

MUSINA SPATIAL DEVELOPMENT FRAMEWORK 2019

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1. BACKGROUND

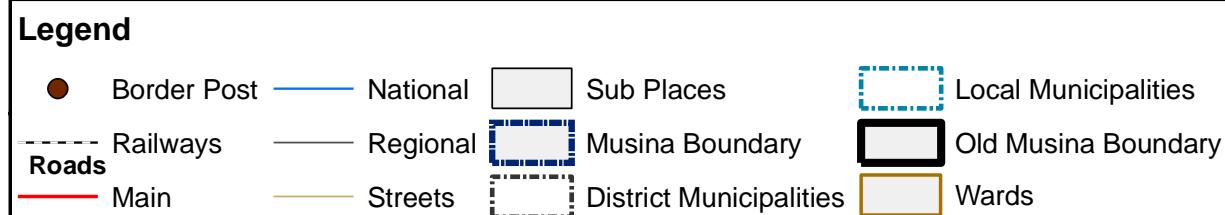
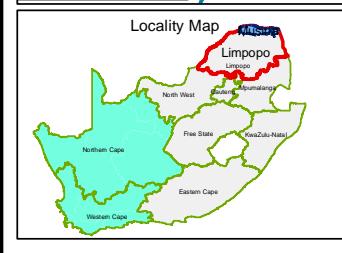
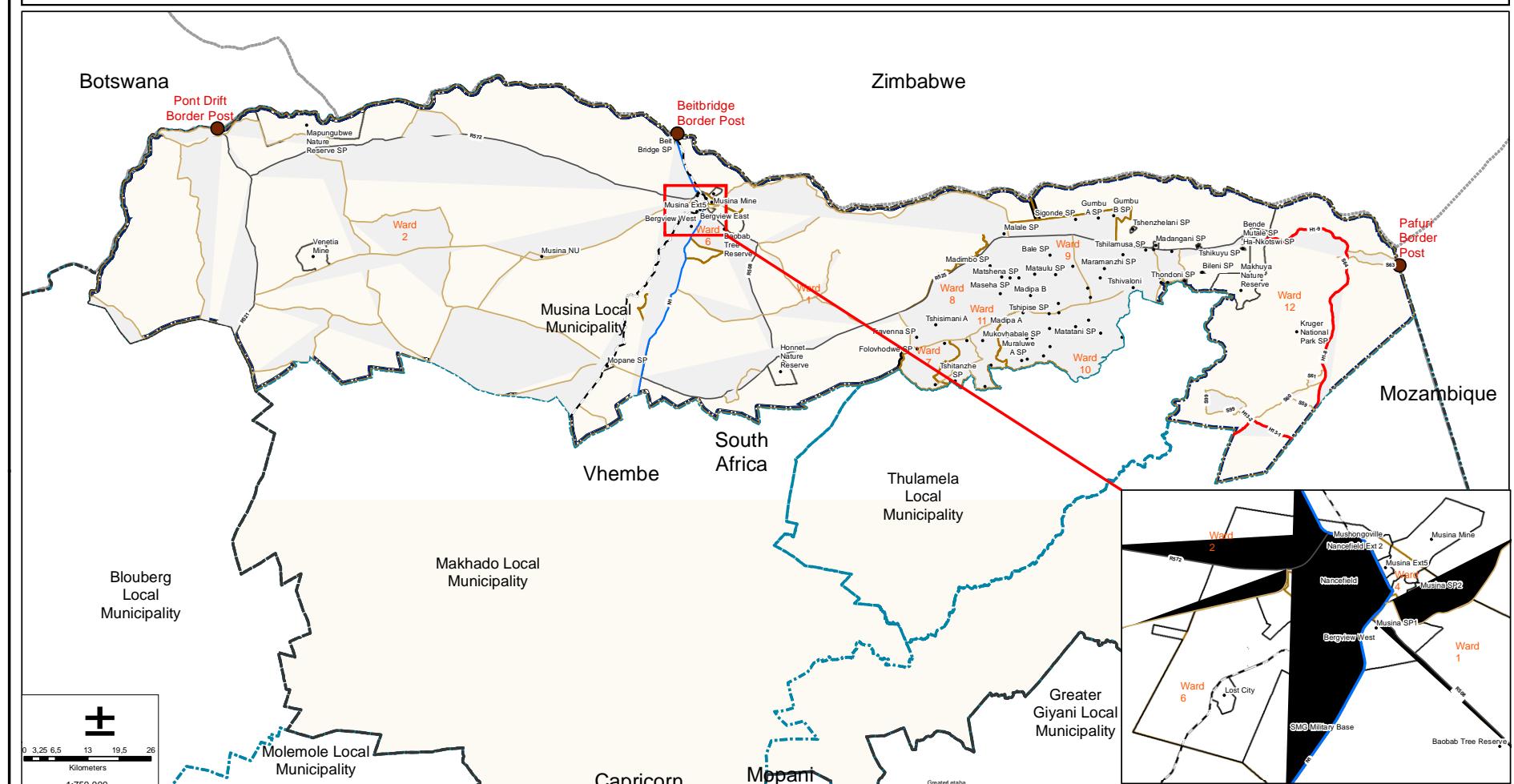
The Musina Local Municipality (Musina LM) is a category B Municipality in terms of the Municipal Structures Act, 1998 (Act 117 of 1998) and its main functions are the provision of basic services to the communities as per Part B of Schedule 4 and 5 of the Constitution of the Republic of South Africa, 1996 (Act 106 of 1996).

Musina LM is situated on the Northern part of South Africa and Limpopo Province and is one (1) of the four (4) local municipalities within the Vhembe District Municipality. During 2016, six (6) wards from the Mutale Local Municipality was merged to form part of the Musina Local Municipality to comprise of twelve (12) wards. The municipal area covers approximately 1 217 128.69 hectares (ha) (12171.29km²) that extends from the confluence of the Mogalakwena River and Limpopo River in the West to the confluence of the Nwanedi River and Limpopo River in the East. At its Southern borders, it is flanked by four local municipalities, and is bordered by Botswana and Zimbabwe in the North West and North respectively while Mozambique is bordering Musina LM on the eastern side of the Kruger National Park (Refer to the Map below).

The location of Musina LM results in international links with Botswana, Zimbabwe and Mozambique, through the Pontdrift, Beit Bridge and Pafuri border posts. Beit Bridge border links South Africa through Zimbabwe to all Northern African countries. This results in this border post being the busiest and is characterised by various cross border issues which influence development and planning within the municipality. The links and impact of the border posts is characterised by not only the legal and formalised interaction but also the illegal impact of the black-market importers from Zimbabwe, refugees and other people seeking employment within the area.

Due to location of the municipality, as a gateway to other African State, Musina LM has been accorded the opportunity or status of a Special Economic Zones (SEZ) in order to enhance and accelerate economic growth within the region through industrial development and agro-processing as well as manufacturing.

Musina SDF: Locality Map



Map 1: Musina LM Locality

2. METHODOLOGY

The figure below illustrates the methodology used for the preparation of Musina LM SDF as part of the SDF guidelines set out by the Department of Rural Development and Land Reform. As demonstrated below, Phase 1 incorporates compliance policy and legislative context, Phase 2 denotes the Analysis of Spatial Challenges and Opportunities identified within the Musina LM. Phase 3 entails the development of spatial proposals, while Phase 4 focuses on the Implementation Framework and Phase 5 denotes the final SDF.

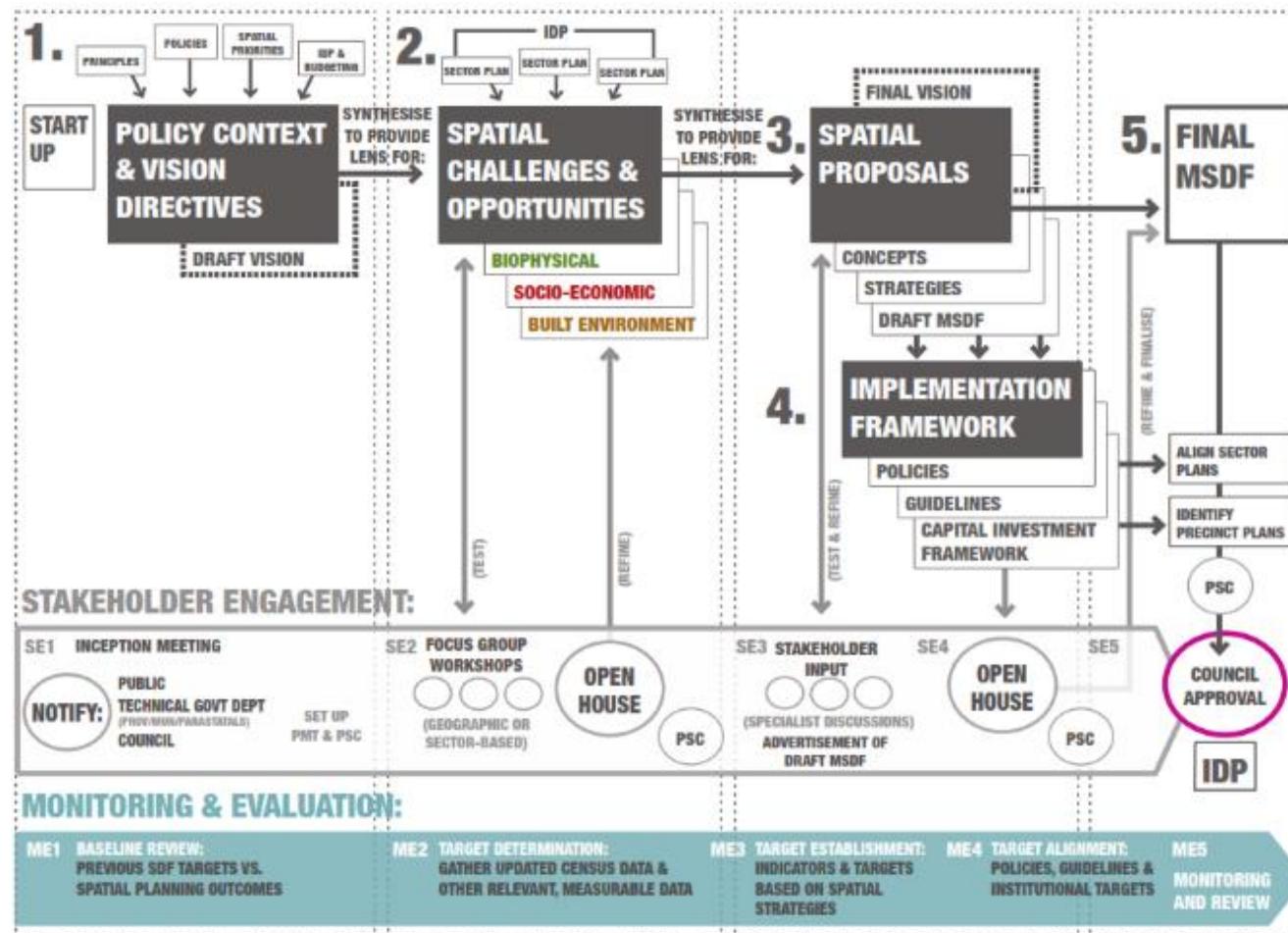


Figure 1: MSDF Methodology

Source: SDF Guidelines (DRDLR)

3. LEGISLATIVE AND POLICY COMPLIANCE

Spatial Development Frameworks (SDF) within the South African cities and rural areas are guided by a series of National, Provincial and Governmental legislations and policies, together with international policies. The aim of these governmental mandates is to redress the spatial imbalances created by the previous apartheid regime. The South African policies and legislations seeks to promotion economic growth and development, adequate service delivery, to increase sustainability and efficiency while protecting valuable resources and generally improving the livelihood of South Africa citizens. This section details the relevant legislation and policies, which directly influences the preparation of Musina LM's Spatial Development Frameworks.

3.1. LEGISLATION

The following table presents the relevant legislation applicable to Spatial Develop Frameworks:

Table 1: SDF legislation

LEGISLATION PERTAINING TO SDFs
Municipal Systems Act (Act 32 of 2000)
Local Government: Municipal Planning and Performance Management Regulations (GN R796 of 2001)
Spatial Planning & Land Use Management Act (Act 16 Of 2013)
Subdivision of Agricultural Land Act 70 of 1970
National Environmental Management Act no.107 of 1998
Municipal Financial Management Act (56 of 2003)

And other relevant legislation to the SDFs includes:

GUIDING FRAMEWORK	STRATEGIC CONTEXT
The Constitution of the Republic of South Africa Act 107 of 1996	<p>The South African constitution acts as the supreme law in the country. The rights of all people are protected by the Bill of Rights, which also affirms the democratic values of dignity, equality and freedom. The sections listed below are of relevance to spatial planning:</p> <p><u>Section 24:</u> Everyone has the right to an environment, which is not harmful to their health or well-being.</p> <p><u>Section 26 (1):</u> Everyone has the right to have access to adequate housing.</p> <p><u>Section 152:</u> spells out the objectives of local government as insuring access to at least basic services and facilitating economic development within a framework of financial sustainability.</p> <p>IMPLICATIONS FOR THE SDF:</p> <p>The SDF contributes towards accomplishing the goals of the Constitution through guiding the type of development and improvements to be made in areas of priority. These may range from the promotion of social and economic development, the preservation and development of sustainable environments and the provision of services.</p>

State of the Nation Address 2018

Key points from the State of the Nation address by his excellency President Cyril Ramaphosa at the Joint sitting of Parliament in Cape Town (February 2018):

- Transformation – By investing in the development of rural and township enterprises and in a new generation of black and woman producers, and open markets to new black entrants with the use of competition policy.
- Infrastructure – Ensure the swift implementation of new projects with particular focus on water, health and road maintenance by means of establishing a team.
- Mining - Finalising the Mineral and Petroleum Resources Development Amendment Bill by the end of the first quarter while intensifying stakeholder engagements on the mining cluster and dealing with mining facilities.
- Small Business, co-ops and township enterprises – Welcoming corporate sector SME fund initiatives and the investment in SME incubation. Honouring to set aside at least 30% of public procurement to SMMEs, cooperatives and township and rural enterprises.
- Land and Agriculture – Make more land available and accelerate our land redistribution programme, land expropriation without compensation, the approach while considering food security, agriculture production and growth. Process of consultation to determine the modalities of the implementation of this resolution.
- Fourth industrial revolution – Commission to be established for the Digital Industrial Revolution and reduce barriers to entry by allocation of spectrum.
- National Minimum Wage – Introduction of National Minimum Wage by May 1
- Health and National Health Insurance – Specific focus on the next critical steps to eliminate HIV, confronting lifestyle diseases and launching a huge cancer campaign.
- Education – First South African Sign Language National Senior Certificate examination will be offered at the end of 2018 to deaf learners, an African language is being offered in all public schools and 2018 will see free higher education and training to first year students from a R350 000 combined annual income households.
- Social grants – To urgently take decisive steps to comply with the all directions of the Constitutional Court and ensuring implementation deadlines set by the court are not undermined by any person in government.
- Social Sector/Civil Society – Social Sector Summit to be held during 2018 for its critical role in society.
- State/Governance – Reduce the number of departments in cabinet, changing the way of board appointments, removing board members from any role in procurement while working with Auditor-General to strengthen the external audit processes and the review of the SOEs funding models and other measures.
- Corruption/State capture – Ensure action is taken against members who acted improperly and unethically, the extent and nature of state capture is to be established by the Commission, fighting corruption, fraud and collusion in the private sector while attending to leadership issues at the National Prosecuting Authority as well as the appointment of a Commission of Inquiry of SARS's Tax Administration and Governance.

IMPLICATIONS FOR THE SDF:

The Municipal SDF highlights areas within which developments should take place. As a result, the state of nation address outlines the types of sectors which can be prioritized to ensure economic transformation within the South African Municipalities.

Provincial Budget Speech 2018

Key points from the Limpopo Treasury MEC, Rob Tooley's March 2018 budget speech, in relation to public infrastructure investments as per Vote are listed below:

- Office of the Premier: R420.6m was allocated for 2018/19, R437.2 for 2019/20 and R461.3m for 2020/21.

- Education: R30.6bn was allocation for 2018/19, R32.3bn for 2019/20 and a further increase for R34.2bn for 2020/21. A R2.3bn is included in the allocation for Conditional Grants and R565.9m from own revenue in the 2018/19 financial year. With these allocations the following will be prioritised: provision of quality basic education, school nutrition, delivery and maintenance of school infrastructure together with the appointment of qualified educators and administrative personnel.
- Agriculture: R1.9bn was allocation for 2018/19 financial year in order to deliver its mandate. A R345.3m is included in the allocation for the Conditional Grants. The budget will be directed towards food security and support programmes for farmers.
- Provincial Treasury: R472.8m was allocated for 2018/19, R492.2m for 2019/20 and R499.3m for 2020/21. Included in this is R24.9m for the Government Technical Advisory Centre project for the enhancement of infrastructure delivery within the province.
- Economic Development, Environment and Tourism: R1.7bn is allocated for 2018/19. Of that Conditional Grants are R3.3.m and R746.6m is for transfer to Public Entities. R254.6m is allocated for SEZ and the implementation of broadband network infrastructure by the Limpopo Economic Development Agency. The allocated funds are also for the upgrading of nature reserves and resorts, and for programs with a specific focus on youth job creation and the promotion of SMME's.
- Health: R19.5bn is allocated for the 2018/19 financial year which include the Conditional Grants for R2.7bn and R495.4m from their own revenue. The finding will be directed towards quality, accessible and affordable health care for the Limpopo people.
- Transport: R2.1bn was allocated for 2018/19 financial year.
- Public Works, Roads and Infrastructure: R3.1bn was allocated for 2018/19, R3.2bn for 2019/20 and R3.4bn for 2020/21 financial years. R988.9m will be transferred to Roads Agency Limpopo (RAL) for operational costs and road maintenance and upgrading.
- Co-Operative Governance, Human Settlements and Traditional Affairs: R2.6bn was allocated for 201/1, R2.7bn for 2019/20 and R2.8bn for 2020/21 financial years. These allocations will be directed towards the delivery of quality housing through the Human Settlement Development Grant with R2.3bn allocated. R55m is allocated for 2018/19 for the construction and furnishing of Traditional Council Offices and R12.2m for the Kingship project.
- Sport, Arts and Culture: R472.2m was allocated for 2018/19, R487.5m for 2019/20 and R514.3m for 2020/21. R15.1m was included in the allocation for 2018/19 to be directed towards the operationalisation of libraries, celebration of national and historic days, the development and promotion of provincial artists and the creativity industry.

IMPLICATIONS FOR THE SDF:

The budget speech by the Minister of Finance provides guidelines regarding the prioritization of infrastructural (roads, water, electricity, housing and sanitation) developments within the capital investment framework within the SDF of the local municipality. This budget allocation provided by the provincial government impacts directly on the ability of the municipal SDF to achieve the successful implementation of prioritized projects.

Spatial Planning and Land Use Management Act (Act 16 Of 2013)

The Spatial Planning and Land Use Management Act (SPLUMA) plays an important role in relation to spatial planning and land use management within South Africa. The Act falls within section 146 of the Constitution and provides development principles and norms and standards as well as frameworks on land use. The Act outlines the following principles for spatial planning, land development and land use management:

- Spatial Justice
- Spatial Sustainability
- Efficiency
- Spatial Resilience
- Good Administration

	<p>IMPLICATIONS FOR THE SDF:</p> <p>SPLUMA instructs national, provincial and local governmental spheres to prepare Spatial Development Frameworks. Therefore, municipalities are beholden by this act to ensure that the preparation of the IDPs includes Spatial Development Frameworks to provide strategic spatial proposals based on the above mentioned spatial principles and to outline the current status of each municipality. Furthermore, Section 21 outlines the content of a Municipal Spatial Development Framework (SDF).</p>
<p>National Development Plan: Vision for 2030</p>	<p>The National Development Plan (NDP) developed by the National Planning Commission focuses on enabling sustainable and inclusive development. The NDP provides a long-term vision for the future development of South Africa and takes note of the spatial inefficiencies within existing settlements and commits the national government to developing a National Spatial Framework. The spatial principles that are identified in the NDP include the following:</p> <ul style="list-style-type: none"> • the integration of urban and rural areas; • ensuring social diversity within the built environment; • increasing the density of settlements without increasing costs of land and housing for the poor; • ensuring the integration of transportation systems and land use; • Supply reliable infrastructure, suitable land and property, connectivity, skills and logistics to broaden the economic base of towns and cities • build community involvement and partnerships; • Supporting the development of vibrant, diverse, safe, green and valued places. <p>IMPLICATIONS FOR THE SDF:</p> <p>The objective of the SDF is to ensure the standards and elements outlined in NDP are upheld so as to ensure the achievement of spatial objectives centred on the challenges and opportunities identified within the SDF area.</p>
<p>National Environment Management Act (Act 107 of 1998)</p>	<p>The following directives are significant for all development, in relation to the National Environmental Management Act:</p> <ul style="list-style-type: none"> • Developments should be socially and economically viable, while being environmentally just; • Priority should be given to the protection of natural resources and maintenance of natural systems • There should be equal access to natural resources, benefits and services to meet the human needs; • Measures to safe guard the environment should be taken into account when permission is granted for new developments. <p>IMPLICATIONS FOR THE SDF:</p> <p>Municipalities are obliged by this act, to create rural and urban spaces which increase economic opportunities and environments, while ensuring sustainable utilisation of the environment. Therefore, the SDF should take cognisance of NEMA regulations when developing spatial proposals for municipal areas while permission for new developments are cautiously managed.</p>
<p>National Land Transport Act, (Act no. 5 of 2009)</p>	<p>The National Transport Act 5 of (2009) provides the regulatory framework for transportation across the country. The National Transport Act binds public entities (all three spheres of government) to align their development plans with the following aspects:</p> <ul style="list-style-type: none"> • Public entities must provide written consent to the planning authority in relation to any planned intensification of land use • Traffic impact and public transport assessments must be conducted before development can take place in an area governed by a planning authority that must accompany the land use applications • Unless an agreement has been reached with the developer, the planning authority should bear the costs involved in the upgrading of transportation infrastructure • No action may be taken that would have the result of substantially decreasing the quantity or availability of land transport infrastructure or services, unless the owner of the land on which the infrastructure is situated, or the holder of the relevant operating license, as the case may be, has notified the relevant planning authority in writing not less than 30 days before the action is taken.

	<p>IMPLICATIONS FOR THE SDF:</p> <p>The transportation plan of the SDF will implement the governmental mandate based on the before mentioned aspects to ensure efficacy in relation to the conduction of; transportation impact studies, availability of infrastructure and land use intensification in prioritized areas of relevant local municipalities.</p>
New Growth Path (2010)	<p>The aims of the New Growth Path (NGP) 2010 are to achieve economic growth of 7%, the creation of 37000 jobs annually and the creation of an additional 5 million jobs by 2020. South Africa was negatively affected by the 2008 economic down turn. The NGP proposed to address this by focusing on the following areas:</p> <ul style="list-style-type: none"> • Job creation; • Cross-cutting development policy package for growth, decent work and equity; • Proposals for macro-economic policy, micro-economic policy, and social partners; • Resources required to support economic development; • Inclusion of stakeholders in the economy via institutional arrangements. <p>IMPLICATIONS FOR THE SDF:</p> <p>The SDF needs to ensure the creation of rural-urban linkages within the municipality in order to bridge the development and economic gap between poorer rural areas within the municipality and the urban areas.</p>
Integrated Urban Development Framework (2013)	<p>The Integrated Urban Development Framework (IUDF) was created to work towards the achievement of resilient, inclusive and liveable cities and towns within South Africa. The UDF builds upon several chapters from the National Development Plan (NDP) as well as extending on Chapter 8 of the constitution. The vision of the (IUDF) is: 'Liveable, safe, resource-efficient cities and towns that are socially integrated, economically inclusive and globally competitive, where residents actively participate in urban life'.</p> <p>It aims to achieve this vision through focusing on eight levers which are:</p> <ol style="list-style-type: none"> 1. Integrated Spatial Planning 2. Integrated Transport and Mobility 3. Integrated and Sustainable Human Settlements 4. Integrated Urban Infrastructure 5. Efficient Land Governance and Management 6. Inclusive Economic Development 7. Effective Urban Governance <p>IMPLICATION FOR THE SDF:</p> <p>The IUDF deals with issues relating to Spatial Planning, Transport, Human Settlements, and Urban Infrastructure all of which are issues directly relating to local municipality SDF. Therefore, decisions taken in relation to these issues should be reflected in the local SDF.</p>
National Housing Act 1997 (act.107 of 1997)	<p>The National Housing Act reiterates the Constitutional right to access adequate housing and identifies the state's legal responsibility to a sustainable housing development process. The act identifies general principles applicable to housing development. The Act provides the following recommendations concerning housing provision:</p> <ul style="list-style-type: none"> • Prioritise the housing needs of the poor; • Provide a wide choice of housing and tenure options; • Be economically, fiscally, socially and financially affordable and sustainable; • Focus on integrated development planning; • Consider and address the impact on the environment; • Socially and economically viable communities;

	<ul style="list-style-type: none"> • Safe and healthy living conditions; • Racial, social, economic and physical integration in urban and rural areas; • Effective functioning of the housing market and level playing fields; • Higher densities and the economical utilisation of land and services. <p>IMPLICATIONS FOR THE SDF:</p> <p>The SDF out to be aligned to the National Housing Act 107 of 1997 for the purpose of ensuring the provision of sustainable human settlements as well as strengthening spatial integration within urban and rural areas.</p>
National Housing Code (2009)	<p>The National Housing Code (2009) was developed under the direction of the National Housing Act 107 of the 1997. Section 4 of the National Housing Act (1997) requires that the Minister develop a housing code. The National Housing Code contains the National Housing Programmes which are described below:</p> <ul style="list-style-type: none"> • Financial Housing Programmes <ul style="list-style-type: none"> ◦ Individual Housing Subsidies ◦ Enhanced Extended Discount Benefit Scheme ◦ Social and Economic Facilities ◦ Accreditation of Municipalities ◦ Operation Capital Budget ◦ Housing Chapters of IDPs ◦ Rectification of Pre-1994 Housing Stock • Incremental Housing Programmes <ul style="list-style-type: none"> ◦ Integrated Residential Development Programme ◦ Enhanced People's Housing Process ◦ Informal Settlements Upgrading Programme ◦ Consolidation Subsidies ◦ Emergency Housing Assistance • Social and Rental Housing Programmes <ul style="list-style-type: none"> ◦ Institutional Subsidies ◦ Social Housing Programme ◦ Community Residential Units • Rural Housing Programmes <ul style="list-style-type: none"> ◦ Rural Subsidy: Informal Land Rights ◦ Farm Residents Housing Assistance Programme <p>IMPLICATIONS FOR SDF:</p> <p>The SDF should be aligned to the National Housing Code to ensure the effective implementation provision of integrated Human Settlements within the municipality.</p>
Intergovernmental Relations Framework Act (No 13 of 2005)	<p>The Intergovernmental Relations Framework Act was established in reference to the constitutional mandate in section 41(2) of the South African Constitution. The IGR was established to provide a legal framework to guide relations between the different spheres of government.</p> <p>The main focus areas of the act are:</p> <ul style="list-style-type: none"> • To provide principles for Intergovernmental relations in the country • To regulate intergovernmental forums

	<ul style="list-style-type: none"> • To provide guidelines for internal intergovernmental procedures • To provide a framework to assist in the settlement of disputes between the different spheres of government <p>IMPLICATIONS FOR THE SDF:</p> <p>Where corridors are proposed by the SDF that cross municipal boundaries, the development of such corridors should be jointly planned by the affected municipalities to ensure integration, successful implementation and reduced potential for conflict. The intergovernmental forums created through the Intergovernmental Relations Act can be used to achieve this.</p>
Breaking New Ground Policy (2004)	<p>The Breaking New Ground (BNG) Policy 2004 was developed as a policy framework which focuses on developing integrated human settlements and the provision of economic and social infrastructure. According to the BNG Policy the delivery of housing should encompass the following objectives:</p> <ul style="list-style-type: none"> • Environments that are secure and safe • Housing with proximity to economic opportunities • Housing and tenure types that provide safety and security • Reliable and affordable basic services, educational, entertainment, health, welfare and police services within a Multi-purpose cluster concept • Promotion of good quality life, compactness, diversity, mixed land usage and pedestrian friendly environments • Lower income housing in proximity to employment opportunities • Human settlements as well as town and cities that are well integrated, environmentally sustainable and functional • Social (Medium-Density) Housing • Housing that utilised alternative technology and design <p>IMPLICATIONS FOR THE SDF:</p> <p>The SDF ought to be aligned with the BNG policy in order to identify potential sites for the development of affordable housing within a reasonable distance to social and economic opportunities.</p>
Municipal Systems Act 2000 (Act 32 of 2000)	<p>According to the Municipal Systems (Act 32 of 2000), all municipalities are required to prepare a Spatial Development Framework as a vital element of the Integrated Development Plan (IDP). The IDP must reflect a Spatial Development Framework and must contain basic guidelines for land use management systems for the municipality.</p> <p>IMPLICATIONS FOR THE SDF:</p> <p>The SDF is prepared under the set vision of the municipal IDP. Strategic Spatial Proposals are therefore guided by the MSA mandate requiring the preparation of SDF's as a component of the IDP. It is required that the SDF must contain strategies, policies and guidelines that is linked to the objectives and land use management system of the municipality. Programmes and projects need to be identified as part of the development of land while representing the desired spatial form of the city.</p>
Municipal Planning and Performance Management Regulations 2001 (No 796 of 2001)	<p>The Performance Management Regulations necessitate a framework that represents the specific processes that needs to be conducted by the municipality.</p> <p>IMPLICATIONS FOR THE SDF:</p> <p>Section 2(4) of the Local Government: Municipal Planning and Performance Management Regulations provide that an SDF should:</p> <ul style="list-style-type: none"> • Give effect to the SPLUMA principles; • Set out objectives that reflect the desired spatial form of the municipality; • Contain strategies and policies to achieve the objectives and which should indicate desired patterns of land use; • Address the spatial reconstruction; • Provide strategic guidance regarding the location and nature of development;

- Set out basic guidelines for a land use management system in the municipality;
- Set out a capital investment framework for the municipality's development programs;
- Contain a strategic assessment of the environmental impact of the SDF;
- Identify programs and projects for the development of land within the municipality;
- Be aligned with the spatial development frameworks reflected in the integrated development plans of neighbouring municipalities;
- Provide a plan of the desired spatial form of the municipality, which should:
 - indicate where public and private land development and infrastructure investment should take place;
 - indicate desired or undesired utilisation of space in a particular area;
 - delineate an urban edge;
 - identify areas for strategic intervention;
 - Indicate priority spending areas.

3.2. POLICY FRAMEWORK

This section entails the list of policy framework upon which the Musina Local Municipality SDF is based.

- Special Economic Zones (SEZ) Act 16 of 2014;
- Vhembe District IDP;
- Vhembe District SDF;
- Musina Local Municipality IDP 2017/18 – 2021/22;
- Musina Local Municipality LITP 2016; and
- Mutale Local Municipality IDP 2016/2017;

GUIDING FRAMEWORK	STRATEGIC CONTEXT
Limpopo Provincial Spatial Development Framework (LSDF), 2016	<p>The Limpopo SDF was created in relation to Section 12 of SPLUMA which requires the different spheres of government to produce SDF's. The vision of the Limpopo SDF (LSDF) is a “provincial spatial structure where the natural environment and valuable agricultural land in the rural areas are protected for future generations, with a strong, diverse and growing economy focused around a range of nodal areas and that offers its residents high quality living environments and good job opportunities in a sustainable manner.” The aim is to be related to the development needs of urban and rural areas within the province and ensuring social, environmental and economic sustainability for the province.</p> <p>The Limpopo SDF has a number of objectives which are critical to achieving the development aims mentioned above. These are listed below:</p> <ul style="list-style-type: none"> • Capitalise on the Province's strategic location within the SADC region • Improve regional and local connectivity to facilitate the movement of people goods and services • Provide a strategic and coherent rationale for targeted public-sector investment, including engineering, social and economic infrastructure, to optimise service delivery • Encourage urban and rural spatial restructuring as a necessity; • Aggressively protect and enhance the Province's natural resources, including scarce fresh water sources and high biodiversity landscapes • Guard valuable agricultural land as a scarce resource and national asset • Consolidate and enhance the Province's ecotourism product

- Encourage and institutionalise the sustainable development of its massive mineral potential (and encourage green economy initiatives)
- Create an enabling environment for both the formal and informal sector participate in economic development (retail, office, commercial, industrial)

There are several points within the LSDF that relate specifically to Musina, such as

- The province's protected areas network can and should be expanded to incorporate unprotected critical biodiversity areas 1 and 2. High potential and productive agricultural land should be diligently protected from development
- The Aviation Strategy for Limpopo identified several areas with the best market potential for aviation services with Musina in the medium to long term framework.
- Musina Economic SEZ: Focus on logistics, tourism and manufacturing (mineral beneficiation) and agriculture.
- Key spatial outputs for the LSDF identified Musina as a targeted growth point and important economic node (logistics)
- Musina is one of the four high order modal transfer facilities that are proposed to be established as part of the provincial Strategic Public Transport Network (SPTN)
- The Trans-Limpopo Corridor with a strong agricultural, mining and tourism industry which includes the Kruger Transfrontier National Park and the Mapungubwe National Park. The corridor is ideal for agro-processing facilities and mineral beneficiation industries with produced products marketed in the sub-Saharan African countries.
- The proposed extension of the international freight rail line running from Nelspruit via Bushbuckridge and Maruleng to Musina and on to Zimbabwe with regional infrastructure be consolidated in the form of a road/rail freight hub of which Musina is one of eight.
- Expansion of the mining sector and the beneficiation of minerals within the Musina and Makhado Mining Cluster with focus on diamonds and coal

The areas, such as Mutale-Masisi, Folovhodwe, Tshipise and Pontrdrift which fall within Musina have been designated as Rural nodes/service points by the LSDF. The focus of development within these areas should be on community infrastructure and social services which can serve neighbouring rural areas.

IMPLICATIONS OF THE SDF:

The PSDF is created in relation to SPLUMA section 12 that requires all the spheres of government to develop SDFs for their areas. SPLUMA also requires that Provincial SDF policies and strategies to be synchronized, integrated and aligned to those of the National, Provincial and Local spheres of government. Therefore, the policies and strategies of the Musina SDF should be aligned to the Provincial SDF.

Limpopo Development Plan 2015 - 2019

The Limpopo Development Plan (LDP) is built on the previous Limpopo Growth and Development Plan (LEGDP) 2009 – 2014 and the Limpopo Provincial Growth and Development Strategy (PGDS) 2004 – 2008. In addition, the LDP has the following objectives:

- Highlighting the contribution of the province to the NDP and national MTSF for 2015-2019;
- Providing a guideline for the strategic plans of each provincial government department; as well as the IDPs and sector plans district and local municipalities;
- Creating an environment conducive for the constructive participation of the private sector and organised labour, which subsequently will lead to the achievement of the provincial growth and development objectives; and
- Encouraging the citizens to be more active in improving the standards of living in their communities

In order to achieve the developmental vision of the LDP the following strategies have been identified:

- Creation of decent employment through inclusive economic growth and sustainable livelihoods
- Improve the quality of life of citizens
- Prioritize social protection and social investment
- Raise the effectiveness and efficiency of a developmental public service

- Ensure sustainable development

IMPLICATIONS FOR THE SDF:

The LDP states that all the municipalities should reflect the following MTSF Outcomes in their IDP revision process:

- Job-creation, economic growth and poverty reduction, including informal sector
- Institutional capacity building and improved municipal service delivery
- Spatial planning, land use management and land protection
- Constructive engagement of organised business and labour
- Engagement of citizens in development
- Tourism and meat clusters

Limpopo Green Economy Plan 2013

The Limpopo Green Economy Plan was created to utilise the environment and the environmental assets of the province to improve the lives of residents. Limpopo is particularly well suited to become a centre of the Green Economy for several reasons such as the abundant biodiversity resources. The strategic goals that the Limpopo Green Economy Plan aims to achieve are listed below:

- Generation of employment
- Improving the quality of the environment
- Creation of conditions to enable Green Growth
- Altering behavioural patterns and production patterns
- Develop a new economic/environmental paradigm for the Province

Within these different goals there are several specific interventions, that can be implemented. These are:

- Sustainable Production and Consumption
- Water Management
- Sustainable Waste Management Practices
- Clean Energy and Energy Efficiency
- Agriculture, Food Production and Forestry
- Green buildings and the built environment
- Sustainable Transport and Infrastructure
- Green Municipalities
- Cross-cutting

IMPLICATIONS FOR SDF:

MLM is home to several biodiversity resources which can be exploited for Green development and job creation such as the Vhembe biosphere reserve. Such resources can serve purposes for eco-tourism generation and conservation.

Musina Integrated Development Plan 2018/19- 2021/22	<p>The vision of the Musina municipality is: "To be the vibrant, viable and sustainable gateway city to the rest of Africa"</p> <p>This IDP indicated several strategic objectives:</p> <p>IMPLICATIONS FOR THE SDF:</p> <p>The SDF should be aligned to the vision of the municipality in to ensure that the development of spatial proposals and objectives are linked to the challenges and opportunities identified within the IDP.</p>
The Special Economic Zones Bill, 2013	<p>During 2013 the Government tabled the Special Economic Zones Bill, 2013 to the National Council of Provinces (NCOP), aimed to support balanced regional industrial growth by fostering the development of more competitive and productive regional economies in South Africa. The reasoning for the establishment of the SEZ is as a result of government trying to close the gaps with regard to the implementation of designated Industrial Development Zones (IDZs) taking into account that the IDZs were only biased towards the development of coastal regions while ignoring the economic potential that exists in inland regions of the country. The most notable designated IDZs include Coega, East London, Richards Bay, OR Tambo and the recently designated Saldanha Bay, and out of the 5 only 3 are fully operational (i.e. Coega, East London and Richards Bay).</p> <p>Special Economic Zones are defined as geographically designated areas of the country that are set aside for specifically targeted economic activities and supported through special arrangements and systems that are often different from those that apply to the rest of the country. In terms of the Bill, the SEZs are sought to boost private investment, both domestic and foreign, in labour-intensive areas in order to increase job creation, competitiveness, skills and technology transfer, and exports of beneficiated products. To cater for various socio-economic and regional planning considerations, the Bill provides for the designation of the following types of SEZ:</p> <ul style="list-style-type: none"> • Free ports: duty-free areas adjacent to a port of entry where imported goods may be unloaded for value-adding activities, repackaging, storage and subsequent re-export, subject to special customs procedures. • Free trade zones: duty-free areas offering storage and distribution facilities for value-adding activities within a special economic zone. • Industrial development zones: purpose-built industrial estates that leverage domestic and foreign fixed direct investment in value-added and export-oriented manufacturing industries and services. • Sector development zones: zones focused on the development of specific sectors or industries through the facilitation of general or specific industrial infrastructure, incentives, technical and business services primarily for the export market. <p>IMPLICATIONS FOR THE SDF:</p> <ul style="list-style-type: none"> • The SDF provides the strategic spatial concept for the Musina LM. The Bill should take cognisance of these spatial proposals when determining areas for development.

3.3. IMPLICATIONS OF NEIGHBOURING SPATIAL DEVELOPMENT FRAMEWORKS

The following Municipal SDFs were taken into consideration.

3.3.1. Mutale SDF

As from 2016, the Mutale Local Municipality was dissolved of which 6 new wards are now included in the Musina Local Municipal borders. The Mutale Local Municipality Spatial Development Framework (SDF) was essentially developed as a tool to guide development, investment, infrastructure development and advice on the municipality spending patterns while assisting the municipality in making sound decisions. The SDF looked at all the challenges, trends, key issues and opportunities that the municipality has as far as development is concerned and try to come up with directions and guidelines in terms of future development forms and patterns.

In addition, the Mutale SDF main thrust is the identification of Nodal Points categorised as primary, secondary and third Municipal Nodes. This identification of nodes will inform future spatial development and infrastructure investment as well as identifying important routes for economic and development.

3.3.2. Makhado SDF

The Makhado SDF is regarded as the principal planning document, which should inform all decisions pertaining to spatial planning, development and land use within the municipal area. The Makhado SDF indicates that the main objective of the spatial analysis is to provide an overview of the municipality's spatial structure/pattern in order to effectively guide all decisions that involve the use and development of land or planning for the future use and development of land. These decisions include:

- Land use management decisions on applications for the change in land use, such as rezoning or subdivision applications;
- Decisions on where and how public funds (municipal and other government agencies) are invested, such as extension of bulk service networks, or provision of community facilities; and
- Guide developers and investors to appropriate locations and forms of development.

The Limpopo SDF also indicated the Musina-Makhado Corridor/Cluster for the promotion of mining activities and associated job creation in terms of coal and diamonds. Makhado was also identified by the Limpopo SDF as a Provincial Growth Point with an Agri hub/Park. The forestry sector in Makhado as the LDP recommended, holds potential for expansion in terms of their forestry sector and for value chain development (see the Map below).

3.3.3. Thulamela SDF

The Thulamela LM approved a Spatial Development Framework (SDF) revolves around Nodal Point's Development Strategy and hierarchy of settlements based on the priorities of the residents, as well as the direction that the municipality intends to take in relations to the following identified areas:

- Strategic and potential development areas;

- Hierarchy of business centre as well as areas for future industrial development;
- Radial road network;
- Future spatial form and major directions of desired growth; and
- National, provincial and municipal routes and nodal points, as well as strategic development initiatives' and functional development areas.

Thohoyandou in Thulamela LM is identified in the Limpopo SDF as a District Growth Point while the LDP recommended that Thulamela holds potential for expansion in terms of their forestry sector and for value chain development (see the map below).

3.3.4. Blouberg SDF

The Limpopo spatial rationale played a significant role in informing the development of the Blouberg Municipality Integrated Development Plan and Spatial Development Framework. Furthermore, the Blouberg Municipality Spatial Development Framework has taken into consideration the National Spatial Development Perspective and is aligned with the NSDP. In terms of this alignment certain nodal points and corridors have been identified and outlined for development. These corridors and strategically located nodes and pieces of land as well as related investment are directed at the triggering of economic development. The inclusion of recently demarcated areas such as Tolwe, Vivo, Swartwater and Mastrom have also influenced the contents of SDF and core areas as identified in the original Spatial Development Framework. The Blouberg Spatial Development Framework identifies the following as core nodes of the municipality:

- Senwabarwana (district growth point);
- Alldays (district growth point);
- Eldorado (provincial rural node);
- Tolwe;
- Langlaagte; and
- Puraspan-Avon - Indermark corridor.

As mentioned earlier, the Limpopo SDF identified the Musina and Makhado Mining cluster in terms of diamonds and coal. There exists potential in the vicinity of Alldays, a Limpopo SDF identified municipal growth point within Blouberg LM, and Musina for diamond mining. The R521 linking Alldays to Polokwane, also links Alldays to Pontdrift in Musina. This road is identified as a strategic road freight corridor in the Limpopo SDF.

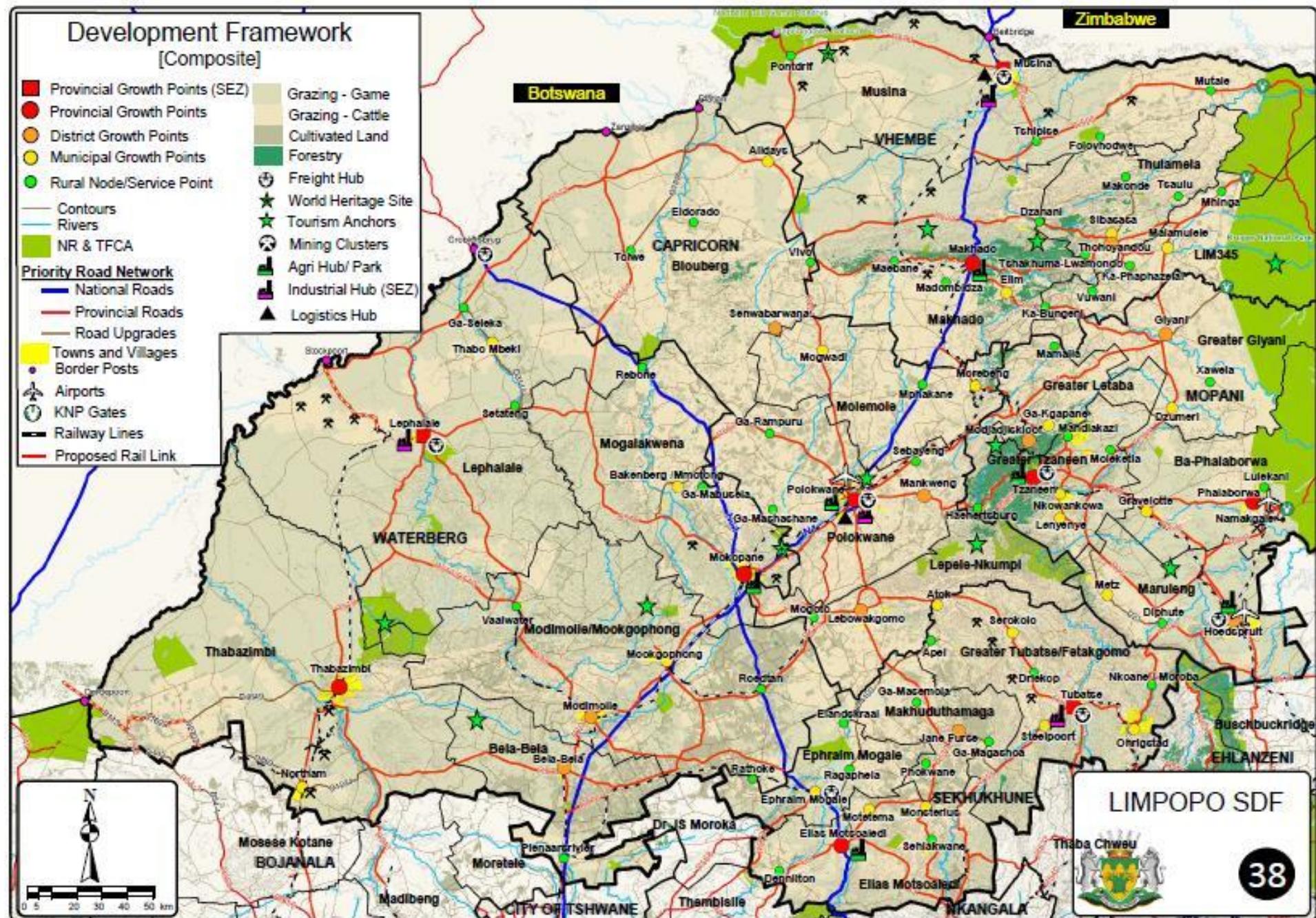
Development Framework [Composite]

Legend:

- Provincial Growth Points (SEZ)
- Provincial Growth Points
- District Growth Points
- Municipal Growth Points
- Rural Node/Service Point
- Contours
- Rivers
- NR & TFCA
- Priority Road Network**
 - National Roads
 - Provincial Roads
 - Road Upgrades
- Towns and Villages
- Border Posts
- Airports
- KNP Gates
- Railway Lines
- Proposed Rail Link

Icons:

- Grazing - Game
- Grazing - Cattle
- Cultivated Land
- Forestry
- Freight Hub
- World Heritage Site
- Tourism Anchors
- Mining Clusters
- Agri Hub/ Park
- Industrial Hub (SEZ)
- Logistics Hub



Map 2: Limpopo Composite SDF

3.4. EXISTING SECTOR PLANS

According to the SDF Guidelines, sector plans mean the plans that are in place for the purpose of addressing particular aspects of the development strategies of the municipality. These plans among others include Housing Sector Plans, Environmental Management Plans etc. Synergy amongst the sector plans and the SDF is vital as to ensure that development directions and plans complement each other.

Therefore, the SDF guides the different sector plans that have to be drafted as required by the Municipal Systems Act, 2000 as the core component of the municipal IDP and should assist in alignment between the different sector plans. The most important sector plans include:

Table 2: Musina Sector Plans

Sector Plan name	State as per Musina Local Municipality
Municipal Housing Sector Plan (2007)	Recommended
Environmental Management Plan (EMP) and Environmental Management Framework (EMF)	Recommended
Infrastructure Master Plan (2010)	In place (Review recommended)
Local Economic Development Plan/Strategy (2016)	Under Review
Town Master Plan (2011)	In place
Land Use Management Scheme (LUMS) (2016)	Under Review
Integrated Transport Plan (2017)	In place

Source: Musina Local Municipality IDP 2017/18-2021/22

4. SITUATIONAL ANALYSIS

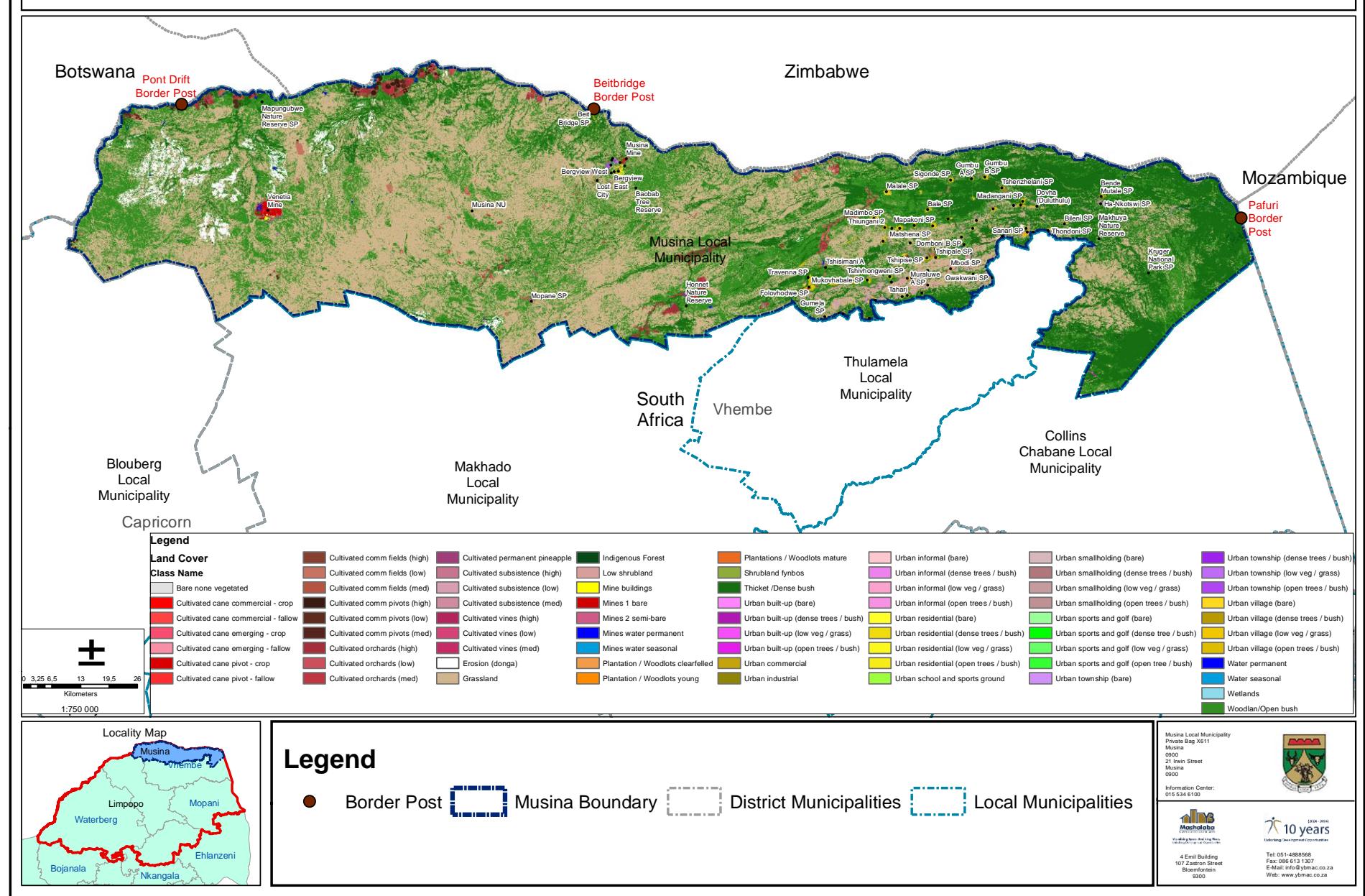
4.1. BIOPHYSICAL ANALYSIS

This section provides the biophysical analysis of Musina Local Municipality (MLM). The municipality comprises of environmental sensitive areas and areas that need to be preserved. The biophysical analysis of MLM is divided into the following: Climate, hydrology, topography, geology, agriculture, vegetation, protected areas, critical biodiversity and climate change.

4.1.1. Land Cover

According to the land cover map below, Musina Local Municipality consists of over 10 land cover themes. The largest land cover type is grassland which covers just over half of the total area of MLM. Thicket/ dense bush is the second largest land cover type followed by woodlands/open bush. Cultivated commercial field and pivots, mines as well as urban built-up, commercial, industrial and residential are scattered across the municipality but covers very small area in comparison to the natural area.

Musina SDF: Land Cover



Map 3: Land Cover

Source: Limpopo SDF (2016)

4.1.2. Climate

The Municipality forms part of one of the warmest regions of South Africa. Its average temperature ranges between a minimum of 10 degrees Celsius during winter and 40 degrees Celsius during summer. The Municipality experiences a dry climate with rainfall ranging between 800mm to 1000mm. MLM receives low rainfall during winter and more rainfall during summer. The temperature and rainfall for Musina Local Municipality for the past nine years are presented in the graphs below.

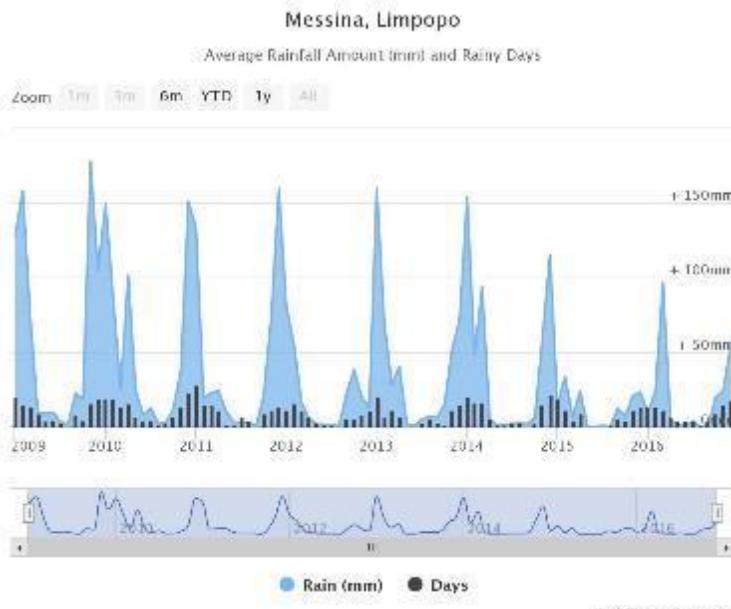


Figure 2: Musina LM Rainfall

Source: World weather online (2017)

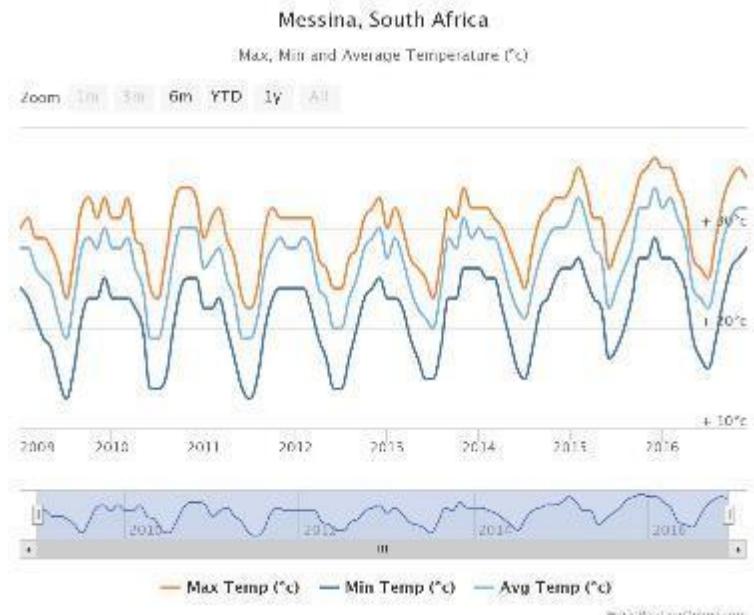


Figure 3: Musina LM Temperature

Source: World weather online (2017)

The Municipality has been experiencing unstable rainfall patterns since 2009 to the present moment. The highest rainfall received was during the year 2010 where it was more than 150mm while the lowest (50mm) rainfall was received in 2016 (World Weather Online, 2017). The Municipality is also characterised by high temperature with mild temperatures during winter. The highest maximum temperature the Municipality experienced since 2009 was 2016 where the temperature was more 35 degrees Celsius while the lowest minimum temperature was approximately 11 degrees Celsius in 2009 and 2010 (World Weather Online, 2017).

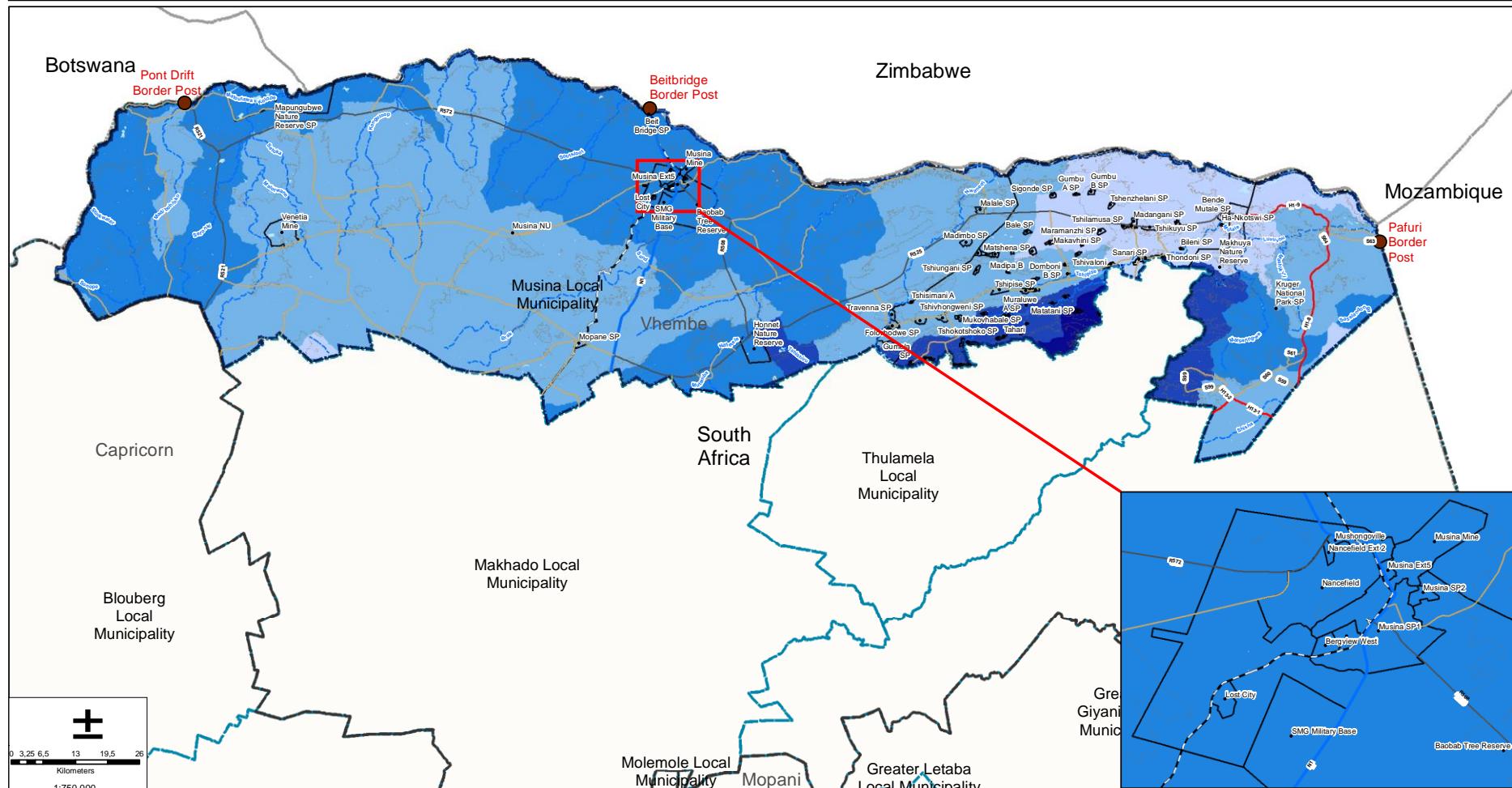
4.1.3. Hydrology

Musina LM comprises of the following water catchment areas; Sand River, Nzhelele River, Mutale, Luvuvhu and the Nwanedzi River catchment area (Musina Draft SDF 2015 and Mutale Local Municipality IDP 2017/18. Furthermore, these catchment areas drain into Limpopo river (SANBI 2009). The Musina Municipal area falls within the jurisdiction of the Limpopo Catchment Management area which imply that catchment areas within Musina Municipality are managed by this agency (Musina Draft SDF 2015). This gives effect to the National Water Act of 1998 (Act 36 of 1998) which gives provision on the management of catchment areas by Catchment Management Agencies. Musina LM comprises of two water management areas namely; Limpopo and Luvuvhu and Letaba water management. These water management areas cover approximately 992 231.5ha of the municipality. In addition, the Municipality comprises of several rivers which include the following:

- Brak
- Limpopo
- Mogalakwena
- Mutamba
- Nwanedi
- Nzhelele
- Sand
- Luvuvhu
- Mutale (SANBI 2009)

The groundwater recharge of MLM is presented on a map below. The lowest ground water recharge ranges between 11-36mm while the highest ground water recharge ranges between 191-329mm. The lowest ground water recharge is received on the eastern part of the Municipality nearby the Mutale river area and on the south-western part of the Municipal area. The highest ground water recharge is received on the south-western part of the Municipality around Mbodi SP (SANBI 2009).

Musina SDF: Ground Water Recharge



Legend

● Border Post	— National	— Rivers	□ Local Municipalities	58 - 94
— Contours (100m)	— Regional	— Wetlands		95 - 190
Roads	— Streets	— Musina Boundary		191 - 329
— Main	— Railways	□ District Municipalities		11 - 36
				37 - 57



10 years
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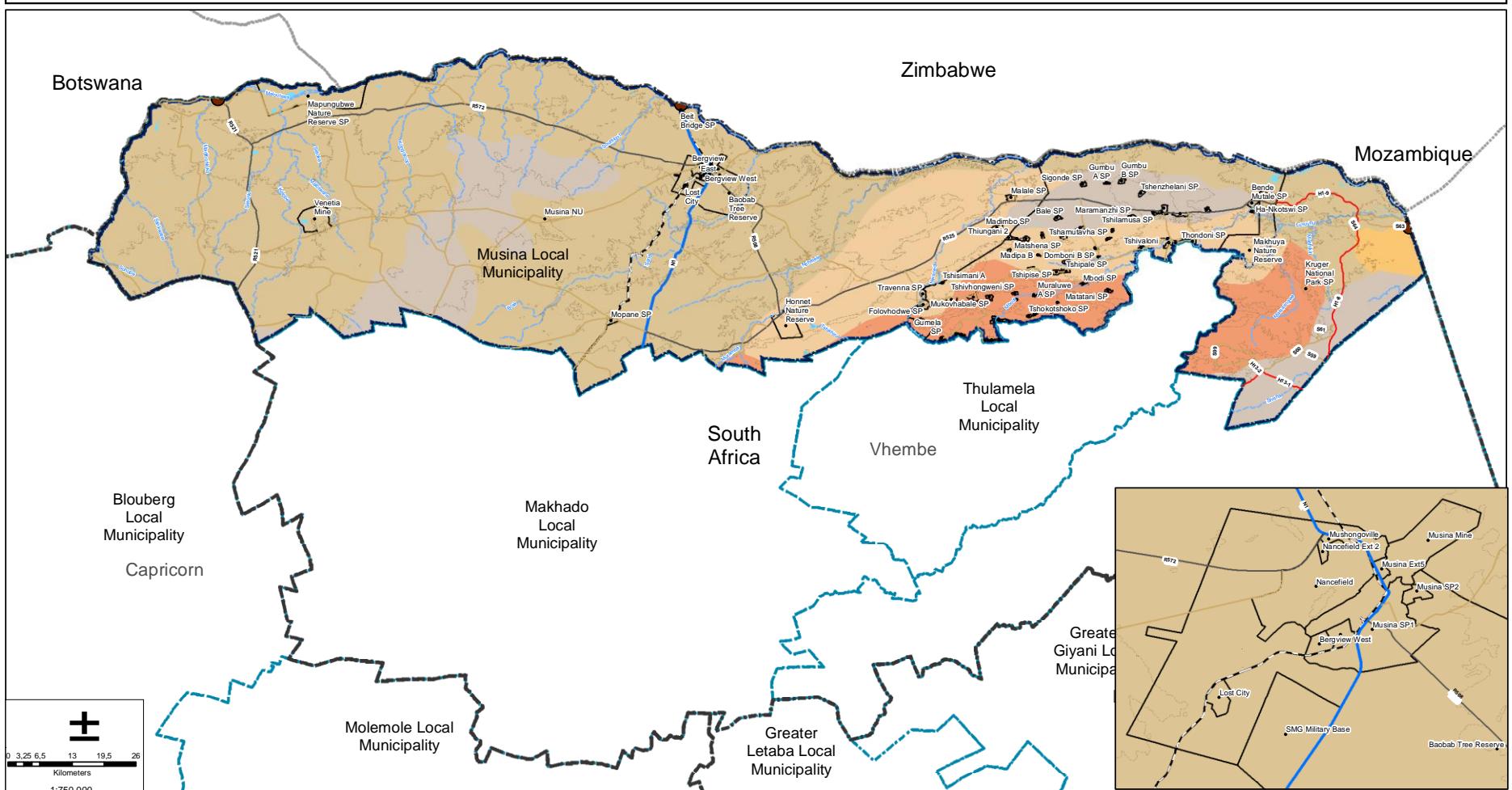
Map 4: Hydrology

Source: SANBI (2009)

4.1.4. Topography

The highest relief within the Municipality range between 450 to 900 while the lowest range between 0-130m as can be seen in the Map below. Generally, the Municipality's surface relief is between 30 to 210m; however, some areas have high and low surface relief. Most of the areas on the south, west, central, north to east nearby Honnet Nature Reserve to the North West nearby Gumbu Gumbu to Ha-Kontswi and Kruger National Park SP, their surface relief is between 30 to 210m. The areas around the southern border within the six additional wards, Dovha Duluthulu and Bale (eastern part) and Musina NW (western part) have the lowest surface relief which is between 0-130m. The areas that have high surface relief include; Makhuya Nature Reserve (south eastern part), Matatani, Tshipise, Muraluwe on the southern part of the Municipality. Part of the areas around the west of the Kruger National Park, the surface relief is between 130 to 450m (DEA, 2009).

Musina SDF: Topography- Surface Relief



Legend

Map showing the Musina Boundary area with the following features:

- Roads:** Main roads (red), Regional roads (grey), National roads (blue), Streets (yellow).
- Contours (100m):** Shaded lines representing elevation levels.
- Rivers:** Shaded blue lines.
- Wetlands:** Shaded light blue area.
- Local Municipalities:** Shaded orange areas.
- Countries:** Shaded brown areas.
- District Municipalities:** Shaded brown areas.
- Musina Boundary:** Shaded blue line.
- RELIEF:** Shaded brown areas representing different elevation ranges: 0-130m (lightest), 130-450m (orange), 30-210m (brown), 30-450m (brown), and 450-900m (dark brown).



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Map 5: Topography

Source: DEA (2009)

4.1.5. Geology

Musina LM is characterized by the following geological rocks; Beaufort, Baberton, Suurberg, Waterberg and Zululand (Musina LM Draft SDF 2015). These geological characteristics poses a potential for mining within the Municipality. Beaufort is evident on the south-eastern part where it stretches to south and central part of the Municipality. It is also evident on the south-west and south-east and stretches to the northern parts of the Municipality. Baberton is evident on the east where it stretches to the central covering most of the areas and stretches to the north-western parts and partially appears on the southern part of the Municipality. Suurberg appears on the south and stretches to the east and southern east of the Municipality. Waterberg is evident on the southern parts with Zululand on the southern east part of the Municipality (Council for Geoscience, 2016). The map below portrays geological characteristics in Musina LM while the table below represents different minerals and rock types that are found at Musina LM.

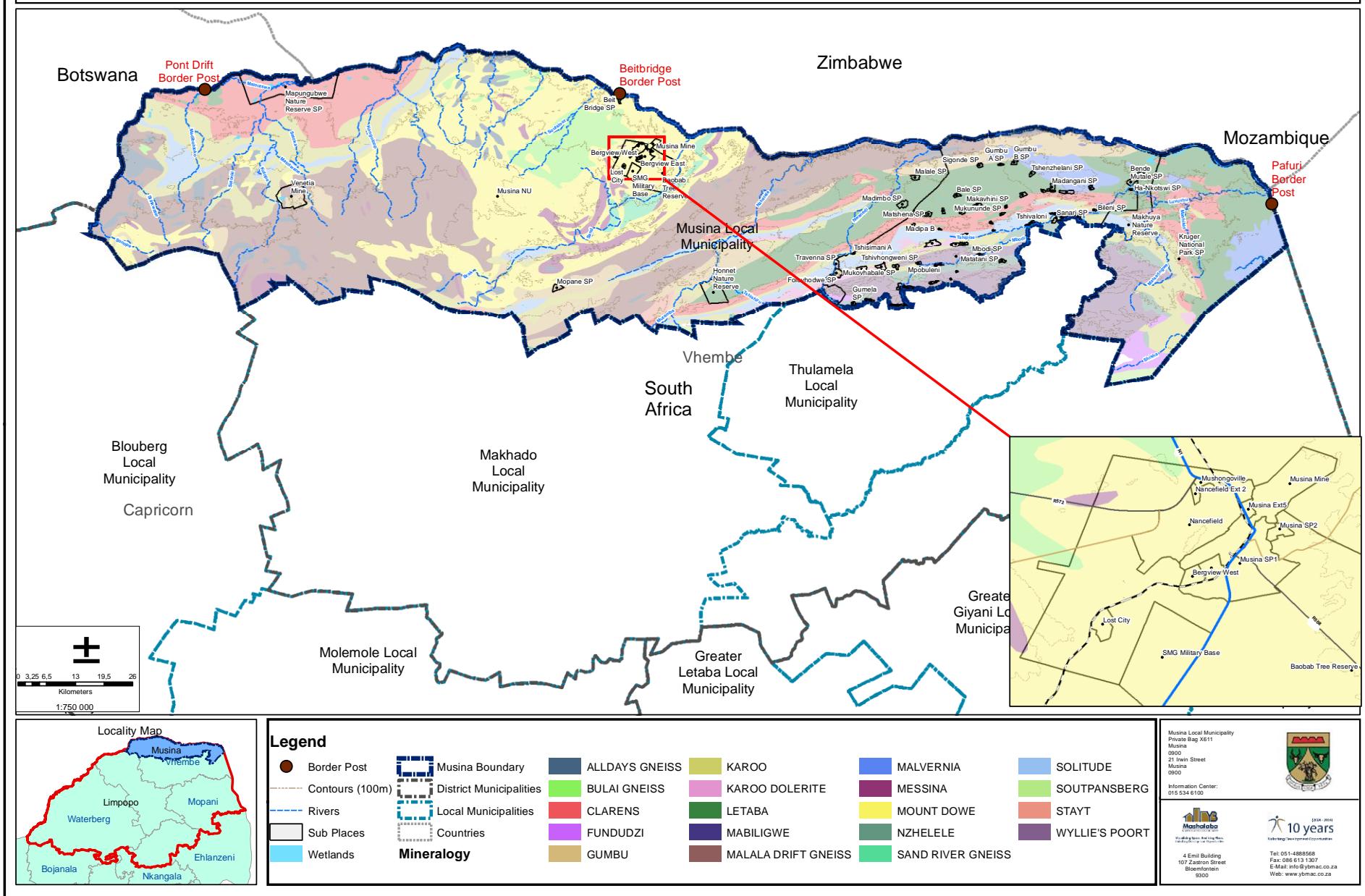
Table 3: Geology type within Musina LM

MINERAL	ROCK TYPE	DESCRIPTION
ARENITE	Sedimentary	<ul style="list-style-type: none"> Arenite rocks are formed when weathered grains are consolidated into rock via compaction, consolidation and cementation. This rock type generally occurs along the coastlines of Southern Africa within the sand deposits.
BASALT	Extrusive Igneous	<ul style="list-style-type: none"> Basalt rock is formed when magma flows from large fissures in the Earth's crust. Basalt is a fine-grained dark coloured rock. This rock type forms the flat area called the Springbok Flats in the southern parts of Limpopo. A number of smaller members of basalt also occur in the far northern parts of Limpopo and the Kruger National Park.
DOLERITE	Intrusive Igneous	<ul style="list-style-type: none"> Dolerite is usually a dark coloured, fine-grained rock. Dolerite occurs mainly as dykes and sills in the sedimentary strata of the Karoo. Dolerite also occurs in a wide range of other rock types such as granite.
GNEISS	Metamorphic	<ul style="list-style-type: none"> Metamorphic rocks like Gneiss form under high pressure and temperature conditions. Under these conditions existing rock is changed by adjusting to the new conditions. This may cause a number of changes like the formation of new minerals, recrystallization or as is the case of gneiss the reorientation and regrouping of minerals. The texture of this mineral is referred to as foliation and banding. Gneiss occurs mainly in the Basement Complex as a remnant of the old crustal rocks.
GRANITE	Igneous	<ul style="list-style-type: none"> Granite forms when magma intrudes into the Earth's crust to crystallize in an isolated environment. This causes the rock to be coarse-grained. Granite consists of minerals like quartz, plagioclase and alkali feldspar.
MUDSTONE	Sedimentary	<ul style="list-style-type: none"> Mudstone is built up of particles originating from the weathering of other rocks and deposited in a depositional basin. Clay-sized particles are transported in suspension in water settle in deep water marine or fresh water lakes. After compaction and cementation, it is called mudstone. Clay refers to particles smaller than 0.02mm. Mudstone occurs within a succession of coarse-grained sandstone alternating with fine-grained mudrock.
NORITE	Intrusive Igneous	<ul style="list-style-type: none"> Norite consists primarily of plagioclase and pyroxene. Norite along with gabbro is one of the major rock types in the Bushveld Igneous Complex.

QUARTZITE	Metamorphic	<ul style="list-style-type: none"> Quartzite is formed through pressure and heat of mainly sandstone and other silica-rich rocks. Quartzite like many other types of sandstone has also undergone recrystallization due to burial depth and are then referred to as orthoquartzites.
SHALE	Sedimentary	<ul style="list-style-type: none"> Shale consists largely of silt and clay sized particles and with visible layering (fissile) as opposed to a mudstone that is massive. Shale always occurs within a succession of coarse-grained sandstone alternating with fine-grained shale (mudstone). The most widespread occurrence is in the Karoo strata which covers 75% of the central subcontinent.
SLATE	Metamorphic	<ul style="list-style-type: none"> Slate is formed through pressure exerted on shale rock. The rock exhibits cleavage along the original bedding planes. It is usually a dark coloured fine-grained rock.

Source: Musina LM Draft SDF (2015)

Musina SDF: Geology



Map 6: Geology

Source: Council for Geoscience (2016)

4.1.6. Agriculture

According to the Musina IDP (2017/18-2021/22), the agricultural sector is one of the main contributors to the economy of the Musina LM and is at the same time, one of the key job creators within the local economy. The section will cover specifically the potential with regard to agriculture and development established through the integration of certain factors dealing with soil potential. Musina LM is dominated by rural areas where the communities are dependent on agriculture (Musina IDP 2017/18-2021/22). The Municipality practice the following agricultural activities; Crops which include; vegetables, cabbages, oranges, tomatoes, Mopani worms, Butternuts, pepper, macadamia nuts, Boabob trees, and livestock which include cattle, poultry, pig, etc. (Musina IDP 2017/18-2021/22). Within the municipality, five areas with agricultural potentials have been identified. These areas include the area along the Limpopo River known as Limpopo valley-including Weipie farms, the area along the Sand River to the West of Mopane, the Nwanedi farms of which only a small section falls within the municipal area, the area along the Nzhelele River known as the Nzhelele irrigation area and the area along the Nwanedi River which is predominantly state land leased by small-scale farmers.

a) Soil Potential

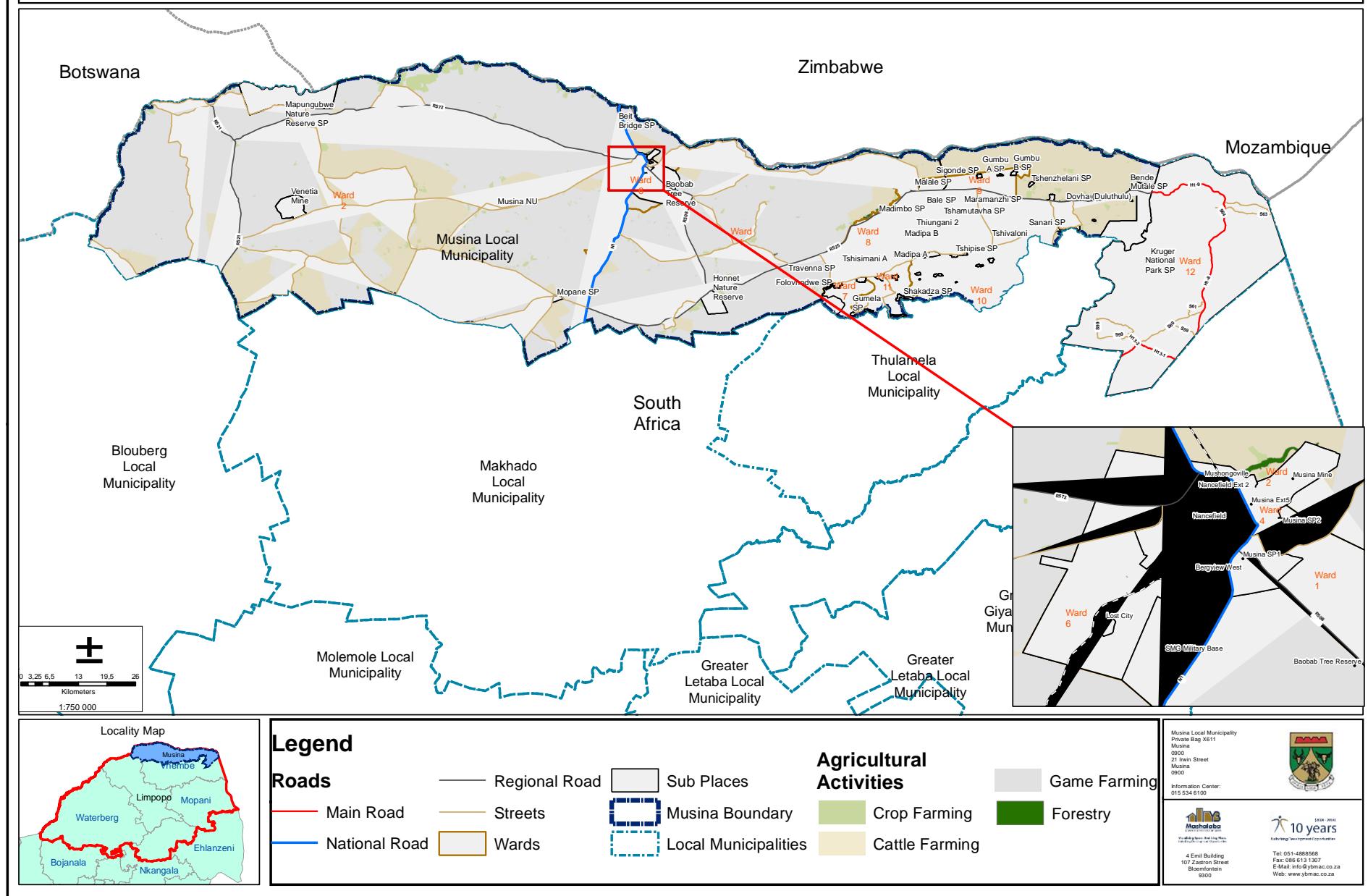
Soil potential is regarded as a basic issue which determines the agricultural potential of an area. However, soil potential is also largely influenced by climate and other factors. The map below shows the soil potential for the Musina municipal area. The spatial distribution of soil potential clearly correlates closely with the local geology and morphological structure of the environment. Musina LM cultivate effectively on the river banks flowing through the Municipal area. This is due to the arid climate, irregular rainfall and lack of ground water. The mostly arable areas at the municipality is at the banks of Limpopo River and other rivers running through out Musina LM. The climatic condition and underground water of this area makes most part of Musina arable (DEA, 2009).

b) Grazing Capacity

Refers to an area of land required to maintain a single animal unit over an extended number of years without deterioration of vegetation and soil (Adam, 1996). Limpopo is suitable for grazing, however there are some part of the Province on the south-western parts of the Province and north-western parts on the Musina LM (Modis, 2009).

The greater grazing capacity can be very beneficial to the Municipality, not only economically but also to subsistence farming. The communities within the Municipality have their own domestic animals which are dependent on the grazing land, furthermore these animals provide transport, milk, meat and other products within the Municipality at a local scale. The Municipality should ensure that grazing land is protected through various strategies including education and awareness, skills development and partnerships with the agricultural agencies. The Municipality should unleash the potential for this sector in order to create jobs and build the economy. The map below shows the grazing capacity of South Africa.

Musina SDF: Agricultural Activities



Legend

Roads

— Regional Road

— Main Road

— National Road

Streets

Wards

Sub Places

Musina Boundary

Local Municipalities

Agricultural Activities

Game Farming

Crop Farming

Forestry

Cattle Farming



Map 7: Agricultural Capacity
Source: Limpopo SDF (2016)

Musina Local Municipality
Private Bag X611
Musina
0800
21 Irwin Street
Musina
0800
Information Center:
015 534 6100



10 years
Established 1994
Tel: 051 488 8568
Fax: 086 613 1307
E-Mail: info@msmco.co.za
Web: www.msmco.co.za

4.1.7. Biodiversity

The MLM measures 1 217 128.69 hectares (ha) which is 12171.29km² in extend. The municipality is largely covered by a savannah biome with the small area of coverage of forest biome (SANBI 2009). The entire MLM has been proclaimed as a biosphere reserve known as the Vhembe Biosphere Reserve. It is characterized by savanna, grassland and forest biome, four bioregions and twenty-four different vegetation types. This biosphere reserve has many habitats for various species.

4.1.7.1. Vegetation

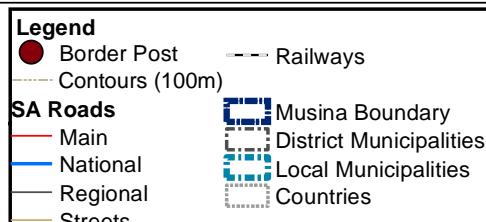
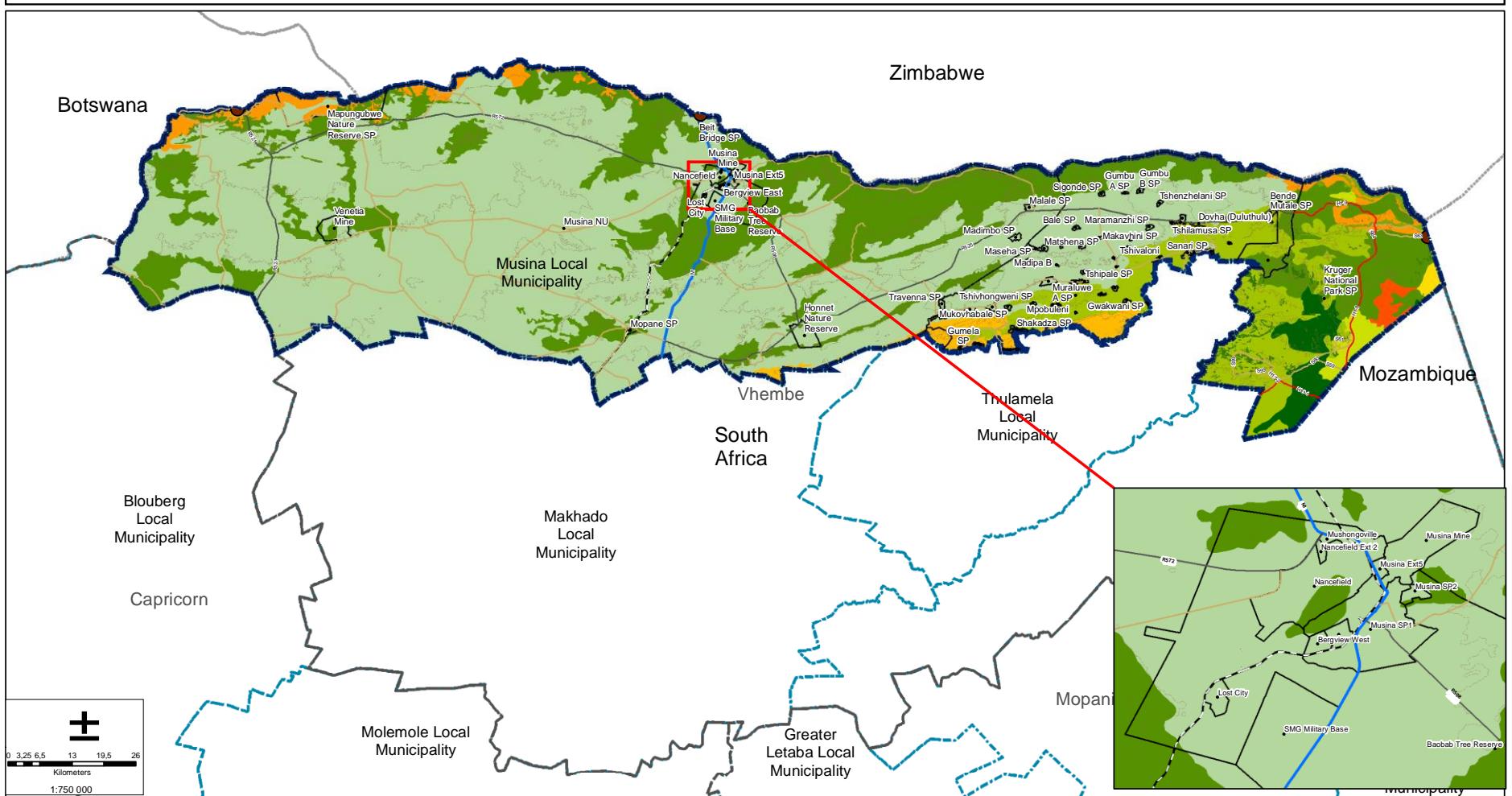
The Municipality is dominated by Musina Mopane Bushveld vegetation (SANBI,2009). The following vegetation types are found: Ironwood Dry Forest, Lowveld Riverine Forest, Makuleke Sandy Bushveld, VhaVenda Miombo, Subtropical Alluvial Vegetation, Limpopo Ridge Bushveld, Musina Mopane Bushveld, and Soutpansberg Mountain Bushveld. Musina Mopane Bushveld is more evident on the south to central and on the east to western part of the Municipality. Makuleke sandy bushveld is partially evident on the North West and on the far south west where it stretches to the border of the Thulamela Municipality. Limpopo Ridge Bushveld appears on the north where it stretches to the far west and also appears partially on the east, south and central part of the Municipality. Ironwood dry forest is scattered on the south-western part of the Municipality. Subtropical Alluvial vegetation is evident on the north eastern and south-western part of the Municipality. A Mopane salt pan appears on the south-western part while Tsende mopane veld appears on the south-western part of the Municipality (DEA, 2009). The following table outlines the different types of vegetation and their respective coverage areas.

Table 4: Vegetation Type

Vegetation	Area	Percentage
Ironwood Dry Forest	22.4 ha	0.01%
Lowveld Riverine Forest	20.4 ha	0.01%
Makuleke Sandy Bushveld	84229.3 ha	35.9%
VhaVenda Miombo	33.4 ha	0.01%
Subtropical Alluvial Vegetation	18020.4 ha	2.38%
Limpopo Ridge Bushveld	191023.8 ha	26.76%
Musina Mopane Bushveld	613412.4 ha	99.38%
Soutpansberg Mountain Bushveld	85357.1 ha	35.53%

Even tough a variety of vegetation is clear the protection there off as indicated in the Vegetation Status Map, is poorly managed. Some of the areas indicated as poorly protected also falls within some of the protected areas which raises concern. It should be noted that the status of the areas are not only depended on the actions of people but the natural elements such as climate change.

Musina SDF: Vegetation



Map 8: Vegetation Type
Source: Limpopo SDF (2016)

Cathedral Mopane Bushveld	Nwambyia-Pumbe Sandy Bushveld
Ironwood Dry Forest	Soutpansberg Mountain Bushveld
Limpopo Ridge Bushveld	Subtropical Alluvial Vegetation
Lowveld Riverine Forest	Subtropical Salt Pans
Makuleke Sandy Bushveld	Tsende Mopaneveld
Mopane Basalt Shrubland	VhaVenda Miombo
Musina Mopane Bushveld	

Musina Local Municipality Private Bag X611 Musina 0900 21 Irwin Street Musina 0900 Information Center: 015 534 6100	
10 years 1994-2004 Tel: 051-4888568 Fax: 086 613 1307 E-mail: info@pmac.co.za Web: www.pmac.co.za	

Musina SDF: Vegetation Status



Legend

Roads

- Border Post
- Main Road
- National Road
- Regional Road
- Streets
- Rivers
- Railways

- Wetlands
- Sub Places
- Musina Boundary
- District Municipalities

Local Municipalities

- Not protected
- Poorly protected
- Moderately protected
- Well protected

Map 9: Vegetation Status
Source: Limpopo SDF (2016)



10 years
Independent Local Government

Musina Local Municipality
Private Bag X611
0900
21 Main Street
Musina
0900
Information Center:
015 534 6100

YBMAC
Yard 6, Block 9, Baobab Tree Reserve,
Musina, Limpopo, South Africa
Tel: 051-4886568
Fax: 051-6131307
E-Mail: info@ybmac.co.za
Web: www.ybmac.co.za

4.1.8. Protected Areas

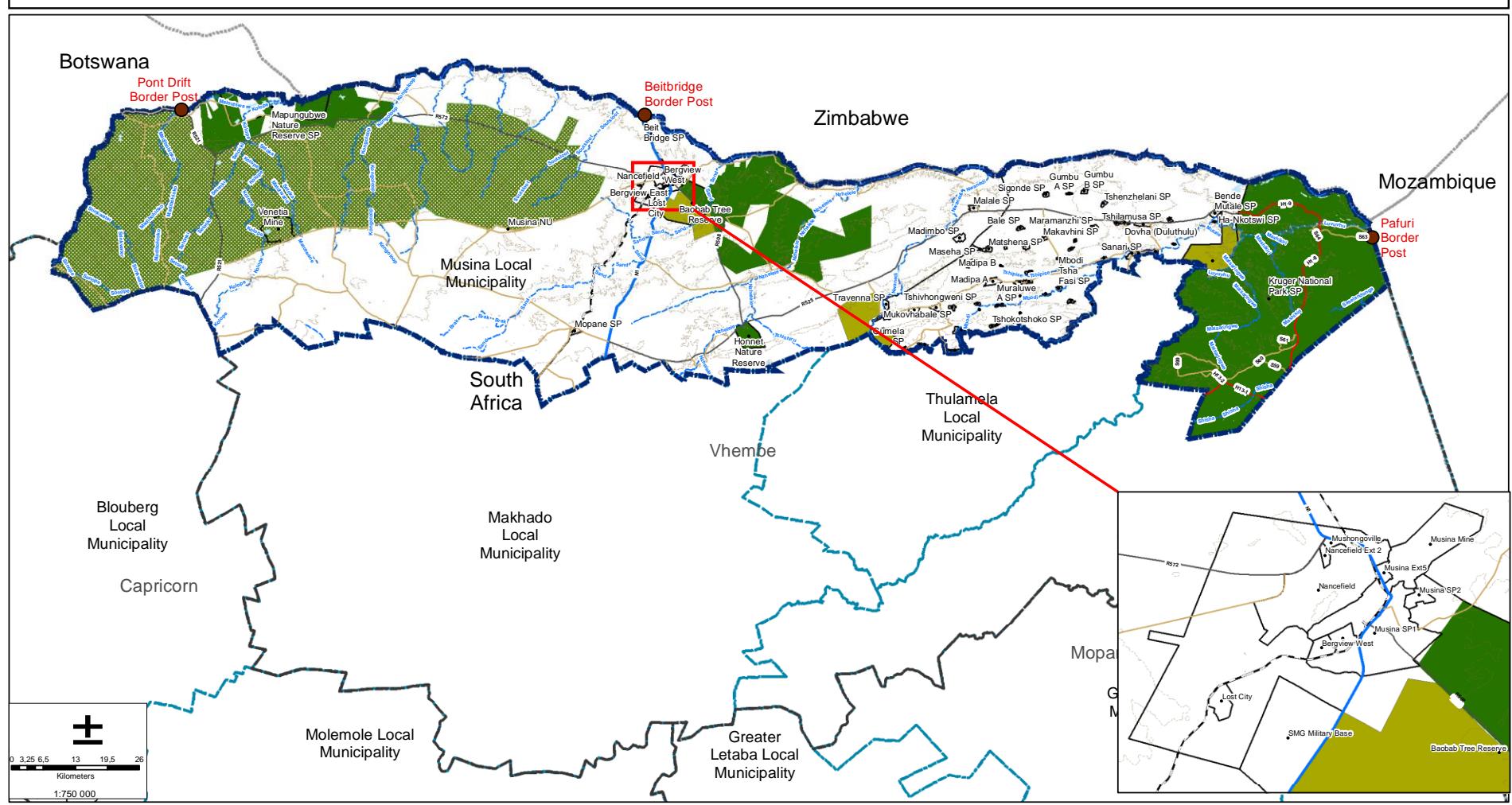
The Musina LM is covered predominantly by a savannah terrestrial ecosystem covering 992 072 ha, and also consists of forests which covers 1,7 ha. The area is also home to a number of formal protected areas in the form of nature reserves, conservation areas and national parks. These protected areas play a significant role with respect to conservation as well as tourism. These reserves include the Baobab Tree Reserve, the Honnet Nature Reserve, the Mapungubwe National Park and the Nwanedi Nature Reserve (SANBI, 2009). The table below represent different Reserves and Parks also classified as protected areas as well as their coverage:

Table 5: Protected Areas

Protected areas	Area (Hectare)	Percentage
Kruger National Park National Park	331.8 ha	0.14%
Nwanedi Nature Reserve Nature Reserve	8666.3 ha	2.03%
Honnet Nature Reserve Nature Reserve	1991,9 ha	0,26%
Mapungubwe National Park	19929,2 ha	2,63%
	30919,2 ha	5.06%

Source: SANBI (2009)

Musina SDF: Protected Areas



Legend

The legend is organized into two main sections: 'Roads' on the left and 'Protected Areas' on the right. The 'Roads' section includes: Border Post (dark red dot), National Road (solid blue line), Rivers (dashed blue line), Contours (100m) (dashed pink line), Regional Road (solid black line), Streets (solid gold line), and Railways (dashed black line). The 'Protected Areas' section includes: Countries (dashed grey line), Provincial Nature Reserve (solid olive green), Wetlands (solid light blue), Transfrontier Conservation Area (dashed green), Musina Boundary (dashed dark blue line), District Municipalities (dashed grey line), Local Municipalities (dashed teal line), and National Park (solid dark green).

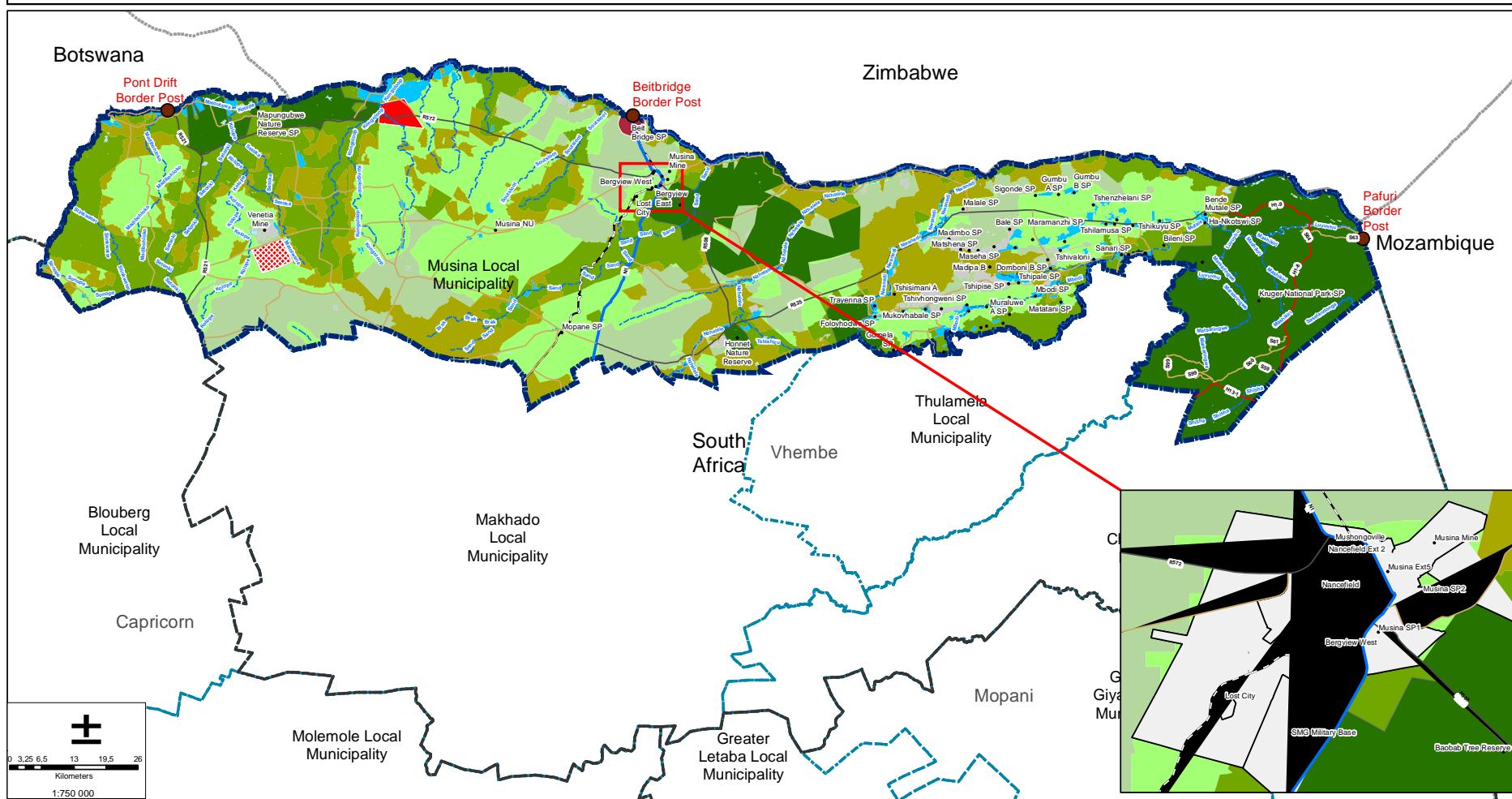
 **10 years**
 Unleashing Business Improvement Opportunities
 Tel: 051-4888568
 Fax: 086 613 1307
 E-Mail: info@ybmac.co.za
 Web: www.ybmac.co.za

Map 10: Protected Areas
Source: Limpopo SDF (2016)

4.1.9. Critical Biodiversity

Musina LM has various ecosystem of which some are threatened. According to SANBI (2009), the municipality has one Threatened (vulnerable) Ecosystems covering 41.5 ha (Lowveld Riverine Forest) and it is also consisting of one Endangered Threatened Ecosystems covering 2255,9 (Mapungubwe/Greefswald Riverine Forest). Musina LM has various critical biodiversity, these include protected areas, critical biodiversity area 1, critical biodiversity area 2, Ecological support area 1 Ecological support area 2 and No Natural Remaining as represented on the map below. Protected areas are dominated at the eastern part and fairly on the west and central part of the Local Municipality. Critical biodiversity area 1 is mostly on the west and also on the central and eastern part of the Local Municipality. Critical biodiversity area 2 is scattered throughout the municipality. Ecological support area 1 is also scattered throughout the municipality. Ecological support area 2 is dominated on the western and fairly on the eastern part of the municipality (SANBI, 2009). The LSDF specified that the province's protected areas network can and should be expanded to incorporate unprotected critical biodiversity areas 1 and 2 while high potential and productive agricultural land should diligently be protected from development. The No Natural Remaining is mostly on the western side of the municipality mainly within or located on the areas where villages are found and the urban area of Musina.

Musina SDF: Critical Biodiversity Areas



Legend

Roads

- Border Post
- Main
- National
- Regional
- Streets
- Railways
- Rivers

Musina Boundary
District Municipalities
Local Municipalities
Wetlands

Solar Energy Project

- Approved
- In process
- Withdrawn/Lapsed

Critical Biodiversity Areas

- Ecological Support Area 2
- Critical Biodiversity Area 1
- Critical Biodiversity Area 2
- No Natural Remaining
- Ecological Support Area 1
- Protected Area



Map 11: Critical Biodiversity
 Source: SANBI (2009) & Limpopo SDF (2016)

4.1.10. Climate Change and Mitigation Strategies

South Africa has regarded climate change as the most significant environmental challenge which poses threat to the human population. Furthermore, Limpopo Climate Change Response Strategy 2016 (LCCRS) has indicated that the province should expect warmer and wetter winters and hotter, drier summers in the future. According to the IPCC 2015, climate change is defined as change in the state of the climate that can be identified by changes in the mean and the variability of its properties and that persists for a period of 10 years or more. It is mainly due to an excessive amount of greenhouse gases emitted to the atmosphere due to human activities. The Limpopo province have recently been experiencing altered weather patterns which may have been attributed by climate change impacts, such includes severe rainfall, heatwaves. Since the province is dominated by rural areas the climate change impacts will be felt more (LCCRS 2016). This draws attention for development plans to incorporate climate change strategies.

a) Climate change risks

Climate Change impacts results in the following aspects as predicted by the IPCC, 2014;

- Higher temperatures
- Altered rainfall patterns
- More frequent or intense extreme weather events including heat-waves, droughts, storms and floods
- Rising sea levels

The implications of the above predicted climate change impacts and climatic changes will impact on the physical environment which will ultimately impact on the sustainability of human livelihoods. It is imperative Musina Local Municipality's future planning initiatives and

programmes take into consideration risks and impacts and limitations imposed by climate change, such as increased temperatures; changes in precipitation levels; increased storm events; and considers adaptation measures.

b) Water Sources

Climate change may result in higher temperature and low rainfall which may have impact on the water resources within the Municipality (LCCRS 2016). Musina LM generally experience higher temperature which sometimes reaches 43 degrees Celsius of which results in higher evaporation and transpiration resulting in drier rivers, wetlands and dams and affect water availability. Due to climate change impacts, the climatic conditions are likely to elevate and such may result in droughts, low rainfall, higher temperature and desertification. Furthermore, Vhembe District is already experiencing desertification and due to climate change impact, it is likely to become more severe if no action is undertaken (Vhembe IDP 2017/18).

c) Agriculture and Food Security

Agriculture is interlinked with the availability of water for irrigation since climate change impacts may result in low rainfall and higher temperature which results in water scarcity (IPCC 2013). A long dry season without rainfall may have higher impact on crops (maize, vegetation and etc.) which require water for irrigation, livestock (cattle, goat and pig) which require water for consumption. Furthermore, when it eventually rains, it is likely to cause floods due to the dry and bear soil which it is difficult for water to infiltrate. This may result in washing away of crops which were surviving during such season and also in destruction of livestock and these may result in invention of army worms. These may result in low agricultural production. As a consequence, a low

production in agriculture may result in food insecurity as the majority of the communities within the region rely on agriculture.

d) Biodiversity

As indicated on the biodiversity section that the Municipality comprises of endangered (Mapungubwe/ Greifswald Riverine) and vulnerable (Lowveld Riverine Forest) ecosystems (SANBI 2009). Changes in climatic conditions may result in severe colds or severe higher temperatures with low rainfall, these conditions may have impact on biodiversity. Certain species adapt to specific temperatures and changes in temperature and while any other climatic conditions may disturb the productivity of such species. Impact on biodiversity may result in stress of the eco-tourism sector since tourists are attracted by the unique biodiversity within the Municipality. Destruction of these ecosystems may have severe impact on tourism if no action is undertaken.

e) Health

Limpopo Province is vulnerable to malaria, particularly Vhembe District Municipality which Musina Local Municipality falls under. The change in climatic conditions accelerate these diseases as indicated on the Vhembe District IDP (2017/18), that malaria is one of the diseases experienced within the District.

f) Flooding

Climate change may result in flooding due to high rainfall and excessive drought which attribute vegetation loss (IPCC, 2013). It is indicated on the Vhembe District IDP 2016, that the Municipality is facing challenges of desertification which results in drier and bare soil which elevates surface run off which causes floods. As a result of climate change impact such as higher rainfall and severe storms, floods may become a challenge within the Municipality. Floods destroy

infrastructure such as buildings, bridges and etc. since the Municipality is predominately rural, there are mud structure which are more vulnerable to these impacts and in urban areas which does not have drainage systems, such areas become vulnerable to floods.

g) Opportunities for alternative energy sources

Climate change is gravitated by excessive emission of greenhouse house gases. Energy production is one of the contributors of greenhouse gases in South Africa (Environmental Affairs, 2013). Renewable energy should be considered as an alternative energy in order to reduce the emission of greenhouse gases. The MLM has a potential for biomass energy and solar energy. There are already three solar energy projects within Musina Local Municipality proposed by the Department of Environmental Affairs. MLM can also initiate these kinds of projects for the benefit of the community. These projects will be more suitable in areas where there is no natural remaining as depicted by the Critical Biodiversity Map.

h) Air Quality

In South Africa, outdoor and indoor air pollution continues to be perceived as a serious issue (South Africa's air quality, 2013). Ambient air quality refers to the physical and chemical measure of pollutant concentration in the ambient atmosphere to which the general population will be exposed (South Africa's air quality, 2013). The Mutale Local Municipality IDP 2016/17 indicates that the sources of air pollution are residential and commercial sources. Residential sources are Brazier which is used for home manufactured aluminium pots, wood stoves, brickyard burning, barbecues, natural gas heating, structural fires, and fire wood burning. Commercial sources are characterized by oil and gas industry, land clearing burning, restaurants, light industry, welding

shops, space heating, agriculture, landfill sites, building construction and demolition, gravel pits, bakeries, asphalt application, dry cleaning, metal degreasing, printing inks, glues adhesives sealants and paint application (Musina IDP 2017/2018. Livestock farming produces methane from animal waste; pesticides from crops farming also contribute to air pollution. Mining also contribute to air pollution within the Municipality in form of methane from waste dumps and particulate matter from mining operations (Mutale IDP 2016).

i) Mitigation and adaptation

Climate Change Mitigation refers to efforts to reduce or prevent emission of greenhouse gases. Mitigation can mean using new technologies and renewable energies, making older equipment more energy efficient, or changing management practices or consumer behaviour. Climate change mitigations include actions taken to limit changes in the global climate caused by human activities.

Energy

As indicated that there is potential for renewable energy in the form of biomass, and solar within the Musina Local Municipality. Such should be capitalised in order to reduce greenhouse gases from the generation of electricity.

Drought

In order to adapt drought to climate change people need to save water and use water in a sustainable way. Water can be saved in the following ways;

- People who use more water pay an increasing higher price for it
- Introduce high tolerates plants/grass to drought because native plants can save 100,000 gallons of water per year

Floods

- Reforestation in rural and urban areas, vegetation reduces surface run off
- Building dwellings that are more resistant to flooding and do away with mud structures
- People who live near river, streams and wetlands must build their homes on an elevated to a height above the area predicted food level rise
- For people who are already living on a flood zone when building choose flood damage-resistant material such as glazed bricks, concrete, stones, steel and recycled plastic lumber.
- Rather than paving a drive way, choose materials such as pavers that allow water to seep through them into the ground or gravel

The use of ecosystem-based adaptation strategies

Large-scale labour-intensive clearing of invasive alien vegetation in mountain catchments to increase water supply to areas affected by drought as a result of climate change, and large-scale restoration of water catchments and wetlands to ensure they provide a good buffer effect and filtration service during floods.

Temperature

- Keeping the streets unpaved or grassy surfaces because paved surfaces absorb radiation and keep heat for longer
- As temperatures are generally higher as one is closer to the ground, people should build houses that are not close to the ground

Health service

Health actions which can be taken will include;

- emergency medical services;
- improved climate-sensitive disease surveillance and control;

- Safe water and improved sanitation

Table 6: Climate Change, Adaptability and Mitigation Strategy

Infrastructures and sectors affected by climate change	Adaptation and mitigation strategy	Housing	marshlands/wetlands as buffer against flooding; protection of existing natural barriers
Water	Expanded rainwater harvesting; water storage and conservation techniques; water re-use; desalination; water-use and irrigation efficiency	Energy	Replace vulnerable houses with low cost housing which are disaster resistant
The agricultural sector	Planting of drought resistant crops, Utilizing seasonal crops, Adjustment of planting dates and crop variety; crop relocation; improved land management, e.g. erosion control and soil protection through tree planting	Biomass energy	Wind farms
Health service infrastructure	Heat-health action plans; emergency medical services; improved climate-sensitive disease surveillance and control; safe water and improved sanitation	Solar Energy	Storm water control measures must be implemented to avoid soil erosion and siltation of drainage lines.
Transport infrastructure	Realignment/relocation; design standards and planning for roads, rail and other infrastructure to cope with warming and drainage.	Storm water management	Vegetation must be retained where possible to avoid soil erosion.
Eco-Tourism sector	Diversification of tourism attractions and revenues; shifting ski slopes to higher altitudes and glaciers; artificial snow-making, development of species adaptation plan	Soil erosion	If slopes are cleared during construction, these must be rehabilitated as soon as possible to minimize soil erosion losses using local indigenous vegetation.
Infrastructure/ Settlement	Relocation; seawalls and storm surge barriers; dune reinforcement; land acquisition and creation of		

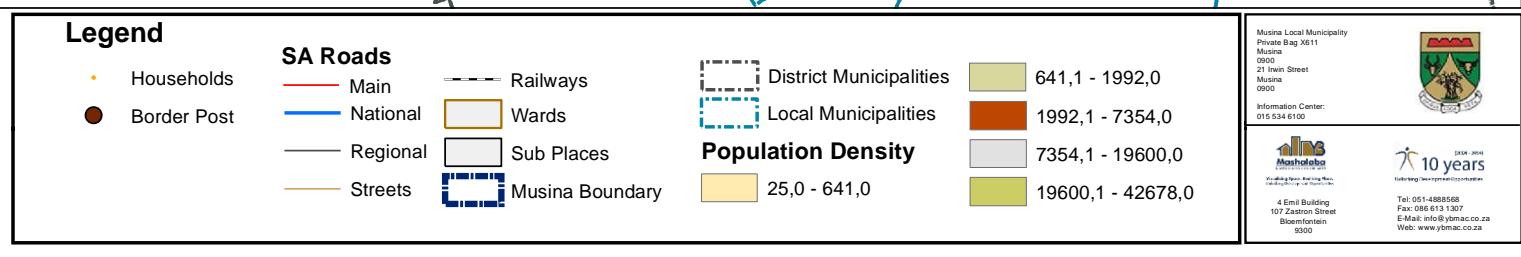
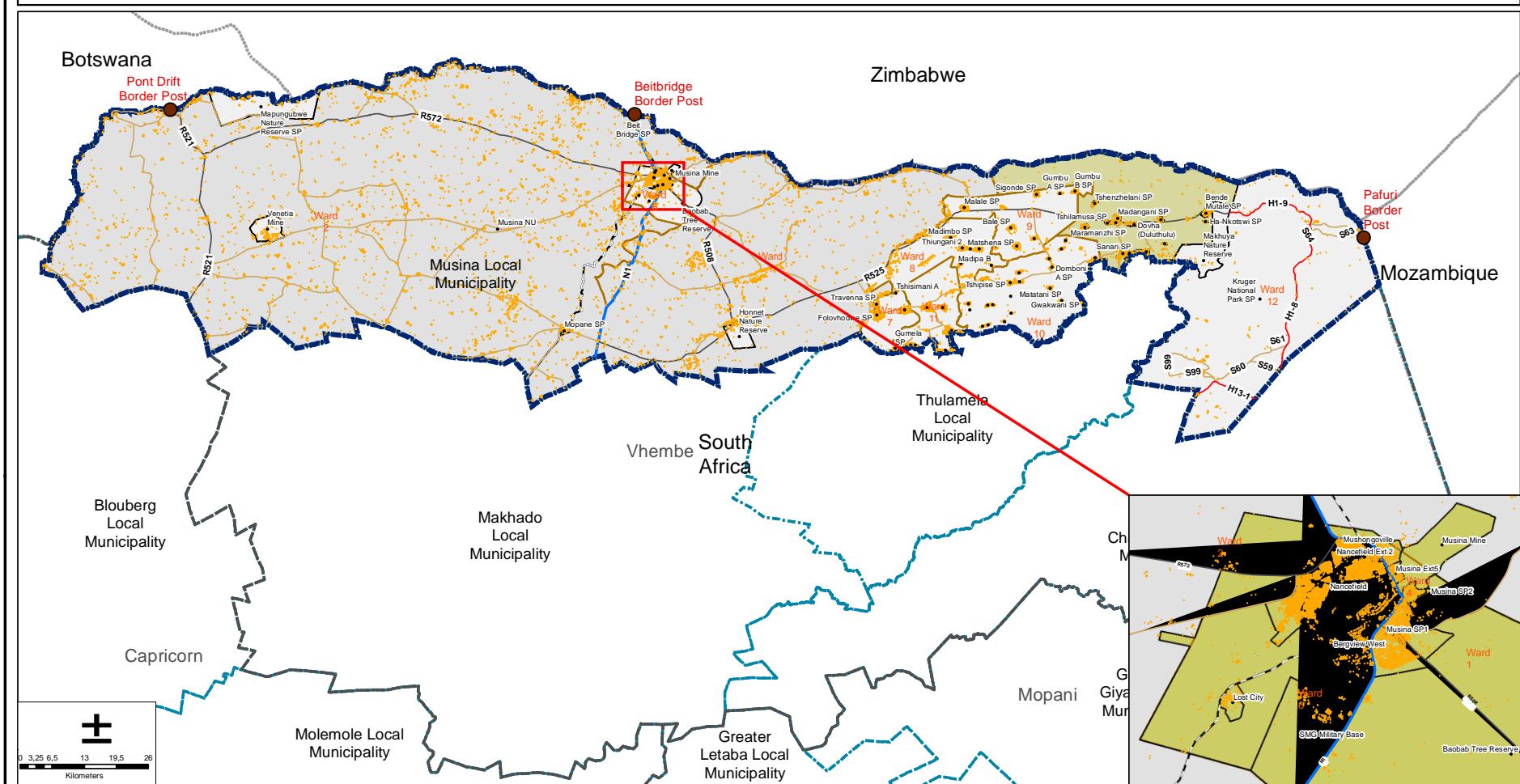
4.2. SOCIO-ECONOMIC ANALYSIS

The socio-economic analysis of Musina LM comprises of population distribution in relation to (Gender, Age, and Race), Education levels, employment status, household's income levels as well as poverty levels within the municipality. These demographics are analysed together with the assessment of the availability of social amenities as well as various economic sectors in order to guide and direct the types of developments which can be spatially planned to meet the demands of the people residing within the Musina LM jurisdiction.

4.2.1. Population Distribution

This section provides a population analysis of Musina LM based on race, gender and age. Stats SA 2011 indicated that Musina LM comprised of a total population of 104 654 (new wards included) that rose to 132 009 in 2016 according to STATSSA, after the amalgamation of Musina LM and Mutale LM (Ward 7-12). As per the map below, the highest population density can be found in Musina town followed by the rural areas around town towards the western side of the municipality followed by the tribal areas on the eastern side of the municipality.

Musina SDF: Population Density



Map 12: Population Density
Source: Limpopo SDF (2016)

The figure below demonstrates the population distribution by race for Musina LM. There has been a slight increase in both the Black African and Coloured population while there was a slight decrease in the White population and the Indians or Asians remained steady over the past five years.

POPULATION BY RACE



Figure 4: Population Distribution by Race.

Source: Stats SA (2011) & Community Survey (2016)

The next figure indicates population distribution by gender. As demonstrated below, Musina LM was populated by 53 509 (51.1%) females as compared to their 51 146 (48.9%) male counterparts during the 2011 Census. The 2016 Community Survey revealed a total male population of 65 856, while the female population still remain slightly more at 66 153. There is however a big difference between the 2011 and 2016 statistical difference indicating that the male population has seen a bigger increase than female during this five-year period.

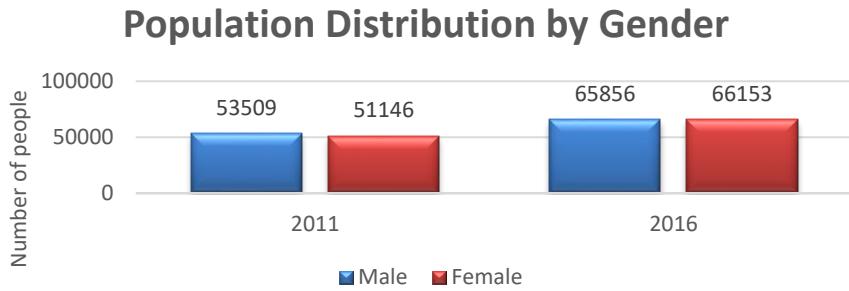


Figure 5: Population Distribution by Gender.
Source: Stats SA 2011 & Community Survey (2016)

The figure below demonstrates population distribution by age. Stats SA (2011) indicated that the population of Musina LM was predominated by children aged 0-4 (12.7%), followed by people aged between 25-29 (12.1%), it must be noted that a rapid decrease in the population is seen between the age groups of 35-39 (6.9%). It is evident that a large proportion of Musina LM is made up of children and the youth as compared to the elderly.

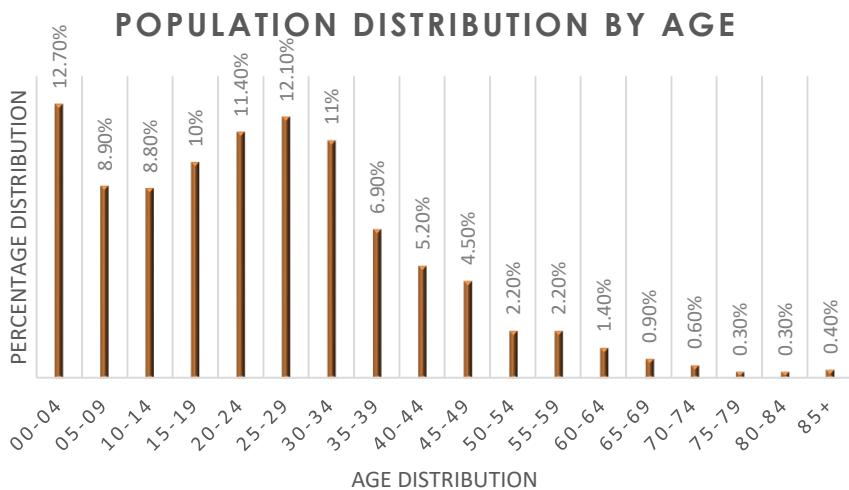


Figure 6: Population Distribution by Age
Source: Stats SA 2011 & Community Survey (2016)

The 2016 Community Survey outlined that the population of Musina LM is relatively young. The figure below demonstrates the population distribution by age for the population between 15-35 years (Youth Population).

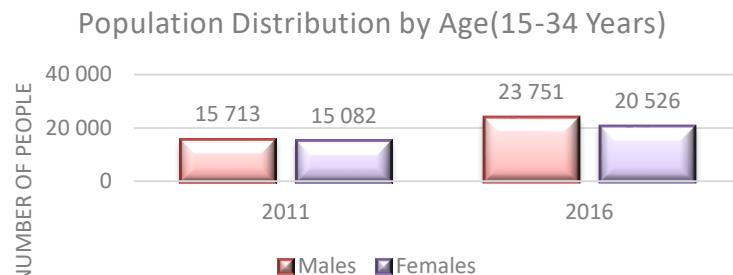


Figure 7: Population Distribution by age (15-34).
Source: Community Survey 2016

As indicated above, despite the fact that young people do not predominate the entire municipality, it must be noted that the youth male population is more than the youth female population within the Musina LM.

The figure below illustrates language distribution within the Musina LM.

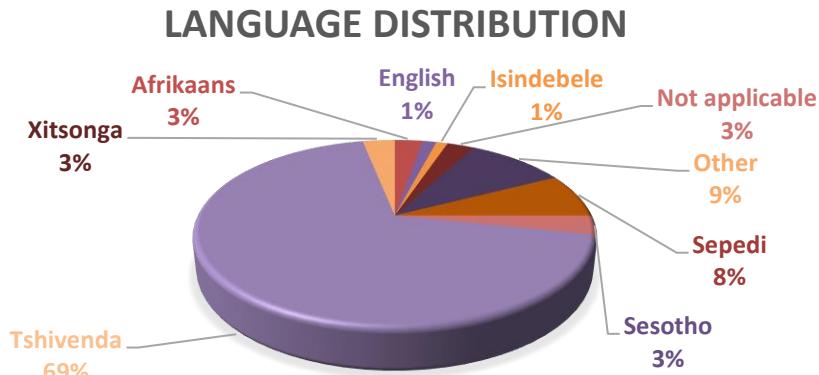


Figure 8: Language Distribution.

Source: Stats SA, Community Survey (2016)

The Stats SA, 2016 Community Survey indicated that 69% of the population use Tshivenda frequently as compared to other languages, while 9% use other languages and 8% use Sepedi as their main language. Afrikaans, Xitsonga and Sesotho both have 3%.

4.2.1.1. ISSUES OF MIGRATION

The figure below denotes the migration trends of Musina LM.

Province of Birth 2011 & 2016

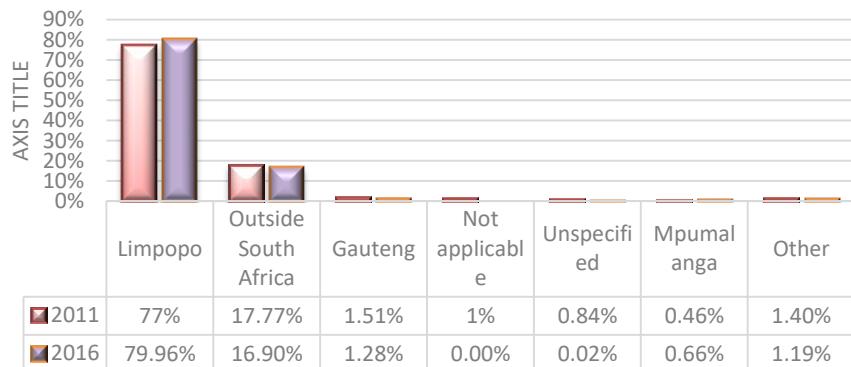


Figure 9: Migration Birth by Province

Source: Stats SA (2011) & Community Survey (2016)

As can be seen from the figure above, the majority of the Musina LM population were born in the Limpopo Province, while there is 16.90% of the population which were born outside South Africa.

4.2.1.2. POPULATION PROJECTIONS FOR THE NEXT 5 YEARS

$$P = P_0(1 + r)^t$$

Whereby : P = Future Population

P_0 = Initial Population

r = rate of growth

t = time (number of years)

The projections can be seen in the image below ranging from 2011-2021 with the 2011 and 2016 Stats SA information for Musina LM.

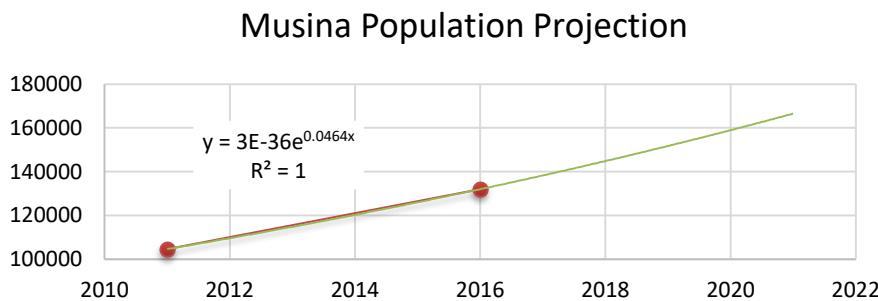


Figure 10: Population Projection

Source: Stats SA (2011 Census and 2016 Community Survey)

4.3. Education Level

The figure below illustrates the education levels of the people residing within the jurisdiction of Musina LM.

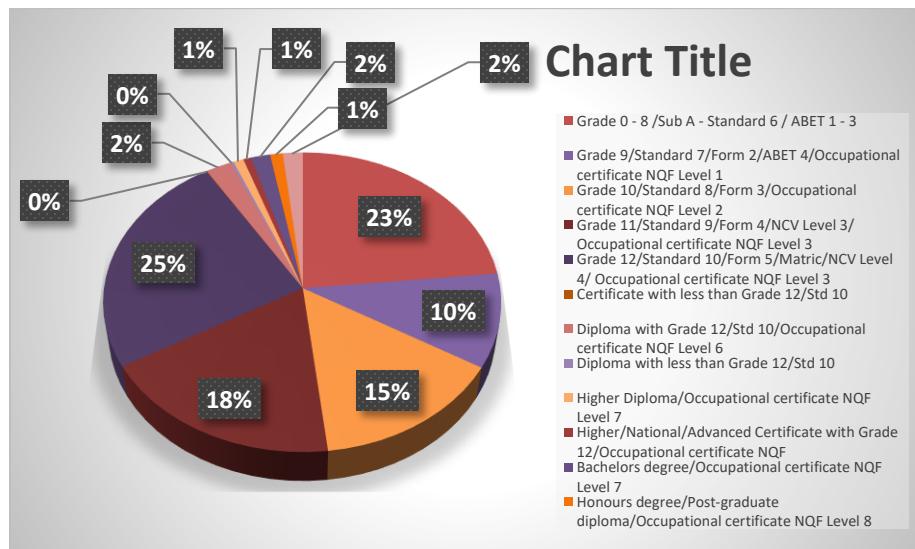


Figure 11: Education Status.

Source: Stats SA, Community Survey (2016)

As indicated on the figure above 67.8% of the Musina population had access to some secondary education, while only 25% completed Grade 12 while only 6.7% of the population have tertiary education.

4.4. Employment Status

Although the figure above on the education status indicated that a large proportion of the population only completed secondary education, it must be noted that the employment status (Figure below) indicates that 43.5% of the population were employed, while 35.20% are not economically active, 14.60% are unemployed and the remaining 6.80% are discouraged work-seekers. As can be seen in the map below, the unemployment rate decreases as we move towards the eastern part of the municipality which is home to the Kruger National Park. The unemployment rate is not very high around the Baobab tree reserve due to the economic activities in the area in comparison to the rest of the Municipality.

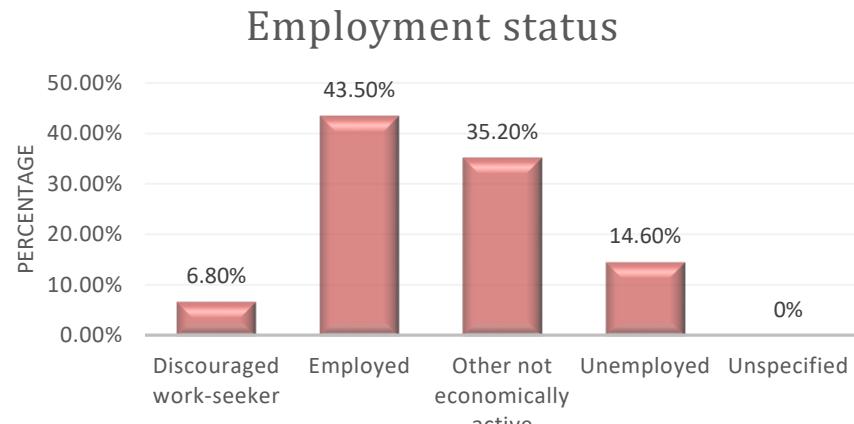
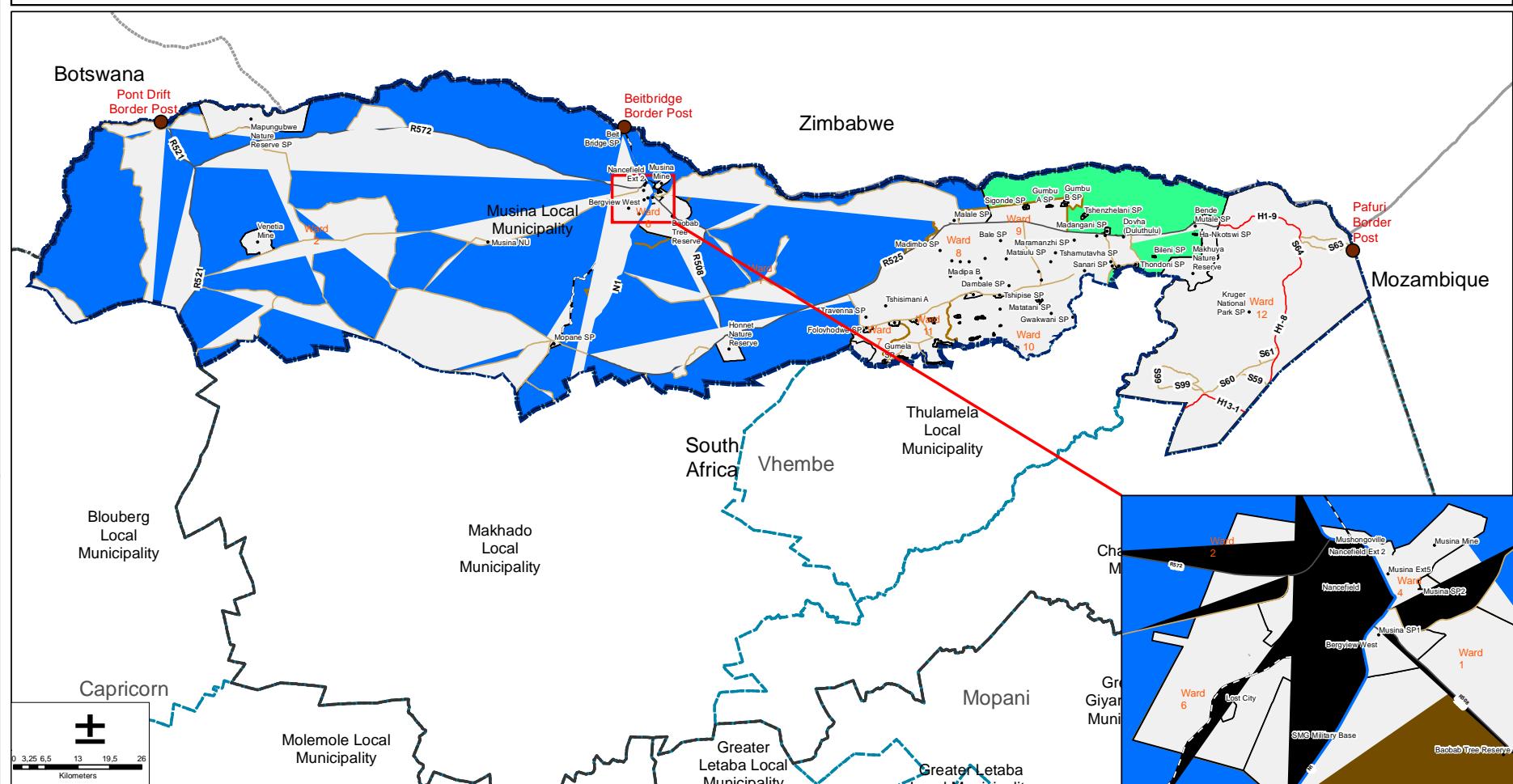


Figure 12: Employment Status.

Source: Stats SA (2011)

Musina SDF: Unemployment Rate



Legend

Roads

- Border Post
- National Road
- Regional Road
- Main Road
- Streets
- Railways

Administrative Boundaries

- Wards
- Sub Places
- District Municipalities
- Local Municipalities
- Musina Boundary

Unemployment Rate

- 0,0 - 19,0
- 19,1 - 57,0
- 57,1 - 125,0
- 125,1 - 244,0
- 244,1 - 1401

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 10 years
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Web: www.ybmac.co.za

10 years
Unlocking Development Opportunities

Map 13: Employment Status
Source: StatsSA (2011)

4.5. Income Distribution

The figure below illustrates the income distribution for households within Musina LM. Stats SA (2011) indicated that 36.5% of households (which is the highest) earned between R10 000- R20 000 during the recording off the 2011 Census.

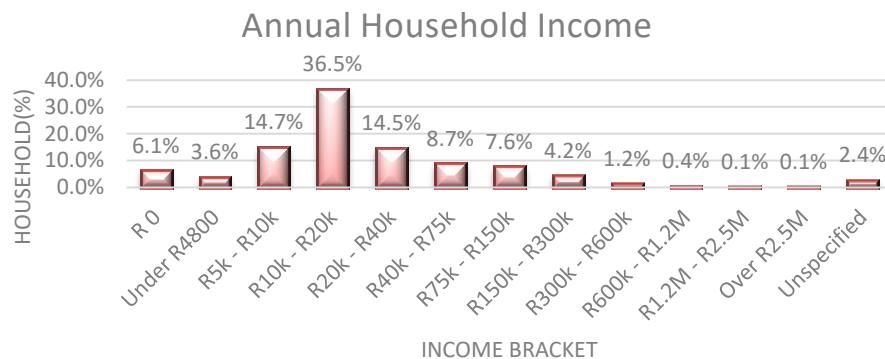


Figure 13: Income Distribution.
Source: Stats SA (2011)

4.6. Employment by sector

The following table depicts the types of employment sectors in Musina LM. As it stands, a large proportion (64.10% (18982)) of the employed population works within the formal sector. The Musina LM IDP 2017/18-2021/22 outlined that the government have established initiatives to bridge the gap between the first and second economy. By doing so, the Expanded Public Works Programme (EPWP) was one of the governmental programmes which was established to reduce unemployment though providing jobs for the poor and unskilled people throughout the country. However, this innovation creates temporary employment for the employed and does not address the real issues relating to unemployment, more especially challenges faced by the youth. In this regard, new economic opportunities need to be

established in order to stimulate growth and development, and thus creating job opportunities within the municipality. This is an indication that a lot still needs to be done, in terms of the enhancement of the education level, in order to ensure the reduction of the secondary economy within the municipality.

Table 7: Employment by Sector

Column	Percentage	Number of People
Do not know	2,80%	813
In the formal sector	64,10%	18 982
In the informal sector	20,40%	6 04
Private household	12,70%	3 763
Unspecified	0%	0

Source: Stats SA (2011)

4.7. Poverty Levels

The figure below demonstrates the poverty levels per headcount as well as the intensity of poverty within the Musina LM. As indicated below, poverty per headcount in 2011 was 7.80% and decreased by 2.2% in 2016 (5.6%). The intensity of poverty was 40.80% in 2011 and decreased with 0.5% in 2016 (40.30%). This is an indication that although the levels of poverty are slightly lower, the rate in which the intensity of poverty is decreasing raises concerns.



Figure 14: Poverty Levels.
Source: Community Survey (2016)

4.8. Social Amenities

Since the development of sustainable human settlements also encompass the provision of adequate social amenities, it is vitally important for the municipality to ensure that communities have access to social amenities in reasonable distance per population threshold. In this regard, this section provides a comprehensive analysis of the social amenities within the Musina LM.

4.8.1. EDUCATIONAL FACILITIES

a) Schools

Musina IDP 2017/18-2021/22 indicated that there are 8 secondary schools with 4 990 pupils within the boundaries of the municipality. Furthermore, there are 29 primary schools accommodating 10 714 pupils. There are also 4 combined schools that accommodate the needs of 1183 pupils. In the Musina municipal area there are no special need schools or institutions. Access to education is a significant issue that needs to be addressed.

b) Libraries

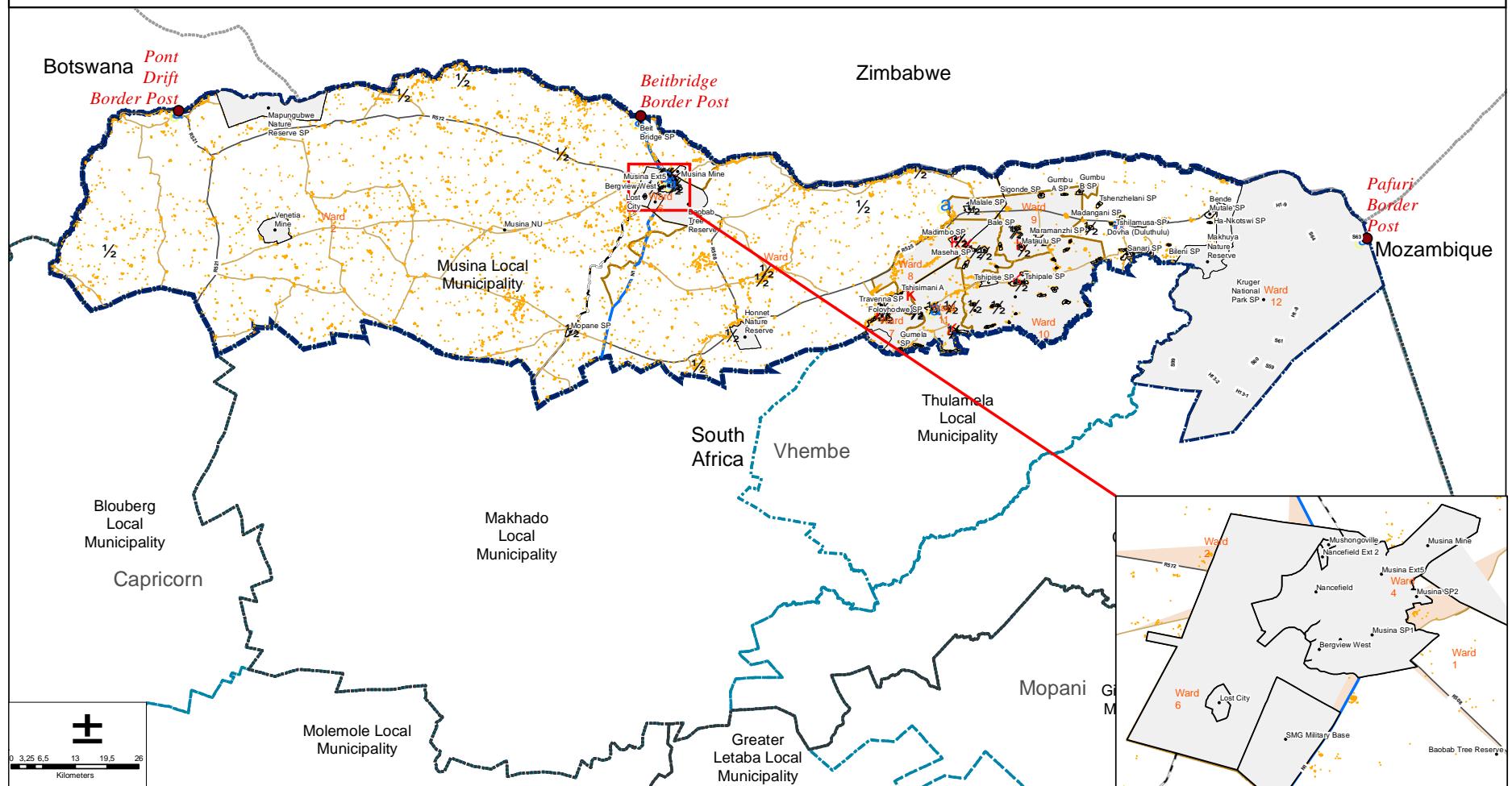
The provision of libraries is an important function as it supports education and social empowerment. These libraries are important in areas where low levels of literacy are prevalent. The Musina LM performs the unfunded mandate to ensure that people have access to this vital educational facility in an adequate environment to serve the community, both in size per service point and location. Vast areas remain un-serviced and this is more problematic as literacy levels in the un-serviced areas are very low.

4.8.2. SPORTS, RECREATION, ARTS AND CULTURE

Musina IDP 2017/18-2021/22 indicated that the municipality has quite a number of sports and recreation facilities. Most of these sports facilities that are of a higher standard are found in Musina and Nancefield with the rest scattered in the five rural settlements areas. The Sports and Recreation infrastructure consists of 2 Cluster stadiums, 2 Community halls, 4 satellite offices and numerous combination playing fields. In addition, there are 2 community halls which are located in Tshilamba and Masisi, and 1 Arts and Culture Centre located in Tshilamba. In contrast to the more urban settlement areas, most of the facilities located in the rural areas have hard gravel surfaces (Mutale IDP, 2016).

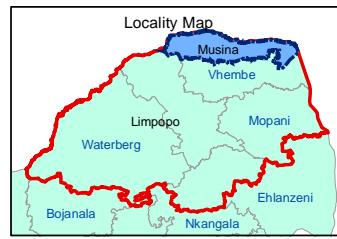
It is evident that sport and recreation provision requires some attention. There exists a definite need for better quality and upgraded facilities. The role of sports in the lives of both residents and youth cannot be underestimated. Sports develop important life skills, it enables both residents and youth to deal with frustrations in a healthy way, and it keeps them away from negative influences such as crime, drugs, etc. Furthermore, sports provide opportunities for the future. A sustainable model for the management and maintenance of the sports and recreation infrastructure across the municipality needs to be established. This model needs to take into account that some of the facilities used were not originally built by the Municipality, but other stakeholders.

Musina SDF: Settlements and Social Amenities



Legend

● Border Post	a Police Station	— National Road	■ Military base	■ Musina Boundary
· Households	K health facilities	— Regional Road	■ Wards	■ District Municipalities
½ Schools		— Streets	■ Sub Places	■ Local Municipalities
Roads		— Main Road	— Dashed	



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Map 14: Settlements and Social Amenities
Source: StatsSA (2011)

4.8.3. HEALTH

Tabulated below is a demonstration of health facilities within Musina LM.

Table 8: Access to Health Facilities

Municipality	Clinics	Health Centres	Hospitals	Total Health Facilities
Musina	3	0	1	4
Access to water & sanitation	3	0	1	4

The following challenges are faced in terms of the provision of healthcare in the Musina LM:

- Overcrowding in all health centres;
- Shortage of medicine
- Poor road infrastructure which causes poor accessibility;
- Influx of immigrants;
- Malaria;
- Lack of dedicated PHC pharmacists and assistant pharmacist;
- Rabies;
- HIV and AIDS related conditions remain a challenge to be prioritized by Department;
- Most of the health facilities are old and dilapidated;
- Most of the equipment are old and non-functional; and
- Shortage of personnel.

4.8.4. SOCIAL WELFARE SERVICES

The table below denotes the types of social welfare services within Musina LM.

Table 9: Social Welfare Services

Type of Social welfare facility	Baseline	Backlog
Victim Empowerment Centre	2	1
Home base care	1	0

Drop-in Centre
Early childhood development
Elderly community base care centre
Old Age home
Child and Youth Care Centre

7	6
29	4
1	1
0	0
0	0

Source: Musina 2017/18-2021/22

4.9. Police Station and Courts

According to the Musina IDP (2017/18-2021/22), law enforcement infrastructure in the municipality includes 3 Police stations and 1 magistrate district court:

- Tshamutumbu
- Pontdrift
- Musina
- 1 Magisterial district court.

4.9.1. CRIME

The safety of communities is a matter of concern as crime is a problem across the municipal area as it appears to be on the rise. One of the most significant factors influencing crime is the high level of unemployment. Other factors that can contribute to the high levels of crime in the municipal area include illegal immigration, youth unemployment and drug as well as alcohol abuse.

The table below demonstrates the different types of reported crimes within Musina LM in the year 2017. The main crime which was reported in 2017, was drug related crime with 283 cases, followed assault with the intent to inflict grievous bodily harm 265 cases and common assault (225 cases). It should also be noted that burglary and robbery are also common crimes within the municipality. 140 Cases were recorded for theft out of or from motor vehicle, commercial crime had 126 cases in

2017. There are also unreported crimes such as culpable, public violence, Crime injuria and neglect/ill treatment of children which were not reported in 2017 but were however recorded in previous years. With the give crime stats within Musina LM, it is clear that measures need to be taken to enhance the provision of safety and security within the municipality.

Table 10: Types of Crimes occurring within Musina LM

Type of Crime	Number of Reported Cases in 2017
Murder	15
Sexual Offence	48
Attempted Murder	13
Assault with the intent to inflict grievous bodily harm	265
Common assault	225
Common robbery	29
Robbery with aggravating circumstances	146
Arson	5
Malicious damage to property	99
Burglary at non-residential premises	94
Burglary at residential premises	128
Theft of motor vehicle and motorcycle	13
Theft out of or from motor vehicle	140
Stock-theft	15
Illegal possession of firearms and ammunition	3
Drug-related crime	283
Driving under the influence of alcohol or drugs	12
All theft not mentioned elsewhere	272
Commercial crime	126
Shoplifting	89
Carjacking	10
Truck hijacking	0
Robbery at residential premises	17
Robbery at non-residential premises	26

Source: Crime Stats SA (Online: 2017)

4.10. Economic Sector Analysis

This sub-section undertakes economic sector assessment in Musina LM. It seeks to identify the main sectors in the economy, to identify trends

within each sector, and to provide initial recommendations with regards to the development of certain industries or sectors. Agriculture, community services, and retail trade were identified as main economic drivers of the district municipality. Also refer to the map below for a spatial representation of various economic sectors within the municipality.

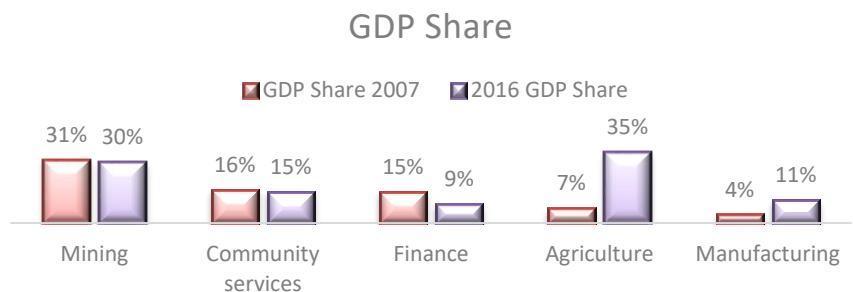
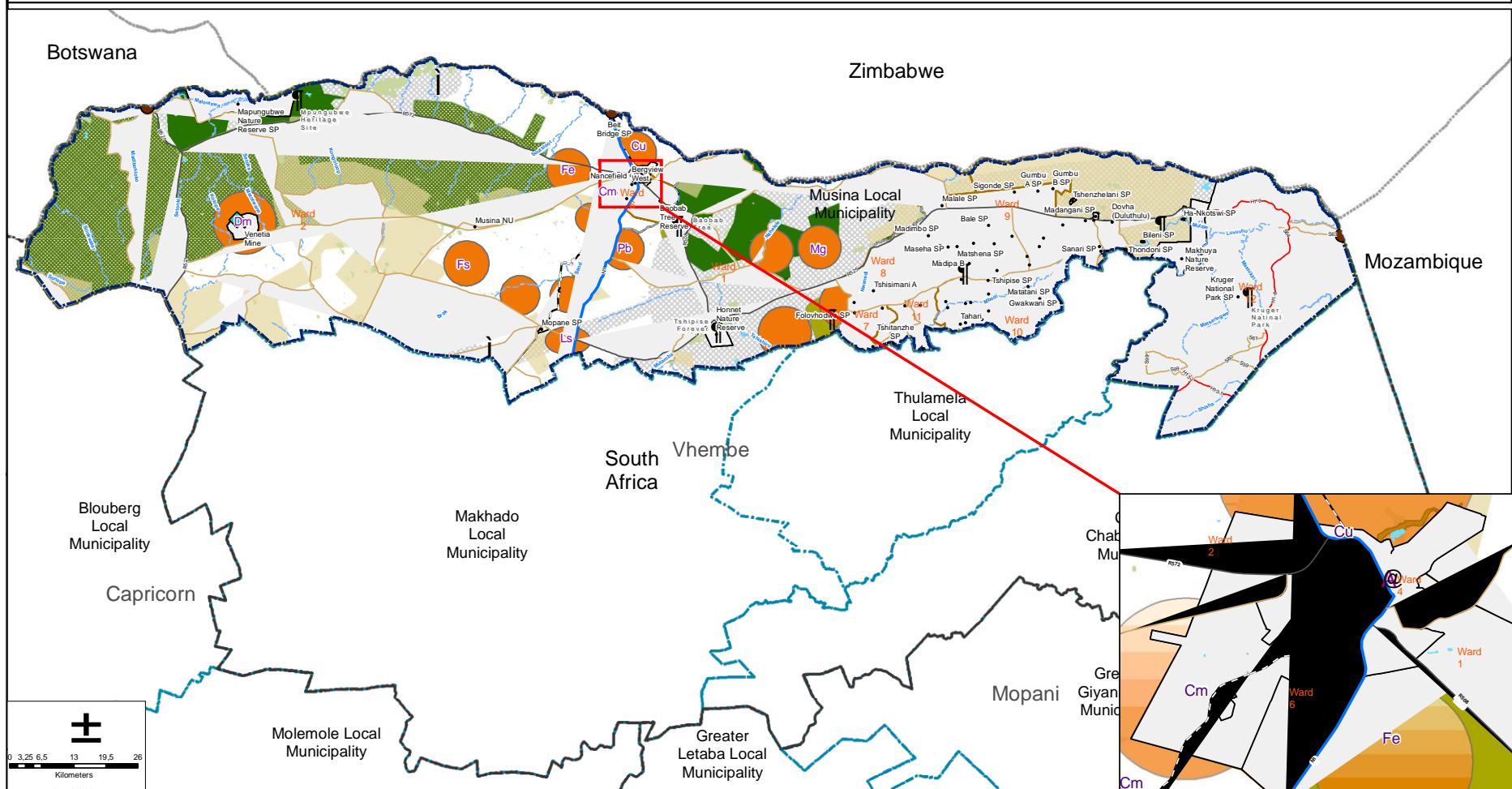


Figure 15: Gross Domestic Share,
Source: Musina IDP (2017/18-2021/22)

The agricultural sector shows that the sector has been growing tremendously in the past as indicated by the table above. The sector grew from 7% to 35% in 2016. The mining sector showed a decline of 1% from 31% to 30%. Community services dropped by 1% while the financial sector also declined by 6%. The manufacturing sector increased by 5%. According to the Musina IDP of 2018/2022, agriculture in Musina contributes approximately half of the employment in Vhembe district. The agricultural sector had a positive but low employment growth rate of 2% over the years. The mining sector plays an important role in terms of job creation in the municipality.

Musina SDF: Economic Sector



Legend

Roads

- Tourism Site
- Diamond Mine
- Coal Mine
- Border Post
- Industrial Hub
- Main Road
- National Road
- Regional Road
- Streets

Agricultural Activities

- Rivers
- Railways
- Wards
- Sub Places
- Wetlands

Protected Areas

- Forestry
- Provincial Nature Reserve
- Crop Farming
- Transfrontier Conservation Area
- Cattle Farming
- Coal fields
- Mineral potential areas
- National Park
- Industrial Manufacturing

Municipalities

- Musina Boundary
- District Municipalities
- Local Municipalities

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Map 15: Economic Sectors
Source: Limpopo SDF (2016)

4.3. BUILT ENVIRONMENT ANALYSIS

This section provides a comprehensive overview of the spatial form of Musina LM in relation to settlement patterns, housing trends and accessibility to basic services.

4.3.1. Spatial form

The spatial form of Musina LM is made up of the different types of settlements, household's trends, tenure status and the types of dwellings. Settlement patterns of Musina LM are spatially depicted in the map below.

4.3.1.1. MAIN DWELLING TYPE

The figure below illustrates the main dwelling types within Musina LM. Stats SA, Community Survey (2016) indicated that main Musina's settlements, comprise of 82.40% formal dwellings, while 9.1% is tribal/traditional settlements and 8.3% consists of informal dwellings as can be seen in the Traditional area map.

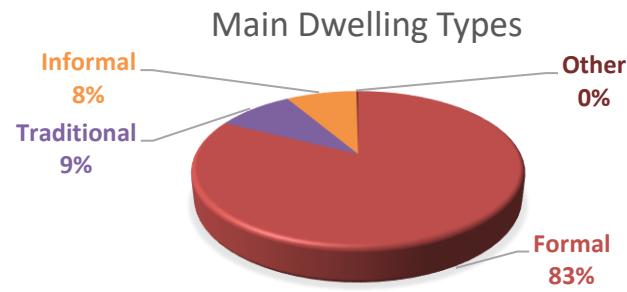


Figure 16: Main Dwelling Types
Source: Stats SA, Community Survey (2016)

The figure below outlines the Type of Dwellings within the municipality according to various land uses used for residential purposes.

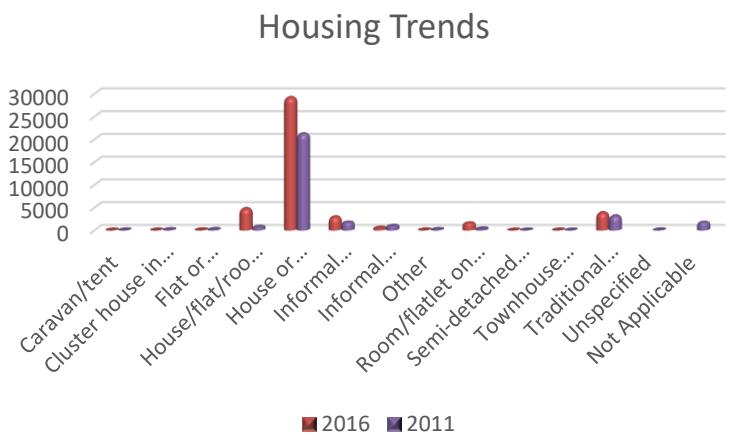


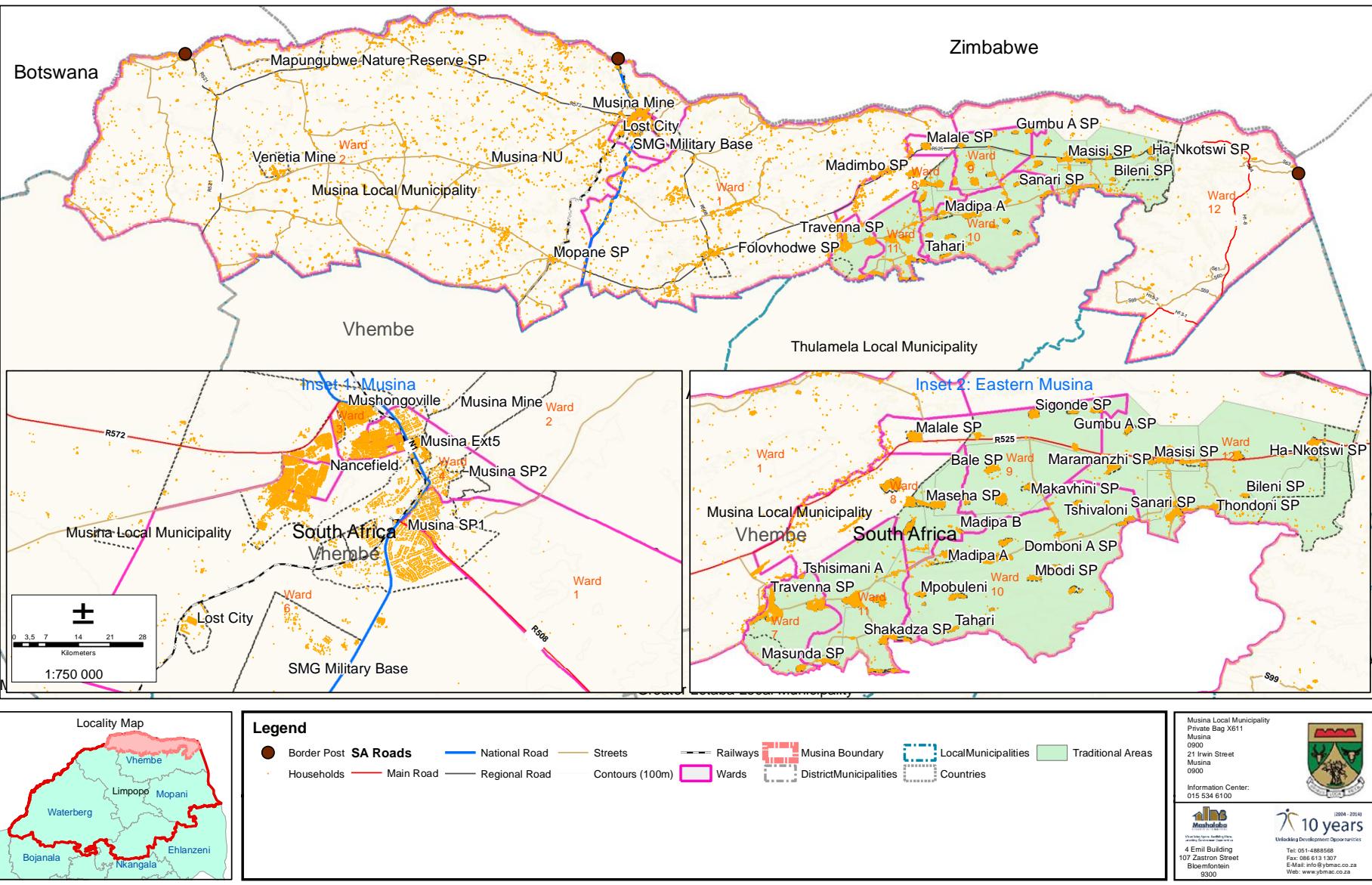
Figure 17: Housing Trends.
Source: Stats SA (2011) & Community Survey (2016)

The average household size went down from 3.5 in 2011 to 3.0 in 2016.

4.3.1.2. TYPE OF DWELLINGS

Stats SA (2011) and the Community Survey (2016) indicated that Musina LM comprised of 29555 households which grew to 43730 households. As illustrated above, the majority of households (29262) live in Houses or brick/concrete block structure, while 3976 households live in traditional areas and there are 3644 informal dwellings. This shows that although the majority of households live in formal residences, provisions for infrastructure and social amenities needs to be made to accommodate the people living on farms and traditional area as can be seen on the Settlement Pattern Map below.

Musina SDF: Traditional Areas Map



Map 17: Traditional Areas

Source: Limpopo SDF (2016)

4.3.1.3. TENURE STATUS

The figure below denotes tenure status for households within Musina LM for 2016. The household that lived in rented residence increased from 28% to 36%, while the fully paid dwellings decreased from 37% to 31%. The households occupied rent-free decreased from 22% to 14% and the residence that are owned but not full paid increased from 5% to 10%.

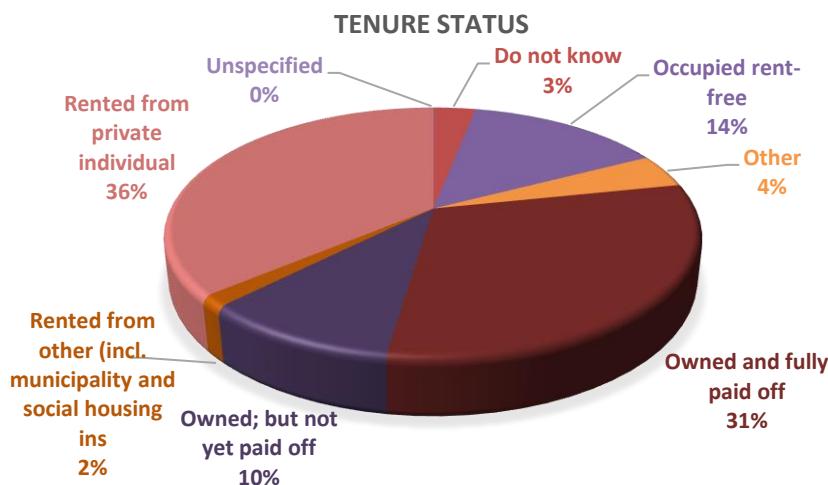


Figure 18: Tenure Status

Source: Stats SA, Community Survey (2016)

With regards to the new absorbed wards, it must be noted that there is lack of survey general plans due to the nature of disperse villages within the Mutale LM.

4.3.1.4. LAND OWNERSHIP AND LAND CLAIMS

The Musina LM IDP (2017-2021) indicated that the Musina LM owns 27 farms which are distributed throughout the municipality. However, 59% (206) of farm land within the municipality is privately owned. Moreover, 351 of land claims which have been lodged on farms within the

municipality covers 27% of the total municipal area. It must be noted that, out of a total of 351 land claims, only 21 of those land claims are on government land and situated in the proximity of the N1 and the railway towards Mapungubwe. A large proportion of land claims are situated within private land, more particularly along the south-eastern parts of the municipality. The additional clusters of land claims encompass of institutional land around Venetia mine (owned by De Beers), as well as around Domboni/Madimo areas (owned by the South African Development Trust). Given the demarcation of the new boundary, it must be noted that The Mutale LM only own Masisi (Tshilamba) while most of the land is owned by tribal/traditional authorities. The table below and the maps that denotes land ownership and land claims for Musina LM.

Table 11: Land ownership for Musina LM

Land Ownership	(n)	%
Not confirmed	20	6
State owned (National/Provincial)	21	6
State Owned (Municipal)	1	0
Private Owned	206	59
Institutional Owned	80	23
Mixed Ownership	7	2
Unknown	16	5
Total	351	100.0

Source: Musina LM IDP 2017-2021

Table below denotes the settled land claims for Musina and Mutela Local Municipalities. According to the table below there are 22 settled land claims within Musina and Mutale LM.

Table 12: Musina and Mutale LM Settled Land

Ref No.	Name of DM	Name of LM	Name of Claimant	Date of Settlement	Settlement Option	Property Description
5572	Vhembe	Musina	Rammbuda Territorial Council	21/08/2006	Land Restoration	R/E & Ptn 1 of Doppie 95 MT, Adelaide 91 MT Folorodwe 79 MT, Feskraal 85 MT, Wendy 86 MT, Hetty 93 MT, Cross 117 MT
10672	Vhembe	Musina	Mulambwane Community (Phase 1)	23/04/2008	Land Restoration	Van Der Bijl 528 MS, R/E, Ptn 2, 3 & 4 of Antrobus 566 MS, R/E of Steenbok 565 MS, Ptn 2 of Scott 567 MS, Battle 585 MS, Ptn 1 of Joffre 584 MS, Somme 611 MS, Lekkerlaag 580 MS, Dreyer 526 MS & Ptn 2 of Vriendien 589 MS
10672	Vhembe	Musina	Mulambwane Community (Phase 2)	03/03/2009	Land Restoration	Ptn 4 of Coniston 699 MS
10672	Vhembe	Musina	Mulambwane community (Phase 2) Addendum	06/12/2011	N/A	Ptn 4 of Coniston 699 MS
			Mulambwane Community (Phase 3)	20/06/2014	Land Restoration	Ptn 0 of Malapchani 659 MS, Ptn 0 of Mapani Ridge 660 MS, Ptn 0 of Sandstone Edge 658 MS, Ptn 0 of Driehoek 631 MS
			Mulambwane Community (Phase 4)	30/06/2016	Land Restoration	R/E of Delft 499 MS
2207	Vhembe	Musina	Mamuhohi Community (Phase 1)	23/04/2008	Land Restoration	R/E of Scott 567 MS & R/E of Bennie 571 MS
63	Vhembe	Musina	Mapakoni Community	18/08/2008	Land Restoration	Ptn 0 of Suzette 32 MT, Ptn 0 of Ettie 33 MT & Ptn 0 of Minnie Skirving 34 MT
694	Vhembe	Musina	Machete Community Phase1	27/01/2009	Land Restoration	Ptn 1 of Den Staat 27 MS, Ptn 1 & 2 of Oryx 841 MS
1752	Vhembe	Musina	Mandiwana Community	27/01/2009	Land Restoration	
1908	Vhembe	Musina	Lishivha Community (Phase 1)	27/01/2009	Land Restoration	Ptn 1 of Kalkvlakte 670 MS, R/E of Bosjesveld 669 MS, R/E of Schulpad 674 MS
1908	Vhembe	Musina	Lishivha Community (Phase 2)	06/04/2009	Land Restoration	Middelfontein 673 MS, Renfrew 620 MS, Thurso 616 MS
			Lishivha Community (Phase 3)	30/06/2016	Land Restoration	Cygnus 549 MS, Ursa Minor 551 MS
1819	Vhembe	Musina	Tshivhula Community (Phase 1)	27/01/2009	Land Restoration	Arcadia 74 MS, Lauriston 76 MS, R/E of William Porter 90 MS, Ammondale 278 MS, Montagu 77 MS, Fleischerton 89 MS
1819	Vhembe	Musina	Tshivhula Community (Phase 2)	02/06/2009	Land Restoration	Braam 92 MS
1819	Vhembe	Musina	Tshivhula Community (Phase 2) Addendum	06/12/2011	N/A	R/E of William Porter 90 MS Montagu 77 MS, Fleischerton 89 MS
			Tshivhula Community Phase 3	21/07/2015	Land Restoration	Ptn 1 & R/E of Ptn 3 of Dorsig 364 MS
10672	Vhembe	Musina	mulambwane community (Phase 2) Addendum	06/12/2011	N/A	Ptn 4 of Coniston 699 MS
395	Vhembe	Musina	Munungufhala Community	2013/02/02	Land Restoration	Fallershall 74 MT, Pelham 112 MT, Magazand 123 MT
11137	Vhembe	Musina	Ramphabana Community (Phase 1)	13/03/2013	Land Restoration	Ptn 6 and 7 of Boulogne 61 MT
			Ramphabana Community (Phase 2)	29/08/2015	Land Restoration	Doreen 108 MT, R/E of Howard 116 MT, ptn 1 & 2 of Kromdraai 106 MT
9992/4113/3721/9207/8060/8049/10621/8235	Vhembe	Mutale	Ramputa's Location individual Claimants	13/03/2015	Financial Compensation	Ramputa's Location 196 MT

Source: Office of the Regional Land Claims Commissioner: Limpopo, 2018

The table indicates the current status of 56 land claims in Musina LM in terms of the compensation, dismissal, negotiations, phases and research.

Table 13: Musina LM Land Claims Status

REFERENCE NUMBER	NAME OF CLAIMANT	PROPERTY DESCRIPTION	LM	STATUS OF CLAIM	COMMENTS
1539	Manenzhe Community	Halfdood 393 MT	Musina	Dismissed	Closed
1539	Manenje KJ	Halfdood 393 MT (received benefits under Tshivhula)	Musina	Dismissed	Closed
1748	Fourie A	Folovhodwe 79 MT	Musina	Dismissed	Closed
394	Bouwer JL	Feeskaal 85 MR	Musina	Dismissed	Closed
5343	Richards JJ	Fontainebleau 537 MS	Musina	Dismissed	closed
10896/10903	Kotze Family	Hagumba, Musina (approved as non-compliant 08/03/2018 as the claimant passed on and it was difficult to locate the direct descendants) Researched Externally	Musina	Dismissed	Closed
5089	Babirwa Tribe	Zoutpan 495 MS	Musina	Dismissed	Closed
9167	Machothi PM	Waterfontein	Musina	Dismissed	Closed
63	Mapakoni Community	Minnie Skirving 34 MT	Musina	Financial Compensation: Finalised	Closed
10031955	The full Gospel Church	Unclear Property Description	Musina	Financial Compensation: Finalised	Closed
1597	Mosegwa MA	Scot 465 MS	Musina	Land Restoration: Finalised	Closed
1066	Sebola ME	Vleifontein 691 MS	Musina	Negotiations	Active
1537	Mamadi MA	Zoutpan 459 MS	Musina	Negotiations	Active
1741	Matabeka Family	Zoutpan 459 MS	Musina	Negotiations	Active
1677	Mashohla KS	Albert 686 MS	Musina	Negotiations	Active
1043	Manakane DP	William Porter 90 MS	Musina	Negotiations	Active
388	Nedondwe WM (Nedondwe Community)	R/E of Aicedale 138 MT	Musina	Negotiations	Active
399	Sithangu SM (Nemamilwe Community)	Naus 178 MT, R/E & Ptn 1 of The Duel 186 MT, R/E, Ptn 2 & 3 of Nairobi 181 MT, Ptn 0 of Nakab 184 MT, R/E, Ptn 1 & R/E of Ptn 2 of Terblanche 155 MT, R/E of Hardevlakete 152 MT, R/E & Ptn 2 of Lotsieus 176 MT,	Musina	Negotiations	Active
1044	Semata MJ	Lucca 54 MS	Musina	Negotiations	Active
1450	Sekhwama GP	Richmond 492 MS	Musina	Negotiations	Active

1674/10288	Mphephu Tribal Authority	Terblanche Hoek 25 MT, Malala Drift 83 MT, Aicedale 138 MT, Meteor 141 MT, Lotsieus 176 MT, Mont Stuat 153 MT, Terblanche 155 MT, Septimus 156 MT, Martin 157 MT, Rynia 158 MT, Amonda 161 MT, David 160 MT, Skullpoint 132 MT, Deongberg 126 MT, Hayoma 130 MT, Werkplaas 129 MT, Beatrice 124 MT, Nonsiang 127 MT, Protea 125 MT, Hope 109 MT, Joan 110 MT, Solitude 111 MT, Dawn 71 MT, Frampton 72 MT, Skirbeek 73 MT, Njelele's Drift 38 MT, Humie 36 MT, Woodhall 35 MT, Aletta 26 MT, Voorwaats 28 MT, Huddon 27 MT, Esmefour 29 MT, Vrouwensbrook 80 MT, Popallin 87 MT, Magazand 123 MT, Neltox 92 MT, Adelaide 91 MT, Wendy 86 MT, Suzette 32 MT, Zisaan 31 MT, Ettie 33 MT, Adieu 118 MT, Laura 115 MT, Truida 76 MT, Armitice 120 MT, Olympie 114 MT, Fllerhall 74 MT, Carto Smuts 113 MT, Pelham 112 MT, Minnie Skirving 34 MT	Musina	Negotiations	Active
2211	Netshidzivhani Community & His	Kate's Hope 21 MT, Hoogeveld 66 MT, N'jelele's Drift 38 MT, Frampton 72 MT, Woodhall 35 MT, Aletta 26 MT, Dawn 71 MT, Boulogne 61 MT, Shangani 58 MT, Bush 57 MT, Veeneen 48 MT, Dover 44 MT, Magdala 9 MT, Vryheid 8 MT, Bokveld 12 MT, Malalahoek 13 MT, Twilight 16 MT, Groetsukkel 22 MT, Scrutton 23 MT, Humie 36 MT, Riverview 20 MT, Lenin 68 MT, Senator 40 MT, Trotsky 67 MT, Udini 19 MT, Oorsprong 62 MT, Heuningfontein 59 MT, Randisfontein 43 MT, Middelbult 41 MT, Boschrand 10 MT, Skirbeek 73 MT, Terblance Hoek 25 MT, Bosbokpoort 70 MT, Leeuwdraai 18 MT, Reitz 39 MT, Stoffel 69 MT, Ostend 63 MT Researched: Kate's Hope 21 MT, Hoogeveld 66 MT, N'jelele's Drift 38 MT, Frampton 72 MT Dismissed: Woodhall 35 MT, Aletta 26 MT, Dawn 71 MT, Boulogne 61 MT, Shangani 58 MT, Bush 57 MT, Veeneen 48 MT, Dover 44 MT, Magdala 9 MT, Vryheid 8 MT, Bokveld 12 MT, Malalahoek 13 MT, Twilight 16 MT, Groetsukkel 22 MT, Scrutton 23 MT, Humie 36 MT, Riverview 20 MT, Lenin 68 MT, Senator 40 MT, Trotsky 67 MT, Udini 19 MT, Oorsprong 62 MT, Heuningfontein 59 MT, Randisfontein 43 MT, Middelbult 41 MT, Boschrand 10 MT Withdrawn by the claimant: Skirbeek 73 MT, Terblance Hoek 25 MT, Bosbokpoort 70 MT, Leeuwdraai 18 MT, Reitz 39 MT, Stoffel 69 MT, Ostend 63 MT	Musina	Negotiations	Active
5572	Nefolovhodwe Community	Straithart 173 MT	Musina	Negotiations	Active
10591	Musina MJ	Lucerne 198 MT,	Musina	Negotiations	Active
10670	Vhaleha Tribe	Stockford 46 MT, Toynton 49 MT, Antonvilla 7 MT, Singelete 6 MT, Pangbonine 52 MT, Prinzenhagen 47 MT, Vogelzang 3 MT, Uitenpas 2 MT, Maryland 1 MT	Musina	Negotiations	Active
11178	Nethengwe T	Hayoma 130 MT	Musina	Negotiations	Active
10278	Tshirundu TMA	Njelele Drift 28 MT	Musina	Negotiations	Active
1074	Mavhusha MD	Sans Soudi 241 MS, Sheldrake 239 MS, Fountainebleau 212 MS	Musina	Negotiations	Active
373	Nedondwe B	Hayona 130 MT	Musina	Negotiations	Active
10598	Ndou MS obo Madide Community	Dawn 71 MT; Hope 109 MT; Olympic 14 MT; Cato Smuts 13 MT; Palham 12 MT; Fallershall 74 MT; Laura 115 MT; Truida 76 MT; Frompton 583 MT; Maremani 624 MT	Musina	Negotiations	Active
11232	Mnemusina MDMM	Unclear Property	Musina	Negotiations	Active
689	Kwinda MP (Lushaka Iwa ha Tshirundu)	Doreen 108 MT	Musina	Negotiations	Active
6253	Morale LP	Brombreek 272 MS	Musina	Negotiations	Active
424	Mpolaeng David Tlebjane obo Ba-Leha Tribe	Diepdrift 299 MS, Oatlands 251 MS, Purekrantz 250 MS, Alldays 299 MS	Musina	Negotiations	Active
1759	Rambuda Territorial Council	Straitdhart 173MT, Doppie 95 MT, Adelaide 91 MT, Folorodwe 79 MT, Feskraal 85 MT, Wendy 86 MT, Hetty 93 MT, Cross 117 MT	Musina	Negotiations	Active
11190	Nemamilwe Community	Nakab 184 MT	Musina	Negotiations	Active
1071	Maside TP	Nieuwe Geneva 326 MS, Gordon 310 MS, Ettenmouth 327 MS	Musina	Phase Outstanding	Active

1052	Tshivhula (Tshivula Community)	TA	Melrose 469 MS	Musina	Phase Outstanding	Active
395	Muvhango (Munungufhala Community)	PR	Magazand 123 MS	Musina	Phase Outstanding	Active
1069/1579	Makgathe MJ		Grootboomen 476 MS (Consolidated into Tshivhula)	Musina	Phase Outstanding	Active
1580	Manetsha LJ		Geselschap 395 MS	Musina	Phase Outstanding	Closed
1582	Ramalebana MP		Loretto 264 MS	Musina	Phase Outstanding	Closed
1594	Sebutla ML		Cange 677 MS	Musina	Phase Outstanding	Closed
1752	Mandiwana (Mandiwana Community)	TP	Adelaide 91 MT	Musina	Phase Outstanding	Active
1551	Sebola (Tshivhula Community)	MS	Farnel 473 MS	Musina	Phase Outstanding	Active
1076	Tshivhula Community		Rooigrond 468 MS	Musina	Phase Outstanding	Active
1078	Tshivhula TS		Secrabje 470 MS	Musina	Phase Outstanding	Active
1550	Tshivhula Community		Ratho 1MS	Musina	Phase Outstanding	Active
1593	Sekhwama GP		Krige 495 MS	Musina	Phase Outstanding	Active
11137	Ramphabana PA		Ostend 63 MT	Musina	Phase Outstanding	Active
1819/1084/ 1052/1076/ 1550 694	Tshivhula Tribal Authority		Christiana 478MS	Musina	Phase Settled	Active
	Machete LP (Machete Community)		Rhodes Drift 12 MS	Musina	Phase Settled	Active
	Mphephu Tribal Council		Carto Smuts 113 MT	Musina	Research: External	Active
12181	Maake MM		Louwskraal 104 MS	Musina	Research: Internal	Active
1540	Mavhusha MD		Shelldrake 239 MS	Musina	Research: Internal	Active
5557	Van Der Westhuizen		Inyatji Ranch 94 MT, Adelaide 91 MT, Zisaan 31 MT	Musina	Research: Internal	Active

Source: Office of the Regional Land Claims Commissioner: Limpopo, 2018

While the table above denotes the status of the land claims within Musina, the table below indicates the Mutale LM's land claims status. It should be noted that the list is for the entire Mutale LM and not just for the wards that are included in Musina LM's borders as of 2016. The table indicates the current status of 55 land claims in Mutale LM in terms of the compensation, dismissal, negotiations, phases and research.

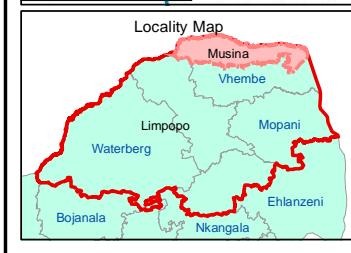
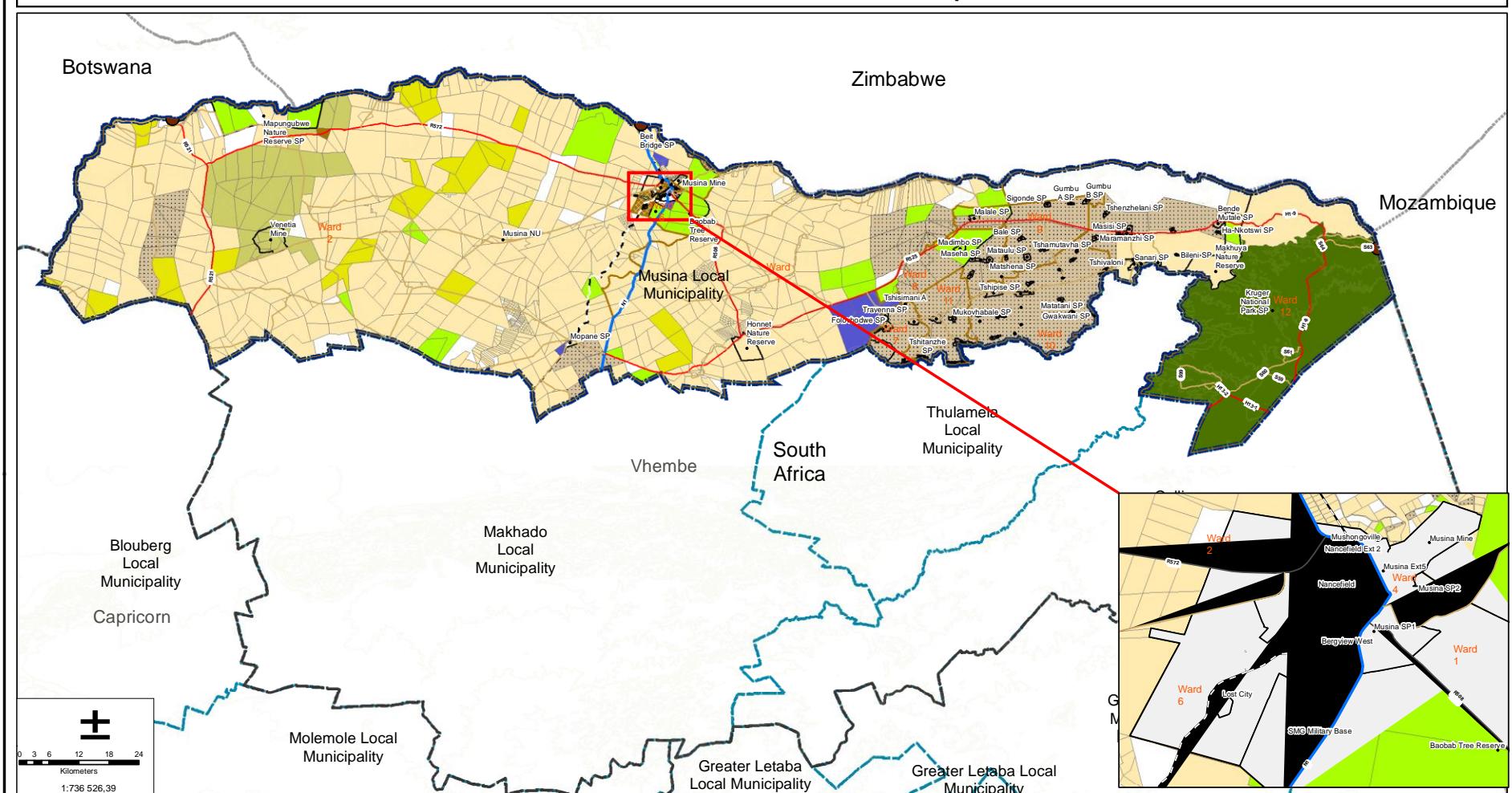
Table 14: Mutale LM Land Claims Status

REFERENCE NUMBER	NAME OF CLAIMANT	PROPERTY DESCRIPTION	LM	STATUS OF CLAIM	COMMENTS
2840	Chauke MN	Tengwe's Location 255 MT	Mutale	Alternative Remedy: Finalised	Closed
10015	Ndlopfu N	Tengwe's Location 255 MT	Mutale	Alternative Remedy: Finalised	Closed
10037	Baloyi VB	Tengwe's Location 255 MT	Mutale	Alternative Remedy: Finalised	Closed
11207	Siaga NA	Tengwe's Location 255 MT	Mutale	Alternative Remedy: Finalised	Closed
8058	Baloyi HJ	Tengwe 's Location 255 MT	Mutale	Alternative Remedy: Finalised	Closed
10539	Magona Community	Thengwe 255 MT	Mutale	Alternative Remedy: Finalised	Closed
10677	Shivambu HG	Nthlaveni Tengwe 's Location 255 MT	Mutale	Alternative Remedy: Finalised	Closed
9601	Ndlovu SN	Tengwe's Location 255 MT (Tshamutavha)	Mutale	Alternative Remedy: Finalised	Closed
11454	Netilili TJ	Tengwe's Location 255 MT	Mutale	Alternative Remedy: Finalised	Closed
2899	Risimati SM	Tengwe 's Location 255 MT	Mutale	Dismissed	Closed
10978	Neduvhuledza TS (Vhatavhatsindi Vha Duvhuledza)	Unclear	Mutale	Dismissed	Closed
10979	Tshififi Community	Tshififi	Mutale	Dismissed	Closed
3721	Khoza NE	Ramputas Location 196 MT	Mutale	Financial Compensation: Finalised	Closed
3955	Mathozi MI	Ramputa's Location 196 MT	Mutale	Financial Compensation: Finalised	Closed
4112	Hlengane M	Ramputa 's Location 196 MT	Mutale	Financial Compensation: Finalised	Closed
4113	Mavunda M	Ramputa 's Location 196 MT	Mutale	Financial Compensation: Finalised	Closed
9121	Siphuma MM	Unclear Property	Mutale	Financial Compensation: Finalised	Closed
9153	Maluleke HS	Mpaphuli 278 MT	Mutale	Financial Compensation: Finalised	Closed
9190	Maluleke GT	Sambandou	Mutale	Financial Compensation: Finalised	Closed
9207	Hlungwani H	Ramputa's Location 196 MT	Mutale	Financial Compensation: Finalised	Closed
9258	Shabalala RE	Sterkstrom 227 MT (Ha-Makhuvha)	Mutale	Financial Compensation: Finalised	Closed
9349	Netili TJ	Luheni (Deka)	Mutale	Financial Compensation: Finalised	Closed
11151	Mavambe Community	Molenje 204 LT	Mutale	Financial Compensation: Finalised	Closed
5376	Makhanani TN	Ramputa 's Location 196 MT	Mutale	Financial Compensation: Finalised	Closed
9733	Gumbi,Masisi, Tshenzelani, Swigwende Community	Madimbo Corridor	Mutale	Land Restoration: Finalised	Closed
3504	Tshabalala M	Tengwe's Location 255 MT (Research approved on the 27/10/2016)	Mutale	Negotiations	Active
3016	Shirilele SR	Tengwe 's Location 255 MT	Mutale	Negotiations	Active

3503	Madingane MM	Tengwe's Location 255 MT (Research approved on the 07/09/2015)	Mutale	Negotiations	Active
2206	Folovhode Tribe	Doppie 95 MT	Mutale	Negotiations	Active
3722	Mathebula MM	Ramputa's Location 196 MT	Mutale	Negotiations	Active
3723	Baloyi MA	Ramputa's Location 196 MT	Mutale	Negotiations	Active
8993	Khosa SD	Sanari Village, Ha Makuya	Mutale	Negotiations	Active
9228	Munchelele MM	Sterkstrom 227 MT (Ha-Makhuvha)	Mutale	Negotiations	Active
10035	Maluleke NH	Pile in Mutale	Mutale	Negotiations	Active
11052	Nkotswi Community	Land inside Kruger National Park	Mutale	Negotiations	Active
8052	Nyavale M	Property Unclear	Mutale	Negotiations	Active
2841	Manganyi M	Tengwe's Location 255 MT	Mutale	Research: Internal	Active
2842	Chauke TJ	Tengwe's Location 255 MT	Mutale	Research: Internal	Active
3501	Chauke TM	Tengwe's Location 255 MT	Mutale	Research: Internal	Active
3717	Ndlovu N	Tengwe's Location 255 MT	Mutale	Research: Internal	Active
3730	Ndlovu T	Thengwes Location 255 LS	Mutale	Research: Internal	Active
3731	Ndlovu MM	Thengwes Location 255 LS	Mutale	Research: Internal	Active
3950	Nkuna MS	Tengwe's Location 255 MT	Mutale	Research: Internal	Active
3951	Maluleke TB	Tengwe's Location 255 MT	Mutale	Research: Internal	Active
3952	Hobyan MD	Tengwe's Location 255 MT	Mutale	Research: Internal	Active
3954	Mavunza HN	Tengwe's Location 255 MT	Mutale	Research: Internal	Active
4125	Ndlopfu N	Tengwe 's Location 255 MT	Mutale	Research: Internal	Active
9452	Maluleke HF	Tengwe's Location 255 MT	Mutale	Research: Internal	Active
2898	Shisandaku ME	Tengwe 's Location 255 MT	Mutale	Research: Internal	Active
3017	Maluleke MF	Tengwe 's Location 255 MT	Mutale	Research: Internal	Active
3732	Hlabangwani AM	Tengwe 's Location 255 MT	Mutale	Research: Internal	Active
9428	Tlhelele W	Tengwe's Location 255 MT	Mutale	Research: Internal	Active
8090	Ndlopfu N	Thengwe	Mutale	Research: Internal	Active
1709	Fourie A	Folorodwe 79 MT	Mutale	Research: Internal	Active
11192	Netshifhafhe MT	Malmesbury 72 LT	Mutale	Research: Internal	Active

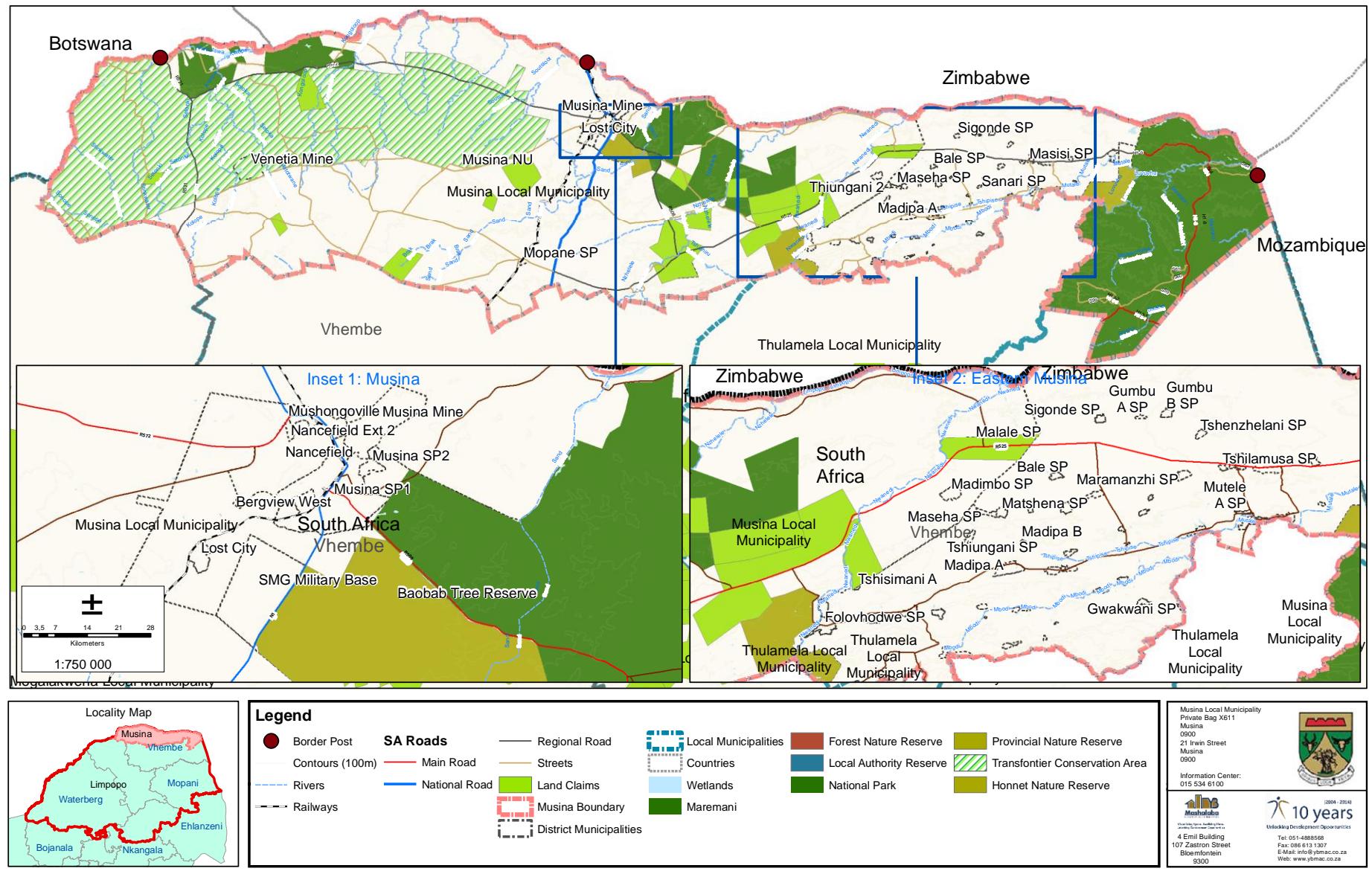
Source: Office of the Regional Land Claims Commissioner: Limpopo, 2018

Musina SDF: Land Ownership



Map 18: Land Ownership

Musina SDF: Land Claims Map



Map 19 : Land Claims
 Source: Limpopo SDF (2016)

4.3.1.5. INFORMAL SETTLEMENTS

According to the Musina LM 2018/19-2021/22 IDP, several informal settlements have been identified which are mostly located on different commercial farms also known as farm dwellings. The two settlements noted by the IDP are the Mopani and Doreen informal settlements. However, the Municipality intends to formalise both of these informal settlements in order to provide basic services for people residing within these settlements. Processes have already been carried out (appointment of a service provider) to formalize the Mopane area. According to the Mutale IDP (2018/2019), there are no informal settlements in the newly absorbed wards from Mutale LM, however it should be noted that settlements were referred to as unplanned settlements and not informal settlements mainly within the tribal areas.

4.3.1.6. HOUSING DEMAND

The Musina LM IDP 2018/19-2021/22 indicated that the Musina LM have 12 000 housing backlogs for all the wards in villages and Nancefield. This is due to insufficient land to build houses. It has thus been recommended that suitable land needs to be identified in order to reduce the housing backlog. So far, the Mutale LM comprised of a total of 6 870 housing backlog in 2013/2014 financial year. According to the Mutale IDP (2016/2017) some of the housing challenges faced by the municipality is the abandonment of the RDP houses. It is thus vitally important for the Musina LM in collaboration with Mutale LM to conduct research to analyse the reasons behind the abandoned of the RDP houses. Updated information on housing backlog for Musina LM which includes the wards from Mutale LM which have been absorbed into

Musina is thus required in order to properly provide spatial solutions for housing challenges and backlogs within the municipality.

4.4. INFRASTRUCTURE DEVELOPMENT AND SERVICE DELIVERY

Infrastructural Development and service delivery entails the provision of bulk infrastructure services in order to enhance the distribution of services such as the water supply, sanitation, electricity and refuse disposal service to communities. Service delivery, as part of the governmental mandate, needs to be carried out by the municipality in order to ensure that all households have access to affordable adequate services. This section provides a comprehensive overview of infrastructure and service delivery for Musina LM based on the Stats SA 2011 and the 2016 Community Survey.

4.4.1. SOURCE AND SUPPLY OF WATER

Water is a fundamental human right which should be provided to all households within the municipality. The Vhembe District Municipality is responsible for the distribution of water supply for all municipalities falling under its jurisdiction. The district seeks to provide each household with a reliable, affordable, equitable and sustainable water supply for all households within its jurisdiction. Although this is the case, the fact that the district highlighted a huge backlog with regards to water supply raises concerns. The Vhembe DM further highlighted that the majority of the population within the district already have access to water, the main issue is however with the refurbishment and upgrading of infrastructure. The Musina IDP 2018/19-2021/22 indicated that even though some households have access to water in the Musina LM there is still a huge water supply backlog. The figure below illustrates the types of water supply within the municipality.

Supplier of Water

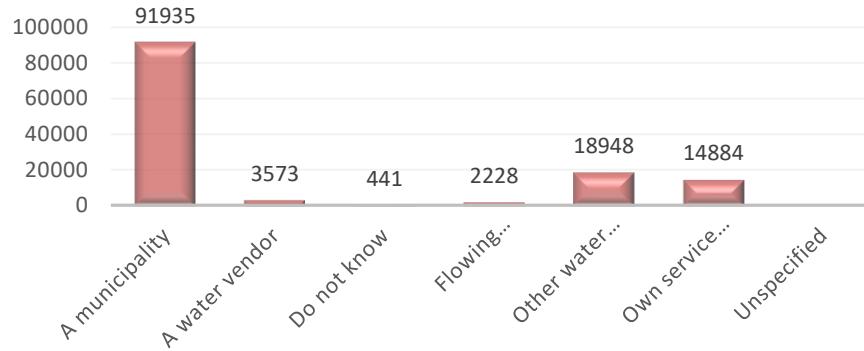


Figure 19: Water Supply
Source: Stats SA, Community Survey (2016)

As indicated in the figure above, the majority (91935) of households used a municipality in contrast to any other form of water supply, followed by 18 948 households who are supplied by other water schemes. Mutale LM receives its water from Mutale River and Nwanedi Lupepe dam. However, the Vhembe DM IDP 2016 indicated that there's a challenge with regards to the provision of quality water and thus there are also constraints in relation to drying of water in Masisi. Musina water demand and supply is however at an equilibrium point. The Vhembe DM added that Musina extracts 6244 Ml/annum in urban areas from the Limpopo River and the same amount is supplied to consumers.

The figure that follows, indicates the source of water where 61 459 households are connected via piped (tap) water inside the yard while only 11 466 households have piped (tap) water inside the dwelling or house and 38 216 have access from pipe water on a community stand. Even though water is supplied, it is clear that the water infrastructure and supply is of concern in the municipality.

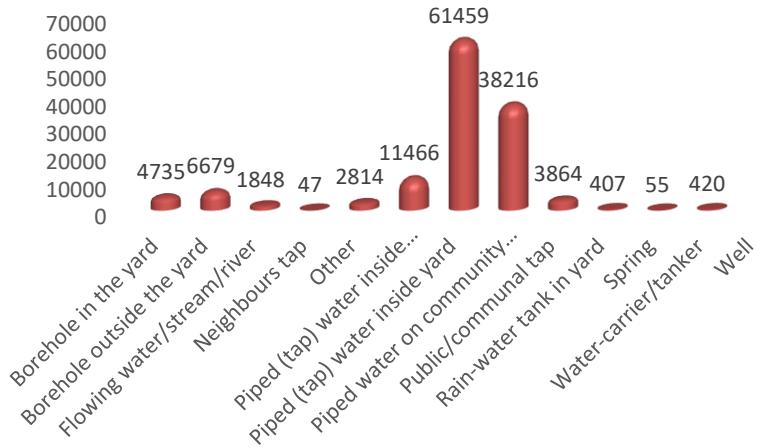


Figure 20: Water Source
Source: Stats SA, Community Survey (2016)

a) Water Connection 2011

Tabled below is a demonstration of water connectivity in households within the jurisdiction of Musina Local Municipality. As it stands, during the conduction of the 2011 Census, the majority of the population had access to piped (tap) water inside the yard (9 854), while 5 290 households had access to tap water inside dwellings/institutions. The lowest score was indicated in accessibility to piped (tap) water on a community stand in a distance greater than 1km or less from dwellings. It must however be noted that, there is still a portion of households (1 360) who do not have access to piped water. In this regard, provisions need to be made to ensure that all households within the municipality have access to adequate water supply in a reasonable walking distance.

Table 15: Water Connection

Water Connection	Number of Households
------------------	----------------------

Piped (tap) water inside dwelling/institution	5 290
Piped (tap) water inside yard	9 854
Piped (tap) water on community stand: distance less than 200m from dwelling/institution	2 478
Piped (tap) water on community stand: distance between 200m and 500m from dwelling/institution	839
Piped (tap) water on community stand: distance between 500m and 1000m (1km) from dwelling/institution	98
Piped (tap) water on community stand: distance greater than 1000m (1km) from dwelling/institution	123
No access to piped (tap)water	1 360

Source: Stats SA (2011)

b) Main Source of water for drinking 2016

The following figure is an illustration of the main source of water for drinking for households within the jurisdiction of Musina LM in 2016. As indicated below, 26 333 households have access to piped water, while the remaining 6 930 had access to other sources of water.

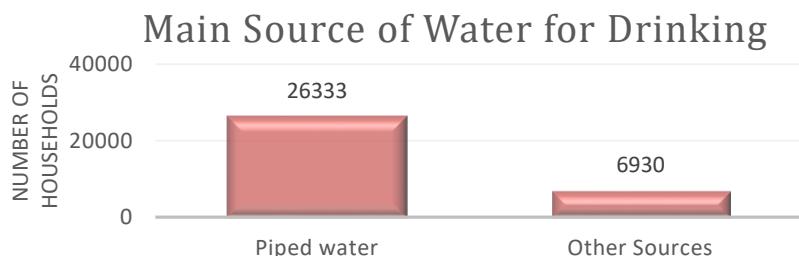


Figure 21: Main Source of water for drinking.

Source: Community Survey (2016)

c) Types of water services needed

The table below indicates water backlog and the types of services required for the provision of water supply for households within the Jurisdiction of Musina LM. There is total backlog of 1 162 for the entire municipality, with the main being community access to infrastructure but no access to water due to water source (488), followed by

community requiring water extension to existing infrastructure. Mutale LM had a total backlog of (22 836) which is way higher than Musina LM. This shows that the current water supply does not have the capacity to cater for the water demand within settlements of this municipality, more especially with the merger of wards from Mutale LM into Musina LM. As a result, provisions need to be made for the extension and provision of water sources in existing infrastructure.

Table 16: Type of water services required

Type of required water services	Backlog
Community access to infrastructure but no access to water due to functionality (O & M/ Refurbishment) problems	292
Community requiring water extension to existing infrastructure	382
Community access to Infrastructure but no access to water due to source problem	488
Community having no formal water infrastructure	0
Total Backlog	1 162

Source: Musina LM IDP 2016/2017

4.4.1.1. SANITATION SERVICES

The provision of adequate sanitation services is fundamental to public health, as it provides hygiene and dignity to human life. The figure below illustrates the types of toilet facilities being used by the households within Musina LM. The main toilet facility used by the majority of households (12 664) is toilets connected to the sewerage system, followed by 2 645 households that have no access to toilet facilities, 2 252 households Pit toilets without ventilation and 1 479 households that used Pit toilets with ventilation. It must however be noted that although it is quite a small proportion, there are still households (130) which used the bucket system.

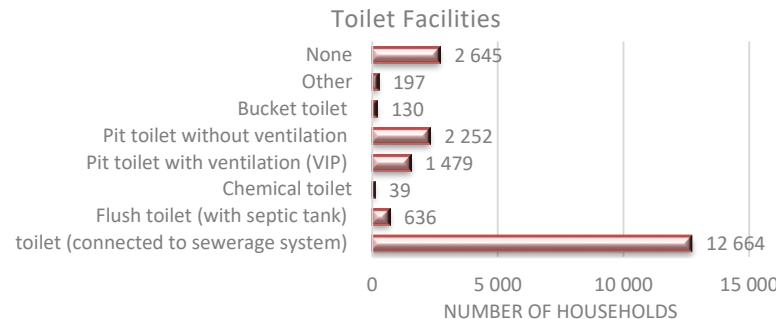


Figure 22: Toilet facilities

Source: Stats SA (2011)

Although the main toilet facilities used by households is flush toilet connected to the sewerage system, the fact that there are households which still used the bucket system raises concerns, more particularly with addition of Mutale LM wards into Musina LM. It must be noted that the majority of Mutale LM used PIT toilets with ventilation (14 077) and 37 households used the bucket system. It is a governmental mandate to ensure the eradication of the bucket system for all settlements within this municipality. The following table illustrates the number of households which uses the bucket system in Musina LM.

Table 17: Number of households weighted for the bucket system

Area	Bucket system backlog
Mapungubwe Nature Reserve	5
Musina NU	123
Beit Bridge	-
Musina	-
Malale	1
Madimbo	1
Mopane	-
Mutale LM (Absorbed wards)	20
Total	150

Source: Stats SA: 2011

The Musina LM IDP 2016/2017 indicated that Musina LM had a backlog of 182 between 2003-2012, within which 600 VIP toilets were provided for households within the municipality. However, during the period of 2012-2014, the municipality experienced a backlog of 510. This shows that more still needs to be done to escalate the provision of adequate sanitation services within the municipality. The figure below illustrates the main toilet facilities used by the majority of households with Musina LM. There were 1339 households which had access to flush toilets during the recording of census 2011. This number grew remarkable in 2016 by 89.9 % (25144 households).

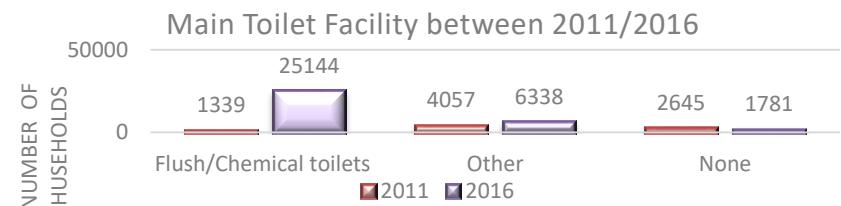


Figure 23: Main Toilet Facility.

Source: Community Survey (2016)

This is an indication that although there are households which still uses the bucket system, a trend has been established in relation to the provision of sanitation services since 2011.

4.4.1.2. ELECTRICITY SUPPLY

Due to technological advancement and urbanization, communities rely heavily on the use of energy to cater for their daily needs and demands. In this regard, energy is the most fundamental aspects which assist the majority of the population in conducting their daily work and routines. This section deals specifically with the types of energy usage for lighting, cooking and heating by households within the jurisdiction of Musina LM. It must however be noted that the statistical data outlined

hereunder do not encompass Mutale LM data, since the amalgamation of these municipalities occurred in 2016, which was after the recording of Stats SA (2011). It must also be noted that Mutale LM consists of one electrical substation (Tshilamba substation). However approximately 20% of Mutale LM households do not have electricity connections in their houses. The underlying impacts of the lack of electricity within this municipality needs to be acknowledged and addressed as the lack of adequate provision of electricity can create unsafe spaces and thus put communities in vulnerable positions.

a) Energy usage for Lighting

The figure below outlined the type of energy usage for households residing within the jurisdiction of Musina LM in the period of 2011.

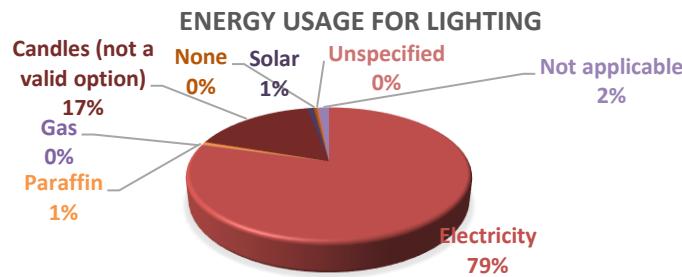


Figure 24: Energy usage for Lighting.
Source: Stats SA (2011)

As indicated, 79% of the households within the Musina LM jurisdiction used electricity as the main source of energy during the conduction of 2011 Census. The fact that 17% used candles raises concerns. As such, provisions need to be made to curb against the utilisation of candles as this type of energy source have over the years provided to have hazardous effects. Particularly in informal settlements.

a) Energy usage for Cooking

The figure below illustrates the type of energy usage for cooking. As outlined below, the majority (58 261) of households use wood as the main energy source for cooking, followed by (47 741) households who use electricity, (1 677) households who use gas and (1 118) households who use paraffin. Although the majority of the population used electricity during the conduction of Census 2011, it is undeniable that provisions needs to be made through enhancing the provision of alternative energy (solar) and also to ensure the preservation of natural environment (indigenous forests).

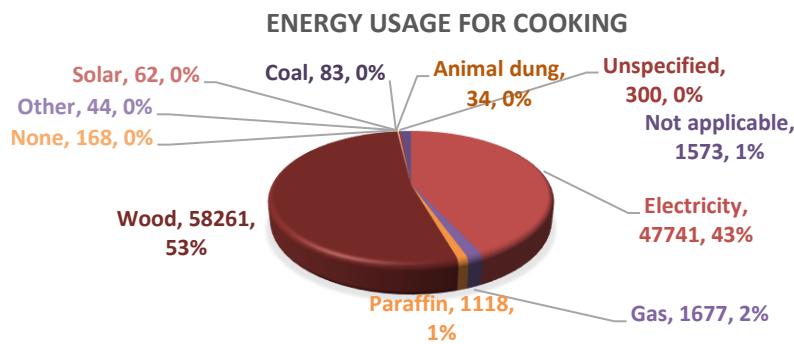


Figure 25: Energy usage for Cooking
Source: Stats SA (2011)

b) Energy usage for Heating

The figure below illustrates the type of energy usage for cooking. As outlined below, the majority of households (49 337) use wood for cooking, followed by electricity (42 236).

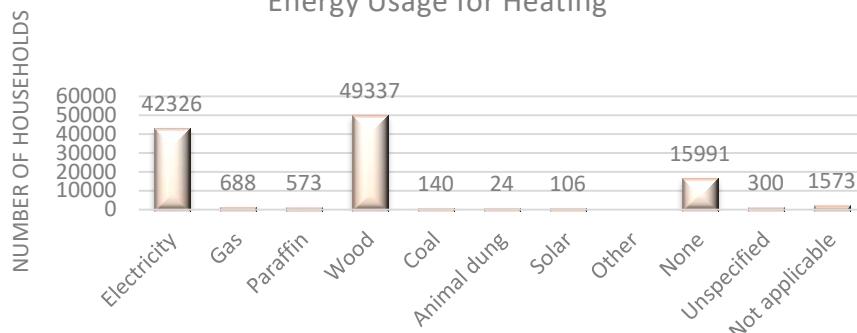


Figure 26: Energy usage for Heating
Source: Stats SA (2011)

The figure below demonstrates the main energy usage for households within the Musina LM during the conduction of Community Survey 2016. As indicated below, it is clear that the majority of households (29 718) used electricity as compared to other sources of energy. Although this is the case, the fact that 3 244 households do not have access to any type of energy is worrying.

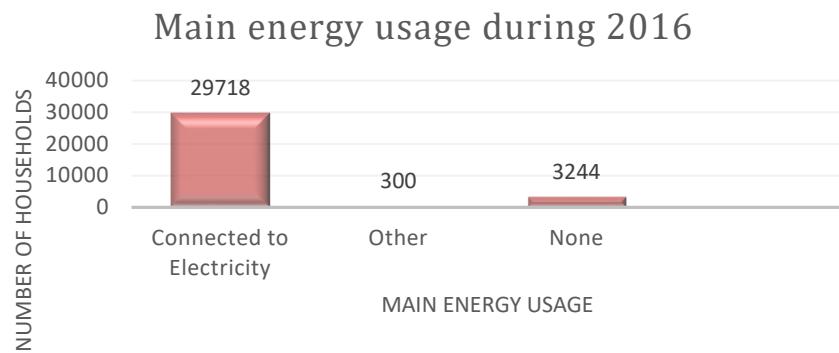


Figure 27: Main Energy Usage 2016
Source: Community Survey (2016)

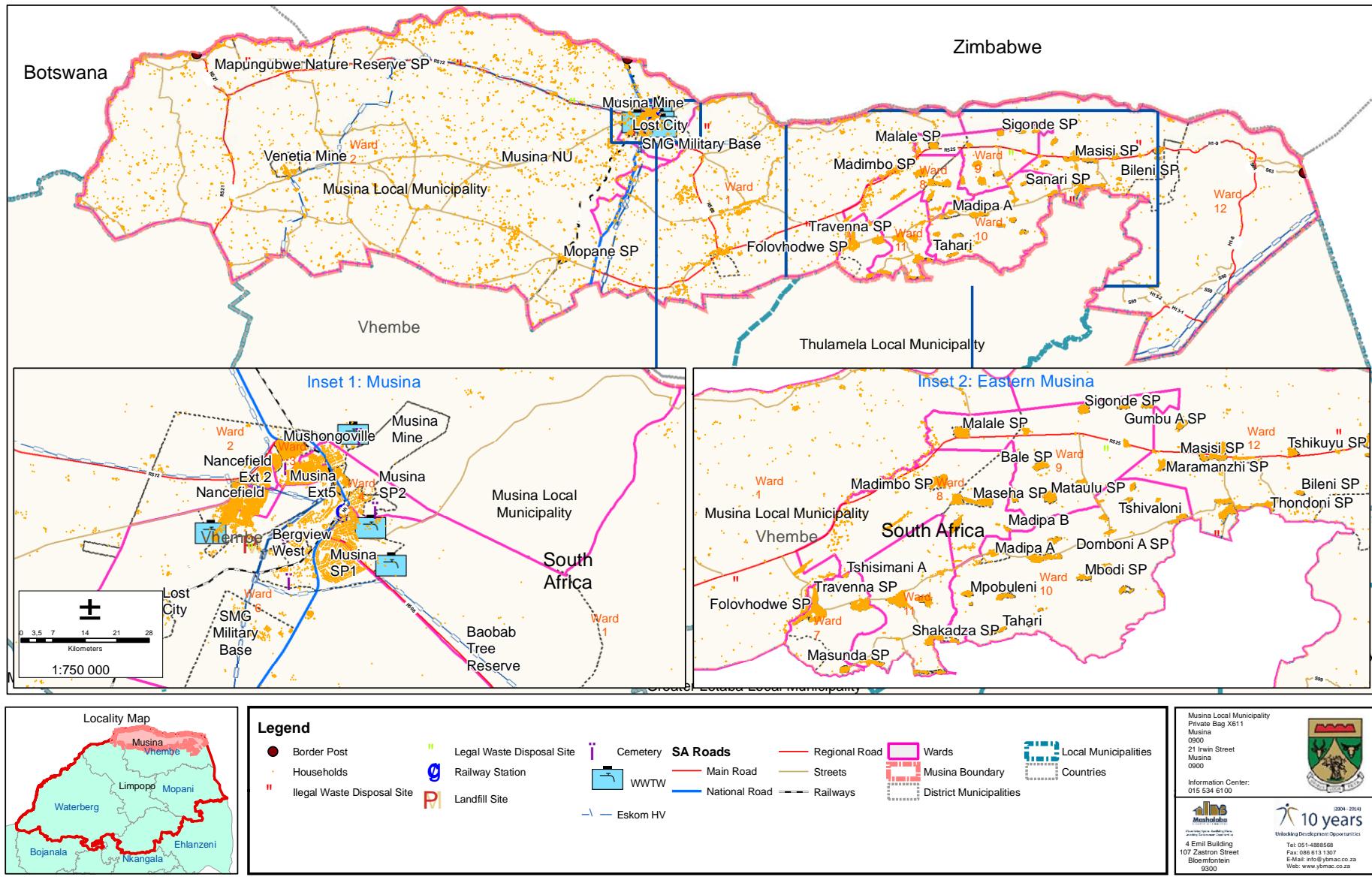
4.4.1.3. REFUSE DISPOSAL

The provision of refuse disposal services is an important aspect of waste management which seeks to create clean and safe environments. It is therefore vitally important to ensure that citizens have access to refuse removal services to minimize the impact of health risks which may be caused by waste. Musina LM comprise of 1 licensed landfill site which covers 6ha, located North of Harper Road on the remainder of the Farm Messina number 4 MT and 1 privately-owned landfill site (Venetia). Mutale LM is a service provider which collects 5 tons of waste in Tshikondeni (the only licenced and privately-owned landfill site) and Masisi (unlicensed). The figure below demonstrates refuse disposal services used by the Households within the Musina LM. As it stands, the majority (12 319) of the households used refuse disposal services provided by the local authority/private company, which removes refuse once a week. A portion of households (3 954) used own refuse dump, while 2 171 households had no rubbish disposal and 1 079 households used communal refuse dump.



Figure 28: Refuse Disposal
Source: Stats SA (2011)

Musina SDF: Infrastructure Map



Map 20: Infrastructure
Source: Limpopo SDF (2016)

4.4.1.4. ROADS AND TRANSPORTATION NETWORK

The provision of a sustainable and integrated transportation network is pivotal in the development of urban and rural landscape. This section provides an overview of the road condition and transportation network within Musina LM.

a) Road Condition

Musina LM comprise National, Provincial and Local roads. SANRAL is responsible for the rehabilitation of National Roads in order to mobilize support for the mining and agricultural activities within the Limpopo Province. RAL is a parastatal that is responsible for road infrastructure in Limpopo Province (Established as per the Northern Province Roads Agency and Provincial Roads Act 7 of 1998). The Musina LM is responsible for the provision and maintenance of municipal roads in various towns within the municipal jurisdiction. The table below denotes the Provincial and District Road Conditions which falls under Musina LM.

Table 18: Estimated Provincial and District Roads Condition

TOTAL LENGTH OF SEALED/PAVED ROADS:KM	PAVED ROAD (%)	TOTAL LENGTH OF UNPAVED ROADS:KM	UNPAVED ROAD (%)	TOTAL LENGTH OF ROADS:KM
447.1	40.5%	656.5	59.5%	1 103.6

Source: Musina LM LITP (2016)

The Musina LM Integrated Transport Plan utilized the Visual Condition Index to illustrate the road conditions in Musina LM. The following figure illustrates the road conditions for paved provincial roads. As indicated below, 46% of roads are in a fair condition, while 42% is in a good condition, 10% in a poor condition and the remaining 2% is in a very

poor condition. This indicates that roads which are in a fair-poor condition needs to be rehabilitated.

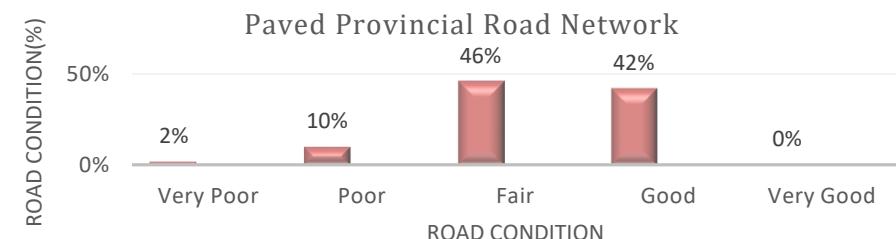


Figure 29: Musina LM Road Condition (paved provincial road network)
Source: Musina LITP (2016)

The Musina LM LITP (2016) also indicated that a large proportion of provincial unpaved roads are in a poor condition (53%), 40% in fair condition, while the remaining 7% is in a good condition. With regards to local roads, the municipality is responsible for the maintenance of roads and storm water drainages. It must however be noted that most of the villages in Musina LM do not have access to adequate road infrastructure, except Madimo village. With the inclusion of the new demarcation which comprise of 6 wards from Mutale LM, the total estimation of paved roads amount to approximately 64km and unpaved roads amounts to a total estimation of 500km (excluding private and farm lands). It was further highlighted that a large percentage of the municipal roads infrastructure is ageing, thus major rehabilitation and upgrading of urban roads is required as well as the channelling of adequate storm water drainages.

b) Road Network

The Musina road network is made up of mobility roads, which comprise of National Roads (SANRAL as the responsible authority) and Provincial Roads (RAL as a responsible authority); as well as access roads, which

comprise of Musina Roads and managed by Musina LM (Roads/civil division). The table below illustrates the main road classification and description for Musina LM.

Table 19: Main Road Classification

Main Road	Description
N1	The N1 is a national road which runs across Musina LM from the northern side of the municipality, towards the south. It provides a linkage via the Beitbridge border post between South Africa and Zimbabwe.
R572	The R572 runs on the northern parts of Musina LM near the Pont Drift Border post (Botswana) on the junction of R521, which passes by Alldays town on the western side, then moves towards Beitbridge border post (Zimbabwe) on the eastern side. This road is also connected to the N1 on the northern parts of Musina LM.
R521	The R521 provides a linkage between Alldays and Pontdrift Border Post.
R508	The R508 is connected to the R572 and the N1 on the northern parts of Musina LM and provides a linkage between Musina and Tshipise Resort.
R525	The R525 is connected to the N1 and provides a linkage between Mopani to Kruger National Park to Pafuri Border Post.

Source: Musina LM LITP (2016)

c) Transportation Network

Public Transportation

Given the socio-economic status of the municipality in relation to employment status, income levels and settlement patterns. It should be noted that public transportation plays a major role transporting communities within Musina LM to various economic, social and residential land uses. The figure below outlines the number of taxis and buses as well as taxi routes and subsidised bus routes within the Musina LM. There are 482 taxis, 21 taxi routes, 13 buses and subsidised bus routes (Musina SDF 2016/2017).

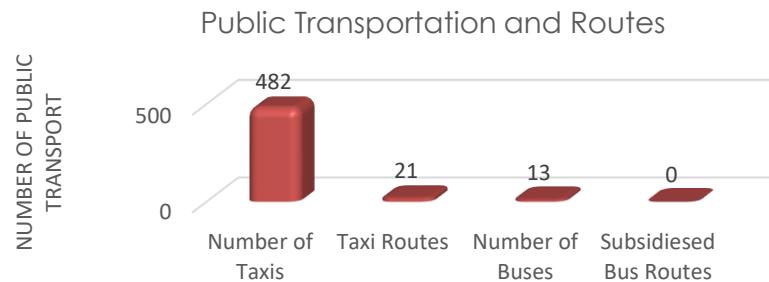


Figure 30: Public Transportation

Source: Musina LM SDF 2016/2017

According to the Musina LM LITP (2016) the bus services operates on the entire N1 route, particularly of the eastern parts of the municipality along the R525, R508, D259, D1724, D1833, D1942. However, there are no bus routes on the western parts of Musina LM. Long distance bus services operate between Gauteng and Zimbabwe, via the Musina/Beitbridge.

Table 20: Main Public Transport Routes and Facilities

Type of Public Transportation Facility	Role and condition
Bus Facilities	Musina Bus Rank is combined with the Musina Taxi Rank Station (operated by couches between Gauteng and Zimbabwe). It must be noted that this facility is in a bad condition due to lack of sufficient water, lighting, universal accessibility and littering.
	Sand River Resort is operated by various bus service. This facility is located near a filling station along the N1. This facility is in a good condition. There is however no universal access to the facility but it is usable.
	Bus Shelter and Lay-By's facilities are not passenger user friendly as they do not comprise of route information and seats. Informal public transport pick-up points are located on road reserves and the lay-by's are underutilized or not used for the purpose that they were established for.

Minibus Taxi services facilities	Musina Station Taxi Rank is situated near the PRASA Rail Station. The facility is in a good condition. It encompasses route information and sufficient water supply, with however no benches for passengers.
	Beitbridge Taxi Rank is situated at the Beitbridge border post. The facilities constitute of hawker facilities, with no formal office structures with electricity. There is lack of route information, sufficient water supply for drinking, public phones and pedestrian benches.
	Masisi Taxi Rank is situated on the south east of Musina, along the R525. The infrastructure is in a good condition. However, there are no route information, public phones and pedestrian benches.
Metered taxi's	Operate between Musina and Beitbridge. It must however be noted that there are unlicensed metered taxis operating. Regulations are required to ensure the provision of licensing and permits to operators.
Passenger Rail	This railway was suspended in 24 November 2014. Although the facility is not used, the infrastructure is still kept in a good condition and comprise of sufficient water supply, bathroom, and seating near the Musina Taxi Rank Station.

Source: Musina LM LITP (2016)

i. Mini-bus taxi transportation routes

The minibus transportation is the most dominant public transportation used in Musina LM. The mini-bus taxis play a role in integrating Musina LM with its remote rural settlements. The table below demonstrates the different types of taxi associations and the linkage of Musina LM with its remote settlements, based on place of origin for taxis and their respective destinations.

Table 21: Mini-bus Taxis

Taxi Association	Mini Bus Routes		
	Route	Linkage between towns & rural areas	
Nancefield Taxi Association	L-R0052	Musina	Campbell
	L-R0053	Musina	Nancefield
	L-R0054	Musina	Tshipise
	L-R0055	Musina	Tshikondeni

Beitbridge Border Taxi Association	L-R0057	Musina	Mukovhawabale
	L-R0058	Musina	Makushu
	L-R0059	Musina	Thohoyandou
	L-R0060	Musina	Alldays
	L-R0134	Beitbridge	Zimbabwe
	-	Musina Taxi Rank	Pondrift Taxi Rank
	-	Musina Old Taxi Rank	Tempell Hoff Taxi Rank
	-	Musina Taxi Rank	Joubert Fourie Farm
	-	Musina Taxi Rank	Muswodi Dipeni
	L-R0002	Musina	Beitbridge
Musina Taxi Association	L-R0003	Thohoyandou	Beitbridge
	L-R0022	Musina	Makhado
	L-R0001	Beitbridge	Johannesburg (via Makhado)
Venda-Johannesburg Taxi Association	L-R0135	Mutale	Dzimaulwi
	L-R0135	Mutale	Dzimaulwi
	-	Masisi	Venda Plaza Taxi Rank
	-	Manenzhe	Venda Plaza Taxi Rank
	-	Folovhodwe	Venda Plaza Taxi Rank
	-	Venda Plaza Taxi Rank	Musina Taxi Rank
	-	Tshilamba	Musina Taxi Rank
	-	Dzimauli	Venda Plaza Taxi Rank
	-	Matatani	Venda Plaza Taxi Rank
	-	Sigonde	Venda Plaza Taxi Rank
	-	Muralwe	Venda Plaza Taxi Rank
	-	Nwawedi	Venda Plaza Taxi Rank
Thohoyandou Taxi Association	L-R0103	Mutale	Thohoyandou

Source: Musina LM LITP (2016)

The above table only indicates taxi routes that are specific to Musina LM although some of the above listed taxi association operates outside the boundaries of Musina LM. As indicated above, Musina Town plays an important role as a place of taxi origin and destination. The major movement pattern occurs in Musina Town and towards the Beitbridge border. The Musina Local Integrated Transport Plan (2016) indicated that the major routes which are being utilized by taxis includes the taxi routes tabulated below:

Table 22: Mini-bus Taxis Routes operations

Busiest Routes	No. Passengers	Morning Peak	No. Passengers
Internal Movement Patterns between Musina and Nancefield	Excess 500 passengers	Dzimaulwi and Mutale transport	Approximately 140 passengers
Internal Movement Patterns between Mutale and Thohoyandou		Afternoon Peak	No. Passengers
		Musina to Beitbridge	Approximately 99 passengers
		Musina to Tempel Hof	Approximately 103 passengers
		Mutale to Thohoyandou	Approximately 136 passengers
Average		58 Passengers	

Source: Musina LM LITP (2016)

The Musina LM LITP further indicated that in settlements such as Madimbo, people walk ± 15 km to access public transport in Malale and ± 8 km in Domboni. This is an indication that accessibility to public transport is a major challenge within the municipality.

ii. Informal Taxi Rank Facilities

Musina LM also comprise of informal taxi rank. The table below indicates the location of informal taxi ranks in Musina LM.

Table 23: Informal Taxi Rank

Informal taxi rank	Location	Description
Factory Shop Taxi Rank	Musina (Whyte Road)	This taxi rank is used as a holding facility that transports passengers towards the Beitbridge border and into Zimbabwe. The area also comprises of a factory shop which passengers use to buy groceries.
Folovhodwe Taxi Rank 1 and 2	Folovhodwe (R525)	There are no formal taxi facilities in this area. Taxis pick up people travelling to (Musina, Sibasa, Tshilamba, Singonde, Manenzhe and Folovhodwe).
Great North Road Plaza informal taxi rank	Musina Mall (N1)	Taxis operate in the parking lot of the mall
Mabvete Taxi Rank	South East of Musina, in Maseha(R525)	There is no formal taxi rank structure. Taxis pick up people travelling to Musina and Tshikondeni.
Madimbo Taxi Rank	South East of Musina(R525)	There is no formal taxi rank facility. Informal traders have installed informal stands near this informal taxi rank. Taxis here transport people travelling to (Musina, Tshikondeni, Manenzhe and Thohoyandou).
Manenzhe Taxi Rank	South East of Musina in Mataulu (R525)	There is no formal facility or infrastructure. Taxis operate on-street. Minibus taxis transport people travelling to Musina and Tsikondeni.
Matavhela Taxi Rank	South East of Musina (R525)	There is no formal facility or infrastructure. Taxis operate off-street, transporting people travelling to (Musina, Thohoyandou, Tshilamba, Khakhu, Sigonde, Manenzhe, Gogobole, Masisi, Folovhodwe, Matatani, Muraluwe, Nwandeni and Tshivhongweni.)

Matshena Taxi Rank	South east of Musina in Matshena (R525)	There is no formal facility or infrastructure. Taxis transport people travelling to Musina and Tshikondeni.
Musina Taxi Rank (Nancefield)	Musina at the Auto Spares Shop on the N1	Taxi operates on-street which results in the disrupting of the traffic flow in the area. Taxis transport people travelling to Campbell.
Muswodi Taxi rank	Muswodi(R525)	There is no formal taxi rank facility. Taxis operate in vacant land in the road reserve, transporting people to Musina, Muswodi Dipeni and Sibasa.
Muswoditshisimani Taxi Rank	Muswoditshisimani (R525)	There is no formal taxi rank facility. There are no specifications with regards to destination areas for taxi operations.
Mutele Taxi Rank	Mutele (R525)	There is no formal taxi rank facility. Taxis transport people travelling to Musina, Tshikondeni.
Pafuri Taxi Rank	East of Musina (R525) towards Pafuri Gate-Punda Maria Road.	There is no formal taxi rank facility. Instead of utilization of mini-bus taxis, Light Delivery vehicles and Bakkies are used to transport people. There are no specific destinations for travelling. The demand for transportation is not high, due to the rural nature of the area.
Shakadza Taxi Rank	South east of Musina, off the R525 in Shakadza	There is no formal facility or infrastructure. Taxis transport people travelling to Musina Sibasa, Tshilamba, Sigonde, Manenzhe, Matatani, Folovhodwe and Tshivhongweni.
Musina Informal Taxi Rank	Musina (Watson Road)	Informal taxi rank established due to limited space in Musina Taxi Rank. Taxis transport people travelling to Sibasa.
Tshikondeni Mine Taxi Rank	South East of Musina(R525)	There is no formal facility or infrastructure. Taxis transport people travelling to Musina and Tshikondeni.
Tshikundamalena Taxi Rank	South east of Musina, between the R525 and the R524 in Tshongani.	There is no formal facility or infrastructure. The destination of people travelling from this area is not specified.

Tshikavarakwara Taxi Rank	South east of Musina, off the R525 towards Travenna	There is no formal facility or infrastructure. Taxis transport people travelling to Musina, Sibasa, Tshilamba, Sigonde, Manenzhe and Folovhodwe
Tshiungani Taxi Rank	South east of Musina, (R525) in Tshiungani	There is no formal taxi rank facility. Taxis transport people travelling to Manenzhe and Thohoyandou.
Zwigodini Madifha Taxi Rank	South east of Musina, south of the R525 and north of the Nyala Magnesium Mine	There is no formal taxi rank facility. The destination of people travelling from this area is not specified.

Source: Musina LM LITP (2016)

Non-motorised Transportation

This mode of transportation is mainly used within the Musina CBD, along the N1 as a result of the establishment of commercial activities, to access public transportation and educational facilities. High levels of pedestrian activities are also experienced mainly within Nancefield and rural villages falling within the jurisdiction of the municipality. Notwithstanding the poor condition of roads within the municipality, it must be noted that Musina LM also comprise of dilapidating non-motorised infrastructure such as sidewalks and the utilization of sidewalks for informal trading. A need to promote and enforce measures for non-motorised transportation should be embodied within the areas of Musina LM to ensure flexible movement of pedestrian and cycle infrastructure within the municipal area. To ensure safety of pedestrian, sidewalks, public transport pickup and drop-off points and pedestrian crossing needs to be established. In addition, the provision of stop signs and speed humps is imperative, to ensure the safety of learners in schools located in the vicinity of roads comprising of high traffic volumes.

Freight transportation

Due to mining, agriculture and the tourism sector being the main contributors to Musina LM economy, it must be noted that these sectors also depend on the utilization of freight transportation for transportation of goods. The table below denotes the types of freight transportation, together with the linkage that each freight transportation has with adjacent towns.

Table 24: Freight Network

Type of Freight System	Freight Transportation Routes	Linkage
Road Freight Transportation	N1	Serves as a primary freight route between Zimbabwe and Gauteng and passes through Musina.
	R521	Link between Alldays and Pont drift Border
	R572	Link between Musina and Pont drift Border
	R508	Link between Musina and Tshipise
	R525	Link between Kruger National Park and the N1. Also connects the agricultural activities with previous mining industries to Musina and the rest of the country.
Rail Freight Transportation	Railway	The Musina railway system links Beitbridge, Musina, Kamkusi, Skelmwater and Mopane. Huntleigh and Lilliput are rail sidings within the Musina LM network. This railway system is mainly used by industries on the southern side of Musina town. There are also coal mining activities occurring in the proximity of the rail. To enhance this rail, it must be noted that Transnet plan to develop a multi-purpose terminal in Musina (180 ha).

Source: Musina LM LITP (2016)

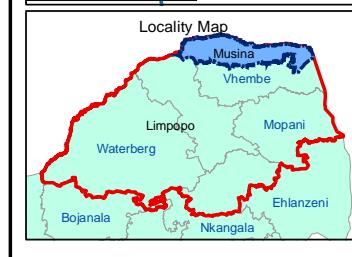
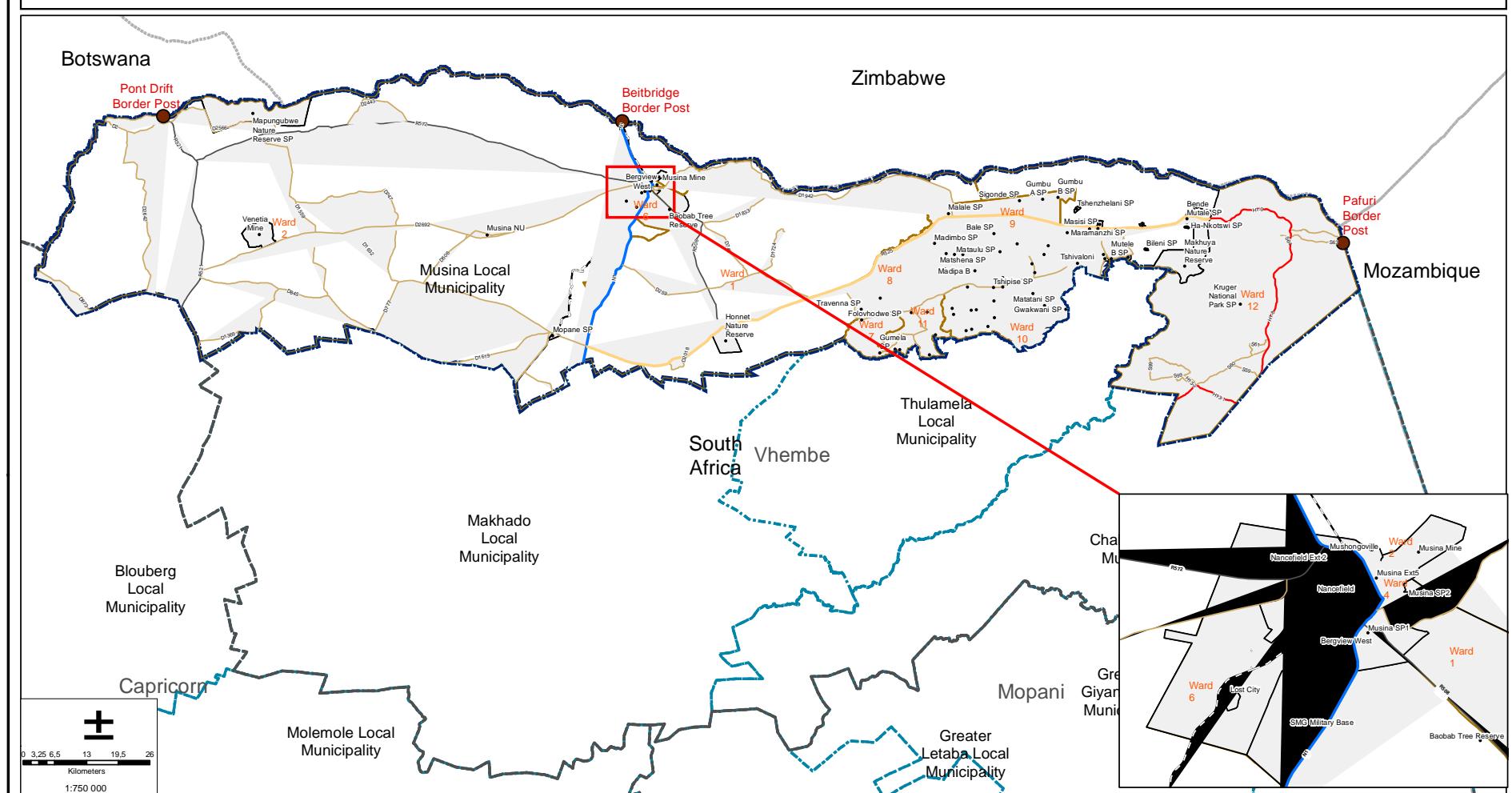
It should also be noted that the above the above-mentioned routes are also used for the transportation of hazardous substances. The Musina LM LITP (2016) suggested that hazardous substances should be kept far

from residential land uses and should not be transported on major roads.

Air Transportation

Musina LM comprise of two air stripes which are located in Musina. Musina LM also comprise of an airport which is situated outside of the Musina Town (5km west of Musina) and is owned by the South African National Defence Force. The airport infrastructure is in an average condition. However, there is no terminal, administration facilities and ablution facilities. The traffic volume in this airport is low and inconsistent. Further assessment needs to be conducted to analyse the viability of this airport for social and economic benefits.

Musina SDF: Roads Classification



Legend

● Border Post	— National Road	— Railways	■ Musina Boundary
— Main Public Transport Route	— Regional Road	■ Wards	□ District Municipalities
— Streets	— Sub Places	□ Local Municipalities	

Roads Class

- Main Road

Musina Local Municipality
Private Bag X611
Musina
0900
Information Center:
015 534 6100



10 years
YMAAC
Yard Management Association of South Africa

4 Emilia Building
107 Zastron Street
Brenton on Sea
9390

Tel: 031 418 1888
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E-Mail: info@yamac.co.za
Web: www.yamac.co.za

Map 21: Roads Classification

Source: Limpopo SDF (2016)

4.5. SWOT ANALYSIS

Tabulated below is a demonstration of Strengths, Weakness, Opportunities and Threats Identified for Musina LM.

Table 25: SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none">• Developed policies and procedures• Availability of land• Strong revenue base• Strategically located to be a gateway to the SADC region;• Declared as a Provincial Growth Point and Special Economic Zone;• The presence of protected areas• Availability of arable agricultural land• The municipality receives high rainfall which is beneficial to agriculture.	<ul style="list-style-type: none">• Non-transfer of R293 townships, these townships are still largely controlled by the province• Electronic Records Management• Mushrooming of backrooms• Continuous informal land development mushrooming in areas with potential in terms of economic benefits• The demarcation of sites by traditional authorities creates service backlogs• Communal land has a significant impact on development. Ownership is restricted and controlled outside the normal land ownership arrangements• Poor land development including municipal growth point and local service centres due to unavailability of developable land• Poor enforcement of municipal land use policies and regulations• Implementation of policies, procedures and by-laws• Little evidence of municipal monitoring and evaluation strategies• Handling traffic congestion within the CBD• Aging water infrastructure and provision of bulk water supply• Electricity backlog and non-functionality of streets lights• Provision of bulk electricity capacity• Lack of water monitoring and management system• Inadequate sewerage system• High waste collection backlogs in rural areas• Most roads are in a bad condition. This has a negative impact on issues of accessibility and the provision of adequate transportation system;• There is only one cost center which is responsible for the maintenance of all roads. This puts pressure on equipment and machinery and thus make it difficult for the routine maintenance of roads infrastructure;

	<ul style="list-style-type: none"> • Lack of capacity to provide infrastructure • Lack of developable land for future developments • Vacant land which can be reserved for future township establishment is located in privately owned land; • There is lack of provision of adequate social facilities, particularly the provision of schools and tertiary institutions; • Insufficient provision of non-motorized transportation and poor maintenance of access roads to schools • An increase in the demand for services which puts pressure on the existing infrastructure due to the influx of undocumented foreigners. • Unable to plan cohesively due to lack of updated land claim information; • Sparse settlement patterns and informal settlements or unplanned settlements; • Climate conditions vs spatial planning (detail out): influencing the supply and demand of the market force can hinder success of production within the agricultural sector.
Opportunities <ul style="list-style-type: none"> • Solar energy • Geographical location – SADC region • Infrastructure development • Special Economic Zone • Improved service delivery through satellite offices • Negotiations with the Department of Public works for the acquisition of land for township establishment on the farm Erasmus and Pretorius as well as other identified farms will be conducted; • Provision of adequate and accessible social facilities in identified suitable land based on the CSIR guidelines; • Expected growth in the mining, agriculture and tourism industry. 	Threats <ul style="list-style-type: none"> • Influx of undocumented foreign nationals • Lack of land for development – LDP projects • Occurrence of diseases such as Malaria • High Crime activity • Possibility of not achieving some MDGs • Unplanned settlement (tribal land) • High rate of unemployment • Delays in water, roads, electricity and sanitation services for new developments • Unsettled land claims; • Mushrooming of informal settlements in the vicinity of urban centres; • Mining activities in this municipality affect the air quality; • Soil erosion due to deforestation; • Water salinity due to increase in temperature;

- Mining put stress on underground water quality within the municipality;
- Surface water is threatened by human activities such as pollution and natural factors such as invasive alien species which consume lot of water;
- Biodiversity is threatened by deforestation and climate change impacts;
- Agriculture is threatened by water scarcity and lack of grazing land

4.6. SDF VISION

The SDF is an integral part of the IDP, thus the SDF Vision is largely informed by the IDP. The aim of the SDF is to support the Municipal vision by spatially interpreting the vision.

The Council Approved Vision:

"To be the' vibrant, viable and sustainable gateway city to the rest of Africa"

5. SPATIAL ANALYSIS AND SYNTHESIS

5.1 ENVIRONMENTAL PLANNING

Even though the 2011 StatsSA data depicts that 62.40% of Musina comprise of urban settlements, the majority (more than 50%) of the municipal area is spatially covered by natural environment with the urban settlements clustered around Musina town. The rest of the municipality is dominated by rural areas, where majority of the population rely directly on biodiversity for ecosystem services. As a consequence, the municipality faces challenges of deforestation. These challenges coupled with climate change impacts can lead the biodiversity being destroyed and/or leads to extinction of certain biodiversity. Development in Musina LM is essential for economic growth as it is in other municipalities. It is however vital to consider environmental aspects when proposing any developments. There should be restrictions of some developments in some areas to avoid environmental degradation. The restrictions will assist in protecting the ecosystems and maintaining ecological processes especially for critical biodiversity and threatened ecosystem. These restrictions also include the inclusion of the critical biodiversity, as eluded by the Limpopo SDF, together with the protected areas as no development zones.

As indicated in the hydrology section of the situational analysis, the municipality comprises of various sources of water which are sensitive and under stress. These water sources should be protected in order to save water resources as the climate change impacts (higher temperatures and low rainfall) are putting more pressure on the water sources of the municipality. Furthermore, development such as buildings, hardened surfaces and other infrastructures within these areas should not be encouraged since these may have severe impact on the hydrological features. It is also important to consider natural buffers in areas such as rivers in order to protect them. Any proposed development should be guided by the 1:50-year flood line (32m) with the minimum buffer zone of 10m. This will ensure that no development will have any direct impact on the natural flow of rivers and streams. Measures should be in place as some developments can contribute to water pollution and also affect the water tables negatively which will eventually affect wetlands negatively. No earthworks and backfilling should be allowed in the 1:50-year flood line. In addition, concrete channelling is not allowed near the rivers. The communities residing within the proximity of these hydrological features should be educated via informative workshops about the importance of taking care of water resources in order to combat pollution and destruction of water resources due to human activities.

Musina LM faces challenges when it comes to reliable and sustainable basic municipal service such as water, waste collection and electricity especially in rural areas. Sustainable ways of providing municipal services includes using resources in a way that will avoid depletion of natural resources and to maintain an ecological balance. It is therefore advisable that the Municipality should consider provision of renewable energy in the form solar energy instead of coal powered electricity. Solar energy is affordable and environmentally friendly and it will help to deviate the communities from utilising wood for energy which pose detrimental impact to the environment due to loss of biodiversity. In Musina LM, it is advised to place the solar energy on bare non vegetated land, which is mostly found in eastern sides of Folovhodwe, Moswadi, and Tshipise before agricultural land is used. Large surfaces such as the roofs of shopping complexes, municipal and business buildings should be considered for solar energy.

Mining is one of the largest contributors on the economy in the Municipality while it also results in environmental degradation. Mining influence air quality issues in the form of dust, impact on biodiversity and it contribute to climate change. The municipality faces Mine and Industrial Site Rehabilitation challenges as well as the possibility of sink-holes. To avoid these challenges Musina LM should be fully involved in the mining companies within the area so that challenges such as these can be solved before closing of the mine sites. It must be noted that after the mines are closed or any shafts are closed, they should be rehabilitated in order to ensure that an alternative end land use is provided. After the rehabilitation, these old mines may be transformed into recreational land uses (golf course, parks and etc.), heritage sites, museums, tourism attraction sites, and residential areas. Furthermore, the rehabilitated old mine may be transformed into its original state, if the land use was agricultural or natural forest land use it may be transformed to such.

It must be noted that there is a need for further investigations when proposing any development. The studies such as Environmental Impact Assessment (EIA) which involves many specialist studies should be conducted for activities listed in the EIA Regulations as well as in other relevant environmental legislation in order to ensure that the natural resources in the Municipality are used to their fullest potential. This will assist in promoting and achieving sustainable development.

5.2. ECONOMIC DRIVERS

Tabulated below is a demonstration of some of the types of economic drivers which falls under the jurisdiction of Musina LM.

Table 26: Economic Drivers

Economic sector	Product	Location
Mining	Diamonds, coal, quarry & other minerals	Venetia, Vele, Tshipise, Mutale & Makhado.
Tourism and conservation (Protected Areas & Critical Biodiversity Areas)	<ul style="list-style-type: none"> • Pontdrift Border post • Greater Mapungubwe Nature Reserve • Tshipise resort • Baobab Tree Conservation, • Honnet Nature reserve, • Nwanedi Nature Reserve • Sagole Spa • The Big Tree & the Big Tree Holiday Lodge • Messina Nature Reserve • Venetia Limpopo Nature Reserve • Ratho Crocodile Farm/Bush Camp • Popallin Safari Ranch • Awelani Eco Tourism Lodge • Makuya Nature Reserve (A part of the Reserve) 	Throughout the municipality

	<ul style="list-style-type: none"> • Kruger National Park (Pafuri Border Post) 	
Agriculture	<ul style="list-style-type: none"> • Crop farming (Vegetables, cabbages, oranges, tomatoes, Mopani worms, Butternuts, pepper, macadamia nuts, Baobab trees) • Cattle and livestock Farming (Cattle, poultry, pig, etc) • Game Farming 	<ul style="list-style-type: none"> • Area along the Limpopo River known as Limpopo valley-including Weipie farms, • The area along the Sand River to the West of Mopane, • The Nwanedi farms of which only a small section falls within the municipal area, • The area along the Nzhelele River known as the Nzhelele irrigation area and • The area along the Nwanedi River which is predominantly state land leased by small-scale farmers • Game, Cattle and livestock throughout the municipality
Transport/logistics	Road freight (N1), Coal and commuting routes.	N1, R525, R572 & D2692.

5.2.1. MINING

This section aims on identifying projects that will be sustainable in the event that mines in the area close only once proper rehabilitation and safety regulations are adhered to. (1) Construction is considered to be one of the complex sectors in the economy but it is sustainably generating income as there are job opportunities for construction workers. Brick laying training projects/programmes and bricklaying manufacturing facilities to ensure that communities acquire skills and start their own construction start-ups. Equipping the local unemployed people with the necessary skills so that they set up their own construction businesses will not only be beneficial to them but it will ensure there are no leakages out of the economy. (2) Due to the mining activities found in Musina, there is need for explosive plant, steel manufacturing facility small scale mining, waste management recycling facility, servicing of equipment by local businesses. This can be extended by implementing a tyre manufacturing facility. (3) Solar energy has attracted a number of investors especially in South Africa, Musina is known for its high temperatures so setting up a solar manufacturing facility associated to a solar geyser manufacturing facility and light solar powered housing infrastructures will be beneficial to the region as it will create job opportunities. The following opportunities exist within the mining sector in Musina LM (Mutale Local Municipality IDP, 2016):

Existing mines

- Supply of manufacturing inputs in the mines
- Subcontracting of cleaning and catering services
- Jewel making
- Coal beneficiation
- Magnesium production

Abandoned mineral deposits

- Small scale mining cooperatives
- Local mineral processing and beneficiation activities
- Steel beneficiation

Graphite deposits

- Graphite extraction and beneficiation

Increasing demand for bricks

- Expand brick production capacity

5.2.2. TOURISM

The tourism sector in Musina is backed by activities that have enough capacity to generate revenue for the South African economy. These activities include the Nwanedi Nature Reserve, Greater Mapungubwe Nature Reserve, Baobab Tree, Awelani Eco Tourism, Tshipise Hot Spring, Honnet Nature Reserve and Kruger National Park. The tourism corridor stretches all the way from Pont Drift Border Post close to Botswana Border towards the Beitbridge Border Post. In September 2017 starting from the 12th to the 16th, Nwanedi, Kruger National Park and Mapungubwe World Heritage site took part in a four-day free access, promoting tourism. Nwanedi is located about 20km east of Tshipise and 35km away from Kruger National Park. Tshipise Resort is blessed with year-round sunny summer climate conditions and hot mineral springs. Tshipise is close to the Beit Bridge Border Post and pass it along the route to the Kruger National Park which is a well-known tourist destination. The municipality should collaborate with the Tourism Department in Musina to raise, promote and integrate all tourism destinations around the municipality.

The Mapungubwe route dates back to the 13th century with evidence of ancient trade relations with countries like China, India and Arab nations. The richness in history of the area makes it interesting for the Mapungubwe route. In 2003 the region was declared a tourism heritage site. Mapungubwe World Heritage Site integrates with the Mapungubwe National Park, it is known that 1000 years ago the route started in a small town of Makhado went through Southpanberg into Blouberg Nature reserve, into Greater Mapungubwe Transfrontier Park and the World Heritage Site, from there it stretched into Musina's Nwanedi Wildlife Reserve. The Sagole Big tree is found in this region of Nwanedi, the route continues to the Makuya Nature Reserve described as a primary wilderness destination which stretched towards the Kruger National Park one of South Africa's heritage site. The Crooks Corner incorporates South Africa, Zimbabwe and Botswana at the confluence of Pafuri and Limpopo river.

Sandstone cliffs, balancing rocks, views of the Limpopo river and riverine forests is part of the reasons tourists should visit and the municipality should invest this region. The most interesting part is that the region forms the core of the Limpopo Shashe Transfrontier Conservation Area incorporating the region to Zimbabwe South Africa and Botswana. Within the Mapungubwe National Park wildlife found in this region include, elephant, giraffe, eland, gemsbok, blue wildebeest, red hartebeest, zebra, kudu, waterbuck, impala, bushbuck, klipspringer and other plains game. The SANPARK guides are responsible for guide visits into the Mapungubwe hills, San rock art and the dinosaur fossils. The region has 4x4 trails, picnic sites and birding view hides, crocodile farm and the famous Baobab tree trails that can be explored on mountain bikes.

5.2.3. AGRICULTURE

The Agricultural Hub was chosen by the Department of Rural Development and Land Reform (DRDLR) to be located in Nwanedi in the Thulamela Local Municipality (Refer to the Map below). The Agricultural Corridor will benefit from the Agri-hub through training, logistics, agro-processing, packaging, product distribution and branding. Nwanedi Agricultural Hub (also see the figure below) will have three basic units, the Farmers Production Support Unit (FPSU) that will serve as a rural outreach unit connected to the Agri hub, Agri Hub Unit (AH) which is a production, equipment hires,

processing, packaging, logistics, and training unit. Lastly as a huge boost, will be the construction of the Rural Urban Marketing Centre in Polokwane, with the aim of facilitating marketing linkages between the Aari hub and markets, assisting farmers in managing contracts, negotiating local / export contracts for farmers.

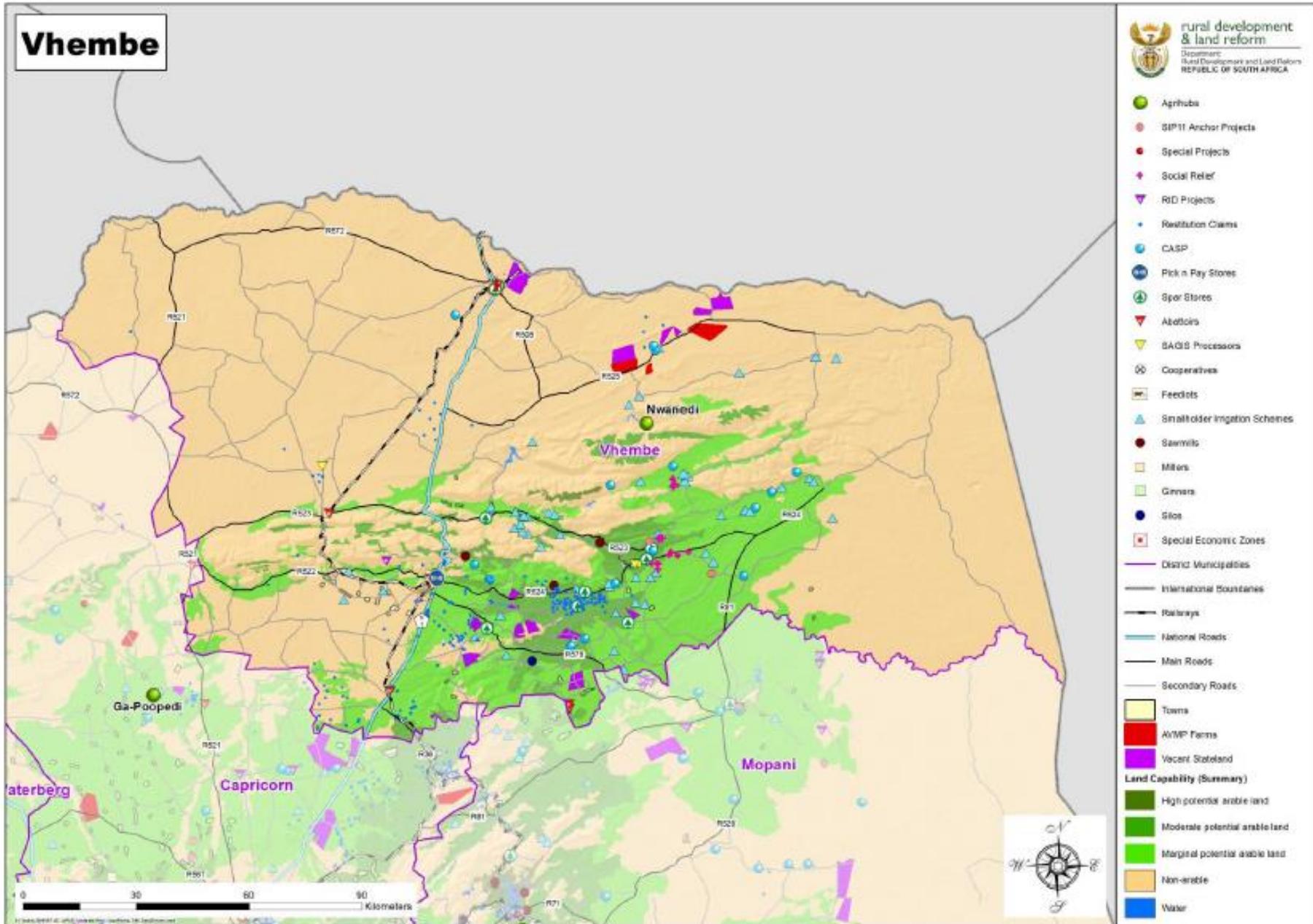
A Farmers Production Support Unit is already in place aiming to ensure that farmers have access to agricultural input supplies, extension support, logistics support, produce collection, packaging and collection, packaging for local retail and international market, transportation of produce from farm to the Agri hub. Comprehensive Agriculture Support Programme (CASP) projects where identified along the R525, included along this road, just after Madimbo, is the local NTK that assist with required basic inputs and irrigation schemes along the road between Folovhodwe towards Mutele. For more comprehensive information with regard to the agricultural rural development program please refer to the 2016 Vhembe District Municipality Final Report Agri-Park Master Business Plan (DRDLR).

Table 27: Potential of the Agricultural Sector

	Crops	Livestock	Mechanisation
Animal feed production	Lucerne production	Goat, Beef and Game Meat Processing	Letting of farming implements
Beauty products	Pumpkin chutney and jam	Plants	Agricultural input services
Vegetable processing	Traditional beverages	Dairy Production	Refrigerated trucks
Tomatoes and Tomato processing	Cotton production	Leather Production	Processing and packaging
Juice making	Cream-of-ta-ta from the baobab tree	Establishment of Abattoirs	
Nut processing and packaging plant	Citrus production	Poultry Processing	
Sun-dried tomatoes	Production and processing of cabbages	Egg Production and Broilers	
Tomato jam, purees, paste, etc.	Lucerne production	Goat, Beef and Game Meat Processing	
Producers co-operative	Pumpkin chutney and jam	Plants	
Packaging and export	Traditional beverages	Dairy Production	
Frozen vegetables	Cotton production	Leather Production	
Canned vegetables	Cream-of-ta-ta from the baobab tree	Establishment of Abattoirs	
Organic farming	Citrus production	Poultry Processing	

The Municipality should facilitate the development of cooperatives in order to empower the communities. This will assist the communities to their own establish cooperatives to expand the agricultural sector. The Municipality should ensure that agricultural potential land is protected.

Vhembe



Map 22: Vhembe Agri-Hub

LIMPOPO AGRI-PARK NWANEDI AGRI-HUB



Figure 31: Nwanedi Agri-Hub

Source: Department of Rural Development and Land Reform (2017)

5.3. TRANSPORTATION PLANNING

Transportation planning is a fundamental planning process which provides linkages and access which guide the manner in which development can take place, as well as it informs future investment prospects which can enhance flexible movement of goods and people and thus provide accessibility to economic activities, residential land uses and social facilities.

5.3.1. CROSS BORDER PLANNING

The location of Musina LM results in international links with Botswana, Zimbabwe and Mozambique. The location of the municipality is seen as an important gateway to other African States and has been accorded the opportunity of a Special Economic Zones (SEZ) in order to enhance and accelerate economic growth within the region through industrial development and agro-processing as well as manufacturing. Beit Bridge border links South Africa through Zimbabwe to all Northern African countries. This results in the border post being the busiest and is characterised by various cross border post issues such as illegal migrants, drug smuggling, to mention but a few. These issues consequently have a negative impact on development and planning within the municipality.

a) Alignment to Neighbouring Countries

Due to Musina LM being bordered to adjacent countries such as Zimbabwe via the Beit Bridge Border Post, Botswana via the Pont Drift Border Post and Mozambique via the Pafuri Border Post, it must be noted that high cross border traffic volumes are experienced at the Beit Bridge Border Post to Zimbabwe from Musina as compared to the other border posts. Traffic generated along the Beitbridge is mainly induced by public transportation which comprised of licenced metered taxi's, as well as informal metered taxis without permits, as well as mini-bus taxis and buses. There are also delivery goods vehicles which delivers goods for informal traders along the border. Musina Town being a linkage to the Beitbridge border post in terms of transportation have considerable impact on Musina's infrastructure, local economy and the overall transport system. The table below illustrates the alignment between Musina LM with the neighbouring countries via the border posts.

Table 28: Alignment to Neighbouring Countries

Country	Location	Description	Infrastructure condition and main activities
Zimbabwe (Beit Bridge Border Post)	The border post is located 12.6km on the northern side of Musina Town (Limpopo Province).	Beit Bridge serves as the main access point for masses of populations and freight from northern Africa. Given the busy activity of both people and freight along the N1 route, there is unmatched immigration and customs control present at the border post. As a result, crime dominants and illegal immigrants as well as unauthorized freight leaks in or out of the country unnoticed.	The border post accommodates rail freight which is located 2km from the border post buildings (transports mainly coal and animal feed) and road transport. This border post also provides Cargo Services which deals with the transportation of commercial consignments (Tobacco, cotton, fruits and vegetables, etc). There is an average of 10 000 -12 000 people crossing the border each day, in which the main movement patterns occurs during peak hours. There are approximately 1000 trucks which crosses the bridge per day, which mainly comprise of exports from South Africa. However, it must be noted that 20% of these trucks travel without cargo. The total commercial traffic flow ranges from +-35% for containerised traffic. While +-150 (90%) commercialized consignments of plants and plant products per day are imports to South Africa. It must however be noted that the infrastructure and facilities within this border post is not properly planned and therefore cannot accommodate passengers and handle commercial traffic movement patterns. The Rail Freight which constitute of coal and animal feed is not controlled. Measures should be taken to enhance adequate planning and development of the border post.
Botswana (Pont Drift Border Post)	The border post is located 113km on the western side from Musina Town (Limpopo Province).	The Pont drift border post serves as a tourism and conservation node within the municipal area.	The border post consists of a major freight transport road (R521) which moves from Vivo to the Pont drift border post. However, there is no crossing bridge to Botswana. This becomes problematic during flood and a cableway is used when the river is flooded. The main activities along Pontdrift includes tourism attraction areas such as: Evangeline, Great Mapungubwe Transfrontier Conservation Area, Mapungubwe Heritage Site as well as agricultural activities. Furthermore, there is no infrastructure to accommodate informal trading near the border post. There is thus a need to provide informal trader stalls as well as an information centre to enhance the effectiveness of the border post as well as promoting it to become an efficient gateway to Botswana that also stimulates growth in terms of tourism attraction.
Mozambique (Pafuri Border Post)	Located 159km from Musina town to the eastern side before entering the Kruger National Park.	This border is the smallest border in contrast to the above-mentioned borders and has proven to be quite efficient. There are shops and accommodation facilities in the vicinity of the border post. The establishment of the Great Limpopo Transfrontier Park (GLTP), links Kruger National Park in South Africa, Gonarezhou National Park in Zimbabwe and Limpopo National Park in Mozambique.	New infrastructure has been installed in the border post facility and is thus neat and user friendly. However, it must be noted that when accessing the border through the park, the roads are not well developed (Roads are made up of sand and gravel which becomes problematic during rainy seasons).

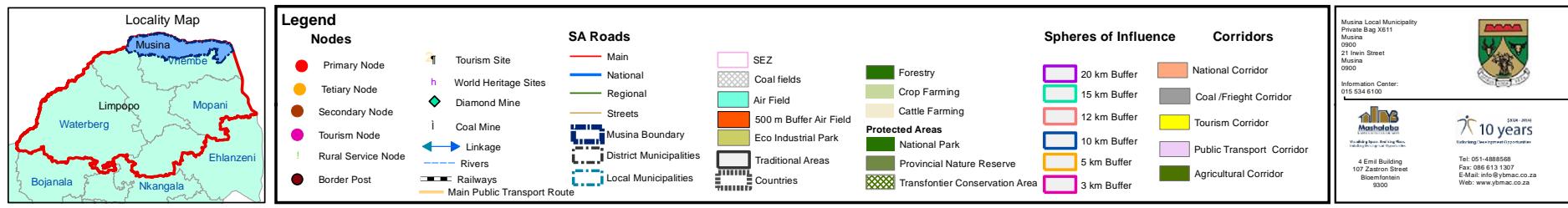
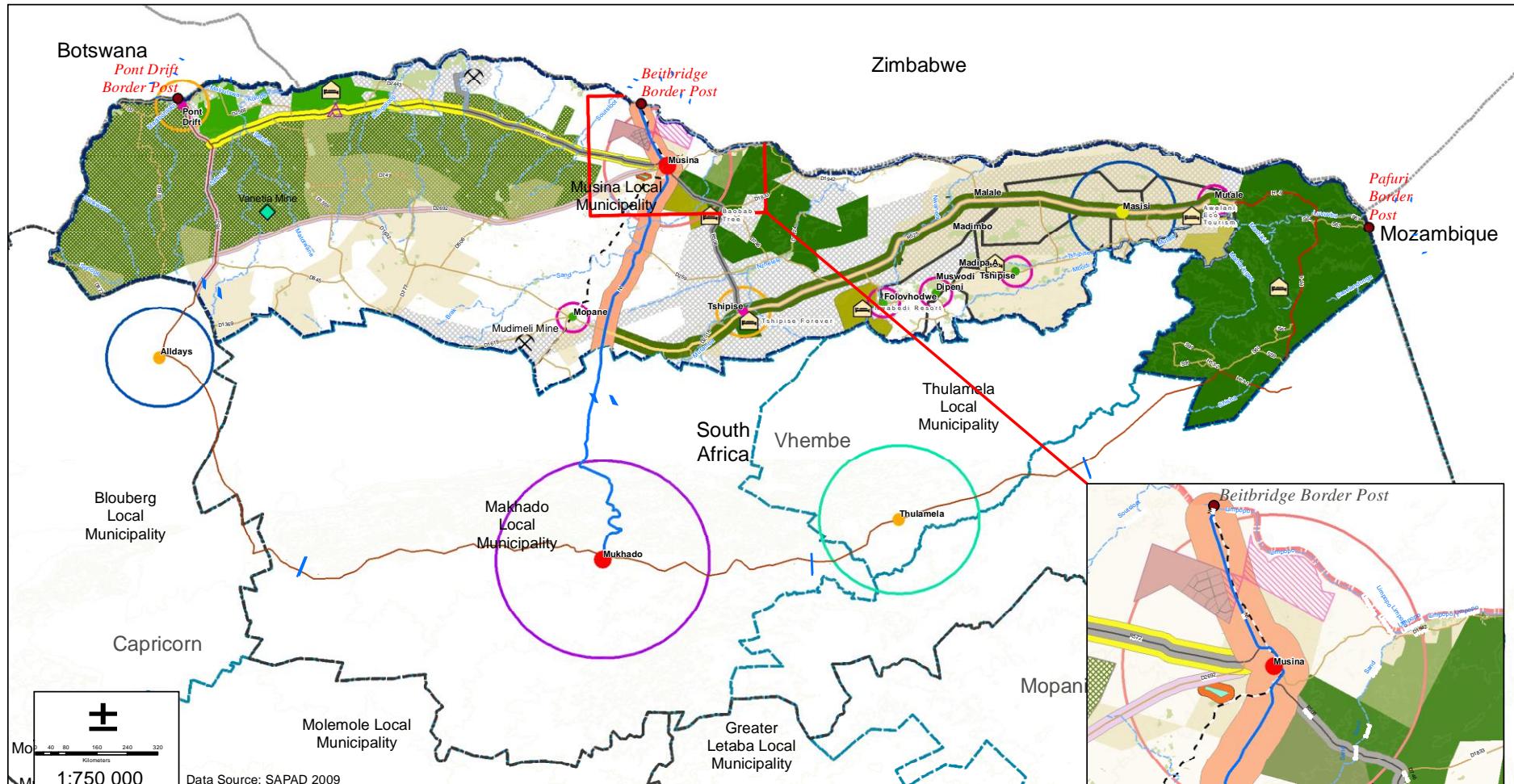
b) Alignment to adjacent municipalities

The table below and the map below demonstrates the alignment between Musina LM and other neighbouring municipalities.

Table 29: Alignment to adjacent Municipalities

Local Municipality	Linkage	Function
Collins Chabane Local Municipality	Located on the eastern side of Musina LM and is linked via the R508 into Kruger National Park.	The Municipality also shares the border with Zimbabwe on the north and Mozambique on the east. The municipality also connects other municipalities within the Vhembe DM with the Kruger National Park.
Makhado Local Municipality	Located on the southern side of Musina LM. The municipality is connected with Musina LM, from Polokwane, towards Makhado LM.	Makhado LM forms part of the Trans-Limpopo Corridor (also identified as a National Corridor) which moves along the N1 from Polokwane, passes through Musina and moves northwards towards Zimbabwe. There's also a railway that moves from Musina, towards the southern side of Makhado LM. It is undeniable that transportation plays a major role in integrating Musina and Makhado LM.
Thulamela Local Municipality	Located on the southern side of Musina LM and is linked to Musina via the R524 (Provincial Corridor) and the N1(National Corridor).	Shares a boundary (LIM 345) with Musina LM on the south-eastern side, moves north towards the Zimbabwe border and is also connected to Makhado LM on the western side. Crime has been identified as the main issue of concern between these municipalities due to the influx of undocumented people crossing the border to South Africa. Thulamela is also house to District's Agri-Hub in Nwanedi which is approximately 40km from Musina.
Blouberg Local Municipality	Located on the Western Side of Musina and is linked to Musina via the R521 (Provincial Corridor).	Blouberg LM is linked to Musina via the Alldays. Access is provided via the R521 which provides a linkage between Musina LM and Botswana. The R521, further connects Blouberg LM with Venetia Mine and Musina Town.

Musina SDF: Cross Border Alignment



Map 23: Cross Border Alignment, Nodes and Corridors

Source: Limpopo SDF, 2016

5.2.4. NODAL PLANNING, CORRIDOR DEVELOPMENT AND GROWTH POINTS

Nodal planning and corridor development plays a major role in creating feasible transportation network systems, land use regulations, the promotion of economic growth and development, as well as infrastructure development. This section identifies the proposed nodal points located within the jurisdiction of Musina LM. Also refer to the Cross Border Alignment, Nodes and Corridors Map.

5.2.4.1. DEVELOPMENT NODES

Below is an illustration of the hierarchy of nodes. Due to the rural nature of Musina, the Musina LM comprise of a primary node, tertiary node, tourism nodes and rural service nodes.

Table 30: Nodal Development for Musina LM

Hierarchy of nodes	Description
Primary Node 	Primary Nodes are characterised by high economic activities, potential to grow even further and also plays a vital role at a National, Provincial and Local Level. This node is also characterised by commercial and industrial development, Shopping centres of +25 000m ² , High density residential developments and social facilities.
Secondary Node 	Secondary nodes have the potential to grow with the current level of their economy. These nodes are characterised by simple to complex economic scale. This can include the development of shopping centres ranging between 20 000m ² – 25 000m ² . Secondary nodes play an important role in the regional economy as they also comprise of health facilities, social and justice services at a regional scale.
Tertiary Node 	Tertiary nodes focus on the provision of minor social amenities such as (police services, clinics, etc.) and minimal economic activities at a local community scale. A shopping centre of at least 10 000 m ² .
Rural Service Node 	The main function of a rural node is to provide services at a neighbourhood level to meet immediate needs to rural communities. These nodes also seek to enhance the nature and the rural economy of the area in which they are located.
Tourism Node 	These nodes are characterised by tourism attraction and provide luxury private accommodation with small economic facilities.

Based on the character of the urban settlements and the rural nature of most settlements within the Musina LM, it is clear that there is no settlement in Musina which can undertake the role of a secondary node. Rather, the table below outlines the nodes which are applicable to Musina LM, together with each node's main function and location as well as identified future opportunities that each node comprises of.

Table 31: Nodal Development in Musina LM

Type of Nodes	Definition	Location	Main Function	Type of services Required	Identified Opportunities
Primary Node	Denotes the highest order nodes with an established diverse economy and social amenities. The PGP have also been earmarked for SEZ as they are dominated by mining opportunities. To further enhance the PGP, immense engineering public infrastructure should be embodied in order to support bulk future economy which will be undertaken by the private sector.	Musina	Musina is a Provincial Growth point and is also linked to the Special Economic Zone. The types of activities in this town includes (Industrial Buildings, warehouses, offices, old mines and regional shopping centres).	<ul style="list-style-type: none"> • Municipal offices; • Hospital; • Schools; • Police station; • Magistrates court; • Commercial and retail outlets; and • Housing infrastructure. 	<ul style="list-style-type: none"> • CBD Regeneration; • Roads upgrade; • Housing; • Commercial and industrial development; • SMME and Agricultural development.
Tertiary Node	Represents a small based economy and institution, with settlements comprising of at least 75 000 to 100 000 people. These settlements are accessible from the provincial road network. There is however a need to enhance the provision of infrastructure, economic activities as well as social amenities in these areas.	Masisi	Masisi is a Municipal Growth Point which comprise of various social amenities (schools, clinic, community hall, magistrate court, etc) and minimal economic activities.	<ul style="list-style-type: none"> • Points for mobile services; • Clinic; • Sports facilities; • Post box points; • Transport facilities; • Localised services including primary schools; • Police Station • Pension pay out point; • Public works offices; and • Public phones, local markets and minor commercial activities 	<ul style="list-style-type: none"> • Masisi should be developed as an administrative centre of the municipality • Revitalize the Masisi Taxi Rank to enhance its utilization; • Accommodate the development of formal and informal businesses;
Rural Service Node	Represents isolated villages with minimal to no efficient basic service provision. These villages are far from the provincial road network. There are however other local service points which are located in the proximity of provincial road network and comprise of minimal amenities and commercial farming. The focus of development in these areas should therefore be on the provision of social amenities and the maintenance and improvement of small scale economy.	Folovhodwe, Muswodi Dipeni, Tshipise and Mopane	Local Service Growth Points encompass of minimal economic and social facilities such as (Clinics, district offices, post boxes, shops, primary and secondary schools).	<ul style="list-style-type: none"> • Low level retail services, • Police stations, • Education (primary and secondary), • Clinics, • pension • Pay-out points, • Community halls and; • Taxi rank. 	There is a need to mobilize support and capitalize on rural economy and development. A rural development strategy needs to be established to outline ways to enhance the rural economy and uplift the overall livelihood of the rural economy.

Tourism/ Conserv ation Node	Pontdrift and Tshipise Resort	<p>This node focuses on the provision of tourism facilities, which includes Tshipise Resort, Mapungubwe Resort in close proximity to Pontdrift. These resorts encompass of a unique agricultural character which also aims to conserve the natural environment while promoting eco-tourism within the municipality.</p>	<ul style="list-style-type: none"> • Small facilities in economic core • Mobile clinic • Information centres • Luxury Private Accommodation 	<ul style="list-style-type: none"> • Capitalize on strategies which promotes the conservation of the natural environment, while enhancing the aesthetics of the area for tourism attraction. • Preserve the unique character of the node, while creating measures to stimulate eco-tourism within the municipality.
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5.2.4.2. CORRIDOR DEVELOPMENT

Taking into consideration the expansion of towns and cities as well as population growth, corridor development outlines a spatially vivid understanding of the current and future development which can be allowed to enhance the identified opportunities in nodal planning. This is to ensure that road networks compliment the surrounding land uses and thus provides opportunity for growth. As a result, corridor planning and development takes into consideration various types of transportation networks in order to transform the natural and human environment where it's located. The main important function of a corridor is to connect nodes to a point where transportation is easily accessible by local communities and provide various transportation modes to complement various land uses adjacent to it. The table below denotes identified corridors which are linked to Musina LM and their main function (spatial representation can be seen in the Cross Border Alignment, Nodes and Corridors Map).

Table 32: Corridor Development

Type of Corridors	Location and Linkage	Rationale
Transitional Development Corridor	N1 which extent to Beit Bridge border (Border between South Africa and Zimbabwe) and moves southwards to Musina-Makhado and towards Polokwane	This corridor focuses more on the transportation of goods and people (Transnational Development Corridor). It is the main route that links South Africa and Zimbabwe. There is also a freight railway which runs parallel to the N1 and thus forms part of the N1 corridor. The Transitional Development Corridor offers a variety of land uses and promotes long term SEZ goals which have been outlined by the Limpopo Provincial Government.
	Mutasshi Activity spine	Builds on the N1 corridor but concentrates on the intensified development of Musina Town & Beit Bridge Border post as nodes and the facilitation of economic activity along the route (N1) between them. The success of this corridor can further the provincial vision of linking South Africa with Zimbabwe, while intensifying developments to create employment for local communities.
Public Transportation Corridor	Along the R521 from Vivo to Botswana, moving towards the eastern side of Vele Mine towards (D2692) Musina and moving along the R525.	This corridor mainly serves the south-eastern settlements of Musina LM. It's mainly used for public transportation from the Vele mine to Musina (D2692) and along the R525 integrating Musina with Masisi which is identified as a tertiary node. The R525 is mainly used by mini-bus taxis to transport commuters from rural settlements to Musina. The R525 also links Musina with rural service nodes such as Mopane, Folovhodwe and Tshipise through an internal gravel road which needs to be upgraded (D1724, D3675 and D3758). This corridor provides diverse transportation network, which gives people access to Public Transportation (Mini-bus taxis), some areas use light delivery vehicles and bakkies), while other use bikes and walk to arrive at public transport pick up points, taxi ranks, economic activities and social amenities.
Coal/Freight Corridor	R572- R508- R525 located along the coal fields and provide a linkage between coal mines and Pafuri Gate.	This corridor is mainly characterised by coal fields and thus provides freight network for transportation of coal. It must however be noted that there are various agricultural activities (cattle farming and crop farming along this corridor). This corridor provides a network which stimulates the transportation of coal and agricultural production to various destinations (Mines: Zimbabwe-Botswana; Crop and Cattle Farming: Mopane, Folovhodwe, Madimbo, Tshipise, Masisi and Mutale).
Agriculture and Conservation Corridor	Tshipise, Madimbo, Masisi corridor located on the R525, moves towards Mutale and settlements along the river banks towards the Pafuri gate.	This corridor mainly functions as a freight network route which also comprise of agricultural activities along the R525. Included along this road is the local NTK that assist with required basic inputs.

Tourism Corridor	R572 provides a linkage into Botswana (Pont Drift Border Post), passing the Mapungubwe National Park and Heritage site towards Musina. The R525 provides access to the Kruger National Park and Mozambique through the Pafuri gate and Border Post.	The main function of this corridor is to promote tourism attraction between Musina LM and Botswana. The park can also be accessed via the R521. The main issue concerning this corridor is the occurrence of Malaria and lack of shops and petrol stations. The Kruger National Park promotes tourism attraction and can be accessed via the R525 through the Pafuri gate which also links South Africa with Mozambique. This corridor functions as a tourism attraction area with accommodation for tourists and also provides linkage between the Park and Thulamela LM as well as Pafuri border Post. Musina Town is used as an economic stop point before accessing the park. Provisions needs to be made to ensure the development of economic activities which can be utilized by locals and tourists. This corridor can offer a variety of land uses which can conserve the existing visual of the parks, social and historic aesthetic appeals and also providing access to small economic activities.
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5.3. GROWTH PRESSURES

Settlement indicators such as density, quality of urban environment as well as social and economic integration levels have an impact on the level of development within a municipality. Increased population within settlements, presents varying challenges in both rural and urban areas.

5.3.1. MUSINA TOWN SETTLEMENTS

Within Musina town, the area on the eastern side of the CBD is characterised by middle to high income earners and thus middle-income settlements. The demand for such properties is increasing and it is accommodated by developments in the easterly direction. This is attributed by further residential developments along the R508 route. In contrast, the increasing housing demand in the western direction (Nancefield) of Musina CBD is accommodated by backrooms within the subsidised residential properties. This could be highly attributed by the inability to afford houses from the masses residing in Nancefield (see table below). This concludes that there is increased pressure on settlements and housing provision in the Nancefield area.

Table 33: Residential Affordability profile

Income Midpoint 2011 (R)	House Price	Distribution (%)	Classification
R0	R0	80.8%	Freestanding low-cost home
R3 656	R11 269		Freestanding low-cost home
R10 970	R33 811		Freestanding low-cost home
R21 939	R67 619		Freestanding low-cost home
R43 878	R135 235		Freestanding low-cost home
R87 745	R270 468	8.8%	Gap & Entry level Economic Freestanding / Group
R175 508	R540 933	6.2%	Low-middle income

R351 016	R1 081 864	3.1%	Middle income
R702 031	R2 163 726	0.7%	Middle-high Income
R1 404 060	R4 327 449	0.2%	High Income
R2 808 120	R8 654 896	0.2%	Elite
R3 776 458	R 11 639 407		Elite

5.3.2. RURAL SETTLEMENTS

Musina Local Municipality is in the process of formalising a great portion on the eastern rural areas. These include the formalisation of approximately 1600 erven in Madimbo and proposed formalisation in Feeskraal. Rural areas such Madimbo, Masisi, Folovhodwe and Tshipise are characterised by sparsely populated residential units. Similar and even further scattered settlements can be found in remote agricultural and farm units as was seen on the Population Density map.

Rural development improves access to services, land, income and livelihoods contributes immensely to the depiction of the municipal human resources. This is factored by the diverse land use (educational facilities, businesses, open spaces, health facilities etc.) included in the formalisation process.

5.3.3. STRATEGIC GROWTH POINTS

Identified Strategic Growth Points (Cross Border Alignment, Nodes and Corridors Map) are categorised based on the hierarchy of settlements within the municipality. The Limpopo Provincial Development Plan categorised the Hierarchy of settlements. The First Order Settlement (Growth Points) are outlined hereunder:

- Provincial Growth Points;
- District Growth Point;
- Municipal Growth Points; and
- Local Service Points.

It must however be noted that the Vhembe District SDF have not identified any district growth point in relation to Musina LM. Musina LM also comprise of third order settlements (Local Service Points). Although the Growth Points are the main strategic focus, it is recommended that development priority be given to local service points which serves the local/rural communities which falls under traditional authorities. The table 32 above outlined the nodal points and identified growth points within the Musina LM, together with their specific geographic location and economic potential.

5.4. DEVELOPMENT OPPORTUNITIES

Agricultural activities make up large portions of land in the municipality, with more than half of the employed population being employed in this sector.

The agricultural sector of Musina municipality also contributes approximately 35% to the same sector in the district, showing its importance to the local economy. It is essential that job opportunities are spread to all the people, especially to people from the settlements in the eastern parts of the municipality, which are very rural in nature and are not reaping the same benefits as the population in the urban area surrounding Musina town.

The manufacturing sector of the economy is not currently performing well. However, given the strong agricultural base, opportunities for expansion of the manufacturing industry exists through agro-processing and other activities as mentioned in the synthesis.

The municipality benefits from a potentially economically active population that comprises approximately 70% of the total population, which provides the municipality with a large human resource base. This allows opportunities for development projects to involve and benefit local people. The age distribution of the municipality's population also indicates a fairly young potential economically active population, necessitating development to focus on the youth.

In terms of economic indicators, the municipality also enjoys comparative advantages in the agriculture, mining, manufacturing and transport industries, compared to the District. The municipality should therefore capitalize on these advantages to further strengthen its position in the district and the province as a whole.

Furthermore, the fastest growing sectors in the municipality were those of transport and construction sectors. The current growth occurring in these sectors should be exploited to ensure the creation of new job opportunities for the local people.

- Location / bordering onto three countries / importation of scarce skills / trading in needed commodities
- Natural tourism attractions, Frontier Parks, Baobab Tree, World heritage site (Mapungubwe), Game farming
- Infrastructure capacity for the Mutasshi activity
- Water catchments to improve agricultural activity
- Potential for alternative energy
- Willingness of communities to participate in planning
- Support through PPP
- Mining (Diamond, coal and quarries)
- Existence of cooperatives
- Opportunities for expansion of the manufacturing industry
- Agriculture potential (agro-processing)
- Accommodation facilities for passer-by's
- Rail network

5.5. DEVELOPMENT CONSTRAINTS

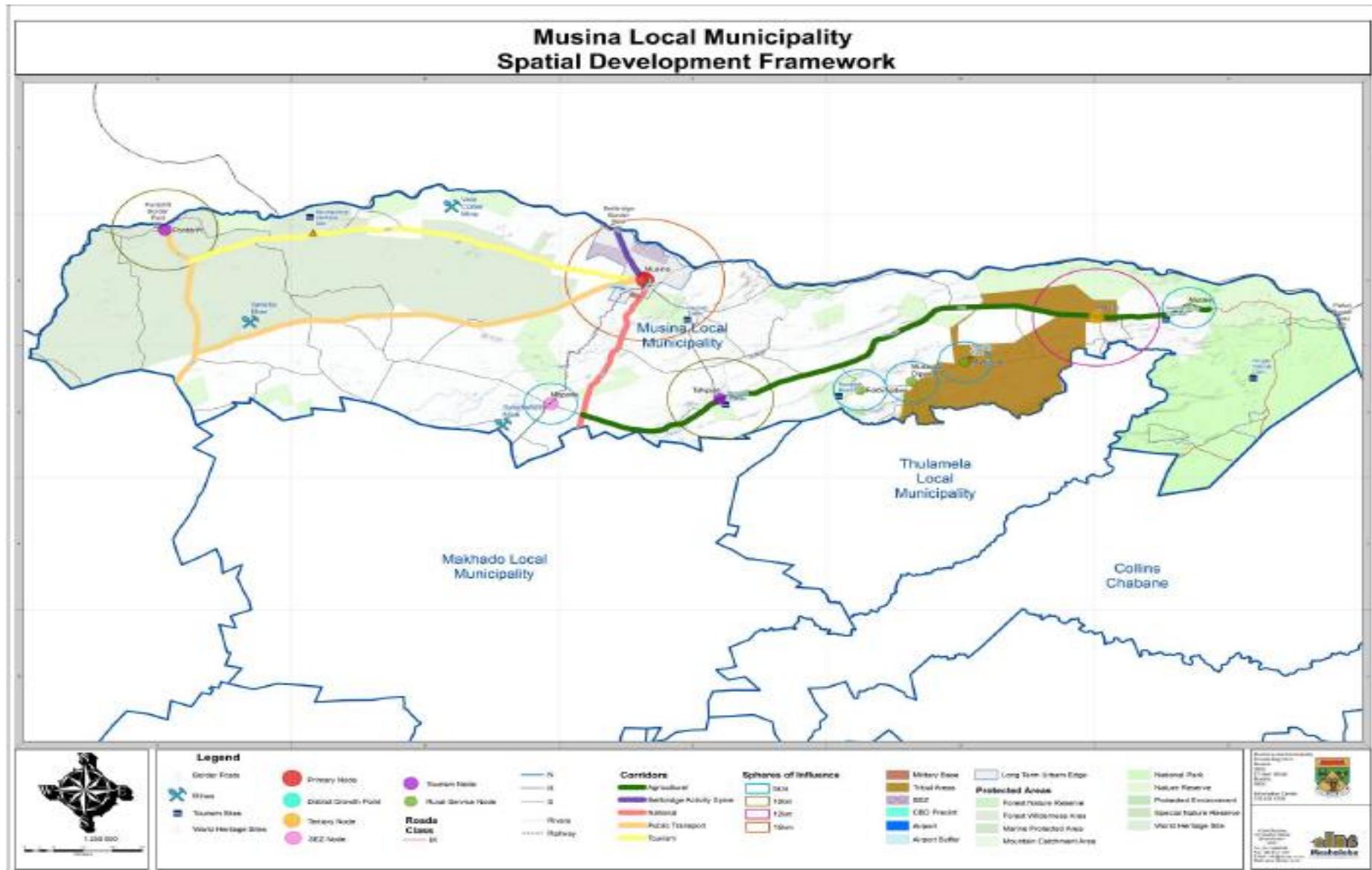
The Limpopo SDF indicates that Musina municipality has a dualistic economy comprising a “commercial” component largely located in Musina (urban area) and “non-commercial” component. Problems encountered in respect of the non-commercial component are:

- The natural resource base and economy do not have the capacity to support the total population, forcing a large percentage of the labour force to seek employment opportunities outside of the municipality
- The low levels of income from the formal sector forced a portion of the population still residing in the area to enter and participate in informal and marginal activities
- The low level of income also implies low levels of buying power and therefore, few opportunities for related activities such as trade. This in turn supports the leakage of buying power since there are fewer local outlets to buy from
- Land claims are a major factor influencing development. A total of approximately 781 920ha (representing 30, 53% of the total area of the Vhembe district) is subject to land claims. The total area of the municipality is 1217 128,69ha and the amount of land claimed is approximately 279 109ha, which comprises more than a third (36%) of the municipality.
- The economic relationship between the settlements in the municipality and Musina CBD are not strong yet
- Employment opportunities in Musina should also benefit people from the other settlements within the municipality
- There is a shortage of job opportunities and job creation in the area
- Established businesses and farmers still prefer to employ immigrants at lower wages
- SMME's need financial assistance to expand their businesses and to promote/advertise their products, and
- There is a lack of finance to pursue farming projects

Priority Issues:

- Trucks in the CBD
- Illegal warehouses in the CBD
- Condition of road infrastructure
- Traffic Congestion in the CBD
- Littering in the CBD
- Lack of public toilets
- Population densities in Nancefield
- Lack of law enforcement:
 - Land use
 - Traffic
 - Police
 - Beit-Bridge Gateway
 - Urban Rural Linkages
- Waste management in rural areas
- Informal trade
- Community development
- Land availability
- Backyard units in dense settlement

6. DEVELOPMENT PROPOSALS



6.1. SUMMARY OF PROPOSALS

The table below is a summary of development proposals, which incorporates priority areas and related action to be taken to enhance the economic growth and development, capitalize on stimulating development to ensure the viability of Musina LM as a gateway that links South Africa with other parts of the SADC region. Apart from strengthening the economy, the enforcement of these proposals can uplift the livelihoods of communities within the Musina LM.

Table 34: Summary of Proposals

PRIORITY AREAS	PROPOSAL	ACTIONS
No Development Zones	Including the Critical Biodiversity Areas (CBA) as protected areas	The inclusion of the CBA's as protected areas will ensure the protection of natural resources by protecting CBA and Protected Areas as No Development Zones.
Musina Central Business District (CBD)	1. Upgrading and revitalization of the Central Business District making it more attractive to both investment and tourism.	1.1. Upgrading, renovation and maintenance of buildings in the Central Business District.
	2. Improvement of the environment in the Central Business District to enable sense of place.	2.1. Creation of public open spaces on the area located adjacent to the railway station and opposite to the Musina Hospital.
	3. Integrated Public Transport Node to be developed on the site of the existing Taxi Rank and adjacent site.	3.1. Upgrading of existing taxi rank and adjacent land into Integrated Public Transport Node where rail, taxi, and bus services interlink. 3.2. Redesigning of the vending stalls within the existing taxi rank to create an illusion of space. This can be achieved by decreasing the taxi rank wall height to increase visibility.
	4. Upgrading of Tourism information centre of Musina	4.1. Upgrading of Tourism Information Centre and the inclusion of a local arts, Indigenous Knowledge systems (heritage) and crafts market with appropriate infrastructure. This will improve the tourism market within the Municipality.
	5. Upgrading of the N1 running through the Central Business District as to control the flow of trucks within the CBD.	5.1. This can be achieved by having stop and go control points on both ends of the CBD. The first control point will be located just before SUPA QUICK on the southern entrance of the CBD while the other control point will be located just before the N1 business centre on the northern entrance of the CBD. 5.2. Between these two control points the middle lane will be strictly reserved for trucks. This middle lane will prohibit trucks from stopping within the CBD. 5.3. Harsh fines for stopping, parking or driving in areas that do not form part of dedicated truck infrastructure. 5.4. Formalisation of the informal truck stop located opposite the N1 Business centre on the northern entrance.

		<p>5.5. While the southern N1 will be occupied mostly by trucks lining up on the control point, Harold Grenfell Street will be used by light motor vehicles as an alternative route to relief traffic congestion.</p> <p>5.6. The incorporation of trade infrastructure at the truck stop location for the promotion of local economic development.</p>
Rural-Urban linkages	<ol style="list-style-type: none"> 1. Rural areas within the Musina Municipal area and other settlement areas such as Madimbo, Folovhodwe, Muswodi and Tshipise should be recognised as important economic contributors of the municipality. 2. These nodes should be strategically reinforced based on their position, role and growth path. 3. These areas should furthermore be integrated via public transport and mobile service delivery. 	<p>Development of Madimbo, Folovhodwe, Muswodi, and Tshipise as local service centre for government services, education and agricultural goods and services.</p> <p>Development Tshipise Resort as a growth point and tourism node.</p>
Pontdrift Border Post (Environmental Management Zone) EMZ	<ol style="list-style-type: none"> 1. The Pontdrift border post is located within a region full of tourist attractions, such as Evangelina, the Great Mapungubwe Transfrontier Conservation Area, the Limpopo River Conservancy and aquaculture in terms of crocodile farming, as well as cultural heritage sites in the Mapungubwe. 2. Skills development initiative are to be directed at local people within the surrounding rural areas being employed in the tourism sector as guides and those with Indigenous Knowledge Systems (IKS) will be beneficial in this regard. 	<ol style="list-style-type: none"> 1.1. This node can be upgraded, developed and promoted as the gateway into Botswana for its scenic surroundings in terms of access and infrastructure. 1.2. This border post should be incorporated into the tourist information centre located in Musina town. 1.3. Trade with respect to tourism products and fresh produce can be facilitated through the development of a market with stalls at the border post. 1.4 The upgrade of infrastructure would improve the livelihoods of the small settlements along the R572 route and the surrounding communities. <p>2.1. Small settlements along the R572 route would benefit from the skills development and improve their livelihoods.</p>
Beit Bridge Border Post	<ol style="list-style-type: none"> 1. Special Economic Zone accommodating various economic activities including transport, logistics, warehousing and offices associated with the gateway position of the Beit-Bridge border post 2. The upgrading and improvement of the Gateway Park Truck Stop to be in line with the long-term objectives of Mutasshi. 3. Mirror development of Gateway Truck Stop across the road to improve efficiency and capacity. 4. Formalization of the existing taxi rank at the border post. 	<p>1.1. Development of warehouses and office blocks related to transport, logistics and warehousing.</p> <p>2.1. In the Beit-Bridge area businesses supporting the goods and services associated with transport and logistics need to be integrated into the Special Economic Zone.</p> <p>3.1. Establishment of offices and services centres for truck companies as well as truck stop. Integration of related businesses to accommodate travellers.</p> <p>4.1. Facilitate small scale trade at the taxi rank by providing infrastructure such as trading stalls.</p>
Musina Mokhado Special Economic Zone	<ol style="list-style-type: none"> 1. Establishment of the Musina Mokhado Special Economic Zone and development of the Special Economic Zone in line with the long-term objectives of Mutasshi. 	<p>1.1. The SEZ location will be situated on Antonville north of Musina town and on Tempelhof farm near Beit Bridge.</p>

	<p>2. Furthermore the Special Economic Zone should include businesses and industries associated with the secondary and tertiary economic sectors of the municipal area.</p>	<p>2.1. Industries in the Musina Mokhado Special Economic Zone should be clustered into three categories, namely logistics, manufacturing and energy. SEZ area will incorporate the existing industrial area and the old mines.</p> <p>2.2. Musina Mokhado Special Economic Zone is to include warehouses, office blocks, industrial buildings and a regional shopping centre.</p> <p>2.3. The existing industrial area will connect the SEZ to the rail and road infrastructure in order to facilitate the transfer of freight between rail and roads.</p>
Limpopo Eco-Industrial Park	<p>1. The Limpopo Eco-Industrial Park will be the first zero solid waste Eco-Industrial Park in the province.</p>	<p>1.1. This eco-park is located on the western side of the SEZ.</p> <p>1.2. The Eco-Industrial Park provides opportunities in areas such as eco-tourism, environmental management, environmental education and training.</p> <p>1.3. The main industrial components of the Limpopo Eco-Industrial Park development are to include a Coke Plant accompanied by a Power Co-Generation Plant and a Gas-to-Liquid Plant.</p> <p>1.4. The development of various facilities within the park including a visitor's centre, an industrial ecology faculty, an entire Eco-tourism area.</p> <p>1.5. The waste generated from these plants combined with the waste generated by the Mutasshi Special Economic Zones will be processed by a Plasma Waste Gasification Plant and a Brick Making Factory. This system will form a closed loop and this process of the chain of industries that benefit from each other is known as Industrial Symbiosis.</p> <p>1.6. The Eco-industrial park shall also integrate solar technologies.</p>
Northern and Southern townships	<p>1. Addressing spatial segregation</p>	<p>1.1. This challenge can be addressed by broader development plans for accessibility, nodal points as well as economic growth points.</p> <p>1.2. The main segregating element is the 'koppie' located between Nancefield and Musina Town. However, the proposed bypass will work as an integrating element as it will expose the Nancefield area to more commuters.</p> <p>1.3. In addition, the development of a mixed land use (Business, commercial, light industry etc.) as an economic growth point in the Nancefield area will improve spatial integration within the Musina area. This growth point should be located on the land parcel where the R572 from Pontdrift and D2692 from Alldays merge in the Nancefield area.</p> <p>1.4 Another growth point recommended for development of a mixed land use (Business, commercial, light industry etc.) in the Nancefield area is the land parcels along the N1 Bypass route from the N1.</p>
Proposed N1 Bypass	<p>1. The N1 Bypass is an existing proposal and is in process of construction.</p> <p>2. In conjunction with the bypass it is proposed that truck stops be accommodate along the Bypass.</p> <p>3. The truck stop on the Nancefield side is to incorporate a market which will provide infrastructure for trade.</p> <p>4. Commercial properties are proposed which will enhance economic activities along the N1 bypass</p>	<p>1.1 The N1 Bypass is to redirect heavy trucks away from the Central Business District.</p> <p>1.2 This will alleviate the pressure on roads infrastructure currently experienced as well as relieve congestion.</p> <p>1.3 The truck stops to be located along the bypass will attract commuters, travellers and truck drivers to boost the economy of Nancefield.</p> <p>1.4 The proposed market to be developed within the truck stop will promote local economic development.</p> <p>1.5 The proposed N1 bypass and truck stop, will work as a buffer between Nancefield and the existing landfill site.</p> <p>1.6 Linkage of the N1 to the Airport or landing strip</p> <p>1.7 Revitalization of the airport</p>

		1.8 Commercial to low density residential development from Mesina Extension 11 to Messina-Nancefield Extension 7
Nancefield	<ol style="list-style-type: none"> Community Residential Units are proposed to cater for the housing need which have increased due to mining employment opportunities and have resulted in the occurrence of backyard shacks. A Land Use Compliance Strategy is proposed to minimise the occurrence of backyard shacks in Nancefield. 	<ol style="list-style-type: none"> In an effort to enhance integration through minimising time travelled to and from work, the development of Community Residential Units will promote efficient, affordable and liveable spaces which are in the proximity of the mines. The proposed Land Use Compliance Strategy will promote compliance to regulated land uses, thus minimise pressure on infrastructure caused by additional households in backyard shacks and act as a risk management strategy.
Musina Airport Revitalization Strategy	<ol style="list-style-type: none"> To stimulate business opportunities in order to uplift the socio-economic status of the people residing near the airport, the Musina Revitalization Strategy is proposed. This will enhance the utilization of the airport, while uplifting the economy and the livelihoods of community surrounding the airport. The proposed development on the airport includes the following: <ul style="list-style-type: none"> Minimal terminal points Administration facilities Ablution Facilities A small restaurant and shops Small Waste Disposal and Recycling Centre A 500m buffer zone is proposed to accommodate the above-mentioned land uses and also keep a reasonable distance to the communities residing adjacent to the airport. 	<ol style="list-style-type: none"> The airport will aid to stimulate economic development, more particularly moving towards Nancefield along the N1 (SEZ). Given the proposed facilities, a proportion of people residing in areas adjacent to the airport may be employed. In an effort to effectively enhance the utilization of this airport, it must be noted that the air traffic volumes may increase. As a result, to limit disturbance which may occur due to aircraft noise for people in neighbouring areas, aircraft noise contours will be applied to monitor on-going aircraft noise emissions.
Masisi	<ol style="list-style-type: none"> The following land uses are proposed to enhance development in Masisi as a municipal growth point: <ul style="list-style-type: none"> Future Mixed Land Use Business which provides the SMME business opportunities (shops, supermarkets, bakery) Revitalization and extension of the Masisi taxi rank Design and provision of informal traders trading stalls Future housing development units (RDP houses) Neighbourhood park with equipment Revitalization of Sports and Recreational Facilities Access Roads Upgrade(paved), taxi stops, road-serves and street lighting 	<ol style="list-style-type: none"> The development of mixed land use development can provide opportunities to mobilize support for the emerging SMMEs as part of a rural development mandate. This will not only facilitate growth, but also uplift the livelihoods of the overall community. Since the Masisi area is already cauterized by various social amenities, the business land uses along the R525 can complement the residential, institutional and the Masisi taxi rank which will also be developed to accommodate informal trader's stalls and benches for commuters. Future Housing development can be constructed in accordance to the RDP standards, with which a portion of land can be earmarked to accommodate 100 sites, with each consisting of 350m². In order to promote sustainable human settlement, a neighbourhood park with equipment can be developed in the proximity of social amenities. Whereas, a sports facility can be developed near the primary school on the north-eastern side of the Masisi area. Access roads can be paved and street lights installed for the purpose of enhancing accessibility and safety in the area.
Folovhodwe	<p>This local service point is characterized by minimal provision of social amenities. As such, the following land uses are proposed:</p> <ul style="list-style-type: none"> Formal Taxi Pick up points facilities along main street 	<ol style="list-style-type: none"> To enhance accessibility through transportation, as the area is currently facing challenges with regards to scholar transportation and taxi pick up points. The main roads can be upgrade (paved) to ensure flexibility of people and public transport; to also provide a link between Folovhodwe and Muswodi Dipene.

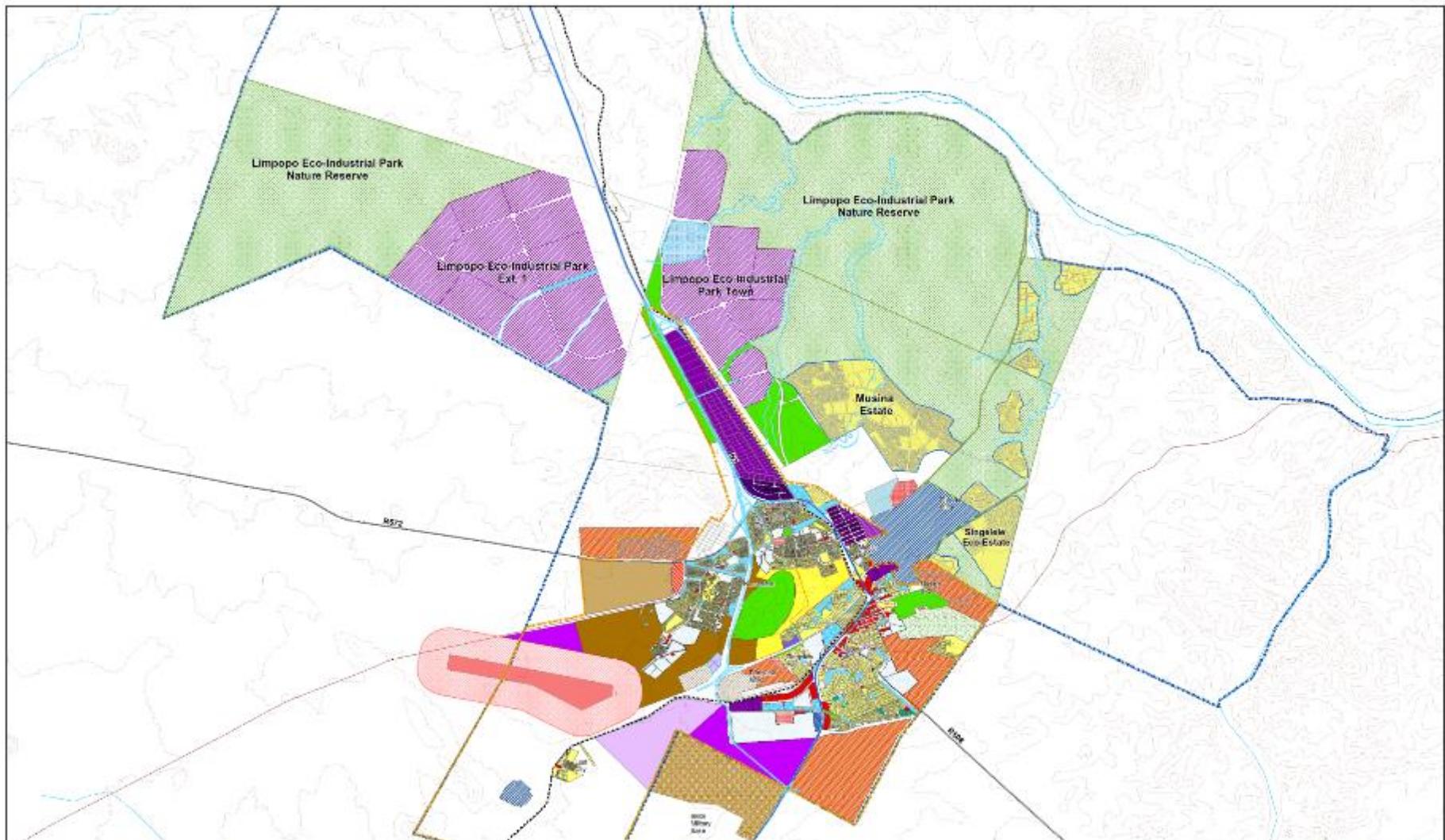
	<ul style="list-style-type: none"> Construction of Access Roads (paved) (Muswodi to Folovhodwe) Landfill site Enhance tourism attraction access through rural road upgrade leading towards Ngwanedi Nature Reserve Mixed Low Business Development (tuck shops and light service industries) along the main street in the proximity of the Folovhodwe Clinic and Primary School. 	<p>1.2 Ngwanedi Nature Reserve is in the vicinity of Folovhodwe, roads upgrade is necessary to further stimulate the tourism sector in the area.</p> <p>1.3 Should the mine in this area be closed down, safety measures should be undertaken in order for the purpose of using the mining site as one of the tourist attraction destinations or mining related opportunities in the area. This can boost the economy of the area, while on the same time providing job opportunities for the local residents.</p> <p>1.4 The development of mixed low order business development can be developed centrally along the main street so as to ensure that economic activities occur in a walkable distance from residential land uses.</p>
Muswodi Dipeni	<p>1. To enhance development in this local service point, the following land uses are proposed:</p> <ul style="list-style-type: none"> Library Secondary School Neighbourhood park Access Roads to Folovhodwe Minimal business developments along the R525 intersection 	<p>1.1 There are already economic activities in Muswodi Dipeni, the proposed business developments can be directed towards the intersection of the R525.</p> <p>1.2 To complement the existing land uses in this area, minor social facilities can be constructed to ensure that the community of Muswodi Dipeni do not travel a long distance to access social facilities. This can be embedded to ensure that communities neighbouring this area also benefit from accesses such facilities.</p> <p>1.3 Minor economic activities can be strengthened in a central location, along the main road where accessibility is easily provided.</p>
Tshipise	<p>1. To enhance development in this local service point, the following land uses are proposed:</p> <ul style="list-style-type: none"> Low Density Residential Multi-Purpose Centre Taxi Pick up Point Business Node 	<p>1.1. The proposed low density residential area will preserve the rural character of the area, while accessibility and employment opportunities will be created through the upgrading of the rural road leading to the R525.</p> <p>1.2. Due to low demand of taxis, taxi pick up points are proposed on the main road where minimal economic activities are proposed, as these activities will be located near the school.</p> <p>1.3. A multi-purpose centre is proposed to bring social services close to the rural community. This will include Sassa pay points, indoor sports facility, etc.</p>
Mopane	<p>Due to land uses surrounding Mopane area (mining activities and a primary school, a tuckshop and minor residential buildings), it is proposed that the area be developed in a sustainable manner through introducing land uses such as commercial developments along the N1, enhancing agricultural activities along the R525, a mobile clinic and residential buildings. Infrastructure development should be a key priority into this area, in order to ensure that the infrastructure accommodates the intensity of the proposed developments.</p>	<p>The development of the Mopane area, will unlock development opportunities for various land uses which can attract investment along the SEZ to Makhado. The Mopane settlement can be developed as a service point which can stimulate growth and development along the N1 and enhance the utilization of the railway system that runs through the settlement for the transportation of coal. It must be noted that all these developments should await the installation of infrastructure services (sewerage system, water services and electrification).</p>

6.2. MUSINA

The map below is a reflection and overview of the proposals for Musina town with the inclusion of the SEZ, Beitbridge and LEIP.

Musina SDF: Proposals For Musina

124.018



Map 25: Musina Composite SDF

6.2.1. MUSINA TOWN

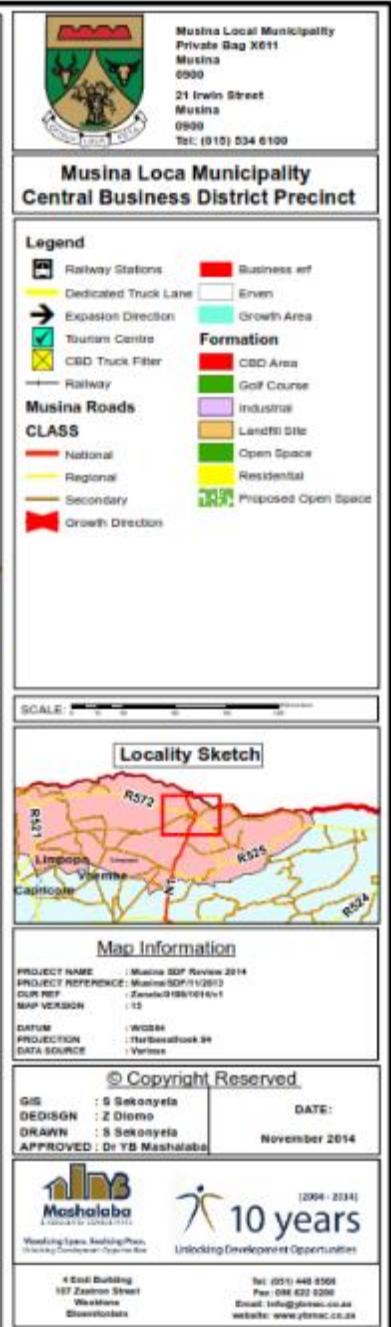
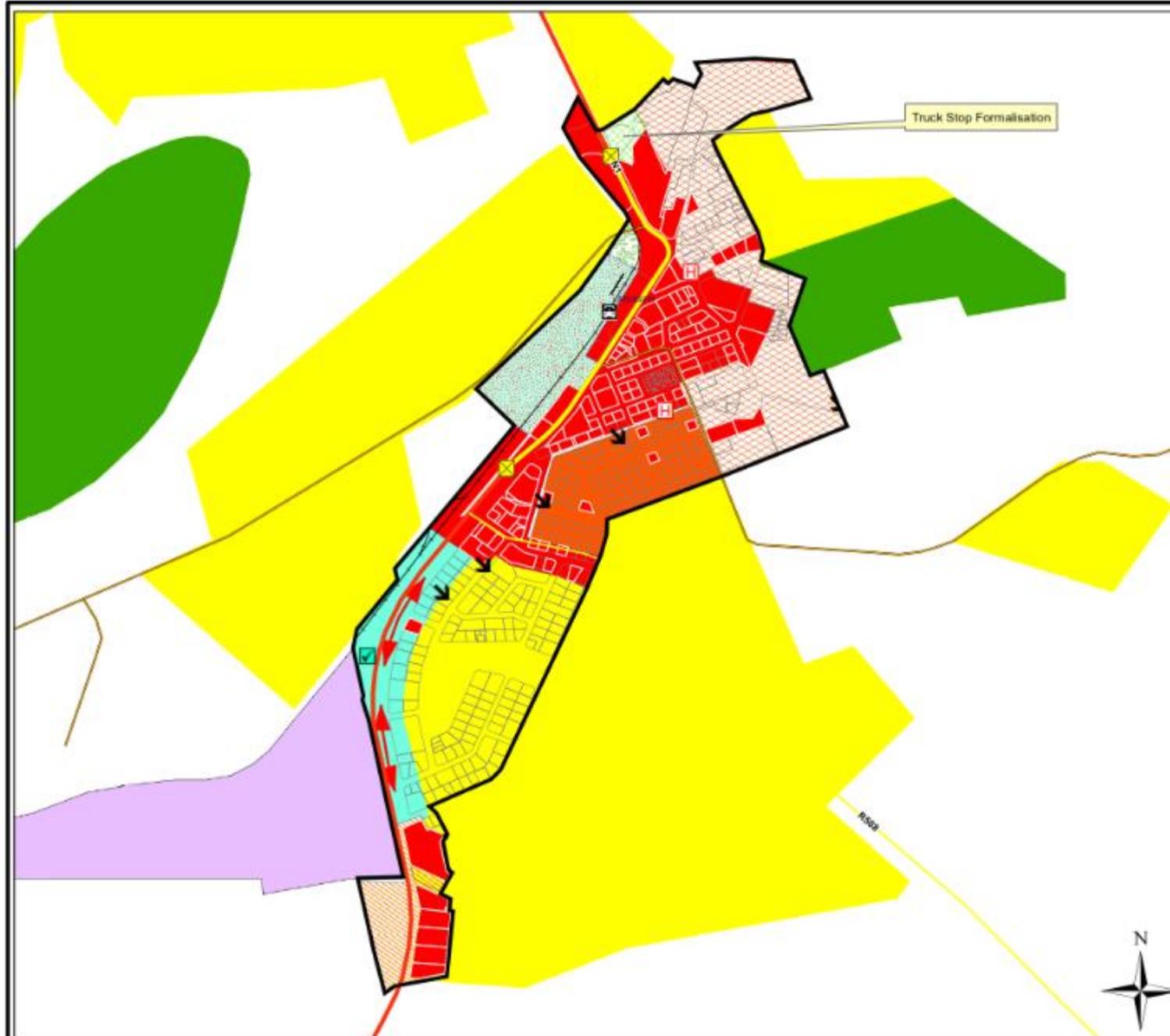
The map below illustrates the proposed Musina CBD precinct plan. The border of the CBD precinct is determined by the current and expected growth direction of activity in the CBD. The CBD precinct area incorporates the CBD node, the northern shopping centre, the taxi rank and the southern business activity node and also the Limpopo Eco-Industrial Park.

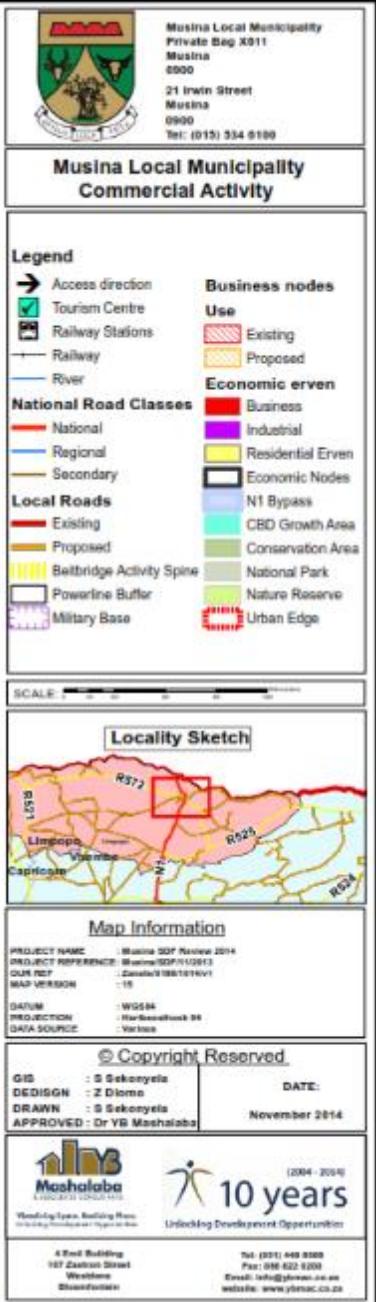
The railway boundary hinders the expansion of the CBD towards the western direction. In addition, the majority of traffic inflow comes from the southern direction of the N1 and along the R508 access route. This results in increased economic activity along the N1 route especially at the R508 intersection and the CBD. The mushrooming business sites along the N1 result in a growth area, thus the CBD and the southern business activity node are future expected to merge.

The dedicated truck lane as indicated in the map below is intended to reduce the congestion within the CBD. The truck lane aims to maintain and monitor truck traffic within the CBD. This approach accommodates truck commuters within the town while retaining control of the flow of traffic as well as reduces traffic congestion.

Within the CBD precinct, better management and monitoring shall improve the business conditions. This can be achieved by:

- Upgrading, renovation and maintenance of buildings in the Central Business District.
- Creation of public open spaces on the area located adjacent to the railway station and opposite to the Musina Hospital.
- Upgrading of existing taxi rank for the facilitation of Integrated Public Transport Node where rail, taxi, and bus services interlink.
- Redesigning of the vending stalls within the existing taxi rank to create more usable space.





Map 27: Commercial Activity

Commercial activity in Musina can be illustrated by the Map above. Secondary to the Business activity is the industrial activity. The Southern industrial node is smaller and limited to coal activity while the northern node is more diverse (light and heavy industrial) and can expand. The North Eastern Industrial site along the N1 will encompass light industrial businesses which will also focus on recycling to complement the Limpopo Eco-Industrial Park in such a way that reduces waste generated within the CBD. Apart from the creation of job opportunities, this opportunity will enhance economic sustainability, while keeping the CBD precinct clean.

Most of the business activities are located along routes that cater to a larger number of people. Based on the geomorphology of the town, marked by the koppie that separated the town and Nancefield, the current and proposed business nodes form a circular shape surrounding the koppie. The proximity between the CBD and the northern shopping centre result in the biggest node that caters for most of the residents. The proposed business node between D2602 and R572 is expected to cater for the large number of residents within the Nancefield areas. In addition, the proposed Fresh market, truck stop centre, business and commercial area located along the proposed N1 bypass, will facilitate residential development between Nancefield and Musina town.

All of these proposals will ultimately have the following success:

- Urban Regeneration;
- Spatial Integration;
- Reduced traffic congestion;
- Mixed land uses;
- Efficient use of land and resources;
- Employment Opportunities;
- Universal accessibility to economic activities; and
- Increased movement patterns between different economic activities (business, industrial and commercial) within the CBD.

6.2.2. MUSINA SETTLEMENTS

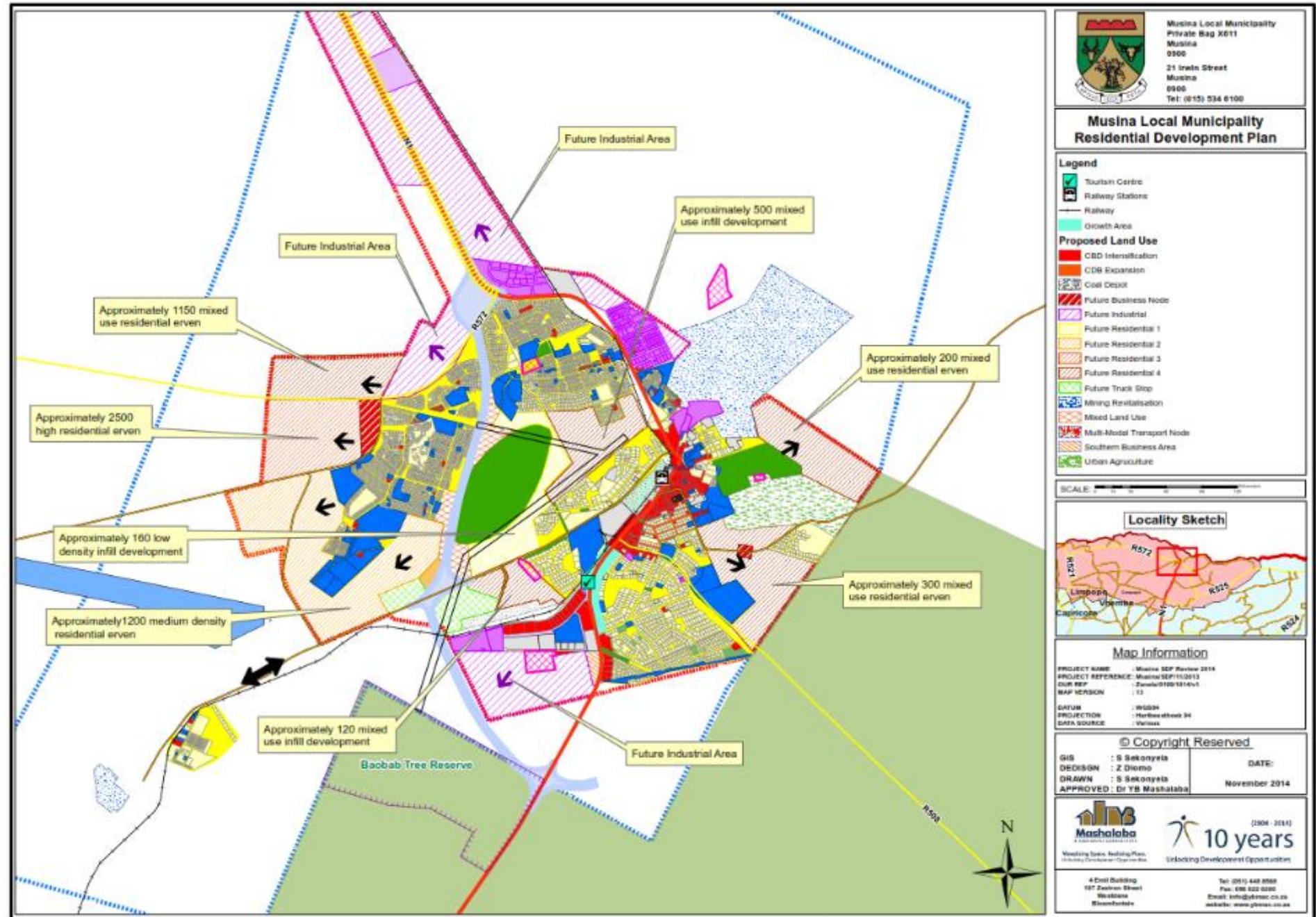
- The main segregating element is the 'koppie' located between Nancefield and Musina Town. However, the proposed bypass will work as an integrating element as it will expose the Nancefield area to more commuters.
- Nancefield is characterized by high population densities and informal business activity.
- In addition, the development of a mixed land use (Business, commercial, light industry etc.) as an economic growth point in the Nancefield area will improve spatial integration within the Musina area and cater to the local communities.

- Future high density residential developments are meant to accommodate the high population around Nancefield. Also refer to the Residential Development Plan below.
- Future mixed use residential are also proposed on the south-eastern side of Musina town to accommodate business premises, as well as residential buildings. The development of mixed use residential is an approach which can be taken to stimulate integration in the Musina area.
- The future residential area proposed on the southern side of Musina town along the eastern side of the N1 are meant to accommodate the middle to high income residents as extension of the current neighbourhood.
- Commercial development is proposed on the southern side of Musina along the western side of the N1.

The table below illustrates the number of residential units that can be developed in Nancefield. Extension 3 has been demarcated for Community Residential Units (Future Residential 3) which will accommodate people earning R3 500 or less. This can reduce the mushrooming of backyard shacks in this area. Portion 39 and Extension 17 in Musina and the Nancefield Extension 11, 13, and 14 can be earmarked for dwelling units of 300m². The construction of this development will reduce the housing demand in this area.

Table 35: Residential Development in Nancefield

Area	Proposed Housing Typology	Size (ha)	Area reserved for amenities and open spaces	Coverage	Number of Units
Extension 3	CRU	6.6ha	2.64ha (40%)	3.9ha (60%)	990 (40m ²)
Extension 11	Dwelling Houses	4.2ha	1.05ha (25%)	3.15ha (75%)	105 (300m ²)
Extension 13	Dwelling Houses	4.5ha	1.13ha (25%)	3.37ha (75%)	112 (300m ²)
Extension 14	Dwelling Houses	4.6ha	1.15ha (25%)	3.45ha (75%)	115 (300m ²)
Extension 17	Dwelling Houses	31.2ha	7.8ha (25%)	23.4ha (75%)	780 (300m ²)
Musina Portion 39	Dwelling Houses	23.5ha	5.88ha (25%)	17.63ha (75%)	587 (300m ²)



6.3. OPEN SPACES AND SOCIAL AMENITIES

All the residential settlements within the Musina Town have a good distribution of open spaces. However, the use thereof is subject to the densities in the areas. In the Nancefield Area, both active and passive public open spaces are poorly managed and therefore result in illegal land uses. The population size within the Nancefield areas also exerts detrimental pressure on the public open spaces. Open Spaces located on the eastern side of the railway and those located in Musina Extension 6-8, resemble characteristics of well managed and thus appropriate land uses. The open space on the corner of 1st Avenue and Maseri Avenue is proposed for Health facilities. Please refer to the map below for a spatial representation.



Musina Local Municipality Open Spaces & Social Amenities

Legend

- Tourism Centre
- Health Facility
- Reservoirs
- Airports
- Railway Stations
- Railway
- River
- Dedicated Truck Lane
- Belbridge Activity Spine
- Powerline Buffer
- Military Base
- Parks
- Institutional uses
- Erven
- N1 Bypass
- Urban Edge

SCALE: 1:25 000



Map Information	
PROJECT NAME:	Musina SDF Review 2014
PROJECT REFERENCE:	MusinaSDF1/2013
DRAWN BY:	Zoë Mabaso
MAP VERSION:	v1
DATUM:	WGS84
PROJECTION:	Merkebeck 94
DATA SOURCE:	Various

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GIS:	S Sekonyela	DATE:
DESIGN:	Z Dlamini	
DRAWN:	S Sekonyela	
APPROVED:	Dr YB Mashalala	November 2014



Map 29: Musina Open spaces and Social Amenities

6.4. REVITALIZING THE MUSINA AIRPORT

The air traffic volumes in Musina airport has been indicated as low to inconsistent. Although the airport is underutilized, the infrastructure is in a good condition. In order to enhance the viability of this airport, the following land uses are proposed:

- Minimal terminal points
- Administration facilities
- Ablution Facilities
- A small restaurant and shops
- Small Waste Disposal and Recycling

The airport will aid to stimulate economic development, more particularly moving towards Nancefield along the N1 (SEZ). Given the proposed facilities, employment opportunities may arise for a proportion of people residing in areas adjacent to the airport. In an effort to effectively stimulate the use of this airport, it must be noted that the air traffic volumes may increase. As a result, to limit disturbance which may occur due to aircraft noise for people in neighbouring areas, aircraft noise contours will be applied to monitor on-going aircraft noise emissions. A 500m noise buffer is proposed in this regard.

Furthermore, to compliment the vitalization of Musina Airport, an agro-processing industry is proposed on the north-western side of the airport. The agro-processing will stimulate the economy of the agricultural and manufacturing sector within Musina LM. The goal of this agro-processing will be to create employment and enhance food security within the municipality.

6.5. INFRASTRUCTURE

6.5.1. BULK WATER SUPPLY

There are two reservoirs found within the Musina Town (Nancefield and Messina), they are Dikkop and Bergview reservoirs. The latter also has a pump station while the other pump station is located close proximity to the old Harper mine. These rivers fall within the Lupele/Nwanedi water scheme area and source their water from the Limpopo River. Shaft 5 of one of the old copper mines has proved to be possible water storage, with an influx of 24 litres per second and an average storage capacity of 800 Mega-litres. The Musina Water Master Plan 2011 indicated that the future water requirements until 2030 are estimated as follows:

Table 36: Estimated water requirements (2030)

Year	Population figures used in the calculation (Low Growth)	Population figures used in the calculation (High Growth)	Water Requirements (Low Growth) Million m ³ /a	Water Requirements (High Growth) Million m ³ /a
Actual (1)	23,914	23,914	5.365	5.365
2010	24,216	24,322	5.613	5.684
2015	24,831	25,154	5.999	6.208
2020	25,634	26,526	6.636	7.012

2025	26,203	27,684	6.969	7.515
2030	26,505	28,579	7.036	7.741

Source: Musina Water Master Plan (2011)

The population base of 2007 to make 2030 estimates, the Musina Water Master Plan 2011 indicated that the long-term water requirements for Musina Area will increase to 7.741 million m³/annum (21.194 ml/day, 742 l/c/d) in 2030 for the high growth scenarios. Whereas the short-term requirements, which can be for the year 2020 is expected to have an increase of 7.012741 million m³/annum in high population growth scenario. Furthermore, the Musina Water Master Plan 2011 indicated that the Limpopo River is the main water supply throughout the Musina area, the river is sustainable as the river basin complying with the international agreements with Botswana.

6.5.2. SEWERAGE

There are two waste water treatment works in Musina Town, one is located in the north while the other is located in the southern side of Musina Town. In addition, there are two oxidation ponds, which cater for smaller communities' due to their purification limitations. However, these oxidation ponds reduce purification pressure on the bigger waste water treatment works. The capacity of the Southern sewerage treatment works was at a maximum of 800 kl/day before upgrading, while the Northern sewerage treatment works has a maximum 2600 kl/day with a possible increase of up to 4000 kl/day after upgrade. The current condition and maintenance of the waste water treatment works is sufficient to handle the Musina sewerage.

6.5.3. CEMETERIES

Musina Town has five official cemeteries. These are namely the Bergview, Musina, Messina, Nancefield cemeteries and the cemetery located close to the old mines. All of these cemeteries are functional and in operation. The sixth cemetery is located in Messina-Nancefield X1 but it does not satisfy the community needs.

6.5.4. SOLID WASTE DISPOSAL

The current location of the existing landfill site is limited to 3 years, after which the Musina Local Municipality shall identify a new landfill site. This is attributed by the fact that the land fill is in close proximity to residential properties and the proposed N1 bypass will cut through the landfill site.

6.5.5. ELECTRICITY

Eskom supplies 15MVA to Musina Town and its surrounding areas. Although this capacity caters for all of Musina's electricity needs and also taking into account the proposed nodes, a higher MVA supply is required in order to accommodate increasing industries and residential future expansions. The Limpopo Integrated Infrastructure Master Plan (2017) indicated that the Eskom Development plans includes a power network comprising of 400kV MTS

in Nzhelele for the year 2021, which will be reinforced to serve the economic nodes in Musina and other neighbouring municipalities within the Vhembe District. Enhancing electrification in Musina is part of the NDP's request which was made in 2014 and received in 03/03/2017 Electrical infrastructure, such as the switchgear and substation that need upgrading.

6.5.6. ROADS

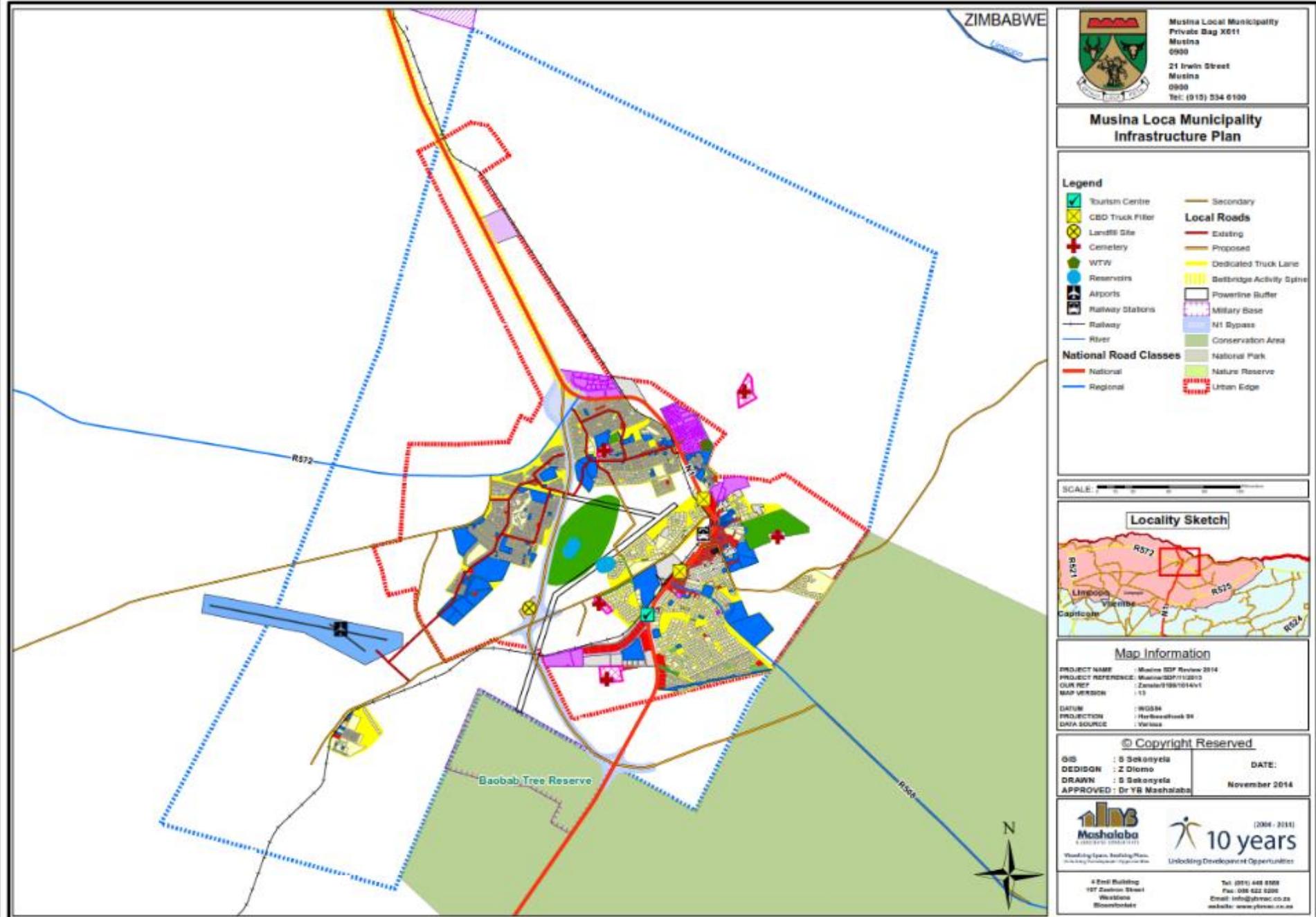
The Limpopo Integrated Infrastructure Master Plan (2017) indicated that there are already plans in place for road upgrades in Musina LM. This includes:

- Road widening (1 additional lane) on the N1 on the section between Makhado and the R525 junction in Musina in the year 2030 and 1 additional lane on the R525 in the year 2050.

In addition, the following upgrades / new roads are also proposed:

- The road connecting Folovhodwe, Muswodi, Tshipise and Mutele with Masisi (D1724, D3675 and D3758)
- The proposed corridors (R521, R572, R525, R508, the public transportation corridor passing the Vele mine to Musina (D2692)
- The proposed upgrades as per the Infrastructure map below
- General upkeep of the Musina town and Nancefield's internal roads

The proposed upgrades and new roads will enable the access and flow within the municipality while also attracting investment.



Map 30: Musina - Infrastructure Plan

6.6. MASISI SETTLEMENT

The Masisi Settlements precinct plan below comprise of various social amenities such as community hall, clinic, department of home affairs, police station, Primary School and an unutilized taxi rank. Although Masisi is more of a service node, to stimulate the settlement's growth, the economy of this settlement needs to be improved. Already, the settlement comprises of minor business activities occurring along the R525. As such, future business development is proposed on the vacant land on the western side and eastern side of the R525, as the area is centrally located. With the business node being proposed, other land uses which can complement it are outlined hereunder:

- Future Mixed Land Use Business which provides the SMME business opportunities (shops, supermarkets, bakery)
- Revitalization and extension of the Masisi taxi rank
- Design and provision of informal traders trading stalls
- Future housing development units (RDP houses)
- Neighborhood park with equipment
- Revitalization of Sports and Recreational Facilities
- Access Roads Upgrade(paved), taxi stops, road-serves and street lighting

Table 37: Density Requirements for Masisi

Settlement Area (m ²)	Area excluding streets and amenities at average of 25% (m ²)	Maximum number of stand (average stand = 350m ²)
46 665	34 998.75	100

The map below illustrates the development proposal for Masisi precinct area.

Musina SDF: Proposal For Masisi



Legend Roads

- M
- N
- R
- S

- Rivers
- Social Amenities

- Contours
- Sub Places
- Cadastral

Land Use

	Future Residential
	Residential 1
	Future Business
	SMMEs Development
	Agricultural Activity



Map 31: Proposal for Masisi

6.7. BORDER POSTS

6.7.1. PONDRIFT BORDER POST

The Pontdrift border post serves as a tourism and conservation node within the municipal area. It can be characterized by:

- Environmental Management Zone based on the Greater Mapungubwe Nature Reserve.
- This node can be upgraded, developed and promoted as the gateway into Botswana for its scenic surroundings.
- This border post should be incorporated into the tourist information centre located in Musina town.
- Trade with respect to tourism products and fresh produce can be facilitated through the development of a market with stalls at the border post.
- Upgrading and development of this node will also service the tourists, small settlements and surrounding communities.
- Small settlements along the R572 route would benefit from the skills development and improve their livelihoods.

Fostering this border post and its surrounding areas as a tourism and conservation node shall preserve the natural scenic area as well as cater for the tourism market.

6.7.2. BEIT BRIDGE BORDER POST

Beit Bridge serves as the main access point for masses of populations and freight from northern Africa. Given the busy activity of both people and freight along the N1 route, there is unmatched immigration and customs control present at the border post. As a result, crime dominants and illegal immigrants as well as unauthorized freight leaks in or out of the country unnoticed. The border post operates 24 hours and has an average of 10 000-12 000 passengers per day crossing the bridge.

Therefore, infrastructure and service provision upgrades need to be aggravated at this border post. These may include;

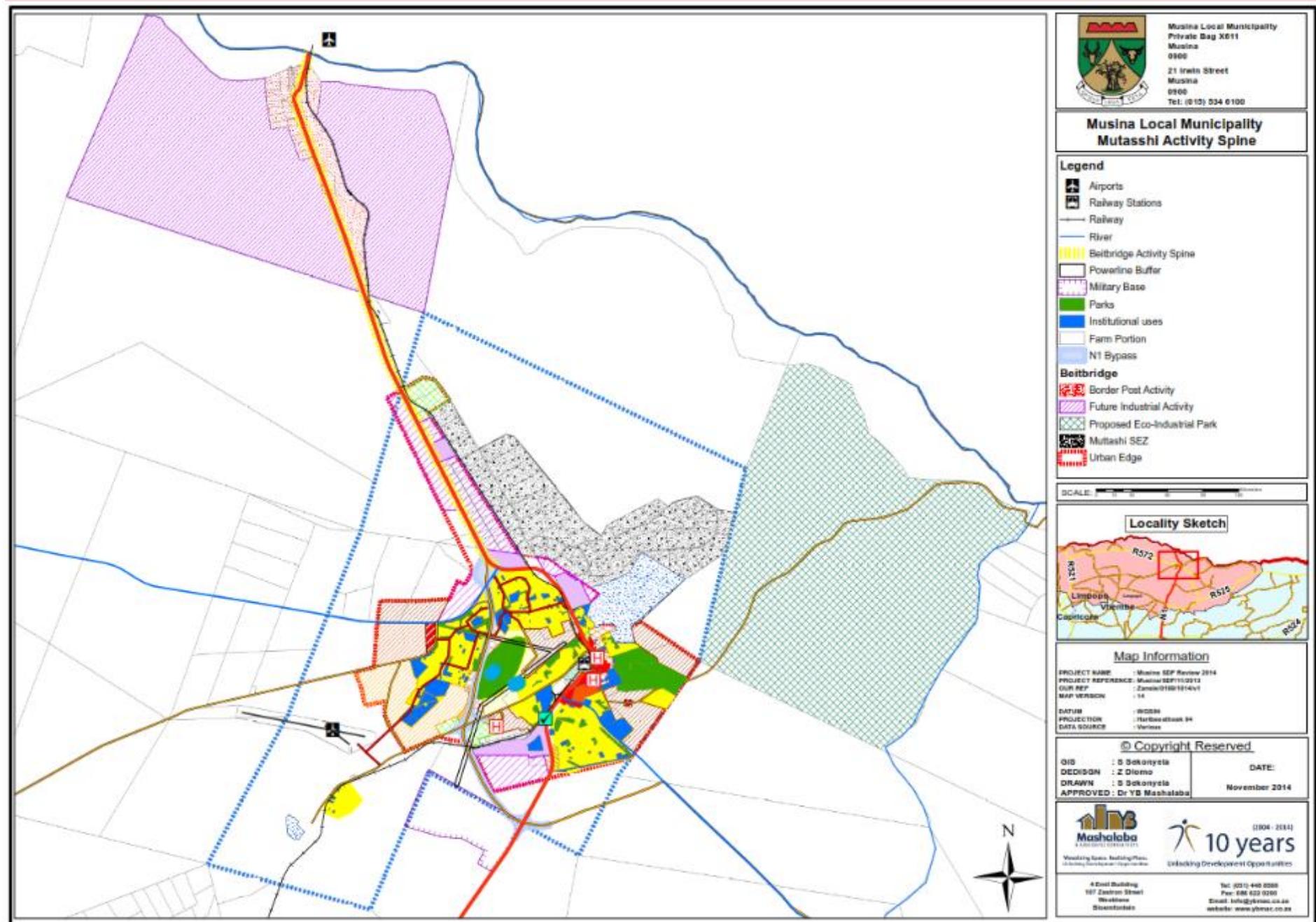
- Upgrading and improvement of the Gateway Park Truck Stop
- Mirror development of Gateway Truck Stop across the road to improve efficiency and capacity
- Upgrading and expansion of security, access control, immigration and customs services.
- Formalization of the existing taxi rank at the border post.
- In addition, this border post forms part of the Muttashi activity spine. With the successful development of the Muttashi, it is expected that the economy of the municipality will increase drastically.

6.7.3. PAFURI BORDER POST

Although this border gate is small in comparison to the border posts in Musina LM (Pont Drift and Beitbridge), Pafuri border post is the link between South Africa and Mozambique which can be accessed via the R525. Additionally, this border can be accessed from the Kruger National Park, which makes it a necessity to enhance the tourism activities in this border. According to the *Pafuri Border Post Gate Control Report*, the traffic volumes for September 2017 consisted of 460 vehicles as well as 1 529 people crossing the border to Mozambique. As a result, infrastructure and service provision needs to be intensified in this border. This may include:

- Upgrading and improvement of access roads to enhance capacity to accommodate proposed tourist facilities surrounding the border; and
- Upgrading of safety and security measures, documentation, provision of tour guides and monitoring of tourist and the general public crossing of the border.

6.8. MUTTASHI ACTIVITY SPINE



Map 32: Muttashi Activity Spine

The directive of the Mutasshi initiative is to mirror the development on the Zimbabwean side and the objectives include:

- The development of a sustainable flagship low carbon city which will act as a replicable model that helps the poor to become economically prosperous and act as an anchor for regional economic development.
- A foundation for unparalleled freedom of trade and movement.
- A recreational centre proving recreational, cultural, sports and shopping facilities.
- The development of an e-Commerce logistics hub directed at positioning as the best of Africa.
- The establishment of an economic and empowerment incubator serving specifically previously disadvantaged people by creating employment, stimulating industrial growth opportunities, promoting local agriculture and proving a platform from which agricultural produce produced locally and regionally can be sold and exported to the rest of Africa and other international marketplaces.

The focus area of the Musina to Africa Strategic Hub Supplier Initiative (Mutasshi) is largely directed at the activity corridor the town of Musina and the Beit-Bridge Border Post. It is proposed that this initiative be expanded to go beyond the function of a logistics hub and include special economic zones which are strategically located. Proposals that have been drafted with regard to this include the Beit-Bridge Gateway Economic Zone and the Musina Makhado Special Economic Zone. The development, strengthening and reinforcement of these nodes are to constitute the more short-term objective directed at achieving the long-term objective of the Mutasshi.

The proposed Mutasshi development is to include but not be limited to the following:

- Regional Shopping Centre:
 - 75 000m²
 - R849 million
- 10 unit warehouses
 - 5 000m² each
 - R341 million
- Double Storey Office Blocks
 - 4 000m² each
 - R412 million
- 10 Industrial Buildings
 - 4 000m² each
 - R272 million

6.8.1. MUSINA MOKHADO SPECIAL ECONOMIC ZONE (SEZ)

The Musina Makhado SEZ is located in the Vhembe district in Limpopo. An SEZ is understood to be a national development tool aiming to develop the economic growth of the country through governmental support measures in order to attract Future Development Initiatives. The SEZ is part of the Trans Limpopo Spatial Development Initiative making Musina the main trade route between South Africa, Mozambique (Limpopo Mirror, 2017), Zimbabwe and Botswana. An Industrial Park is expected to be established within the Musina Makhado Special Economic Zone and is expected to create over

21000 jobs over 10 years. An operating permit was issued for the Musina Makhado SEZ on the 18th of September 2017 by the Minister of Trade and Industry to South African Energy Metallurgical Base, a subsidiary of Chinese Conglomerate Shenzhen Hoi Mor Resources (Limpopo Mirror,2017). The development will ensure expansion of manufacturing, mineral beneficiation and creation of employment in the region which has high levels of poverty, unemployment and underdevelopment. Two (2) development sites have been noted, the Mopane 8000ha site and the 3250ha Musina site close to the Zimbabwe border. More focus is being placed on the Mopane site due to the investor's interests in the area. This SEZ programme will have a positive impact on Mopane and it will help with the growth of Musina town. It will change the economic landscape of Musina and Makhado by creating business and employment opportunities for the people of the Vhembe district. It will also extend the benefits the SADC countries such as Botswana, Zimbabwe, Mozambique etc. The economy of Musina town will then grow as it is the point of entry from the SADC countries. The properties that are identified as SEZs in Musina LM include the following farms:

- Antrobus Portion 2 566 MS
- Steenbok 565 MS
- Dreyer 526 MS
- Van der Bjal 528 MS and
- Battle 586 MS

The energy and metallurgical cluster within the Musina Makhado Special Economic Zone entered the implementation phase for the Limpopo Eco-Industrial Park and is expected to produce high grade steel for domestic and export consumption, manufacturing capacity consisting of power, cooking, pig iron, steel, stainless steel, lime plants and supporting facilities (Business Day, 2017).

6.8.2. LIMPOPO ECO-INDUSTRIAL PARK

The Eco-Industrial Park provides additional opportunities in areas such as eco-tourism, environmental management, environmental education and training. In order to support the development of these opportunities, the Limpopo Eco-Industrial Park will house various facilities such as a Visitor's Centre, an Industrial Ecology Faculty, an entire Eco-Tourism area and Training Facilities. An important initiative that has been proposed for the Limpopo Eco-Industrial Park is a Business Incubator. This facility will be set up to provide opportunities and support for Small, Medium and Micro Enterprises (SMMEs). This incubator is to promote local economic development and promote the entrepreneurial spirit.

The Limpopo Eco-Industrial Park will result in a substantial economic injection for the province. It is projected that the project will bring in more than ± R16.4 billion during the construction phase and a further ± R10.3 billion annually during the operational phase. The project also holds some socio-economic benefits. It is projected that the project will be responsible for the creation of approximately 80,000 jobs during the construction phase and 70,000 direct and indirect jobs during the operational phase. The jobs created during the operational phase are to include employment generated

by associated down-stream and side-stream businesses. Furthermore, the project will also be developing a permanent serviced housing facility consisting of at least 1,500 units. This housing facility will initially provide for the accommodation of construction workers and after completion of construction the housing development will be upgraded and handed over to the Musina Municipality. The two extensions were approved during 2015 and was surveyed during 2016. The two residential townships were approved during 2016 and was surveyed early 2017. Approval of the water licence from the Department of Water Affairs (DWA) is at an advanced stage while funding is currently secured.

According to the Map below, the LEIP township & Extension 1 will consist of a total of 46 erven of zonings consisting of Industrial 2, Private open spaces, Transport facilities, Game Reserve, Private roads and streets. The Musina Estate consists of a total of 2656 erven that will consist of Residential 1 and 2, Business 1, Institutional, Educational, Municipal, Private open spaces and roads. The Singelele Eco-Estate will consist of Residential 1 and 2, Business, Education, Institutional, Private open spaces, Game reserve, private roads and 50 proposed chalets with private open space and related facilities. As it is a major project, it will be implemented in phases.

Although the Limpopo Eco-Industrial Park is an existing initiative, it is proposed that more be done to get the initiative off the ground. This development is to make a substantial contribution to the local and provincial economy. Furthermore, the initiative will create much needed employment opportunities and support skills development in the area. It is also proposed that this development should integrate solar technologies into the planned infrastructure while it also has the potential to impact on the issues associated with waste management in the municipality. The Limpopo Eco-Industrial Park also has its own dedicated webpage with the relevant information in terms of projects and socio-economic benefits.



Map 33: Limpopo Eco-Industrial Park

Source: Pieterse Du Toit & Associate (Pty) Ltd

6.8.3. BEIT BRIDGE GATEWAY ECONOMIC ZONE

The Beit-Bridge Border Post is quite similar to the case of the Niagara Gateway Economic Zone. In the Niagara case, the zone was identified due to its strategic location and its implications for cross-border trade and growth in the region. The planning and economic development in the Gateway Economic Zone was directed at the support of economic diversity and promotion of increased opportunities for cross-border trade, the movement of goods and tourism as discussed under the border post section.

At present, infrastructure in this area includes the Beit-Bridge South African Border Post, the Gateway Truck Stop, the Shell Select Border Service Station and the Beit-Bridge Traffic Control Centre. Additional land adjacent to the border post is in the process of being acquired. This land includes the Lee Family Holdings and Tempelhof.

6.9. URBAN-RURAL LINKAGES AND GROWTH POINTS

Musina town is complemented by other settlements within the municipal area. This section illustrates how the various settlements complement each other and can contribute to the economy of the municipality. The key focus will however focus on Madimbo, Tshipise Resort, Folovhodwe and Muswodi linkage. It must be noted that, all the proposed developments for the identified growth points should be facilitated upon the provision of bulk infrastructure. The successful implementation of development proposals depends on the capacity of infrastructure to handle such intensification. Additionally, business developments should be carried out in a manner which accommodates the income levels of the population of the identified growth points and its surrounds. Future residential, business and commercial developments are encouraged, most particularly for the enhancement of the Makhado-Musina SEZ, however, the importance of infrastructure provision and employment opportunities should be at the forefront of planning for local service points, without infringing rapidly on the rural character of the identified local service growths. Ultimately, this can lead to reduction of unemployment, investment attraction as well as the overall improvement of the live hoods of the rural community.

6.9.1. TSHIPISE RESORT GROWTH POINT

Tshipise is dominated by quarrying and other mining, tourism and agricultural activity. Agricultural activity stretches from Tshipise along the R525 to Madimbo and towards Feeskraal. In addition, the Tshipise Resort is a favourite tourism destination amongst tourists. Tshipise as the closer node to the N1, can serve as the service point for the local produce to be transported to any parts of the continent. This node is linked to all the major access routes which are used regularly within the Musina Local Municipality. The R525 towards the eastern direction connects this node to the rural villages and continues the western direction to where it connects to the N1. Furthermore, the R508 which links up to the N1 within Musina, is an alternative route used by freight and commuters traveling from the eastern side to Musina.

6.9.2. MADIMBO SERVICE POINT

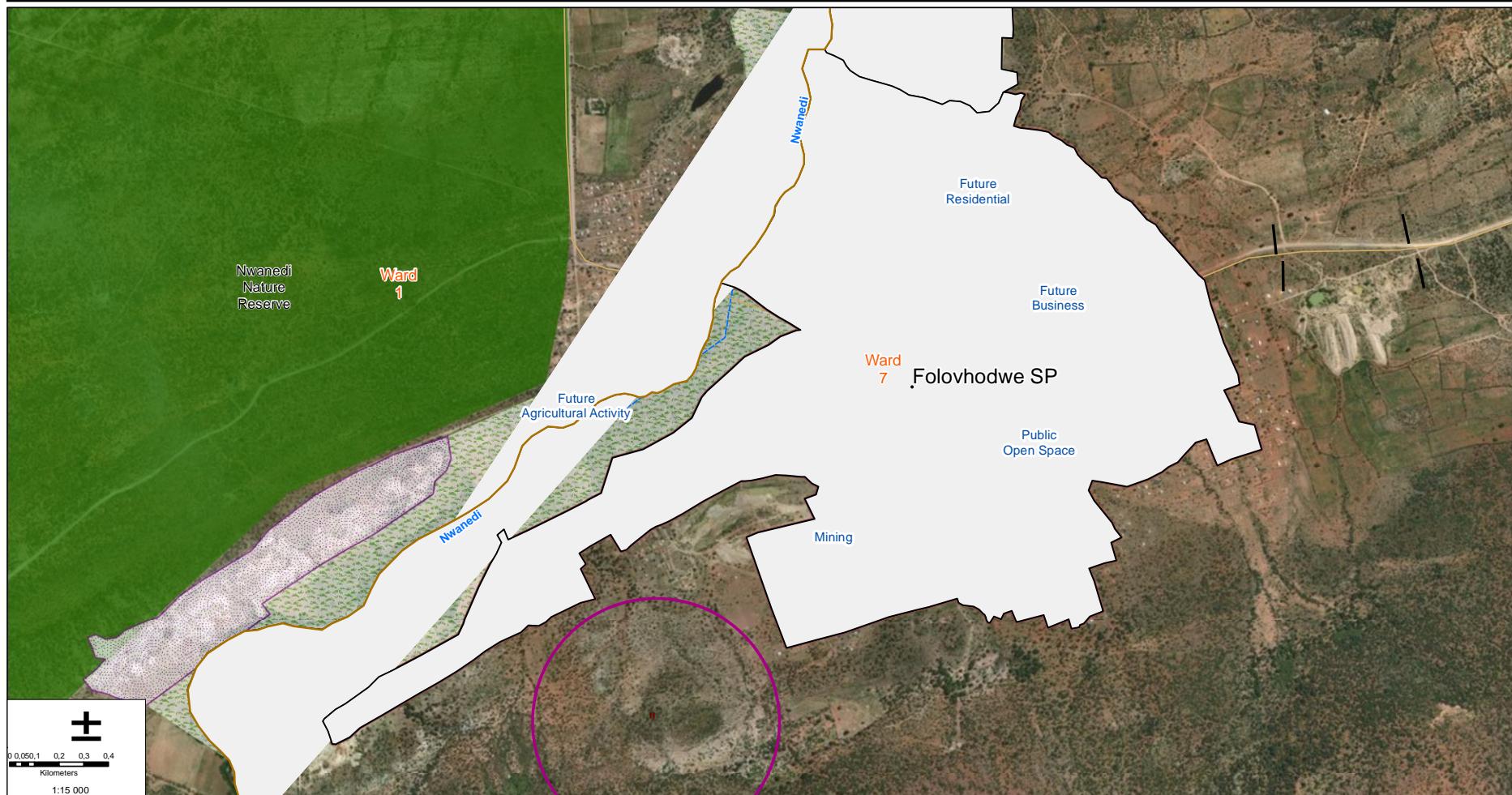
Characterised by clinic, high school, municipal offices, SASSA services, agricultural training facilities etc. to cater for eastern rural settlements, Madimbo could serve as an efficient rural service point. With its anticipated growth and the formalisation of existing erven and new township establishments, Madimbo has a potential of growing property markets and lure services for the local residents. The successful expansion of this rural area can reduce the distance travelled to Musina Town. Although most of the residents earn their living through farming, formalisation of erven and registering new townships will improve the economic status of the area. One also passes through Madimbo on route to the Sagole Big Tree that is known as the largest baobab tree in South Africa.

6.9.3. FOLOVHODWE LOCAL SERVICE POINT

Folovhodwe is characterised by a clinic, Primary School and is located near Ngwanedi Nature Reserve which accommodates tourism attraction in the area. Agricultural activities play a major role in the village, as well as mining. Mutale SDF indicated that Eskom has already planned 196 connections for the value of R 3,806,067. The following land uses are proposed for future developments in the area. (Refer to map below)

- Formal Taxi Pick up points facilities along main street;
- Construction of access roads (paved) (Folovhodwe to Muswodi);
- Landfill site;
- Mixed Low Business Development (tuck shops and light service industries) along the main street in the proximity of the Folovhodwe Clinic and Primary School.
- Rehabilitation of the old mine dumps and use them for recreational parks

Musina SDF: Folovhodwe Proposals



Legend

Growth Direction
\ Legal Waste Disposal Site
\ Wards
--- Rivers
--- Sub Places
--- Folovhodwe Subplace
--- Streets
--- Waste Disposal 500 m Buffer



Musina Boundary

Land Use

\ Future Residential
\ Mining
\ Future Agricultural Activity
\ Public Open Space
\ Future Business
\ Protected Area

Musina Local Municipality
 Private Bag X611
 Musina
 0900
 21 Irwin Street
 Musina
 0900
 Information Center:
 015 534 6100



10 years
 Musina Local Municipality
 4 Emilia Building
 107 Zastron Street
 Bloemfontein
 9900
 Tel: 051 418 1888
 Fax: 051 418 1907
 E-Mail: info@bmac.co.za
 Web: www.bmac.co.za

Map 34: Folovhodwe Proposals

6.9.4. MUSWODI DIPENI LOCAL SERVICE POINT

Muswodi Dipeni has been declared as a local service point which serve the local community. This area is characterised by minor economic activities such as super markets and churches. The main road running from Folovhodwe through Muswodi towards Tshipise is also one of the access roads to the Sagole Big Tree (just before Tshipise). Land Uses which are proposed to compliment this area are outlined hereunder (Refer to the Muswodi map):

- Library
- Secondary School
- Neighbourhood park
- Access Roads from Folovhodwe through Muswodi towards Tshipise)
- Minimal business developments and commercial developments along the R525 intersection
- Formalization of the existing residential in collaboration with the traditional authorities.

These activities will stimulate growth and development in the Muswodi Dipeni are and also serve the community of adjacent rural areas such as Folovhodwe.

6.9.5. TSHIPISE LOCAL SERVICE POINT

Tshipise has been declared as a local service point which is characterised by a school, residential land uses and district municipal offices. Land Uses which are proposed to strengthen this area to serve the local community includes:

- Rural Roads Upgrade to create accessibility for freight and public transport to Musina Town
- Taxi Pick Up point
- Multi-Purpose Centre
- Minor Business Node
- Revitalization of the Hot Spring Spar to a tourism node

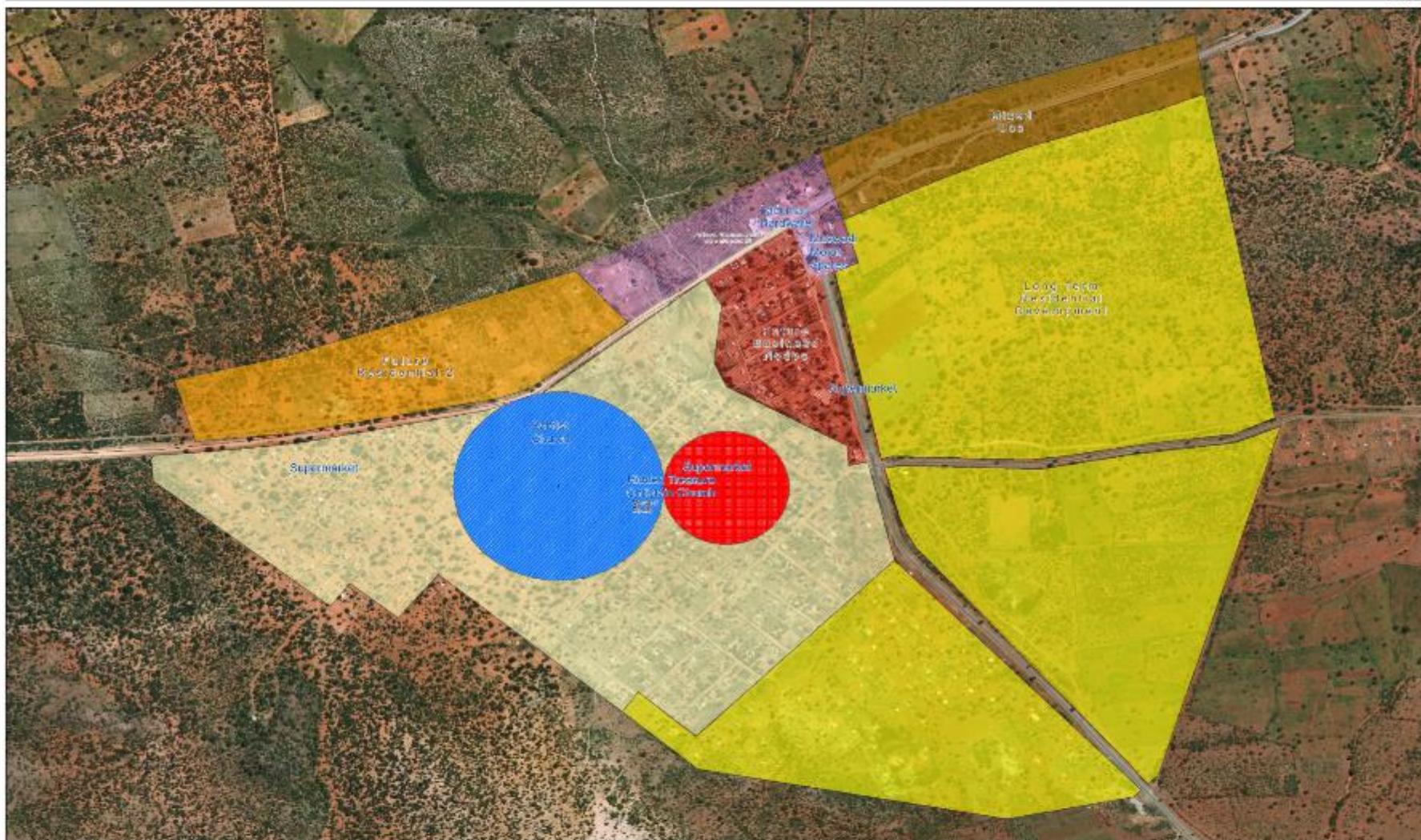
6.9.6. MOPANE LOCAL SERVICE POINT

Although this settlement is not characterised by a variety of land uses, development can be enhanced through the stimulation of various business land uses along the N1. It is also located in close proximity of an SEZ. This can include:

- Agricultural Activities along the R525, moving towards the N1;
- The railway system be utilized as a transportation mode for coal for the Mopane Mine;
- Upgrading the railway station to be a drop over & pick up for agricultural goods;

- Auction station for livestock;
- Commercial Development, business premises and a Public Garage along the N1; and
- A mobile clinic which can cater for the population of the settlement.

Musina SDF: Proposals For Muswodi



Legend

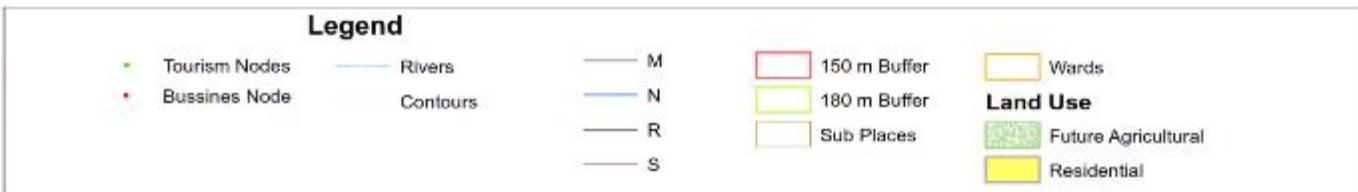
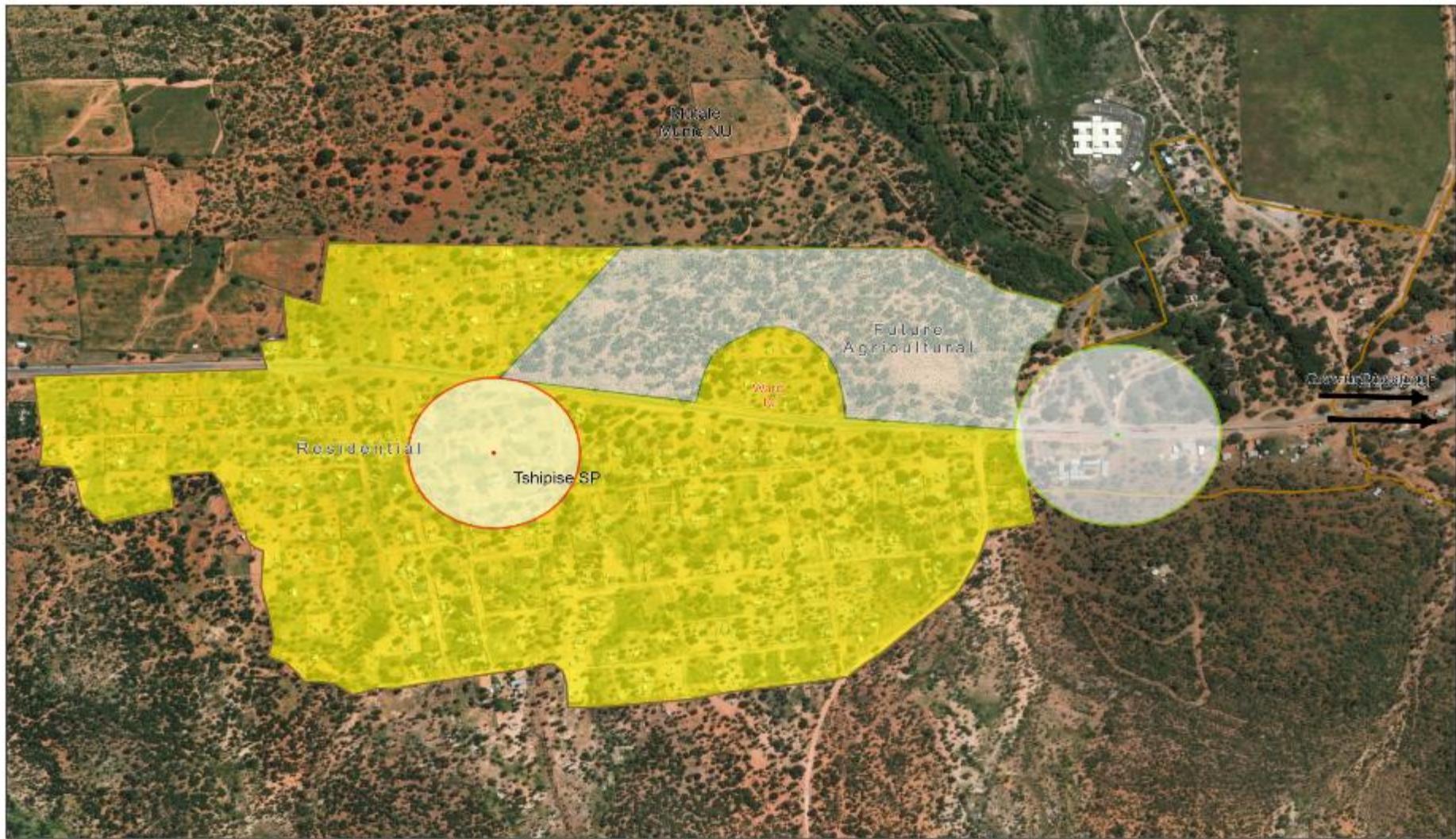
The legend is divided into two main sections. The top section, titled 'Land Use', includes 'Roads' (blue line), 'Contours' (black line), 'Future Commercial Development' (purple box), 'Future Residential 2' (orange box), 'Mixed Use' (brown box), 'Residential' (yellow box), and 'Social Amenities' (blue box). The bottom section, titled 'Development Types', includes 'Future Business Nodes' (red box), 'Long Term Residential Development' (light yellow box), and 'Business Development' (red box).



Map 35: Muswodi Proposals

Musina SDF: Proposal For Tshipise

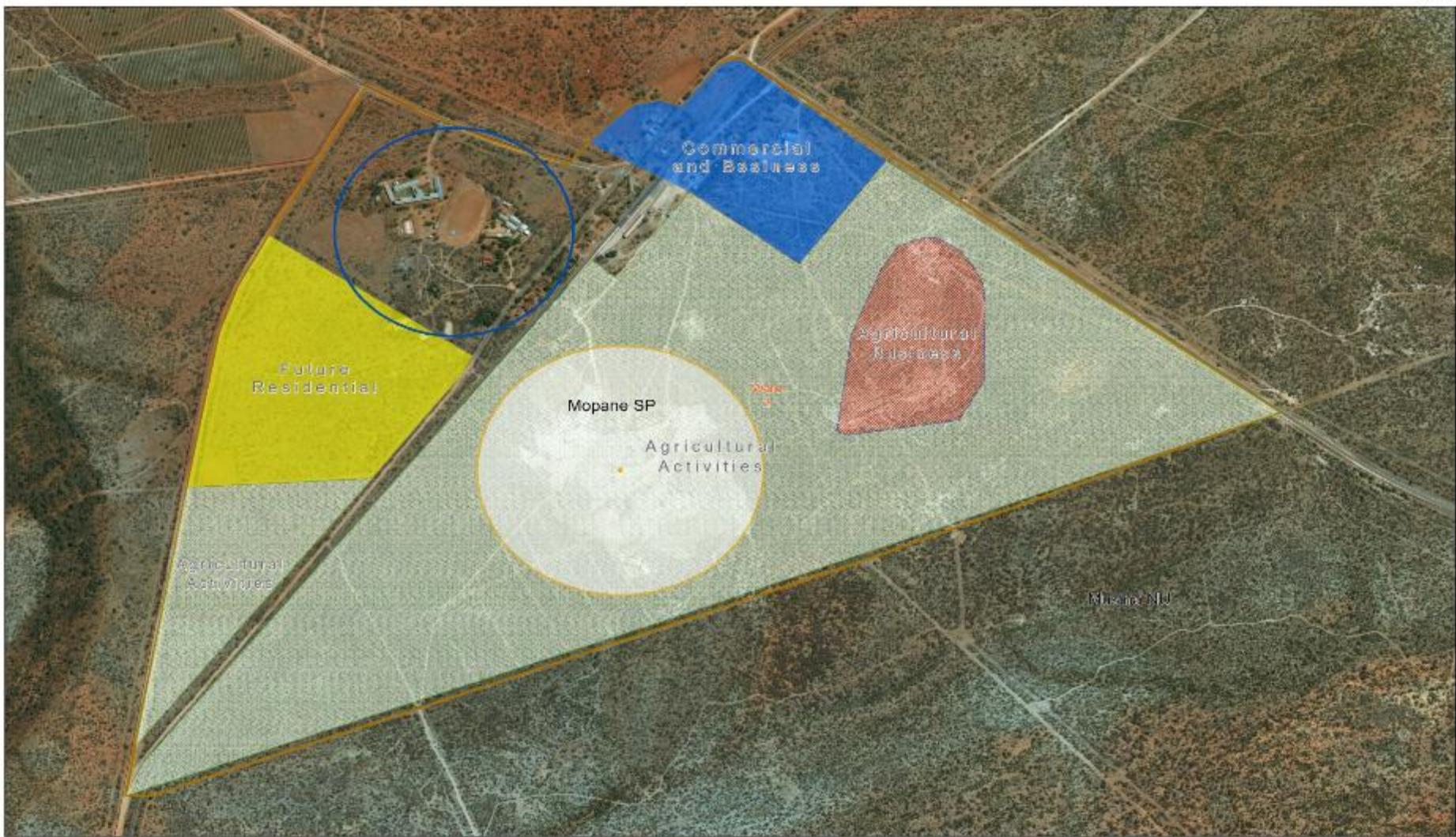
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Map 36: Tshipise Proposals

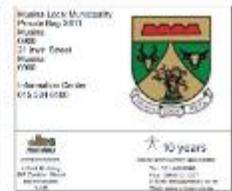
Musina SDF: Proposal For Mopane

1:3,000



Legend

• Mining Node	M	250m Buffer Mopane	Agricultural Business
• Commercial Node	N	300m Buffer Land Use	Commercial and Business
Contours	R	Sub Places	Agricultural Activities
Rivers	S	Wards	Future Residential



Map 37: Mopane Proposals

7. CONCLUSION

The Mutasshi contributes immensely to the spatial development of Musina. This is largely attributed to its spatial location and the opportunities it presents. The Mutasshi covers the Beit Bridge border post, Musina Town and its surrounding areas. As discussed earlier, the Eco-Park and the Special Economic Zones shall be the main economic contributors. The eventual visualization of this project will have a significant impact on the economic state of the local municipality as well as the Province as a whole. The spatial location of Musina also exerts a high influx of inward migration from neighbouring North African countries. This results in informal settlements, backyard shacks and high populations in the Nancefield area. Moreover, land uses control measures in this area poses challenges to the Local Council. As discussed earlier, high populated areas can be contained through the development of high density dwellings. Finally, the proposed growth points R525 have been proposed to improve the spatial form, enhance accessibility and uplift the overall livelihoods for people residing in settlements falling under traditional authorities.

8. CAPITAL INVESTMENT FRAMEWORK

8.1. PURPOSE

Ensuring the equitable distribution of infrastructure in the development of municipalities is a challenge. The main reason for this is that municipalities lack the necessary human, capital and technological resources required to address existing and identified backlogs. An effective implementation framework is required in this regard in order to realize the development principles and strategies set out in the Spatial Development Framework. Without an implementation framework it is likely that these principles and strategies will remain theoretical and it is unlikely that the growth and development strategy of the municipality will be realized.

The implementation framework directed at realizing the principles and strategies contained in the Spatial Development Framework is known as the Capital Investment Framework (CIF) which also emanates from the IDP. The Capital Investment Framework translates the goals and objectives of the municipality into tangible investment strategies and budget allocations. The main objectives of the Capital Investment Framework are as follows:

- Ensuring the improvement and the management of municipal infrastructure assets;
- Addressing the developmental and historical backlogs;
- Determining and planning infrastructure requirements for future development;
- Ensuring that new infrastructure is delivered in an objective and structured manner that support the municipality's vision, Growth and Development Strategy and priorities;
- Prioritization of projects and programmes;
- Directing future public and private investment;
- Strategically aligning capital budgets; and
- Translating a proposed project into Investment Programmes

8.2. METHODOLOGY

It is required that a methodology or type of system be used to determine key projects for the capital investment framework. This methodology needs to ensure the alignment of capital investment programmes with mayoral priorities, sector programmes and strategies and principles outlined in the Spatial Development Framework. This methodology also provides an understanding of the implications of development decisions. In determining key projects for the capital investment framework, the following was taken into consideration:

- Existing projects and backlogs;
- Development proposals;
- Alignment with principles, strategies, mayoral priorities and growth and development strategy; and
- Prioritization of key programmes and projects.

8.3. APPROACH

The priority projects identified by different departments need to be evaluated in terms of key municipal priorities as found within the IDP (2018/19-2021/22). The municipal perspective includes strategic elements that may not be the same as that of the different departments. It is vital that strategic inputs are received in order to enable decision-makers to plan and make suitable allocation of budgets and resources. The priority projects identified are directed at realizing the strategic direction provided by the municipal vision and current agendas. Basic considerations taken into account for the prioritization of projects are:

- Locality;
- Financial implications;
- Existing municipal programmes;
- Mayoral Priorities (e.g. Education, HIV and Inner-City Regeneration);
- Planning Issues (e.g. Service Delivery, Economic Growth and Social); and
- Technical Issues (legal obligations, technical requirements, feasibility, etc).

8.4. INTERVENTION PROGRAMMES

The following Investment Programmes have been developed to support the implementation of the Musina Spatial Development Framework. These investment programmes were used as a guide in the allocation of the capital budget. These investment programmes are directed at achieving the spatial vision, strategies and development principles outlined in the Spatial Development Framework. These programmes are as follows:

- Upgrading of Marginalized Areas Programme –sustainable human settlements;
- Regeneration Programme –nodal development;
- Corridor Development Programme –corridor development and reinforcement;
- Nodal Programme –nodal development;

- Strategic Transportation Interventions Programme –mobility, accessibility and transport of goods;
- Strategic Infrastructure Investment Programme-infrastructure development; and

- Sustainable Environment Programme -environmental management.

These programmes have been identified to provide a comprehensive framework and set out specific actions to address a number of developmental and infrastructure provision, upgrade and maintenance challenges. The identified strategic programmes will deliver benefits by integrating development and infrastructure proposals to ensure coordinated implementation. These programmes are not grouped spatially; these interventions are to be implemented in different areas and are therefore grouped by sector. Investment programmes and associated projects have been prioritized in terms of their contribution and alignment to the Mayoral Priorities, Strategic Vision, Sectoral Plans and Principles. The considerations taken into account for these programmes include:

- Economic Development
- Community Development
- Housing
- Infrastructure and Services
- Environment
- Spatial Form and Urban Management
- Transportation
- Health and Safety
- Financial Sustainability
- Governance
- Corporate and Shared Service

The comprehensive nature of the identified programmes is aimed at achieving integration and alignment of capital projects and sector programmes. The following table depicts the capital expenditure allocation per capital investment programme.

Table 38: Summary of CIF per Programme

Programme	Capital Expenditure
Upgrading of Marginalized Areas Programme	R 63 941 064.14
Regeneration Programme	R 1 400 000.00
Corridor Development Programme	R 3 400 000.00
Nodal Programme	R 1 600 000.00
Strategic Transportation Interventions Programme	R176 147 000.00
Strategic Infrastructure Investment Programme	R1 363 446 735.00
Sustainable Environment Programme	R 500 000.00
TOTAL	R1 610 434 799.14

8.5. CAPITAL EXPENDITURE PROGRAMMES AND PROJECTS

This section illustrates the linkages between the identified project in section 5 (development proposals) and the capital expenditure programme. These projects are linked to the Service Delivery and Budget Implementation Plan (2017/18) as well as the IDP (2017/18 -2021/22). However, the execution of these projects sits with the relevant sector departments within the province.

8.5.1. UPGRADING OF MARGINALIZED AREAS PROGRAMME

The upgrading of marginalized areas has been identified as one of the most critical programmes in bridging the gap between the primary and secondary economies. Furthermore, this program is directed at ensuring that balanced, equitable and shared growth is achieved through the prioritization of the development of marginalized areas and addressing backlogs.

The following table depicts the CIF per Upgrading of Marginalized Areas Programme:

Table 39: Upgrading of Marginalized Areas Programme CIF

Project Description (IDP and SDBIP)	Source of funding	Budget 2017/18	Budget 2018/19	Budget 2019/20	Budget 2020/21
Formalisation and demarcation of sites in villages	Internal		R3,140 600	R1 750 000	R1 850 000
Resurvey of 300 Residential Erven in Nancefield extension 9 and 10	Internal		R700 000	R200 000	
Development of residential settlements (Mixed land use settlement)	Internal		R3,650 000	R1 950 000	R2 050 000
Upgrading of Doreen combined school Clinic in Tanda, Tshikhudini, Malele and Mopani	Department of Education				
Construction of RDP Houses	Department of Health				
Routine road maintenance	Department of Housing				
Upgrade (gravel to tar) Makuya to Masisi (Flood damage repairs) (T652)	Department of Public Works, Roads & Infrastructure	R15 M	R18 M		
Upgrade (gravel to tar) Mutele to Sagole to Muswodi to Folovhodwe to N'wanedi Nature Reserve to road P135/1 (Tshipise) (T638B)	Department of Public Works, Roads & Infrastructure	R8 074 000	R80 000 000		
Upgrading of library (Masisi Modular library)	Department of Public Works, Roads & Infrastructure	R5 000 000	R10 000 000		
Tshikuyu (16 connections)	ESKOM	R350 000			
Tshidizi (10 connections)	ESKOM	R566 352			
Gwakwani / Tshidzi (38 connections)	ESKOM	R342 000			
Manezhe (18 connections)	ESKOM	R1 489 448.76			
Rangani phase 2 (25 connections)	ESKOM	R855 803.70			
Lwathudwa (35 connections)	ESKOM	R711 745.32			
Bennde Mutale phase 3 (10 connections)	ESKOM	R1 172 574.36			
Need for Secondary school in ward 1 and 8 and other villages	Department of Education	R229 140			

8.5.2. REGENERATION PROGRAMME

The regeneration programme is concerned with the development of existing areas that have started to decline and degrade. Projects within this programme include:

- Upgrading and maintenance of infrastructure;
- Pavement management;
- Storm water management;
- Upgrading and maintenance of social, health and recreation facilities;
- Provision of new housing where possible;
- Provision of public transport facilities;
- Promoting a safe environment; and
- Protection of cultural amenities

The following table depicts the CIF per Regeneration Programme:

Table 40: Regeneration Programme CIF

Project Description (IDP and SDBIP)	Source of funding	Budget 2017/18	Budget 2018/19	Budget 2019/20	Budget 2020/21
Development of CBD Regeneration Plan	Internal		R1 400 000		

8.5.3. CORRIDOR DEVELOPMENT PROGRAMME

An important component of the Spatial Development Framework and achieving the spatial vision is corridor development. Corridors are the areas developed around major movement networks. The corridor development programme involves the incorporation of intense residential and economic development that will be supported by the appropriate level of infrastructure and services provision. In order to ensure that these areas are planned and managed effectively the following aspects have been identified:

- Higher densities are proposed, existing infrastructure and social amenities will have to be upgraded;
- Implementation of the relevant public transport routes;
- Ensuring mobility along important arterials;
- Providing quality pedestrian facilities; and
- Integrating with other transportation modes, especially rail.

The table below illustrates CIF as per Corridor Development Programme:

Table 41: Corridor Development Programme CIF

Project Description (IDP and SDBIP)	Source of funding	Budget 2017/18	Budget 2018/19	Budget 2019/20	Budget 2020/21
MUTASSHI (SEZ)	LEDET and LEDA	-	-	-	-
SEZ (LEIP)	Eco-Industrial Solution	-	-	-	-
Establishment of commercial township (SEZ)	Internal		R1 500 000	R1 900 000	

8.5.4. NODAL PROGRAMME –NODAL DEVELOPMENT

The Spatial Development Framework recognizes the key contribution that strong, viable nodes play as structuring elements within the municipality. This programme supports the efficient management and growth of the existing nodes and development of future nodes through the following interventions:

- Upgrading and maintenance of infrastructure;
- Pavement management;
- Storm water management;
- Upgrading and maintenance of social, health and recreation facilities;
- Providing new housing where possible;
- Providing of public transport facilities; and
- Supporting tourism development

The below table indicated CIF as per Nodal Programme:

Table 42: Nodal Programme CIF

Project Description (IDP and SDBIP)	Source of funding	Budget 2017/18	Budget 2018/19	Budget 2019/20	Budget 2020/21
Development of Industrial township	Internal		R1 600 000		
Provincial Hospital	Health Department budget				
Building TVET FET College	DHE				

8.5.5. STRATEGIC TRANSPORTATION INTERVENTIONS PROGRAMME

The Strategic Transportation Interventions Programme takes into account the municipal public transport network and endeavours to deliver public transport across the municipal area. The strategic public transport network consists of the road networks along mobility spines and mobility roads that serve as a structuring element of the municipality in creating a more accessible municipality that presents greater economic and employment opportunities.

The following table illustrates CIF as per Strategic Transportation Interventions Programme:

Table 43: Strategic Transportation Interventions Programme CIF

Project Description (IDP and SDBIP)	Source of funding	Budget 2017/18	Budget 2018/19	Budget 2019/20	Budget 2020/21
Construction of Muswodi / Folovhodwe tar roads	RAL	R48 M			
Replace collapsed bridge from Musina to Maphungubwe to Pontdrif (T725)	Department of Public Works, Roads & Infrastructure	R5 M	R7.5 M		

Repair of flood damaged infrastructure (T761, T762, T777 and T765)	Department of Public Works, Roads & Infrastructure	R4 M	R10 529 000		
Construction of access road to Nancefield extension 7	MIG/internal		R16 M		
Construction of roads from community hall to Bonwaudi school, Haramavhuya surgery to hostel, Blakkies dorp road from the crusher to grave yard	MIG/internal			R18 M	
Construction of 2km of paved roads	MIG	R8 M	R14 M	R16.5 M	R20 M
Maintenance of internal gravel streets in Musina	MLM	R500 000	R750 000	R840 000	
Routine/ preventative Roads Maintenance to surfaced roads	MLM	R5 M	R742 000	R786 000	

8.5.6. STRATEGIC INFRASTRUCTURE INVESTMENT PROGRAMME

The strategic infrastructure investment programme includes the entire spectrum of infrastructure and social amenities to be provided for the strategic development proposals. This investment extends to the following areas:

- Infrastructure provision with relevant capacities;
- Provision of new social, health and recreation facilities;
- Procurement and development of land for open space provision as well as service servitudes;
- Construction of new transportation linkages and facilities with the focus on public transportation;
- New housing opportunities;
- Public lighting;
- Resolving power outages;
- Addressing storm water drainage; and
- Increasing the overall infrastructure capacity levels of the municipality to meet development potential of the gateway to Africa.

The below table illustrates CIF per Strategic Infrastructure Investment Programme:

Table 44: Strategic Infrastructure Investment Programme

Project Description (IDP and SDBIP)	Source of funding	Budget 2017/18	Budget 2018/19	Budget 2019/20	Budget 2020/21
Bulk water reticulation – Provision of water in Mopani	MIG		R20 M		
Bulk water reticulation – Provision of water in villages (Luphephe & Nwanedi)	MIG	R3.5 M	R8.4 M	R8.8 M	R9.7 M
Bulk water reticulation – Provision of water in villages (Shakadza)	MIG	R2.2 M			
Bulk upgrade of water supply (Musina Limpopo River)	MWIG	R7.5 M	R4.2 M	R4.4 M	R4.8 M
Extension of water bulk line in Limpopo River (Wards 3, 4, 5 and 6)	RBIG/MWIG	R20 M			
Provision of water and sanitation in rural farms	MWIG		R885 000	R423 500	R512 435

Installation of water and sanitation services in Nancefield Ext 6, 7, 10, 14, and 17 and new townships	COGHSTA/ VDM	R28 M	R36 M	R42 M	
Installation of filtration plant	MIG		R63 846 234.12	R6.6 M	R7.9 M
Construction and fencing of a reservoir	RBIG/ MIG		R5 M	R5.5 M	R6.7 M
Construction of reservoirs and/or procurement of storage tanks	MSIG	R6 M			
Recommissioning of Nwanedi water treatment works	WSIG	R5 M			
Extention of bulk line from Nwanedi to Tanda and Tshikhudini	WSIG		R1 M		
Extension of bulk, reticulation and standpipes	WSIG	R5 M			
Construction of water purification plant in Mapani (Ward 2)	MIG		R20 M		
Electricity Household connections in villages (Wards 9, 10 and 12)	ESKOM	R5,367 M	R4.2 M	R5.9 M	R7.8 M
Extension of electricity in farm communities (All farming communities)	ESKOM		R9.1 M	R6.9 M	R9 M
Installation of solar high masts in villages (Madimbo, Malale, Domboni, Tanda & Tshikhundini)	ESKOM		R6 M	R7.8 M	R11 M
Installation of solar high mast in Musina (Nancefield)	MIG		R5.8 M		
Upgrade of electricity capacity Musina	DoE	R3.3 M	R39 M	R52 M	R62,920
Electrical reticulation for new settlements (Nancefield ext. 6, 7, 14)	DoE	R7.6 M	R60 M	R72 M	R93 M
Multi-purpose community center (Indoor sports centre, disability centre & youth centre)	MIG	R8 M			
Musina community walk-in centre Phase 2(Musina/Nancefield)	MIG		R10 M		
Nancefield construction of storm water channels phase 2 (Musina/Nancefield)	MIG		R4 M	R4.6 M	R5.6 M
Sports ground/stadiums (Ward 11)	MIG	R3.6 M	R3.5 M		
Sports ground/stadiums (Villages)	MIG			R10 M	R20 M
Municipal Satellite office / Thusong centres (Villages -Tshipise, Tsha, Sagole, Muswodi, Masisi)	MIG		R9 M	R12 M	R14 M
Drilling of boreholes (All wards)	WSIG	R2.5 M			
Construction of VIP Toilets (Wards 1, 2, 8, 9, 10, 11 and 12)					
Provision of VIP toilets in villages (Muswodi Dipeni and Masisi)	RBIG/MWIG	R6 M	R31 M	R33 M	R41 M
Constriction of WWTW	VDM		R40 M	R44 M	R52 M
Households connections waterborne sewer in Musina	MWIG		R3.5 M		
Extension of sewer reticulation to convert household to waterborne (Wards 3, 4, 5, 6 and 7)	WSIG	R4 M			
Upgrade of Harper and Campbell package plants (Ward 6)	WSIG	R2.5 M			
Upgrade of sewer reticulation pipes (Wards 3, 4, 5, 6 and 7)	WSIG	R2.5 M			
Installation of water and sanitation services (Musina townships/Mopani) (Wards 2, 3, 4, 5 and 6)	RBIG/MWIG	R50 M			

Water purification plant (Mopani) Ward 2	RBIG/MWIG	R20 M			
Upgrade of waste water treatment works (Musina, Nancefield) (Wards 3, 4, 5 and 6)	RBIG/MWIG	R60 M			
Development of Agri-park house	DRDLR	R45 M			
Construction of cemetery with grave site plan	MIG		R2 M		
Landfill site in Musina	MIG		R13 M	R16,5 M	
Construction of 2 Libraries	Department Sports, Arts and Culture				
Building of Special school	DoE				
Nwanedi Agricultural Secondary Cooperation	DRDLR	R3 000 000			
Khuele Farming (Production, inputs, mechanization and infrastructure)	DRDLR	R653 800			
Development of Nwanedi Vegetable cluster (CASP) – Irrigation systems installation for 40 x 1ha irrigation sites	Department of Agriculture	R9 M			
Nwanedi Agriculture Development (CASP) – Development of packing and marketing facilities	Department of Agriculture	R11 M			
Storm water drainage at Rwanda	MIG/Internal		R4.9 M		
Old roads, /bridges / Culverts	MIG/Internal		R1.5 M	R1.7 M	R2.9 M
Routine preventative roads maintenance to surfaced roads	MIG/Internal	R5 M	R742 000	R786 000	R884 000
Construction and maintenance of bridges and storm water drainage system	MLM	R2.5 M	R1.5 M	R1.24 M	
Musina community walk-in centre Phase 2	MLM	R10 M			

8.5.7. SUSTAINABLE ENVIRONMENT PROGRAMME

The sustainable environment programme is aimed at conservation of both the natural and built environment. This conservation is to be done in a sustainable manner within the confined resource framework. The table below illustrates CIF as per Sustainable environment programme.

Table 45: Sustainable Environment Programme CIF

Project Description (IDP and SDBIP)	Source of funding	Budget 2017/18	Budget 2018/19	Budget 2019/20	Budget 2020/21
Development of Water and Sanitation Infrastructure Master plan	WSIG		R500 000		
Plant trees to green Musina and mitigate climate change	Internal	OPEX	OPEX	OPEX	

8.6. BUDGET BREAKDOWN

The table below illustrates a detailed list of the CIF for Musina Local Municipality. It should be noted that the Musina Local Municipality is not limited to the listed projects below. However, for the purpose of budget breakdown, only projects with assigned and reserved budget were listed to illustrate the nature of the CIF. The projects contributing to the bulk of the CIF indicate that there are investments made in terms of infrastructure such as roads, water services and electricity. There are projects related to the development of the SEZ which are not necessarily indicated in the CIF.

Table 46: Capital Investment Framework

Project Description (IDP and SDBIP)	Source of funding	Budget 2017/18	Budget 2018/19	Budget 2019/20	Budget 2020/21
Bennde Mutale phase 3 (10 connections)	ESKOM	R229 140,00			
Bulk upgrade of water supply (Musina Limpopo River)	MWIG	R7 500 000,00	R4 200 000,00	R4 400 000,00	R4 800 000,00
Bulk water reticulation – Provision of water in Mopani	MIG		R20 000 000,00		
Bulk water reticulation – Provision of water in villages (Luphephe & Nwanedji)	MIG	R3 500 000,00	R8 400 000,00	R8 800 000,00	R9 700 000,00
Bulk water reticulation – Provision of water in villages (Shakadza)	MIG	R2 200 000,00			
Constriction of WWTW	VDM		R40 000 000,00	R44 000 000,00	R52 000 000,00
Construction and fencing of a reservoir	RBIG/ MIG		R5 000 000,00	R5 500 000,00	R6 700 000,00
Construction and maintenance of bridges and storm water drainage system	MLM	R2 500 000,00	R1 500 000,00	R1 240 000,00	
Construction of 2km of paved roads	MIG	R8 000 000,00	R14 000 000,00	R16 500 000,00	R20 000 000,00
Construction of access road to Nancefield extension 7	MIG/internal		R16 000 000,00		
Construction of cemetery with grave site plan	MIG		R2 000 000,00		
Construction of Muswodi / Folovhodwe tar roads	RAL	R48 000 000,00			
Construction of reservoirs and/or procurement of storage tanks	MSIG	R6 000 000,00			
Construction of roads from community hall to Bonwaudi school, Haramavhuya surgery to hostel, Blakkies dorp road from the crusher to grave yeard	MIG/internal			R18 000 000,00	
Construction of water purification plant in Mapani (Ward 2)	MIG		R20 000 000,00		
Development of Agri-park house	DRDLR	R45 000 000,00			
Development of CBD Regeneration Plan	Internal		R1 400 000,00		
Development of Industrial township	Internal		R1 600 000,00		
Development of Nwanedi Vegetable cluster (CASP) – Irrigation systems installation for 40 x 1ha irrigation sites	Department of Agriculture	R9 000 000,00			
Development of residential settlements (Mixed land use settlement)	Internal		R3 650 000,00	R1 950 000,00	R2 050 000,00
Development of Water and Sanitation Infrastructure Master plan	WSIG		R500 000,00		
Drilling of boreholes (All wards)	WSIG	R2 500 000,00			
Electrical reticulation for new settlements (Nancefield ext. 6, 7, 14)	DoE	R7 600 000,00	R60 000 000,00	R72 000 000,00	R93 000 000,00

Electricity Household connections in villages (Wards 9, 10 and 12)	ESKOM		R4 200 000,00	R5 900 000,00	R7 800 000,00
Establishment of commercial township (SEZ)	Internal		R1 500 000,00	R1 900 000,00	
Extension of bulk, reticulation and standpipes	WSIG	R5 000 000,00			
Extension of electricity in farm communities (All farming communities)	ESKOM		R9 100 000,00	R6 900 000,00	R9 000 000,00
Extension of sewer reticulation to convert household to waterborne (Wards 3, 4, 5, 6 and 7)	WSIG	R4 000 000,00			
Extension of water bulk line in Limpopo River (Wards 3, 4, 5 and 6)	RBIG/MWIG	R20 000 000,00			
Extention of bulk line from Nwanedi to Tanda and Tshikhudini	WSIG		R1 000 000,00		
Formalisation and demarcation of sites in villages	Internal		R3,140 600 000	R1 750 000,00	R1 850 000,00
Gwakwani / Tshidzi (38 connections)	ESKOM	R1 489 448,76			
Households connections waterborne sewer in Musina	MWIG		R3 500 000,00		
Installation of filtration plant	MIG		R63 846 234,12	R6 600 000,00	R7 900 000,00
Installation of solar high mast in Musina (Nancefield)	MIG		R5 800 000,00		
Installation of solar high masts in villages (Madimbo, Malale, Domboni, Tanda & Tshikhundini)	ESKOM		R6 000 000,00	R7 800 000,00	R11 000 000,00
Installation of water and sanitation services (Musina townships/Mopani) (Wards 2, 3, 4, 5 and 6)	RBIG/MWIG	R50 000 000,00			
Installation of water and sanitation services in Nancefield Ext 6, 7, 10, 14, and 17 and new townships	COGHSTA/ VDM	R28 000 000,00	R36 000 000,00	R42 000 000,00	
Khuele Farming (Production, inputs, merchanization and infrastructure)	DRDLR	R653 800,00			
Landfill site in Musina	MIG		R13 000 000,00	R16 500 000,00	
Lwathudwa (35 connections)	ESKOM	R1 172 574,36			
Maintenance of internal gravel streets in Musina	MLM	R500 000,00	R750 000,00	R840 000,00	
Manezhe (18 connections)	ESKOM	R855 803,70			
Multi-purpose community center (Indoor sports centre, disability centre & youth centre)	MIG	R8 000 000,00			
Municipal Satellite office / Thusong centres (Villages -Tshipise, Tsha, Sagole, Muswodi, Masisi)	MIG		R9 000 000,00	R12 000 000,00	R14 000 000,00
Musina community walk-in centre Phase 2	MLM	R10 000 000,00			
Musina community walk-in centre Phase 2(Musina/Nancefield)	MIG		R10 000 000,00		
Nancefield construction of storm water channels phase 2 (Musina/Nancefield)	MIG		R4 000 000,00	R4 600 000,00	R5 600 000,00
Nwanedi Agricultural Secondary Cooperation	DRDLR	R3 000 000,00			
Nwanedi Agriculture Development (CASP) – Development of packing and marketing facilities	Department of Agriculture	R11 000 000,00			
Old roads, /bridges / Culverts	MIG/Internal		R1 500 000,00	R1 700 000,00	R2 900 000,00
Provision of VIP toilets in villages (Muswodi Dipeni and Masisi)	RBIG/MWIG	R6 000 000,00	R31 000 000,00	R33 000 000,00	R41 000 000,00
Provision of water and sanitation in rural farms	MWIG		R885 000,00	R423 500,00	R512 435,00
Rangani phase 2 (25 connections)	ESKOM	R711 745,32			

Recommissioning of Nwanedi water treatment works	WSIG	R5 000 000,00			
Repair of flood damaged infrastructure (T761, T762, T777 and T765)	Dept of Public Works, Roads & Infrastructure	R4 000 000,00	R10 529 000,00		
Replace collapsed bridge from Musina to Maphungubwe to Pontdrifft (T725)	Dept of Public Works, Roads & Infrastructure	R5 000 000,00	R7 500 000,00		
Resurvey of 300 Residential Erven in Nancefield extension 9 and 10	Internal		R700 000,00	R200 000,00	
Routine preventative roads maintenance to surfaced roads	MIG/Internal	R5 000 000,00	R742 000,00	R786 000,00	R884 000,00
Routine road maintenance	Dept of Public Works, Roads & Infrastructure	R15 000 000,00	R18 000 000,00		
Routine/ preventative Roads Maintenance to surfaced roads	MLM	R5 000 000,00	R742 000,00	R786 000,00	
SEZ (LEIP)	Eco-Industrial Solution	-	-	-	-
Sports ground/stadiums (Villages)	MIG			R10 000 000,00	R20 000 000,00
Sports ground/stadiums (Ward 11)	MIG	R3 600 000,00	R3 500 000,00		
Storm water drainage at Rwanda	MIG/Internal		R4 900 000,00		
Tshidizi (10 connections)	ESKOM	R342 000,00			
Tshikuyu (16 connections)	ESKOM	R566 352,00			
Upgrade (gravel to tar) Makuya to Masisi (Flood damage repairs) (T652)	Dept of Public Works, Roads & Infrastructure	R8 074 000,00	R80 000 000		
Upgrade (gravel to tar) Mutele to Sagole to Muswodi to Folovhodwe to N'wanedi Nature Reserve to road P135/1 (Tshipise)(T638B)	Dept of Public Works, Roads & Infrastructure	R5 000 000,00	R10 000 000		
Upgrade of electricity capacity Musina	DoE	R3 300 000,00	R39 000 000,00	R52 000 000,00	R62 920 000,00
Upgrade of Harper and Campbell package plants (Ward 6)	WSIG	R2 500 000,00			
Upgrade of sewer reticulation pipes (Wards 3, 4, 5, 6 and 7)	WSIG	R2 500 000,00			
Upgrade of waste water treatment works (Musina, Nancefield) (Wards 3, 4, 5 and 6)	RBIG/MWIG	R60 000 000,00			
Upgrading of library (Masisi Modular library)	Dept of Public Works, Roads & Infrastructure	R350 000,00			
Water purification plant (Mopani) Ward 2	RBIG/MWIG	R20 000 000,00			
	Total	R1 610 434 799,14	R437 644 864,14	R421 098 000,00	R378 075 500,00
					R373 616 435,00