanga SDF 2019).

As a way to decongest the coal haul roads and improve freight networks, connectivity to the major corridors such as N4 and N11 will decrease the secondary traffic on district distributor roads or class 3 roads. In addition, the use of the railway network will improve the demanding freight movement. Improving the road conditions of the coal haul roads to reduce the traffic issue.

The maps depicting the corridors within the Municipality is attached hereunder:



**Map 11** DPKIS LM's Corridors



### 7.1.3. Activity Spines

The activity spines are major routes that connect one or more urban and rural nodes, and support as well as give access to most mixed-use development and community activities within the activity corridor (Cape Metropolitan Council, 2000: 15). Activity spine can also be defined as a public street, incorporating an existing or planned public transport route, and adjacent land used or intended for mixed-use development.

Activity spines have the capacity to facilitate economic activities within the municipal area. The activity spines have a positive effect on the high-density areas to provide a threshold for various formal and informal economic activities. This will be of benefit to the local communities in terms of economic growth and better service delivery by the Municipality.

An activity spine is a route within a development corridor on which all development is focused. Activity spines will be major carriers of all modes of transport and will enable direct access to a range of high-intensity land-uses such as retail, cultural, residential and employment. Activity streets are smaller versions of activity spines, although the same principles namely linearly, accessibility, land use diversity and intensity apply. In an activity street, however, there are much lower levels of opportunity, e.g. there may be no freeways or metropolitan scale land uses in proximity.

#### 7.1.4. Future Development and Growth

The SDF provides for the anticipation of future population growth and defining the limit of municipal growth towards the peripheries and sensitive natural areas – the urban edge that provides for development within the boundaries. The development and growth of a Municipality are determined through the following:

- Development of transport and communication: the concept generally involves the movement of people or goods from one place to another via a means of transport. On the other hand, communication is the passing of information or data from one source to another. Dr Pixley Ka Isaka Seme Local Municipality has the potential of growing its transportation routes especially taking into consideration the railway routes that are already there. People find public transportation less expensive and very convenient, therefore, transportation routes need to be renewed every once in a while and the development of new routes/paths.
- Commercialisation: agriculture is one of the economic sectors within the municipality. The process of commercialization involves the introduction of new products to market. The Municipality can take advantage of agricultural activities to generate money on the market from food as it is the most basic need. With the Gert Sibande RDP, the Municipality must also ensure that it supports the commercial farmers, including emerging ones, in order to ensure that this sector provides the employment opportunities that are desperately required.
- Educational and Recreational Facilities: the spatial proposals illustrate the growth of educational and recreational facilities within the municipal areas. Projections have been made on future growth and needs for educational facilities.
- Economic Growth: An increase in economic growth caused by more efficient use of inputs (increased productivity of labour, physical capital, energy or materials). The municipal area is saturated by agricultural activities, meaning that this sector has the potential to employ a lot of people. There is an envisaged economic opportunity in agriculture.
- Housing Development: The Municipality currently has a backlog of 4100 households, the majority of which are in Daggakraal (1500). The spatial proposals have identified land parcels for future housing development and to further addressing densification.

#### 7.1.5. Environmental Management Areas

SPLUMA requires a MSDF to include a strategic assessment of the environmental pressures and opportunities within the municipal area, including the spatial location of environmental sensitivities, high potential agricultural land and coastal access strips. The previous report identifies areas of environmental pressure to ensure that all stakeholders are aware and can easily point these out on depicted maps.

Development Principle 1 of the GSDM SDF promotes the protection, enhancement and the management of the natural resources within the district. All the sensitive environmental areas and aspects within the municipal area were combined in Map 12 to present a zone of a sensitive natural area within the Municipality.

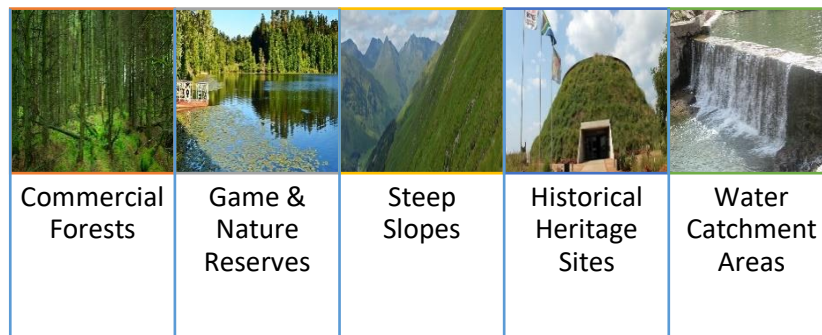
These depicted areas should be considered as protected and any development proposed in the area should be directed by the different environmental sensitive aspects as required by environmental legislation. Furthermore, the abundance of conservation and protected areas should also be utilised as a part of the natural environment to promote the economy and tourism in the municipal area by developing the areas to attract tourist and promote the attractiveness of the municipality.

The following environmentally sensitive areas should be protected from development:

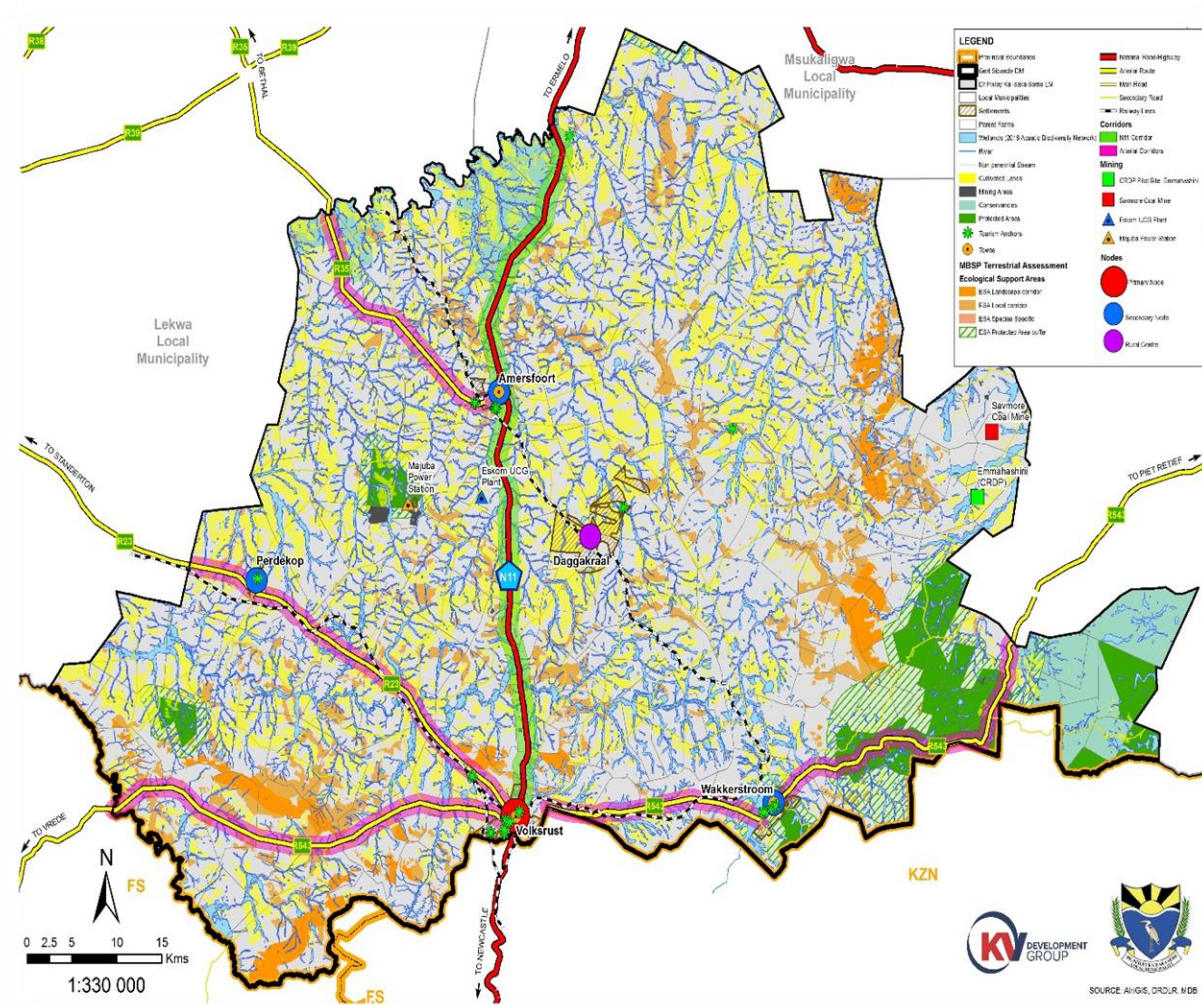
- Commercial forests;
- Game and nature reserves
- Steep slopes greater than 1:6;
- Historic heritage sites; and
- Water catchment areas.



**Photo 1** Environmentally Sensitive Areas



**Map 12** DPKIS LM's Environmental Management Areas



All new developments along the river should be subject to a detailed environmental impact assessment with specific input from the Department Of Water and Sanitation and the requirements of Section 144 of the National Water Act, 1998, (Act No. 36 of 1998) in determining floodlines.

#### 7.1.6. Energy, Tourism, Mining and Services

Mines in operation are scattered around the Local Municipality and include sand, dolerite and coal mining. Small scale open cast mining is being undertaken to the east of Wakkerstroom and there is a coal mine adjoining the Majuba Power Station west of Amersfoort which is now utilised for the gasification of coal.

Given the low quality and limited thickness of much of the resources in the municipal area, coal is likely to be mined using opencast methods which can have a significant impact on the water resources and sensitive ecology in the municipal area. Future quarries are also likely to be developed for construction materials where a market for such materials is identified close to materials sources, such materials would include builders sand and road aggregates. The Majuba Power Station is considered to be an existing industrial node as well as the Savmore Coal mine in the eastern part of the municipal area.

The Municipality has great potential for tourism and Agro-Tourism. The Municipal IDP 2017-2022 highlights the need for the promotion of local tourism resources and sees this as an economic opportunity. The N11 is used freight transportation route and can also be viewed as a potential corridor on boosting tourism in the area. This route can be used to tap into the economic development of the municipal jurisdiction as it is in good condition.

The Wakkerstroom Wetland Conservation area is a primary tourism focus and occupies approximately 650ha. It is recognised as a national asset and the town of Wakkerstroom is internationally known as a haven for birdwatchers and eco-tourists. Special species occurring in the area include Rudd's Lark, Botha's Lark, Yellow-breasted Pipit, Blue Korhaan and Southern Bald Ibis.

The Municipality also hosts some of the key battle sites of South African history including Majuba Hill near Volksrust where the Transvaal won independence from the British. Memorials in the town commemorate the Anglo-Boer wars in honour of concentration camp victims and those in active service.

Besides birding, outdoor recreation is based on resources including the Mahawane Waterfall and the Amersfoort and Martins Dams and a well-known paragliding venue is situated at the Tamatiesberg to the north of Volksrust. Fly-fishing is a further popular outdoor pursuit in the municipal area. The

south-eastern portion of the municipality is mountainous and probably attracts ecotourism activities such as hiking, abseiling and mountain climbing.

Among the key challenges facing the tourism industry, include:

- Lack of well-developed tourism product;
- Lack of effective public, private and community collaboration;
- Lack of transformation;
- Tourism expenditure; and
- Enabling infrastructure.

To address these challenges DPKIS LM needs to pay urgent attention to the following factors:

- Building effective collaborations between the public, private and community sector;
- Development of a coherent product for the municipality and linking this with the district, provincial and national product;
- Ensuring effective and efficient utilization available resources; and
- Expedite the transformation and integration of the industry.

The GSDM Development Principle 3 seeks to utilize the existing natural environment, cultural-historic and man-made activity areas within the District as Tourism Anchors and Nodes; and to develop and promote the eastern parts of the District (around route R33) as a Primary Tourism Corridor linking the Lowveld Tourism Precinct to the north (in Ehlanzeni), to the St. Lucia Tourism Precinct located to the south of the District.

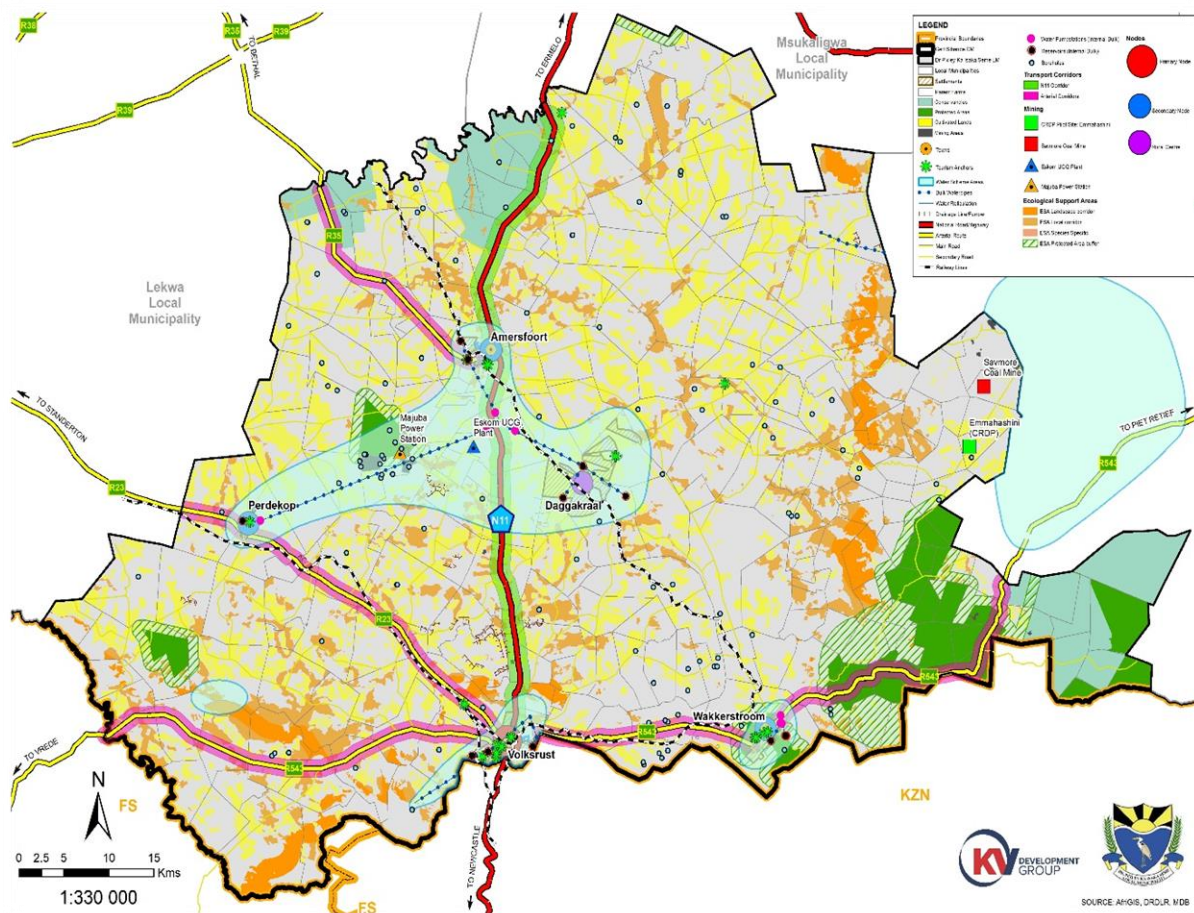
One of the major priorities for the Municipality is the maintenance of bulk water infrastructure and ensuring consistent water supply. Local Government is expected to maintain and expand water purification works and wastewater treatment works in line with growing demand.

The Development Principle 7 of the GSDM SDF requires the facilitation and accommodation of mining in a sustainable manner in order to support local electricity generation and industrial development. One of the Municipality's primary objectives is to ensure that there is access to free basic electricity for the majority of its poor citizens. As one of its weaknesses, the ageing electricity infrastructure is of grave concern to the Municipality. Households with a connection to electricity increased to 19 824 in 2016. The share of households connected to electricity improved to a level of 87.9% in 2016. The current backlog of households not connected to electricity is 2561. This shows that there is indeed for energy.



The map showing the majority of the services discussed in this section are contained in the map hereunder (Map 13).

**Map 13** DPKIS LM's Services, Mines, Energy & Tourism Areas



#### 7.1.7. Rural Intervention Areas and Farmer Support Production Units

The Municipality's 2017-2022 IDP identifies communities in RDP houses and in rural areas as the most vulnerable to many of these physical risks, but proximity to certain installations or hazards also exposes other communities to risks. In terms of capacity to address and therefore reduce risks, there currently is a strong emphasis on preparedness and response planning. This means that capacity and planning in terms of mitigation and prevention should be strengthened.

The GSDM SDF Development Principle 5 seeks to promote intensive and extensive commercial farming activities throughout the District and to

facilitate and concentrate subsistence farming activities within certain rural communities.

Some of the interventions identified by the GSDM RDP are:

- MPG / KZN initiative – tourism liberation route and farm tourism
- Majuba Fly Ash
- Bakeries – Sizakhele Mdamba and Smooth and Soft Bakery Cooperative

Perdekop falls under Rural Intervention Area which looks to consolidate rural activity around the area with the main focus to be on agriculture with agro-industries around. Mining may become more prominent in the future.

Daggakraal falls under Rural Intervention Area which sees the area as the focal area for the establishment of a Rural Node. Several land reform initiatives are underway. The RDP identifies that regional access to Daggakraal is problematic as it has been removed from the regional road network.

A Rural Intervention Area can comprise of rural informal settlements, rural villages under traditional leadership and/or clusters of farmworkers either displaced or working on farms in the area. The first important step towards enhancing rural development in the Rural Intervention Area is then to compile a Community Based Rural Precinct Plan for the area. This plan needs to be compiled in close consultation with all local stakeholders and beneficiaries, including relevant Traditional Leaders and the relevant municipal officials as all these parties need to take co-ownership of the plan once it is completed, and ensure development which is consistent with the proposals contained in the plan.

This approach will also ensure alignment and cooperation between the Traditional Leaders and the relevant Local Municipality. It is important that such Rural Precinct Plan is compiled at an appropriate level of detail to ensure that there is clarity as to exactly what needs to happen on each cadastral entity in the area.

In cases where Land Reform initiatives are underway in such area, special attention also needs to be paid to the way in which beneficiaries are to be accommodated/ incorporated into the area. Beneficiaries may be individuals, e.g. emerging commercial farmers having been allocated land to farm on, or it may be larger communities that need to be established in a sustainable manner.

In the case of individual farmers, the Rural Precinct Plan needs to indicate how/ where these farmers will fit into the broader area and how their farming



activities can/ should be aligned with surrounding, well established commercial farmers.

The Mpumalanga Agri Park initiative earmarked fourteen nodes in the region as Farmer Production Support Units (FPSUs). In the Dr Pixley ka Isaka Seme LM, the following areas have been identified:

**Table 6** DPKIS LM's FPSU Areas & Commodities

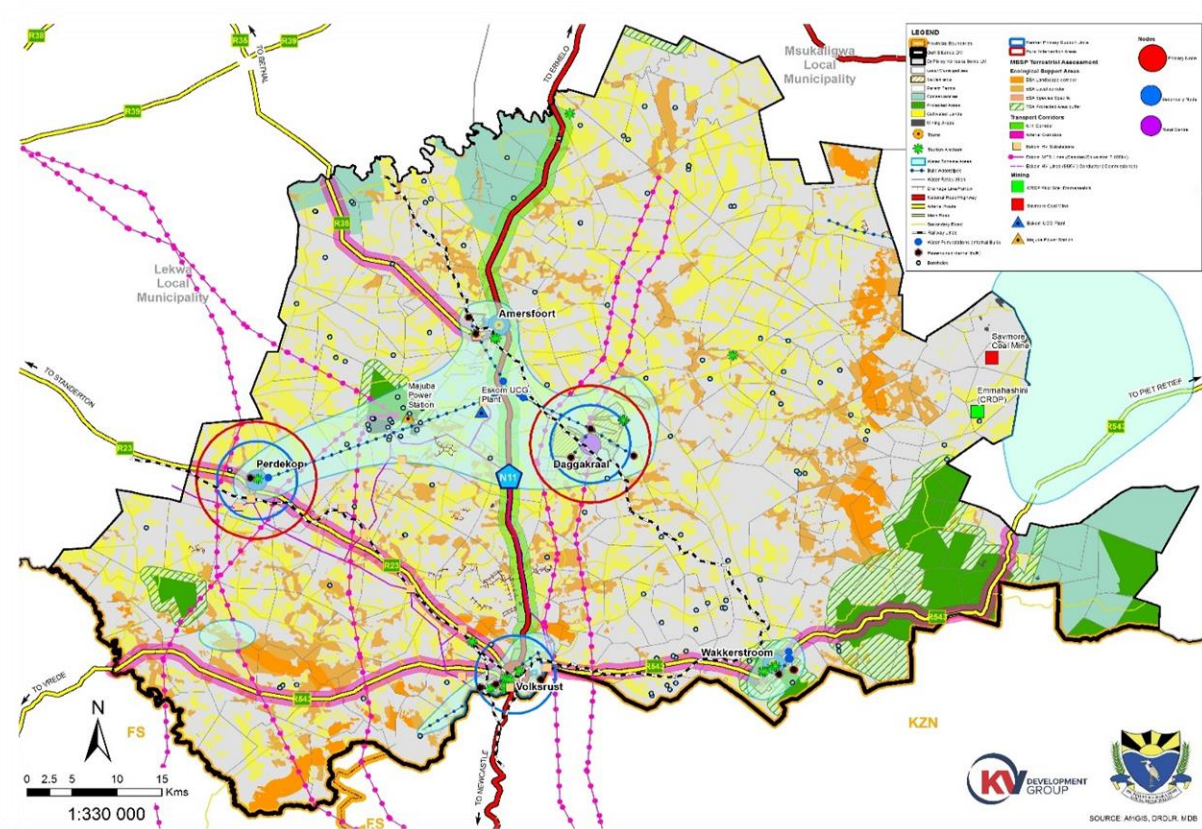
<b>No.</b>	<b>Area</b>	<b>Commodities</b>
<b>1.</b>	Volksrust	Livestock
<b>2.</b>	Daggakraal	Grains
<b>3.</b>	Perdekop	Fruits (apples, berries) Vegetables Soya Grains

**Source:** GSDM RDP (2017)

## **7.2. The Dr Pixley ka Isaka Seme Local Municipality SDF, 2019**

The map depicting the proposed SDF of the Dr Pixley ka Isaka Seme Local Municipality is attached to this report as Map 14.

**Map 14** Dr Pixley ka Isaka Seme LM's Proposed SDF



### 7.3. The Concept of Densification

Densification can be defined as “The increased use of space, both horizontally and vertically, within existing areas/properties and new developments, accompanied by an increased number of units and/or population threshold.” (City of Cape Town, 2012).

Densification can contribute to the creation of good-quality, efficient and sustainable urban form in a number of ways, including the following:

- Densification reduces land take-up;
- By encouraging higher densities, future land requirements for new developments could be reduced and the housing unit demand could be accommodated on much less land compared to the same number of units accommodated at lower densities;
- Densification reduces the consumption of valuable/non-renewable resources;
- By encouraging development upwards rather than outwards, densification helps reduce the consumption of valuable resources such as agricultural land, areas of mineral potential, aquifer recharge areas and valuable biodiversity areas. It can also reduce the consumption of non-renewable fuels by lessening car dependence;

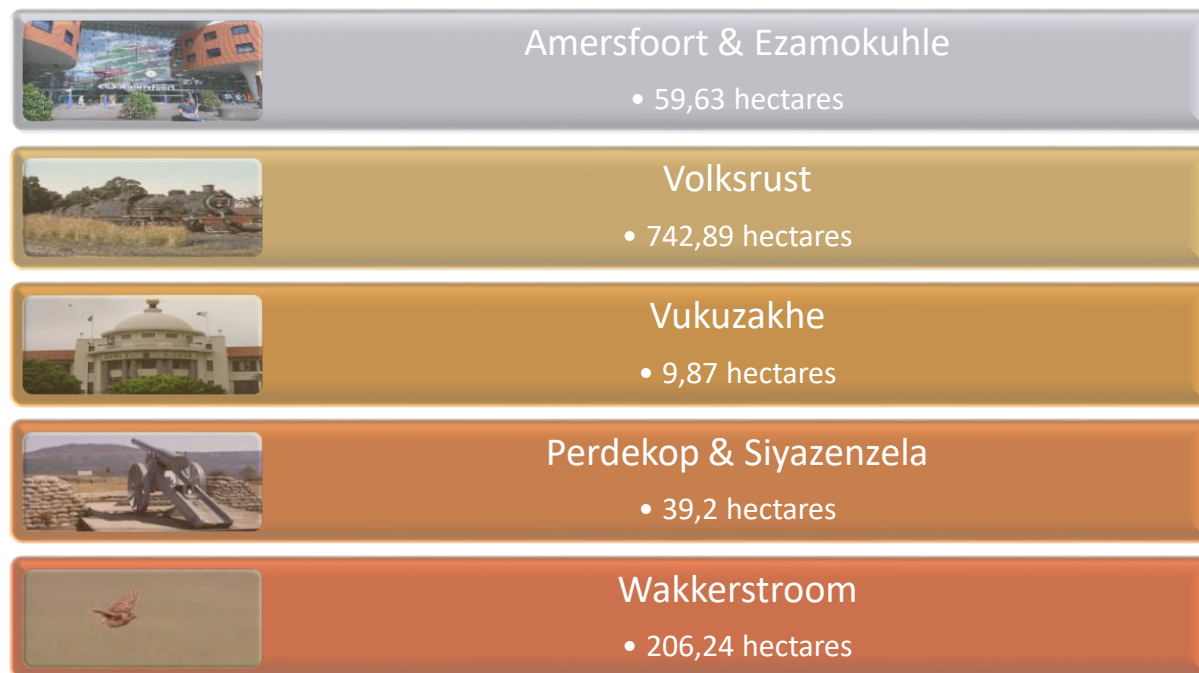
- Densification reduces the distance between the workplace and place of living;
- Higher densities in appropriate locations, especially those close to urban opportunities (services, facilities, jobs) and public transport, help rationalise the housing pattern in the city and improve access to the city's amenities and facilities. They help reduce travel distances and times, as well as the associated costs;
- Densification encourages increased use of sustainable public transport;
- Higher densities, accompanied by increased population thresholds and mixed-use development, support the efficient functioning and viable provision of public transport services, especially on major line-haul routes for mass and rapid transit;
- Densification promotes efficient and on-going utilisation of infrastructure;
- Higher densities, accompanied by increased population thresholds, create sufficient consumers to generate the development of economic opportunities, social facilities and services, and enable the cost-effective provision and optimal use of infrastructure especially where there is excess service capacity or where increased thresholds are required to provide services and infrastructure;
- Densification improves housing patterns and choice of house type;
- A mix of residential densities ensures diversification and choice of housing types and tenure options;
- Densification contributes to urban place-making and improves safety;
- Appropriately designed and located higher densities (in terms of form, scale, height, orientation) can provide an opportunity for place-making and the creation of attractive and safe urban environments, particularly those in proximity to public spaces (both natural and built);
- Densification encourages balanced and viable communities;
- Higher densities are not a guarantee of quality urban environments, appropriate built form or good urban design. However, the extremes of either very high or low densities often result in negative urban environments. Appropriate regulations, local development policies and urban design policies can be used to help prevent negative built environments;
- Densification enhances the economic vitality of activity nodes and corridors; and
- Higher densities along existing and future activity nodes and corridors support efficient and optimum use of existing infrastructure and enhance the economic vitality of an area.

(Polokwane Local Municipality 2013)

#### 7.3.1. Applying Densification to DPKIS Local Municipality

To ensure that urban sprawl does not affect the Municipality going forward, it is imperative that densification is applied. That would allow for higher densities in the built-up areas and allow the Municipality to have a uniformed approach to sustainable development. There a number of vacant stands within the towns of the Municipality that should be made available for future development to address the housing backlogs. The vacant properties, per town, are included hereunder.

**Figure 3** Vacant Land Size



**Source:** Own Construction (2019)

There are 1057,83 hectares of land available for further development within the built-up areas of the Municipality. These are the stands that should be made available to address the housing backlogs. The local authority will have to determine the ownership status to determine if these have to be bought, in the event of private ownership, or can easily sell these off if municipality owned.

#### **7.4. Determining Growth Patterns**

To determine how the settlements of the Dr Pixley ka Isaka Seme Local Municipality have grown since 2010 when the last spatial development framework was compiled, the growth patterns had to be spatially depicted. The first step into doing this was to apply an urban edge. That way, the plan would take into consideration the current growth pattern to ensure that the SDF considers areas that can be deemed as newly developed.

Defective growth patterns can lead to catastrophic results on humans and the natural environment. Migration has led to unbalanced, unstable and unsustainable growth patterns that have increased over time. The World Economic Forum (2014) sees the application of systems to determine structural elements on the balanced growth patterns, linked to supply and demand, as vital drivers for change and ensuring sustainable growth and

development. The WEF highlights issues linked to socio-economic challenges resulting from domestic income in developing countries. The lower-income earners continue to struggle to make ends meet and thus are looking for opportunities elsewhere, thus putting pressure on resources during migration. This normally leads to the emergence of informal settlements. The distribution of resources is highly hampered by unemployment and the lack of access to basic services.

It is important that there is a shift in thinking in the way policy-makers apply developmental initiatives to mitigate the challenges. Bellù (2011) refers to a **"Development paradigm"** which is seen as *"a defined modality or path to follow to achieve development, based on a codified set of activities and/or based on a vision regarding the functioning and evolution of a socioeconomic system"*.

To identify prevailing development paradigms and related policies, it may be useful to take a glance at a macroscopic perspective of what is going on in the global development arena. A good starting point is, for instance, the declarations of the G8 Summit on global governance and global food security ("l'Aquila declarations" G8, 2009). Even if such declarations, in general, emphasise more development objectives than instruments and processes required to achieve them, some "ingredients" of the prevailing "development recipes" are identifiable.

These include economy-wide growth, increased agricultural production and productivity, support to small scale industries, promotion and protection of innovation and transfer of clean, low-carbon technologies. Further aims are the development of human capital, research, infrastructure, opening markets further to international trade and foreign investment, stability and good governance; social protection mechanisms such as safety nets and social policies for the most vulnerable.

Among other things, this should allow for the achievement of the Millennium Development Goals (MDGs) set by the United Nations at the beginning of the millennium (poverty reduction, food security, health, education, sustainable resource use, good governance)<sup>15</sup>. In particular, all the above should lead to the achievement of the first MDG: "Eradicate extreme poverty and hunger", which is probably the most challenging objective to achieve in a sustainable way.<sup>3</sup>

The above resonates with SPLUMA Developmental Principles, read together with the Gert Sibande District Municipality's 12 Development Principles, in

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<sup>3</sup> [http://www.fao.org/docs/up/easypol/882/defining\\_development\\_paradigms\\_102en.pdf](http://www.fao.org/docs/up/easypol/882/defining_development_paradigms_102en.pdf)

addressing the spatial challenges that are in place and having a policy and result-driven approach to development. Emanating from the above, the settlements of the Municipality have grown as follows since the last SDF of 2010.

In determining the growth patterns, the 2009 landcover layer was added, showing only urban/homesteads (depicted in grey on the photos). Next, the 2019 aerial imagery was brought in and then the expansion areas (in red) added through a digitizing method. The growth was picked up on the most recent aerial photos. This then allowed for the depiction of the growth patterns as discussed hereunder.

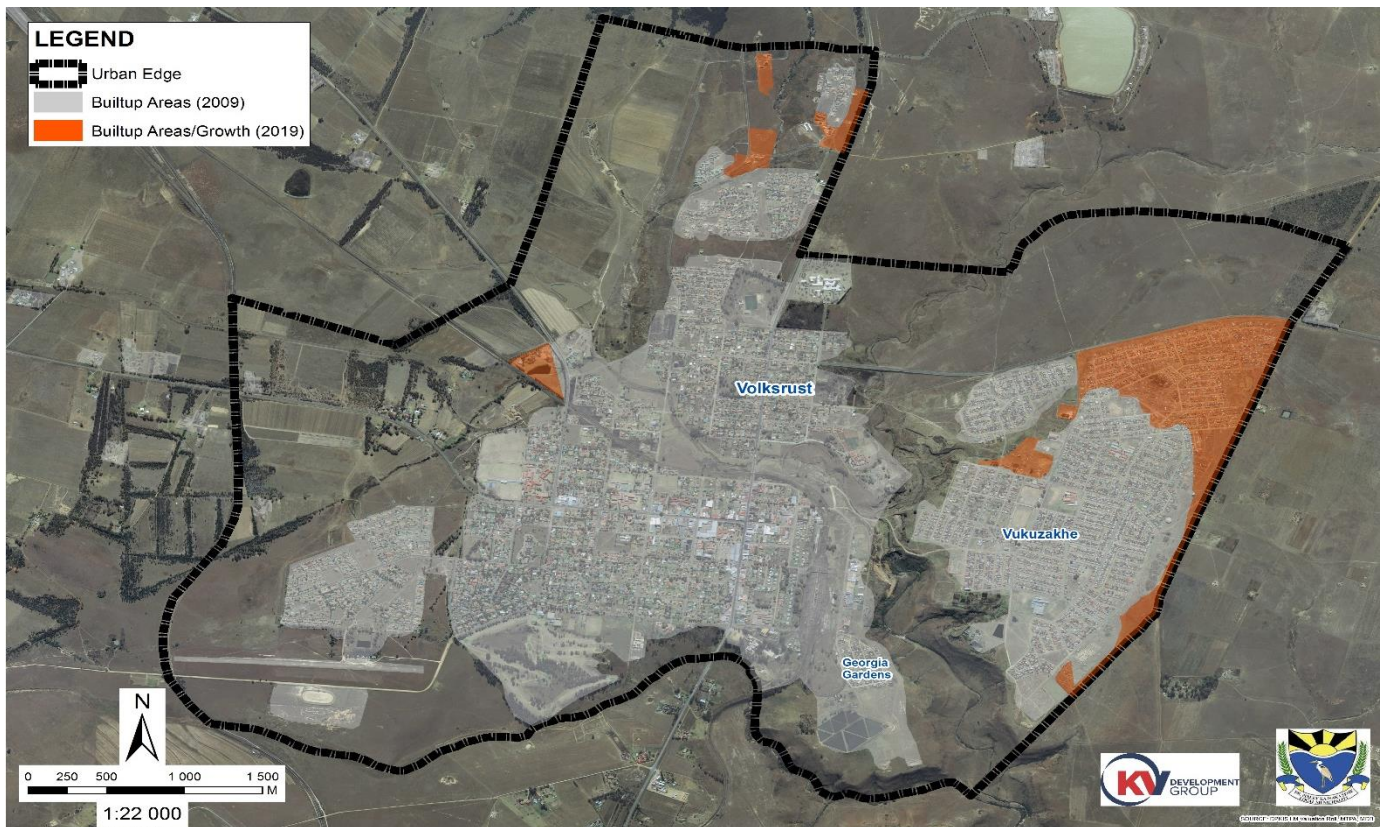
#### 7.4.1. Volksrust and Vukuzakhe Growth Pattern 2010-2019

The largest development took place in the eastern parts of the township of Vukuzakhe. The main development has followed a functional and formal township establishment process as the imagery attached hereto (Photo 2). This development lies to the southern parts of the Chris Hani Street and is internally connected to Shoya Street and Phuthaditjhaba Avenue. Further towards the latter avenue is an existing informal settlement that occupies what seems to be an open space or park.

This informal settlement did not exist when the 2010 SDF was compiled which then confirms the housing challenges that the Municipality currently faces. Details of the informal settlements are discussed in the later parts of this report. A number of structures have been constructed next to Mavuso Street in an area which may provide challenges and dangers due to an existing stream nearby. The main development that has happened in Volksrust is to the north of the Volksrust Primary School. These are not of great significance as compared to those in Vukuzakhe.



Photo 2 Volksrust & Vukuzakhe Growth Pattern

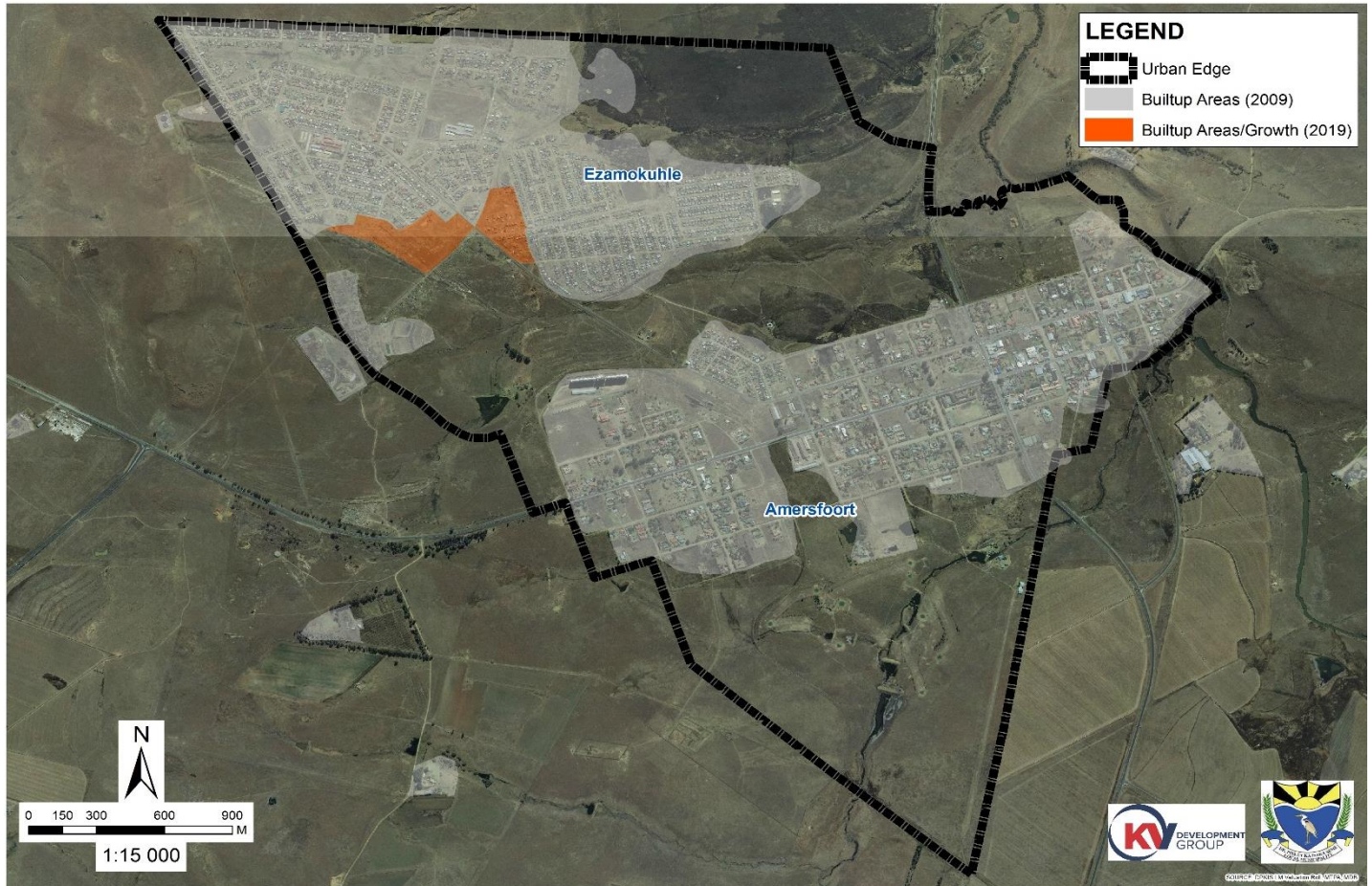


#### 7.4.2. Amersfoort / Ezamokuhle Growth Pattern 2010-2019

No new development occurred in the town of Amersfoort. There is a development that has, however, taken place in Ezamokuhle (Photo 3). The area to the north-west and western parts of Bree Street have experienced a few developments of this period. The pattern looks like it has taken a formal township establishment process.



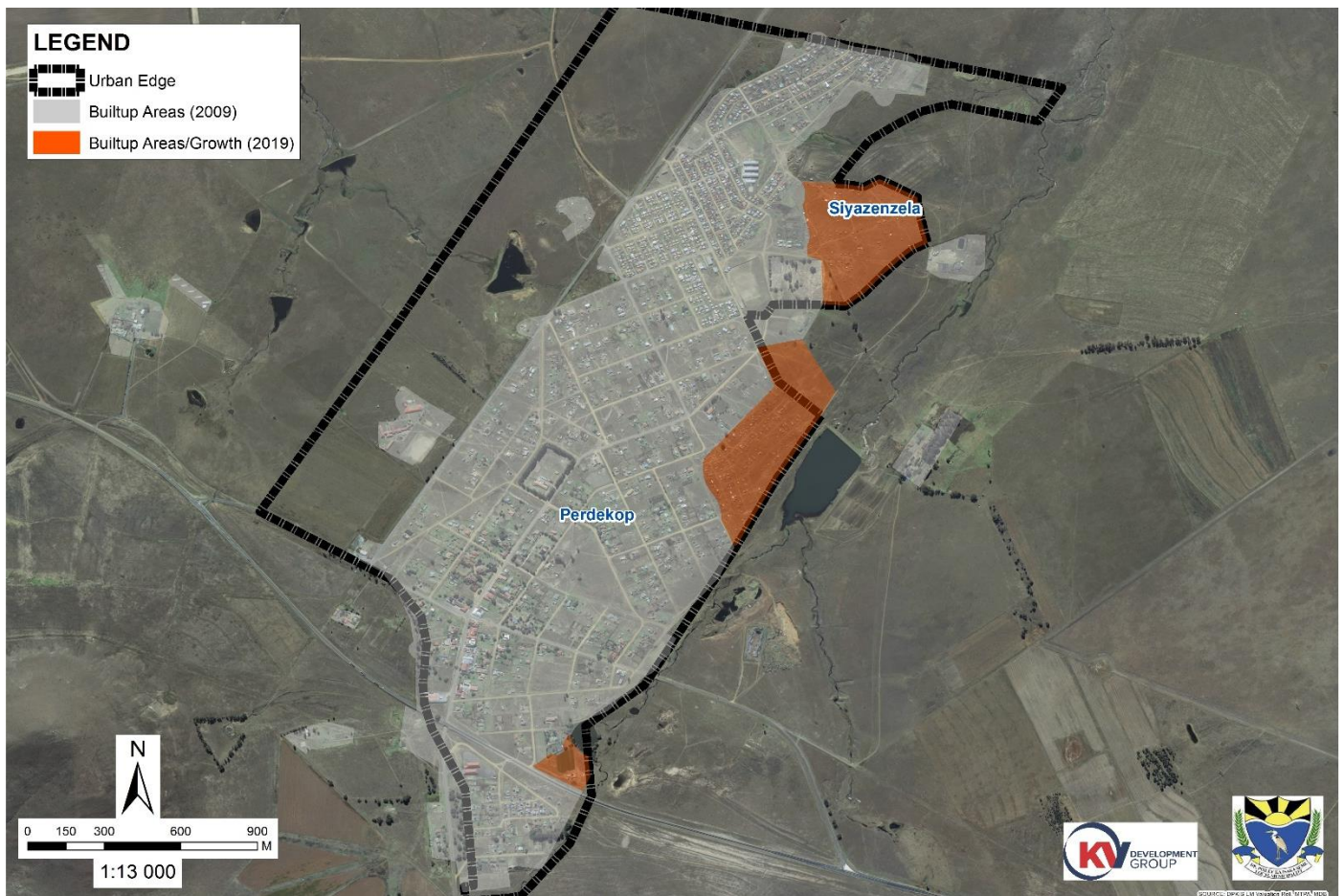
**Photo 3** Amersfoort & Ezamokuhle Growth Pattern



#### 7.4.3. Perdekop and Siyazenzela Growth Pattern 2010-2019

As with the previous two areas, the main growth took place in Siyazenzela. The areas located in close proximity to Loop and Main Streets has seen a number of informal structures being constructed on an area that seems to have been a park stand before. This is the case also towards the north-eastern parts of the township. Minor developments have occurred on the R23 on the entrance of Perdekop from the south-east (Photo 4).

Photo 4 Perdekop & Siyazenzela Growth Pattern.

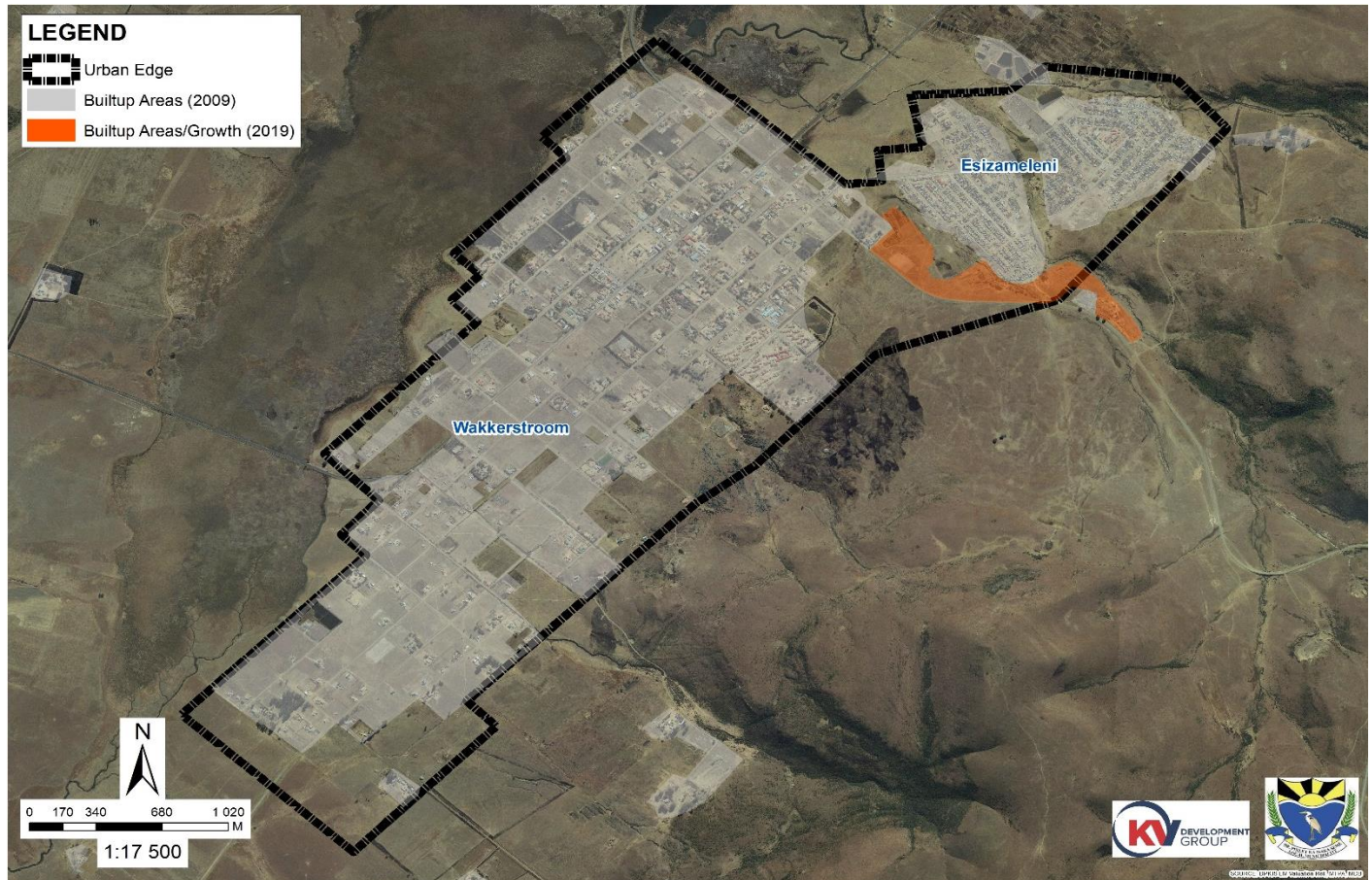


#### 7.4.4. Wakkerstroom and Esizameleni Growth Pattern 2010-2019

Informal growth has transpired along Slabbert Street in the Esizameleni Township. Worryingly, this development is happening right on the edge of an existing river. Considering the environmentally sensitive nature of the Wakkerstroom area, it is imperative that alternatives are found and these communities are relocated to an area that is suitable for development. That can become an extension of the existing town and township.



Photo 5 Wakkerstroom & Esizameleni Growth Pattern

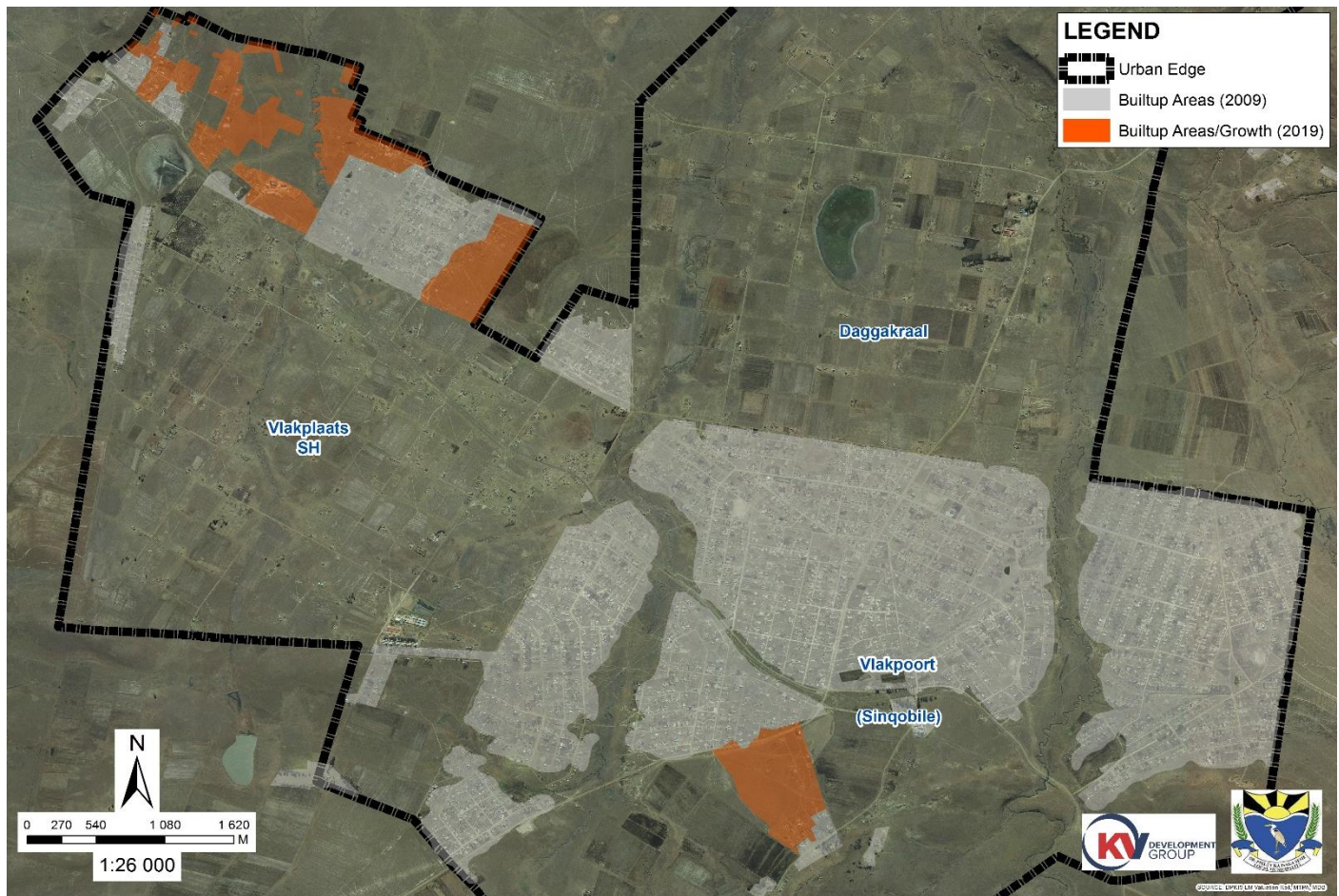


#### 7.4.5. Daggakraal and Singobile Growth Pattern 2010-2019

The rural node of Daggakraal and Singobile has experienced significant during the 2010-2019 period. The main area where development took place is on the north-western parts of the main node. Here a number of informal structures have been built over this period. Of significance is the possible integration of this with the main built-up area due to the close proximity. Also, this can ensure that there is densification applied to the development and growth of the area as a mitigating factor to possible urban sprawl.



**Photo 6** Daggakraal & Sinqobile Growth Pattern



## 7.5. The Urban Edge

An urban edge, depicted by a demarcated line, is utilised to manage, control and direct development by ensuring that it does not take place haphazardly. An urban edge is there to ensure that there is the protection of the growth of urban development, setting its limits, and to further protect the natural environment. The purpose of an urban edge is:

- To act as a growth management tool that is utilised to limit urban sprawl in an urban area so as to ensure that densification and infill development is promoted as a way of encouraging efficient utilisation of existing resources and land;
- To act as a management and conservation tool that seeks to exclude certain environmental elements from mixing up with the urban form as a way of protecting and managing the natural environment and preserving the ecosystem for the promotion of sustainable development that is environmentally compatible.

The following general guidelines should be used for the alignment of the urban Edge;

- The existing planning policy.
- The existing zoning and land use.
- Natural environmental informants, i.e. natural watercourses, 1: 100-year flood lines, wetlands, slopes steeper than 1:4, ridgelines, unstable geology, sensitive vegetation, protected natural environments, mineral deposits/ mining land etc.
- The agricultural potential of the land.
- Build environment, i.e. cultural heritage structures, scenic routes and vehicular accessibility.
- Legal, planning and land ownership status.

Development outside the urban edge as outlined in the agriculture and rural land use policy should be permitted within the policy guidelines. Certain developments can take place, which is to adjoin and/or reinforce the urban edge. These developments should be carefully considered based on the following:

- Development necessary to maintain essential rural economic activity;
- The development of outdoor recreational facilities;
- Passive recreation facilities, golf courses and cemeteries;
- Golfing estates, nature reserves and the majority of development is dedicated to open space; and
- Nature reserve/eco-friendly resorts.

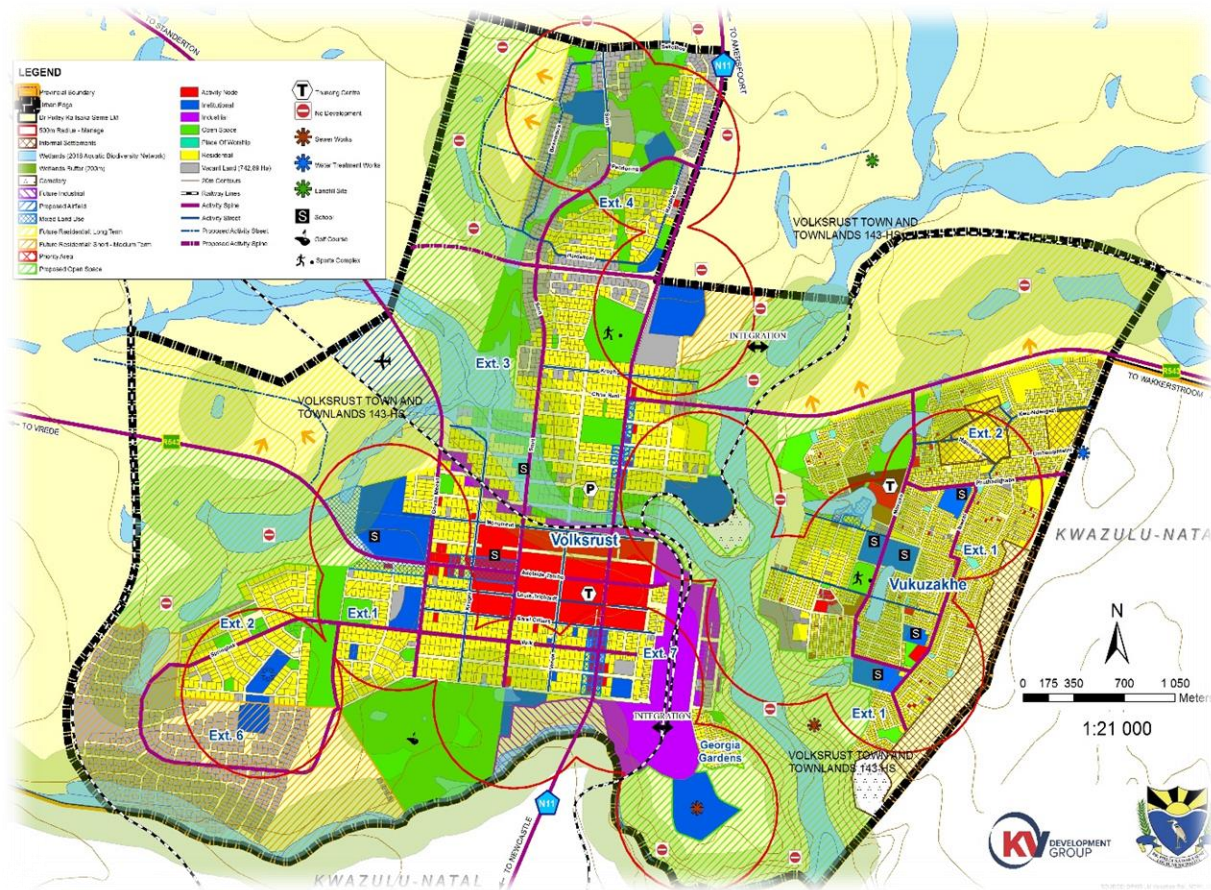
The urban edge has been applied to all spatial proposals made on the local SDFs of the towns within the Dr Pixley Ka Isaka Seme Local Municipality.

## **7.6. The Spatial Proposals**

Integration between Volksrust and Vukuzakhe is impossible. The idea behind addressing the apartheid-era spatial planning impacts is a noble one but at times there are issues that make this impossible. In this regard, the river between the two urban areas makes the integration impossible. The spatial proposals seek to protect the natural environment and the ecosystem. As a result, any development next to any form of water body should not be allowed. The issue affecting the integration of both Volksrust and Vukuzakhe is depicted on the attached map (Map 15).



**Map 15 Volksrust and Vukuzakhe**



The following sections address the spatial proposals of all the settlements within the DPKIS Local Municipality.

#### 7.6.1. Spatial Strategies Applied in all Towns

##### 7.6.1.1. Management Zones

The Department of Trade and Industry has set out provisions for the development of liquor-selling outlets. In order to standardise licensing requirements, liquor premises should be located at least five hundred meters (500m) away from schools, places for worship; recreation facilities, rehabilitation or treatment centres, residential areas and public institutions.

Further, no liquor licences shall be issued to areas not classified for entertainment or zoned by municipalities for purposes of trading in liquor. Premises already licensed within the 500m radius and premises within high-density locations will have to comply with the Norms and Standards issued



from time to time providing for amongst others, the issue of trading hours, noise, nuisance and pollution. In this regard, licensing authorities with their discretion may impose tighter trading conditions that trading hours of the outlets should not coincide with lessons during school hours.

A 500m radius management buffer has been applied to all properties that are zoned as "Community Facilities". Undesirable land uses should be discouraged within these buffered zones.

#### 7.6.1.2. Open Space Network

No development should be allowed on areas that contain water bodies like rivers, streams and wetlands. To ensure that all stakeholders are aware of the location of these, the areas have been buffered within the existing built-up areas by 200m. Section 144 of the National Water Act, 1998, (Act No. 36 of 1998) requires a floodline determination in an area that has a stream in its vicinity. This is a way of mitigating against potential flood hazards. Authorities are expected to make information available to the public in respect of:

- a flood which has occurred or which is likely to occur;
- a drought which has occurred or which is likely to occur;
- a water work which might fail or has failed, if the failure might endanger life or property;
- any risk posed by any dam;
- levels likely to be reached by floodwaters from time to time;
- any risk posed by the quality of any water to life, health or property: and
- any matter connected with water or water resources, which the public needs to know.

Wetland systems provide a variety of ecosystem goods and services, including:

- The temporary storage of floodwaters and attenuation of flood peaks;
- Water quality improvement;
- Base flow maintenance downstream of large wetlands;
- Erosion control (through sediment trapping and storage);
- Biodiversity support;
- Fishing, grazing and land for subsistence agriculture; and
- Reed and medicinal plant harvesting

(Department of Water and Sanitation 2008)

As a result, all wetlands should be delineated using the available processes and procedures. All open spaces must be protected and no development should be allowed in areas zoned as such.

### **Development Philosophy**

- Key primary node to be optimally developed as a service centre
- Establish a network of local activity nodes to serve respective communities
- Ensure the linkage of precincts together with the regional road networks through proposed activity spines
- Enhance business and industrial development
- Consolidate urban development and growth through infill development and densification

### **Local Nodal Hierarchy**

Volksrust is the highest order node in the DPKIS LM. The town serves the surrounding communities with the majority of the key land uses located within the CBD of the town. The Volksrust Central Business District is the primary activity node of Volksrust. Retail development, offices, service industry, government buildings and municipal offices are located here. This should still be promoted as the major business node in the municipality and services in the area should be optimised for this purpose. A network of other nodes should be promoted to be a feeder into the primary CBD node.

Volksrust functions as the largest commercial centre in the study area. The town fulfils a central place function with the largest residential and commercial component although it is not situated in the centre of the municipal area but in the southern part of the municipal area close to the border of Kwa-Zulu Natal. The location of the town on the N11 and the intersection of the R23 and R543 and the railway line connection led to the diversified development of the area. The town has good engineering and social services and hence supports itself as well as the surrounding rural community.

### **The Central Business District**

Business is mainly concentrated in the town centre between Smith Street, Schoon Street, Oos Street and Louis Trichardt Street. An extension of the business activities of the town is present in Laingsnek Street and the western part of Joubert Street. All the residential areas depend on the town centre for day-to-day shopping needs, although certain areas have access to neighbourhood centres and corner or tuck shops. There is no significant secondary business node identified in the town.

## **Activity Spines and Corridors**

The town forms part of the N11 Limpopo-Mpumalanga-K24 Corridor. The Mpumalanga Provincial SDF sees the town as a transport/development corridor and that as part of the Strategic Objective 1 in leveraging the N4 corridor to facilitate regional and provincial connectivity. The N11 provides a regional corridor that will become more important with the development of the Waterberg coal reserves. The N11 provides interaction between the N1, N4 and N2/N17 corridors and will play a major part in the region as a transportation corridor to Richards Bay. The focus for developing the existing corridors on existing corridors will strengthen the transportation network and streamline the freight movement.

The improvement of the N12 and N11 corridors will support the freight movement of Gert Sibande and Nkangala mining areas and serve a major population of Mpumalanga Province. Improvement and extension of the existing provincial corridors i.e. R23, R40, R573 and Dilokong Platinum Corridor can serve the densely populated area and connect to the key regional service centres and service towns.

Emanating from the 2010 MSDF, there are a number of Activity Spines that have been identified. These give more localised access to residential areas, business activities and other local facilities. The following streets can be identified as Activity Spines within Volksrust:

- R543 to Wakkerstroom (De Kock Street from the N11)
- R543 to Vrede (Joubert Street)
- R23 from Standerton (Dan Pienaar Street)
- North Bypass connection to R23 to Standerton
- Pendoring/Smit Street
- Volk Street
- Sekelbos Avenue

The primary functions of activity streets are to provide access and connections between the different activity spines. Activity streets are thus regarded as streets of more local nature and importance, providing access to activity spines and nodes as well as to inter-modal transfer facilities. The development and maintenance of activity streets should focus on the following major streets for connectivity purposes:

- Springbok Street;
- Chris Hani Street;
- Adelaide Tambo Street; and
- Govan Mbeki Street.

## **Tourism**

The Mpumalanga SDF sees road linkages as vital for tourism. Roads that link the tourism destinations with one another. It is therefore important that the roads be maintained and developed regularly. Maintenance of these routes will enable linkage and strengthen the current tourism sector of and it will also give rise to resource-based investment. As a result, the R543 between Volksrust and Wakkerstroom should be well maintained as a way of ensuring that tourism blossoms and to further improve regional connectivity.

The Spatial Vision of the GSDM seeks a functional linkage of sub-continental tourism corridor extending from Kruger National Park in Ehlanzeni District, through the eastern tourism belt in GSDM, and linking up with the iSimangaliso Wetland Park in Umkhanyakude District around St Lucia in KwaZulu-Natal. It is vital that the DPKIS LM taps into this to make this vision an attainable one.

## **Industrial Area**

The industrial area of the town is situated along the railway line in the eastern part of town between Spoorweg Street and Dingaan Street. A number of industrial activities also occur on the farm portions south of Suid Street further along the railway line. The railway line that cuts across the industrial area is key to the redevelopment of this node.

The National seeks a fast-growing, well-connected and more inclusive economy. For this to be achieved, the development of movement infrastructure and a variety of modes of transport will have to be guided by a national spatial development pattern with at its base (1) the pursuit of more compact, concentrated settlement in fewer core national nodes, to reduce the number of main roads and railway lines to be built and maintained, (2) more mixed, higher density development, to reduce the need for motorised travel and distances to be travelled, and (3) higher levels of beneficiation and processing of raw materials, to reduce the volume of raw products that require road and railway networks.

## **Densification / Infill Development**

As discussed in Section 6.3.1., there are currently 742,89 hectares of available land, within the proposed urban edge, that can be used for development in Volksrust. To encourage infill development and mitigate possible urban sprawl, the Municipality must utilise these vacant stands in the event of any development. These vacant stands have been derived from the Municipality's current valuation roll, which also determined their ownership status. Extension

6 is a fairly new development and these stands should be sold for any development that has to take place within the town.

## Future Development

The natural direction for the future growth of the town is towards the west and south-west due to constraints in the east with the ravine between Volksrust and Vukuzakhe that makes expansion in an easterly direction almost impossible.

Furthermore, the waste dump site to the east of the town restricts development in that area. To the north of the town, there are rocky ridges and steep areas that restrict the further expansion of Extension 4 to the north. Furthermore, the Kwa-Zulu Natal border in the south restricts any further development in that direction. Therefore, the only direction for growth is to the west and south-west of the town.

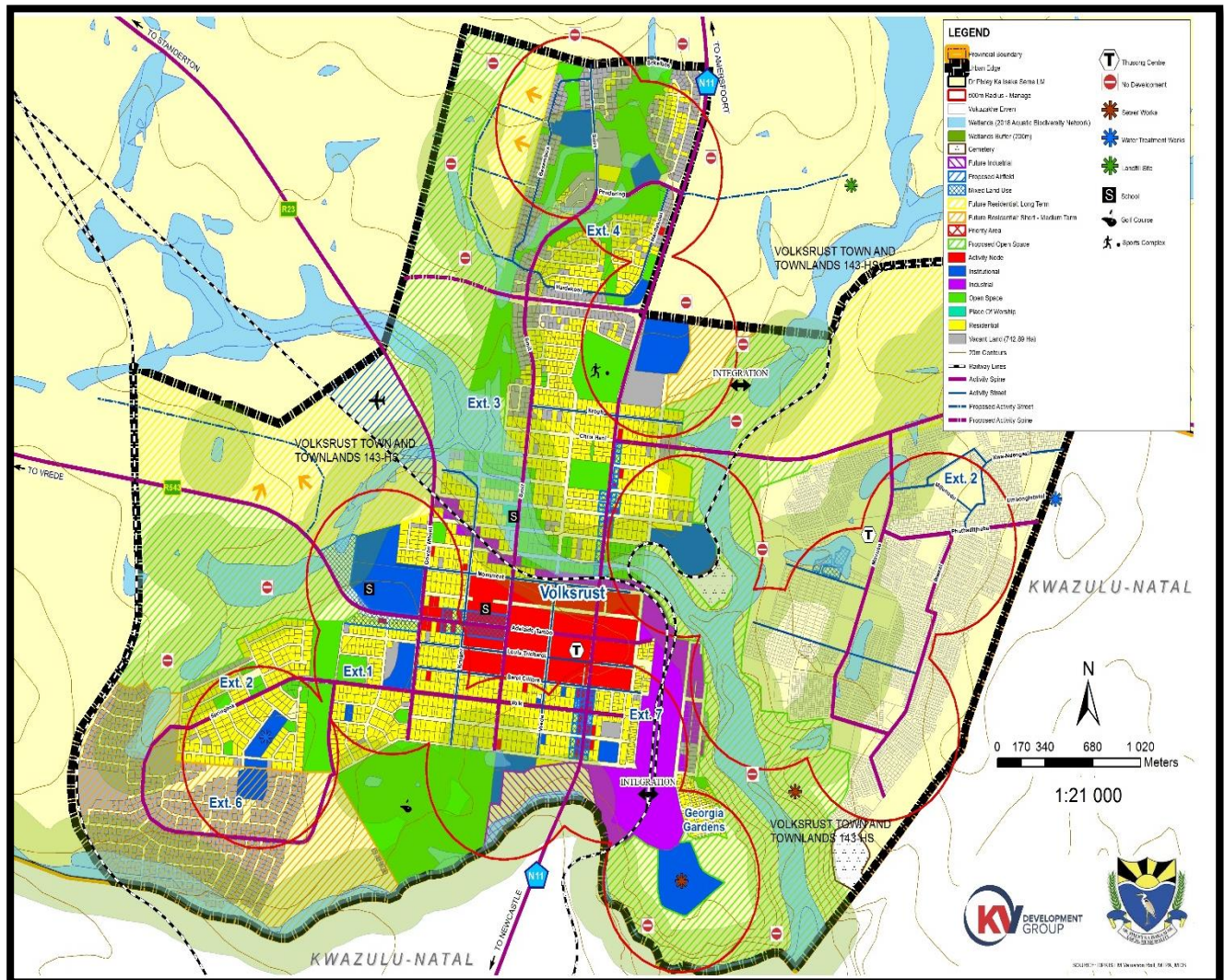
The approved Volksrust Extension 6 is not yet developed and has the potential for a large number of stands for residential purposes in the south-western part of the town. Further expansion of Volksrust Extension 4 to the west is also possible as well as residential extension north of the R543 to Vrede.

**Table 7** Volksrust Future Development

No.	Term	Application
<b>1.</b>	5-years (short-term)	<ul style="list-style-type: none"> <li>• Strengthen the CBD so as to encourage investment.</li> <li>• Promote infill development on the available vacant stands.</li> <li>• Revive the industrial area.</li> <li>• Ensure that the railway line is maintained at all times.</li> <li>• Maintain and encourage usage of the N11.</li> <li>• Promote internal connectivity through activity spines and streets.</li> <li>• Manage and protect community facilities and open spaces.</li> <li>• Manage development in areas within 500m to community facilities</li> </ul>
<b>2.</b>	10-20 years (medium to long-term)	<ul style="list-style-type: none"> <li>▪ Review the urban edge.</li> </ul>

The Volksrust LSDF is contained in the map hereunder (Map 16).

Map 16 Volksrust LSDF 2019



### 7.6.3. Vukuzakhe Local Spatial Development Framework

#### Development Philosophy

- Key township to be optimally developed as a feeder for Volksrust
- Establish a network of local activity nodes to serve respective communities
- Ensure the provision and maintenance of services and infrastructure
- Enhance business development
- Consolidate urban development and growth through infill development and densification
- Address informal settlements and land invasion



## **Local Nodal Hierarchy**

The primary node of Vukuzakhe is proposed around the education node in the centre of the town, adjacent to Mavuso Street. This area should be promoted as the primary node of the town in conjunction with the surrounding nodes. The locality of the node in the centre of the settlement makes it more efficient and accessible. Business activities should be encouraged to the west of the existing sports field and the Thusong Centre to the north.

## **Activity Spines and Corridors**

The R543 from Volksrust to Wakkerstroom acts as the mobility spine for Vukuzakhe from where all other access is gained to the town. The activity spines in Vukuzakhe can be identified as the following streets:

- Mavuso Street;
- Phuthaditjhaba Street;
- And other streets as indicated on the attached map.

## **Densification / Infill Development**

As mentioned in Section 6.3.1., there are 9,87 hectares of available land in Vukuzakhe. This land is vacant, with most located within the existing built-up area, ensuring that it is in line with the past formal development of the township. These sites should be utilised for future development and can be put on the market by the Municipality or through encouraging the owners to make the land available for development.

## **Informal Settlements**

The township has three sites that are currently affected by informal settlements. Two of these are on the area abutting the KwaZulu-Natal border, leading to fears that there will be an over spillage into the Province in the not so distant future. The Implementation Plan of this SDF will come with tangible proposals on how this can be addressed.

## **Future Development**

Vukuzakhe has very limited opportunities for expansion in any direction except to the north of the Wakkerstroom road. The Kwa-Zulu Natal border restricts development to the east and south and the ravine between Volksrust and Vukuzakhe restricts development to the west. Furthermore, the sewerage treatment plant south of the town also restricts development in that direction.

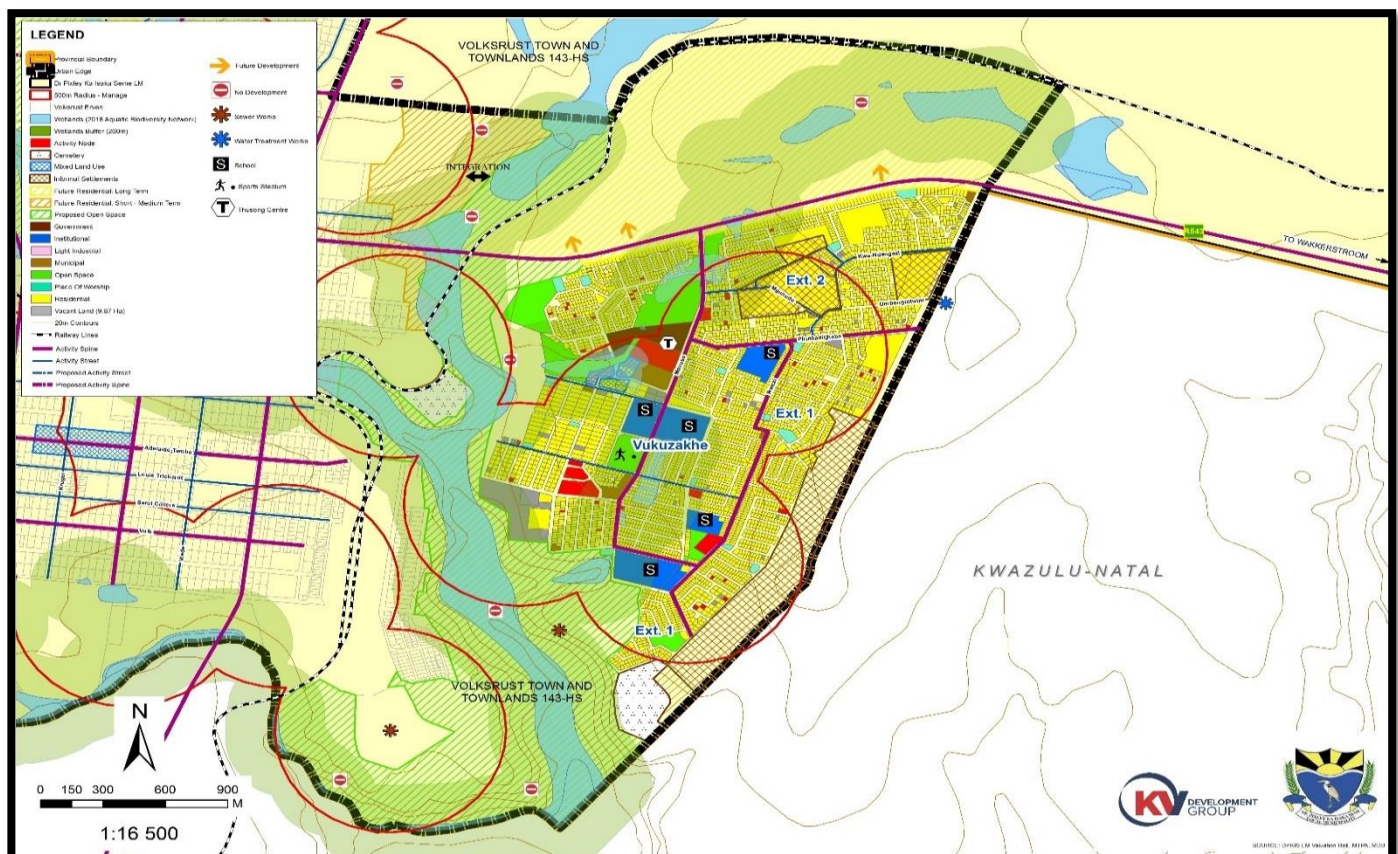
Therefore the only direction for future growth and integration with Volksrust is to the north of the town between the railway line and the Wakkerstroom road. This should be seen as long term development and residential infill and densification as proposed in the SDF should be seen as short to medium term development for the town.

**Table 8** Vukuzakhe Future Development

No.	Term	Application
1.	5-years (short-term)	Strengthen both education and business nodes Promote and strengthen activity spines and streets Address informal settlements Protect the open space network Encourage business and infrastructure development Manage development in areas within 500m to community facilities
2.	10-20 years (medium to long-term)	Review the urban edge Consider future expansion to the north of Extension 2 Floodline determination

The Vukuzakhe LSDF is attached hereunder as Map 17.

**Map 17** Vukuzakhe LSDF 2019



#### 7.6.4. Amersfoort and Ezamokuhle Local Spatial Development Framework

Amersfoort and Ezamokuhle are yet another example of the concept of integration not being plausible due to environmental issues that exist in the area. A stream cuts in between the two areas thus making the integration process impossible.

### **Development Philosophy**

- A key node along the N11
- Establish a network of local activity nodes to serve respective communities
- Ensure the provision and maintenance of services and infrastructure
- Enhance business development through encouraging investment in the CBD
- Consolidate urban development and growth through infill development and densification
- Protect the open space network
- Discourage environmental degradation

### **Local Nodal Hierarchy**

For Amersfoort, the CBD is the primary node where investment should be encouraged. All future retail and service industries should be encouraged around this area. The Mpumalanga SDF sees the town as an integral part of the N11 Transport and Development Corridor. Deciduous fruit farming is more prominent towards the east from Amersfoort up to Kwazanele, making the area a key node for agricultural investment.

For Ezamokuhle, the township acts as a feeder for the main town. A node is proposed for the education area to create a unique node that can be utilised to develop a mixed-use node in the future.

### **Activity Spines and Corridors**

The N11 corridor is of national and provincial significance. It is an inter-regional corridor connecting major links to Botswana, Zimbabwe and Mozambique. The improvement of the N11 corridor will support the freight movement of Gert Sibande DM and serve a major population of the Province.

The activity spines within Amersfoort and Ezamokuhle are as follows:

- Plein Street (N11 to Volksrust)
- Scheiding Street (part of N11 to Volksrust)
- Sybrandt Van Niekerk (R35 to Morgenzon)
- Bree Street (connecting Amersfoort to Ezamokuhle)
- Vlok Street connecting to Sybrand van Niekerk Street

- Other streets in Ezamokuhle as indicated on the local SDF.
- Connection with the N11 from Ezamokuhle

The following streets were identified as activity streets in Amersfoort and Ezamokuhle:

- Buitekant Street
- Bree Street (east of Plein Street)
- Kort Street
- Zuid Street
- Helden Street
- Landsberg Street
- Simon Street
- Streets as indicated in the SDF for Ezamokuhle (no names)
- 2 Proposed Activity Streets in Ezamokuhle

## **Industrial**

The area abutting Extension 7 is an industrial area. Investment should be encouraged here, considering that a railway line also cuts across the earmarked site. The railway line links Bethal to Volksrust via Morgenzon, Amersfoort, Daggakraal and Wakkerstroom/Sizameleni.

In support of its power stations in Mpumalanga, and in an attempt to ease pressure being placed on the 100km stretch of N11 road between Ermelo and the Majuba Power station near Amersfoort by coal-carrying trucks, Eskom has also budgeted R1.5-billion for the construction of a new railway line specifically aimed at transporting coal from the Ermelo area to Amajuba to the south. Amersfoort has been earmarked by the GSDM as a potential agricultural cluster.

## **Densification / Infill Development**

There are 59,63 hectares of land available for development in the both the Amersfoort and Ezamokuhle areas. All future / potential developments should be encouraged in these vacant stands.

## **Future Development**

Amersfoort and Ezamokuhle probably have the best opportunity to be fully integrated with each other but unfortunately, the floodline between the two towns greatly restricts full integration. The future expansion of Ezamokuhle is proposed in an eastern direction in line with the proposed activity spine with connection to the N11. No development is proposed to the west of the town

across the railway line. To the north of the town, development is restricted due to the landscape that is too steep for development.

There is a small opportunity for further development of Amersfoort to the north of Buitekant Street up to the flood line which can be seen as infill development for the short term. Other possibilities for future expansion of Amersfoort are in a western direction adjacent to Amersfoort Extension 7 on the western outskirts of the town, but this can only be proposed once the existing vacant stands and densification opportunities in the existing town have been exhausted.

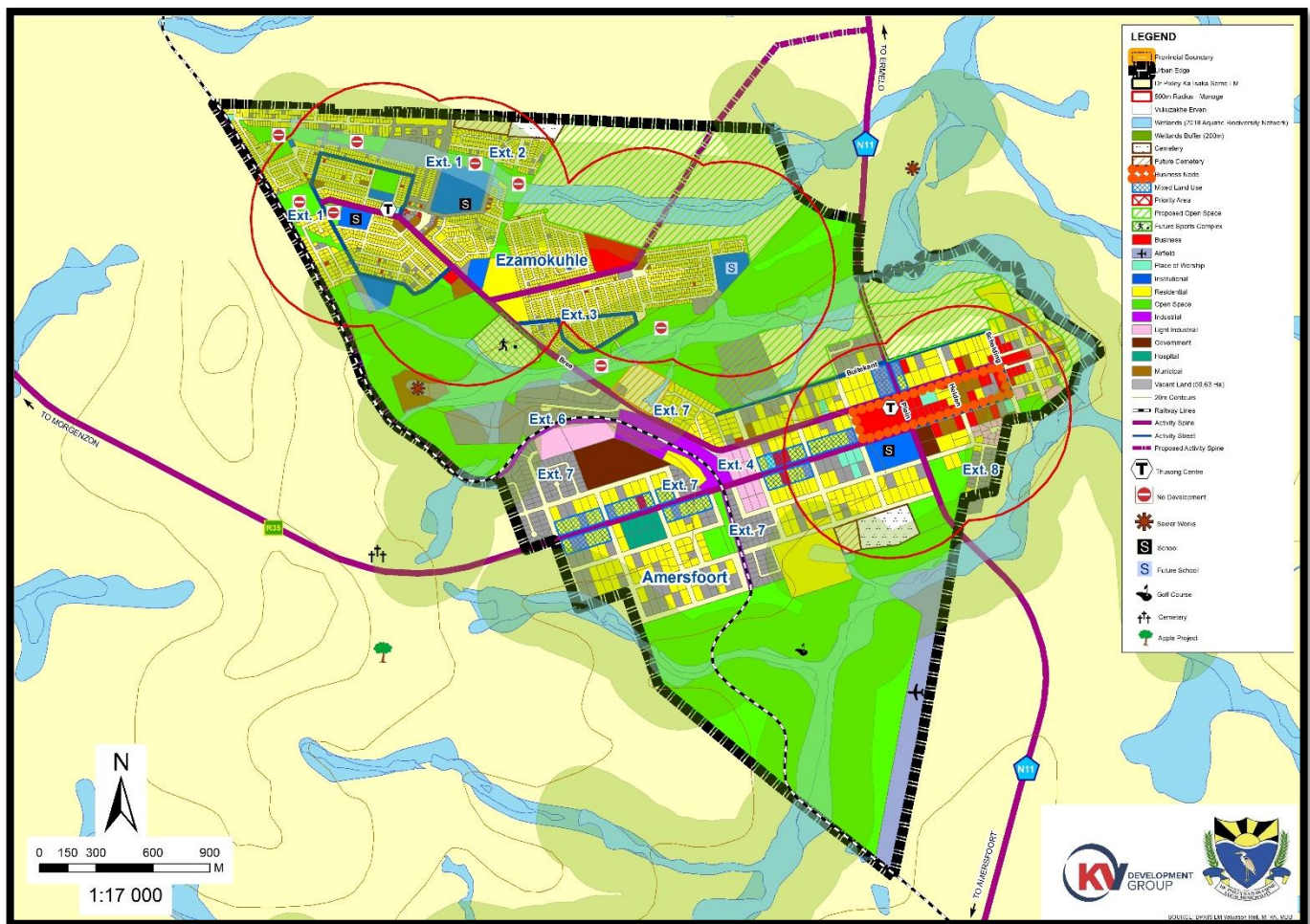
**Table 9** Amersfoort & Ezamokuhle Future Development

No.	Term	Application
<b>1.</b>	5-years (short-term)	Strengthen both education and business nodes Promote and strengthen activity spines and streets Protect the open space network Encourage business and infrastructure development Manage development in areas within 500m to community facilities
<b>2.</b>	10-20 years (medium to long-term)	Review the urban edge Floodline determination Seek alternatives for future growth when the need arises

The Amersfoort and Ezamokuhle LSDF map is attached hereunder as Map 18.



Map 18 Amersfoort & Ezamokuhle LSDF 2019



#### 7.6.5. Perdekop and Siyazenzela Local Spatial Development Framework

### Development Philosophy

- Encourage and promote integration
- Establish a network of local activity nodes to serve respective communities
- Ensure the provision and maintenance of services and infrastructure
- Enhance business development through encouraging investment in the CBD
- Consolidate urban development and growth through infill development and densification
- Protect the open space network
- Discourage environmental degradation
- Address informal settlements



## **Local Nodal Hierarchy**

The Perdekop and Siyazenzela area, considered as a Third Order Node within the District, has been identified as a rural intervention area and where the location of the Farmer Production Support Units (FPSU) should be.

The Amersfoort CBD, between Plein and Scheiding Street and the proposed surrounding areas around the Thusong Centre should be promoted for future retail and services industries. The integrated nature of both Perdekop and Siyazenzela makes it possible for a proposal of a single business node. A service node can be developed around the sports ground and municipal offices area in Siyazenzela.

## **Activity Streets**

The following streets were identified as activity streets in Perdekop and Siyazenzela:

- Main Street;
- Park Street
- Church Street
- Market Street
- Grootvlei Street
- Streets in Siyazenzela.

These will encourage internal and external connectivity.

## **Informal Settlements**

Two areas of concern exist within Siyazenzela. If this informal area is not addressed soon, there is a possibility of the two areas not only integrating but also endangering the stream in the vicinity of the two towards the east. The urban edge has been applied to inform local authorities of the impending danger to human lives and the ecosystem.

## **Densification / Infill Development**

There are 39,2 hectares of land available for development in the both the Perdekop and Siyazenzela areas. All future / potential developments should be encouraged in these vacant stands.

## Future Development

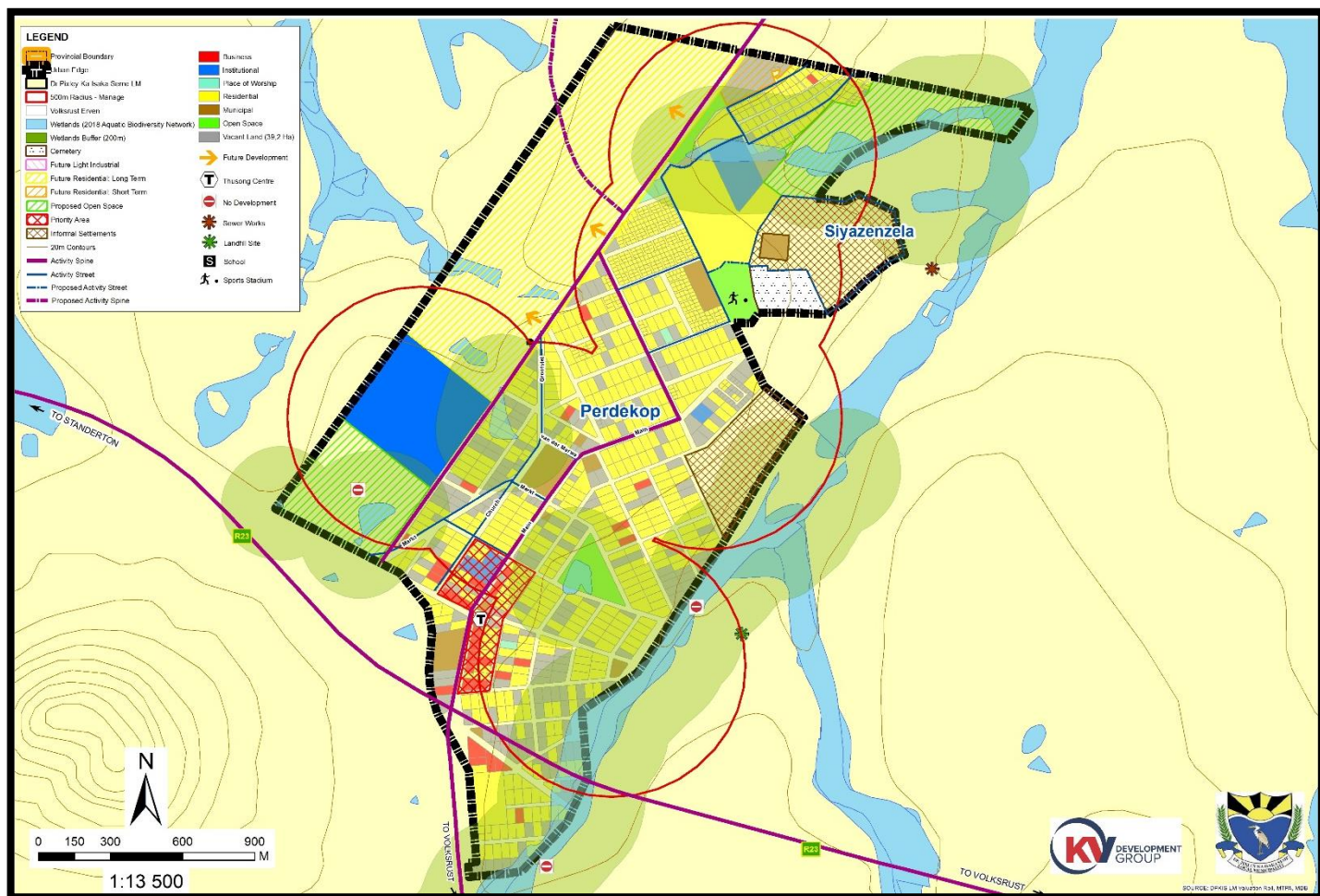
Perdekop and Siyazenzela have very few opportunities for expansion since the flood line and sewer works to the east of the towns restrict any development in that direction. However, there is a small opportunity for expansion to the east of the towns which should be explored if future expansion becomes critical. Another long term future expansion possibility exists to the west of the Amersfoort road next to the school which will rectify the unusual spatial form of the town. Currently, there are ample of stands available for densification over the short and medium-term if the demand for residential stands increases in the near future.

**Table 10** Perdekop & Siyazenzela Future Development

No.	Term	Application
1.	5-years (short-term)	Strengthen both the municipal and business nodes Promote and strengthen activity spines and streets Protect the open space network Encourage business and infrastructure development Address informal settlements Manage development in areas within 500m to community facilities
2.	10-20 years (medium to long-term)	Review the urban edge Floodline determination Seek alternatives for future growth when the need arises

The Perdekop and Siyazenzela LSDF map is attached hereunder as Map 19.

Map 19 Perdekop & Siyazenzela LSDF 2019



## 7.6.6. Wakkerstroom and Ezizameleni Local Spatial Development Framework

### 7.6.6.1. Wakkerstroom's Immediate Problems

Wakkerstroom is a place that needs special care due to its environmental sensitiveness. In 2016 Government granted Atha Africa Ventures a permit for coal mining in the Mabola Protected Environment area. The Mabola Protected Environment was declared under the National Environmental Management: Protected Areas Act, 2003, (Act No. 57 of 2003), in 2014 by the Mpumalanga provincial government as part of the declaration of more than 70,000 hectares of protected area in the Mpumalanga grasslands. This was due to the fact that the decisions were not taken in an open and transparent manner or in a manner that promoted public participation.

The decision to grant the permit was set aside by the high court in November 2018. Earlier in 2019, the North Gauteng High Court refused an application for leave to appeal its decision to overturn the Government's hush-hush approval of a new coal mine in a critical biodiversity and water conservation area.

Currently, a legal battle is looking on the Municipality's plans to construct a R13m pipeline in a three-year project in the area. The local community is not happy about this. The residents feel that the proposed water pipeline from Martin's Dam, above the Wakkerstroom wetland, to Vukuzakhe in Volksrust, may threaten the water supply to residents in the area and could further have a major negative impact on the environment, tourism and job opportunities and ultimately impact on the sustainability of Wakkerstroom itself.

The Department of Environmental Affairs listed the Wakkerstroom landscape, with its mountain grasslands, forests and wetlands, as a priority conservation site, where conservation initiatives began more than a century ago (Bega 2018: *Online*).

As such, it is important that steps are undertaken by authorities to ensure that the natural environment is protected at all costs. As articulated earlier, no development will be allowed in areas that include any form of water bodies. It is the role of a spatial development framework to ensure that the natural environment and ecosystem is protected at all costs. This municipal policy is legally binding.

Section 24 of the Constitution, requires the State to have the environment protected for the benefit of present and future generations through reasonable legislative and other measures, which include a land use planning system that is protective of the environment.

Sustainable development of land requires the integration of social, economic and environmental considerations in both forward planning and ongoing land use management to ensure that the development of land serves present and future generations.

The SPLUMA **Development Principle of Efficiency** requires decision-making procedures to be designed to minimise negative financial, social, economic or environmental impacts whereas the **Principle of Spatial Resilience** requires 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.

Section 22.(1) of SPLUMA: *"A Municipal Planning Tribunal or any other authority required or mandated to make a land development decision in terms of this Act or any other law relating to land development, may not make a decision which is inconsistent with a municipal spatial development framework."*

## **Development Philosophy**

- Establish a network of local activity nodes to serve respective communities
- Ensure the provision and maintenance of services and infrastructure
- Enhance business development through encouraging investment in the CBD
- Consolidate urban development and growth through infill development and densification
- Protect the open space network
- Discourage environmental degradation

## **Local Nodal Hierarchy**

The main node is situated in the CBD where the existing business core of the town is already situated between Hoog and Loop Street and Hoek and Slabbert Street. The primary node of Esizameleni is situated at the corner of Mndebele Street and Ndlovu Street where some business activity already exists. Wakkerstroom is considered as a prime tourism node for the Municipality. The Mpumalanga SDF seeks the promotion of underdeveloped and undeveloped tourism areas and development of necessary tourist facilities. The Wakkerstroom Biosphere Reserve is one of the earmarked areas for development.

The sensitive upper catchments and wetlands of the Wakkerstroom-Luneburg area are considered to be a strategic focus area by the Provincial SDF. As a result, these 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.

Furthermore, Wakkerstroom falls under the Special Control Mining Areas where there is a consideration on existing environmental strategies and policies, which will help in outlining policies for:

- Aggressive rehabilitation of land
- No-go areas
- Protection of high potential agricultural land and the natural environment
- Protection of environmentally sensitive areas etc.

## **Corridors, Activity Spines and Streets**

The main corridor through the town is the R543 from Volksrust to Piet Retief. The following streets can be identified as Activity Spines in Wakkerstroom and Esizameleni:

- Van Riebeeck Street;
- Slabbert Street;
- Joubert Street;
- Mndebele Street; and
- Scheiding Street.

The following streets were identified as Activity Streets in Wakkerstroom and Esizameleni:

- Loop Street;
- Laag Street;
- Kerk Street;
- Hoog Street;
- Leyds Street;
- Hoek Street;
- Nkonyane Street;
- Masango Street; and
- Mchunu Street.

## **Tourism**

The development of a family eco-adventure resort at the Heyshope Dam situated between Wakkerstroom and Piet Retief in the Mkhondo Local Municipality. It is envisaged that the resort will include mid-market serviced and self-catering chalets, a hotel or small lodge, a restaurant, conference facilities, an indoor fitness centre and spa complex, various trails leading into the greater area, and a variety of water-based activities. The development is aimed at targeting several market segments including domestic leisure overnight tourists, domestic special interest overnight tourists, and foreign leisure overnight tourists.

Wakkerstroom is a key tourism node within the District due to the wetland and bird watching attractions. It is one of Africa's key ornithological sites. The area is one of the settlements with the richest open space system which forms part of the wetland around the town. The existence of the wetland creates ample opportunities for functional open space systems and need to be developed as such in combination with the tourism strategy for the area.



## Future Development

The major restriction on the direction of growth of Wakkerstroom is the wetland area towards the north-west of the town. No development can be proposed in that direction due to the preservation of the precious wetland area. Therefore the only direction for growth is towards the south-east and the south-west of the town. Again this option should be for the long term since there are ample vacant stands available and bigger stands that can be subdivided if the demand for residential properties increases.

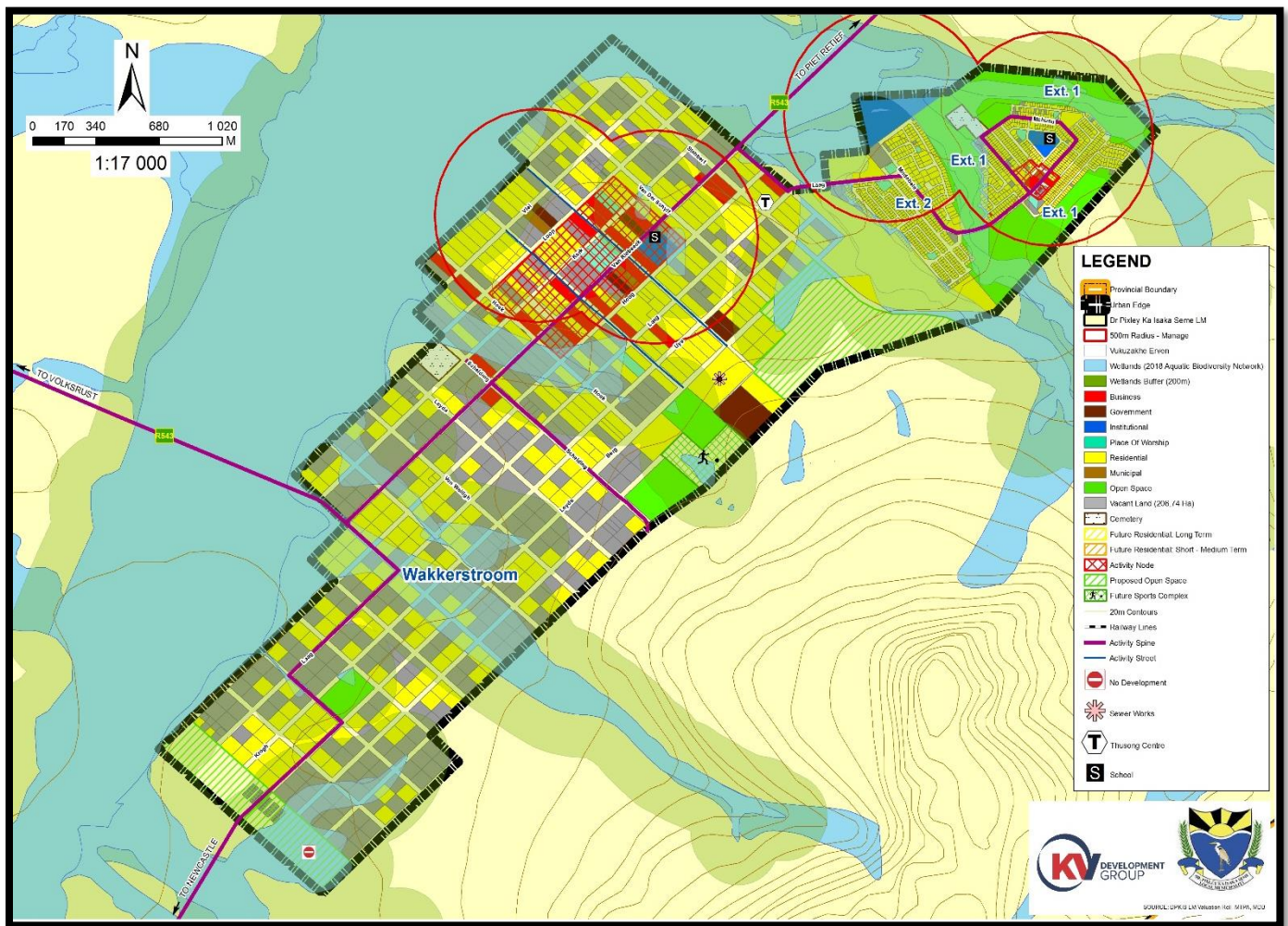
The expansion opportunities for Esizameleni are also limited due to the tributaries present in the town. The only option for expansion is towards the road to Utrecht in a south-eastern direction. Further densification is not possible in Esizameleni due to the high density of stands in the area; therefore expansion towards the south-east is the only option for future residential development.

**Table 11** Wakkerstroom & Esizameleni Future Development

No.	Term	Application
1.	5-years (short-term)	Strengthen the business nodes Promote and strengthen activity spines and streets Protect the open space network Encourage business and infrastructure development Manage development in areas within 500m to community facilities
2.	10-20 years (medium to long-term)	Review the urban edge Floodline determination Seek alternatives for future growth when the need arises

The Wakkerstroom and Esizameleni LSDF map is attached hereunder as Map 20.

Map 20 Wakkerstroom LSDF 2019



### 7.6.7. Daggakraal Local Spatial Development Framework

#### Development Philosophy

- Establish a network of local activity nodes to serve respective communities
- Ensure the provision and maintenance of services and infrastructure
- Enhance business development through encouraging investment in the CBD
- Consolidate urban development and growth through infill development and densification
- Protect the open space network
- Discourage environmental degradation
- Address informal settlements

## Local Nodal Hierarchy

The main node for this area is proposed at the intersection with the Amersfoort and Volksrust road. This area already has some business activity. The secondary node is at the existing library complex west of the proposed primary node. Daggakraal has been identified as an area to accommodate the Farmer Production Support Unit of the Municipality by the Gert Sibande RDP. The area is also a focal point for the District's Rural Intervention Areas.

## Corridors and Activity Streets

The D281, to Volksrust, and D254, to Wakkerstroom, are the main corridors through the area. The streets identified as activity streets are indicated on the LSDF for Daggakraal/Sinqobile. It has been determined that regional connectivity is an issue for Daggakraal. Investment should be encouraged to ensure that infrastructure development and maintenance of the streets remains at the core of ensuring consistent movement and access.

## Future Development

Perdekop and Siyazenzela have very few opportunities for expansion since the flood line and sewer works to the east of the towns restrict any development in that direction. However, there is a small opportunity for expansion to the south of the towns which should be explored if future expansion becomes critical. Another long term future expansion possibility exists to the west of the Amersfoort road next to the school which will rectify the unusual spatial form of the town. Currently, there are ample of stands available for densification over the short and medium-term if the demand for residential stands increases in the near future.

This area has a very good open space system throughout the area due to the tributaries flowing through the town. Care should be taken that the 1-in-100 year floodlines are updated to prevent any flooding of residential areas or risk of flooding for residential development. Upgrading of the open space system is necessary to make it more functional.

A One Household/ One Hectare Initiatives has been earmarked for the area. This forms part of the Government's land reform programme.

**Table 12** Daggakraal & Sinqobile Future Development

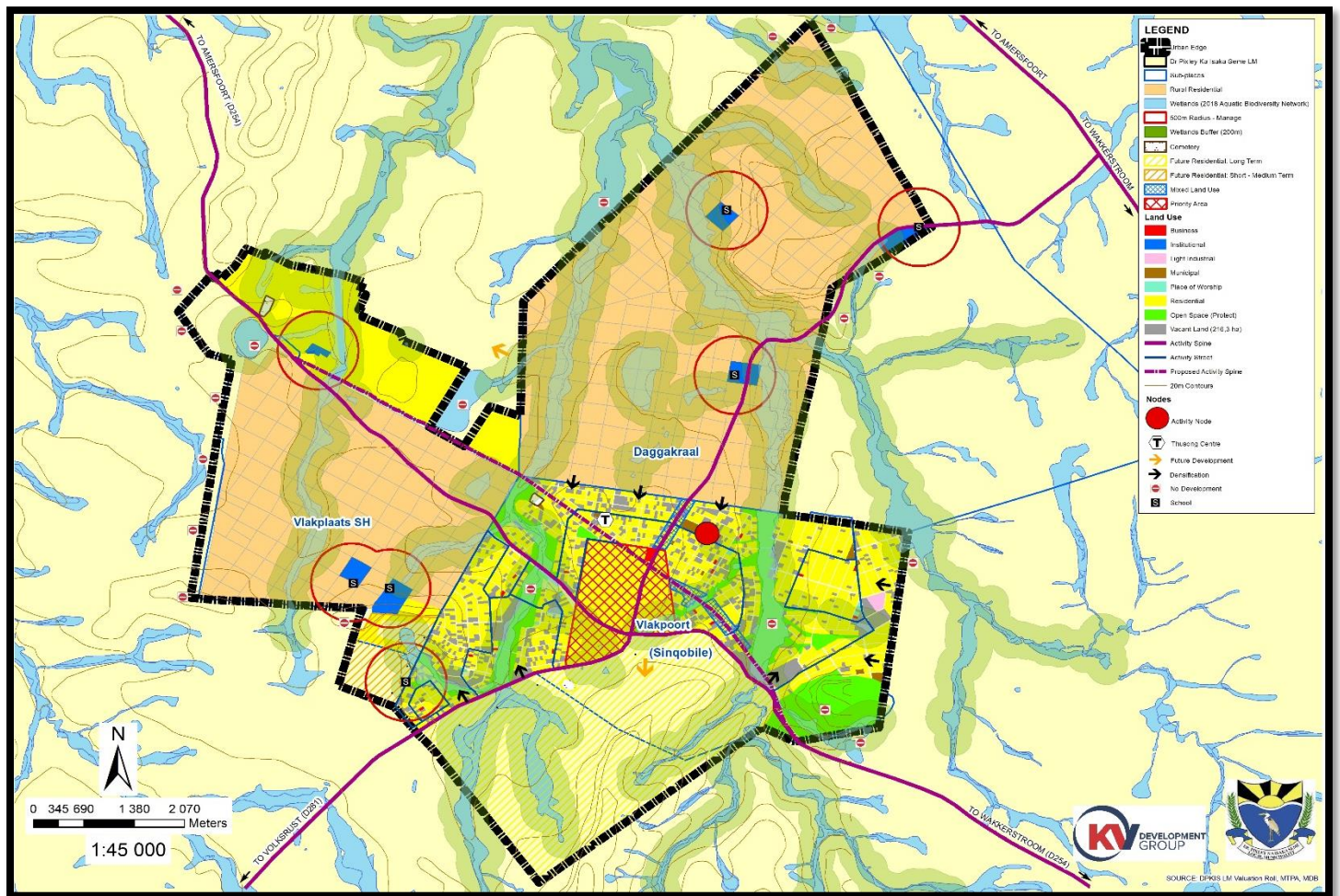
No.	Term	Application
1.	5-years (short-term)	Strengthen the business nodes Encourage investment in agro-processing Promote and strengthen activity spines and streets



		Protect the open space network Encourage business and infrastructure development Manage development in areas within 500m to community facilities Protect agricultural land
2.	10-20 years (medium to long-term)	Review the urban edge Floodline determination

The Daggakraal and Sinqobile LSDF map is attached hereunder as Map 21.

**Map 21** Daggakraal & Sinqobile LSDF 2019



## 8. CONCLUSION

Spatial planners are, today, faced with rapid growth in urban population that directly and indirectly impact on urban planning at a regional level. One of the impacts is Spatial Injustice. The latter comprises of different facets that can be addressed through the fundamental concept of spatial development planning. The strategies of the latter include urban renewal, policy-making, environmental management, housing provision and economic development.

The development of the Dr Pixley ka Isaka Seme Local Municipality is informed by both legislation and policy. The key driving principle for this MSDF is to ensure sustainable development and efficient utilisation of the available resources. An area like DPKIS LM, with its environmental sensitiveness, requires an approach, to development, that considers the impact that it will have on the natural environment.

As a result, the approach is that of managing and controlling development to ensure that the future of communities is protected through environmental management and applying principles that address the ecological management of natural resources. The challenges that are in place, for example, informal settlements, will be addressed as part of the Implementation Plan of the MSDF. The Plan should be realistic in what it has to achieve and set tangible goals accompanied by timeframes.

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