

# DRAFT 2011 – 2030 MBOMBELA LOCAL MUNICIPALITY SPATIAL DEVELOPMENT FRAMEWORK (SDF)

DRAFT SDF

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Prepared By



Prepared For



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**List of Acronyms**

ASGISA: Accelerated and Shared Growth Initiative for South Africa  
 CRDP: Comprehensive Rural Development Plan  
 DCGTA: Department of Cooperative Governance and Traditional Affairs  
 DEDEAT: Department of Economic Development, Environmental Affairs and Tourism  
 DARDLA: Department of Agriculture, Rural Development and Land Affairs  
 DWA: Department of Water Affairs  
 EPWP: Expanded Public Works Programme  
 IDP: Integrated Development Plan  
 ICT: Information Communication Technology  
 ISDF: Integrated Spatial Development Framework  
 KMIA: Kruger Mpumalanga International Airport  
 LED: Local Economic Development  
 LRAD: Land-Re-distribution for Agricultural Development  
 LUMS: Land Use Management System  
 MLM: Mbombela Local Municipality  
 MPCC: Multi Purpose Community Centre (Thusong Service Centre)  
 MMC: Member of the Mayoral Committee  
 MTPA: Mpumalanga Tourism Growth Strategy  
 NSDP: National Spatial Development Perspective  
 PA: Protected Areas  
 SDF: Spatial Development Framework  
 NAFCOC: National African Federation

# 1 CHAPTER 1: INTRODUCTION

## 1.1 Foreword by the Executive Mayor

The foreword by the Executive Mayor will be included in the final document.

## 1.2 Background

Mbombela Local Municipality has appointed Umsebe Development Planners to assist in the review of the current Spatial Development Framework (SDF) 2006/2007.

## 1.3 Legal requirement

The formulation of the Spatial Development Framework is primarily instigated by the following legislation:

- Chapter 5, Section 26(e) of the Local Government: Municipal Systems Act, 2000; and
- Chapter 2, Section 4 of the Local Government: Municipal Planning and Performance Management Regulations, 2001.

The Municipal Systems Act, 2000 stipulates that one of the core components of a municipality's Integrated Development Plan (IDP) is "a spatial development framework which must include the provision of basic guidelines for a land use management system for the municipality".

## 1.4 Link between IDP, SDF and LUMS

In terms of the Municipal Systems Act (MSA), (Act 32 of 2000) the IDP constitutes the blue print of the municipality's strategies in addressing the socio-economic development needs of the communities and the SDF is prepared in conjunction with the IDP.

The IDP reflects the key development focus areas agreed upon with communities and stakeholders and the SDF in turn, guides and informs land development and management. In other words, the SDF gives spatial effect to multi-sectoral projects identified in the IDP.

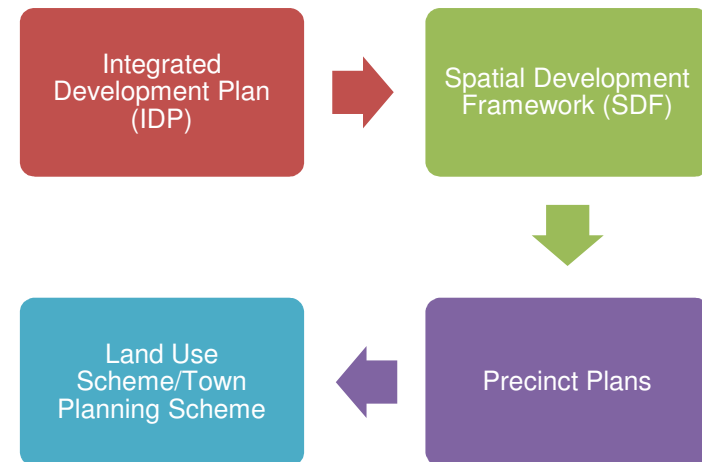
In terms of the MSA the SDF is an indicative plan intended to show desired patterns of land uses, directions for future growth, indicate the alignment of urban edges and depict special development areas.

For the SDF to achieve its objectives, it requires the Land Use Management System (town planning scheme or land use scheme) to act as a management tool to implement the strategic plans prescribed by the SDF. In other words the relationship between the SDF and LUMS is generally that the LUMS will ensure that land uses on the ground are in accordance with the proposals of the SDF.

**The impact of the SDF is limited to provide policy to guide and inform land development and management. It does not change or confer real rights on land. In contrast to the SDF, LUMS have a binding effect on the development rights attributed to land and confer real rights on properties.**

The figure below indicates the relationship between the IDP, SDF and LUMS.

Figure 1: Link between IDP, SDF and LUS



## 1.5 Goal and objectives of the SDF

The **ultimate goal** of the SDF is to achieve the desired spatial form of the municipality.

The purpose of a SDF is to guide all decisions of a municipality relating to the use, development and planning of land and should have the following **key objectives**:

- To provide a strategic and indicative forward planning tool to guide decisions on land development;
- To provide a set of policies, principles and directives for spatial development;
- To provide a clear and logical framework for private and public sector investment;
- To promote sustainable development in terms of the natural and built environment;
- To facilitate social, economic and environmental sustainability;
- To provide a framework for dealing with key issues such as natural resource management, land reform and land use management;
- To facilitate the development of aesthetic urban form and landscape; and
- To guide and inform directions of growth and major movement routes.

## 1.6 Timespan of the SDF

The SDF presents a long term vision of the desired spatial form of a municipality and thus a critical informant to bulk infrastructure planning which normally has a 20 year planning horizon. Therefore, the long term spatial vision of the SDF is 20 years.

## 1.7 Public participation process

A thorough and inclusive public engagement process is critical for the successful preparation of the SDF. The public participation process is in line with the draft *Stakeholder Participation Policy* for Mbombela Local Municipality, prepared in terms of the Municipal Systems Act (Act 32 of 2000) and the White Paper on Local Government (1998).

The SDF is steered, managed and approved within the following institutional framework:

### 1.7.1 Project Management Team (PMT)

A Project Management Team was established to carry out the day to day management of the project. This team consisted of representatives from the following institutions:

Mbombela Local Municipality:

- Member of the Mayoral Committee (MMC) for City Planning and Development Services;
- Representation from;
  - Technical Services
  - Local Economic Development (LED)
  - Tourism & Trade
  - Community Services
  - Urban and Rural Management
  - Corporate Strategy
  - Office of the Executive Mayor

### Department of Co-operative Governance and Traditional Affairs

### 1.7.2 Project Steering Committee

The Project Steering Committee consisted of representatives of the Project Management Team and the following Sector Departments:

- Mpumalanga Office of the Premier
- Mpumalanga Department of Community Safety, Security and Liaison
- Mpumalanga Department of Economic Development, Environment and Tourism
- Mpumalanga Department of Education
- Mpumalanga Department of Health and Social Development
- Mpumalanga Department of Human Settlements

- Mpumalanga Department of Public Works, Roads and Transport
- Mpumalanga Department of Agriculture, Rural Development and Land Affairs
- Department of Rural Development and Land Reform
- Ehlanzeni District Municipality
- SANParks

### **1.7.3 Municipal Interested and Affected Parties (I&AP):**

- Lowveld Chamber of Business & Tourism
- Rates Payers Association
- National African Federation Chamber of Commerce (NAFCOC)
- Farmers Associations
- Sembcorp Silulumanzi
- Bushbuckridge Water Board

### **1.7.4 Traditional Authorities:**

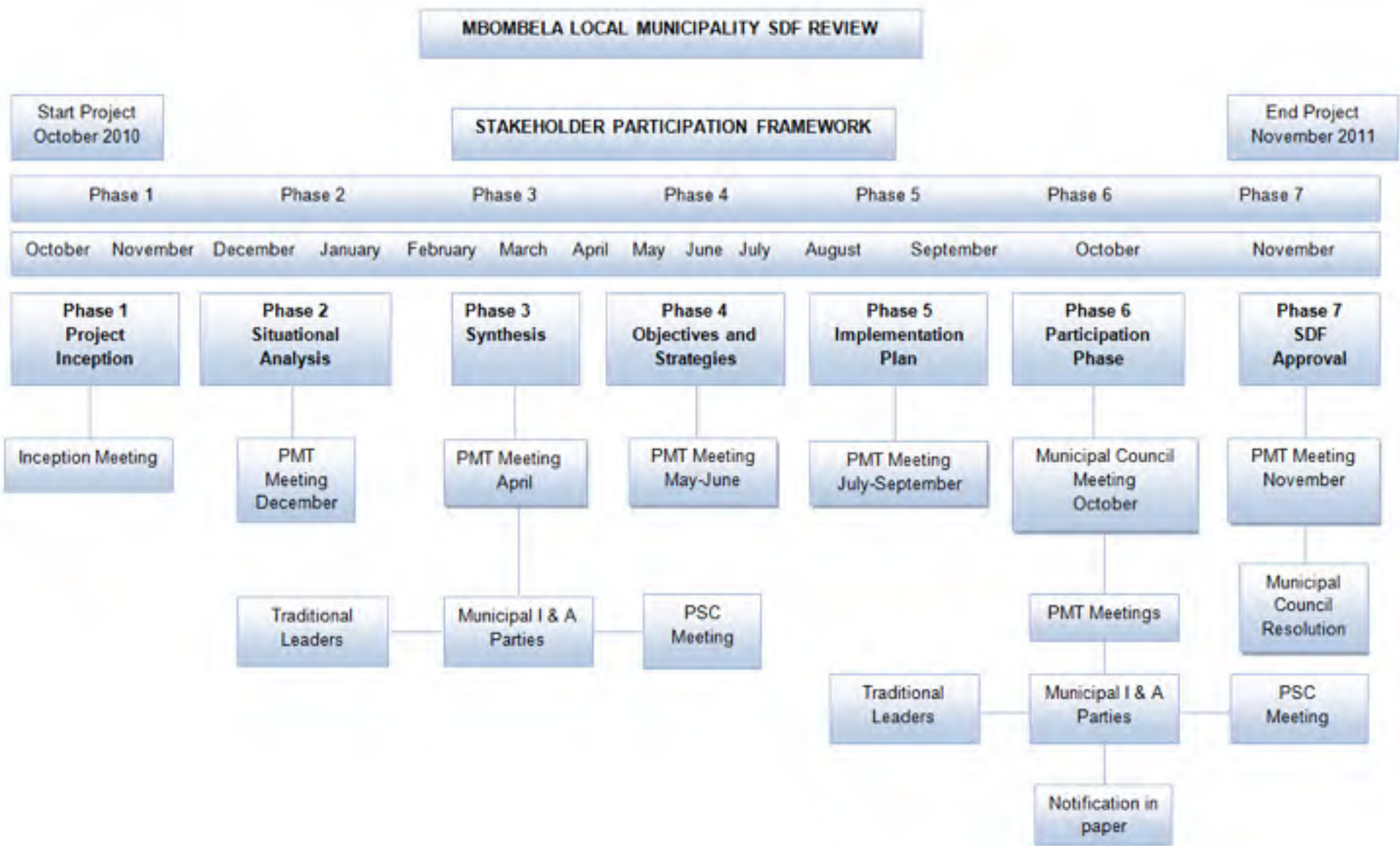
- 
- Gutshwa Traditional Authority
- Lomshiyo Traditional Authority
- Masoyi Traditional Authority
- Mbuyane Traditional Authority
- Mdluli Traditional Authority
- Mpakeni Traditional Authority
- Msogwaba Traditional Authority
- Nkambeni Traditional Authority
- Kgarudi Traditional Authority

### **1.7.5 Municipal Council**

The SDF comes into effect upon approval by the Project Management Team, Project Steering Committee as well as the adoption by the Mbombela Municipal Council by means of a Council Resolution. Consultative meetings will be held during the course of the project with the following entities as indicated in the figure below.

Figure 2: Public Participation Process





## 1.8 Planning Process

The planning process for reviewing the SDF consists of the following phases:

### Phase 1: Project inception

This phase involves the initial start-up of the project, finalising institutional and political support structures, agreement on the scope of work and the completion of the project plan and inception report.

### Phase 2: Situational analysis

This phase consists of two components:

- Analysis of legal and policy framework taking into account relevant policies and legislations that have a bearing on spatial planning.
- A status quo analysis of Mbombela with specific reference to its natural systems, built systems and socio-economic systems.

### Phase 3: Synthesis

This phase concludes the previous phases highlighting development opportunities and constraints within Mbombela.

### Phase 4: Objectives and strategies

The spatial vision, objectives, proposals and strategies are formulated as part of Phase 4. This phase provides a visual representation of the desired spatial form of Mbombela.

### Phase 5: Implementation Plan

This phase involves the formulation of an Implementation Plan including a Capital Expenditure Framework with projects, timeframes, implementation agencies etc., policies, broad land use guidelines and a monitoring and evaluation framework.

### Phase 6: Public participation

This involved consultation with key stakeholders and the general public throughout the SDF review process.

### Phase 7: SDF approval

Phase 7 is the final phase and involves the consolidation of comments and finalisation of the SDF document for approval and adoption by the Council.

## 1.9 Chapter layout

The SDF document consists of 9 chapters and the purpose of each chapter are briefly discussed below:

### Chapter 1: Introduction

This chapter confirms the legitimacy of a SDF, its planning horizon, how it links between the IDP and LUMS, the objectives of the SDF and the institutional framework within which the SDF is compiled.

### Chapter 2: Contextual Overview

A contextual overview familiarises the user of the document with Mbombela Local Municipality, its locality, administrative areas, general statistics, comparative advantages to neighbouring municipalities, its pressing needs and investment priorities.

This chapter provides the basis for Chapters 3 and 4 that provide an in depth institutional and spatial analysis of the municipality.

### Chapter 3: Institutional Analysis

It is a legal requirement that SDFs should be aligned to national and provincial laws and policy. Chapter 3 provides an analysis of existing laws, policies and programmes that have a bearing on the SDF of Mbombela. The Spatial

Development Frameworks of adjoining municipalities were investigated to promote horizontal alignment (between municipalities).

#### **Chapter 4: Spatial Analysis**

Chapter 4 provides a spatial analysis of Mbombela's:

- Biophysical environment
- Socio-economic environment and
- Built environment

It reveals the factors that influence where and how people settle and organise themselves in Mbombela.

Important aspects covered in this chapter include the status of Mbombela's natural capital base, population characteristics, travel patterns, migration trends, land ownership and reform, settlement patterns, hierarchy and role of settlements, areas experiencing development pressure, anticipated urban land use demand, vacant land audit, infrastructure and services.

#### **Chapter 5: Synthesis**

This chapter provides a synthesis of the findings of the foregoing Chapters 3 and 4 by perusing the Closed Ecological Cycle concept. It identifies issues that the SDF has to address to keep the ecological cycle in balance. The chapter is concluded by highlighting development opportunities, challenges and constraints faced by the municipality.

#### **Chapter 6: Vision**

A Spatial Vision is developed in Chapter 6. The spatial vision underscores the IDP Vision, identified IDP Strategic Focus Areas and encapsulates the major concerns and opportunities within Mbombela.

Theoretical Spatial Principles are adopted for Mbombela in Chapter 6 in order to attain its Spatial Vision.

#### **Chapter 7: Spatial Development Framework**

Chapter 7 identifies how the spatial form of Mbombela should be shaped to achieve its Spatial Vision and to give effect to the Spatial Principles adopted in Chapter 6.

The purpose of Chapter 7 is to:

- Reiterate the structuring elements that dictate the location of development and direction of growth in the municipality (Chapters 3 and 4),
- Develop a Conceptual Framework showcasing basic planning principles,
- Formulate key spatial strategies to assist Mbombela achieve its spatial vision,
- Develop the Desired Spatial Pattern, being a composite plan of the key spatial strategies and division of the municipality into 5 functional zones with development directives attached to each zone.

#### **Chapter 8: Spatial Framework Proposals**

Chapter 8 develops strategic frameworks for focus areas identified in the Desired Spatial Pattern. These areas require further detail planning and are categorized into:

- Rural service centres
- Urban centres and
- Traditional authority areas

The purpose of these frameworks is to guide development towards certain areas or to steer development away from certain areas.

#### **Chapter 9: Implementation Plan**

Chapter 9 considers how best to implement the Spatial Development Framework through:

- Direct investment by the municipality in infrastructure and development projects,
- Policies and guidelines which provide the private sector and other stakeholders with the tools and incentives to implement the SDF proposals,
- Basic guidelines for a Land Use Management System and
- A monitoring and evaluation framework where interventions can be measured and evaluated.

## 2 CHAPTER 2: MUNICIPALITY IN CONTEXT

### 2.1 Contextual overview

A contextual overview familiarises the user of the document with Mbombela Local Municipality with respect to its locality, administrative areas, general statistics, comparative advantages to neighbouring municipalities, pressing needs and investment priorities.

A contextual overview of Mbombela Local Municipality is set out in the section below.

#### 2.1.1 National and provincial context

Mbombela Local Municipality is located in Mpumalanga Province which is situated in the north-east of South Africa.

Figure 3: National and provincial context



#### 2.1.2 District context

The municipality is located within the Ehlanzeni District Municipality, which is situated in the north-eastern part of Mpumalanga. The Ehlanzeni District Municipality is one of 3 district municipalities constituting Mpumalanga Province as indicated in the figure below.

Figure 4: District context



#### 2.1.3 Local context

Mbombela is one of 5 local municipalities situated within the Ehlanzeni District Municipality, which also includes part of the Kruger National Park as indicated in the figure below.

Figure 5: Local context



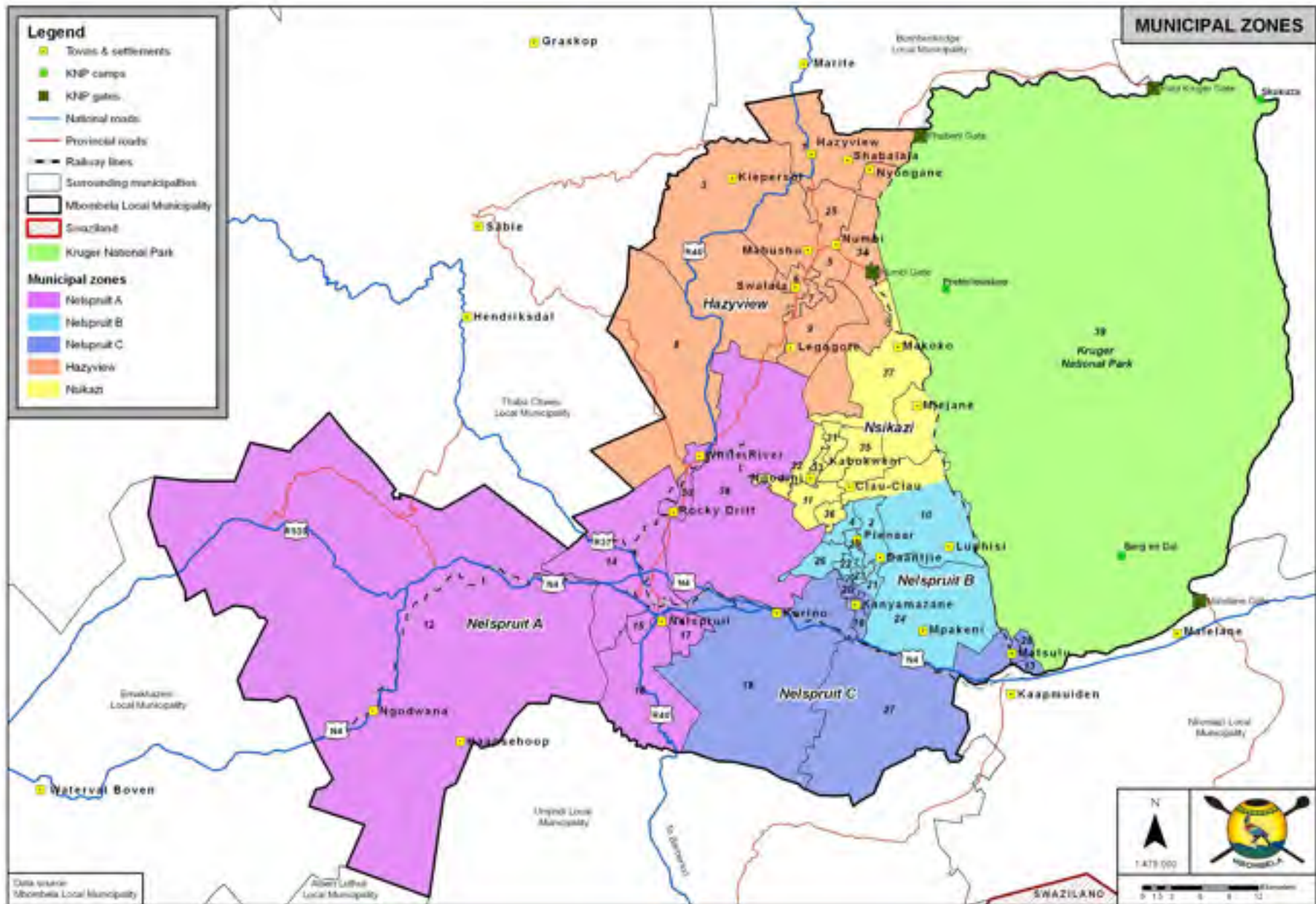
### 2.1.4 Municipal zones and wards

The municipality is divided into 5 zones namely, Nelspruit A, Nelspruit B, Nelspruit C, Hazyview and Nsikazi. These municipal zones are based on the latest ward delineation which came into effect on 18 May 2011. The municipal wards increased from 36 to 39 and part of Kruger National Park fall within the municipal area as Ward 39 (See **Plan\_ : Municipal Zones** and **See Plan\_ : 2011 Ward Boundaries**).

Table 2: Municipal zones and wards

Municipal zone	Wards
<b>1. Nelspruit A</b>	12, 14, 15, 16, 17 & 38
<b>2. Nelspruit B</b>	2, 4, Part of 10, 13, 21, 22, 23, 24, 26 & 29
<b>3. Nelspruit C</b>	13, 18, 19, 20, 21, 27, 28 & Part of 39
<b>4. Hazyview</b>	1, 3, 5, 6, 7, 8, Part of 9, 25, 34 & 37
<b>5. Nsikazi</b>	Part of 9, 10, 11

Source: Mbombela Local Municipality







## 2.2 Traditional authorities

The municipality consists of 9 Traditional Authorities situated in the eastern Nsikazi area as follows: **(See Plan: Traditional Authorities)**.

- Gutshwa Traditional Authority
- Lomshiyo Traditional Authority
- Masoyi Traditional Authority
- Mbuyane Traditional Authority
- Mdluli Traditional Authority
- Mpakeni Traditional Authority
- Msogwaba Traditional Authority
- Nkambeni Traditional Authority
- Kgarudi Traditional Authority



## 2.3 Mbombela Profile

A profile of Mbombela is presented in the table here under:

Table 3: Mbombela Profile

Area of jurisdiction (excl KNP)	±3 411 km <sup>2</sup>	
Population (CS 2007)	527 203	
Number of households (CS 2007)	137 353	
Human Development Index (IDP 2002)	0.56	
Wards	39	
Traditional Authorities	9	
Urban nodes	Nelspruit, White River, Rocky Drift, Matsulu, Kanyamazane, Kabokweni, Hazyview	
Length of roads managed/maintained by MLM (excluding KNP roads)	Tarred roads	424 km
	Gravel roads	2 139 km
Operating Budget for 2011/2012	R 1 587 769 117	
Capital Budget for 2011/2012	R 457 823 240	
Total Budget for 2010/2011	R 2 045 592 357	

Source: Municipal IDP 2011-2016 and Medium Term Revenue and Expenditure Framework May 2011

## 2.4 Comparative advantages

Mbombela Municipality's comparative advantages to other local municipalities in Ehlanzeni District are:

- Strategic location
- Infrastructure
- Scenic environment
- Fertile land

### 2.4.1 Strategic location

Mbombela is the regional service hub of Mpumalanga, Swaziland and southern Mozambique as it offers high level support, business, educational and financial services. Mbombela is only three hours drive from Johannesburg Metropole and two hours from Maputo in Mozambique. Table 4 indicates approximate distances between Nelspruit and other urban centres. (**See Plan \_ : Regional Linkages**)

Table 4: Distance to urban centres from Nelspruit

Urban Centres	Distance from Nelspruit (km)
<b>Metropolises</b>	
Johannesburg	353
Pretoria	316
Durban	575
Maputo	200
<b>Main centres</b>	
Middleburg	178
Polokwane	278
Secunda	256
<b>Other towns</b>	
Ermelo	177
Barberton	40
Secunda	256
Malalane	64
Bushbuckridge Town	84
Lydenburg	78

### 2.4.2 Infrastructure

Mbombela has high-quality infrastructure which includes an international airport (KMIA), Mbombela Soccer Stadium, Provincial offices, railway links to Zimbabwe, Mozambique, Swaziland and the rest of South Africa as well as the N4 Maputo Corridor between Gauteng and the deep sea port of Maputo.

### **2.4.3 Scenic environment**

Mbombela has a unique environment with numerous scenic areas. These areas coupled with the proximity to the Kruger National Park make Mbombela a sought after tourist destination.

### **2.4.4 Fertile land**

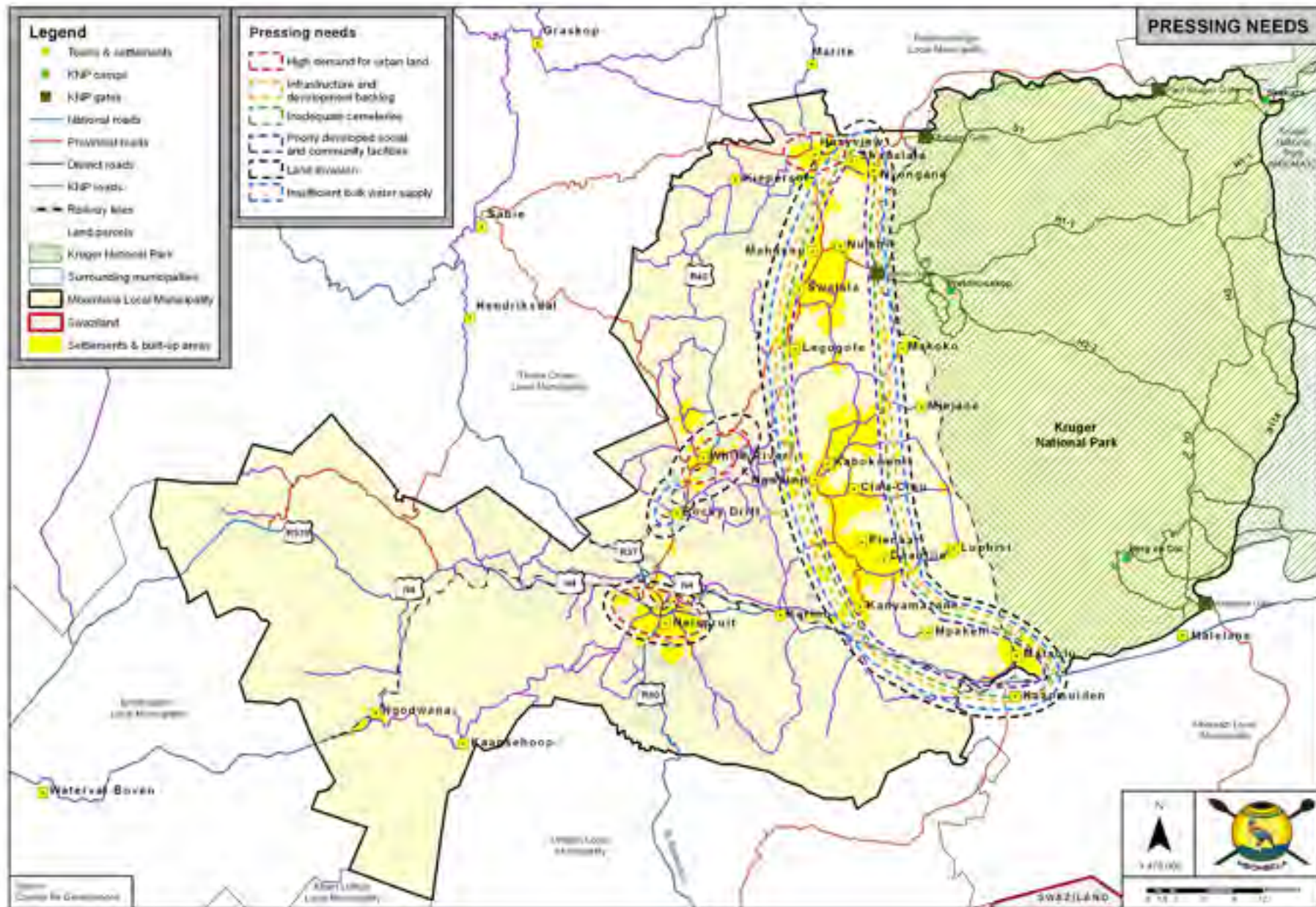
Fertile land located along in the Crocodile River Valley and along the banks of the Sabie River ensures good fruit crops in a typically subtropical climate. Mangoes, litchis, banana and avocados are among the crops grown the most profitable in the region.



## 2.5 Pressing needs

In terms of the IDP 2011-2016 and the Mbombela Strategic Risk Assessment Report 2011 the pressing needs in Mbombela are summarised below: **(See Plan\_ : Pressing Needs):**

- Insufficient bulk water resources - there is a need to secure bulk water supply for the entire municipality.
- Poor and limited water supply, especially to Nsikazi.
- Infrastructure backlogs are high and the quality of services provided such as water, sanitation, electricity and roads is problematic in Nsikazi.
- Roads and stormwater management is a challenge in Nsikazi due to highly erodible soils.
- Nsikazi is characterised by inadequate waste management services.
- Poorly developed social and community facilities in Nsikazi, most of the facilities do not have basic services and are of poor standard.
- Lack of land use management - formalisation and land tenure upgrade is required to implement effective land use control in the Nsikazi area.
- The approval of developments by different government departments (Department of Agriculture, Rural Development and Land Administration, Department of Human Settlements and the Mpumalanga Development Tribunal) with little consideration of the impact on municipal infrastructure.
- The availability of land for industrial, commercial and residential purposes is limited.
- Existing cemeteries have reached or are near full capacity. There is a need to identify and secure regional cemetery sites.
- Land invasion is a challenge due to uncontrolled urbanisation, lack of cooperation between traditional authorities and the municipality, migration and long travelling distances between work and home.
- Uncontrolled urbanisation and informal settlement are unsustainable in terms of service delivery.



## 2.6 Municipal investment priorities

This section seeks to uncover whether there is a link between the pressing needs identified above and development and investment priorities identified in the IDP 2011-2016 and the Medium Term Revenue and Expenditure Framework dated May 2011.

Mbombela Local Municipality has identified seven development priorities in the IDP 2011-2016:

- Institutional development and transformation
- Infrastructure and sustainable services
- Rural development
- Economic development
- Financial management and viability
- 2010 legacy and flagship projects
- Human capital and community development

In response to the development priorities of the municipality an amount of R64 million has been allocated in the **operating expenditure budget** for 2011/2012. The breakdown is indicated in the table below.

Table\_: Development priorities

Nr	Development priority	Budget (R million)
1	Institutional development and transformation	14.9
2	Infrastructure and sustainable services	-
3	Rural development	1.5
4	Economic development	4.6
5	Financial management and viability	5.8
6	2010 legacy and flagship projects	11.6
7	Human capital and community development	21.7

Source: Medium Term Revenue and Expenditure Framework – May 2011

An amount of R457.8 million has been allocated in the **capital expenditure budget** for the 2011/2012 fiscal year of which R346 million (75%) has been allocated to infrastructure development in the form of new, refurbishment and upgrade of water, electricity, sanitation, waste management, roads and stormwater networks as well as community facilities.

Table\_: Infrastructure development priorities

Development priority	Budget (R million)
<b>Infrastructure and sustainable services</b>	
Water	89.7
Electricity	43.7
Roads and stormwater	86.8
Sanitation	75.8

Considering the municipality's priority investment areas and the adopted Medium Term Revenue and Expenditure Framework, it's evident that the Mbombela is geared towards addressing its pressing needs.



### 3 CHAPTER 3: INSTITUTIONAL ANALYSIS

#### 3.1 Institutional background

This chapter analyses existing laws, policies and programmes that have a bearing on the SDF of Mbombela and include, but are not limited to the following:

##### Legislation

- The South African Constitution and Principles of Sustainable Development
- Local Government Municipal Structures Act, Act 117 of 1998
- Local Government Municipal Systems Act 32 of 2000
- Municipal Planning and Performance Management Regulations 2001
- The Development Facilitation Act 67 of 1995
- Draft Spatial Planning and Land Use Management Bill, 2011

##### Other legislation

- National Environmental Management Act (1998)
- The National Water Act, 1998 (Act 36 of 1998)
- The Subdivision of agricultural Land Act, (Act 70 of 1970)
- Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)

#### 3.1.1 The Constitution of the Republic of South Africa 1996 (Act 108 of 1996)

Part of the Constitution is dedicated to define the role and function of government at national, provincial and local level.

**Part B of Schedule 4** identifies municipal planning as a local governmental matter. Aspects influencing spatial planning are local tourism, municipal airports, municipal health services, and municipal public transport, water and sanitation services.

**Part B of Schedule 5** does not specifically mention any planning function but identifies the aspects of cemeteries, municipal parks and recreation, public places, municipal roads, traffic and parking, which have an influence on spatial planning.

#### 3.1.2 Local Government: Municipal Structures Act, Act 117 of 1998

The Municipal Structures Act, 1998 (MSA) assigns and divides powers to and between district and local municipalities.

The MSA requires that local municipalities “must seek to achieve integrated, sustainable and equitable social and economic development of its area as a whole”. Powers and functions assigned to Local Municipalities includes, *inter alia*:

Integrated development planning for the local municipality as a whole;  
Bulk supply of water, sewerage, electricity and solid waste disposal;  
Municipal roads that form an integral part of a road transport system and  
Promotion of local tourism for its jurisdiction area, etc.

The aforementioned powers and exercising of such powers by Mbombela Local Municipality have an impact on the spatial development pattern of the local municipal area and district municipal area. Horizontal (between local municipalities) and vertical alignment (between district and local municipalities) are therefore essential in reviewing the SDF.

#### 3.1.3 Local Government: Municipal Systems Act 32 of 2000

Section 26(e) of the MSA stipulates that the local municipality should prepare a SDF which must include basic guidelines for a Land Use Management System (LUMS) as part of the IDP. The SDF shall act as a forward plan that illustrates the intended nature of spatial development and shall take **precedence over any other plan approved by the Municipality**. Furthermore, the SDF shall be the first point of reference for decision-makers when seeking guidance on specific land development issues.

Municipal Planning and Performance Management Regulations, 2001

The Local Government Municipal Planning and Performance Regulations (2001) stipulate the content of the SDF.

**In terms of Section 4 of the Regulations the SDF is required to:**

- give effect to principles contained in Chapter 1 of the Development Facilitation Act, 1995;
- Set out objectives that reflect desired spatial form of the municipality;
- Contain strategies and policies regarding the manner in which to achieve the objectives which must:
  - Indicate the desired pattern of land use and
  - Indicate the direction of growth;
- Provide strategic guidance in respect to location and nature of development;
- Set out basic guidelines for a land use management system;
- Set out a capital investment framework for development programmes;
- Incorporate a strategic assessment of the environmental impact of land within the municipality;
- Identify programmes and projects for development of land within the municipality;
- Be aligned with neighbouring municipal SDF's;
- Provide visual representation of the desired spatial form which:
  - must indicate areas in which the intensity of land development could be either increased or reduced;
  - must indicate desired and undesired utilisation of land in an area;
  - indicate conservation of both the built and natural environment;
  - must indicate where public and private land development and infrastructure investment should take place;
  - may delineate the urban edge;
  - must identify areas where strategic intervention is required; and
  - must indicate where priority spending is required.

### 3.1.4 The Development Facilitation Act 67 of 1995

Chapter 1 of the Act lays down principles that apply to all types of land planning and development. These principles are vital to establishing a more efficient, equitable and development planning system for Mbombela.

**Promote efficient and integrated land development:**

Integrate social, economic, institutional and physical aspects of land development,  
Integrate land development in rural and urban areas,  
Promote availability of residential and employment opportunities in close proximity to each other,  
Optimise the use of existing resources,  
Promote a diverse combination of land uses,  
Discourage the phenomenon of urban sprawl and contribute to the development of more compact towns and cities,  
Contribute to the correction of historically distorted spatial patterns of settlement in the Republic,  
Encourage environmentally sustainable land development.

Key themes contained in these principles include:

**Socio-economic integration**

- Rural and urban integration
- The promotion of high levels of access that could minimise the use of the private motor vehicle and
- Limiting urban sprawl so as to increase urban efficiencies relating to business thresholds and minimise the impact of urban growth on agricultural land, areas of scenic beauty and areas of high biodiversity potential.

### 3.1.5 Draft Spatial Planning and Land Use Management Bill, 2011

The draft Spatial Planning and Land Use Management Bill, 2011 seeks to:

- Provide for a “uniform, effective, efficient and integrated regulatory framework for spatial planning, land use and land use management in a manner that promotes the principles of co-operative government and public interest”.
- Establish development principles, compulsory norms and standards for land use management; and
- Promote co-operative governance and socio-economic benefits generally associated with the sustainable and efficient use of land.

Once enacted, the bill will replace amongst others the following pieces of legislation:

- Development Facilitation Act 67 of 1995
- Removal of Restrictions Act 84 of 1967 and related legislation
- The Physical Planning Act 88 of 1967 and related legislation.

### 3.1.6 Other legislation

#### 3.1.6.1 National Environmental Management Act, 1998 (Act 107 of 1998)

The act provides a framework for environmental management. NEMA makes provision for the formulation of Environmental Implementation Plans, which are the vehicles for implementing the NEMA principles to which municipalities are legally obliged to conform with.

#### 3.1.6.2 The National Water Act, 1998 (Act 36 of 1998)

The act ensures that the nation’s water resources are protected, used, developed, conserved, managed and controlled. Many water uses by municipalities, such as potable water supply systems, domestic waste water, sewage disposal systems and solid waste disposal sites are controlled by the act. Development in the 1:100 year flood is regulated in terms of this act.

#### 3.1.6.3 The Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970)

Currently the retention of productive agricultural land is administered through the Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970) which controls the subdivision of agricultural land and its use for purposes other than agriculture. In the near future the use of this scarce resource will be regulated in terms of the Sustainable Utilisation of Agricultural Resource Bill (SAUR).

Enshrined in SAUR is the national policy on the protection of high potential and unique agricultural land (HPUAL). The Bill tasks provinces with the responsibility of ensuring that the principles of the HPUAL policy are incorporated into municipal IDP’s and SDF’s.

#### 3.1.6.4 Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)

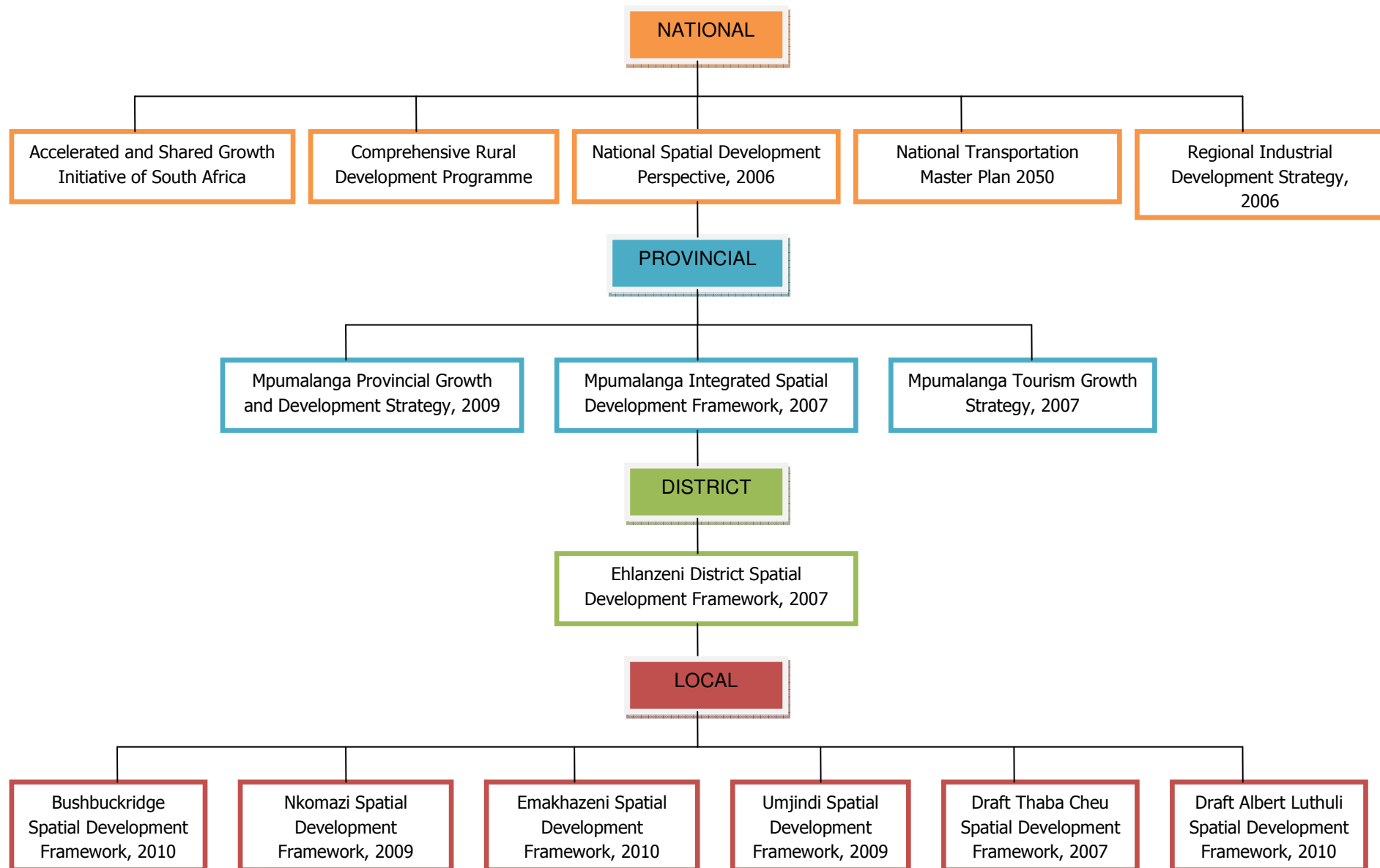
The objectives of Act 43 of 1983 are mainly to provide for the conservation of natural agricultural resources of the Republic by:

- the maintenance of the production potential of soil;
- the combating and prevention of soil erosion;
- the protection of the water sources;
- the protection of the natural vegetation; and
- The combating of weeds and invader plants.

### 3.2 Alignment with government policies

What is addressed at this stage is the extent to which the following policies and strategies can advance the SDF for Mbombela as illustrated in the figure below.

Figure 6: Hierarchy of government policies



### 3.2.1 National

The Mbombela SDF must align with the following key national policies and strategies as indicated in Figure 6 above:

#### 3.2.1.1 Accelerated and Shared Growth Initiative for South Africa (AsgiSA)

Investigations by government indicate that the growth rate needed to achieve its social objectives is around 5% on average between 2004 and 2014.

In order to achieve this objective the following initiatives were identified:

- Significant **investment in infrastructure**, including provincial and local roads, bulk water infrastructure and water supply networks, energy distribution, housing, schools and clinics, business centres, sports facilities, and multi-purpose government service centres, including police stations, courts and correctional facilities.
- Targeting **economic sectors with good growth potential**. In this regard two sectors have been identified namely Business Process Outsourcing and Tourism. A third sector, bio-fuels, is being finalised. What these industries have in common is that they are labour-intensive, growing rapidly worldwide, suited to South African circumstances, and open to opportunities for Broad-Based Black Economic Empowerment (BBBEE) and small business development;
- Skills development;
- Eliminating the Second Economy - building up small businesses to bridge the gap between the formal and informal economies; and
- Governance and Institutional Interventions - Beefing up public administration and creating a macro-economic environment that is more conducive to economic growth.

The development of the Mbombela Soccer Stadium and associated bulk infrastructure (roads and water), the construction of the N4 Northern Bypass, the expansion of the Kruger Mpumalanga International Airport and increased focus on tourism development are typical projects intended by AsgiSA.

Mbombela Spatial Development Framework needs to create an environment conducive to the implementation of the AsgiSA initiatives.

#### 3.2.1.2 National Spatial Development Perspective (2006)

The National Spatial Development Perspective (NSDP) reflects on the need to address firstly, the provision of basic services as a constitutional right and, secondly that government spending should focus on localities of economic growth and/or economic potential.

The NSDP's five normative principles to spatially guide development decisions and investment priorities throughout the country is summarised below:

**Principle 1:** Rapid economic growth that is sustained and inclusive is a prerequisite for the achievement of other policy objectives, along with poverty alleviation.

**Principle 2:** Government has a constitutional obligation to provide basic services to all citizens (e.g., water, energy, health and educational facilities) wherever they reside.

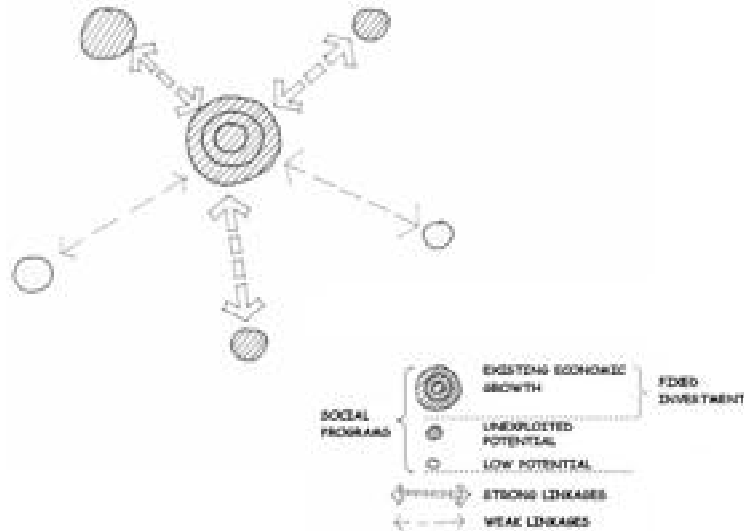
**Principle 3:** Beyond the constitutional obligation identified in Principle 2 above, government spending on fixed investment should be focused on localities of economic growth and/or economic potential in order to gear up private sector investment, to stimulate sustainable economic activities and to create long-term employment opportunities.

**Principle 4:** Efforts to address past and current social inequalities should focus on people, not places. In localities where there are both high levels of poverty and low demonstrated economic potential, government should, beyond the provision of basic services, concentrate primarily on human capital development by providing education and training, social transfers such as grants and poverty-relief programmes.

**Principle 5:** In order to overcome the spatial distortions of apartheid, future settlement and economic development opportunities should be channelled into

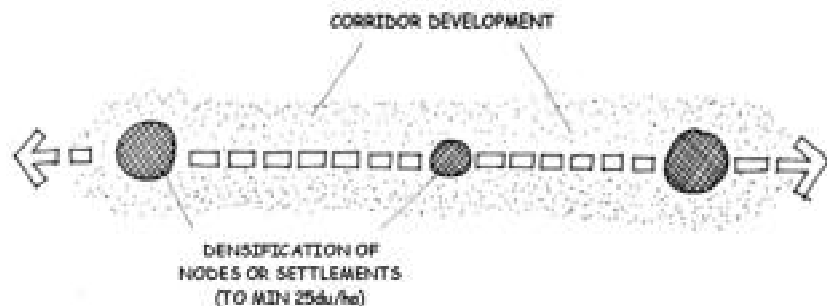
activity corridors and nodes that are adjacent to or that link the main growth centres.

Figure\_: Schematic illustration of principles 3 & 4



The NSDP recognises that development potential tends to be greatest along linear corridors or axes. This is the result of the relationship between urban nodes of opportunity and the transport and communication routes that connect them.

Figure\_: Schematic illustration of principle 5



It is pertinent to point out that the document cites that different regions have different economic potential and the spatial variations in the incidence of poverty are also vastly different. Hence, in areas of low or no economic potential, the path of development and poverty reduction should be through a focus on investment in human capital development.

### 3.2.1.3 Comprehensive Rural Development Programme

The vision of the Comprehensive Rural Development Programme (CRDP) is to create vibrant, equitable and sustainable rural communities with a view to contributing to the redistribution of 30% of the country's agricultural land; improving food security of the rural poor; creation of business opportunities, decongesting and rehabilitation of over-crowded former homeland areas; and expanding opportunities for women, youth, people with disabilities and older persons who stay in rural areas.

The first leg of the strategy is to ensure that economic and social infrastructure development takes place in South Africa's rural communities. This will be done through a proactive strategy of upgrading infrastructure, some of which would also serve as a tool of social transformation, by providing roads, electricity, water and telecommunications to support sustainable economic development.

Types of projects and priorities cited include, but are not limited to the following:

- **Agrarian transformation:**
  - Livestock farming and related value chain development (exploring all possible species for food and economic activity); and
  - Cropping and related value chain development (exploring all possible species, especially indigenous plants, for food economic activity).
- **Rural development:**
  - The establishment of business initiatives, agro-industries, cooperatives, cultural initiatives and vibrant local markets in rural settings;

- The empowerment of rural communities, especially women and the youth, through facilitating and mediating strong organisational and institutional capabilities and abilities to take full charge of their collective destiny;
- Capacity building initiatives, where rural communities are trained in technical skills, combining them with indigenous knowledge to mitigate community vulnerability to, especially climate change, soil erosion, adverse weather conditions and natural disasters, hunger and food insecurity; and
- Revitalisation and revamping of old, and the creation of new economic, social and information communication infrastructure and public amenities and facilities in villages and small rural towns.

The CRDP holds perhaps the most promise for rural areas in that it has clearly defined principles of intervention and support from which areas like Mbombela are eligible to benefit. Currently no CRDP projects have been identified within the Mbombela Municipality.

#### 3.2.1.4 Draft National Transportation Master Plan 2050 (NATMAP)

The aim of the NATMAP project is to address problems surrounding transport systems in South Africa, to achieve a coordinated, efficient and cost effective transport plan investment strategy that will streamline transport planning vertically (among the planning authorities) and horizontally (across all modes).

NATMAP identifies five projects in the Mpumalanga Province, namely:

- Develop a regional passenger rail system: Moloto Corridor
- Upgrade provincial coal haulage roads
- Develop a regional rail system: R40/R538 Corridor
- Develop a regional passenger rail system: N4 Corridor, and
- Doubling of the Overvaal tunnel.

Of the five priority projects, the following are important for Mbombela:

##### 1. Develop a regional rail system: R40/R538 Corridor

The R40 and R538 form part of three important development corridors in the province, namely:

- Nelspruit-Phalaborwa Spatial Development Initiative
- Nelspruit-White River Corridor, and
- Karino-KMIA-Plaston Corridor.

NATMAP identified the R40/R538 corridor between Nelspruit and Acornhoek as one of Mpumalanga's Strategic Public Transport Network (SPTN) corridors, because of the relative high number of passenger numbers currently travelling along the R40/R538, and because of its future public transport potential.

NATMAP proposes the implementation of a **rapid transit system** in the corridor, as follows:

- If a regional passenger rail system is not feasible, investigate the option of implementing rapid transit, in the form of light rail transit (LRT) or bus rapid transit (BRT), along the full length of this corridor;
- Conduct a feasibility study for the construction and implementation of a regional passenger rail system along this corridor;
- If a rapid transit system is not feasible, additional capacity (in the form of 1 lane per direction) will have to be provided on the R40, as follows:
  - Period 2010 to 2015: Hazyview to Bushbuckridge
  - Period 2015 to 2030: Bushbuckridge to Acornhoek; Nelspruit to Barberton
  - Period 2030 to 2050: White River to Hazyview; White River to Nelspruit

##### 2. Develop a regional passenger rail system: N4 Corridor

The N4 Maputo Corridor between Gauteng and Maputo has been identified as a national and regional development corridor. This corridor has also been identified as one of Mpumalanga's Strategic Transport Network (SPTN) corridor, due to the relatively high number of passengers currently travelling along specific sections of the N4, as well as latent and future public transport potential (especially between Pretoria and Kaapmuiden).

NATMAP proposes the implementation of a **rapid transit system** in this corridor, as follows:

- Conduct a feasibility for the construction and implementation of a regional passenger rail system along this corridor
- If a regional passenger rail system is not feasible, investigate the option of implementing rapid transit, in the form of light rail transit (LRT) or bus rapid transit (BRT), along specific sections of the corridor, specifically:
  - Between Emalahleni and Middleburg, and
  - Between Mbombela and Kaapmuiden
- If a rapid transit system is not feasible, additional capacity (in the form of 1 lane per direction) will have to be provided on the N4, as follows:
  - Period 2015 to 2030: R575 to R104 intersections in the Middleburg area; Mbombela to Malalane; R104 intersection to Belfast.
  - Period 2030 to 2050: N4 southern leg between eNtokozweni and Elandshoek (just before Mbombela); N4 northern leg between R36 intersection and Elandshoek.

### 3.2.1.5 Regional Industrial Development Strategy (RIDS) 2006

During 2005 the Department of Trade and Industry (DTI) announced that a new Regional Industrial Development Strategy (RIDS) for South Africa has been initiated to achieve the objectives set out in the NSDP.

The strategic objectives of the RIDS are:

- Attempt to reduce economic disparities between regions, address the needs of both the first and the second economies, and narrow the gap between them,
- Pay particular attention to the needs of those regions which are lagging behind in terms of the national norms,
- Enhance current regional strengths and lead sectors of the economy,
- Promote sustainable economic growth and employment in provinces and municipalities,

- Build regional competitive capabilities and firm-level support measures, and
- Enhance regional performance in attracting foreign direct investment.

The purpose of the strategy is to respond in broad terms to issues of spatial differentiation in economic welfare levels. The key challenge as stated is to simultaneously support lagging regions and to assist leading regions and capitalise on their inherent strengths and potential.

This contemporary approach to regional development will only succeed if the relevant infrastructure is provided in clusters and through partnerships between regional governments, local governments and the private sector. Mbombela Local Municipality have the responsibility to create the local economic environment to promote industrial development through the SDF.

### 3.2.1.6 Comprehensive Plan for the Development of Integrated Sustainable Human Settlements (Breaking New Ground/BNG) 2004

The focus of the BNG policy is to change the delivery of housing at scale, to ensure that housing delivery results in the creation of sustainable human settlements.

Within the broader vision, the department aims at achieving the following specific objectives:

- Accelerating the delivery of housing as a key strategy for poverty alleviation,
- Utilising provision of housing as a major job creation strategy,
- Ensuring property can be accessed by all as an asset for wealth creation and empowerment,
- Leveraging growth in the economy,
- Combating crime, promoting social cohesion and improving quality of life for the poor,
- Supporting the functioning of the entire single residential property market to reduce duality within the sector by breaking the barriers between the first economy residential property boom and the second economy slump,



- Utilising housing as an instrument for the development of sustainable human settlements, in support of spatial restructuring.

### 3.2.2 Provincial

The Mbombela SDF must align with the following key provincial policies and strategies as indicated in Figure 6 above:

#### 3.2.2.1 Mpumalanga Provincial Growth and Development Strategy, 2009

The Mpumalanga Provincial Growth and Development Strategy (PGDS) is a strategy developed by the Mpumalanga Provincial Cabinet.

In order to achieve growth and development in the province the MPGDS identifies key development principles to guide and inform planning initiatives:

- Using indigenous resources to create jobs
- Supporting the industrial and service sectors to create jobs
- Reducing the impact of poverty through social services
- Enhancing social cohesion and developing human capital
- Strengthening sustainable environmental development
- Maximising the provincial benefits from the mining and energy sectors
- Governance and spatial integration

#### 3.2.2.2 Mpumalanga Integrated Spatial Development Framework, 2007

The Mpumalanga ISDF is based on the principles and objectives of the NSDP, which aim is to guide specific decisions regarding the spatial development and arrangement, within and between settlements, and to guide investment and development spending.

##### Priority

Investment in new and existing areas for upgrading and redevelopment should focus on localities with *greatest economic potential*.

##### Balance

The location and development of areas should *balance the use of resources* for infrastructure development and operation with the carrying capacity of ecosystems.

##### Integration

Intensity, diversity and propriety of investment should increase, mainly along transport corridors, from localities of concentrations of greatest need for development towards areas of greatest economic potential, thus to facilitate integration particularly of displaced settlements with areas of opportunity and potential.

##### Choice

In localities of low economic and livelihood potential but high levels of need for development, investment should, over and above investment in basic services, focus on the development of people through skills development and access to knowledge of opportunities, thus facilitating choice and ability to move to areas of greater potential.

##### Opportunity

Settlements should ideally have many neighbourhoods, which offer different types of housing for different income groups to facilitate social integration between different groups.

##### Affordability

Differentiated need in terms of income levels must be considered in relation to different investment products.

##### Cluster of investment

Human settlements should offer a range of social, economic and recreational opportunities within nodes or along specific development corridors in growth centres to increase accessibility and maximize the economies of scale.

The MISDF assigns the following roles to settlements and corridors: **(See Plan: Mpumalanga Spatial Development Framework):**

**N4 Maputo Corridor** - one of the key objectives for creating the Maputo Corridor route was to stimulate regional cooperation and economic development by reviving the trade and tourism route between South Africa and Mozambique.

**Agricultural Service Centres** - these nodes are dominated by agricultural activities at nodal points. Hazyview is the only town in Mbombela falling within this category. Other towns include Ermelo, Standerton, Bethal, Belfast, Balfour, Lydenburg, Piet Retief, Malalane, Evander and Barberton.

**Extracting Industrial Service Centres** - these nodes are primarily concerned with the extraction and processing of economically viable natural capital, such as mineral/mining deposits. Witbank is identified as the main extracting industrial service centre, none of the towns in Mbombela fall within this category.

**Manufacturing Service Centres** - these centres process raw material from agriculture and mining to produce goods for business and individuals. Nelspruit is the only centre falling within this category. Other centres include Secunda, Middelburg, Barberton and Lydenburg.

**Commerce and Services Centre** - this category covers a wide range of personal and professional services that are needed to sustain community life, such as health, education, financial, intellectual and civil services. The following centres fall within this category: **Nelspruit**, Witbank, Middelburg, Secunda, Standerton, Ermelo, Piet Retief, Barberton, **White River**, **Hazyview** and Lydenburg.



### 3.2.2.3 Mpumalanga Tourism Growth Strategy, 2007

The aim of the strategy is to elaborate a framework to guide tourism initiatives and development. The ultimate objective is to attain sustainable benefits for the people of Mpumalanga by creating additional economic activity.

The strategy proposes the implementation of the following ten initiatives:

- Reorganise the institutional framework
- Improve air access
- Upgrade, diversify and expand the product
- Attract tourism investment
- Improve customer research and 'know how'
- Increase destination and product promotion
- Upgrade service skills
- Improve economic infrastructure
- Strengthen transformation and empowerment
- Improve product standards

The implementation of the above initiatives is expected to increase spending in the province from international and domestic tourists and to create new job opportunities in the tourism sector.

The foundations of Mpumalanga's diversified tourism product (wildlife & nature tourism, activity & adventure tourism, resort tourism, sports tourism, residential tourism, conference & meetings, leisure/entertainment, industrial & township tourism, coupled with the increasing interest in the Province's cultural heritage) were initiated in 2007 with a ten year tourism growth strategy and plan. **(See Plan: Mpumalanga Tourism Vision 2016)**

The foundations of this plan impact on Mbombela in the following manner

- **Nelspruit/White River Area** – has been identified as a Product Development Node to include an International Conference Centre (ICC), Sports Stadium and Woolmer Cricket Academy. Nelspruit/Whiter River has become an "in destination" attracting visitors from Gauteng, KZN,

Mozambique, Swaziland and further a field for short breaks, conferences, sports meetings, festivals and events.

- **Hazyview** – increased investment has been attracted to Hazyview with residential tourism and a five star golf resort complex. Hazyview has further developed as a centre for touring to KNP and Blyde River Canyon.
- **Kruger National Park** - the south-western part of the Kruger National Park forms part of Mbombela's area of jurisdiction. The KNP continues to be a major tourism draw and its status is further enhanced by the development of the Great Limpopo Transfrontier Park.
- **Mpumalanga Route** – this route integrates the various products which is a major magnet for foreign visitors and rivals the Western Cape's Garden Route. The route has two major branches, one to Maputo and down the Mozambique coastline to KZN, the other through Swaziland to KZN.
- A major branch traverses Mbombela in a east-west direction being the N4 to Maputo in another branch being the north–south R40.
- **Kruger Mpumalanga International Airport** – the airport makes the area more accessible. Increasing air access was a key factor in attracting increasing numbers of foreign tourists. There are now direct flights from the UK and Germany, along with flights to regional destinations in SADC.
- **Sudwala Caves** – the caves are known to be the world's oldest dolomite caves and form an integral part of the Province's tourist attractions.
- **Tourist railway** – using the existing rail network, a luxury steam train journey from Sabie/Machadodorp/Barberton to Maputo passing through Nelspruit is proposed. The product would involve day-excursionists as well as overnights in both directions.



### 3.2.3 District

#### 3.2.3.1 Ehlanzeni Spatial Development Framework, 2007

The Ehlanzeni District SDF makes specific proposals for its five local municipalities. To ensure vertical alignment (between district and local municipalities) it is imperative that the following proposals for Mbombela be considered: **(See Plan: Ehlanzeni Spatial Development Framework)**

1. The provision of a system of activity nodes to accommodate regional and sub-regional growth:

Proposed nodes	Focus area
<b>Regional Activity Node</b>	Nelspruit CBD, Riverside Park, Nelspruit Industrial areas;
<b>1st Order Activity Node</b>	White river, Hazyview, Swalala
<b>2nd Order Activity Centres</b>	Matsulu, Kanyamazane, Daantjie, Msogwaba and Kabokweni
<b>Specialist Activity Centres</b>	Rocky Drift, Karino, Plaston, KMIA, Ngodwana, Nelspruit Greenbelt and the Mataffin Precinct.

2. The concentration of development within transportation, activity corridors, spines and streets

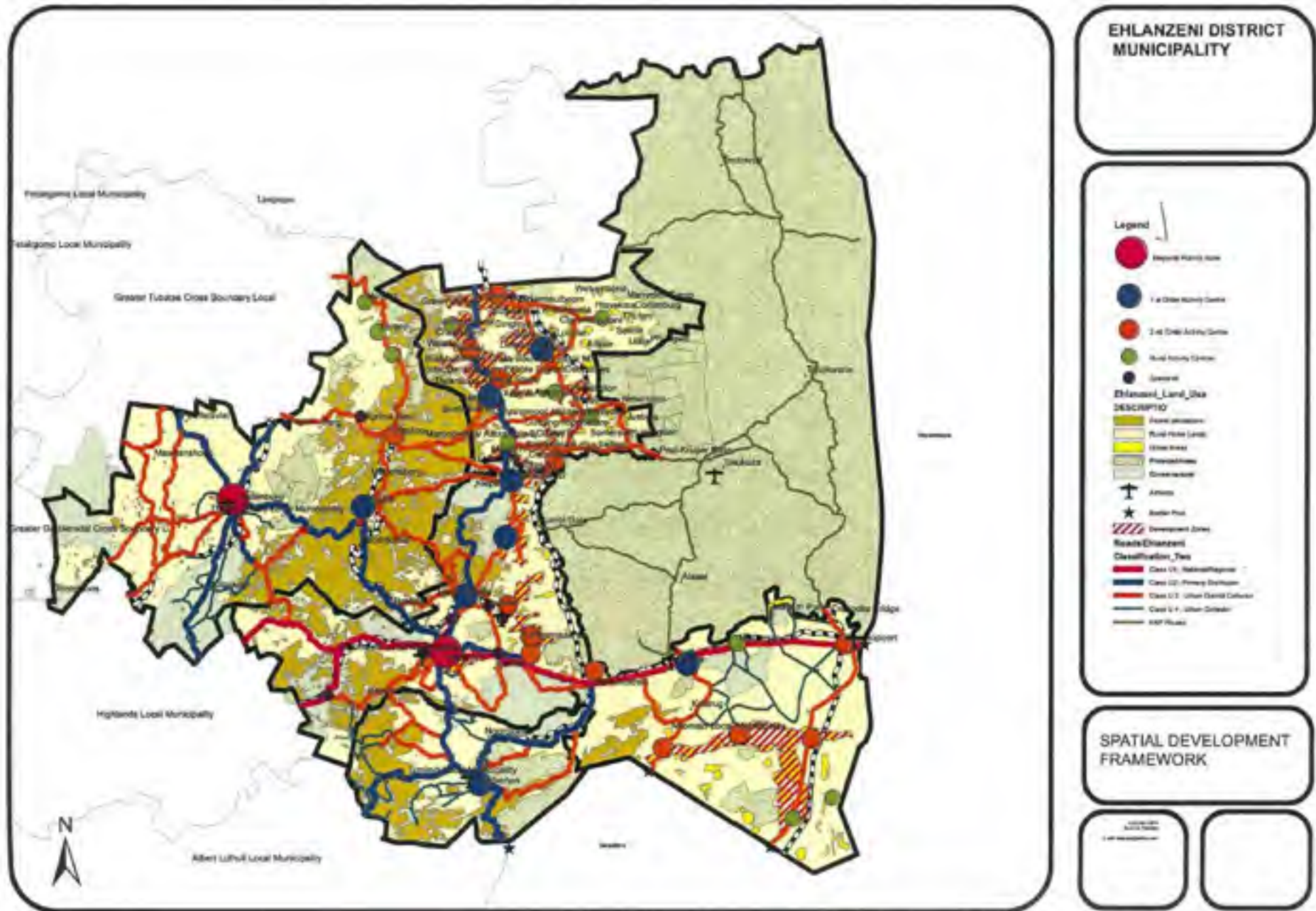
Proposed corridors	Focus area
<b>Maputo Transportation Corridor</b>	Maputo railway line and the N4, all developments need to support the status thereof as transportation corridor
<b>Nelspruit-White River Activity Corridor</b>	Along the R40 – supports activity and mobility along the route
<b>Eastern Activity Corridor</b>	The corridor includes the majority of settlements within the Nsikazi area and the following activity nodes and spines are provided: Kanyamazane CBD Msogwaba Activity Spine Kabokweni CBD and Industrial Area

Proposed corridors	Focus area
	Swalala (Future Activity Centre) Hazyview CBD These nodes need to form the nucleus areas to which catalyst developments projects are directed.
<b>Karino-KMIA-Plaston Activity Corridor</b>	The corridor is supported by the R538 road which connects the following specialised activity centres: Karino Industrial/Commercial centre Kruger Mpumalanga Airport and Industrial/Commercial Area Plaston-Industrial/Commercial Centre It is imperative that the mobility function of the R538 be protected

3. Integration of the Nelspruit-White River Activity Corridor, the Karino-KMIA-Plaston Activity Corridor and Eastern Development Corridor:
  - The provision of **vibrant and sustainable activity centres** within the Eastern Activity Corridor integrating economic and employment opportunities within these areas.
  - The provision of **affordable housing** within Nelspruit–White River Activity Corridor to enable all people to live nearer to their place of work promoting social integration.
  - The provision of **economic opportunities** for historically disadvantaged individuals within the Nelspruit–White River Activity Corridor.
  - The enhancement of **public transportation** and the mobility function of link roads between the corridors.
4. **Urban edges** are provided to concentrate development within development corridors, namely the Nelspruit-White River Activity Corridor and the Eastern Activity Corridor. Growth within settlements that are not located within corridors needs to be limited to the boundaries of these settlements.

5. **Existing Fully-Serviced Urban Areas** - emphasis should be on the maintenance of engineering and social infrastructure for Nelspruit, White River and Hazyview. Densification initiatives in selected areas should be promoted which includes densification of residential developments within Activity Nodes and Centres or as an extension of activity nodes and centres promoting transportation mixed land use development principles.
6. **Service Upgrading Priority Areas** – the eastern corridor should be emphasised for capital expenditure and operational programmes towards upgrading the services and facilities in these areas.
7. **Urban Infill Zones** – this need to strengthen and support and be integrated into the Activity Corridor and the development thereof be driven by the availability of infrastructure and the need to provide catalytic projects to ensure social and economic integration.
8. **Focus Areas for Land Reform** – Tenure upgrading within the majority of settlements within the Nsikazi Area needs to be attended to in terms of a tenure upgrading programme. Precinct Development Plans need to be developed prior to undertaking tenure upgrading projects. Settlements in terms of land restitution need to conform to the development principles of the Spatial Development Framework.
9. **The Regional Open Space System** – the open space system is demarcated for the region and includes major watercourses and other natural features such as nature reserves within the area of Mbombela. The Kruger National Park in the eastern boundary requires the provision of environmental interfaces to ensure the protection of this resource.
10. **The Rural Hinterland** – these areas are earmarked to be used for two main purposes, namely commercial agriculture and forestry. Other uses include the following:
  - Agri and forestry villages including Mataffin, Boschkop, Mayfern and Elandshoek;
  - Road related purposes including accommodation and vehicle related services;
  - Eco-tourism;

- Low density residential areas;
  - Rural residential areas including the historically disadvantaged communities of Nsikazi involved in subsistence farming activities;
  - Industrial concentrations such as canning factories, and sawmills;
  - Regional services (cemeteries, waste sites, reservoirs, electricity lines); and
  - Other uses such as quarries, mining etc.
11. **Transportation** – strategies are proposed to address transportation issues such as modal interchanges in all activity nodes and activity centres, affordable basic access to transportation and the transportation needs of passengers at the KMIA.
  12. **Airports** – the KMIA needs to provide for an array of ancillary and complementary functions to the airport such as an Industrial Development Zone and the Nelspruit Airport will complement the KMIA as a local airport.
  13. **Tourism Nodes** – include the Hall’s Gateway, Casterbridge/Kingdoms of Africa and Perry’s Bridge nodes. Expansion to these nodes to specialise in the provision of tourists and highway related functions should be encouraged. The tourism nodes should be accessible to tourist’s routes and may include cultural centres and specialised commercial nodes at Matsulu, Karino and Hazyview.
  14. **Housing** – needs to provide for the full array of subsidy-linked mass housing schemes, middle and income housing and social housing. The development of social housing schemes is a priority of Mbombela Municipality and a number of focus areas/sites for such developments need to be identified.





### 3.2.4 Local

The Mbombela SDF must align with the following local spatial development frameworks as indicated in Figure 6 above. This is to promote horizontal alignment (between municipalities).

#### 3.2.4.1 Bushbuckridge Spatial Development Framework, 2010

The following proposals are considered important for Mbombela's spatial planning: **(See Plan: Bushbuckridge Spatial Development Framework).**

1. **Protected areas:** the Boschoek Nature Reserve is located along the northern boundary and comprises sensitive environmental features that should be conserved and sustainably use for commercial nature based tourism and education.
2. **Primary corridor:** the R40 connecting Mbombela in the south with Phalaborwa in the north is identified as a national route of strategic importance. Nodal development is supported along this route.
3. **Nodal development:** Mkhuhlu, Bushbuckridge, Acornhoek and Thulamahashe are identified as urban nodes that provide higher order functions to the broader community. Of specific importance are the proposals made for Mkhuhlu, being the nearest town to Hazyview.
4. Accordingly, the intension is to develop an industrial hub at Mkhuhlu (as first priority) and at Acornhoek (as second priority) by concentrating bulk industrial and agri-processing activities at these nodes.
5. **Railway line:** Proposals are made for a commuter railway line to promote the north-south link between Bushbuckridge and Mbombela. This is in line with the NATMAP proposals. It is further proposed that future railway stations be developed at Mkhuhlu and at other identified nodes.



### 3.2.4.2 Nkomazi Spatial Development Framework, 2009

The following proposals made for Nkomazi Local Municipality are considered noteworthy for Mbombela: (**See Plan: Nkomazi Spatial Development Framework**)

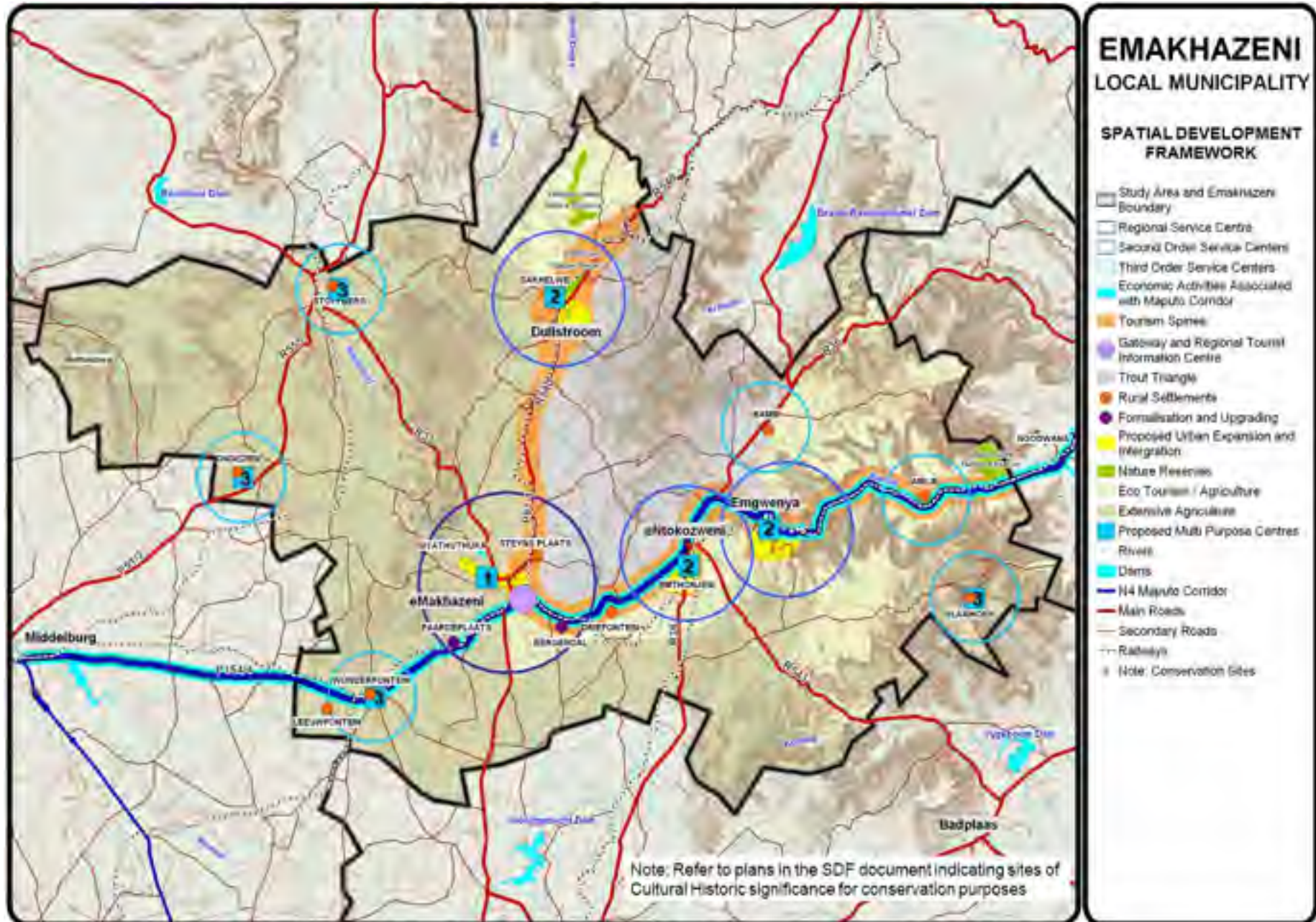
1. **Transportation corridor** – the N4 highway and railway line are identified as a transportation corridor. Mobility is a priority and should be enhanced through the provision of bypass roads within urban areas and selected interchanges and access points.
2. A mix of agriculture, conservation and tourism uses interspersed with activity nodes along the N4 are promoted.
3. **Conservation & eco-tourism** – the Crocriver Mountain Conservancy is a cross-border conservancy between Nkomazi and Mbombela. Opportunities for conservation, eco-tourism, hunting safaris and breeding opportunities have been identified.
4. **Agri-tourism** – The tourism potential provided by the Crocodile River should be exploited in an environmental sustainable way and must correspond with the provisions of the Kruger National Park Zoning Plan 2006. Eco- and agri-tourism initiatives are promoted along the Crocodile River.



### 3.2.4.3 Emakhazeni Spatial Development Framework, 2010

The following spatial proposals made for Emakhazeni Local Municipality are considered noteworthy for Mbombela (**See Plan: Emakhazeni Spatial Development Framework**).

1. **Nature Conservation, Eco-tourism/Agriculture:** the Tullach-Mohr Nature Reserve located in the eastern part of the Emakhazeni area is earmarked for eco-tourism and agricultural uses. The area comprises sensitive environmental features that should be conserved taking into consideration the balance between agriculture and tourism.
2. **N4 Maputo Corridor:** the N4 is earmarked as a tourism spine promoting tourist facilities in the form of tourist accommodation and tourist attractions. Furthermore, economic activities associated with the Maputo Corridor are supported along the N4 highway.
3. **Forestry:** plantations to the east contribute significantly to the economy of Emakhazeni and it is proposed that the potential for forestry be improved by constructing access roads to woodlots and to establish supportive economic infrastructure.



#### 3.2.4.4 Umjindi Spatial Development Framework, 2009

The following spatial proposals made for Umjindi Local Municipality's are considered noteworthy for Mbombela (**See Plan: Umjindi Strategic Spatial Development Framework**)

The spatial development strategies impacting on Mbombela include the following:

1. **Protected Areas:** the Barberton Nature Reserve located close to the Worcester Mine, where the R40 exits Umjindi to Mbombela comprises sensitive environmental features that should be conserved and sustainably use for commercial nature-based tourism and education.
2. **Conservancies:** the Crocriver Mountain and De Kaap Valley Conservancies are cross-border conservancies between Umjindi and Mbombela. These conservancies include ecological sensitive natural open spaces offering opportunities for conservation, eco-tourism, hunting safaris and breeding opportunities.

The following strategies are adopted for Planning Areas C and D, abutting Mbombela in the north.

**Area C:** (includes the area on the eastern and western side of the R40)

- The establishment of eco estates, tourism resorts, nature reserves and protected areas.
- The restriction of ad hoc tourism retail centres
- Encouraging the utilisation of the environment as economic asset in order to promote and develop agriculture/forestry and eco-tourism.

**Area D:** (includes the areas north and south of the R38 route between Barberton and Kaapmuiden)

- The efficient utilisation of existing mineral resources, providing an environment conducive for sustainable quality of life and the protection and utilisation of the agricultural and natural environment in support of tourism.

- Centralise future residential development into the existing Barberton/Emjindini development node.
- The provision of further activity nodes need to be restricted.

# UMJINDI SPATIAL DEVELOPMENT FRAMEWORK

**MAP 9 - 1  
UMJINDI  
STRATEGIC SF**



**Legend**

-  1st Order Activity Centre
-  Mining Centres
-  Rural Settlements
-  Airfields
-  Protected Areas
-  Conservancies
-  Forests
-  Agriculture

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### 3.2.4.5 Thaba Chweu Spatial Development Framework 2007

The following spatial proposals made for Thaba Chweu Local Municipality are considered noteworthy for Mbombela (**See Plan: Thaba Chweu Strategic Spatial Development Framework**)

The following strategies are adopted for Planning Areas G, I and J, abutting Mbombela in the south-east.

- The provision of forestry villages in accordance with the demand for local labour;
- Clustering of agri and forestry villages needs to be promoted in order to provide a sustainable economic and social infrastructure;
- The provision of eco-estates and golf estates need to be in line with policies as prescribed;
- Agricultural and forestry land needs to be conserved and optimally utilised;
- The provision of tourism facilities within the areas need to be promoted;
- The utilisation of tourism facilities for permanent or long-term residential use needs to be restricted; and
- The protection of the integrity and status of the Motlatse Canyon National Park by stringent land use management measures.



### 3.2.4.6 Draft Chief Albert Luthuli Spatial Development Framework 2011

Chief Albert Luthuli Municipality borders Mbombela to the south-west. The following proposals are made for the area abutting Mbombela, being Focus Area 2:

**(See Plan: Chief Albert Luthuli Spatial Development Framework):**

1. **Commercial forestry** - provision of infrastructure to support forestry i.e., roads and water supply. Providing basic services such as health and education for forestry labourers.
2. **Tourism** - utilisation of forestry areas for leisure activities e.g. hiking and camping; concentrating the establishment of tourism uses as first priority in areas closet to rural villages, main towns and easy access points from proposed tourism links.



### 3.2.5 Other initiatives

This section outlines other initiatives, besides government policies discussed above, that impact on Mbombela Municipality.

#### 3.2.5.1 Maputo Development Corridor Spatial Development Initiative (SDI)

The “Spatial Development Initiatives (SDI) programme is an interdepartmental investment strategy led by the National Department of Trade and Industry (DTI) and Department of Transport (DoT) and involves strategic initiatives by government aimed at the following:

- Crowding in of investment: this investment (including financial, technical and institutional resources) cannot only be made by the public sector and its parastatals agencies, but must also make sense for the private sector.
- Public-Private partnerships (PPPs)
- Inherent economic potential
- Rapid planning and delivery
- Restructuring the apartheid space economy
- Generating sustainable employment
- Maximising private sector investment
- Exploiting SA’s under-utilised location and economic advantages.

There are a number of these initiatives being pursued by national, provincial and local government in South Africa. The **Maputo Development Corridor (MDC)** is the most advanced and the best known of the SDI’s.

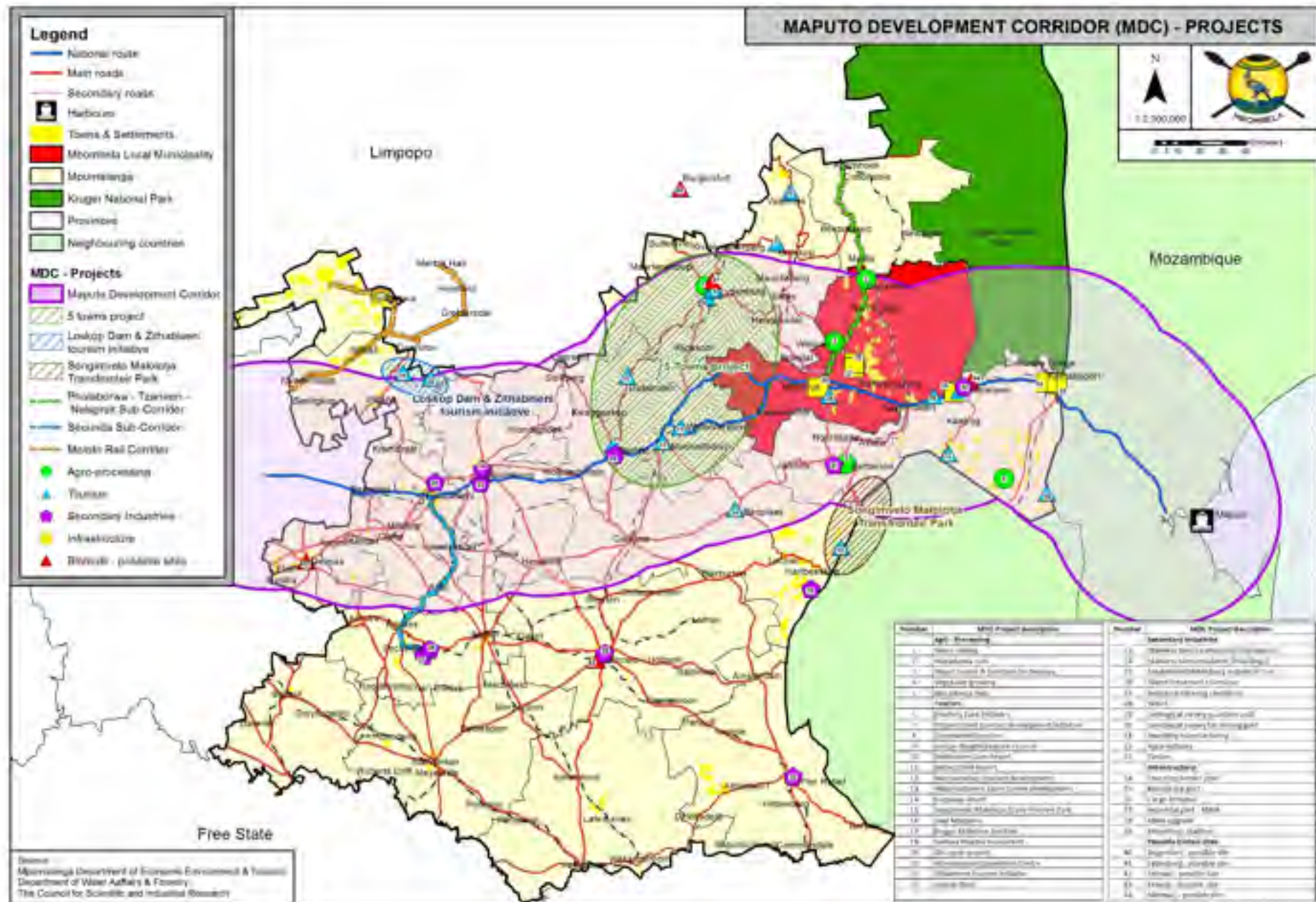
The Maputo Development Corridor focuses on the N4 route stretching from Witbank to Recano Garcia in Mozambique. The Corridor programme is more than just the construction of the road and includes the following key infrastructural projects:

- The railway line;
- Telecommunication;
- Dredging the harbour and upgrading port facilities; and
- The gas pipe lines

The Department of Economic Development, Environment and Tourism (DEDET) identified projects within a 100km (50km on either side) buffer along the N4 road (**See Plan: Maputo Development Corridor Projects**).

The projects located in Mbombela are:

- Agri-processing – Hazyview, White River
- Tourism – International Convention Centre in Nelspruit
- Infrastructural – Mbombela Stadium & KMIA industrial park and upgrade



### 3.2.5.2 The Nelspruit-Phalaborwa Spatial Development Initiative

The Nelspruit-Phalaborwa SDI aims to create better access between the port of Maputo and the mining town of Phalaborwa in the Limpopo Province. The main road, the R40, links Phalaborwa with Nelspruit and provides opportunities for supporting agriculture and tourism.

The following incentives support the SDI:

- The Bushbuckridge Local Municipality has been declared as an Integrated Sustainable Rural Development Programme (ISRDP) node, which prioritises the area for special development and funding from National Government.
- The Kruger to Canyon Biosphere Reserve, which links the Blyde River Canyon with the Kruger National Park. The desired state of the K2C is based on the following principles:
- Protection of sensitive biological environments, physical environments and water catchment areas.
- Promotion of business and industrial developments focussing on tourism.

### 3.2.5.3 Kruger National Park Management Plan, 2006

The Kruger National Park (KNP), bordering Mbombela to the east, forms part of the Great Limpopo Transfrontier Park measuring approximately 35 000km<sup>2</sup>.

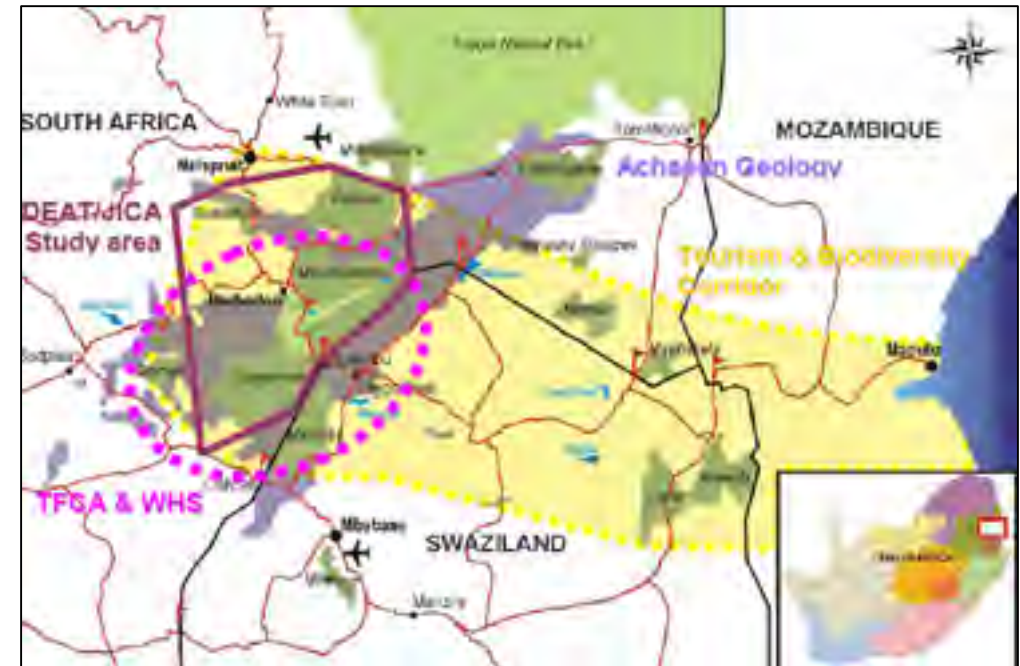
The Protected Areas Act of 2003 mandates SANParks to manage areas of national/international biodiversity, scenic beauty and cultural heritage importance. The KNP is managed by SANParks in terms of the Kruger National Park Management Plan 2006, which is reviewed every 5 years.

The Management Plan contains a zoning plan indicating what activities may take place in different areas varying from high intensity leisure to wilderness. The plan also proposes land use guidelines to municipalities adjoining the Kruger National Park, this is elaborated on later in this report.

### 3.2.5.4 Tourism & Biodiversity Corridor (TBC)

The TBC is a spatial development initiative between Swaziland and Mpumalanga that focuses on the development, promotion and support of sustainable, collaborative and internationally competitive tourism and conservation initiatives. Ultimately this corridor is intended to extend eastwards into southern Mozambique. Mbombela is impacted on by this initiative in the southern part.

Figure 7: Tourism & Biodiversity Corridor (TBC)



Source: Strategic Overview - From Barberton Mountainlands to World Heritage

This initiative promotes the utilisation of the undeveloped tourism development potential in rural areas that house poor communities, specifically the former homeland area.

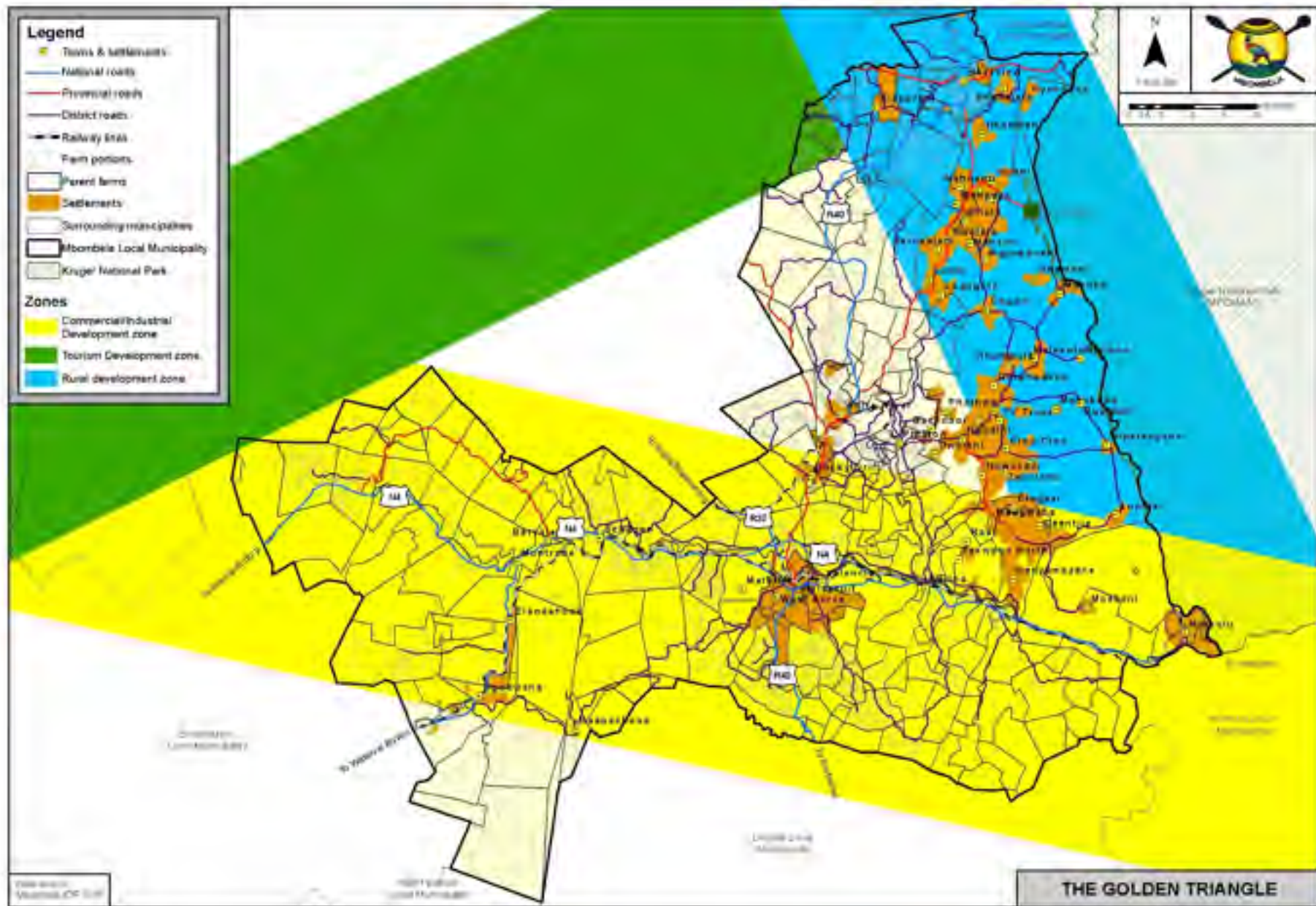
### 3.2.5.5 The Golden Triangle

The Mbombela Local Municipality has crafted the Sakha iMbombela turnaround strategy which made provision for The Golden Triangle. The Golden Triangle is a concept with very broad proposals that intends to guide the spatial development of the municipality.

The proposals of the Golden Triangle are briefly discussed below (**See Plan\_ : The Golden Triangle**):

1. **Commercial or Industrial Development Zone:** The “**yellow belt**” along the N4 highway has been identified as an area with industrial and commercial development potential.
2. **Tourism Development Zone:** The “**green belt**” including the R40 road linking Nelspruit with Hazyview has been identified as an area with tourism potential due to the existence of Kruger National Park.
3. **Rural Development Zone:** The “**blue belt**” has been identified as an area in dire need of development and the implementation of rural development and service delivery programmes and projects.





## 4 CHAPTER 4: SPATIAL ANALYSIS

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

- Environmental factors such as resources, climate, landforms (topography) and water features i.e. agriculture, availability of minerals and metals, and rivers.
- Spatial characteristics and location of, for example the distance between activities, i.e. where people stay and where they work.
- Other factors including cultural factors, economies of scale, political and socio-economic systems.

The spatial analysis is unpacked under the following headings:

- Biophysical environment;
- Socio-economic; and
- Built environment (urban & rural).

### 4.1 Biophysical environment

This natural capital base is the primary or foundational layer on which the socio-economic and built environments must feed, in a sustainable way. This section gives a brief description of the following biophysical elements in Mbombela:

- Climate
- Geology
- Economic geology
- Topography
- Hydrology
- Vegetation
- Biodiversity
- Protected areas
- Agricultural resources

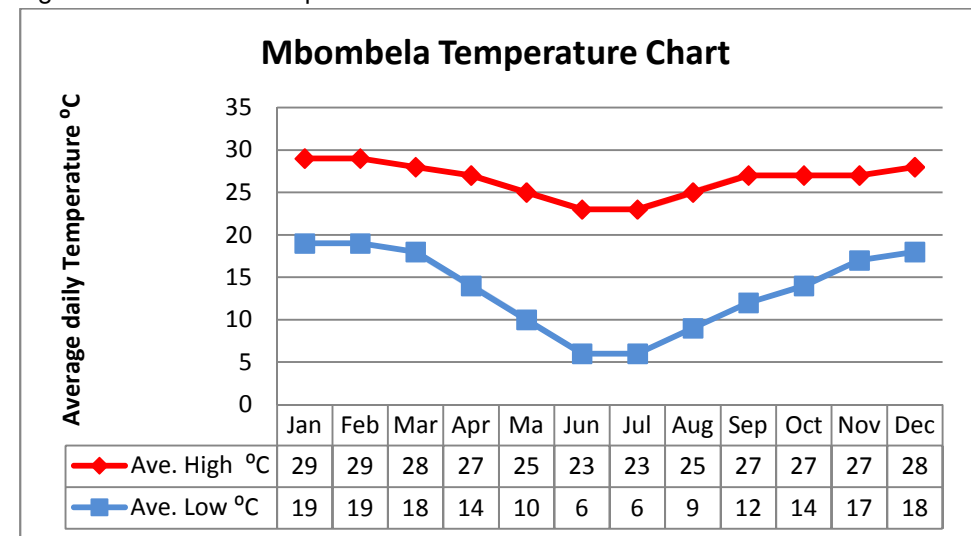
This section is concluded by outlining spatial implications and interpretation of the biophysical environment.

#### Climate

Mbombela is characterised by a humid subtropical climate with mild winters and warm summers. Average monthly minimum and maximum temperatures and precipitation for Mbombela is provided in Figure\_ and Figure\_ below.

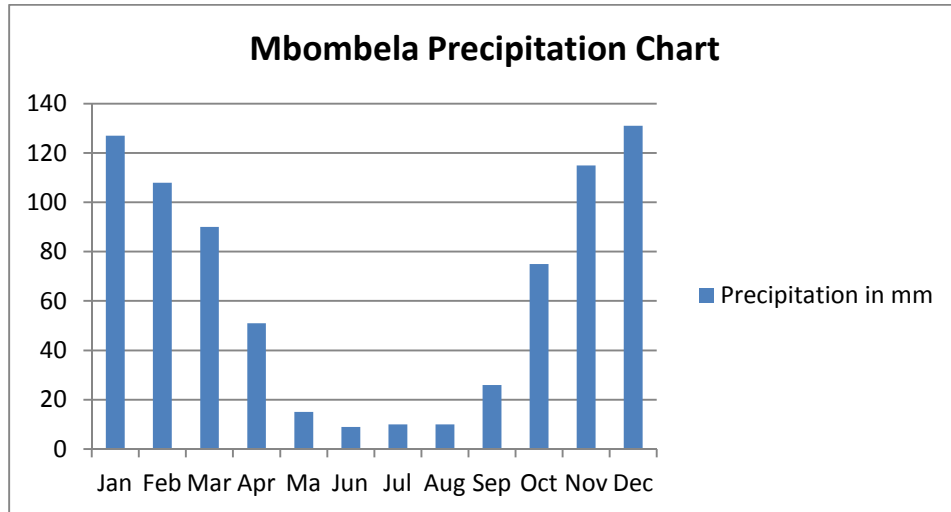
The climatological information presented is based on monthly averages for a 30-year period from 1960 to 1990.

Figure 8: Mbombela temperature chart



Source: South African Weather Service

Figure 9: Mbombela precipitation chart



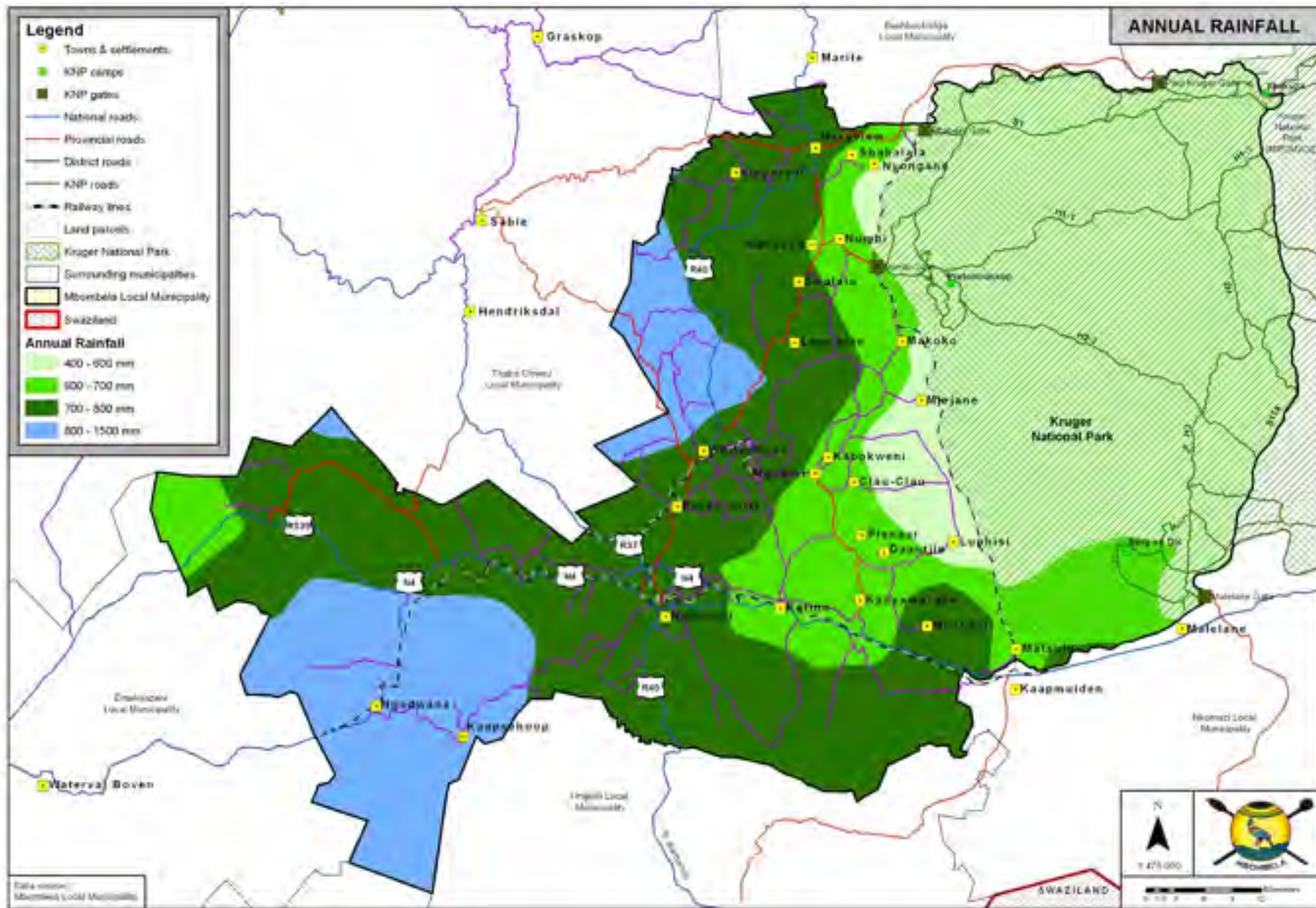
Source: South African Weather Service

Evident from the figures above the following:

- The average daily temperature fluctuates from 6 °C in winter (June and July) to 29 °C in summer (January, February).
- The average rainfall varies from 10mm during the winter (June, July and August) to 120mm during summer (November, December, January and February).
- The highest average rainfall is recorded in December and January.

The geographic distribution of rainfall in Mbombela is depicted in **Plan\_: Annual Rainfall**. The following is noted:

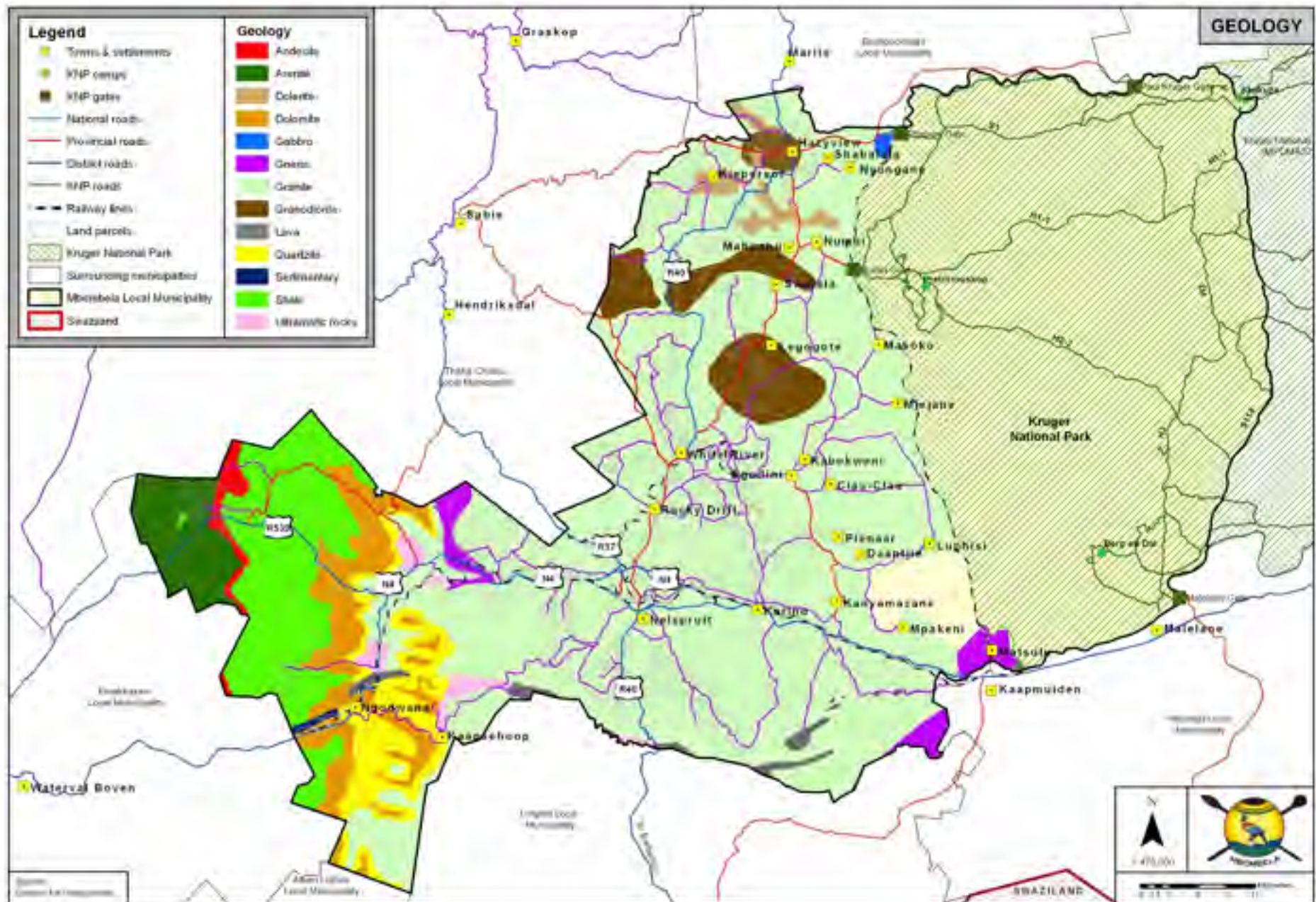
- The highest rainfall (800-1500mm) is recorded in the areas surrounding Ngodwana, Kaapsehoop, and Elandshoek to the west and in the area north-west of White River town.
- The Crocodile River catchment area and a north-south belt, including White River, Sabie River, Longmere Dam, Klipkoppie Dam and Da Gama Dam fall within a 700–800mm rainfall zone.
- The eastern areas receive the lowest annual rainfall between 400–700mm.



#### 4.1.1 Geology

The geology types occurring in the municipal area can be summarised as follows  
**(See Plan: Geology):**

- A large portion of Mbombela is underlain with the Granite Group which covers most of the central, northern and eastern areas.
- Highly permeable and erodible, colluvial sands and residual soils overlay the granitic bedrock (Potassic Gneiss and Migmatite) in the Kanyamazane area.
- The western part has a variety of geology groups including Shale, Dolomite, Quartzite, Andesite, Ultramatic rocks and Gneiss. Dolomite rocks give rise to caustic features, the most notable in Mbombela is the 1.8km long Sudwala Caves.
- Hazyview is underlain by Granodiorite and Matsulu is underlain by Gneiss.



#### 4.1.2 Economic Geology

Economic geology is concerned with earth materials that can be used for economic and/or industrial purposes. These include precious and base metals, non-metallic mineral, construction grade stone, petroleum minerals, coal and water. **(See Plan\_: Economic Geology).**

Minerals and metal deposits deriving from the geology groups in Mbombela include **gold, chrysotile (asbestos) and limestone**, mainly located along the escarpment in the western part. The central, northern and eastern sections of Mbombela do not contain any minerals worthy of exploitation.

Mbombela has limited mining resources worthy of driving the economy as compared to other municipalities within Mpumalanga that have gold and coal mines.

Mining deposits and the status thereof are depicted on **Plan\_: Mining Land**. The following are considered noteworthy:

- The mine north of Kaapschehoop is continuously producing asbestos.
- Crusher quarries exist at Alkmaar, Karino, White River and Hazyview.
- In the western part there are various localities where gold deposits occur and where it has already been exploited.
- Two mines situated north and north-east of Kaapsehoop respectively, are abandoned.
- Small scale illegal sand mining is taking place from river beds, mainly in the Nsikaz area (Gutshwa River).





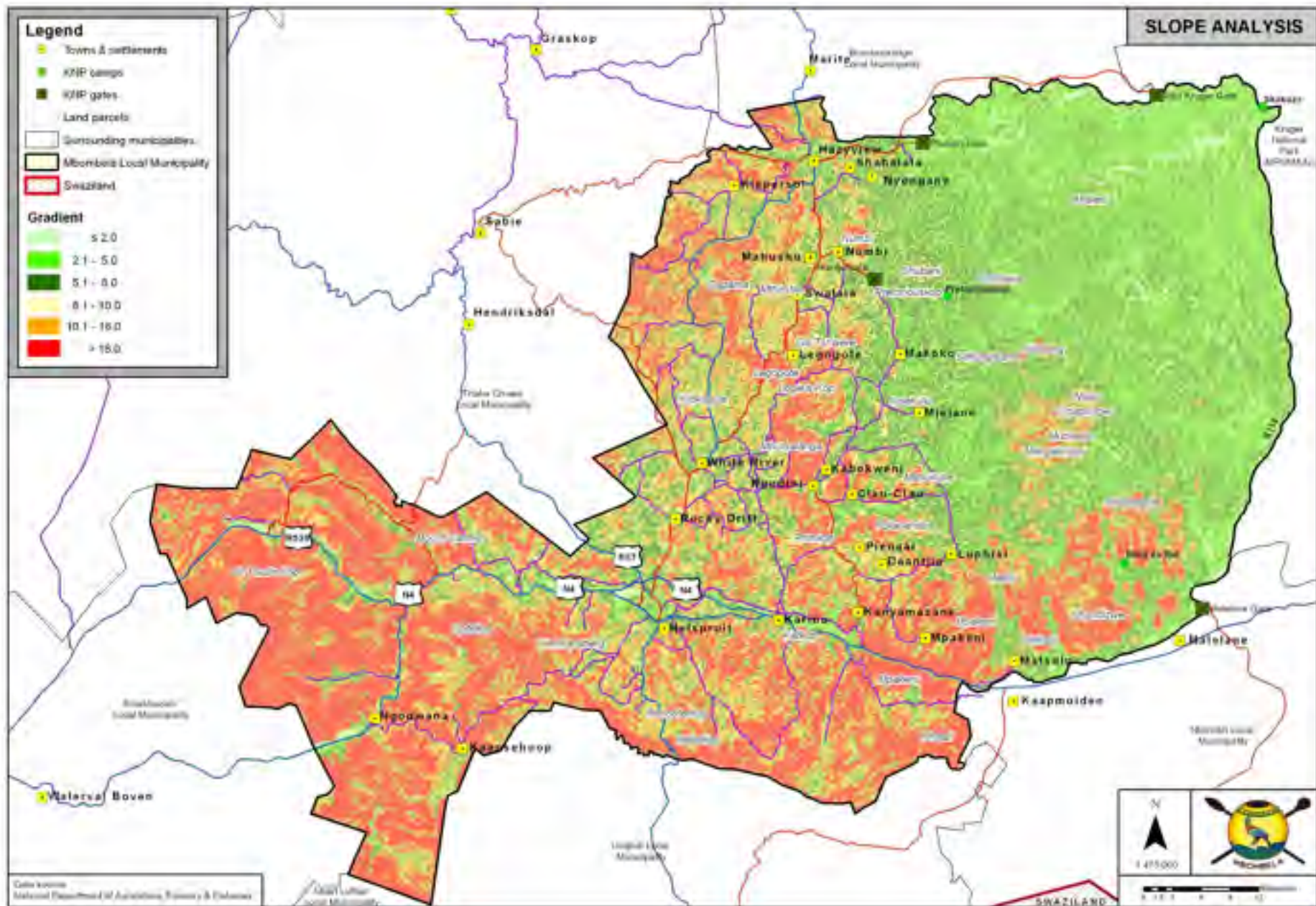
### 4.1.3 Topography

Mbombela lies on the eastern edge of the Drakensberg Mountain range. The area can be divided into three distinct physiographic regions based on the north-south orientation of the Drakensburg Mountain range, namely:

- Highveld,
- Escarpment and
- Lowveld.

The topography ranges from mountainous areas in the western parts to gently sloping areas in the eastern parts. The area falls from a height of approximately 1200m above sea level in the southern-western part to 350m in the north-eastern parts.

A slope analysis, based on slope data received from the National Department of Agriculture, Forestry and Fisheries, presents areas with slopes that vary between  $\leq 2\%$  (level to very gently slope) and  $\geq 20\%$  (steep slopes). Accordingly, most of the municipality consists of steep slopes (**See Plan\_: Slope Analysis**).



#### 4.1.4 Hydrology

Mbombela is situated within two sub-catchments that constitute the main Nkomati River catchment area. The two sub-catchments are the:

- Crocodile River catchment area and the
- Sabie-Sand catchment area

The Crocodile River runs in a west-east direction across the middle of the municipality and the Sabie River runs in a west-east direction along the northern boundary of the municipality.

The Elands River, running south-east to north-west, is the main tributary flowing into the Crocodile River. The North Sand River, running north-south, is the main tributary flowing into the Sabie River.

Other rivers of note include: **(See Plan: Water Bodies):**

- Ngodwana River
- Nels River
- White River
- White Waters River
- Gutshwa River
- Nsikazi River
- Houtbosloop River
- Lupelule River
- Rietspruit River
- Blinkwater River

The main dams in Mbombela include:

- Longmere
- Ngodwana
- Da Gama
- Klipkopje
- Primkop

- Nsikazana
- Friedenheim
- Kwena (situated outside Mbombela in Thaba Chweu)
- Witklip (situated outside Mbombela in Thaba Chweu )
- Inyaka (situated outside Mbombela in Bushbuckridge)

#### 4.1.5 Geohydrology

In terms of geohydrological features the following is noted for Mbombela:

- The Kanyamazane area is underlain by a granite aquifer which is estimated to store approximately 5000m<sup>3</sup> of water per km<sup>2</sup> and receives ±25 000m<sup>3</sup> per annum of recharge from rainfall. Large exploitation of groundwater is limited due to the physical hydraulic nature of granite aquifers. Groundwater quality is good although contamination is taking place. Groundwater drainage is in an easterly direction.
- The area to the north of Nelspruit is typically underlain by un-oxidised residual dolomite soils however some of the areas appear to be oxidised and as a consequence are likely to be very permeable. Other areas may have sinkholes forming as a result of the poor drainage and where the dolomite rock is less than 6 meter deep.



#### 4.1.6 Vegetation

The vegetation of Mbombela can be described as follows:

- The most dominant vegetation type is the Legogote Sour Bushveld, covering most of the western, central and northern parts.
- The Highveld regions in the west is characterised by grassland vegetation. Typical plants include red-hot pokers, pineapple, lilies, scillas, gladioli, watsonias, brunsvigias and numerous terrestrial orchards and summer rainfall proteas.
- The Lowveld region is characterised by the Croc Gorge Mountain Bushveld, Malalane Mountain Bushveld and Pretoriuskop Sour Bushveld.
- The Escarpment is characterised by the Northern Escarpment Dolomite Grasslands, Steenkamsberg Montane Grassland, Northern Escarpment Dolomite Grassland and Long Tom Pass Montane.



### 4.1.7 Biodiversity

The Mpumalanga Biodiversity Conservation Plan (MBCP) is a spatial plan that groups the province’s biodiversity assets into six conservation categories based on the measured distribution of hundreds of biodiversity and ecological features throughout the province.

The MBCP for Mpumalanga was superimposed on the municipal area. The categories and areas covered by each category are indicated in **Plan\_ : Terrestrial and Aquatic Biodiversity Assessment.**

The following is evident from the plan:

- Protected areas – see next section for more detail.
- Irreplaceable areas mainly include the Crocodile Gorge and western escarpment areas stretching from Elandshoek to Kaapsehoop, with a few patches scattered in Schoemanskloof.
- Highly significant areas are predominantly found in the western part of the municipality. It is also found, to a lesser extent, around Barberton Nature Reserve, at Luphisi, Mpakeni, Numbi and between White River and Rocky Drift.
- Important and necessary – includes an area stretching from Numbi to Legogote, an area at Rocky Drift, an area stretching from Mataffin to Schagen and further north-east and a few patches along the southern municipal boundary.
- Least concern – these areas are focused in the eastern part of the municipality, east of the R40.
- No natural habitat remaining – includes the areas that are settled on, forestry areas and areas used for irrigation purposes.
- Ecological and aquatic corridors – The Sabie and Crocodile Rivers are both categorised as ecological and aquatic corridors.

Table 9: provides a brief description of the different biodiversity categories

Table 9: Description of Biodiversity Assessment Categories

Category	Description of biodiversity assessment
<b>Protected Areas (PAs)</b>	These include all formally proclaimed PAs on both state and private land. All are managed for biodiversity conservation and sustainable use. Such use includes: commercial nature based tourism, education, and limited production and harvesting of wild resources, especially game animals.
<b>Irreplaceable</b>	Irreplaceable areas are those of highest biodiversity value outside the formal PA network. They support unique biodiversity features, such as endangered species or rare habitat patches that do not occur anywhere else in the province. These features have already been so reduced by loss of natural habitat, that 100% of what remains must be protected to achieve biodiversity targets.
<b>Highly Significant</b>	Highly significant areas are those where biodiversity has been heavily compromised and very few options remain to meet biodiversity targets. Natural vegetation cover in these areas should be maintained or restored. Any significant habitat loss may cause these areas to become irreplaceable.
<b>Important and Necessary</b>	Biodiversity in this category is relatively intact. It represents the areas which most efficiently contribute to meeting biodiversity targets and minimise land use conflict. If biodiversity is lost from these areas, larger areas will be required elsewhere for targets to be met.
<b>Least Concern</b>	These areas have biodiversity value in the form of natural vegetation cover. Although they are not currently required in order to meet biodiversity targets, they do contribute significantly to functioning ecosystems, including ecological connectivity.
<b>No Natural Habitat Remaining</b>	This category covers the rest of the Province in which natural vegetation has been lost. It includes all land transformed by urban / industrial development and cultivation. Biodiversity is irreversibly changed, reduced to levels that are virtually dysfunctional. These landscapes have only residual or negative effects on the functioning of natural ecosystems.
<b>Ecological Corridors</b>	The purpose of ecological corridors is to provide intact mega-pathways for long-term biological movement. They are selected primarily along river-lines and altitudinal gradients to provide for the natural retreat and advance of plants and animals in response to environmental change. Ecological corridors function at the landscape scale and for the very long term. Natural vegetation in corridors should be maintained, loss of natural habitat minimised, and restoration encouraged.

Source: Mpumalanga Biodiversity Conservation Plan

Land development guidelines for each category are provided in Chapter 9 under land use management guidelines.





#### 4.1.8 Protected areas

Conservation initiatives that are in place to protect the biodiversity and expand the conservation footprint of Mbombela are indicated in the table below.

The MBCP categorises protected areas into 3 groups: **(See Plan\_: Protected Areas.**

- Group 1 = Formal protected areas including National Parks, Provincial Parks and Nature Reserves
- Group 2 = Private protected areas including Municipal, Private and leased-land Nature Reserves
- Group 3 = Unsecured protected areas including SA Natural Heritage Sites, Conservancies on private or state owned land.

Most protected areas listed in the table below span across the municipal boundary.

Table 10: Protected areas

Name	Category	Size (ha)
<b>Mount Carmel</b>	Conservancy	4751
<b>Elands Valley</b>	Conservancy	35575
<b>Brondal</b>	Conservancy	5912
<b>De Kaap Valley</b>	Conservancy	2415
<b>Crocodile Mountain</b>	Conservancy	29171
<b>Hazyview-Kiepersol</b>	Conservancy	22792
<b>Jock of the Bushveld</b>	Conservancy	4609
<b>Chariessa</b>	Conservancy	70
<b>Wonderkloof</b>	Nature Reserve	829
<b>Barberton</b>	Nature Reserve	1305
<b>Coetzeestroom</b>	Nature Reserve	1578
<b>Starvation Creek</b>	Nature Reserve	521
<b>Blouswaelvlakte</b>	Nature Reserve	427
<b>Methethomusha</b>	Nature Reserve	7184

Name	Category	Size (ha)
<b>Kruger National Park</b>	Nature Reserve	
<b>Kudus Hoek</b>	Natural Heritage Site	2 020
<b>Mbesan</b>	Natural Heritage Site	1 882
<b>Blue Swallow</b>	Natural Heritage Site	470
<b>HL Hall Nature Reserve</b>	Natural Heritage Site	±100
<b>Inhlaba</b>	Natural Heritage Site	±50
<b>Mbobo Mkhulu Cave</b>	Natural Heritage Site	843
<b>Poplar Creek</b>	Natural Heritage Site	2875
<b>Spinnekop se nes</b>	Natural Heritage Site	±20
<b>Sudwala Caves / Rainforest</b>	Natural Heritage Site	146
<b>Lowveld Botanical Gardens</b>	Natural Heritage Site	-

Source: Mpumalanga Biodiversity Conservation Plan and State of the Environment Report for Mbombela, 2003

The largest protected area is the Kruger National Park followed by the Mthethomusha Nature Reserve situated on the border of the Kruger National Park.

The plateau at Kaapsehoop is an important area for conservation of plants, particularly herbaceous grasslands species. This area also has the third largest breeding population of Blue Swallow in South Africa.

The Crocodile Gorge has a high scenic value and a high diversity of habitats and is considered an area of particular ecological and conservation importance.



### 4.1.9 Agricultural resources

The National Department of Agriculture, Forestry and Fisheries developed an Agricultural Land Capability system for the whole of South Africa. The agricultural land capability system and applicability thereof to Mbombela is briefly discussed below.

#### 4.1.9.1 Agricultural Land Capability

Agricultural land capability is the total suitability for use, in an ecologically sustainable way, for crops, for grazing, for woodland and for wildlife.

The land capability groups and applicable land use options are indicated in the table below:

Table 11: Land use options per capability group

Land capability groups	Land use options
<b>Arable</b>	Wildlife, forestry, light grazing, moderate grazing, intensive grazing, poorly adapted cultivation, moderately well adapted cultivation, intensive well adapted cultivation, very intensive, well adapted cultivation
<b>Grazing</b>	Wildlife, forestry, light grazing, moderate grazing
<b>Wildlife</b>	Wildlife

(Source: After Smith, 1998)

Agricultural land capability categories in Mbombela are indicated in the plan below: **(See Plan: Agricultural Land Capability)**. Accordingly, the following is noted:

- Arable land occurs in the central areas and along the eastern boundary.
- Grazing land occur on the Escarpment and Highveld regions in the west, as well as along a north-south strip stretching from Hazyview to the Croc River Mountain Conservancy in the south.
- Wilderness areas are found along the southern boundary and in the Crocodile Gorge.

Agricultural land capability is also categorised into very low, low, medium and high. **(See Plan\_ : Agricultural Land Capability)**. Accordingly the following is noted:

**Very low:** The land with a very low agricultural capability coincides with the mountainous areas.

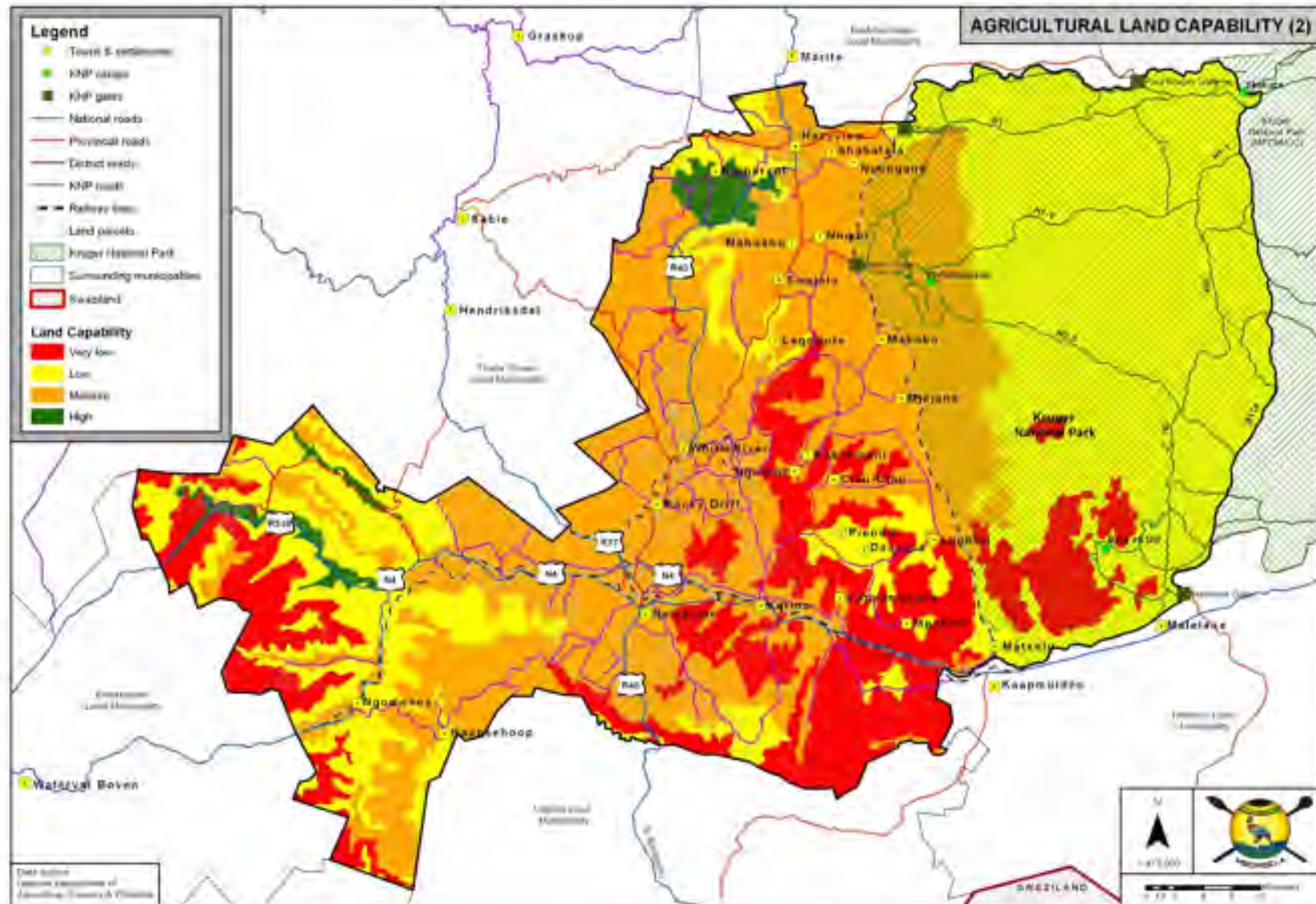
**Low:** Land with a low agricultural capability is located in the Kruger National Park, Schoemanskloof, Ngodwana, at Pienaar and Daantjie and north-east of Legogote.

**Medium:** The larger extent of the municipality contains land with a medium agricultural capability

**High:** Land with a high agricultural capability is located at Kiepersol to the north and along the Crocodile River and its tributary to the west.

These place-bound opportunities and constraints reflect in the current distribution of the main agricultural production types in Mbombela being irrigation, citrus, forestry and crop farming.





#### 4.1.10 Spatial interpretation of biophysical environment

The weathering of different geology types determine the type of soils (depth, texture etc.), minerals and metals to be found in different areas, which together with other factors, determines mining possibilities, agricultural opportunities and vegetation types.

The following deductions are made from the biophysical environment:

- A sub-tropical climate allows for a wide variety of crops including banana farming, tobacco, avocados, litchis, sugar cane, mangoes, oranges, lemons, tangerines and macadamia nuts.
- The low annual rainfall (400mm-700mm) coupled with sandy soils make farming a less viable option to marginalised communities living in the **eastern areas**. This is important to consider if land reform projects (agrarian transformation) are identified.
- Commercial farming is located in the higher rainfall areas to the west and south. The distribution of irrigation areas are dictated by the location of water resources such as the Crocodile and Sabie Rivers as well as dams.
- The location of water reservoirs (dams), mainly found in the western higher rainfall areas, makes water provision to the eastern part challenging.
- The granite group which covers most of the central, northern and eastern parts of the municipality prohibits large exploitation of groundwater due to the physical hydraulic nature of granite aquifers.
- Due to steep gradients and erodability of the weathered granites, **gravel roads** are damaged after each heavy rain storm, mainly in the eastern Nsikazi area.
- More metals and minerals (gold, asbestos, limestone) derived from the geology groups located in the western part of the municipality and therefore more mining activities.
- Small scale illegal sand mining, mainly from river beds in the Nsikaz area (Gutshwa), poses a threat to the environment due to environmental degradation.

- The densely populated eastern areas are characterised with poor waste disposal conditions (VIP toilets) and underlain by sandy soils. This results in groundwater contamination and stormwater management problems.
- Important ecological ecosystems tend to coincide with ridges, mountainous areas and river systems.
- Most ecosystems, of which the biodiversity are regarded as **irreplaceable or highly significant**, enjoy some form of protection albeit nature reserves or conservancies.
- Irreplaceable or highly significant biodiversity areas with no form of protection include Schoemanskloof, Crocodile Gorge (north of the N4) and the area south of Coetzeestroom Nature Reserve.
- The eastern part of Mbombela is bordered by the protected Kruger National Park. Several other private nature reserves and natural heritage sites exist within the municipality.

#### Spatial implications

##### Geology

- Caution must be taken when developing on less ideal geological terrain with specific reference to risks and costs.
- From a geological perspective “no development areas” include areas affected by undermining, dolomite and areas where heaving clays are present.
- The dolomite band stretching from Sudwala southwards is therefore considered a “no go” area for urban development.
- Areas underlain by geology types not suitable for urban development must be excluded from development and included into a conservation zone or an open space system.

### **Topography**

- Slopes greater than 20% are generally considered too steep for conventional housing and urban development.
- The provision of engineering services is expensive in areas with steep slopes.
- Environmental legislation requires the protection of granite or rocky outcrops due to the diverse and sensitive vegetation types associated with these features.
- Areas regarded not suitable for development due to topographical constraints should form part of a municipal open space system

### **Natural environment**

- Conservation areas including river systems, mountainous areas, heritage areas with a unique biodiversity need to be linked to form a continuous open space lattice.
- The open space lattice requires special interventions in order to maintain the environmental integrity as the environment is consistently threatened by the demand for land for human settlement (industrial and residential) and agricultural purposes.

## 4.2 Socio-economic environment

The socio-economic environment reflects the relationship between population requirements and the natural resource base. In other words, the distribution of the population is directly influenced by the bio-physical environment.

This section gives a brief description of the following socio-economic elements in Mbombela:

- Population size and growth
- Population distribution
- Age profile
- Race profile
- Income profile
- Education
- Health
- Employment profile
- Economic sectors
- Employment per sector
- Travel patterns
- Land ownership
- Land reform

This section is concluded by an interpretation of the socio-economic environment and the spatial implication thereof.

### 4.2.1 Population size and growth

Table\_: Population size

	2001 (CS)	2007 (CS)	2010 (est.)	Growth Rate
<b>Mbombela LM</b>	476 593	527 203	546 411	1.2%

Source: Economic Inputs for the Mbombela Bulk Water Strategy, May 2011

The average population growth rate was 1.2% over the last decade (2000-2010). The contributing factors might be fertility & mortality rates and migration patterns in

search for economic opportunities. Illegal immigration has probably inflated these figures but no reliable source to indicate this is available.

More detailed populations projections are made later on in this report.

- The population density is ±100 people/km<sup>2</sup> (546 411 people/5394km<sup>2</sup> including the Kruger National Park)
- The population density is ±160 people/km<sup>2</sup> (546411 people/3411km<sup>2</sup>, excluding the Kruger National Park)

### 4.2.2 Population distribution

Approximately 87% of the total Mbombela Local Municipality population resides in the Nsikazi corridor, with 10% residing in the Nelspruit-White River Corridor and 3% residing elsewhere in Mbombela.

### 4.2.3 Age profile

Table 18 illustrates the age profile of the municipality:

- Mbombela has a fairly young population with 62% of the population being 29 years and younger, in 2007.
- The population group aged 65+ presents the smallest percentage 5%.
- 65% of the population is aged between 15-64 years. This age group is classified as Predominantly Economic Active (PEA) and forms the labour supply for the economic activities in the municipality.

Table 18: Age profile

Age group	2001	%	2007	%	
0 - 4	52155	11	54546	10	↓
5 - 9	54738	11	54599	10	↓
10-14	57905	12	58972	11	↓
15 - 19	57321	12	61689	12	↔
20 - 24	46725	10	55184	10	↔
25 - 29	44681	9	46329	9	↔



30 - 34	35773	8	43486	8	↔
35 - 39	32442	7	34618	7	↔
40 - 44	23542	5	29584	6	↑
45 - 49	19476	4	22256	4	↔
50 - 54	13894	3	19251	4	↑
55 - 59	9715	2	14532	3	↑
60 - 64	9318	2	9313	2	↔
65 - 69	6103	1	8379	2	↑
70 - 74	5748	1	5157	1	↔
75 - 79	2970	1	4717	1	↔
80 - 84	2650	1	1586	0	
85+	1437	0	3000	1	
<b>Total</b>	<b>476 593</b>	<b>100</b>	<b>527 198</b>	<b>100</b>	

Source: Stats SA 2001 and 2007

#### 4.2.4 Race profile

Table 13 illustrates that the Black population constitutes the largest segment (90%) of Mbombela's population followed by the White population (9%). The Coloured and Indian population groups represent a small segment of the total population.

Table 13: Race profile

Race	2001	%	2007	%	
Black	443653	93	473017	90	↓
Coloured	3809	1	4048	1	↔
Indian	1540	0	2052	0	↔
White	27591	6	48086	9	↑
<b>Total</b>	<b>476 593</b>	<b>100</b>	<b>527 203</b>	<b>100</b>	

Source: Stats SA 2001 and 2007

#### 4.2.5 Income profile

The income profile gives an indication of people's ability to meet their basic needs in the acquisition of food, shelter, clothing and basic services.

Table 17 indicates the income profile between 2001 and 2007:

- A decrease from 66% in 2001 to 42% in 2007 in the number of persons with no income.
- 83% of the total population earned below the poverty line (income less than R1600 per month) in 2007.

Table 17: Income per person

Income category	2001	%	2007	%	
No income	312366	66	222666	42	↓
R 1 - R 400	49206	10	113409	22	↑
R 401 - R 800	53400	11	38245	7	↓
R 801 - R 1600	24257	5	64225	12	↑
R 1601 - R 3200	16535	3	24309	5	↑
R 3201 - R 6400	11573	2	17524	3	↑
R 6401 - R 12800	5941	1	18027	3	↑
R 12801 - R 25600	1955	0	9818	2	↑
R 25601 - R 51200	711	0	2692	1	↑
R 51201 - R 102400	344	0	612	0	↔
R 102401-R 204800	216	0	230	0	↔
R 204801 or more	89	0	67	0	↔
No response	0	0	10898	2	↑
Institutions	0	0	4481	1	↑
	<b>476593</b>	<b>100</b>	<b>527203</b>	<b>100</b>	

Source: Stats SA 2001 and 2007

## 4.2.6 Education

Table 19 indicates the literacy level of the municipality between 2001 and 2007:

- A decrease from 25% in 2001 to 14% in 2007 in the number of persons with no schooling.
- An increase in the number of persons who completed primary school from 6% in 2001 to 8% in 2007.
- An increase in the number of persons who attained higher education from 8% in 2001 to 11% in 2007.

Table 19: Education levels

Education Level	2001	%	2007	%	
No schooling	63259	25	52699	14	↓
Some primary	39231	15	21704	6	↓
Completed primary	14971	6	28459	8	↑
Some secondary	62742	25	157970	43	↑
Grade 12/Std 12	54908	22	69256	19	↓
Higher	19361	8	40552	11	↑
<b>Total</b>	<b>254472</b>	<b>100</b>	<b>370640</b>	<b>100</b>	

Source: Stats SA 2001 and 2007

Evident from the **Plan\_**: **educational facilities** are evenly distributed throughout the municipality. Most semi-urban areas and towns have a primary school and secondary or combined school within a reasonable travel time or walking distance.

The levels of education are generally low, which can be attributed to poverty, lack of access to and poor quality of educational facilities.

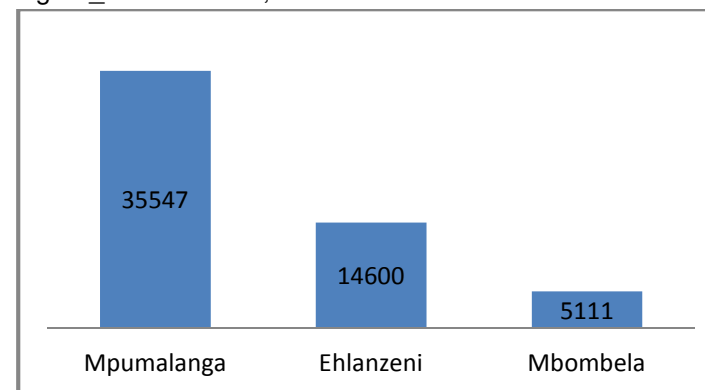
## 4.2.7 Health

### 4.2.7.1 HIV/Aids Profile

HIV/AIDS is a major threat to health, community development, political gains and economic growth:

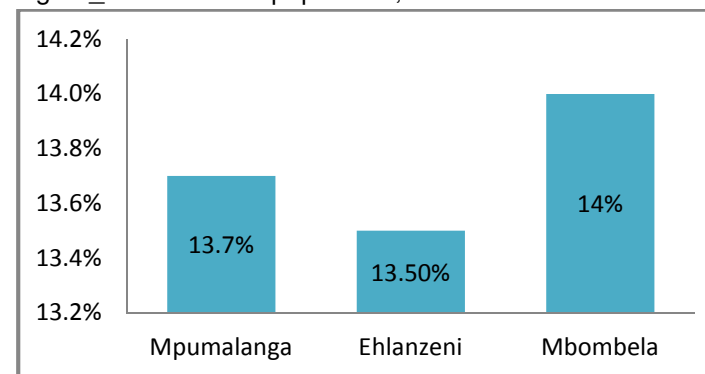
- Figure \_: illustrates that an estimated 5100 people in Mbombela died of AIDS and related illnesses in 2010.
- Figure \_: illustrates that 14% of Mbombela’s population is infected with HIV.

Figure\_: Aids Deaths, 2010



Source: Economic Inputs for the Mbombela Bulk Water Strategy, May 2011

Figure\_: HIV infected population, 2010



Source: Economic Inputs for the Mbombela Bulk Water Strategy, May 2011

According to the Ehlanzeni District Municipality HIV/AIDS Unit, the following trends prevail in terms of HIV/AIDS:

#### 4.2.7.2 Mpumalanga trends

In 2008, the Mpumalanga provincial HIV prevalence amongst 15–49 year antenatal woman was 35.5%. It is the only province that has shown an increase in the overall prevalence in the past years from 32.1% in 2006 to 34.6% in 2007 and 35% in 2008.

#### 4.2.7.3 District trends

When district results are compared, only Ehlanzeni district has shown a decrease in HIV Prevalence, while Gert Sibande’s HIV prevalence increased from 38.9% in 2006 to 40.5% in 2008 and Nkangala from 26.8% in 2006 to 31.8% in 2008.

#### 4.2.7.4 Mbombela trends

Mbombela has the second highest HIV/AIDS prevalence in the Ehlanzeni District. More than 5000 people already receive ARV’s in Mbombela. There are more than 300 orphans and more than 2000 vulnerable children in Mbombela who needs care and support.

**Plan\_:** shows the distribution of health facilities (clinics and hospitals) throughout the municipality. This distribution is generally aligned with the population distribution, however hospitals are clustered in Nelspruit with only two hospitals located in the eastern Nsikazi area.

#### 4.2.8 Employment profile

Table 14 indicates the employment status of Mbombela between 2011 and 2007:

- The number of employed people increased from 62% in 2001 to 76% in 2007.
- Unemployed decreased from 38% in 2001 to 24% in 2007.

Table 14: Employment status

Employment status	2001	%	2007	%	
Employed	108237	62	165594	76	↑
Unemployed	65687	38	52292	24	↓
Total	173924	100	217886	100	

Source: StatsSA 2001 Census and Stats SA 2007 CS

**Economically active:** refers to all the people aged between 15 and 64 years that are able and willing to take part in economic activities (excluding those individuals not actively looking for work, students, pensioners, housewives, etc). The following categories are included:

- **Employed:** all individuals that are currently being employed and paid by the formal sector of the economy.
- **Unemployed:** all individuals that are actively looking for a job in the formal sector of the economy, and cannot find one.

**Economically inactive:** all individuals who are not actively searching for employment or those individuals that do not have the capacity to become employed such as young children.

#### 4.2.9 Economic sectors

The economic performance of a region can be measured by Gross Value Added (GVA). GVA is the difference between the value of goods and services produced and the cost of the raw materials and other inputs which are used in production.

Table\_ illustrates the following:

- Manufacturing, finance and business and government services are the sectors that contributed most to (GVA) in Mbombela.
- Mining only contributes 2.5% of the total GVA, while Mpumalanga produces a high 17.6%. This holds opportunities for Mbombela to provide services for this growing sector in the province.
- Agriculture in Mbombela is declining as the economy moves towards providing services, but potential for growth still exist with new farming

techniques being created to accommodate lack of land and weather changes.

Table\_: Sectoral contribution to GVA

Sector	1999	2004	2009
<b>Primary Sectors</b>			
Agriculture	4.5%	4.5%	3.6%
Mining	3.1%	2.8%	2.5%
<b>Secondary Sectors</b>			
Manufacturing	18.7%	19.2%	17.8%
Utilities	2.0%	2.2%	2.0%
Construction	2.8%	2.5%	3.2%
<b>Tertiary Sectors</b>			
Trade Sector	16.1%	15.3%	13.4%
Transport and Communications	10.5%	11.5%	10.2%
Finance and Business Services	19.1%	18.8%	21.7%
Community Services	7.8%	8.3%	9.2%
Government Services	15.2%	14.9%	16.4%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: Economic Inputs for the Mbombela Bulk Water Strategy, May 2011

#### 4.2.10 Employment per sector

Table \_: illustrates the formal employment as a percentage contribution by each sector. Accordingly the sectors that contribute the most to employment are:

- Trade and Accommodation
- Finance and Business Services
- Government Services

The sectors that contribute the least to employment are:

- Mining

- Utilities
- Construction
- Transport and Communication

Table\_: Employment contribution per sector

Sector	1995	2000	2005	2009
Agriculture	14.1%	12.8%	8.5%	4.9%
Mining	0.9%	0.4%	0.5%	0.9%
Manufacturing	16.4%	12.2%	9.3%	6.1%
Utilities	0.4%	0.6%	0.5%	0.6%
Construction	3.0%	2.4%	2.1%	1.9%
Trade and Accommodation	25.7%	28.6%	25.8%	24.7%
Transport and Communications	2.5%	2.2%	2.3%	1.9%
Finance and Business Services	16.2%	18.4%	22.7%	25.1%
Community Services	3.5%	4.1%	5.8%	5.6%
Government Services	17.4%	18.3%	22.7%	28.3%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: Economic Inputs for the Mbombela Bulk Water Strategy, May 2011

An economic analysis of Mbombela revealed that the following sectors can provide future growth: (Source: Economic Inputs for the Mbombela Bulk Water Strategy, May 2011)

**Mining:** Even though the mining sector of Mbombela contributes a small percentage to the GVA, the municipality can exploit this sector by providing services and trade to surrounding mines in the province.

**Construction:** Infrastructure investment by government in terms of transport and electricity as well as the provision of houses and services hold the most potential for local construction companies to benefit.

**Trade:** is a current strength in the economy of Mbombela and pro-active measures need to be implemented to retain the stability and future growth of this sector.

**Transport:** this sector is becoming increasingly important for this service orientated economy. The accessibility to the Maputo development corridor should be fully exploited.

**Community services:** Continued investment in SMME's, infrastructure and human capital will ensure success in this sector.

**Tourism:** This sector's influence spans over a multitude of economic sectors and has a significantly important multiplier effect.

## 4.2.11 Travel patterns

### 4.2.11.1 Migration trends

The following deductions are made from the National Household Travel Survey (2003) that was done for Mpumalanga to determine the travel habits of individuals during a given period.

- Primary areas of net inflow of business commuters (travelling on a daily basis) include Nelspruit, Emalahleni and Nkomazi. The net inflow to Mbombela originates from Bushbuckridge, Nkomazi, Middelburg, Thaba Chweu and Umjindi.
- Migrants (return home once a month) from Limpopo to Mpumalanga tends to concentrate in three primary areas namely:
  - Nelspruit and surroundings,
  - Thaba Chweu, and
  - Emalahleni.
- Migrants (return home once a month) from Mpumalanga to Limpopo are drawn from three primary areas namely:
  - Siyabuswa,
  - KwaMhlanga and
  - Mbombela
- Net inflow to education facilities in Mbombela is insignificant as compared to Thembisile, Emalahleni, Witbank and KwaMhlanga. Similarly, the primary net outflow to education trips from Mbombela is insignificant as

compared to the primary net outflows that occur at eNkangala, Kwaguqu, Bushbuckridge and Siyabuswa.

Former homeland areas are generally dependent on migrant workers for their survival due to their weak economic base. Mbombela constitutes one of the four main concentrations of people in Mpumalanga living under the Minimum Living Level (MLL), which is the result of a significant percentage (10%) of migrant travelling to Gauteng.

### 4.2.11.2 Internal travel patterns

Employment opportunities and economic activity is centred on the Nelspruit-Rocky Drift-White River corridor, which is the main source of private vehicle trips. The majority of the population though resides in the low-income area of Nsikazi to the east.

Commuting primarily takes place between Nsikazi and the economically well-developed western corridor of Nelspruit, Rocky Drift and White River, with the exceptions being Malalane and Barberton. Hazyview, although on a smaller scale, is another significant attractor of public transport trips considering the trips to and from Bushbuckridge.

The main origin of trips is the Nsikazi area, more specifically the areas surrounding Kabokweni, Clau Clau, Lekazi, Kanyamazane, Daantjie, Lindela and Matsulu.

In 2009 a detailed origin-destination survey was conducted at key intersections along the western edge of the Nsikazi area. The following is noted from the survey:

- Close to 60% of the Nsikazi daily commuter vehicle trips come from the north-east of Nsikazi and traverse the R536-R538, Plaston and Lumphisi junctions.
- Up to 30% of the total daily commuter vehicle trips come from the south of Nsikazi and traverse the Karino junction.
- Of all daily commuter vehicle trips from Nsikazi, the following routes are the most popular:
  - 13% use the Rocky Drift-Plaston link

- 21% use the R40
- 29% use the Kanyamazane road going past Kamagugu and
- 34% use the N4

#### 4.2.12 Land Ownership

Property ownership and land tenure are key elements in land use management in that it will reveal the right that the holder of the land has and therefore the procedures the holder of the land has to follow to effect land use change.

In areas where private ownership is the predominant form of land ownership, land use regulation and tenure are two separate but linked processes. Where land is held in communal ownership, land use rights and tenure are closely linked.

The majority of settlements in the Nsikazi area are informal and characterised by inferior forms of land tenure (communal ownership), as opposed to the settlements in the western part, which are formal and provides full ownership.

Land ownership within Mbombela can be broadly summarised as follows (**See Plan\_ : Land Ownership**)

- The majority of the land is privately owned, followed by the State which includes most of the Nsikazi area, a number of farms between Elandshoek and Kaapsehoop, land located to the west and to the north, along the western boundary.
- Sappi owns land in the western part and Mondi along the R40, to the north.
- Mbombela owns land in and around Nelspruit and to the east, close to Tekwane, Kanyamazane and Matsulu. Land owned by the municipality measures approximately 3 400ha.
- Transnet owns land around Nelspruit.

Table\_ : Land ownership

Ownership	Approximate size (ha)
Private	211 000
State land	63 000

<b>Mbombela</b>	<b>3 400</b>
<b>Total</b>	<b>341 100</b>
<b>SANPARKS (Kruger National Park)</b>	<b>198 300</b>
<b>Total</b>	<b>539 400</b>



## 4.2.13 Land Reform

Land reform consists of three components, namely restitution, redistribution and tenure reform. The land reform status in Mbombela Municipality is briefly discussed below.

### 4.2.13.1 Land restitution

The Restitution of Land Rights Act, applicable in both rural and urban areas, addresses the restitution of land rights lost by any South African as the result of racially discriminatory laws passed since 1913, to establish a Commission on Restitution of Land Rights and a Land Claims Court.

Land claims and the status thereof in Mbombela are indicated in **Plan\_: Land Restitution**. The land size of settled land claims is approximately 39 000ha.

### 4.2.13.2 Land redistribution

Land redistribution is about making land available for agricultural production, settlement and non-agricultural enterprises. Agricultural support programmes implemented in Mbombela are:

1. Pro-Active Land Acquisition Strategy (PLAS)

This strategy provides for the proactive acquisition of land for land reform purposes (e.g. agriculture, agri-processing, eco-tourism etc.)

2. Land Reform for Agricultural Development (LRAD)

This programme forms part of the redistribution programme of Department of Rural Development and Land Reform and involves the buying of farms or land for potential farmers.

PLUS and LRAD projects are located in the following areas: Ngodwana, Elandshoek, Plaston, Msogwaba, Hermansburg, White River and Kiepersol/Hazyview (**See Plan: Land Redistribution**). The approximate land size of these projects is 840ha.

### 4.2.13.3 Land tenure reform

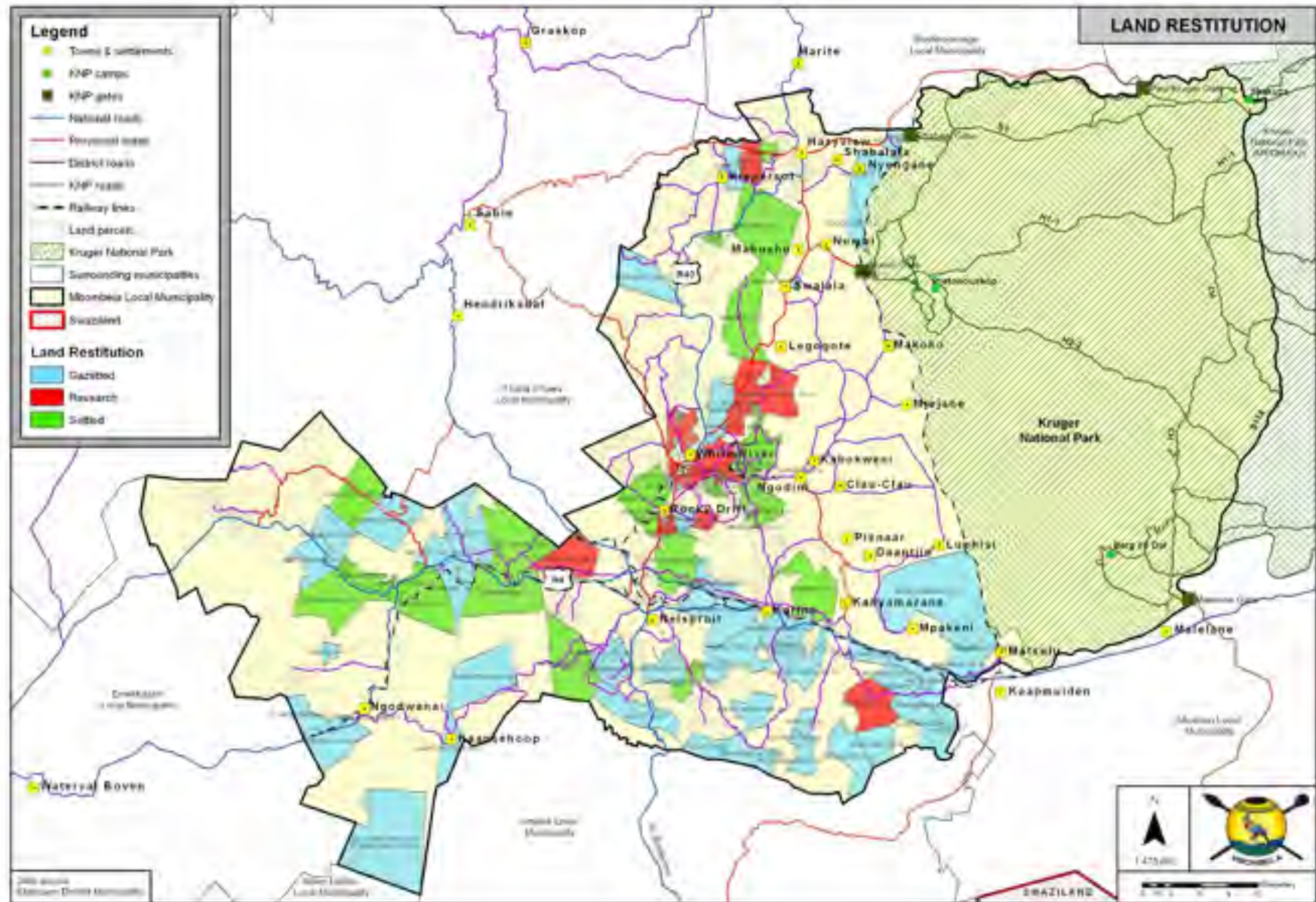
Laws were introduced after 1994 to give people security of tenure, over houses and land where they work and stay (especially farm workers and labour tenants).

This programme aims to provide legal recognition and to formalise communal land rights and to give people security of tenure over houses and land where they work and stay (especially farm workers and labour tenants).

The majority of settlements in the Nsikazi area are characterised by inferior forms of land tenure and require upgrade to full ownership. The upgrade of land tenure will achieve the following:

- unlock the economic potential of the disadvantaged settlements;
- facilitate the regulation of land use;
- facilitate the implementation of cost recovery, which is a prerequisite for the sustainability of the settlements; and
- ensure permanent improvement of the quality of life within the settlements







#### 4.2.14 Spatial implication of socio-economic environment

From the socio-economic analysis the following deductions are made:

- A clear divide exists between the “rich” and “poor”. The deepening of this divide has a threat to the stability of the entire socio-economic system.
  - The majority of people reside in the eastern Nsikazi areas (87%) with typical socio-economic characteristics of a previously disadvantaged area. Unemployment is high, the dependency ratio is high, level of education is low, income levels are low and people are mainly employed in sectors that require elementary skills.
  - Approximately 10% of the population resides in the more developed western areas characterised with relative low unemployment levels, high levels of education and income levels that vary from middle to high.
- Mbombela faces the following spatial challenges as a result of continuous **population growth**, mainly due to illegal immigration.
  - Continued urban sprawl, especially in the eastern Nsikazi areas.
  - Increased need for engineering and social infrastructure including electricity, water, sanitation, roads, community and recreational facilities.
  - Pressure on land for residential purposes and the competition with subsistence or commercial agricultural activities.
  - Increased pressure for burial facilities.
  - Continued influx of illegal immigrants has a remarkable impact on the figures and composition of the population of Mbombela and the resultant mushrooming of informal settlements increases pressure on the provision of housing and social services.
- Mbombela’s youth needs to be catered for in terms of skills development programmes matched with appropriate employment opportunities to ensure they do not immigrate to other parts of the country in search of tertiary education or better employment opportunities.
- The high number of indigents renders the municipality unable to generate sufficient financial resources for sustainable service delivery.
- The poor and marginalized cannot access land in and around the main economic centres in the western part of the municipality because the land is mainly privately owned and too expensive. This places a huge burden on

Mbombela and other sector departments to procure land to pursue low income housing projects to promote integrated human settlements and to avoid informal settlements.

- There is a need for educational facilities, particularly post-matric training as well as accredited tertiary institutions that offer affordable and appropriate qualifications.
- High unemployment levels can be ascribed to the general low levels of education that is worsened by an economy that becomes more capital than labour intensive. The establishment of strategically located labour intensive industries could reverse this situation.
- Skills development programmes need to focus on economic sectors with potential for future growth namely: mining, construction, trade, transport, community services and tourism.
- Mbombela has to make provision for the effects of HIV/Aids with regard to lowered productivity, increased need for health services (hospitals, clinics), increasing number of orphans and a need for cemetery sites. The epidemic contributes a great deal to poverty creation in the area due to income being spent on medicine with less money available for housing, amenities and other goods.
- The distance between live and work areas (east and west) must be decreased in order to decrease the resources spent on commuting and to increase the access of the unemployed to economic opportunities and thereby improve the ability of people to contribute to production
- It is of utmost importance that mobility links be strengthened between areas of low and high economic potential. This will improve the probability that individuals from low potential localities be absorbed in areas with higher economic potential.
- Most land within Mbombela is privately owned. The municipality has limited land to pursue affordable housing developments.
- To date approximately 19% (40 000ha) of previously white owned land has already been transferred. This would mean that approximately 23 300ha of land still needs to be transferred to achieve the target of transferring 30% of all white owned land.
- People have moved back onto ancestral and other land that resulted from land restitution and land redistribution cases which have been settled. In

most cases, this has led to the need to provide services in previously under or non-services areas.

From a spatial development perspective the locality of land reform projects is a critical determinant of their future viability. Areas close to economic activity are beneficial, but in many cases the economic potential of the land in question is inadequate as a source of economic livelihoods.

### 4.3 Built environment

The location and spatial distribution of development throughout the municipality is influenced by several factors, namely: differences in land access and ownership, nature (topography, water), type of economic activities, natural resource base and past apartheid laws and policies.

This resulted in an urban and rural form consisting of urban, peri-urban, semi-urban, rural, commercial agriculture, communal agriculture and forestry areas grouped into different functional areas with different levels of development.

The following aspects are discussed under the built environment:

- Settlement pattern and structure
- Hierarchy and role of settlements
- Development pressures
- Anticipated urban land use demand
- Vacant land audit
- Infrastructure and services

This section is concluded by depicting the spatial implications of the built environment.

#### 4.3.1 Settlement patterns and structure

##### 4.3.1.1 Urban development

Two major development corridors of strategic importance distinguish themselves within Mbombela, being: **(See Plan\_: Urban-rural context)**

##### 1. Eastern Development Corridor

The Eastern Development Corridor consists of a broad strip of urban and semi urban settlements, stretching from Hazyview in the north to Kanyamazane in the south-west. The corridor represents the majority of settlements within the Nsikazi area.

Settlements are characterized by a lack of economic and social opportunities, extraordinary long distances between residence and work/shopping places and insecure forms of land tenure.

These settlements are inefficient in terms of engineering service delivery, inconvenient in terms of long travelling distances and high reliance on public transport.

The settlements in Nsikazi are rapidly growing towards each other in an unplanned, informal and uncoordinated manner with the result being the formation of a continuous urban agglomeration with little remaining open space.

Four gigantic settlements are being formed through this process of uncontrolled growth and include the following areas:

- Daantjie, Msogwaba and Kanyamazane
- Clau-Clau, Newscom and Zwelisha
- Dwaleni, Kabokweni, Nkomeni, Nkohlakalo, Bhuga, Gutshwa, Sifunindlela, Khumbula and Malekutu
- Lundi, Jerusalem, Swalala Phola, Manzini, Mahushu and Numbi.

Only a small number of rural settlements viz. Luphisi, Mpakeni, Spelenyani, Buyelani, Mahukube, Mjejane, Makoko and Phameni as well as the development node of Matsulu does not form part of the Eastern Development Corridor.

##### 2. Nelspruit-White River Development Corridor

The Nelspruit–White River Development corridor is provided along Road P9-2 (R40), which include Nelspruit CBD, the Nelspruit industrial cum commercial areas, Riverside Park industrial area, Riverside Mall, the Provincial Government office complex, Rocky Drift and White River. The residential areas of Nelspruit and White River are also included.

Settlements in the western part have opposite characteristics to the settlements in the east. Rigid town planning schemes, assured zonings and provide for definite land uses within certain zones, control development in these areas. Due to the

uniformity provided by these zonings a set standard of development is achieved in terms of scale and quality.

Urban development taking place outside the mentioned corridors are Matsulu, Ngodwana, Kaapsehoop and Elandshoek.

### **3. Rural development**

Rural development in Mbombela is characterized by:

- A number of rural villages in the eastern part that are supported by subsistence crop production and livestock farming predominantly on communal land.
- Commercial farming in the western and southern areas of Mbombela.
- Forestry on the higher lying areas.
- Hotels, lodges and guest houses dispersed throughout the area.
- A variety of non-agriculture land uses and conservation areas.

The settlement disparities in Mbombela are further illustrated by the findings of the 2010 Mbombela Corridor Modelling Market Study confirming the following:

- Approximately 87% of the total Mbombela Local Municipality resides in the Nsikazi corridor, with 10% residing in the Nelspruit-White River Corridor and 3% residing elsewhere in Mbombela.
- The Nsikazi corridor (including Hazyview, Swalala, Kabokweni, Tekwane, Kanyamazane etc. and Matsulu) houses approximately 17.7% of existing industrial, office, trade and other building space, while the Nelspruit-White River/Rocky Drift/Riverside corridor houses 82.3% of existing building space. 50% of the latter is located in Nelspruit.

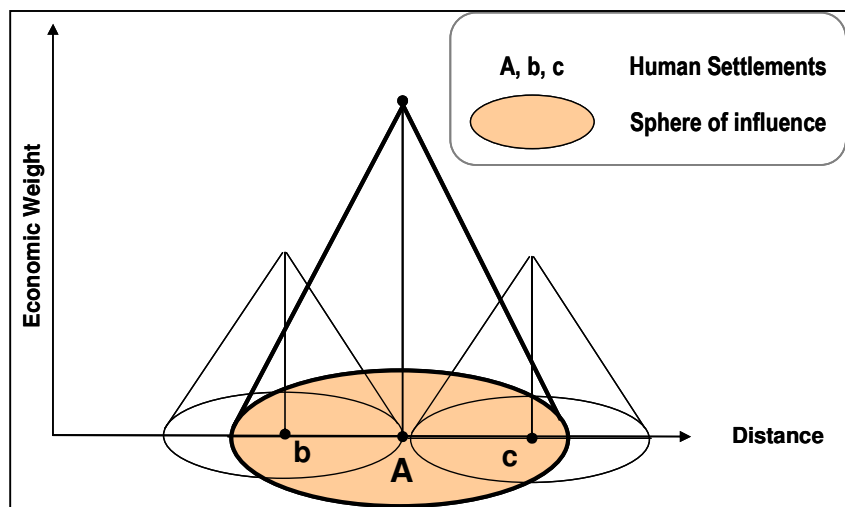


### 4.3.2 Hierarchy and role of settlements

Urban and rural development is dictated by settlement status (hierarchy) and its economic base. It is essential that rural development be aligned to support and diversify the economic base of settlements and in turn that settlements provide services and facilities required by its rural areas.

#### 4.3.2.1 Settlement hierarchy

Settlements can be classified into various functional types according to the number and types of commercial, industrial and service functions provided by each. These functions are called **central functions**. The characteristics of the central functions of a human settlement determine the settlement's position or importance within the hierarchy of settlements. Settlements of a high order normally offer a larger variety of functions and services to a larger area of influence and are, as a result further apart.



Source: Mpumalanga Integrated Spatial Framework: Draft 2007

#### 4.3.2.2 Business function index (BFI)

The Business Function Index, developed by Stats SA (2006), is used as basis to derive the **economic significance** of different settlements throughout Mpumalanga. The table below shows the BFI classification of settlements in Ehlanzeni District Municipality.

Characteristics of human settlements with a BFI of more than 1 are:

- High levels of formal local economic activity;
- High dependence on surrounding area for resource inputs;
- Constitutes the first & second order / primary & secondary economic activity nodes.

Characteristics of human settlements with a BFI of less than 1

- Low levels of formal local economic activity;
- High dependence on higher order settlements for specialised goods and services;
- High levels of public sector investment

Table 21: Business Function Index

Human Settlements with a Business Function Index of more than 1	Human Settlements with a Business Function Index of less than 1
Nelspruit	Schagen
Hazyview	Kabokweni
Malalane	Acornhoek
Lydenburg	Graskop
Barberton	Bushbuckridge
Sabie	Maude
Komatipoort	Kanyamazane
	Uthokozani (Kamaqhekeza, Tonga A, B, C)
	Shongwe mission (Schoemansdal, Driekoppies, Jeppes Reef)



	Pilgrims rest
	Thulamahashe
	<b>Ngodwana</b>
	Waterval Boven
	Hectorspruit
	Kamhlushwa
	Kwalugedlane (Mangweni)
	Arthurstone
	<b>Matsulu</b>
	<b>Nsikazi</b>
	<b>Jerusalem</b>
	Kaapmuiden
	Louw's creek

Source: Mpumalanga Spatial Development Framework, 2007

Accordingly, Nelspruit and Hazyview have a BFI of more than 1, whilst Kabokweni, Kanyamazane, Ngodwana, Matsulu, Nsikazi and Jerusalem have a BFI of less than 1.

Role and function of settlements

Table \_: shows the key settlements in the municipality with a brief description of the role and function of each.

Table \_: Role and function of settlements

<b>Settlement Role/function</b>	Nelspruit Nelspruit is the capital city for Mpumalanga and regional economic hub for the southern parts of Mozambique, the northern parts of Swaziland and the Lowveld Region
<b>Settlement Role/function</b>	White River White River fulfills a sub-regional role with respect to services and retail facilities, however an important

	residential, tourism and agricultural centre.
<b>Settlement Role/function</b>	Hazyview Hazyview is an important agricultural and tourism centre serving the northern areas of Mbombela and southern areas of Bushbuckridge.
<b>Settlement Role/function</b>	Kanyamazane Kanyamazane has a limited economic base providing a variety of social, retail, personal services and service industries to the mainly dormitory settlements surrounding it.
<b>Settlement Role/function</b>	Kabokweni Kabokweni has a limited economic base providing limited retail, industrial and community facilities to the mainly dormitory settlements surrounding it.
<b>Settlement Role/function</b>	Swalala Swalala is predominantly residential with commercial activities clustered along the P17/6 mobility road
<b>Settlement Role/function</b>	Matsulu Matsulu is a dormitory town providing the necessary community and social facilities and business services to its residents.
<b>Settlement Role/function</b>	Rocky Drift Rocky Drift currently performs the function of a regional industrial centre
<b>Settlement Role/function</b>	Ngodwana Ngodwana is a private settlement that evolved around the forestry industry. The settlement includes the Sappi factory, associated housing and ancillary services.

<b>Settlement</b>	Elandshoek
<b>Role/function</b>	Elandshoek provides housing, mainly to the people associated with the forestry industry
<b>Settlement</b>	Kaapsehoop
<b>Role/function</b>	Kaapsehoop is mainly residential with a strong tourism component

#### 4.3.2.3 Nodal interdependence and connectivity

Evident from the above are:

- Nelspruit is the most important settlement within the hierarchy of settlements as it provides the majority of central functions and has the greatest sphere of influence. Nelspruit has a BFI of more than 1 and houses the largest percentage of industrial, office, trade and other building space. Nelspruit has a high dependence on surrounding areas for resource inputs.
- White River and Hazyview performs a secondary role to Nelspruit as employment centre and residential area and fulfil a sub-regional role with respect to the provision of central functions. These nodes depend on Nelspruit for specialised goods and services.
- The main economic activity in the eastern areas is taking place at Kanyamazane CBD, Kabokweni and Matsulu. Commercial activities in Swalala, Msogwaba and Daantjie are located along the main routes. These areas are characterised by low levels of formal local economic activity and high dependence on higher order settlements for specialised goods and services.
- A number of rural villages in the eastern part are supported by subsistence crop production and livestock farming with no economic base. These rural communities depend on nearby service centres where they can access day-to-day services.
- Rocky Drift is the third largest employment area after Nelspruit and White River performing the function of a regional industrial node. Rocky Drift is lacking central functions other than industrial.

- Ngodwana, Kaapsehoop and Elandshoek depend on Nelspruit for a larger variety of functions and services.

Table\_: indicates the shortest road connections between the nodes in the municipal area. The main roads and secondary roads in the area are in a relatively good condition.

Table\_: Distance between development nodes

	Nelspruit	Rocky Drift	White River	Hazyview	Kanyaamazane	Msogwaba	Kabokweni	Swalala	Matsulu
Nelspruit		13	20	66	29	29	30	42	43
Rocky Drift	13		7	53	34	29	17	29	55
White River	20	7		46	34	29	18	23	62
Hazyview	66	53	46		66	75	64	15	83
Kanyamazane	29	34	34	66		5	17	51	24
Msogwaba	29	29	29	75	5		10	52	29
Kabokweni	30	17	18	64	17	10		40	51
Swalala	42	29	23	15	51	29	40		85
Matsulu	43	55	62	83	24	29	51	85	
Total Km	272	237	239	469	258	235	247	337	433
Ranking	5	2	3	8	6	1	4	7	9

Source: Land Use Transportation Strategy, 2010

The following is evident from the table:

- **Msogwaba, Rocky Drift, White River and Kabokweni**, has the highest degree of accessibility. The comparative advantage of these nodes in terms of accessibility needs to be exploited to make the largest impact on decreasing trip distance, time and cost.
- **Nelspruit and Kanyamazane** also has a moderate degree of accessibility. These nodes however have a comparative advantage in terms of accessibility to the N4.
- **Hazyview, Swalala and Matsulu** are relatively inaccessible.

One of the NSDP principles to overcome the spatial distortions of apartheid is to channel future settlement and economic development opportunities into activity corridors and nodes that are adjacent to or that link the main growth centres.

### 4.3.3 Development pressure

Over the years Mbombela has grown considerably due to its status as provincial capital seat, with Nelspruit as a regional service centre, growing tourism and major new infrastructural developments (i.e. Mbombela Stadium, N4 Northern Bypass, KMIA, R40 upgrade, improvements to the Lowveld Botanical Gardens etc). This resulted in a demand for urban land around the main economic centres i.e. White River, Nelspruit and Hazyview with resultant higher land prizes.

Development pressures characterising the **Nelspruit-White River Development Corridor** involve:

- Business and commercial development along the R40,
- The provision of affordable housing nearer to places of employment,
- The provision of roads and engineering infrastructure.

Development pressures along the **Nsikazi Development Corridor** include:

- The unmanaged influx of people into the area,
- Unstructured settlement patterns,
- The lack of employment within proximity of residential areas,
- Urban and rural decay,
- Disparate provision of social, economic and engineering infrastructure,
- A poorly developed roads and transportation system.

Recently submitted and approved land development applications (from year 2000 to date) give an indication of where township development is likely to occur in the municipality in the near future.

An investigation of land development applications, mainly submitted to Mbombela Local Municipality and the Department of Agriculture, Rural Development and Land Administration, revealed the following: **(See Plan\_ : Land use applications).**

- The majority of applications for township development are clustered in and around the economic centres of Nelspruit, Rocky Drift, White River, Hazyview and along the R40 Nelspruit-White River Corridor.

This can be ascribed to the proximity of existing social and engineering infrastructure, economies of scale, employment opportunities, good access and visual exposure.

- Application areas for township development that are situated further away from the economic centres include:
  - The areas to the west of Nelspruit, south of the N4 highway (Broham)
  - The area to the east of Nelspruit, south of the N4 highway
  - The area at Karino
  - The area to the west of KMIA (Likweti)
  - The area between White River and Longmere Dam
  - The area around Klipkoppie Dam
  - The area to the east of Hazyview (Kiepersol)
  - The Schoemanskloof area

These areas provide specific attributes or resources that lend it suitable for development i.e.: close to the airport or N4 highway, near a dam or river, scenic areas etc. These areas are usually not provided by municipal services due to the distance from existing networks.

- Land development in the eastern areas is mainly funded by the public sector focussing on the delivery of houses and associated social and engineering infrastructure. It is imperative that tenure issues be resolved, settlements be formalised and registered in order to attract private sector investment.

Development applications in the eastern area are located at Ngodini.



### 4.3.4 Anticipated urban land use demand

#### 4.3.4.1 Purpose

The purpose of this section is to determine:

4. The need for land (ha) for housing development
5. The need for social infrastructure facilities
6. Engineering services (water, sanitation and electricity)
7. The demand for industrial, office and trade space

#### 4.3.4.2 Methodology

The following basic steps are followed to estimate the demand for these facilities:

- Population and household projections to determine the number of people that need to be planned for during the planning horizon 2010-2035, based on Statistics 2001 and the 2007 Community Survey
- Table \_: indicates the **growth rates** that are used to make projections for the planning horizon 2010-2035. These growth rates are considered as high due to increased access to medical care.
- Apply a residential density of 25 units per hectare to the projected households to determine the land required for housing.
- In terms of the Mbombela IDP 2010 the Housing Unit indicated that the municipality is experiencing a housing backlog of 33 522 units.
- Apply the standards contained in the “Guidelines for Human Settlement Planning and Design” (known as the Red Book) to the projected population and households to determine:
  - The need for social infrastructure facilities
  - The need for engineering services
- The demand for industrial, office and trade space derived from the 2010 Mbombela Corridor Modelling Market Study prepared for the Mbombela Land Use and Transportation Study.

#### 4.3.4.3 Limitations

The methodology has the following limitations:

- The projections are based on two data sources only, namely Stats SA 2001 and the Community Survey 2007 and therefore are not necessarily accurate.
- Migration trends and associated population figures are difficult to determine and are not readily available.
- The threshold population for social infrastructure facilities vary substantially i.e.:
  - 1 clinic per 5000–50 000 people and
  - 1 community centre per 25 000-62 500 people.
- The number of existing social infrastructure facilities is not necessarily accurate.

The population growth rates in Table\_: derived from the “Economic Inputs for the Mbombela Bulk Water Strategy” study prepared in May 2011 and provides for a high growth scenario.

Table\_: Growth rates

Period	Rates (%)
2007-2008	1.7
2008-2010	1.6
2010-2015	1.3
2015-2020	1.1
2020-2025	1
2025-2030	0.8
2030-2035	0.7

Source: Urban-Econ report 2011

The above growth rates were applied to the 2008 population and household figures as per the records of the Department of Water Affairs.

Table\_: Projections and land demand

Mbombela	CS	Projections						Cumulative
		2007	2010	2015	2020	2025	2030	
Projected population	527203	553460	590382	623576	655384	682023	706230	
Projected households	137353	144194	153813	162461	170748	177688	183995	
Additional houses		33522	9619	8648	8287	6940	6307	73323 houses
Land size (du/ha)	25	1341	385	346	331	278	252	2933ha

Table\_: Demand for social infrastructure facilities

Year		2010	2015	2020	2025	2030	2035	
Projected population		553460	590382	623576	655384	682023	706230	
Social infrastructure	Standard	Required						Existing 2010
Crèche/nursery school	1/5000 pers.	111	118	125	131	136	141	unknown
Primary schools	1/3000 pers.	184	197	208	218	227	235	156
Secondary schools	1/6000 pers.	92	98	104	109	114	118	54
Tertiary facilities	No specs							7
Mobile clinics	1/5000 pers.	111	118	125	131	136	141	0
Clinic	1/5000 pers.	111	118	125	131	136	141	34
Hospitals	No specs							6
Libraries	1/5000 pers.	111	118	125	131	136	141	9
Community centres	1/10000 pers.	55	59	62	66	68	71	21
Religious	1/2000	277	295	312	328	341	353	0

Year		2010	2015	2020	2025	2030	2035	
Projected population		553460	590382	623576	655384	682023	706230	
Social infrastructure	Standard	Required						Existing 2010
centres	pers.							
Municipal offices/pay-points	1/50 000 pers.	11	12	12	13	14	14	6
Fire stations	1/60 000 pers.	9	10	10	11	11	12	4
Post office	1/11000 pers.	50	54	57	60	62	64	13
Police station	1/25000 pers.	22	24	25	26	27	28	9
Sports facilities	No specs							

Table\_: Demand for engineering infrastructure

Year		2010	2015	2020	2025	2030	2035	Cumulative
Additional households		33522	9619	8648	8287	6940	6307	
Bulk water & sanitation								
Water demand - high income (1250l/stand)		41.9	12.0	10.8	10.4	8.7	7.9	98Ml/day
Water demand - low income (750l/stand)		25.1	7.2	6.5	6.2	5.2	4.7	58Ml/day
Existing capacity								
Additional bulk required								
Electricity								
Electricity demand - average household (1.1mWh/month)		36874	10581	9513	9116	7634	6937	10581

#### 4.3.4.4 Interpretation of the tables above

Table \_: Projections and land demand

- The projected population for year 2035 is 706 230 people.
- The projected households for year 2035 is 183 995 houses.
- The 2010 housing backlog is 33522, an additional 9 619 houses will be required in 2015, a total of 73 323 houses will be required in year 2035 if no houses are built between 2010 and 2035.
- The land required to eradicate the housing backlog, if developed at a density of 25 units/ha, is 1341 hectares.
- The land required to develop 73 323 at a density of 25u/ha, in year 2035, is 2 933 hectares.
- The housing backlog today (33522) is almost half of the total number of houses required in 2035 (73 323).

Table \_: Demand for social infrastructure facilities

For clarification purposes crèches, primary schools and clinics are used as examples:

Based on population projections and population thresholds per facility the following:

- 111 **crèches** are required in 2010, 125 crèches in 2020 and 141 in 2035, the existing provision is unknown and therefore the shortfall or over supply cannot be determined.
- 184 **primary schools** are required in 2010, 208 primary schools in 2020 and 235 in 2035, the existing provision is 156 and therefore the shortfall as follow:
  - 28 schools in 2010 (184 minus 156)
  - 52 schools in 2020 (208 minus 156), if no schools are built from 2010
  - 79 schools in 2035 (235 minus 156), if no schools are built from 2010

- 111 **clinics** are required in 2010, 125 clinics in 2020 and 141 clinics in 2035, the existing provision is 34 and therefore the shortfall as follows:
  - 77 clinics in 2010 (111 minus 34)
  - 91 clinics in 2020 (125 minus 34), if no clinics are built from 2010
  - 107 clinics in 2035 (141 minus 34), if no clinics are built from 2010

Table\_: Demand for engineering infrastructure

- ±42Ml/day is required to service the immediate housing backlog of 33 522 houses at 1250l per stand and ±25Ml/day at 750l/stand.
- A total of 98Ml/day is required to service the projected housing need in 2035, being 73 323 houses at 1250l/stand.
- The electricity demand for 33522 houses is approximately 36 874 mWh/month.
- An additional 10 581 mWh/month will be required in 2015.
- A total of 80 656 mWh/month will be required in year 2035, if no additional electricity is provided between 2010 and 2035.

#### 4.3.4.5 Housing demand

##### Current backlogs

The current housing backlog stands at approximate 34 000 units. The land required to eradicate the housing backlog, if developed at a density of 25 units/ha, is **1360** hectares. The housing backlog is mainly found in the eastern Nsikazi area, constituting households with incomes less than R3 500 per month. Considering the residential income categories below, a huge demand exists for subsidised units.

##### Residential income categories:

- Subsidised units (Household income below R3,500 pm)
- Affordable (Household income from R3,500 - R 15,000 pm)
- Middle income (Household income from R 15,000 - R 20,000 pm)
- Upper middle income (Household income from R 20,000 - R 40,000 pm)
- Unrestricted income above R40,000 pm

In response to housing backlogs, the following properties were purchased by the Department of Human Settlements and the Department of Rural Development and Land Reform (DRDLR). Table 29 indicates a list of properties requested by Mbombela Local Municipality for the delivery of housing. **(See Plan\_: Possible housing supply opportunities)**

Table 27: Department of Human Settlements

Farm portion	Size (ha)
Portion 24 (Portion of Portion 15) Maggiesdal 456 JT	15
Portion 7 (Portion of Portion 5) Maggiesdal 456 JT	23
Portion 69 of the farm Maggiesdal 456 JT	6
Portion 8 of the farm Maggiesdal 456 JT	9
Portion 23 of the farm Maggiesdal 456 JT	20
Portion 46 (Portion of Portion 6) Maggiesdal 456 JT	8
<b>Total</b>	<b>81</b>

Source: Mbombela Municipality Housing Chapter 2009 (draft)

Table 28: Department of Rural Development and Land Reform

Farm portion	Size (ha)
<b>96 White River Agricultural Holdings</b>	<b>6</b>
<b>Holding 99 of the farm Friedenheim 282</b>	<b>5</b>
<b>Portion 100 of the farm Friedenheim 282</b>	<b>5</b>
<b>Portion 140 of the farm Friedenheim 282</b>	<b>2</b>
<b>Holding 18 White River Agricultural Holdings</b>	<b>3</b>
<b>Holding 19 White River , Agricultural Holdings</b>	<b>3</b>
<b>Holding 20 White River Agricultural Holdings</b>	<b>6</b>
<b>Total</b>	<b>30</b>

Source: Mbombela Municipality Housing Chapter 2009 (draft)

Table 29: Mbombela Local Municipality

Farm portion	Size (ha)
<b>Maggiesdal</b>	<b>257</b>
<b>Cromdale</b>	<b>393</b>
<b>Friedenheim</b>	<b>72</b>
<b>Werksaam</b>	<b>21</b>
<b>White River</b>	<b>7</b>
<b>Blinkwater</b>	<b>103</b>
<b>White River Estates</b>	<b>25</b>
<b>Goedehoop</b>	<b>31</b>
<b>Total</b>	<b>910</b>

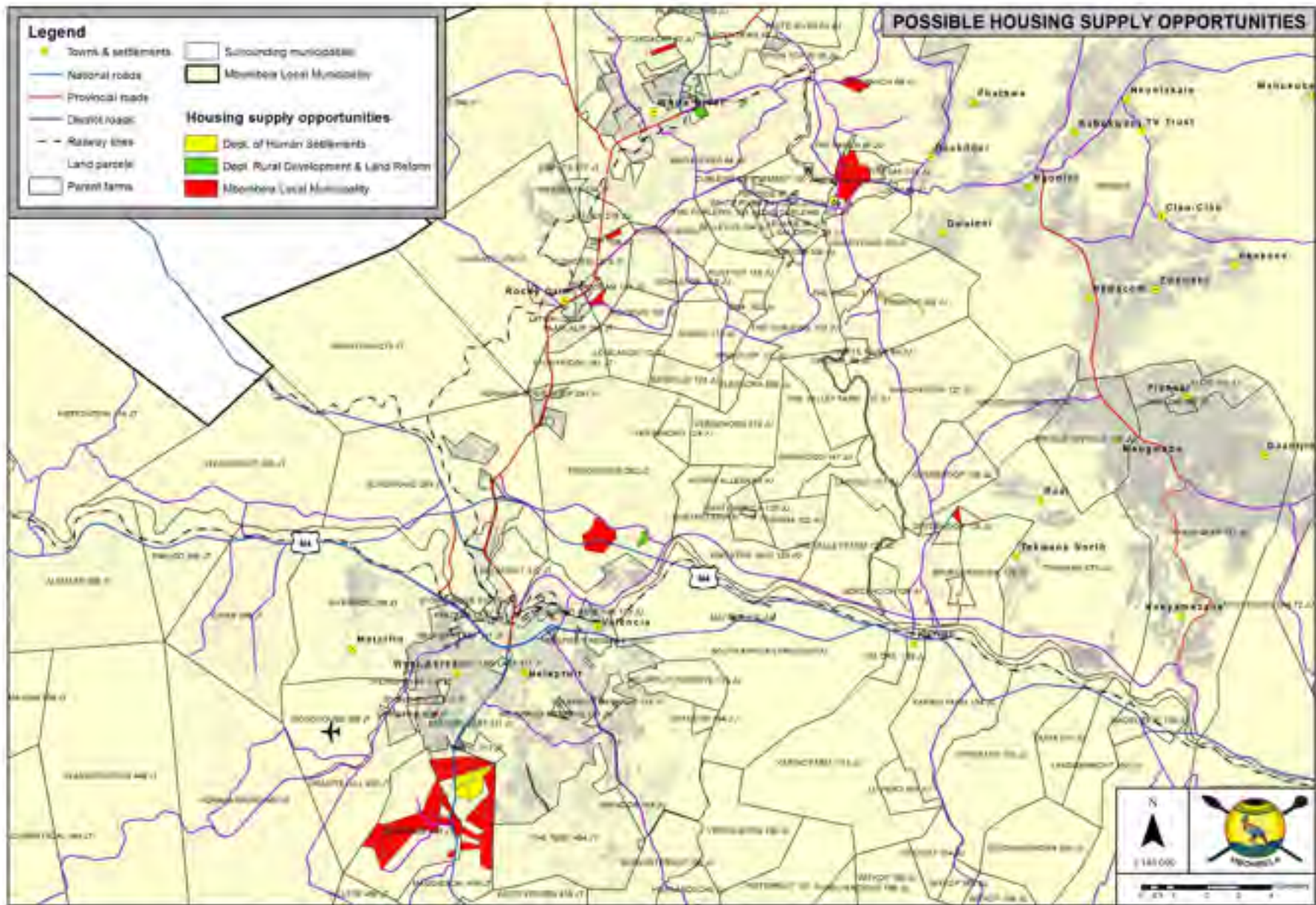
Source: Mbombela Local Municipality

The sum total of land purchased and or requested for the delivery of integrated human settlements, listed in the tables above, is **1 021 ha**. If considered that only 50% of this land is developable due to topographical constraints, rivers, agricultural potential of land or any other environmental constraints, the actual size is only **510 ha** which will allow the development of 12 750 units at a density of 25 units/ha.

This is insufficient to address 1) the current housing backlog and 2) to cater for the future housing demand.



There is a need to acquire additional land for housing delivery in the coming financial years and to establish adequate institutional structures to deal with housing challenges. The Municipality and the Department of Human Settlements aim to deliver a minimum of 1000 housing units per year.



### **Viability of low income housing projects**

Typical low income housing projects include: **(See Plan: Low cost housing)**

1. Tekwane South between Nelspruit and Kanyamazane
2. Tekwane North
3. Entokozweni Extension 1 (Vukuzimele Trust)
4. Matsulu Extension 3
5. Tshabalala

These low income housing projects are located in the eastern Nsikazi corridor and not viable because of the distance to major economic centres with associated high travelling costs between work and home.

The current erf sizes are too small with some measuring less than 200m<sup>2</sup> in extent.

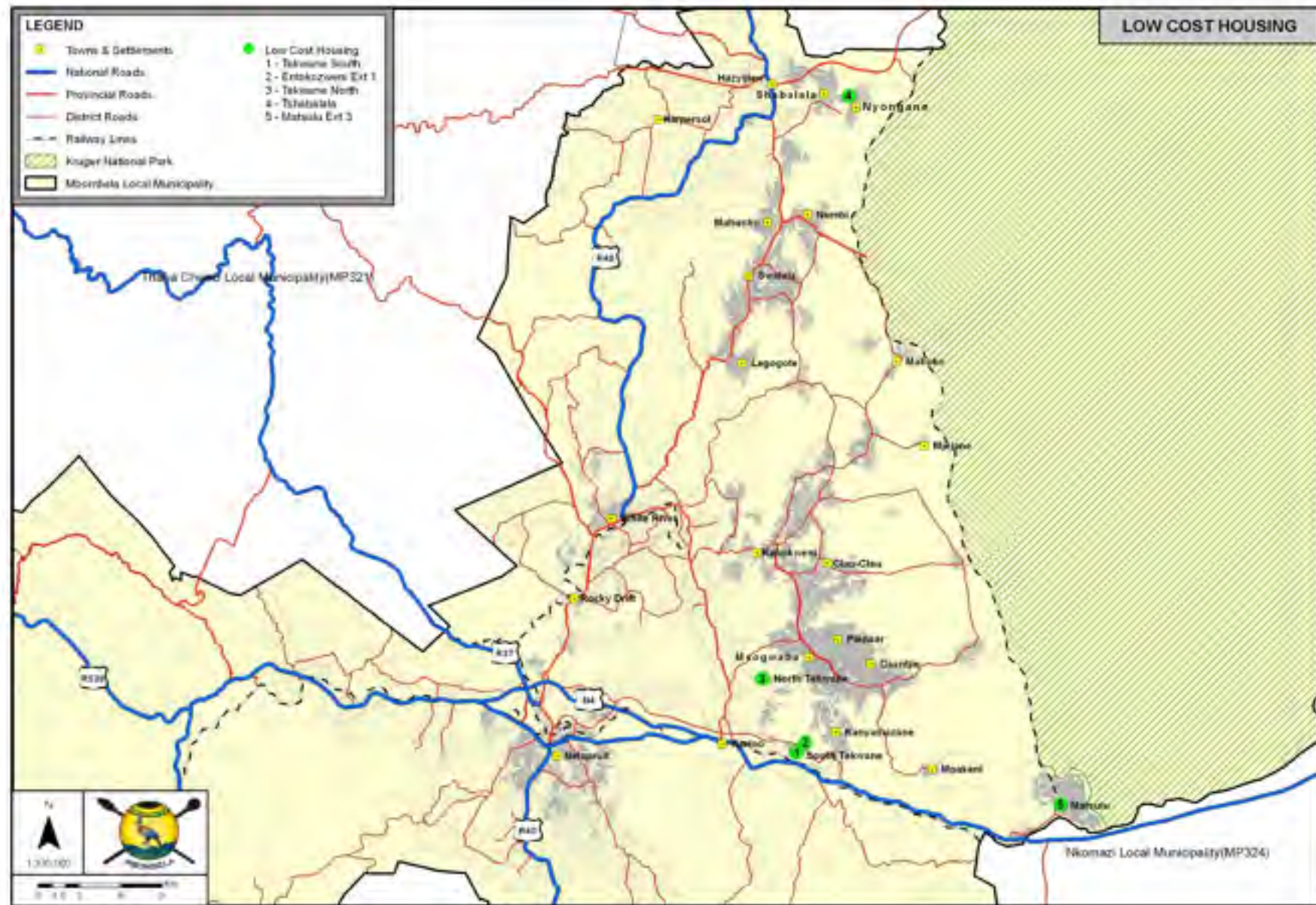
The majority of settlements, where low cost housing projects are delivered currently, are economically unsustainable.

### **Housing trends**

The following trends are noted in Mbombela:

- Illegal land invasion (informal settlement), particularly around Nelspruit, Rocky Drift (Msholozzi), White River, Matsulu and Kanyamazane. This can be ascribed to the fact that the poor cannot access land in and around the main economic centres because the land is privately owned and too expensive.
- There is a trend of the young up-coming population to relocate from the semi-urban eastern areas to the main urban centres. This trend has resulted in the need for middle income residential developments in the main urban centres.
- The unique natural environment and undevelopable topography of Mbombela has led to the establishment of a number of up-market, low-

density residential estate developments, particularly around Nelspruit, White River (around Longmere Dam) and Hazyview.



#### **4.3.4.6 Social infrastructure demand**

Cognisance should be taken that the demand for social infrastructure facilities as determined in Table\_ is essentially a quantitative assessment, and therefore, does not achieve a qualitative assessment, which relates to the realism of meeting determined needs.

Although the shortfall may be very clear, the reality of providing for the shortfall may be very different.

#### **Crèches and nursery schools**

The shortfall or over supply of crèches and nursery schools cannot be determined because the number of existing facilities is unknown. These facilities generally perform a secondary function to residential, pre-primary and primary schools, community centres and churches and therefore not always counted as a separate facility.

#### **Primary and secondary schools**

There may be a shortfall of 28 primary schools in 2010 as indicated in the table above, but it can also be that 30 of the 156 existing schools may lack sufficient teaching facilities or do not conform to the required learner-teacher ratio. This may hamper the delivery of education even more than the number of schools. **(See Plan\_ : Educational facilities)**



### **Clinics**

Strategically located Home Based Care Centres, mobile clinics and community health centres (CHC) bring some relief to the health sector; however a definite need remains for mobile clinics and clinics. A shortage of medicine and qualified personnel, limited funding and lack of maintenance of buildings and equipment are common problems experienced by these facilities. **(See Plan\_: Social Services: Health facilities)**

### **Hospitals**

Currently Mbombela has 6 hospitals constituting two district hospitals (Rob Ferreira and Themba), one TB Hospital (Bongani), and three private hospitals. Although no specific standards exist for the provision of hospitals, there is a definite need for additional facilities.





### **Libraries**

The future provision of libraries must consider the combination of other facilities to form a convenient cluster i.e.: schools, community centres etc.

### **Community centres**

The future provision of community centres must consider the combination of other facilities to form a convenient cluster of services i.e.: Multi-Purpose Community Centres, also known as a Thusong Service Centres,

A MPCC would essentially be a “one-stop” centre for information and services, at a central and easily accessible point within a specific community or group of communities.

### **Religious centres**

The provision of existing centres is unknown and therefore not possible to determine if there is a shortfall or over supply.



### **Fire stations**

Currently there are four fire stations in Mbombela located in Nelspruit, Kanyamazane, White River and Kabokweni. In terms of the IDP (2010/2011) fire stations are planned for in Matsulu, Ngodwana and Hazyview.

### **Post offices**

The need for post offices is partially been catered for by the function of Retail Postal Agencies (RPA's), which not included in the calculations.

### **Police stations**

Currently there are 9 police stations in Mbombela located in Hazyview, Kabokweni, Kanyamazane, Masoyi, Matsulu, Nelspruit, Ngodwana, Pienaar and White River. The communities expressed their need for additional police stations and police patrols due to an increase in crime.



## **Cemeteries**

The main cemeteries are located in Nelspruit, Tekwane, Matsulu, Msogwaba, White River, Nsikazi, Makoko, and Phameni.

There is a need for the provision of adequate, formal and environmentally friendly cemeteries, especially in the Nsikazi area. Most of the cemeteries in these settlements are full or nearly full and are not managed or maintained properly. Some of these sites have the potential for expansion, due the availability of space around them. **(See Plan: Cemeteries)**.

Mbombela intends to establish regional cemeteries at strategic localities throughout the municipal area.

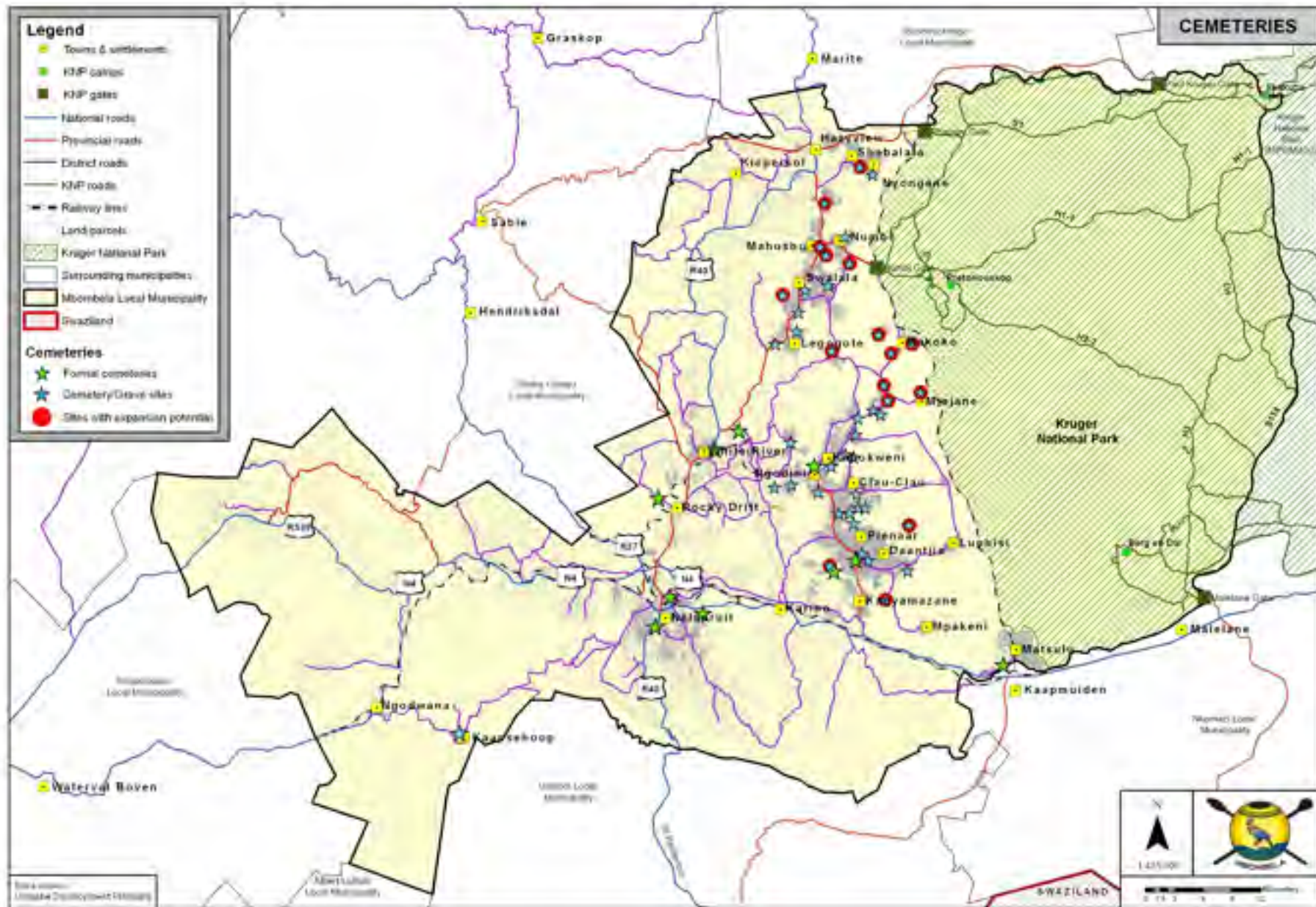


Table \_: identifies spatial guidelines for the provision of social infrastructure facilities.

Table\_: Guidelines for the provision of social facilities

Facility	Stand size	Spatial guidelines
Crèche/nursery school	130m <sup>2</sup>	750m walking distance of residential units and the maximum travel time is 10 minutes, whether by foot or vehicle.
Primary schools	2.4ha	Pupils should reside within 1.5km of a primary school with a maximum travel time of 20 minutes whether by foot, bicycle or by vehicle
Secondary schools	4.6ha	Pupils should reside within 2.25km of a secondary or combined school with a maximum travel time of 30 minutes.
Clinic	0.1ha	1 km walking distance. Clinics should be provided for every 2 km walking distance with a maximum travel time of 30 minutes.
Hospitals	No specifics	Along major transport routes with public transport stops.
Libraries	130m <sup>2</sup>	Walking distance of at least 1, 5 km - 2, 25 km or within 5 minutes walking distance of a public transport stop. Maximum travel time is 20-30 minutes.
Community centres	5000m <sup>2</sup>	A walking distance of at least 1, 5 km - 2, 25 km or within 5 minutes walking distance of a public transport stop. A maximum travel time of 20-30 minutes is recommended.
Religious centres	150m <sup>2</sup> -3000m <sup>2</sup>	Maximum walking distance should be 1,5 km and the maximum travel time by foot, public transport or vehicle is 20 minutes.
Municipal offices offices/pay-points	3000m <sup>2</sup>	These facilities require high levels of exposure and must be easily accessible by public transport. Recommended maximum travel time is 30 minutes.
Fire stations	1.2ha	Fire stations should be located on higher order routes that intersect with primary or regional distributors.
Post office	500m <sup>2</sup>	Along activity routes with a maximum walking distance of 2 km. The recommended travel time per foot or vehicle is 30-40 minutes.
Police station	0.1-1ha	Central to the communities they serve within a walking distance of at least 1, 5 km or at maximum travel time of 20 minutes.

#### 4.3.4.7 Industrial space demand

Increasing industrialisation, brought about by increased population growth and development, leads to more and more land being required for this use.

The Rocky Drift industrial/commercial node has experienced significant growth over the past few years as it is ideally situated to provide for the overspill activities from Nelspruit, as well as White River.

Riverside Park industrial/commercial node has experienced significant growth over the past few years accommodating commercial, warehouses, retail, offices, motor related land uses and industrial developments.

The demand for industrial land is strengthened by the importance of the N4 Maputo Development Corridor, Nelspruit being a regional service centre, supported by a strong agricultural sector with good linkages with the mining sector. The lack of affordable land that is serviced and zoned “Industrial” prohibits industrial growth and leads to industrial development outside the dedicated areas.

Table\_: indicates the anticipated industrial space demand for 2020 and 2030, given a scenario of higher future growth due to improved economic conditions in the market area.

Table\_: Industrial space demand

Cumulative additional demand	2020	2030
Manufacturing (m <sup>2</sup> GLA)	394 831	702 333
Warehousing (m <sup>2</sup> GLA)	578 226	1 028 559
<b>Total Mbombela</b>	<b>973 057(±97ha)</b>	<b>1 730 892(±173ha)</b>

Source: Mbombela Corridor Modelling Market Study, 2010

**Note:** Land required for industrial space if a Floor Area Ratio (FAR) of 0.5 is applied is 150ha in 2020 and 346ha in 2030.

#### 4.3.4.8 Office space demand

Table\_: indicates the anticipated office space demand for 2020 and 2030, given a scenario of higher future growth due to improved economic conditions in the market area.

Table\_: Office space demand

Cumulative additional demand	2020	2030
Finance and Insurance (m <sup>2</sup> GLA)	103 230	182 842
Business services (m <sup>2</sup> GLA)	615 659	909 718
<b>Total Mbombela</b>	<b>718 889 (±72ha)</b>	<b>1 092 560 (±110ha)</b>

Source: Mbombela Corridor Modelling Market Study, 2010

**Note:** Land required for office space if a Floor Area Ratio (FAR) of 0.7 is applied is 102ha in 2020 and 157ha in 2030.

#### 4.3.4.9 Trade space demand

Informal trade is an important economic sector, especially in the eastern parts, as it provides employment and livelihoods to a significant percentage of the people living in these areas.

The informal sector will remain an important sector in Mbombela, but an increasing number of people are supporting the formal retail sector, evident in the retail developments in Kabokweni, Kanyamazane as well as the facilities planned at Msogwaba and the upgrade of retail facilities in Matsulu.

Table\_: indicates the anticipated trade space demand for 2020 and 2030, given a scenario of higher future growth due to improved economic conditions in the market area.

Table\_: Trade space demand

Cumulative additional demand	2020	2030
Wholesale and retail trade (m <sup>2</sup> GLA)	429 276	672 853
Catering and accommodation(m <sup>2</sup> GLA)	402 977	622 910
<b>Total Mbombela</b>	<b>832 253 (±83ha)</b>	<b>1 295 763 (±130ha)</b>

Source: Mbombela Corridor Modelling Market Study, 2010

**Note:** Land required for trade space if a Floor Area Ratio (FAR) of 0.7 is applied is 118ha in 2020 and 186ha in 2030.

#### 4.3.4.10 Tourism

Tourism in Mpumalanga is fairly well developed, but growing at a tremendous rate. The scenic environment (natural resources), coupled with numerous attractions, rich cultural heritage and the Kruger National Park being one of the top ten tourist attractions in South Africa, make Mbombela a sought after destination to tourists.

This has led to the establishment of various up-market residential and golf estates throughout the municipal area as well as low-key tourism developments on farms providing overnight accommodation and recreation facilities i.e. lodges, chalets, guest farms, restaurants with hiking, horseback riding, canoeing, mountain climbing, swimming etc.

#### 4.3.4.11 Vacant land audit

The purpose of this section is to identify strategically located vacant or underutilised land that is located within the existing urban edge or that can relatively easily be incorporated into the existing urban fabric.

Strategically located pockets of vacant land are identified by perusing the latest aerial photography, Google earth imagery and site visits and do not include a detailed assessment of each individual land parcel. **(See Plan\_: Strategically located vacant land)**

For the purpose of the SDF parks and open spaces are considered developed.

Areas have been identified along the Nelspruit-White River Corridor and along the Nsikazi Corridor.

#### 4.3.4.12 Nsikazi Corridor

Table\_: Hazyview and surrounds

Nr	Locality	Size (ha)
1	The area located between the R40 and Kruger Park Lodge, north of the R536 road to the Kruger National Park	98
2	The area situated north of the R536-R40 T-junction	20



3	The area situated south of the R536-R40 T-junction	16
4	The area between Shabalala and the R40	418
5	The area between the R536 and Numbi Park to the west of the R40	420
<b>Total</b>		<b>972</b>

Table\_: Clau-Clau (Mbuyane Traditional Authority)

Nr	Locality	Size (ha)
6	The land situated within the settlement of Clau-Clau along the D2974.	32
7	The land situated between Clau-Clau and Sipelanyane along the D2974 road.	270
<b>Total</b>		<b>302</b>

Table\_: Daantjie (Mpakeni Traditional Authority)

Nr	Locality	Size (ha)
8	The land situated east of Daantjie and north of the southern Luphisi link.	158

Table\_: Khumbula (Gutshwa Traditional Authority)

Nr	Locality	Size (ha)
9	The land situated west of Khumbula and the D2689.	405
10	The land situated east of the D1411 and north of the D2975 road.	502
<b>Total</b>		<b>907</b>

Table\_: Nkambeni and Tshabalala (Nkambeni Traditional Authority)

Nr	Locality	Size (ha)
11	The land situated north of Nkambeni along the D2965 road.	141
12	The land situated between Hazyview and Nyongane as well as between the low-cost housing development and the Phabeni Gate road.	270
13	The land situated south of the low-cost housing development.	54

<b>Total</b>	<b>465</b>
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Table\_: Matsulu (Lomshiyo Traditional Authority)

Nr	Locality	Size (ha)
14	The area between the eastern boundary of Mthethomusha Nature Reserve and Matsulu B.	61

Table\_: Msogwaba (Msogwaba Traditional Authority)

Nr	Locality	Size (ha)
15	The land situated west of Msogwaba and east of Tekwane North along the D2975 Road (Southern Luphisi Link).	80

Table\_: Tekwane

Nr	Locality	Size (ha)
16	The land west of Tekwane South and south of Tekwane Central Landfill Site.	97

Table\_: Swalala (Masoyi Traditional Authority)

Nr	Locality	Size (ha)
17	The land between Bhekiswayo/Salubindza and Phola. The land is also between the P17/6 road and the D2967 road.	389

#### 4.3.4.13 Nelspruit-White River Corridor

Table\_: Nelspruit and Riverside Park

Nr	Locality	Size (ha)
18	The area between Nelsville and the N4 that is currently being used for agricultural purposes (orchards).	24
19	The area opposite the Orchards Shopping Centre, south of the N4 that is currently being used for agricultural purposes.	33
20	The area around Kamagugu, between the N4 Northern Bypass and the Kanyamazane road (D2296).	145
21	The area between the N4 Northern Bypass and the D725.	236

22	The land wedged between the R40 and Kanyamazane road, currently being used by the Agricultural Research Centre (ARC).	119
23	The area bordered by the N4 Northern Bypass, R37 road to Lydenburg and the railway line.	44
24	The area located west of Riverside Industrial, east of the P166 and north of the Crocodile River, currently being used for agricultural purposes.	105
25	Land located between Mbombela Soccer Stadium and the built up areas of West Acres.	141
26	The area located between Stonehenge and West Acres.	9
27	The area situated to the west of The Rest Eco Estate, east of the R40 and south of the Tshwane University of Technology.	255
28	The land located between Elaweni Residential Estate and the N4 Northern Bypass.	42
<b>Total</b>		<b>1153</b>

Table\_: Rocky Drift and surrounds

Nr	Locality	Size (ha)
29	The area between Wild Fig Country Estate and the R40	69
30	The area to the west of the R40, north of the existing Rocky Drift.	85
31	The area between Msholozzi and the Heidelberg Road, east of Rocky Drift	29
<b>Total</b>		<b>183</b>

Table\_: White River and surrounds

Nr	Locality	Size (ha)
32	The land between the R537 to Sabie and Msholozzi, west of the R40	196
33	The land located between the R40 and Ingwenyama Lodge	46
34	The land wedged between the R40 and the R537	8
35	The area between Casterbridge and White River, along the R40	61

36	The area between Danie Joubert Street and the R40, north of White River	228
37	The area between Colts Hill and the R537, north of White River	79
38	The area north of Colts Hill	61
39	The area south of Chief Mgiyeni Khumalo Drive, close to Buscor	21
<b>Total</b>		<b>700</b>

The following is evident from the tables above:

- The total size of strategically located vacant land in the Nsikazi corridor measures 3 431 hectares in extent.
- The total size of strategically located vacant land in the Nelspruit-White River Corridor measures 2 036 hectares in extent.
- The total size of strategically located vacant land is **5 467** hectares.

Note that the **size of vacant land** does not equal the **size of developable land**. The latter requires further fine-scale assessment with specific reference to biodiversity significance, topography, rivers and agricultural potential of land.

A more realistic approach to calculate the developable land is to subtract the land on which application for township establishment has already been made (**See Plan\_: Land use applications**) and to subtract 50% of the vacant land to be utilised for purposes of open spaces, roads and infrastructure.

Accordingly:

- In the Nelspruit-White River Corridor, application for township establishment has been made on approximately 45% of the vacant land, which leaves 1 331 ha vacant. **±665** ha is considered developable if 50% is subtracted.
- In the Nsikazi Corridor, application for township establishment has been made on approximately 14% of land (mainly around Hazyview), which

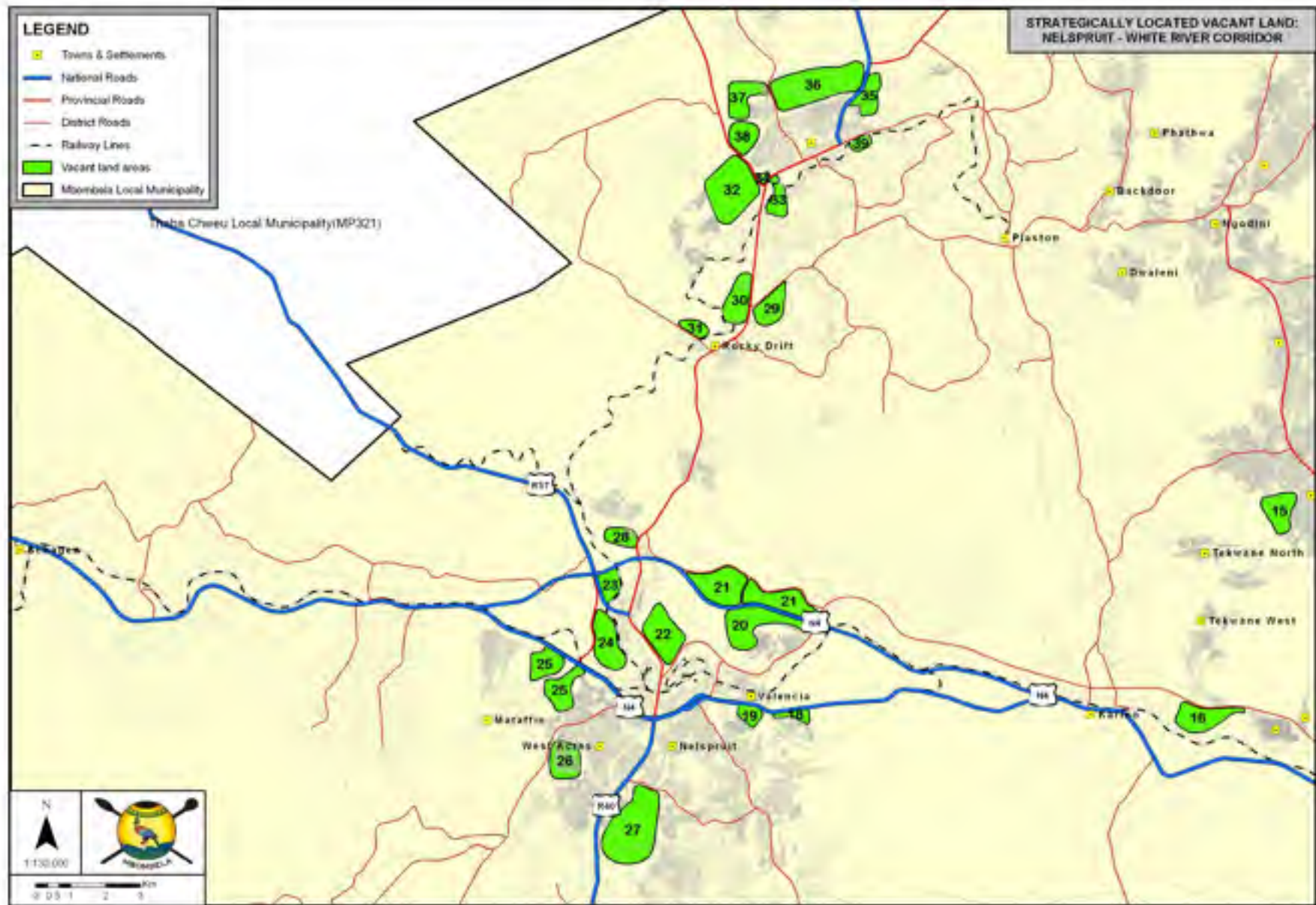
leaves 2 953 hectares vacant. **±1480** ha is considered developable if 50% is subtracted.

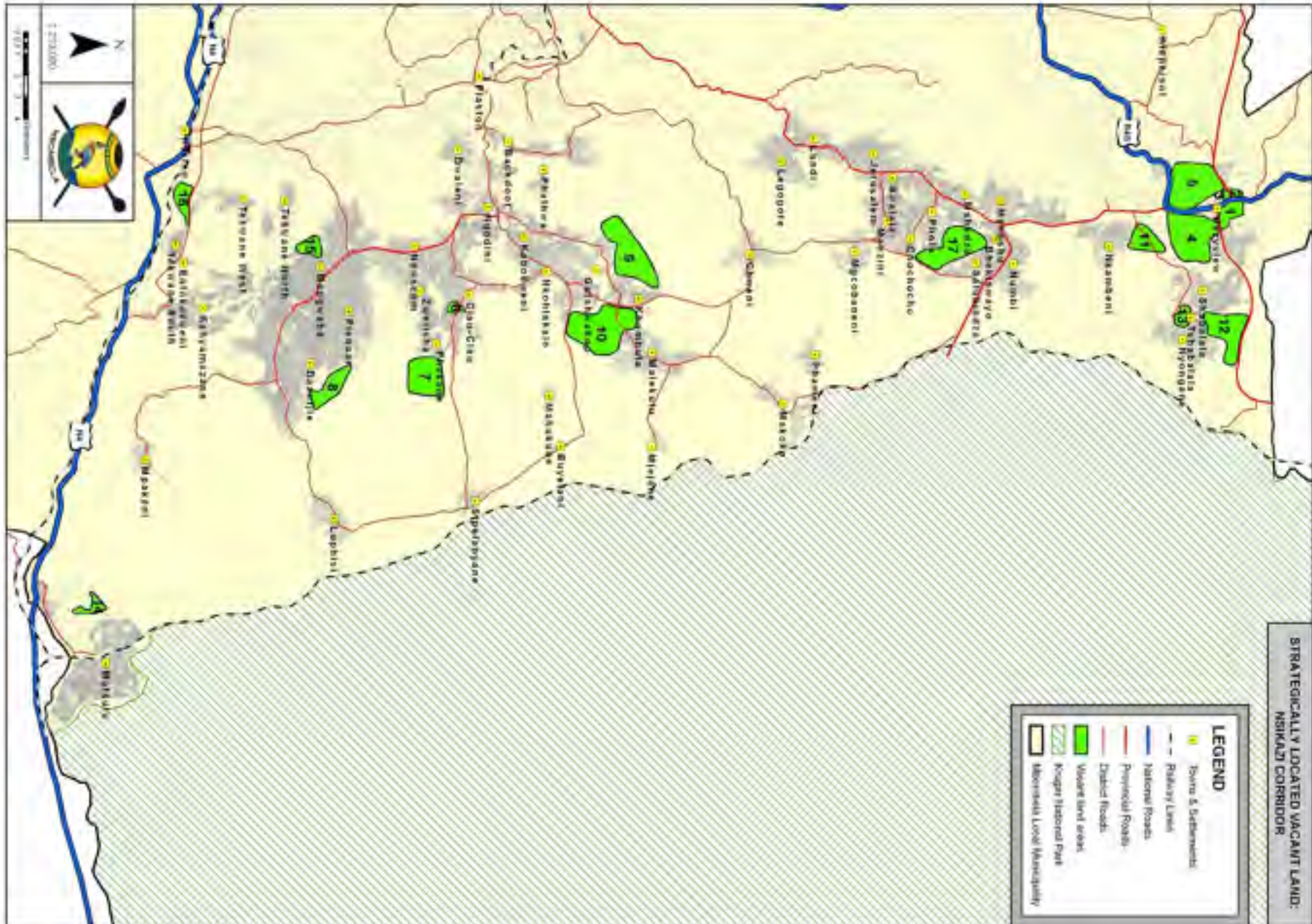
Thus, theoretically, there should be enough land available to cater for the established housing backlog (34 000 units) requiring 1360ha of land if developed at an average density of 25u/ha. The reality however may be significantly different.

Vacant land suitable for urban development is generally not a common feature throughout Mbombela. This can be attributed to urban areas that are fairly built up and surrounded by high potential agricultural land, topographical constraints and areas with high biodiversity potential.

The lack of developable vacant land necessitates measures for densification, integration and mixed land use development in both residential and typically non-residential earmarked areas.

The proposed use of vacant land forms an important part of the Spatial Development Framework and is further elaborated on in Chapter 8.





### 4.3.5 Infrastructure and services

Water supply and infrastructure

Water supply and infrastructure are briefly discussed below.

#### 4.3.5.1 Water resources

Mbombela Municipality relies on run-of-river abstractions from the Crocodile and Sabie Rivers as well as the yield of the Witklop, Klipkopjes and Longmere dams. The town of White River has an allocation from Witklip Dam and also from the Longmere Dam.

Nelspruit obtains its water from the Crocodile River, but these flows are supplemented from releases out of the Kwena Dam.

The total available resources, including estimated yields, are indicated in the table below: **(See Plan: Water infrastructure)**

Table 31: Summary of the existing surface resources

Resources	Yield available within Mbombela (million m <sup>3</sup> /annum)
<b>Ngodwana Dam</b>	21.1
<b>Witklip Dam</b>	0.8
<b>Klipkopjes/Longmere Dam</b>	10.1
<b>Primkop Dam</b>	12
<b>Crocodile farm dams</b>	36.2
<b>Crocodile run-of-river</b>	95.2
<b>Sub-total</b>	<b>175.4</b>
<b>Dam Gama</b>	9.5
<b>Sabie farm dams</b>	22.8
<b>Sabie run-of-river</b>	15.5

Resources	Yield available within Mbombela (million m <sup>3</sup> /annum)
<b>Sub-total</b>	<b>47.8</b>
<b>Total</b>	<b>223.2</b>

Source: Greater Mbombela Bulk Water Strategy, 2011

Surface water is augmented by groundwater sources (boreholes). The physical hydraulic nature of the granite aquifers prohibits large scale exploitation of groundwater. Groundwater is therefore not a viable option for bulk water supply but can be used as an additional source.

#### Future water requirements

- Currently, the demand already outstrips the supply of water in the basin and this is mainly due to competitive water users such as:
- Commercial agriculture i.e. crops such as sugar cane, citrus, sub-tropical fruits;
- Forestry plantations;
- Eskom's Highveld hydro power stations ( Eskom abstracts more than 100 million m<sup>3</sup> of water a year from the Nkomati River basin);
- Mining and industrial uses;
- Domestic water consumption; and
- Ecological water needs, released as a non-consumptive base-flow for the maintenance of riverine and aquatic ecosystems in all three main sub-catchments of the Nkomati River basin.

#### Water supply schemes

Table 32 indicates the different water supply schemes and capacity of water treatment works in Mbombela. It appears that the water treatment works have no spare capacity available for future development.

Table 32: Water schemes and water treatment works

Water scheme	Water treatment works	Design Capacity	Capacity available (%)
<b>Nsikazi North Scheme</b>	Nyongane WTW	15MI/day	0
<b>Nsikazi South Scheme</b>	New Kanyamazane and Old Kanyamazane WTW	60MI/day (new) 4MI/day (old)	0
<b>Matsulu</b>	Matsulu WTW	6MI/day	0
<b>Hazyview</b>	Hazyview WTW	2.9MI/day	0
<b>Nelspruit</b>	Nelspruit WTW and Old Nelspruit WTW	54MI/day (new) 8MI/day (old)	0
<b>White River</b>	Whiter River WTW and White River Country Estate WTW	9.12MI/day 1MI/day (WRCE)	0
<b>Elandshoek</b>	Elandshoek WTW	-	0
<b>Sappi Ngodwana</b>	New Ngodwana WTW and old WTW	4.5MI/day (new) 0.5MI/day (old)	0 0
	Karino	1.8MI/day	
	Primkop	1MI/day	

Source: Water Services Development Plan, 2009

### Water infrastructure

In the Sembcorp Silulumanzi supply area, infrastructure is generally in a healthy state. The Mbombela supply area is generally not bad, except for the Nsikazi supply area.

The status of Nsikazi infrastructure is as follows:

- Bulk infrastructure is in a fair condition, however upgrading is required. Already operating above capacity to meet current actual water demand.
- Link infrastructure is in a fair condition, however upgrading is required.
- Reticulation is not good and characterized with numerous informal connections.

### Access to water

- The 2008 Water Services Development Plan estimated a water services backlog of 70 068 households for 2009/10.
- The 2009 Water Services Development Plan estimated a water services backlog of 28 917 households for 2009/10, based on an updated baseline survey and figures from Sembcorp Silulumanzi.
- The Mbombela IDP 2010/11 quotes the 2006 Water Services Development Plan, confirming 48 711 households have below basic access to water services.

The table below compares the 2001 to 2007 trends with respect to access to water by households. The following trends are noted:

- Households with piped water inside dwelling increased from 20% in 2001 to 41% in 2007.
- Households having no access to piped water decreased from 13% in 2001 to 7% in 2007.

Table 30: Access to water by households

Access to water	2001	%	2007	%	
<b>Piped (tap) water to community stand: distance greater than 200m from dwelling</b>	23738	19	14718	11	↓
<b>Piped (tap) water to community stand: distance less than 200m from dwelling</b>	15229	12	14718	11	↓
<b>Piped (tap) water inside yard</b>	42917	35	40159	29	↓
<b>Piped (tap) water inside dwelling</b>	24528	20	56123	41	↑
<b>No access to piped (tap) water (inc borehole, spring, dam, pool, river, water vendor, rain water tank)</b>	16082	13	9077	7	↓
<b>Not applicable</b>	11	0	2558	2	↑
<b>Total</b>	<b>122505</b>	<b>100</b>	<b>137353</b>	<b>100</b>	

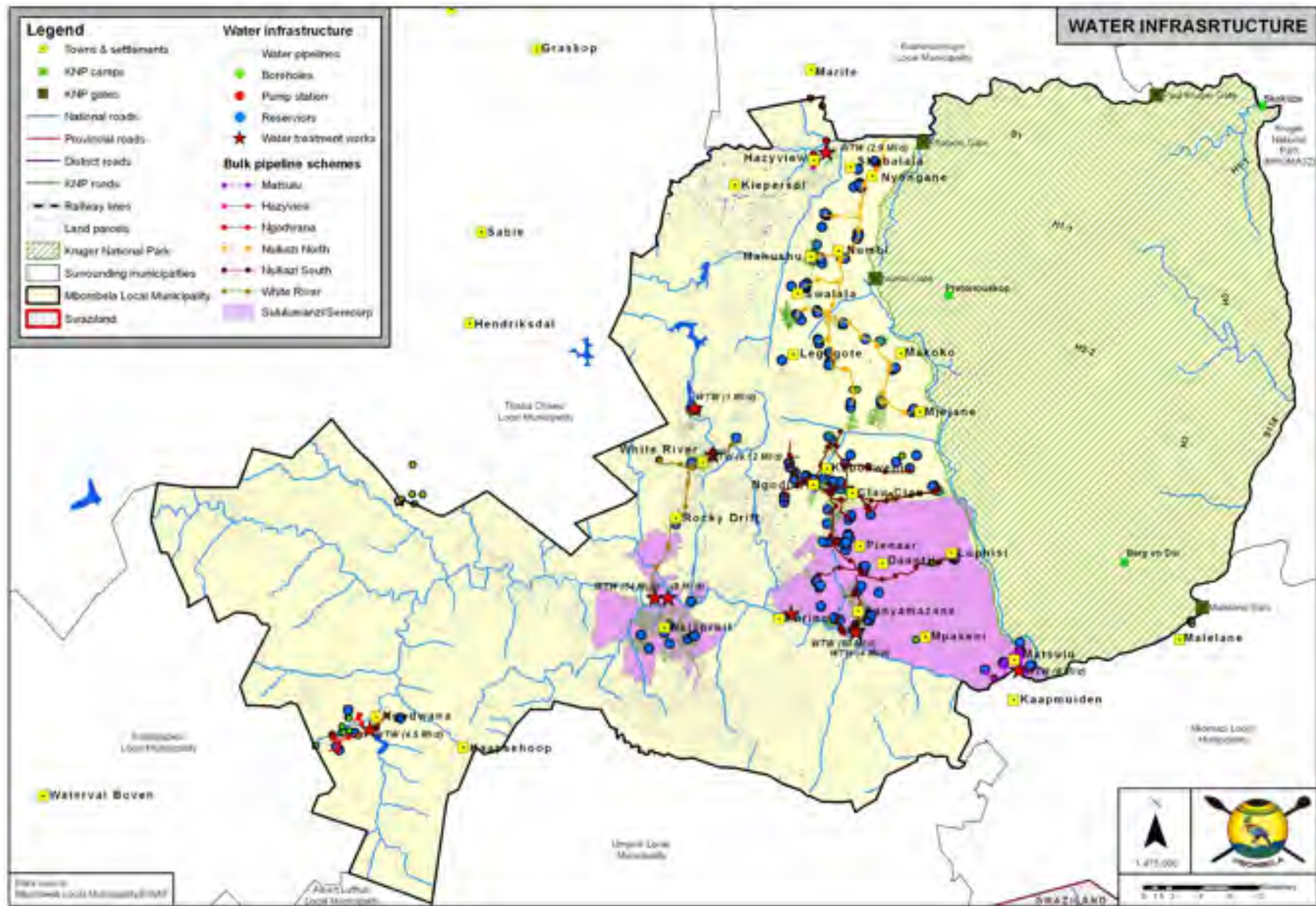
Source: Stats SA 2001 and Stats SA 2007

## Challenges

The following challenges are hampering the provision of water to households:

- Water requirements exceed the available water and water resources are limited.
- Lack of groundwater and groundwater pollution.
- Water losses are high varying between 15% and 60%.
- Water demand will increase as the population increase and it is also expected that increased service levels for Nsikazi North and South will have a huge impact on the water demand.
- Ageing infrastructure and maintenance of existing infrastructure.
- Uncontrolled informal settlements and illegal water connections.





#### 4.3.5.2 Sanitation infrastructure

Sanitation provision and associated infrastructure are briefly described below.

##### Sanitation infrastructure

Sanitation infrastructure (bulk and internal reticulation) is focussed in and around the towns of Matsulu, Kanyamazane, Nelspruit, Kabokweni, White River, Rocky Drift, Hazyview, Ngodwana and Tekwane.

10 Waste water treatment works are located in Mbombela, the location and design capacity are indicated in the table below: **(See Plan: Sanitation infrastructure)**

Table 34: Location and design capacity for waste water treatment works

Nr	Waste water treatment works	Design Capacity – Hydraulic Load (Ml/day)	Capacity available for development (%)	Description of Physical condition
1	Matsulu	6 Ml/day	50	Good
2	Kanyamazane	12 Ml/day	33	Good
3	Nelspruit	26 Ml/day	20	Good
4	Kabokweni	13.65 Ml/day (new) 3.38 Ml/day (old)	50	The new WWTW is still under construction The old is in poor condition
5	White River	3 Ml/day	-	Good
6	Rocky Drift	1.25 Ml/day	-	Good
7	Hazyview	0.7 Ml/day	10	Good
8	Ngodwana	-	-	Good
9	Tekwane	0.15	0	Good

Source: Water Services Development Plan, 2009

##### Access to sanitation facilities

- The 2008 Water Services Development Plan estimated a sanitation services backlog of 129 659 households for 2009/10.
- The 2009 Water Services Development Plan estimated a sanitation services backlog of 44 635 households for 2009/10, based on an updated baseline survey and figures from Sembcorp Silulumanzi.
- The Mbombela IDP 2010/11 quotes the 2006 Water Services Development Plan, confirming 110 148 households have below basic access to sanitation services.

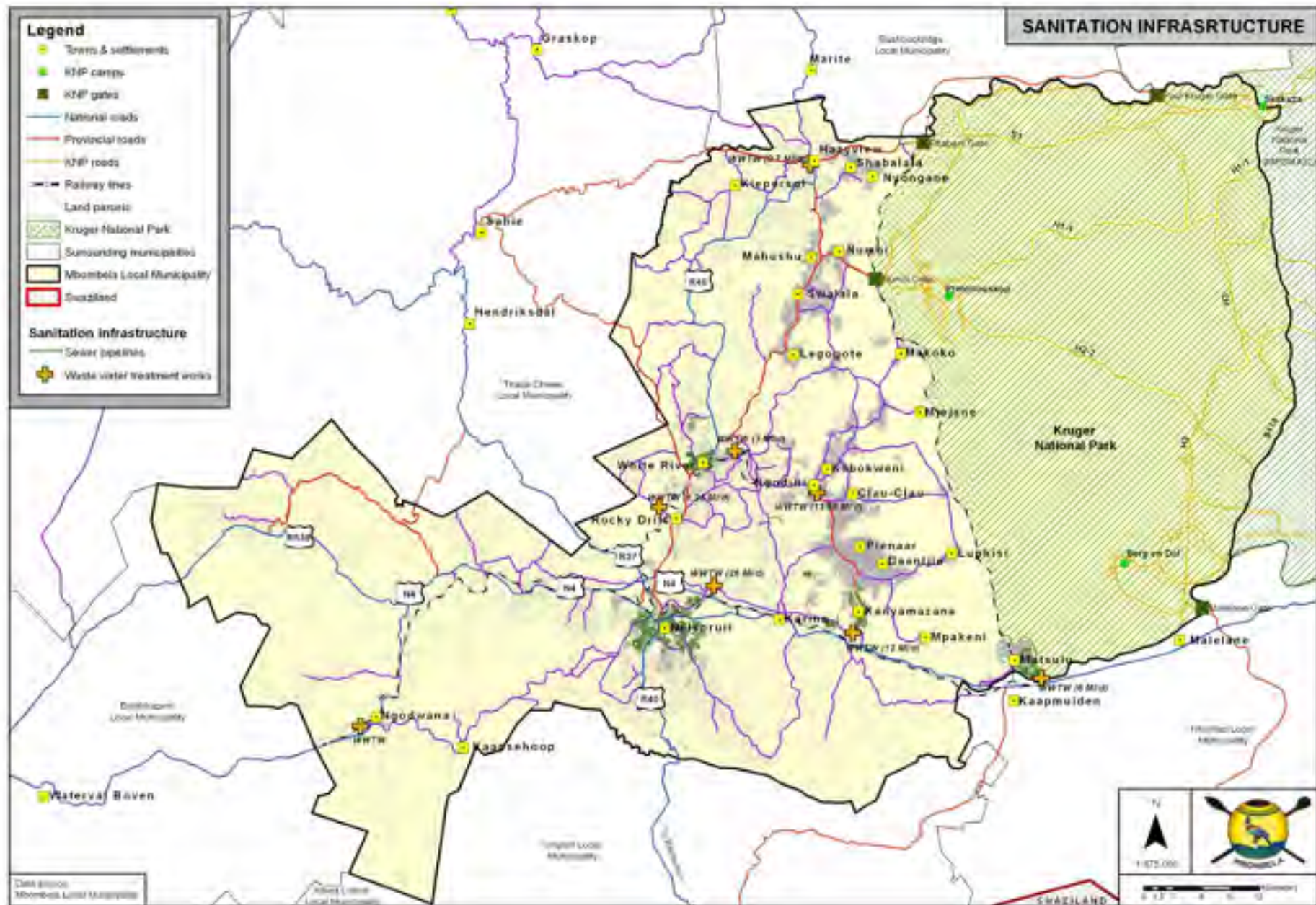
The table below compares the 2001 to 2007 trends with respect to access to sanitation by households. The following trends are noted:

- Households with flush toilets increased from 23% in 2001 to 28% in 2007.
- A 7% increase in households using the VIP system from 11% in 2001 to 18% in 2007 and a significant decrease in households using the pit latrine without ventilation.
- The bucket system has been eradicated.

Table 33: Access to sanitation

Sanitation type	2001	%	2007	%	
Flush toilet (connected to sewerage system)	28074	23	38755	28	↑
Flush toilet (with septic tank)	3517	3	2176	2	↓
Chemical toilet	2229	2	514	0	↓
Dry toilet	0	0	10740	8	↑
Pit latrine with ventilation (VIP)	12931	11	25163	18	↑
Pit latrine without ventilation	61524	50	48042	35	↓
Bucket latrine	1301	1	0	0	↓
None	12917	11	11962	9	↓
Not applicable	11	0	0	0	↔
<b>Total</b>	<b>122504</b>	<b>100</b>	<b>137352</b>	<b>100</b>	

Source: Stats SA 2001 and Stats SA 2007



### 4.3.5.3 Waste management

#### Waste infrastructure

##### Landfill sites

Mbombela has three operational solid waste landfill sites. The status of each is briefly discussed below: **(See Plan: Landfill sites)**.

#### 1. The new Tekwane West Central Disposal Site

The site is fenced with proper access control and has a guard house at the entrance.

<b>Location</b>	<b>±18km north east of Nelspruit</b>
<b>Permit</b>	Yes
<b>Estimated life span</b>	30 years
<b>Type of operation</b>	Cell method

#### 2. Hazyview landfill

<b>Location</b>	<b>±8km east of Hazyview</b>
<b>Permit</b>	No
<b>Estimated life span</b>	±8 years, but will be closed and rehabilitated once the new Nelspruit landfill site is operational
<b>Type of operation</b>	Cell method
<b>Estimated size of site</b>	10ha
<b>Proposals</b>	A transfer station will be built at the closed landfill site The site should be licensed until closure

#### 3. Mbombela landfill

<b>Location</b>	<b>±11km west of Nelspruit</b>
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<b>Permit</b>	Yes
<b>Estimated life span</b>	2 years
<b>Type of operation</b>	Cell method
<b>Estimated size of site</b>	6ha
<b>Proposals</b>	The site should be closed and be fenced

#### Transfer stations

The Nelspruit transfer station is the only one in the municipal area.

<b>Location</b>	<b>2km north-east of Nelspruit</b>
<b>Permit</b>	Yes
<b>Type of operation</b>	Transfer station/skips
<b>Estimated size of site</b>	1ha

#### Access to refuse removal services

The municipality provides refuse removal services to domestic, commercial and industrial (only general waste) properties.

- Only 27% of households receive refuse removal services, mainly focussed in the western areas.
- The majority of un-serviced households (73%) are located in the eastern Nsikazi areas.
- One of the contributing factors to the above is the use of old fleet (refuse removal trucks) and shortage of staff (general workers).
- The table below compares the trends in refuse removal services provided to households from 2001 to 2007. The following trends are noted:
  - The percentage of households receiving refuse removal services from the municipality increased from 25% (2001) to 28% (2007).
  - Households with no rubbish disposal or with their own refuse dump decreased from 65% to 63% and 7% to 5%, respectively.

Table 35: Refuse removal service

<b>Removal service</b>	<b>2001</b>	<b>%</b>	<b>2007</b>	<b>%</b>	
<b>Removed by local authority at least once a week</b>	30545	25	38142	28	↑
<b>Removed by local authority less often</b>	1500	1	2033	1	↔
<b>Communal refuse dump</b>	1538	1	2309	2	↑
<b>Own refuse dump</b>	80162	65	86460	63	↓
<b>No rubbish disposal</b>	8749	7	7462	5	↓
<b>Not applicable</b>	11	0	946	1	↑
<b>Total</b>	<b>122505</b>	<b>100</b>	<b>137352</b>	<b>100</b>	

Source: Stats SA 2001 and Stats SA 2007

### Challenges

The municipality faces the following challenges:

- Illegal dumping, especially building material, is a common phenomenon throughout the municipal area. Approximately 23 000tons of waste are dumped illegally within the municipal area.
- Existing landfill sites are close to full capacity.
- No capacity to effectively manage and monitor the disposal of hazardous, medical or industrial waste.
- Poor road infrastructure and old trucks limit waste collection services.



#### 4.3.5.4 Energy

##### Service providers

Mbombela Local Municipality provides electricity to all urban and peri-urban areas. Eskom provides electricity to all the surrounding farming areas, whilst also providing to the former TED (Transitional Electricity Distributor) areas, on behalf of the municipality.

##### Bulk electrical infrastructure (Eskom distribution)

The electricity network of Mbombela consists of four distinct categories broadly described below: **(See Plan: Electrical infrastructure)**

- 132kV power lines traversing the municipality from west (Ngodwana) to east (Matsulu) linking to Rocky Drift, as well as from south (Matsulu) to north (Hazyview).
- A north-south 66kV power line passing Nelspruit town to the west and links to Hazyview in the north.
- 22kV power lines serve the farming areas north-west of Montrose, Ngodwana, Elandshoek, Kaapschehoop and the eastern areas, mainly between Legogote and Hazyview.
- 6kV power lines serve farming areas around Schagen, Nelspruit, White River, Rocky Drift and the southern part of the eastern Nsikazi areas.

##### Mbombela Local Municipality Distribution

Mbombela's electricity intake points are as follows:

- Rocky Drift 132kV
- Matsafeni 132kV
- Delta 132kV and 33kV
- Nelsriver 132kV
- Paardklip 22kV

##### Access to electricity

The table below compares the 2001 and 2007 number of households with access to electricity for lighting purposes. The following trends are noted:

- The number of households with electricity increased by 13% between 2001 and 2007.
- Households using paraffin and candles for lighting decreased by 4% and 7%, respectively, between 2001 and 2007

Table 36: Access to electricity for lighting purposes

Type of energy	2001	%	2007	%	
Electricity	87338	71	117069	84	↑
Gas	402	0	233	0	↔
Paraffin	10268	8	4978	4	↓
Candles	23914	19	14249	11	↓
Solar	193	0	0	0	↔
Other	376	1	824	1	↔
Not applicable (institutions)	11	0	0	0	↔
<b>Total</b>	<b>124503</b>	<b>100</b>	<b>139360</b>	<b>100</b>	

Source: Stats SA 2001 and Stats SA 2007

##### Challenges

The municipality faces the following challenges with regard to electricity provision:

- The current backlog with respect to electricity provision is estimated to be 19 040 households and 6 schools (Source: IDP 2010/11).
- With respect to streetlight provision the backlog is estimated to be 20 000 street lights.
- Only 966 of Mbombela's households receive free basic electricity.
- The Nsikazi area has regular power outages.

#### 4.3.5.5 Transportation

##### Public transport operators

Commuter public transport trips during peak hours are primarily serviced by buses and taxis. Bus operators account for more than 75% of all public transport peak period trips and the remainder are attributed by taxis. Metered taxis and external shuttle services operate off-peak and are not commuter type services.

##### 1. Bus operators and services

Buscor is a private bus operator and is the major public transport commuter service provider in the area. Great North Transport, the major operator in Limpopo, has about 15 busses in Mbombela.

Trip distances from Nsikazi to Nelspruit vary from 20km to 40km. Long commuting distances and numerous stopping points result in many passengers standing in the busses for long periods of time during their commute.

##### 2. Taxi operators and services

There are four taxi operators servicing the following areas:

- Whitehazy Association, servicing Nyongane, Mahushu and Legogote,
- Kabokweni Association, servicing Gutshwa, Kabokweni and Clau Clau,
- Topstar Association, servicing Msogwaba, Daantjie and Lekazi and
- Matsulu Association, servicing Matsulu.

There are more than 85 metered taxis operating a roving and on-call service primarily in Nelspruit.

##### Public transport infrastructure

The main bus and taxi ranks/termini are located in White River and Nelspruit. In Nelspruit the bus and taxi ranks are located within 200m of each other, whilst in White River the ranks are located a 1000m from each other. A long distance taxi

rank is located adjacent to the Nelspruit commuter rank, and a kerbside rank for distribution services in central Nelspruit is located on Bester Street.

The main taxi rank in **Hazyview** is located next to a shopping centre, east of the R40. The main bus rank and a secondary taxi rank are located on municipal property west of the R40. The main bus and taxi ranks are located far apart making it difficult to transfer between the two modes.

In **Nsikazi** there are no major ranks but only depots for overnight storage at Matsulu, Kabokweni, Masoyi and Daantjie.

##### Rail services

The only passenger service in the area is a regional service between Gauteng and Komatipoort.

##### Air transport

Mbombela has two airports;

- Kruger Mpumalanga International Airport (KMIA) ; and
- the old Nelspruit Airport manned by the South African Defence force.

#### 4.3.5.6 Roads and stormwater

Mbombela's main road network consists mainly of national, provincial and district roads. **(See Plan: Transportation Infrastructure)**

- The N4 runs on an east-west axis through the Nelspruit CBD forming the backbone of the Maputo Development Corridor, providing direct access to the economic nodes of Ngodwana Sappi and Nelspruit. It passes the settlements of Tekwane, Kanyamazane and Matsulu south of the Crocodile River.



- The R40 serves as the main north-south connection between White River, Rocky Drift and Nelspruit and is a major corridor for vehicular traffic during and outside peak hours.
- D636 (Airport Road) west of the low income areas of Kanyamazane/Tekwane, Daantjie/ Msogwaba, Dwaleni, Kabokweni, and Phatwa.
- P17/6 (White River – Hazyview) in the process of reconstruction, providing direct access to Legogote, Jerusalem, Phola, Mahushu, Nkambeni and Hazyview
- D2296 and D1732 providing access to Kanyamazane and Msogwaba/Daantjie, respectively
- D1411 providing a circular route through Kabokweni, Ngodini, Nkohlakalu, Gutswakop, Gutshwa, Chweni, from D636
- P258/1 providing internal accessibility through Daantjie, Msogwaba and Zwelisha
- The D725 provides an important link between the R40 and the D2296, and eventually the R538.
- The D2689 from Kabokweni and the Luphisi Road (D1723) support these major links
- District roads serving the other isolated settlements.

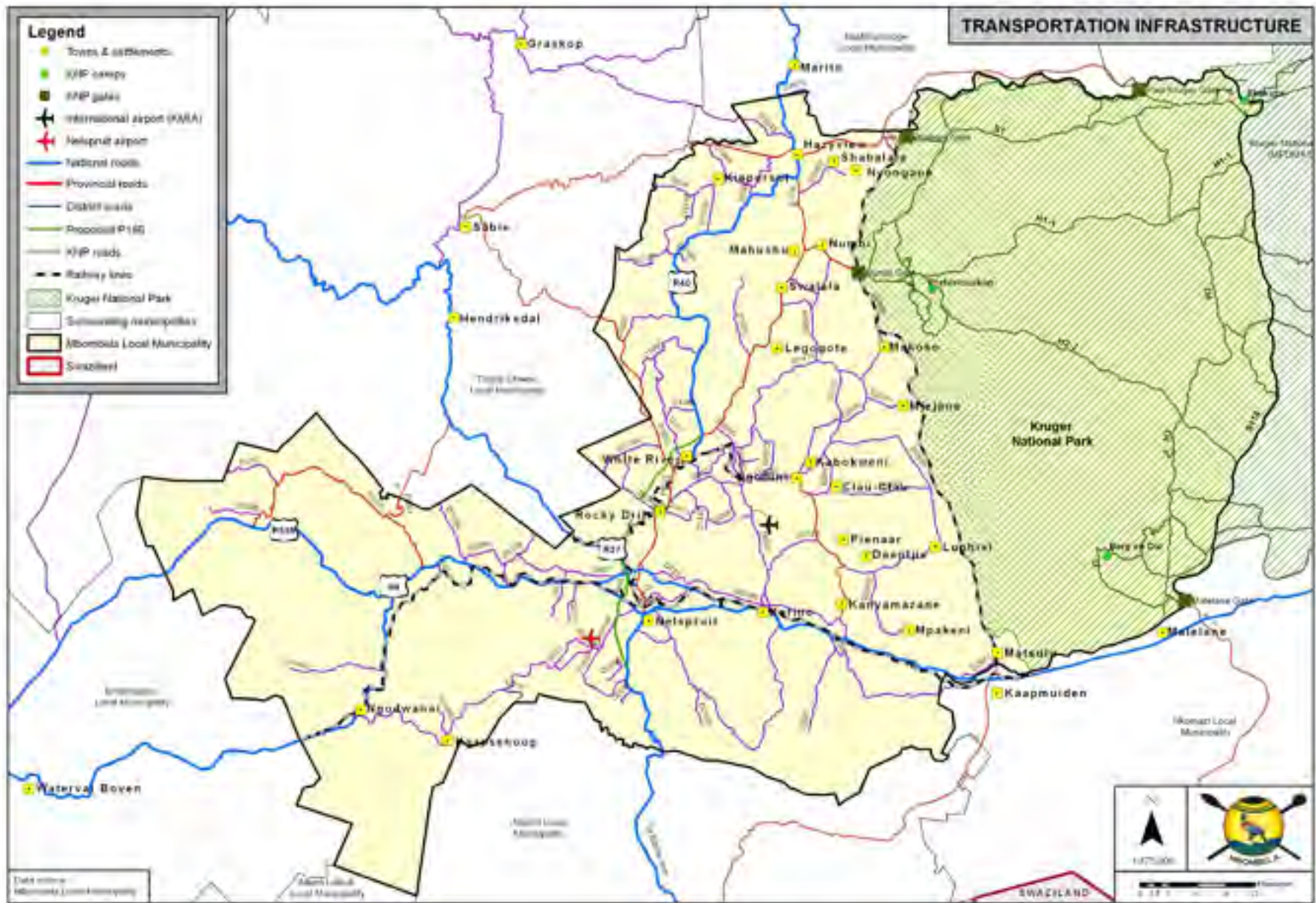
Sections of the N4, either side and throughout Nelspruit are dual carriageway, as is the entire R40 between Nelspruit and White River. Virtually all other major roads are asphalt surfaced single carriageways with one lane in each direction. Minor roads are gravel surfaced.

### **Stormwater**

The large majority of the developed areas the Nsikazi area are lacking formalised road and stormwater systems. Management of stormwater is therefore problematic with the following typical challenges:

- Excessive erosion that causes roads to be impassable in many cases and a danger to road users and pedestrians, especially at night.
- Large quantities of gravel are deposited in existing drains, reducing the stormwater carrying capacity.

- Large quantities of gravel are deposited on surfaced roads creating a danger to road users.
- Residents have trouble in accessing clinics, cemeteries, churches and pay points etc.
- Learners have difficulty accessing schools.
- Regular maintenance is required to backfill drainage furrows caused by erosion and to clear gravel deposits from drains and road ways.
- Re-gravelling of un-surfaced roads is frequently required, after almost every heavy storm.
- Flooding occurs in many areas leading to damage of municipal infrastructure and to personal property; and
- Ponding of stormwater results in various health risks.



#### 4.3.6 Spatial implication of built environment

From the analysis the following deductions can be made for the built environment.

- The built-up areas can be defined along two main corridors, being the western Nelspruit-White River corridor and the eastern Nsikazi Corridor.
- The majority of people reside in the eastern Nsikazi area, however the main employment areas are located in the western Nelspruit-White River Corridor, which results in long travelling distances between work and home.
- Settlements that play a more prominent role, as they offer a larger variety of functions and services to a larger area of influence, are located in the western corridor. Settlements located in the eastern Nsikazi area have a limited economic base and depends largely on higher order settlements for specialised goods and services.
- A vast difference exists between the type of pressures for development between the eastern and western corridors. Development in the western parts is mainly private and profit driven, whilst development in the eastern areas is driven by the public sector focussing on eradicating backlogs in terms of housing, social facilities and engineering infrastructure.
- A continuous population growth results in:
  - Increased need for engineering and social infrastructure including electricity, water, sanitation, roads, community and recreational facilities.
  - Pressure on land for residential purposes and the competition with subsistence or commercial agricultural activities. Informal settlement is the result of failing to provide affordable housing opportunities.
  - Increased pressure for burial facilities.
- There is a significant demand for subsidised houses, considering the current housing backlog.
- A small percentage of identified vacant land is developable mainly due to topographical constraints (steep slopes), environmental sensitive areas and high potential agricultural land.
- The settlements in the eastern areas are lagging behind in terms of service delivery as compared to the developed western areas.
- Areas such as Nsikazi are priority in terms electricity provision as they are constantly faced with power outages.

- The majority of the employed population uses public bus services and resides in the Nsikazi area. The N4 and R40 roads serve as the backbone to the road infrastructure network.

## 5 CHAPTER 5: Synthesis

### 5.1 Introduction

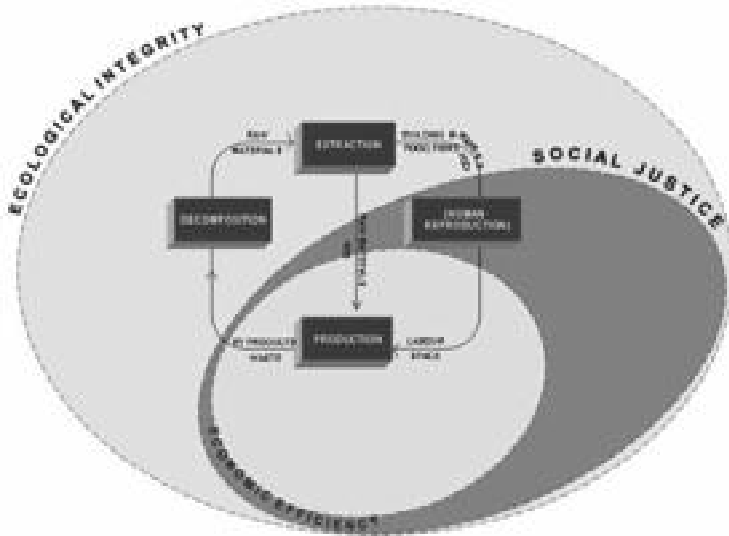
This chapter provides a synthesis of the findings of the foregoing chapters by perusing the Closed Ecological Cycle.

### 5.2 The Closed Ecological Cycle

The closed ecological cycle acknowledges that economic production cannot exceed human capacity and the resources that can be extracted from nature. In turn the cycle can only remain in balance if the waste outputs do not exceed the capacity of the environment to decompose them.

The relationship between the three components namely biophysical-, socio-economic- and built environment is found within the closed ecological cycle.

Figure 1: Closed ecological cycle



Based on the Closed Ecological Cycle the synthesis is structured under the following headings:

1. Extraction
2. Human reproduction
3. Production
4. Decomposition

In addition to the four key components there are four external drivers (enablers/destabilisers) to the cycle, namely:

1. Property market
2. Equity and inequality
3. Funding and income
4. Governance and legislation

### 5.3 Extraction

Primary extractive economic activities such as mining, fishing, agriculture and forestry are directly dependent on the ability of land resources such as geology, soils, climate, biodiversity and water availability.

From the analysis the following is noted for Mbombela:

#### 5.3.1 Agriculture

Climate, soils and availability of water reflect in the current distribution of the main agricultural activities in Mbombela, being:

- A sub-tropical climate allows for a wide variety of crops including banana farming, tobacco, avocados, litchis, sugar cane, mangoes, oranges, lemons, tangerines and macadamia nuts.
- Mbombela is one of the largest banana farming and export areas, mainly clustered around Hazyview and Kiepersol with unique micro climates.

- Mbombela is the second largest sub-tropical fruit producing area in South Africa. Citrus is produced on a wide variety of soils, provided the soil is well-drained and the area is frost -free.
- Forestry occurs on the higher lying areas in the western part and to north of White River. The timber industry is growing and Ngodwana is home to Africa’s biggest pulp and paper mill.

### Challenges

- Agricultural land is impacted on by un-controlled human settlement, especially in the Nsikazi area.
- A limited water supply exists for irrigation purposes.
- Unsustainable farming practices (overgrazing, free roaming of livestock and subsistence crop farming in water catchment areas and river banks) due to extreme poverty in certain regions, insufficient knowledge and skills and lack of enabling infrastructure.
- Conflict exists between human settlement and the conservation of high potential agricultural land around settlements, especially Nelspruit.
- Climate change with expected higher temperatures and lower rainfall will reduce the number and types of agricultural produce.
- Poorly implemented land reform projects and settled land claims i.e.: Kiepersol.
- Agricultural land (land in general) is expensive in Mbombela and in high demand.

### 5.3.2 Mining

The geological composition of Mbombela does not contain minerals and metals of significant value for mining. Mining in the area are restricted to crusher quarries and sand mines.

Gold, asbestos and limestone deposits, varying from occurrence to exploited, are located in the western part of the municipality along the escarpment.

Small scale sand mining, mainly from river beds, poses a threat to the environment due to environmental degradation.

### 5.3.3 Water

Water is extracted for mainly human consumption, industrial and agricultural purposes. Mbombela relies on the following main surface water resources:

Crocodile River (Kwena Dam)  
 Sabie River  
 Witklip Dam  
 Klipkopje/Longmere Dam

### Challenges

- Currently the water demand outstrips the water supply.
- The physical hydraulic nature of the granite aquifers prohibits large scale exploitation of groundwater.
- Alien vegetation transpires excessive water volumes and has a significant negative impact on surface water resources.
- The unaccounted for water is exceptionally high, especially in Nsikazi North (±70%). Unaccounted for water can be ascribed to reticulation leaks, illegal connections, unmetered connections and plumbing leaks.

### 5.3.4 Natural assets

A combination of the area’s topography, soil conditions, vegetation types and climate give rise to numerous scenic environmental features located throughout the municipal area. These include, amongst others:

- Sabie River and Crocodile River with the Lowveld Botanical Gardens,
- Schoemanskloof and the Sudwala Caves,
- Crocodile Gorge,
- Kaapsehoop and its scenic escarpment views
- Legogote Mountain

Numerous conservation initiatives are in place to protect the biodiversity assets and to expand the conservation footprint of Mbombela, the most prominent reserves include:

- Kruger National Park
- Methethomusha
- Coetzeestroom
- Barberton
- Wonderkloof
- Starvation Creek
- Blouswaelvlakte

### **5.3.5 Conclusion**

The sub-tropical climate and soil conditions ensure the production of a wide variety of crops. Mbombela is one of the largest banana farming and export areas and second largest sub-tropical fruit producing area in South Africa, with a growing timber industry. A critical constraint to the agricultural sector is the shortage of water.

Mbombela has little to offer in terms of mining possibilities due to limited mineral and resource deposits, unlike the mining significance of the remainder of Mpumalanga Province characterized with vast coal resources sustaining several coal-fired power stations.

The municipality boasts various natural resources with various scenic environments that, coupled with the Kruger National Park, make Mbombela a sought after destination to tourists. These features need to be protected and utilised in an environmental sustainable way.

## 5.4 Human Reproduction

Similarly, the quality of human resource inputs into the system is dependent on a number of demographic indicators relating to education, health, housing, employment, entrepreneurial development, spiritual aspects such as the role of religion.

Aspects of these indicators, for example health are also dependant on the availability of primary extractive outputs such as water, food and fibre.

Another important aspect of the ability of human resources to participate effectively in the economy as well as interact socially and engage spiritually lies with the structure of human settlements and the extent to which they are efficient and conveniently structured.

### 5.4.1 People

The following broad trends are evident in Mbombela:

1. The Nsikazi area is characterized by high unemployment, high dependency ratio, low level of education, income levels are low and people are mainly employed in sectors that require elementary skills i.e. agriculture, manufacturing and domestic services. Community and social facilities are insufficiently provided and requires continuous upgrade. Engineering services are inadequate and major backlogs exist.
2. The more developed western areas are characterized by low unemployment levels, high levels of education and income levels that vary from middle to high. Sufficient community facilities exist as well as a high level of engineering services. In general the area provides a good quality of life.
3. The human development index (HDI) is a composite of life expectancy, adult literacy, school enrolment and Gross Domestic Product (GDP) per capita. The closer the index is to 1 the higher its level of human development. The HDI for Mbombela is 0.56, which is average and can

be ascribed to the vast difference in socio-economic conditions between the eastern and western parts of the municipality.

4. Mbombela has the second highest HIV/Aids prevalence in the Ehlanzeni District Municipality with the result of lowered productivity, increased need for health services, increasing number of orphans and a need for cemetery sites. The epidemic contributes a great deal to poverty creation in the area due to income being spent on medicine with less money available for housing, amenities and other goods.
5. Mbombela tends to attract a large number of semi- and unskilled people from various destinations in search of economic opportunities. Migration to the municipality puts pressure on its resources with the following spatial challenges:
  - Continued urban sprawl, especially in the former homeland areas.
  - Increased need for engineering and social infrastructure and services.
  - Pressure on land for residential purposes and the completion with agriculture.

### 5.4.2 Settlements

The municipality is divided into two prominent axis, namely:

- The highly developed western axis with commercial, industrial, service, business and residential developments concentrated in the more affluent towns of Nelspruit, Rocky Drift, White River and Hazyview.
- A secondary eastern development axis consisting of low income urban and residential areas supported by a sub-standard road system. Existing development nodes include Kanyamazane, Matsulu and Kabokweni.

Settlements in the eastern part are characterized by a lack of economic and social opportunities and insecure forms of land tenure. Settlements are rapidly growing in an unplanned and uncoordinated manner, with no clear road hierarchy and lack of any form of land use management. Low-density urban sprawl is the dominant settlement pattern.

These settlements are inefficient in terms of engineering service delivery, inconvenient in terms of long travelling distances and high reliance on public transport, and unpleasant to live in due to the lack of social and economic opportunities as well as undesirable and illegal land uses happening next to each other. Very little or no provision is made for green spaces, parks or recreational areas, which has an adverse effect on the quality of human life within these settlements.

Settlements in the western part have opposite characteristics to the settlements in the east. Rigid town planning schemes, which assured definite land uses within certain zones, control development in these areas. Due to the uniformity provided by these zonings a set standard of development is achieved in terms of scale and quality.

### **5.4.3 Conclusion**

Socio-economic conditions in the eastern part of the municipality have a huge impact on the ability of people to contribute to production and ability of people to adapt to changing circumstances. General poor living conditions, long travelling distances and travel times, little economic opportunities and lack of land tenure are counterproductive and need to be addressed.

Illegal dumping, encroachment onto road reserves, informal trade and informal settlement are common issues that need to be addressed to improve living conditions and the appearance of these settlements.

The distance between live and work areas must be decreased in order to decrease the resources spent on commuting and to increase access to economic opportunities and thereby improve the ability of people to contribute to production.



## 5.5 Production

Economic production mainly relates to the secondary and tertiary sectors and their contribution to employment and/or GVA (Gross Value Added).

From the analysis the following is note for Mbombela:

### 5.5.1.1 Contribution to GVA

Table\_: illustrates that:

- Manufacturing, finance and business and government services are the sectors that contributed most to (GVA) in Mbombela.
- Mining only contributes 2.5% of the total GVA, while Mpumalanga produces a high 17.6%.
- Agriculture in Mbombela is declining as the economy moves towards providing services.

Table\_: Sectoral contribution to GVA

Sector	1999	2004	2009
<b>Primary Sectors</b>			
Agriculture	4.5%	4.5%	3.6%
Mining	3.1%	2.8%	2.5%
<b>Secondary Sectors</b>			
Manufacturing	18.7%	19.2%	17.8%
Utilities	2.0%	2.2%	2.0%
Construction	2.8%	2.5%	3.2%
<b>Tertiary Sectors</b>			
Trade Sector	16.1%	15.3%	13.4%
Transport and Communications	10.5%	11.5%	10.2%
Finance and Business Services	19.1%	18.8%	21.7%
Community Services	7.8%	8.3%	9.2%
Government Services	15.2%	14.9%	16.4%

Sector	1999	2004	2009
Total	100%	100%	100%

Source: Economic Inputs for the Mbombela Bulk Water Strategy, May 2011

### 5.5.1.2 Contribution to employment

Table\_: illustrates the formal employment as a percentage contribution by each sector.

- The sectors that contribute the most to employment are Trade and Accommodation, Finance and Business Services and Government Services.
- The sectors that contribute the least to employment are Mining, Utilities, Construction and Transport and Communication.

Table\_: Employment contribution per sector

Sector	1995	2000	2005	2009
Agriculture	14.1%	12.8%	8.5%	4.9%
Mining	0.9%	0.4%	0.5%	0.9%
Manufacturing	16.4%	12.2%	9.3%	6.1%
Utilities	0.4%	0.6%	0.5%	0.6%
Construction	3.0%	2.4%	2.1%	1.9%
Trade and Accommodation	25.7%	28.6%	25.8%	24.7%
Transport and Communications	2.5%	2.2%	2.3%	1.9%
Finance and Business Services	16.2%	18.4%	22.7%	25.1%
Community Services	3.5%	4.1%	5.8%	5.6%
Government Services	17.4%	18.3%	22.7%	28.3%
Total	100%	100%	100%	100%

Source: Economic Inputs for the Mbombela Bulk Water Strategy, May 2011

The following sectors have the potential to provide future growth in Mbombela:  
(Source: Economic Inputs for the Mbombela Bulk Water Strategy, May 2011)

### **Mining**

Even though the mining sector of Mbombela contributes a small percentage to the GVA, the municipality can exploit this sector by providing services and trade to surrounding mines in the province.

### **Construction**

Infrastructure investment by government in terms of transport and electricity as well as the provision of houses and services hold the most potential for local construction companies to benefit.

### **Trade**

Trade is a current strength in the economy of Mbombela and pro-active measures need to be implemented to retain the stability and future growth of this sector.

### **Transport**

This sector is becoming increasingly important for this service orientated economy. The accessibility to the Maputo development corridor should be fully exploited.

### **Community services**

Continued investment in SMME's, infrastructure and human capital will ensure success in this sector.

### **Tourism**

This sector's influence spans over a multitude of economic sectors and has a significantly important multiplier effect.

## **5.5.2 Conclusion**

The economy of Mbombela is growing (growth was estimated at 3.49% from 2001 to 2005) at a too slow pace to accommodate the ever increasing number of labour entrants, thus indicating the economy is changing trajectory and becoming more capital than labour intensive.

To further the growth of the economy, in line with national and local targets as well as to make provision for the ever increasing number of labour entrants, it is essential that this situation be reversed to create more labour intensive industries.

Mbombela has a large pool of skilled and semi-skilled labourers providing opportunities for further development in dominant economic sectors requiring such skills. This provide an opportunity to establish labour intensive industries in Mbombela

## 5.6 Decomposition

The final set of relationships in the ecological cycle relates to decomposition and focus on the performance of environmental sinks such as waste water treatment works, landfill sites and the absorption of atmospheric and aquatic pollution.

If environmental sinks are unable to cope with the loads deposited in them, this will lead to an increasing inability of the eco-system to continue to provide the services that are required in terms of the various extractive components.

An ecological balance can only be achieved if the waste outputs do not exceed the capacity of the environment to decompose them.

From the analysis the following is noted for Mbombela:

### 5.6.1 Water pollution

There are a number of cases where polluted water is returned to the resource (both surface and groundwater) without being treated. This mainly occurs when:

- There are no, or poorly managed stormwater systems which results in run-off and pollution of water sources.
- There are poorly operated and maintained sanitation facilities e.g. blocked sewers, pump failures etc. leading to sewage leaks and pollution of water resources. The physical condition of all waste water treatment works seem to be good and most treatments works have spare capacity.
- There is runoff from informal settlements (e.g. where standpipes are poorly designed with no drainage system).
- Sludge of pit latrines is not disposed of adequately. To avoid this, the use of double pits could be explored.
- High density of VIP's and VIP's in high contamination risk areas
- There is run-off from solid waste sites where no collection system exists.
- There is run-off from agricultural areas e.g. feedlots, cultivated lands.

Organic pollution of the Gutshwa and Nsikazi rivers through the washing of cars and clothes is problematic. Mbombela will have to urgently develop a grey water management strategy, especially in the denser settlements.

Approximately 23% of Mbombela's rivers are affected by weed infestations. These weeds have a detrimental impact on most aquatic biota, it provide a habitat for bilharzia snails and malaria mosquitoes and are a serious problem in some of the rivers, especially the Crocodile River. The Sabie-Sand River's water quality is affected by pollutants from mining activities occurring upstream as well as agriculture and urban developments.

Further, the rivers are affected by littering caused by illegal dumping and illegal/informal cemeteries within the river buffers results in water contamination which can pose health risks.

Alien vegetation transpires excessive water volumes and has a significant negative impact on surface water sources. DWA has initiated the Working for Water Programme to eradicate alien vegetation from rivers and streams.

### 5.6.2 Air pollution

Natural processes become under pressure due to increased population numbers resulting in increased demand for products and services, in some instances linked to negligence and/or lack of environmental awareness.

Increased industrial activity typically causes increased levels of heavy metals such as lead and increased levels of CO, hydrocarbons and NO<sup>2</sup>.

Increased transportation emissions as a result of increased number of vehicles lead to increase levels of hydrocarbons, particulate matter and lead.

Increase burning of fossil fuels typically result in increased levels of smoke, particulate matter and hydrocarbons.

Unpaved roads and mine dumps could lead to increased dust levels.

The burning of waste typically result in increased levels of smoke, particulate matter, chlorinated organic, heavy metals and hydrocarbons.

A significant percentage (as much as 70%) of Eskom electricity is generated in Mpumalanga, impacting on the air quality throughout the province and even further afield.

Other specific air quality issues affecting Mbombela include high pollen counts related to the intensive citrus farming in the area, industrial emissions (Sappi Ngodwana, Delta Manganese Metal Company (MMC), Delta EMD, Novaboard and others), smoke from domestic coal and wood burning, sugarcane and waste burning and vehicular emissions from the N4 crossing through Mbombela.

### 5.6.3 Soil erosion

High occurrence of soil erosion leads to siltation of rivers and streams and consequent single-species dominance. Further this leads to a reduction in wetland plant diversity and wetland habitat diversity, an increase in the risk of fire during dry periods, and increased risk of flooding and associated damage.

Soil erosion causes severe problems in certain areas, attributed mainly to:

1. Forestry in the western section of Mbombela,
2. Agricultural activities and bad farming practices in the central region and to the north,
3. Sand mining at White River, Alkmaar, Karino, Hazyview and
4. Poor stormwater management, mainly in the Nsikazi area.

### 5.6.4 Cemeteries

Mbombela is facing a challenge with regard to cemeteries/burial sites especially in the Nsikazi area which is densely populated. The high mortality rate in Mbombela in recent years resulted in most of the cemeteries managed by the municipality reaching capacity sooner than anticipated. Further, there is a concern that some of the cemeteries that were not properly planned are located near riverbanks, springs or boreholes, hence there is a threat of groundwater contamination. Considering the impact of HIV/Aids it becomes imperative to identify cemetery sites with sufficient capacity and areas with suitable soil conditions to prevent groundwater pollution.

### 5.6.5 Refuse disposal

The municipality is facing a challenge with regard to solid waste management, as only 27% of the households receive refuse removal services, whilst 73% have no services. Illegal dumping is a common phenomenon throughout the municipal area and the existing landfill sites are close to full capacity. Disposal of hazardous medical or industrial waste is poorly managed; incinerators are not utilised at all times. The municipality has only three operational landfill sites in Nelspruit (this site will soon be closing as it has reached its capacity) Hazyview, as well as the newly opened Tekwane West Central Waste Disposal Site.

### 5.6.6 Conclusion

The major aim of the Spatial Development Framework is to improve the physical, economic, social, institutional and natural environment in such a way that it improves the quality of life of all its citizens. The Spatial Development Framework needs to increase the performance of the environment and its people through a process of spatial reconstruction taking into account the need to balance economic, social, institutional, physical and natural aspects.

## 5.7 Enablers or destabilisers

In addition to the four key components there are four external drivers (enablers/destabilisers) to the ecological cycle, namely:

1. Property market
2. Equity and inequality
3. Funding and income
4. Governance and legislation

### 5.7.1 Property market

The dynamics of the property market in terms of tourism, residential, industrial, commercial, agricultural and rural property has an enormous bearing on the extent to which the system is able to keep in balance. The issue of land reform and spiralling land prices is an example of the impact of this driver.

Property market trends in Mbombela are briefly described below:

#### 5.7.1.1 Tourism

Tourism in Mpumalanga is fairly well developed, but growing at a tremendous rate (Source: Local Economic Development Strategy 2008). This calls for large capital investments in order to supply the needed and required tourism infrastructure.

The scenic environment (natural resources), coupled with numerous attractions, rich cultural heritage and the Kruger National Park being one of the top ten tourist attractions in South Africa, make Mbombela a sought after destination to tourists. The emphasis is on the golf tourist market, nature markets, adventure tourists as well as business meetings, conferences and exhibitions.

This has led to the establishment of various up-market residential and golf estates throughout the municipal area as well as low-key tourism developments on farms providing overnight accommodation and recreation facilities i.e. lodges, chalets, guest farms, restaurants with hiking, horseback riding, canoeing, mountain climbing, swimming etc.

Scattered tourist developments should be well-managed not to detrimentally impact on the environment (resource) through poor solid waste and sewage disposal. Additional strain on existing water resources should be avoided. Specific guidelines must apply to estate-type developments not to impact negatively on the environment.

#### 5.7.1.2 Residential

Over the years Mbombela has grown considerably due to its status as provincial capital seat, with Nelspruit as a regional service centre, tourism and major infrastructural developments (i.e. Mbombela Stadium, N4 Northern Bypass, KMIA, R40 upgrade, improvements to the Lowveld Botanical Gardens etc). This resulted in a demand for urban land around the main economic centres i.e. White River, Nelspruit and Hazyview with resultant higher land prizes.

Whilst Mbombela is now a fairly large city, it has retained its natural characteristics and sought after environment to live in. These environmental attributes of Mbombela has increased its property market values and boasts a number of high quality residential estates where these environmental features are key.

The property market in Mbombela is driven by the private sector, which is primarily profit orientated, hence prices are inflated when there is a demand. This phenomenon does not augur well with the poor and marginalised as they are systematically excluded from entering the property market, especially around the main economic centres.

The inability of the marginalized and poor to enter the residential property market around the main centres together with the lack of access to land and high living cost leave the marginalized with no alternative option than to remain in the eastern semi-urban areas. The informal nature of most of the settlements in Mbombela leads to encroachment into natural environments.

There is however a trend of the young and up-coming population to relocate from the semi-urban areas to the main urban centres. This young and up-coming middle aged population segment includes the Black Middle Class that is characterised by relatively high levels of human development. This trend has

resulted in the need for low to middle income residential developments in the main urban centres.

### **5.7.1.3 Industrial and mining**

Increasing industrialization, brought about by increased population growth and development, leads to more and more land being taken up for this use.

Industrial has potentially the most extreme impact on the environment and for this reason it is imperative that all industrial development is undertaken in a responsible manner with due concern on the impact on the environment, especially with regard to air and water pollution and the disposal of industrial waste. Wet industries also place a huge burden on water sources.

Informal industrial land uses are expected to have a negative impact on the environment due to the lack of sufficient regard for the environment. Although not a major land use in Mbombela, small scale sand mining, from especially riverbeds, is a source of environmental degradation.

### **5.7.1.4 Agriculture**

Increasing population growth leads to an ever increasing demand for agricultural produce. This in turn leads to the development of more and more land for agricultural purposes with a related decrease in the extent of the natural environment and increase pressure on limited water resources. Agricultural land (land in general) is expensive in Mbombela and in high demand.

The expansion of forestry plantations is threatening natural forests and other pristine habitats. Forestry also places a huge burden on water sources.

### 5.7.2 Equality and equity

This driver refers to the link between the 1<sup>st</sup> and 2<sup>nd</sup> economies and the extent to which activities decrease or increase the divide between the “rich” and “poor”. The deepening of this divide has a threat to the stability of the entire socio-economic system.

Mbombela is characterised by having many participants in the 2<sup>nd</sup> economy and few in the first. Part of the development challenge is to provide as many opportunities as possible for 2<sup>nd</sup> economy participants to link with the 1<sup>st</sup>. Many of these links are regulatory, experiential or educational and beyond the scope of a SDF, however a critical component of these opportunities are found in space.

It is therefore proposed that a hierarchy of trading opportunities be made available to informal traders and SMME's including the following:

- A certain percentage of space in regional and neighbourhood shopping centres including a market area, which may be linked to a public transport drop-off point and mall and sidewalk opportunities.
- Centrally located market, which may be linked to a public transport interchange, able to intercept significant pedestrian flows,
- Range of sidewalk, verge and median opportunities that cater for permanent traders e.g. fruit and vegetable, refreshments, newspapers and magazines and periodic crafts, junk, second-hand, antiques, clothes etc.
- All of these opportunities should be properly managed and enforced with reasonable permit conditions enforced and depending on levels of security and facilities provided (toilets, paving, shade, services) rentals charged.

### 5.7.3 Funding and income

Access to funding plays a major role in decision making and the extent to which the ecological cycle is able to keep in balance.

The Mbombela Local Municipality 2011-2016 IDP has identified the following seven development priorities:

- Institutional arrangements and development
- Infrastructure and sustainable services
- Rural development
- Economic development
- Financial management and viability
- 2010 legacy and flagship projects
- Human capital and community development

In response to the 7 development priorities, an amount of R64 million has been allocated in the operating expenditure budget for 2011/2012, whilst an amount of R457.8 million has been allocated in the capital expenditure budget for 2011/2012.

Considering the municipality's priority investment areas and the adopted Medium Term Revenue and Expenditure Framework, it's evident that Mbombela is geared towards addressing its pressing needs.

Mbombela's main sources of revenue are from ratepayers, service charges, payments from consumers of municipal services (i.e. refuse removal, sewerage and water) and government grants and subsidies (Housing, CWSS, MIG, CRR, Equitable share etc.).

Beyond the essential expenditure for meeting basic needs, investment must be justifiable on the ground of its potential to raise productivity and incomes, and to generate the income to pay for services. It is essential for Mbombela and Silulumanzi Sembcorp to recover costs in the peri-urban areas with pro-active debt collection policies.

Rural areas are characterized by relatively high logistical costs and high per capita service costs. Where services are provided, the recurrent costs of all but the most basic services must be met by those who use them.

The formalization of settlements in the Nsikazi areas must be speeded up for a number of reasons. Firstly, it will assist in unlocking the economic potential of the area, secondly, it will facilitate the regulation of land use, and thirdly, it will facilitate the implementation of cost recovery, which is a prerequisite for the sustainability of settlements.



## 5.7.4 Governance and legislation

The final set of relationships relates to governance and the efficiency with which it is able to take action, administer development control and have the capacity to implement major projects.

An important aspect of this capacity is the extent to which the administration of legal frameworks at national, provincial and local level is enabling or is becoming so unwieldy as to create blockages that destroy rather than create value and opportunity.

Different pieces of legislation pertaining to land use management and different institutional structures that are in place within and outside former homeland areas, hinders efficient development control in Mbombela.

### 5.7.4.1 Institutional framework

Decision-making with regard to land development is fairly tedious and complex in Mbombela. The key decision-making authorities with regard to land development are:

1. Mbombela Local Municipality,
2. Traditional Authorities,
3. Mpumalanga Department of Agriculture, Rural Development and Land Administration,
4. Mpumalanga Development Tribunal
5. Municipal Townships Board

Furthermore, extensive public participation and inputs from relevant Provincial Departments (Sector Departments) are required during the process of making application for land development. This is to ensure that planning is democratic, participatory and legitimate in nature.

### 5.7.4.2 Legislation framework

Legislation that are most commonly used to obtain land use rights in Mbombela are:

1. R293 and R188
2. The Less Formal Township Establishment Act, 1991 (Act No. 113 of 1991)
3. The Upgrading of Tenure Rights Act, 1991 (Act No.112 of 1991)
4. The Development Facilitation Act, 1995 (Act No.67 of 1995)
5. Town Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986)
6. The Ribbon Development Act, 1940 (Act No 21 of 1940)
7. The Physical Planning Act, 1967 (88 of 1967)
8. The Subdivision of Agricultural Land Act, 1970 (Act No. 70 of 1970)
9. The Subdivision of Land Ordinance, 1986 (Ordinance No. 20 of 1986)
10. The Local Government Ordinance, 1939 (Ordinance No. 17 of 1939)
11. The Removal of Restrictions Act, 1967 (Act No 84 of 1967)

Although the Development Facilitation Act (DFA) promotes the speedy provision and development of land for residential, small scale farming and other purposes, it however conflicts with local government affairs. Decisions by the DFA Tribunal have in many instances been contested to be in conflict with municipal planning i.e. some DFA approved applications have an impact on municipal infrastructure provision. The application of the DFA and other planning legislation, where the municipality is not the main decision-making authority, need to be viewed with caution in order to avoid any conflict.

In addition to the above, the following legislations must be consulted in land use management and development control:

#### **National Environmental Management Act, 1998 (Act 107 of 1998)**

NEMA makes provision for the formulation of Environmental Implementation Plans, which are the vehicles for implementing the NEMA principles to which municipalities are legally obliged to conform with.

#### **National Environmental Management: Biodiversity Act (Act 10 of 2004)**

The National Environmental Management: Biodiversity Act (Act 10 of 2004) provides for the management and conservation of biodiversity at national and bioregional scale. Once a bioregional plan is published, municipal IDPs and SDF's need to take them into consideration.

### **Environmental Conservation Act, 1989 (Act 73 of 1989)**

This act provides for the listing of activities that require certain environmental impact assessment procedures to be complied with before implementation. This act is of particular note for the activities of settlement planning and land use management.

### **Communal Land Rights Act, 2004 (Act 11 of 2004)**

The Communal Land Rights Act, 11 of 2004 (CLARA) sets up Land Administration Committees to develop communal rules for land administration and land use. Community rules prepared and approved in terms of this act need to be recognized.

### **National Water Act, 1998 (Act 36 of 1998)**

This act provides that no person or authority shall establish a township unless the township layout plan indicates the 1:100 year flood line. The act makes provision for river flow management and allows the Minister of Water Affairs to regulate activities that impact on stream flow.

### **National Heritage Resources Act, 1999 (Act 25 of 1999)**

This act provides for the creation of the South African Heritage Resources Agency (SAHRA), which together with provincial heritage resources authorities are obliged to identify those places that have special national and or provincial significance in terms of heritage assessment criteria. A heritage resource is protected by law from certain actions (alteration, subdivision or change in land use) without the necessary consents from the relevant authority. There can be no alteration or demolition of premises over 60 years old without the necessary permissions.

### **Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)**

The Conservation of Agricultural Resources Act (Act 43 of 1983) provides for the conservation of natural agricultural resources through prevention of erosion and the destruction of water resources, and veld protection measures.

This act empowers the Minister of Agriculture to prescribe control measures relating to the utilization and protection of land that is cultivated, the maximum number and the kind of animals that may be kept on the veld etc.

### **National Forest Act, 1998 (Act 84 of 1998),**

This act provides measures to protect coastal and other forests from disturbance, damage or destruction.

### **National Land Transport Transition Act 2000, Sect 29 (2)**

This act states that all persons are bound by the plans prepared in terms of this Act and that no change in land use can occur without the consent of the Transport Planning Authority.

### **Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)**

The Minister of Minerals and Energy has to consent or decline an application for township development in terms of Section 53 of the said act.

### **Municipal by-laws**

Municipal by-laws are public regulatory laws which apply in a certain areas.

## 5.8 Development opportunities and challenges

This section describes pertinent development opportunities, challenges and constraints

### 5.8.1 Development Opportunities

#### 5.8.1.1 N4 - Maputo Development Corridor (MDC)

The N4 route, which forms the backbone of the Maputo Development Corridor, provides direct access to the economic nodes of Maputo (deep sea harbour), Nelspruit, Witbank, Pretoria, Johannesburg and beyond.

One of the key objectives of the MDC is to stimulate regional cooperation and economic development by reviving the trade and tourism route between South Africa and Mozambique.

Projects distributed within the 100km MDC buffer are categorised as follows:

- Agri-processing
- Tourism
- Secondary industries
- Possible bio-fuel sites

The N4 national motorway unlocks the tourist potential of the Lowveld, providing good local and regional access to nature reserves, conservancies, natural heritage sites and tourist attractive areas such as Hazyview, Hall's Gateway, Casterbridge, Perry's Bridge and the Kruger National Park.

#### 5.8.1.2 R40-Nelspruit-Phalaborwa SDI

This SDI aims to create better access between the port of Maputo and the mining potential around Phalaborwa and provide opportunities for supporting agriculture and tourism. This SDI is supported by the Bushbuckridge ISRDP (Integrated Sustainable Rural Development Programme) node as well as the Kruger to Canyon Biosphere Reserve.

It is anticipated that these corridors would trigger further development opportunities along their sphere of influence.

#### 5.8.1.3 Strategic location

The municipality is centrally located within the Province and District, a focal point for development.

Nelspruit is located on the intersection of the N4 MDC and R40 Phalaborwa SDI, only 3 hours drive from Johannesburg, 2 hours from Maputo in Mozambique, providing regional services (business, educational and financial) to Mpumalanga, Swaziland and southern Mozambique.

#### 5.8.1.4 Kruger National Park

The Kruger National Park is one of the top ten tourist attractions in South Africa and is a major tourism draw card. The status of the park is further enhanced by the development of the Greater Limpopo Transfrontier Park and Kruger to Canyon Biosphere Reserve.

The scenic environments of Mbombela present ideal opportunities for tourism development.

#### 5.8.1.5 Kruger Mpumalanga International Airport

The Kruger Mpumalanga International Airport (KMIA) provides an ideal opportunity to establish airport and tourist related facilities in its vicinity. The development of an Industrial Development Zone adjacent to the Airport is currently being investigated.

#### 5.8.1.6 Mbombela Stadium

The development of the Mbombela Stadium and associated bulk infrastructure support the development of the Mataffin Precinct including the Stadium, Cricket Academy, Hall's Gateway combined with a variety of mixed use and housing developments, including subsidy housing.

### 5.8.1.7 Nsikazi area

The settlement structures that characterise Mbombela present opportunities for re-constructing and re-configuring these into functional and sustainable settlements.

High unemployment levels, low income and the high number of indigents render the municipality unable to generate sufficient financial resources for the adequate provision of services. The spatial implication thereof is that the planning for provision of basic services must be driven by densification, sustainability and cost effectiveness.

- **Nodal development**

Nodal development in the Nsikazi area should focus on Kanyamazane, Msogwaba, Kabokweni and Swalala. Economic opportunities need to be identified in close proximity to disadvantaged areas to accommodate regional and sub-regional economic growth.

- **Formalisation and land tenure upgrade**

Tenure upgrade within the majority of settlements within the Nsikazi area needs to be attended to in terms of a tenure upgrading programme. Precinct Development Plans need to be developed prior to undertaking tenure upgrading projects.

- **Service delivery**

Capital expenditure and operational programmes towards upgrading the services and facilities in these areas is priority.

## 5.8.2 Development Constraints

### 5.8.2.1 Land availability

The availability of land suitable for urban development in Mbombela is limited due to:

- **Topography**

The larger part of Mbombela has slopes greater than 20% which is not suitable for development. The provision of engineering services is expensive and steep slopes with sandy soils present a high risk for erosion

- **Environmental significant areas**

A significant portion of the municipal area consists of environmental sensitive areas not suitable for development. These include, amongst others, rivers and associated riparian vegetation, flood plain areas, dams, wetlands, unique landscape features (granite/rocky outcrops), natural habitats and areas with a unique biodiversity (protected and/or irreplaceable areas)

- **Expensive land**

The poor and marginalized cannot access land in and around the main economic centres because the land is too expensive.

### 5.8.2.2 Lack of water

Currently, the demand outstrips the supply and this is mainly due to competitive water users including:

- Commercial agriculture i.e. crops such as sugar cane, citrus, subtropical fruits
- Forestry plantations
- Eskom's Highveld hydro power stations (Nkomati basin)
- Mining and industrial uses
- Domestic water consumption
- Ecological water needs

### **5.8.2.3 Lack of services**

Poor road infrastructure, lack of water and sanitation services and lack of refuse removal facilities characterise mainly the Nsikazi area, this prohibits any significant development and investment.

### **5.8.2.4 Land claims and land ownership**

Land claims and lack of ownership poses a significant challenge to land use management and future planning in Mbombela and has a significant drawback for economic development. Land claims and the status thereof must be acknowledged in any land use management decision and needs to be verified with the Land Claims Commissioner.

The lack of post-settlement support in land reform projects i.e. lack of skills transfer, mentorship, lack of capital funding to support agricultural projects is a major constraint to agriculture specifically.

