LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

LIMPOPO SPATIAL DEVELOPMENT FRAMEWORK

September 2024

The Office of the Premier

Lets grow South Africa together

The heartland of southern Africa - development is about people

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

The Impact Catalyst

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Abbreviations

AAGR	:	Average Annual Growth Rate
AAMP	:	Agro-Processing Masterplan
ADZ	:	Agricultural Development Zones
AfCFTA	:	African Continental Free Trade Area
AH	:	An Agricultural Holding established in terms of the Agricultural Holdings Act, 1919 (Act 22 of 1919)
AIDA	:	Accelerated Industrial Development for Africa
AMV	:	African Mining Vision
APP	:	Annual Performance Plan
AU	:	African Union
BBLU	:	Building Based Land Use
BDRR	:	Blue Drop Risk Rating
BEPP	:	Built Environment Performance Plan
BIAT	:	Boosting Intra-African Trade
BMA	:	Border Management Authority
CAADP	:	Comprehensive Africa Agricultural Development Programme
CBO		Community-based Organisations
CDP	:	Cluster Development Programme
CIB	:	Central Innovation Belt
CIR	:	Capital Investment Framework
CLN	:	Customer Load Network
COGHSTA	:	Department of Cooperative Governance, Human Settlement and Traditional Affairs
CRDP	:	Consolidated Rural Development Programme
CRU	:	Community Residential Units
CSIR	:	Council for Scientific and Industrial Research
CWP	:	Community Work Programme
DALRRD	:	Department of Agriculture, Land Reform and Rural Development
DCoG	:	Department of Cooperative Governance
DDM	:	District Development Model
DEA	:	Department of Environmental Affairs (historical name)
DFFE	:	Department of Forestry, Fisheries and the Environment
DGP	:	District Growth Point
DLRRD	:	Department of Land Reform and Rural Development (historical name)
DM	:	District Municipality
DMRE	:	Department of Mineral Resources and Energy
DoT	:	Department of Transport
DPME	:	Department of Planning, Monitoring and Evaluation
DSAC	:	Department of Sport, Arts and Culture
DSI	:	Department of Science and Innovation
DTCS	:	Department of Transport and Community Safety
DWA	:	Department of Water Affairs (historical name)
DWS	:	Department of Water and Sanitation
EbA	:	Ecosystems based Adaptation
EBSST	:	Electricity Basic Services Support Tariff
EDF11	:	Economic Development Fund Programme 11
EPHP	:	Enhanced People's Housing Process
ESA	:	Ecological Support Area
EU	:	European Union
FEPAs	:	Freshwater Ecosystem Priority Areas
FLISP	:	Finance-Linked Individual Subsidy Programme
FLNG	:	Floating Liquefied Natural Gas
FOA	:	Food and Agriculture Organisation of the United Nations
FPL	:	Food Poverty Line
FPSU	:	Farmer Production Support Unit
FTSEZ	:	Fetakgomo-Tubatse Special Economic Zone
GAAL	:	Gateway Airport Authority Limited
GDP	:	Gross Domestic Product
GLeWAP	:	Groot Letaba Water Augmentation Project
GLTP	:	Greater Limpopo Transfrontier Park
GSDF	:	Gauteng Provincial Spatial Development Framework
GTI	:	GeoTerraImage
GVA	:	Gross Value Added
HLEA	:	Highest Level of Education Attainment
HPAA	:	High Potential Agriculture Area

HSDG	:	Human Settlements Development Grant
HSMP	:	Human Settlements Master Plan
ICP	:	International Cooperating Partners
ICT	:	Information and Communication technology
IDP	:	Municipal Integrated Development Plan
IDPF	:	Industrial Development Policy Framework
IDZ	:	Industrial Development Zone
IGF	:	Intergovernmental Forum
IGFRA	:	Intergovernmental Relations Framework Act
IPILRA	:	Interim Protection of Informal Land Rights Act, 1996
IPRP	:	Industrial Parks Revitalisation Programme
IRDP	:	Integrated Residential Development Programme
IRP	:	Integrated Resource Plan
ISPH	:	Infrastructure Strategic Planning Hub
IT	:	Information Technology
ITMP	:	Integrated Transport Master Plan
IUDF	:	Integrated Urban Development Framework
JMPT	:	Joint Municipal Planning Tribunal
KNP	:	Kruger National Park
KPA	:	Key Performance Area
LBPL	:	Lower-Bound Poverty Line
LDP	:	Limpopo Development Plan
LED	:	Local Economic Development
LEDA	:	Local Economic Development Agency
LEDET	:	Limpopo Department of Economic Development, Environment and Tourism
LIIMP	:	Limpopo Integrated Infrastructure Master Plan
LIMCOM	:	Limpopo Watercourse Commission
LIMP	:	Limpopo Industrialisation Master Plan
LM	:	Local Municipality
LNP	:	Limpopo National Park
LQ	:	Location Quotient
LRB	:	Limpopo River Basin
LSDF	:	Limpopo Spatial Development Framework
LSP	:	Local Service Point
LTA	:	Limpopo Tourism Agency
LTGS	:	Limpopo Tourism Growth Strategy
LTPF	:	Long Term Planning Framework
LUMS	:	Land Use Management System
MEC	:	Member of Executive Council
MGP	:	Municipal Growth Point
MIIF	:	Municipal Infrastructure Investment Framework
MMSEZ	:	Musina-Makhado Special Economic Zone
MPSDF	:	Mpumalanga Provincial Spatial Development Framework
MPT	:	Municipal Planning Tribunal
MSA	:	Municipal Systems Act
MTSF	:	Medium Term Strategic Framework
MuSSA	:	Municipal Strategic Self-Assessment
MYHSDP	:	Multi-Year Human Settlements Development Plan
MYPE	:	Mid-Year Population Estimates
NAMP	:	National Airspace Master Plan
NBA	:	National Biodiversity Assessment
NBF	:	National Biodiversity Framework
NBSAP	:	National Biodiversity Strategy and Action Plan
NDC	:	Nationally Determined Contribution
NDHS	:	National Department of Human Settlements
NDP	:	National Development Plan
NDPWI	:	National Department of Public Works and Infrastructure
NEDLAC	:	National Economic Development and Labour Council
NEPAD	:	New Partnership for Africa's Development
NERSA	:	National Electricity Regulator of South Africa
NGP	:	New Growth Path
NPAES	:	National Protected Area Expansion Strategy
NRRA	:	National Resource Risk Area
NSAA	:	National Spatial Action Areas
NSC	:	North–South Corridor
NSDF	:	National Spatial Development Framework
NSTETR	:	National Spatial Transformation and Economic Transition Region
NWRS	:	National Water Resource Strategy
OTP	:	Office of the Premier
PDPF	:	Provincial Development Planning Forum

PGDS	:	Provincial Growth and Development Strategy
PGM	:	Platinum Group of Metals
PGP	:	Provincial Growth Point
PHP	:	People's Housing Programme
PHSHDAs	:	Priority Human Settlements and Housing Development Areas
PLTF	:	Provincial Land Transport Framework
RAAVC	:	Revitalisation of Agriculture and Agro-processing Value Chain
RAL	:	Roads Agency of Limpopo
RRAMS	:	Rural Roads Asset Management System
REDZ	:	Renewable Energy Development Zone
RISDP	:	Regional Indicative Strategic Development Plan
RSA	:	Republic of South Africa
RSDF	:	Regional Spatial Development Framework
SACAD	:	South African Conservation Areas Database
SADC	:	Southern African Development Community
SADT	:	South African Development Trust
SAMAC	:	Macadamias South Africa
SANBI	:	South African National Biodiversity Institute
SANRAL	:	South African National Roads Agency SOC Ltd
SAPAD	:	South African Protected Areas Database
SAPP	:	Southern Africa Power Pool
SDF	:	Spatial Development Framework
SDG	:	Sustainable Development Goals
SDI	:	Spatial Development Initiative
SEA	:	Strategic Environmental Assessment
SEZ	:	Special Economic Zones
SIC	:	Standard Industrial Classification
SIP	:	Strategic Integrated Projects
SLP	:	Social and Labour Plans
SOPA	:	State of the Province Address
SPLUMA	:	Spatial Planning and Land Use Management Act
StatsSA	:	Statistics South Africa
STISA	:	Science, Technology and Innovation Strategy for Africa
STOSAR	:	Support Towards Operationalization of the SADC Regional Agricultural Policy
STR	:	Small Town Regeneration
SWSA		Strategic Water Source Area
TBVC	:	Transkei-Bophuthatswana-Venda and Ciskei states
TFCA	:	Transfrontier Conservation Area
TRP	:	Title Restoration Programme
UBPL	:	Upper-Bound Poverty Line
UISP	:	Upgrading of Informal Settlements Programme
UK	:	United Kingdom
UN	:	United Nations
WHO	:	World Health Organisation
WHS	:	World Heritage Site
WMA	:	Water Management Area
WRC	:	Water Research Commission
WSA	:	Water Services Authorities
WSDP	:	Water Service Development Plan
WSP	:	Water Service Provider
WWTW	:	Wastewater Treatment Works
ZETDC	:	Zimbabwean Electricity Transmission and Distribution Company

LIMPOPO
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CHAPTER 1: INTRODUCTION

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1.1. LIMPOPO PROVINCE

Limpopo Province, located in the north-east of South Africa, plays an important role in the national and Southern African regional economy. Limpopo shares national borders with Mpumalanga, Gauteng and North West Provinces and international borders with three countries (Botswana, Zimbabwe and Mozambique).

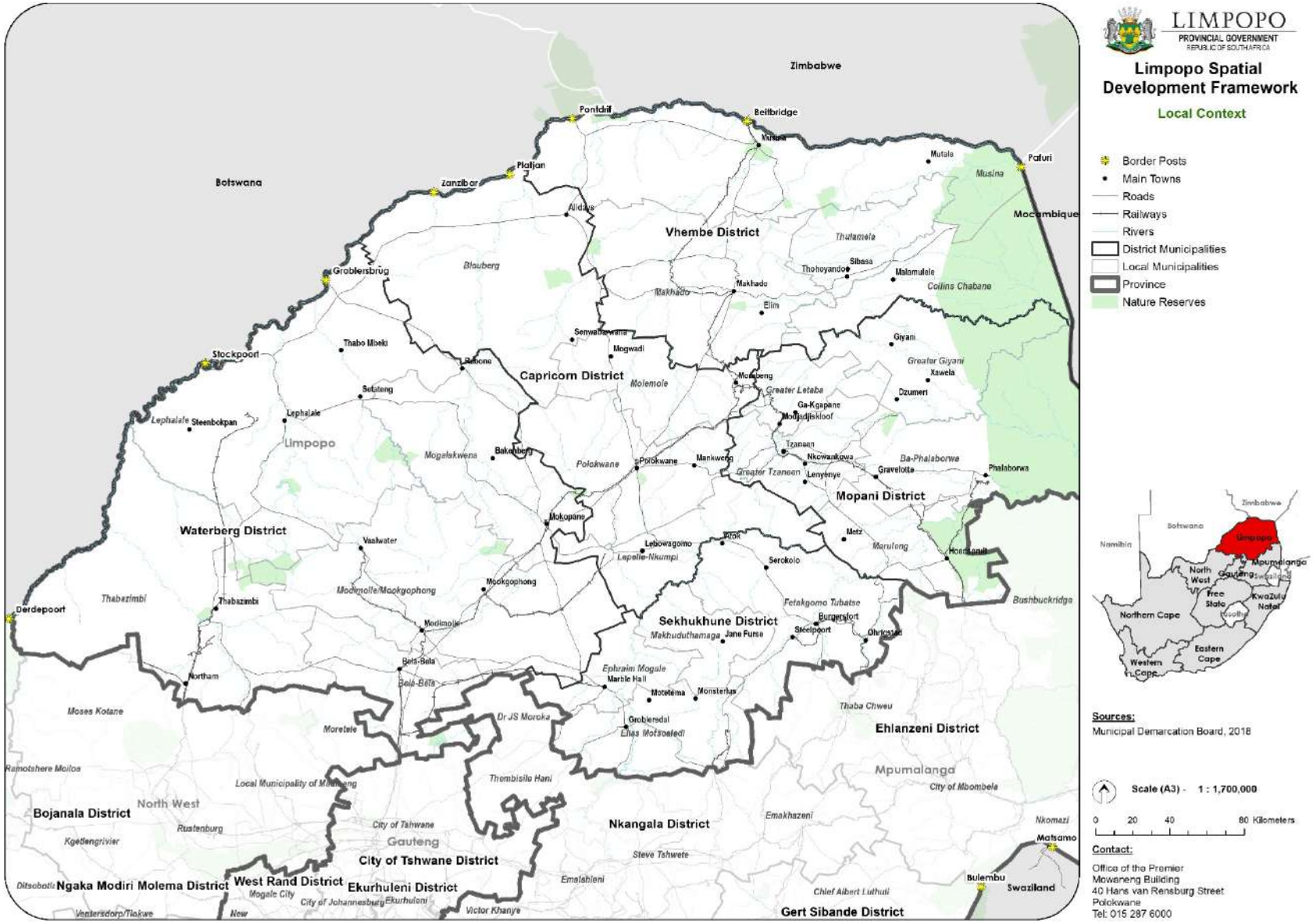
In 2018, Limpopo contributed 7,4% to the total GDP of South Africa. The mining sector in the most dominant industrial sector in the Province.

Table 1: Limpopo Municipalities

District	Local Municipality	District	Local Municipality
Capricorn	Blouberg	**Sekhukhune**	Elias Motsoaledi
	Lepelle-Nkumpi		Ephraim Mogale
	Molemole		FetakgomoTubatse
	Polokwane		Makhuduthamaga
Mopani	Ba-Phalaborwa	**Waterberg**	Bela-Bela
	Greater Giyani		Lephalale
	Greater Letaba		Modimolle-Mookgophong
	Greater Tzaneen		Mogalakwena
	Maruleng		Thabazimbi
Vhembe	Collins Chabane		
	Makhado		
	Musina		
	Thulamela		

The Province consists of twenty-two Local Municipalities clustered into five Districts, i.e. Capricorn, Mopani, Sekhukhune, Vhembe and Waterberg. The municipalities have largely remained unchanged since the drafting of the 2016 Limpopo Spatial Development Framework, with two exceptions. After the August 2016 Local Government Elections, the Collins Chabane Local Municipality was established by the merger of portions of Thulamela and Makhado Local Municipalities. The Greater Tubatse and Fetakgomo Local Municipalities were merged to create the Fetakgomo Tubatse Local Municipality.

Figure 1: Limpopo Province Spatial Context



1.2. INTRODUCTION: REVIEW OF THE LSDF, 2016

In 2021 the Limpopo Office of the Premier in collaboration with the Provincial Department of Cooperative Governance, Human Settlement and Traditional Affairs (COGHSTA) and the National Department of Agriculture, Rural Development and Land Reform, initiated a review of the existing 2016 Limpopo Provincial Spatial Development Framework (LSDF).

Since the adoption of the LSDF in May 2016, there has been significant global, national and provincial spatial and economic developments, a range of new plans and policy documents have been prepared, Covid-19 has wreaked havoc and devastation, climate change and policy response to the challenges it poses have affected the development context, and land development have moved beyond what was envisaged in the 2016 LSDF. In addition, the LSDF is based on (now) dated information and this weakens the evidence base used to develop other plans, policy and projects in the Province.

More recent provincial and national imperatives expressed in policy documents or plans, such as the Limpopo Development Plan 2020-2025, the newly adopted National Spatial Development Framework, the District Development Model (DDM), the Consolidated Rural Development Programme (CRDP), the Medium-Term Strategic Framework 2019-2024, the National Development Plan, and the 2019 Human Settlements Framework for Spatial Transformation and Consolidation still need to find expression in the current framework.

1.3. LEGISLATIVE MANDATE

Section 15 of the Spatial Planning and Land Use Management Act, Act 16 of 2013 (SPLUMA) outlines the requirements for Provinces to develop and review provincial Spatial Development Frameworks (PSDFs) once every five years (RSA, 2013).

Section 15(1) requires that the PSDF must be consistent with the National Spatial Development Framework (NSDF). Section 15 (3) stipulates the role of the PSDF to be to coordinate, integrate and align:

- provincial plans and development strategies with policies of national government;
- the plans, policies and development strategies of provincial departments; and
- the plans, policies and development strategies of municipalities.

The content of a PSDF is specified in Section 16 of SPLUMA and determines that a PSDF must (RSA, 2013):

- provide a spatial representation of the land development policies, strategies and objectives of the Province, including the Province's growth and development strategy (the Limpopo Development Plan);
- indicate the desired and intended pattern of land use development in the Province;
- coordinate and integrate the spatial expression of the sectoral plans of provincial departments;
- provide a framework for coordinating municipal spatial development frameworks;
- coordinate municipal spatial development frameworks with the provincial spatial development framework and any regional spatial development frameworks; and
- incorporate any spatial aspects of relevant national development strategies and programmes.

1.4. LSDF REVIEW PROCESS

The review of the LSDF has been conducted according to the following phases:

- Start-Up Phase
- Phase 1: Spatial Vision and Objectives
- Phase 2: Spatial Analysis
- Phase 3: Indicative Plan and Spatial Focus Areas
- Phase 4: Implementation Instruments
- Phase 5: Consultation
- Phase 6: Finalisation and Approval

1.5. THE ROLE OF THE LSDF

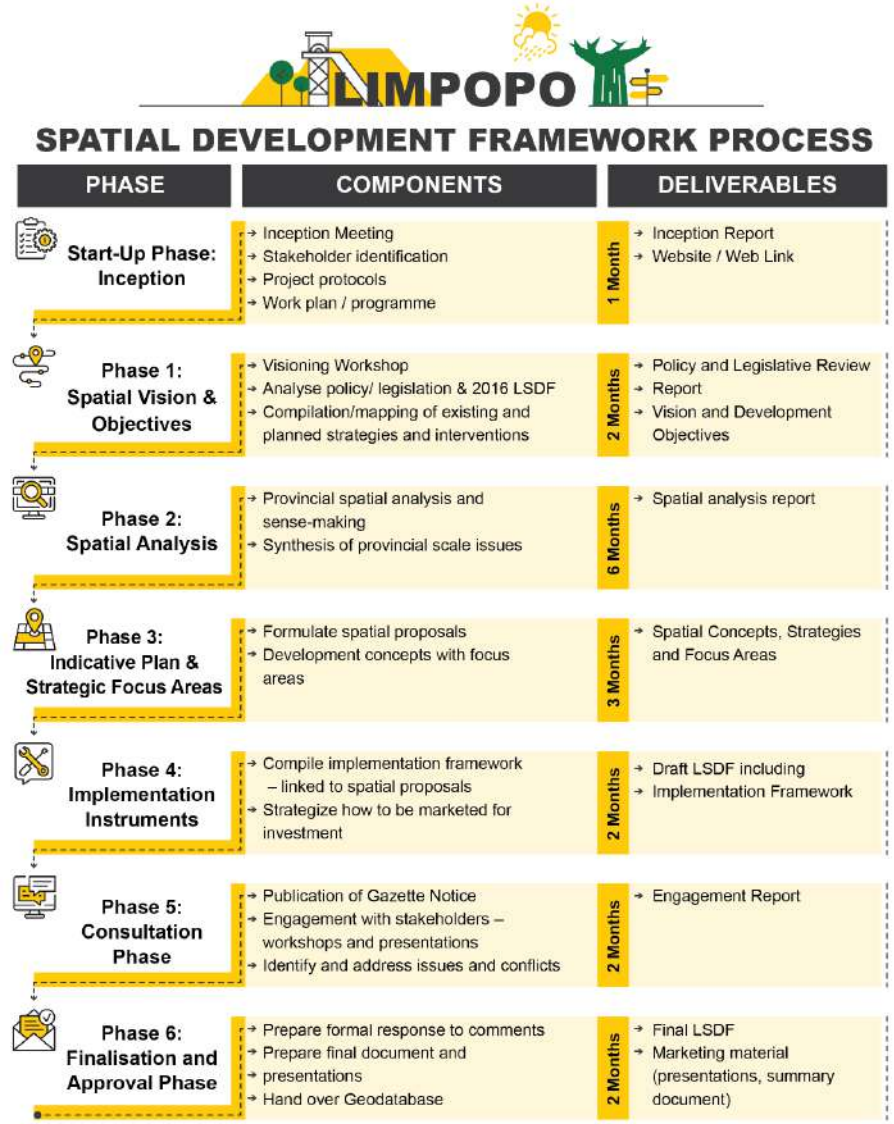
The LSDF plays both a directive and coordinating role in planning and implementation in the Province. It sets the strategic direction for sector planning and municipal planning in the Province. The LSDF provides a strategic link between national and municipal spatial planning, contextualising the NSDF for the realities, aspirations and challenges of Limpopo. To facilitate alignment of planning and implementation, it is a tool to guide the spatial targeting of investment and spending in the Province.

1.6. DOCUMENT SECTIONS

The remainder of the document consists of the following sections:

- Chapter 2: Policy and Planning Context
- Chapter 3: Spatial Analysis
- Chapter 4: Indicative Spatial Plan and Spatial Focus Areas
- Chapter 5: Implementation Framework

Figure 2: LSDF Review Process



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CHAPTER 2: PLANNING AND POLICY CONTEXT

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This chapter presents a summary analysis of the planning and policy context within which the LSDF has been reviewed. It includes an analysis of:

- The global context
- SADC Region strategies and plans
- Strategic direction provided by national policies and plans
- Alignment with adjoining provinces
- Strategic direction provided by provincial policies and plans
- District planning
- Specific issues related to the review of the LSDF, 2016.

The content of the chapter is a summary of a more detailed analysis, please refer to **Annexure A** for the full resource document.

2.1. GLOBAL CONTEXT

2.1.1. Overview and Synthesis

Table 2: Global Context Documents Reviewed

DOCUMENTS REVIEWED	FOCUS
Sustainable Development Goals, 2022	Sets out framework to guide global sustainable development with 196 targets and 232 indicators
South Africa Sustainable Development Goals Country Report, 2019	Sets out a range of priorities to facilitate achievement of the SDGs
Agenda 2063: The Africa We Want, 2015	Sets out a strategic framework for the socio-economic transformation of the African continent. The African Integrated High-Speed Railway Network is a flagship project that aims to connect African capitals and commercial centers through a High-Speed Rail network, thereby promoting connectivity and trade across Africa
Climate Change Bill, 9 of 2022	The bill proposes a range of institutional and planning interventions to address climate changes, and confirm South Africa's carbon emission reduction targets

The implications of global commitments for the LSDF include:

- Enabling sustainable development through spatial form, guided by the translation of global policy and outcomes such as the SDGs to provincial spatial outcomes.
- Considering the impact of international commitments to the decarbonisation of the South African economy on the Limpopo space economy.
- The role of Limpopo and its regional connectivity and resource asset base as a contributor to African development.

2.1.2. Key Outtakes

Box 1: Aspirations for Africa outlined in Agenda 2063

OUR ASPIRATIONS FOR THE AFRICA WE WANT (African Union Commission, 2015)

1. *A prosperous Africa based on inclusive growth and sustainable development*
2. *An integrated continent, politically united and based on the ideals of Pan-Africanism and the vision of Africa's Renaissance*
3. *An Africa of good governance, democracy, respect for human rights, justice and the rule of law*
4. *A peaceful and secure Africa*
5. *An Africa with a strong cultural identity, common heritage, shared values and ethics*
6. *An Africa whose development is people-driven, relying on the potential of African people, especially its women and youth, and caring for children*
7. *Africa as a strong, united and influential global player and partner*

Box 2: South Africa Climate Change Commitments

South Africa has updated and enhanced its nationally determined contribution (NDC) under the Paris Agreement with the following focus: (1) 2020s: the electricity sector; (2) 2030s: deeper transition in the electricity sector, coupled with a transition in the transport sector towards low emission vehicles; (3) 2040s and beyond: decarbonization of the hard-to-mitigate sectors.

Climate Change Bill: Interim National Greenhouse Gas Emissions Trajectory:

The Republic's greenhouse gas emissions will—

(a) peak in the period 2020 to 2025 in a range with a lower limit of 398 Megatonnes (109kg) (Mt) CO2-eq and upper limits of 583 Mt CO2-eq and 614 Mt CO2-eq for 2020 and 2025, respectively;

(b) plateau for up to 10 years after the peak within the range with a lower limit of 398 Mt CO2-eq and an upper limit of 614 Mt CO2-eq.; and

(c) from 2036 onwards, decline in absolute terms to a range with a lower limit of 212 Mt CO2-eq and an upper limit of 428 Mt CO2-eq by 2050.

Figure 3: Sustainable Development Goals

(United Nations, n.d)

Table 3: SDG Priorities South Africa

SOCIAL GOALS PRIORITIES:	ECONOMIC GOALS PRIORITIES:
▪ Improve social protection ▪ Improve access to basic services ▪ Expand ECD Programmes ▪ Promote higher quality and industry-relevant education and training ▪ Address the unequal share of unpaid care and domestic work ▪ Promote innovative and sustainable health financing ▪ Improve frontline health care services ▪ Prioritise social determinants of health ▪ Correct gaps in legislation and policy which address discrimination	▪ Promote effective governance, robust leadership and participative citizenry ▪ Build an effective policy environment ▪ Encourage innovation and entrepreneurship ▪ Increase local and international investment ▪ Implement high-quality economic regulation of network industries ▪ Decouple economic growth from resource use and reduction in waste generation
ENVIRONMENTAL GOALS PRIORITIES:	**GOVERNANCE, PEACE, JUSTICE AND SECURITY GOALS PRIORITIES:**
▪ Continue to strengthen the national climate change response environment ▪ Revisit and Stabilise water sector institutional environment ▪ Improve water infrastructure asset management ▪ Stabilise water sector revenue environment ▪ Improve water sector information and data management ▪ Actively manage marine development trade-offs ▪ Overcome data challenges in the ocean economy ▪ Mainstream ecosystems and biodiversity into national planning ▪ Address programme and data gaps around energy affordability ▪ Fast-track off-grid electrification ▪ Accelerate informal settlement upgrading	▪ Focus on the developmental aspects of the White Paper on Safety and Security ▪ Increase access to justice for all ▪ Strengthen and broaden South Africa's participation in international bodies ▪ Strengthen mechanisms to prevent illicit financial flows ▪ Combat corruption and bribery ▪ Promote and protect the right of public access to information (StatsSA, 2019)

2.2. SUB-CONTINENTAL STRATEGIES AND PLANS

2.2.1. Overview and Synthesis

This section focussed predominantly on the South African Development Community and the countries directly bordering the Limpopo Province.

Table 4: Sub-Continental Documents Reviewed

DOCUMENTS REVIEWED	FOCUS
SADC Policy on Strategy Development, Planning, Monitoring and Reporting, 2020	Sets out the role and functioning of of SADC
SADC Vision 2050, 2020	Sets out the SADC vision and supporting pillars
SADC Regional Indicative Strategic Development Plan (2020-2030), 2020	Operationlises the SADC Vision 2050, providing actions, interventions, targets and timelines for each priority area (pillar).
SADC Transfrontier Conservation Areas, 2020	Sets out the development and management of the Transfrontier Parks straddling the Limpopo border: Great Limpopo and Mapungupwe Transfrontier Parks
SADC Industrialisation Strategy and Roadmap 2015-203, 2015	The strategy sets out its approach to economic and technological transformation on a regional level, with the roadmap outlining interventions, content, objectives, outcomes and responsibilities of main actors
SADC Regional Agricultural Policy, 2013	Sets out common objectives and measures to guide actions at a regional level in the agricultural sector
SADC Support towards Operationisation of the SADC Regional Agricultural Policy	Sets out the aim and approach of the EUR 9 million project financed by the EU with a focus on agriculture and food production
SADC Regional Water Policy, 2005	The policy sets out nine thematic policy areas which address water resource management issues and challenges
South African Power Pool Annual Report, 2021	Sets out the development and functioning of the SAPP
SADC Climate Change Strategy and Action Plan, 2015	The Strategy and Action Plan aims to provide a broad outline for harmonized and coordinated Regional and National actions to address and respond to the impacts of climate change in line with global and continental objectives

Since Limpopo Province connects to three of South Africa's four neighbouring countries, it is both the 'deliverer' and 'receiver' of much of the country's impact on sub-continental level, including:

- Shared resources such as water, conservation land (including game and biodiversity) and coal;
- Electricity augmentation;
- Access to the rest of Africa via road and rail networks (opportunity to maximise export opportunities);
- Migrant labour;
- Tourism; and
- The regional effect of climate change on livelihoods, infrastructure and sectors mentions above.

2.2.2. Key Outtakes

Figure 4: SADC 2050 Vision
(SADC (3), 2020)

The SADC Vision 2050 does not provide any spatial objectives – rather it represents a high-level vision for the SADC region. It does not make any locational or country specific mentions. The vision is expressed in three pillars as illustrated in Figure 4: SADC 2050 Vision to the right. (SADC (3), 2020).

Figure 5: SADC Member Countries Map
(SADC (1), 2020)

Box 3: SACD Vision Pillars Pertinent to the Limpopo Province

Given that the Limpopo Province borders three neighbouring countries, issues related to the three pillars that would be relevant across national boundaries should be tracked. Some of the issues that relates more pertinently to the Limpopo Province includes the following:

Industrialised regional economy: *given the Provinces investment in large industrial complexes through the establishment of several Special Economic Zones (SEZs) and the revitalisation of industrial parks there is a strong intent to develop industries. The market of such industries would also include the SADC economic region.*

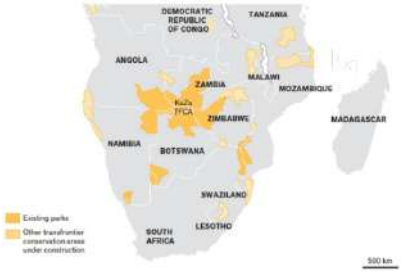
Climate change: *recent and developing stresses brought about by climate change such as droughts, extreme climate events and increasing future temperatures all result in increased risk to those people dependant on agriculture for livelihoods. Shared resources such as the Limpopo River and its associated catchments and basins requires shared policies and measures.*

Infrastructure for access: *The flows of people and goods across SADC countries is essential for market integration, trade, economic development and regional stability. Interdependencies require efficient and operational road-, rail- and air linkages. Limpopo is a gateway providing critical access into and from other SADC countries to the rest of SA as well as its ports.*

Table 5: Key SADC Initiatives:

1. Transfrontier Conservation Areas and Parks

Two of the 18 Transfrontier Parks are predominantly located in the Limpopo Province: **(1)** The Great Limpopo Transfrontier Park and Conservation Area, and **(2)** The Greater Mapungupwe Transfrontier Conservation area.

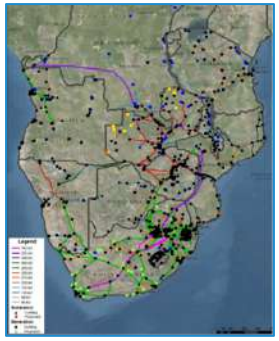


2. Spatial Development Initiatives (SDIs)

The revived Trans Limpopo SDI is meant to create an economic corridor from the Limpopo Province northwards extending to Victoria Falls in Zimbabwe (the Matabeleland Province). This SDI also links up the Musina-Makhado Special Economic Zone. One of the critical issues explored as part of both initiatives is gaining **access to water resources from Zimbabwe to support the SEZ**.

3. Southern Africa Power Pool (SAPP)

Inter-Governmental MoU for the formation of an electricity power pool in the region. The SAPP coordinate the planning and operation of the electric power system among member utilities. The SAPP vision is to be a fully integrated, competitive energy market and a provider of sustainable energy solutions for the SADC region and beyond.



Box 4: Regional Water Policy, Climate Change and the Limpopo River Basin

The Limpopo River Basin, of critical importance to Limpopo, shares water resources with three neighbouring countries, making the regional cooperation policy of critical importance to the province as any future development might affect this regional water resources.

The Limpopo River Basin is mostly semi-arid, with a highly variable climate, and is periodically exposed to severe droughts and floods. The water resources are already over-subscribed and there is an over-reliance on rain fed agriculture for food production. There are large, poor rural populations with livelihoods largely based on climate sensitive natural resources. Undiversified economies in some parts, and insufficient public and private resources to deal with poverty and shocks, make the Limpopo River Basin highly vulnerable to climate related hazards and change. Current climate trajectories project significant warming across the basin with increasing droughts and more frequent dry spells. Past heavy rainfall has already led to significant flood damage in parts and this trend is expected to continue.

SADC Water Basins

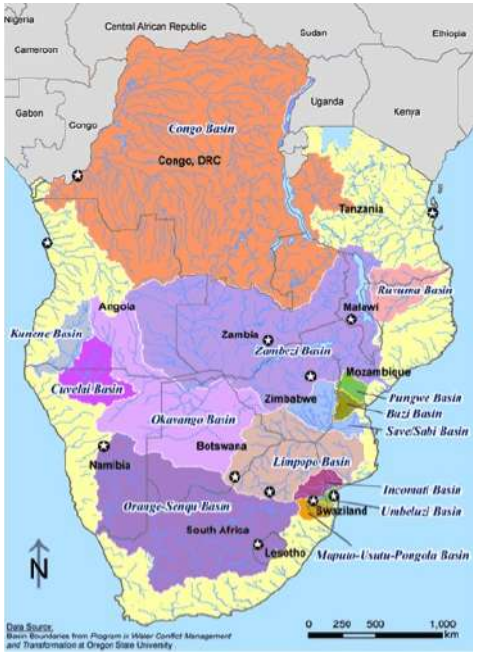


Table 6: Plans and Policies of Bordering Countries

ZIMBABWE

Zimbabwe borders Limpopo Province to the north and is accessed via Beitbridge border post. The N1 national road corridor extends into Zimbabwe and the rest of the continent via Beitbridge. The Beitbridge Modernisation Project to increase capacity at Beitbridge border post by five times is underway.

Additional spatial and functional linkages between Zimbabwe and South Africa include:

- **Industrialisation project:** The planned Musina-Makhado SEZ at Beitbridge border post would possibly require water resources from Zimbabwe to augment available sources in South Africa, and once developed, would increase economic activity close to the Zimbabwe border.
- **Water:** The Limpopo River forms the border between South Africa and Zimbabwe. South Africa shares the Limpopo water catchment basin with Zimbabwe, Mozambique and Botswana.
- **Electricity:** Zimbabwe has an agreement to be an offtaker of surplus electricity from ESKOM, subject to availability
- **Conservation:** The Great Limpopo Transfrontier Park (GLTP) straddles the borders of South Africa, Zimbabwe and Mozambique.
- **Migrant labour:** Many Zimbabweans move to South Africa in search of job opportunities, often leaving family members behind in Zimbabwe.
- **High speed train:** The nature of the planned high-speed train needs to be clarified – if it will cross the border to Zimbabwe.

BOTSWANA

Botswana borders Limpopo Province to the northwest and is mainly accessed via the Groblersbrug border post along the N11 national freeway. A second, smaller border post is found at Pont Drift border post.

Additional spatial and functional linkages between Botswana and South Africa include:

- **Water:** SA shares the Orange-Senqu water catchment basin with Botswana and Namibia and the Limpopo water catchment basin with Botswana, Zimbabwe and Mozambique.
- **Electricity:** Botswana has an agreement to import a maximum allocation of electricity from South Africa but the need for imported electricity is decreasing fast.
- **Mining:** The Mmamabula Coalfields in the south-eastern extents of Botswana overlap to South Africa's Waterberg Coalfield. The Botswana government are planning a new heavy haul railway line linking the Mmamabula area with Lephalale to link into the existing Transnet coal haulage network. There is also the possibility of developing a power station at the Mmamabula coalfields.
- **Conservation and tourism:** The Greater Mapungubwe Transfrontier Conservation Area (TFCA) straddles the boundaries of South Africa, Botswana and Zimbabwe.
- **Food/ exports:** When regulations allow, meat is exported from SA to Botswana.
- **Game industry:** Botswana is a favourite hunting destination for some South Africans.
- **Botswana's National Development Plan:** Planned SEZ at Sir Seretse Khama International Airport in Gabarone; Chobe/ Zambezi river water transfer scheme project.

MOZAMBIQUE

Kruger National Park borders on Mozambique to the east and north. Pafuri border post in the Kruger National Park offers an alternative access to Mozambique.

Additional spatial and functional linkages between Mozambique and South Africa include:

- **Water:** South Africa shares the Limpopo water catchment basin with Mozambique, Botswana and Zimbabwe; the Inkomati Basin with Mozambique and Swaziland; and the Maputo-Usuno-Pangola Basin with Mozambique and Swaziland.
- **Electricity:** Mozambique is richly endowed with a wide diversity of renewable energy sources, exporting 900 to 1000 MW to South Africa. The Coral South floating liquefied natural gas (FLNG) project located offshore Mozambique, is the first FLNG project in Africa. It is the world's first ultra-deepwater FLNG facility to operate at a water depth of 2,000m. To be permanently moored in the Coral South deepwater gas field, the FLNG is expected to produce 3.4 million tonnes (Mt) of LNG a year, over its estimated design life of 25 years.
- **Tourism:** Mozambique is an increasingly popular holiday destination for South Africans.
- **Migrant labour:** Many Mozambicans migrate to South Africa in search of job opportunities. As with Zimbabwe, migrant labour and remittances sent to family in Mozambique are invisible but important linkages to acknowledge.

2.3. NATIONAL STRATEGIC DIRECTION

2.3.1. Overview and Synthesis

Table 7: National Documents Reviewed

DOCUMENTS REVIEWED	FOCUS
National Development Plan, 2012	The plan sets out the long-term developmental vision for a common future for South Africa.
Medium Term Strategic Framework, 2019 – 2024, 2019	The MTSF sets out five medium-term priorities towards achieving the NDP Vision 2030.
District Development Model, 2022	The DDM is an intergovernmental relations based programme focussing on joint investment and delivery in metropolitan and district spaces through the development of the One Plan for District and Metropolitan areas.
National Spatial Development Framework, 2022	The NSDF is a spatial expression of the NDP and national policy direction and gives strategic guidance to spatial planning in the provincial sphere
National Spatial Action Areas, 2022	The NSAAs expand on the National Spatial Action Areas identified in the NSDF, providing more detailed guidance.
National Infrastructure Plan 2050, 2022	The NIP sets out the most critical actions that are needed for sustained improvement in public infrastructure delivery. The NIP is mostly non-spatial, focusing at strategic level and proposing a range of infrastructure but also financial and institutional interventions.
National Transport Master Plan 2050, 2017	NATMAP 2050 is the integrated, multi-modal national transport master plan for South Africa. It sets out a number of spatial proposals, some of specific significance for Limpopo.
White Paper on National Rail Policy, 2022	The policy provides direction for the modernisation of the rail network as the backbone of SA's freight logistics and passenger mobility systems.
Integrated Resource Plan, 2019	The IRP proposes a diversified energy mix consisting of coal, nuclear, natural gas, renewable energy, and hydro, complemented by improved energy storage.
National State of Water Report, 2021	The report provides an overview of the available water resources in SA regarding problem areas, measure taken to improve demand, monitoring programmes and outputs.
Human Settlement Framework for Spatial Transformation and Consolidation, 2019	The framework aims to direct investment in, and development spending on, national space, to enable inclusive growth and sustainable livelihoods by outlining a package of interventions towards asset poverty alleviation and housing delivery in well-located areas with secure tenure.
Priority Human Settlement and Housing Development Areas, 2020	In response to the Human Settlement Framework for Spatial Transformation and Consolidation (2019), a series of Priority Human Settlement and Housing Development Areas (PHSHDAs) were declared. The location of the PHSHDAs was selected to enable residents to live closer to areas with economic activities and social amenities such as schools, health facilities and job opportunities as well as access to adequate accommodation. Eleven PHSHDAs were identified in the Limpopo Province
Integrated Urban Development Framework, 2016	The IUDF seeks to foster a shared understanding across government and society about how best to manage urban growth towards a sustainable growth model of compact, connected and coordinated cities and towns.
IUDF Implementation Plan, 2020-2025, 2021	The IUDF Implementation Plan sets out three core programmes to support the implementation of the IUDF: The Cities Support Programme, the Intermediate City Municipalities Programme, and the Small Town Regeneration Programme.
Small Town Regeneration Programme, 2021	The Small Town Regeneration Programme aims to support the strengthening of the regional approach to planning, enhance financial viability of municipalities and provide targeted support to places and regions.
Comprehensive Rural Development Programme, 2009	The programme aims to deal with rural poverty through the optimal use and management of natural resources by enabling rural people to take control of their destiny, with the support from government. The CRDP aims to achieve this through a co-ordinated and integrated broad based agrarian transformation, strategic investment in economic and social infrastructure that will benefit the entire rural communities and land reform.
Draft National Integrated Rural Development Sector Strategy, 2022	The draft strategy builds on the CRDP and other initiatives and aims to: (1) Provide a national definition for rural and rural development; (2) Coordinate, fund and implement rural initiatives including catalytic programmes and projects; (3) Provide a well-coordinated and efficient national monitoring, evaluation, and oversight system to drive and assess the impact of the various rural

DOCUMENTS REVIEWED	FOCUS
	development initiatives against Government's outcomes and overall strategic direction.
Agriculture and Agro-Processing Master Plan, 2022	The AAMP is the product of a social compact between labour, government, civil society, and industry. It aims to promote inclusive growth, competitiveness, transformation, employment, and food security through the identification of key commodities and the provision of insight into unexplored opportunities in international markets.
National Biodiversity Assessment and Prioritisation Tools, 2018	The NBA is the primary tool for monitoring and reporting on the state of biodiversity in South Africa and informs policies, strategic objectives and activities for managing and conserving biodiversity more effectively.
National Climate Change Response White Paper, 2011	The paper sets out objectives regarding climate change in order to manage the effects of inevitable climate change on SA, as well as to contribute fairly to the global effort to stabilise GHG concentrations.
Climate Change Bill, 9 of 2022	The bill proposes a range of institutional and planning interventions to address climate changes, and confirm South Africa's carbon emission reduction targets
Strategic Framework and Overarching Implementation Plan for Ecosystem-Based Adaptation (EbA) in South Africa: 2016-2021, 2016	The framework sets out how to use biodiversity and ecosystems to support communities to adapt to life in a less predictable climate system which can lessen flooding, improve water, and soil quality, and contribute to livelihood opportunities.
Economic Reconstruction and Recover Plan, 2020	The plan is a key component of Government's response to the COVID-19 pandemic and the current economic recession. Although no specific spatial referencing is included, the priority interventions included in the plan should inform the spatial trajectory / spatial decisions and focus areas for strategic spatial planning.
Industrial Policy Action Plan, 2018/19- - 2020/21	The principal objective of the IPAP is to achieve structural change, by encouraging the development, growth and increased competitiveness of the South African manufacturing (value added) sector.

Issues arising from global, regional and national strategic direction:

- Alignment with the NSDF as the first PSDF to be undertaken since adoption of the NSDF:
  - Role of Limpopo nationally: increased population and urbanisation, national food security, economic diversification in the context of a just transition to low-carbon economy, protection and management of critical ecosystem services especially SWSAs, conservation and management of biodiversity (including role in national tourism).
  - Application of Rural-Regional Development Model, with implications for roles of settlements, defining settlement networks and critical linkages.
  - Alignment of social service provision: NSDF proposals and government precincts, also related to settlement typology.
  - Alignment of national programmes to NSDF logic – principle of economic concentration in Rural Development Anchors (e.g. SEZs, Industrial Parks, agri hubs, government precincts).
- Alignment of PHSHDAs with provincial housing areas, district / local urban edges and principle of concentration / densification of Rural Development Anchors and the Regional-Rural Development Model.
- Economic diversification through industrialisation: possible entry points to consider are green energy, agricultural production, support for redeveloped transport sector.
- Move to rail: potential freight and passenger corridors.
- Economic contribution and competing land uses: consider current contribution and long-term future role. Current significant current contribution of mining, coal-fired electricity vs protection of nationally strategic water resources, air quality / reduced emission targets, high potential agricultural land in the context of accommodating growing population and increased urbanisation, role in national eco-tourism sector.
- Climate change mitigation and adaptation: spatial risks areas, implications and approaches for implementation including Ecosystem-based Adaptation.

2.3.2. Key Outtakes

2.3.2.1. National Spatial Development Framework and Implementation Priorities

The first NSDF prepared in terms of SPLUMA was adopted by Cabinet in March 2022 (DALRRD, 2022). The NSDF is a spatial expression of the NDP and national policy direction and gives strategic guidance to spatial planning in the provincial sphere. Section 15(1) of SPLUMA requires that the PSDF must be consistent with the NSDF (RSA, 2013).

Figure 6: NSDF National Spatial Development Levers

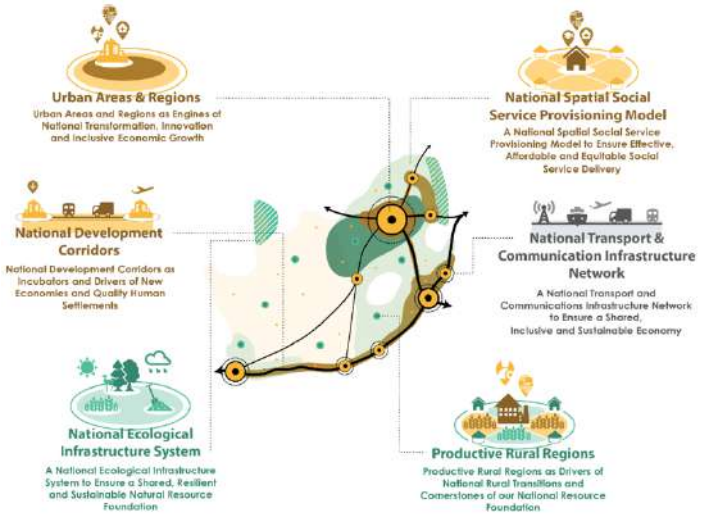
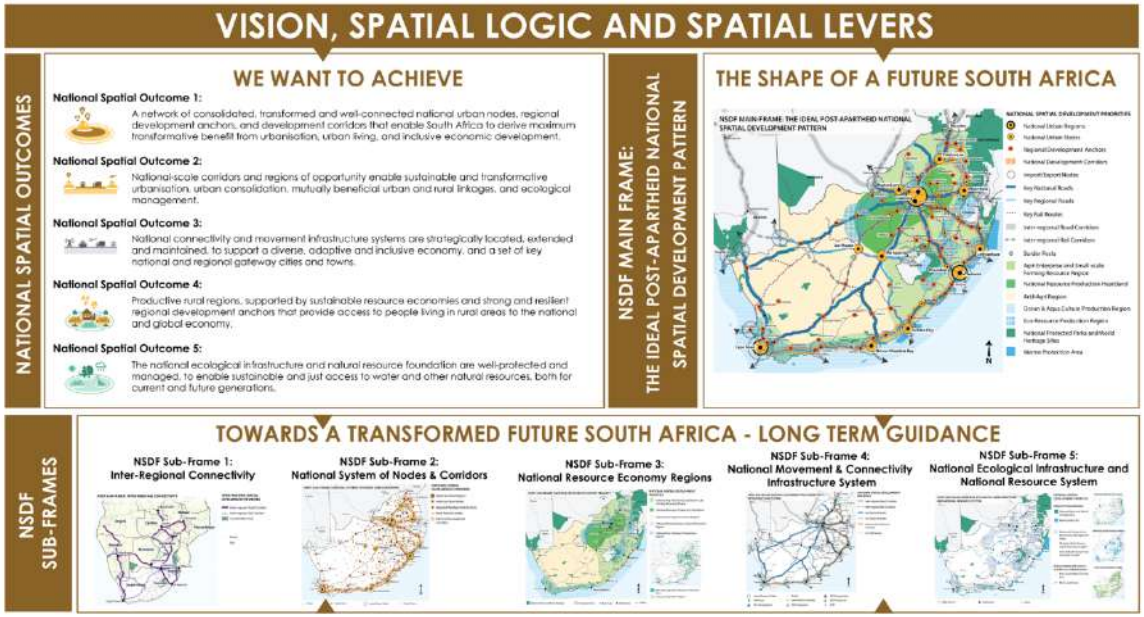


Figure 7: NSDF Spatial Outcomes and Frames



The NSDF Frames include the following spatial structuring elements that are important for consideration in provincial spatial planning to ensure the consistency of the LSDF with the NSDF (DALRRD, 2022):

Figure 8: NSDF Main Frame: Limpopo View

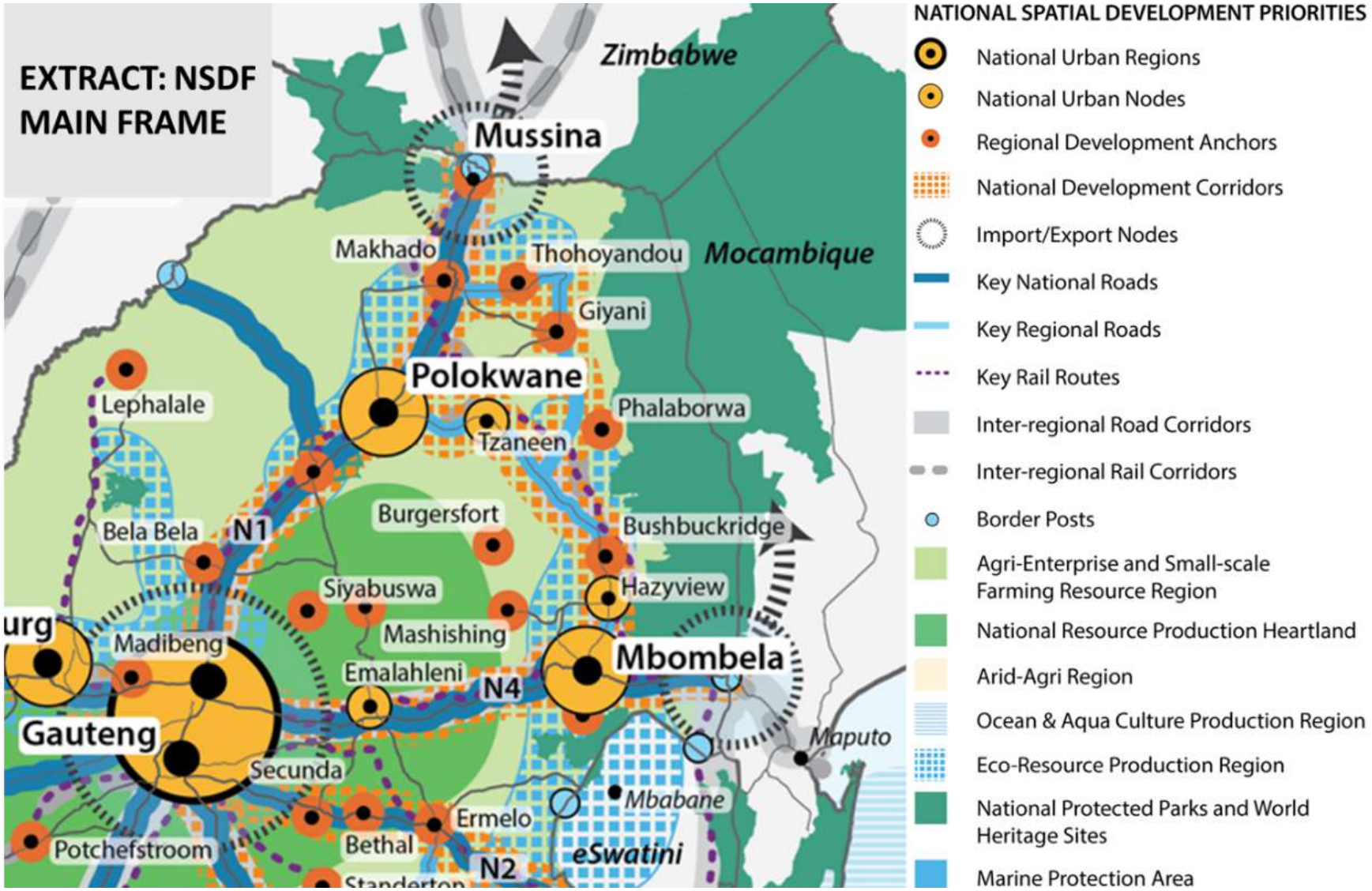


Table 8: NSDF Structuring Elements Relevant to the Limpopo Province

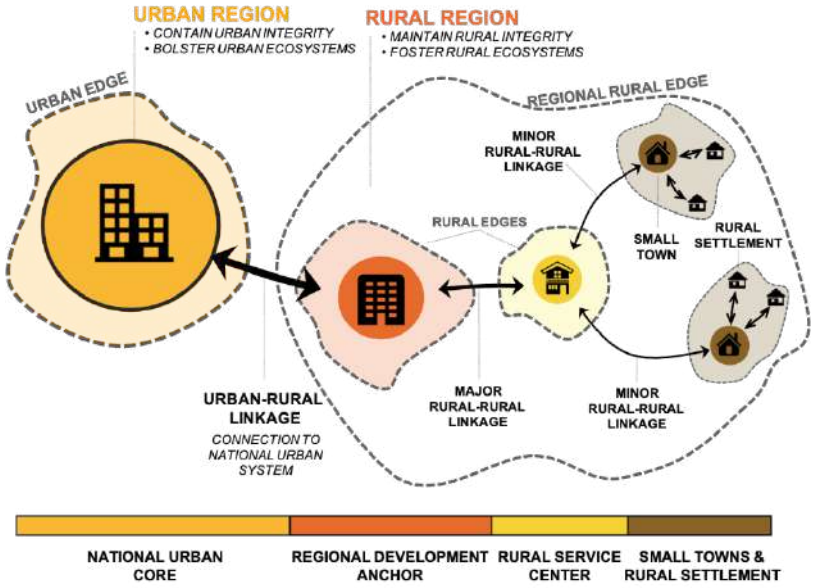
NSDF Element in Limpopo: National Urban Nodes	NSDF Element in Limpopo: Regional Development Anchors	NSDF Element in Limpopo: National Development Corridors
Polokwane (existing), Tzaneen (emerging)	**Makhado, Thohoyandou, Giyani, Phalaborwa, Lephalale, Bela Bela, Burgersfort**	**Along the N1; corridor linking Polokwane, Tzaneen and Mbombela; corridor linking Makhado, Thohoyandou, Giyani, and Phalaborwa.**
NSDF high level recommendations for National Urban Nodes: ▪ Consolidate and direct the rapid population growth in the eastern half of the country to national urban nodes, clusters and corridors by (1) creating quality human settlements and centres of human capital excellence, innovation, trade, inclusive green economies and regional enterprises, and by doing so (2) *reaping the urban (youth) dividend*. ▪ Within *distressed and sparsely populated areas,* and areas that are *becoming increasingly more arid, c*onsolidate settlement growth in (1) existing large urban nodes, and (2) emerging and fast-growing urban nodes. ▪ In addition to strengthening and consolidating expected population growth in urban regions, existing cities and intermediary cities, proactively support the development and emergence of a number of new cities in identified densely populated and high-potential transformation corridors.	**NSDF high level recommendations for Regional Development Anchors:** ▪ Prioritise and strengthen strategically located regional development anchors in productive rural regions and priority national development, trade and transport corridors to provide a range of services within the specific towns/cities and surrounding network of settlements and productive rural regions ▪ Support and strengthen strategically located regional development anchors through (1) targeted settlement planning and development, (2) higher-order social infrastructure provision, and (3) focused support for small and medium-sized enterprise development, industrialisation and economic diversification. ▪ Use the investment and enhanced social service provision in regional development anchors to encourage officials working in these rural regions to stay in these settlements and contribute to the local economy, instead of commuting to larger towns or cities on a daily or weekly/monthly basis. ▪ Clearly identify the role of specific settlements as gateways and interchanges on the regional public transportation network and incorporate these as such into the planning of 'functional rural regions'. ▪ Strengthen the connectivity of traditional areas and rural settlements with (1) higher-order urban settlements and (2) economic systems in functional rural regions, by making use of the road and rail network and regional corridor development. ▪ Plan social infrastructure provision within a regional-rural setting using the 'Social Services Wheel' and use such investment to establish and create well-functioning, compact and lively rural settlements and 'regional rural systems'.	**NSDF high level recommendations for National Development Corridors:** ▪ The corridors along the east and south coasts (N2) are supported as areas of strong interconnection between (1) high-value rural resource production areas, (2) ecological resource regions, (3) popular tourist destinations, (4) 'comfortable climatic zones', and (5) urban nodes. ▪ These corridors also provide opportunities for the consolidation of existing cities and the development of 'new' cities supported by well-developed multi-modal connectivity infrastructure, which will require that: o Port and airport development be strengthened in support of inter-regional trade flows and efficiency; and o Small harbour development in support of the fishing, tourism and maritime economy at identified coastal regional development anchor and rural service centres be maintained, expanded and accelerated. ▪ Development alongside Inter-Regional and National Freight and Development Corridors: o Consolidate nodal development to support inter-regional development corridors and trade with SADC, which includes (1) a focus on SADC corridors, and (2) improving efficiencies at border and port facilities on these routes, to handle greater international and regional trade flows. o Strengthen regional trade to support the development of cities and towns on these corridors. o Prioritise infrastructure (ports, harbours and logistics infrastructure) and efficient operations of nationally significant trade and movement networks.

NSDF Element in Limpopo: Agri-Enterprise and Small-Scale Farming Resource Region	NSDF Element in Limpopo: Eco-Resource Production Region
Entire Province excluding Protected Areas.	**Regions stretch from Gauteng to Lephalale; from Gauteng through Polokwane, Makhado and Thohoyandou; from Mpumalanga to Phalaborwa; mining areas throughout the Province**
NSDF high level recommendations for Agri-Enterprise and Small-Scale Farming Resource Region: ▪ Productive use of high-value agricultural land to support national food security. ▪ Rehabilitation of degraded land and effective land-use management. ▪ Improvement of rural-rural connections, market accessibility and key agricultural-production infrastructure. ▪ Enhancement of connectivity through well-planned infrastructure investment and settlement consolidation in well-connected regional development anchors.	**NSDF high level recommendations for Eco-Resource Production Region:** ▪ Enhance (1) the productive capacity, (2) environmental and livelihood quality, (3) cultural heritage, and (4) natural resource-access of these regions through effective agrarian practices and enterprise development programmes that are focused on natural resource restoration and custodianship. ▪ Discourage further land and settlement development, and carefully manage existing settlements and land uses in productive agricultural regions that play a crucial role in national strategic water production, national food security and rural livelihoods. ▪ Pursue effective management and custodianship of national strategic water source production regions. ▪ Ensure efficient rural-rural connectivity in rural regions to enhance the prospects of making a living in these areas. ▪ Rehabilitate degraded land and ensure effective land use management, settlement consolidation, improved rural connectivity and an eco-resource related enterprise focus to (1) provide opportunities for livelihoods and industry development, and (2) support national water availability. ▪ Enhance and further expand the value and contribution of the Oceans and Aqua Economy Areas to (1) local livelihoods, and (2) regional and national economic development. **NSDF high level recommendations for Mining and Energy Production Areas:** ▪ In the case of new mines, where (1) the levels of automation and mechanisation are low, and (2) sizeable numbers of workers will still be required, housing provision and/or settlement expansion should preferably take place in existing regional development anchors and/or small towns where adequate basic municipal and social services are available. ▪ In deciding on the licensing of new mining operations, (1) national and regional development priorities, and (2) the cumulative impacts of the envisaged mining and related settlement activities and further such activities on the creation of 'functional rural regions' should ideally be considered. Where possible, mining companies should be prompted to become actively involved in the development of such 'functional rural regions' that can survive post the mining era. Instead of spatially scattered piecemeal investments, mining companies, individually, or collectively could, by agreement with the DMRE and the provincial and local governments involved, invest in key 'regional-rural development focused' (1) hard, transport and connectivity, and (2) soft, social services-infrastructure. ▪ In undertaking such regional-rural development focused investment, collaborative, long-term regional planning, which includes (1) scenario development, (2) population migration projections, (3) diversification strategies, (4) cost/benefit-modelling of regional infrastructure provision, municipal service delivery, and the cumulative impacts of the mining activities, and (5) the optimisation of regional and local development opportunities, would be of great value, and should ideally be undertaken. ▪ The DMRE must ensure that rehabilitation and negative-impact-mitigation, as provided for in the MPRDA, must extend beyond agreements on paper and be enforced on the ground.

In addition to the above spatial guidance, the NSDF introduces the Regional-Rural Development Model which is of great significant for Limpopo as a Province with both urban development and productive rural regions. According to the NSDF, this model "takes a systemic view of rural areas and proposes the 'soft delineation' of 'polycentric functional rural regions' that have (1) at least one well-connected regional development anchor, located both within the region, and on the national transport network to 'anchor' the region as a whole in, and connect it to the national space economy, (2) social, cultural, historical, economic and cultural characteristics and attributes that would make the development of a 'functional rural region' possible over time, and (3) the potential for intra-regional rural-rural and rural-urban trade between towns and villages in the region." (DALRRD, 2022)

The application of the logic of the Regional-Rural Development Model together with the NSDF guidance in the Main Frame and Sub-Frames should inform the spatial structuring of Limpopo.

Figure 9: NSDF Regional-Rural Development Model



The NSDF includes very specific guidelines regarding a differentiated approach of providing a different mix and scale of social services to different settlement typologies, directly linked to the Regional-Rural Development Model (DALRRD, 2022):

Figure 10: NSDF Settlement and Service Network

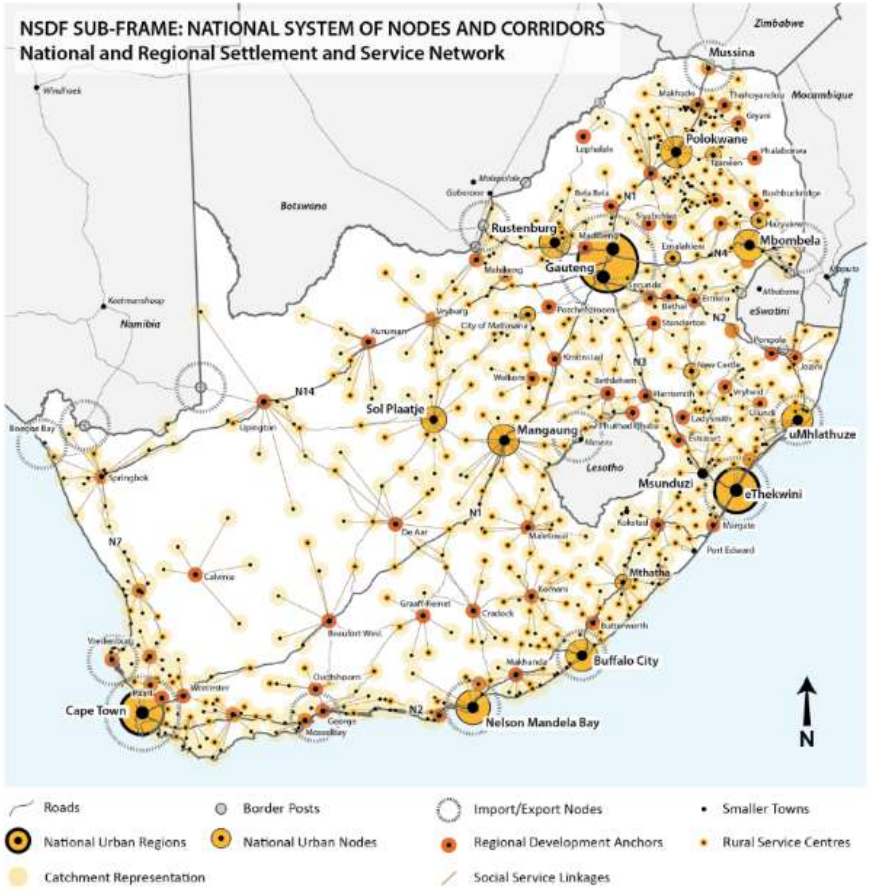
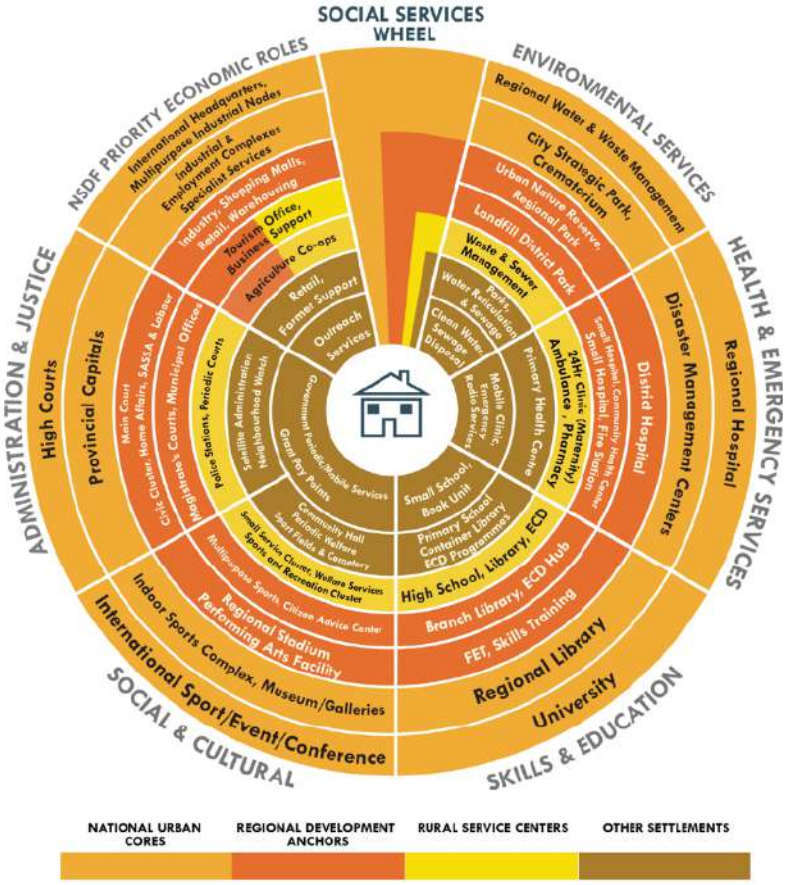


Figure 11: NSDF "Service Wheel"



The settlement typology proposed in the NSDF coupled with the social service recommendations should be considered and applied to the Limpopo settlement network.

In addition to spatial form proposals, the NSDF contains guidance regarding the sustainable use and protection of national ecological infrastructure and the natural resource system (see Figure 12: NSDF Ecological Sub-Frame on the next page) (DALRRD, 2022):

Protected Areas:

Key recommendations centre on the implementation of the National Protected Areas Expansion Strategy, the contribution of protected areas to both human life and the economy (e.g. nature-based tourism and wildlife economy), the requirement of biodiversity stewardship and land reform programmes to work hand-in-hand to give communal landholders access to the social and economic opportunities, and also as a way to extend the protected area network.

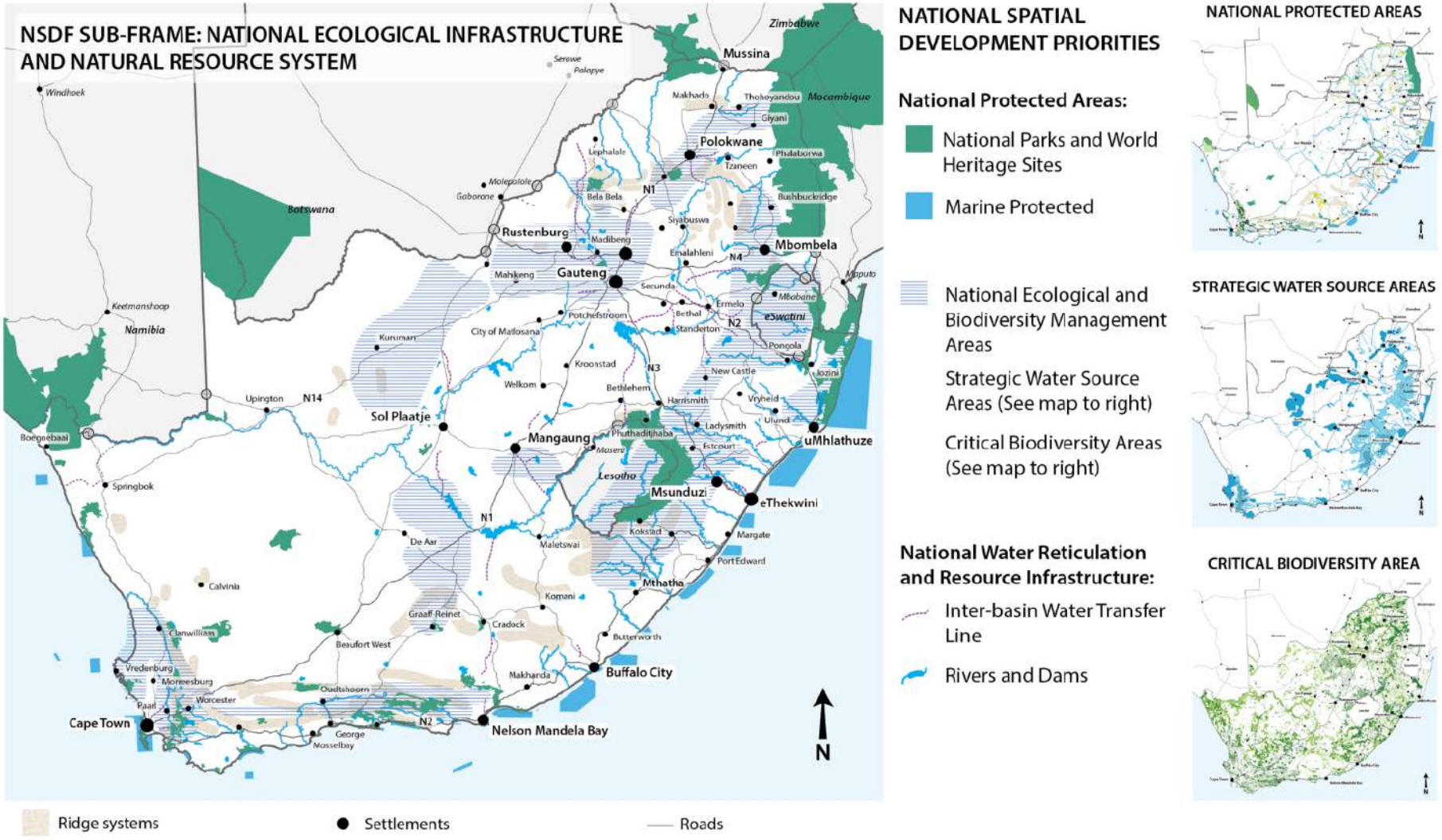
National Ecological and Biodiversity Management Areas:

Key recommendations centre on the management and protection of Critical Biodiversity Areas (CBAs) and Strategic.

National Water Reticulation and Resource Infrastructure:

Key recommendations centre on the maintenance, extension and upgrading of the SWSA resource infrastructure network to support nationally significant spatial development areas and the maintenance and extension of waterpipes to connect/cover national urban regions and cores, regional development anchors and rural service centres and key economic production sites in line with national spatial, social and economic development priorities.

Figure 12: NSDF Ecological Sub-Frame



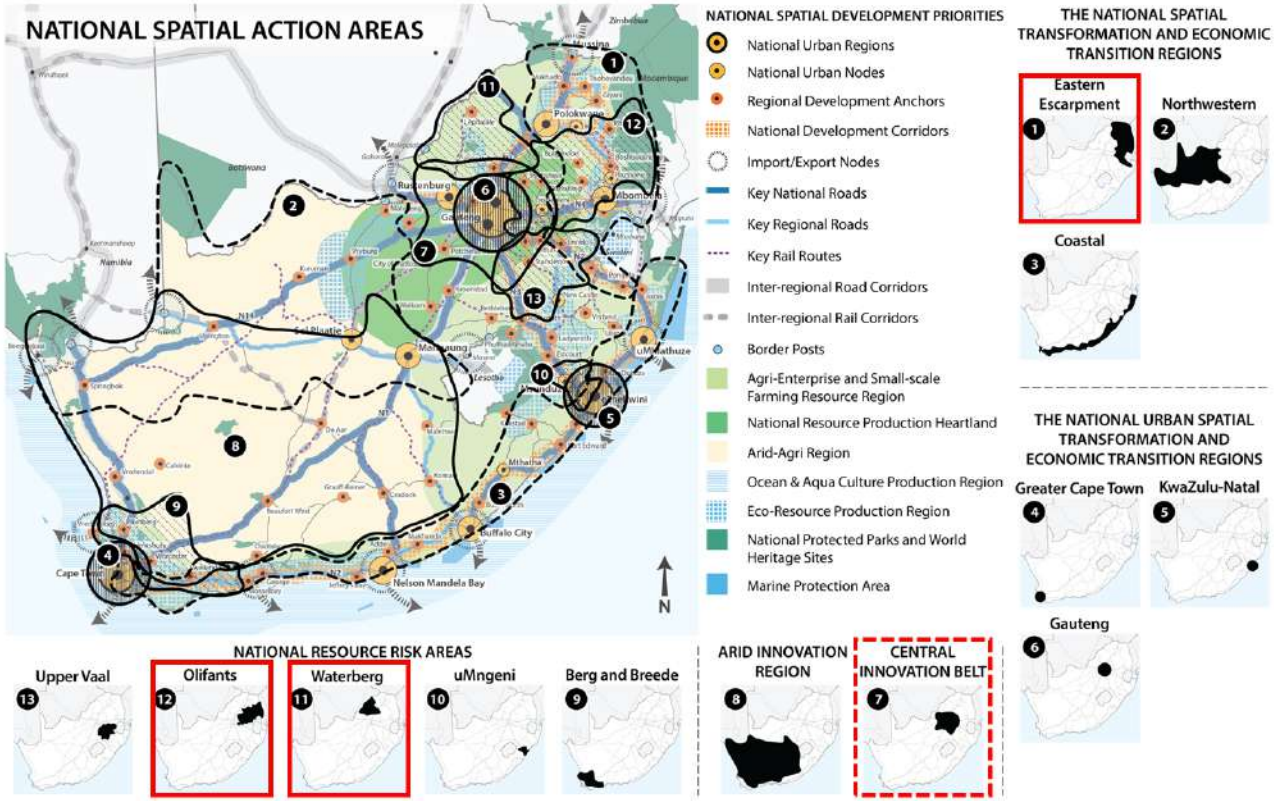
2.3.2.2. National Spatial Action Areas

A key component of the NSDF is a series of five types of National Spatial Action Areas (NSAAs). The NSAAs are spatial regions that represent the "most urgent short-term, strategic spatial development catalysts to (1) bring about radical spatial transformation at scale, (2) manage and mitigate rising national risks, and (3) move our country at speed towards the long-term Ideal National Spatial Development Pattern" (DALRRD, 2022)

Three of the NSAAs extend into Limpopo, while a small portion of a fourth also transcends the provincial boundary (DALRRD, 2022). These are (also see Figure 14 on the following page):

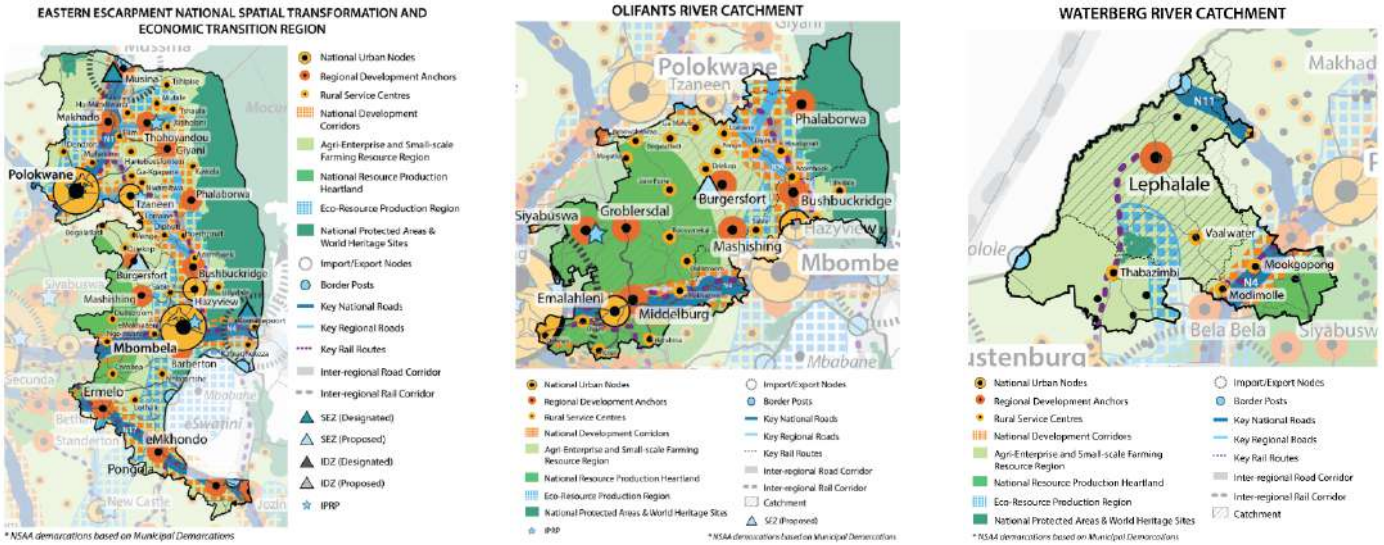
- Eastern Escarpment Spatial Transformation and Economic Transition Region;
- Olifants River Catchment National Resource Risk Area;
- Waterberg River Catchment National Resource Risk Area; and
- Central Innovation Belt (small section).

Figure 13: NSAAs Overview



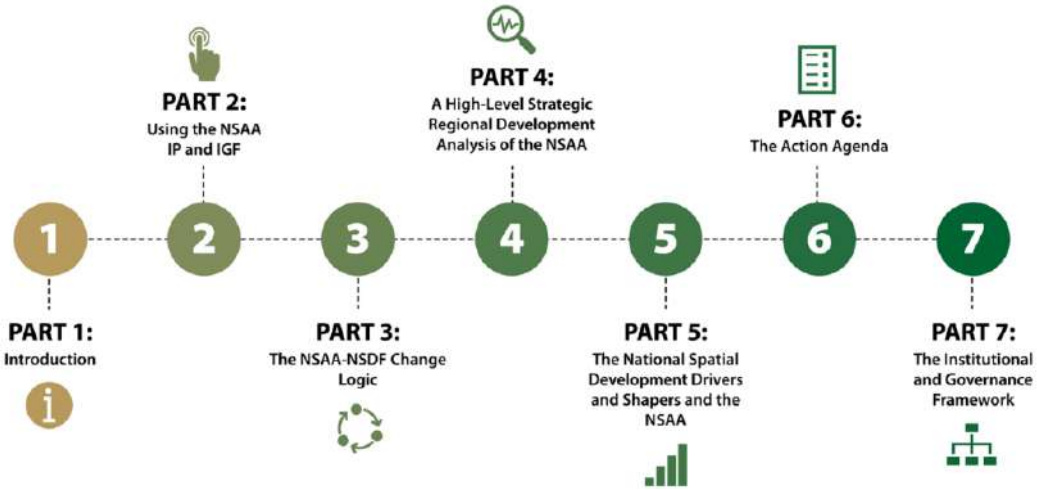
(DALRRD, 2022)

Figure 14: Limpopo NSAAs



At the time of writing, draft NSAA Implementation Plans and Institutional and Governance Frameworks were being finalised. The proposals contained in these, once finalised and adopted, will be used to inform the Implementation Framework of the LSDF.

Figure 15: NSAA Implementation Plans



2.3.2.3. NATMAP

NATMAP 2050 is the integrated, multi-modal national transport master plan for South Africa. In contains a set of spatial proposals (DoT, 2017), of which the following is significant for Limpopo:

Proposed interventions for road infrastructure:

- Upgrading of coal haulage roads in the Province (SIP 1)
- Weighbridge operations and links to one national system

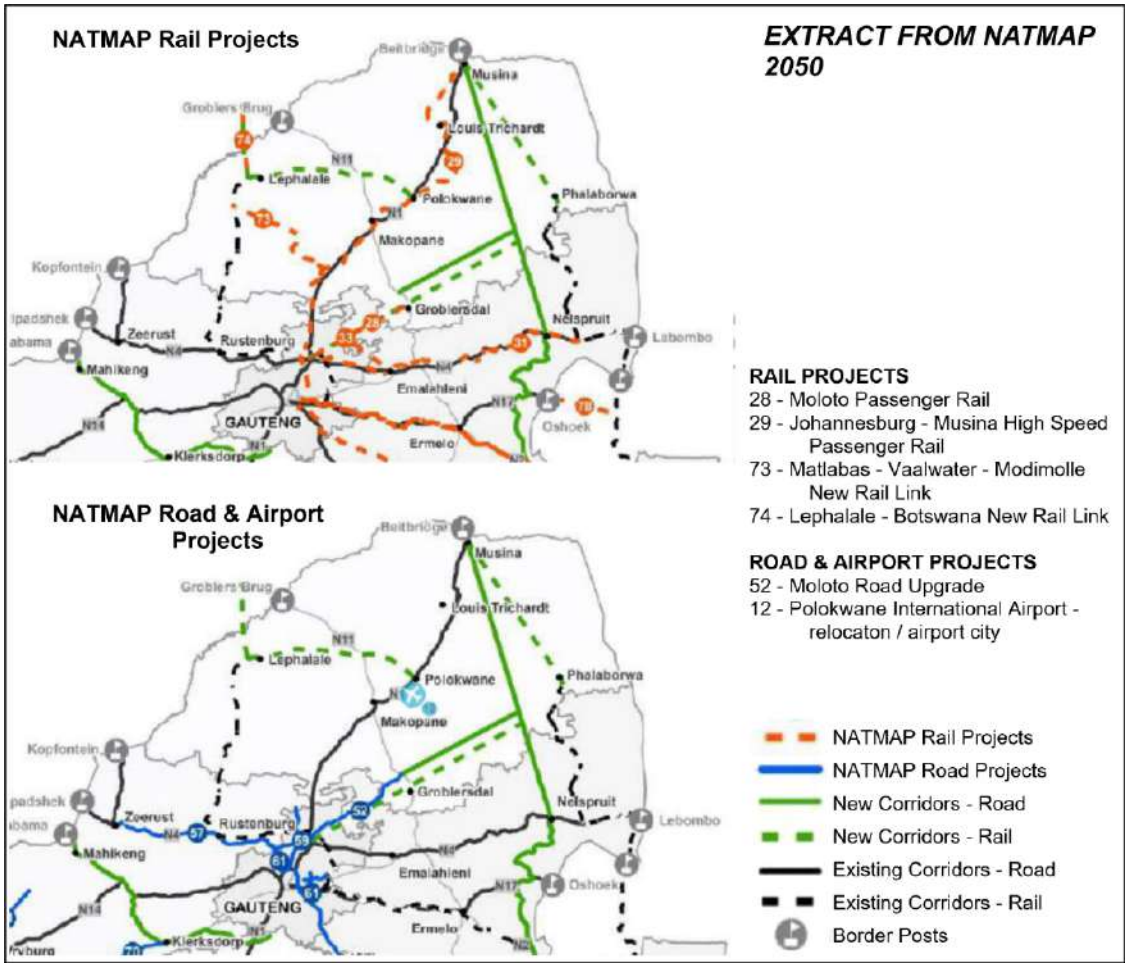
Rail priorities and programmes for various long/medium distance high/medium-speed corridors are:

- N1 (Gauteng–Limpopo–Free State–Western Cape)
- Moloto corridor (second phase to Limpopo)
- Waterberg Mpumalanga–KwaZulu-Natal rail link (part of SIP1): Unlocking the northern mineral belt with Waterberg as catalyst. Rail requirements of the Waterberg region. Transnet is seeking a prefeasibility study on the Waterberg infrastructure and feasibility studies on rail infrastructure linking the coal-mining town of Lephalale in Limpopo to Ermelo in Mpumalanga, which is a key coal-logistics junction.

Airport:

- Polokwane International Airport: Prefeasibility study and construction of aero-city concept and repositioning of Polokwane International Airport (from National Airspace Master Plan (NAMP), (DoT, 2010))

Figure 16: Extract from NATMAP 2050

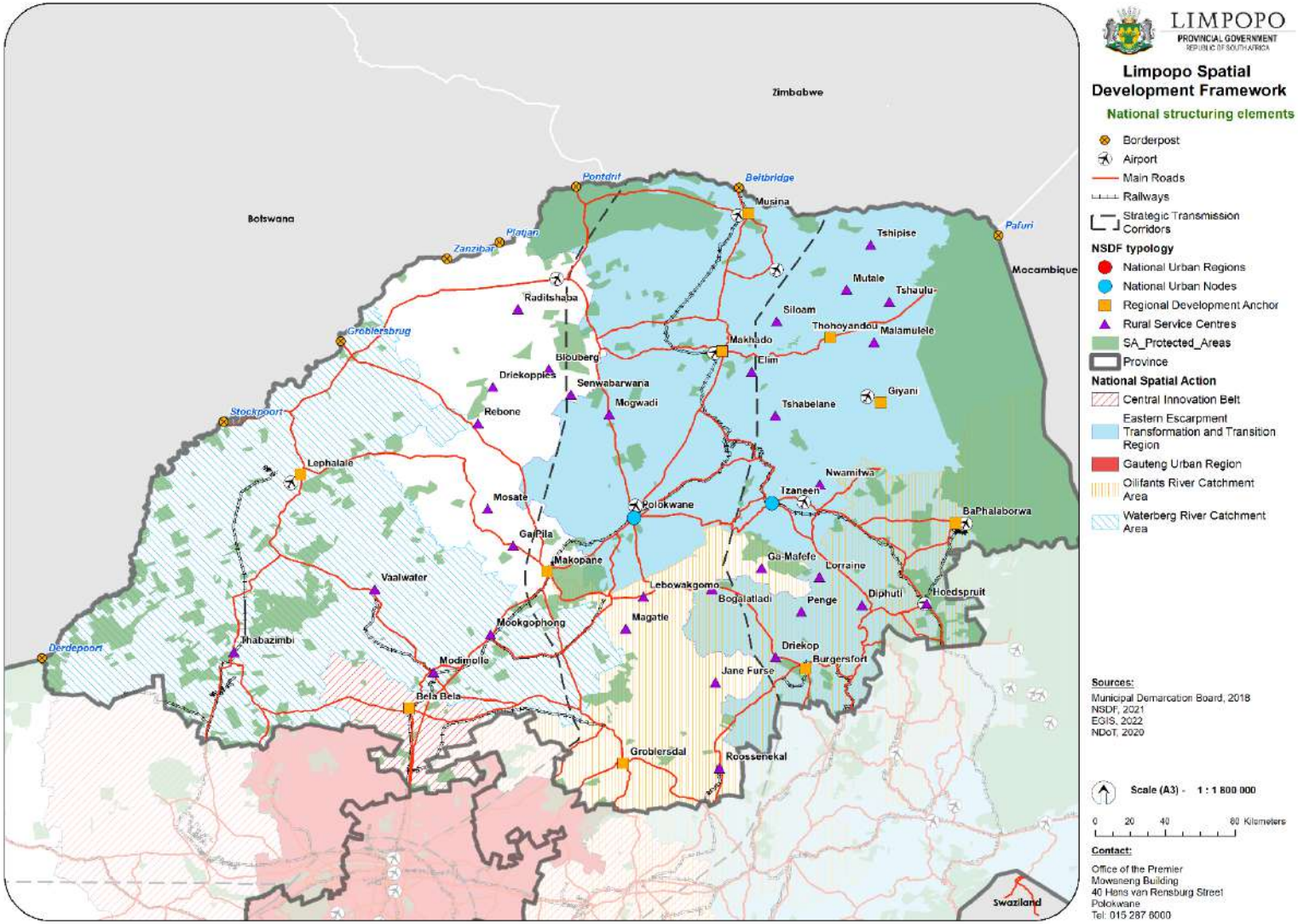


(DoT, 2017)

2.3.2.4. Spatial Footprint: National Strategic Direction and Initiatives

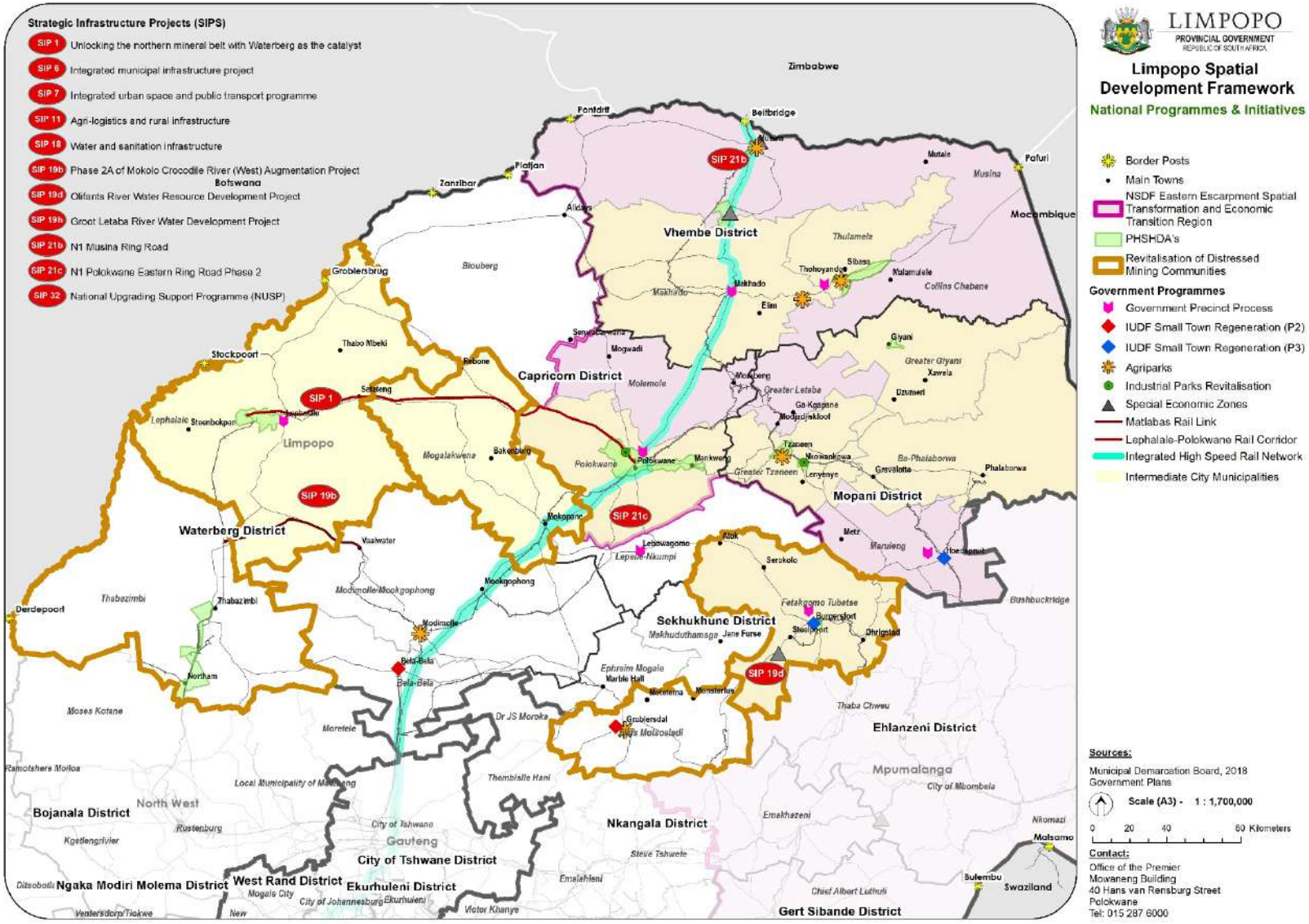
The map below reflects national policy guidance in terms of spatial structuring elements:

Figure 17: National Spatial Structuring Elements



The map below provides an overview of national initiatives and programmes with a specific spatial footprint in Limpopo:

Figure 18: National Programmes and Initiatives



2.4. INTER-PROVINCIAL ALIGNMENT

2.4.1. Overview and Synthesis

Table 9: Inter-Provincial Alignment Documents Reviewed

DOCUMENTS REVIEWED	FOCUS
Gauteng Provincial Spatial Development Framework 2030 (2015)	The framework guides spatial development in the Gauteng Province providing for a polycentric city region structure with a strong emphasis on densification along identified nodes and corridors.
Mpumalanga Provincial Spatial Development Framework (2019)	The framework guides spatial development in the Mpumalanga Province providing for the development of a strong and functioning polycentric system of well-connected nodes in more urban and metropolitan regions, well-serviced rural regions and diverse economic activities.
North West Provincial Spatial Development Framework (2017)	The framework guides spatial development in the North West Province, promoting densification and consolidation of the urban footprint in general, spatial targeting at identified areas with inherent economic potential, and rural development.

The following spatial features and planned initiatives are shared between Limpopo Province and its South African neighbouring Provinces, and have a bearing on the LSDF:

- Shared water management areas, with associated threats of over-use and water quality issues.
- Movement of people and goods. Freight transport includes road and rail routes predominantly to the south coast and the highveld. Poor maintenance of transport routes to export destinations impact on the agriculture and mining industry, in particular the routes through Mpumalanga Province.
- Commercial farming activities.
- Areas recommended for conservation and tourism, mostly due to its rich biodiversity and/or scenic value.
- Mining and industrial activities, including Anglo American's proposed Hydrogen Valley/ Green Corridor

Note, there is not really pressure for human settlement expansion across the borders, from either direction. The respective provincial SDFs encourage densification and consolidation, and the centre of gravity seems to be the provincial cores of Pretoria/ Johannesburg, eMalahleni/ Middelburg, and Rustenburg.

2.4.2. Key Outtakes

Table 1 on the following pages provides a summary of the key planned initiatives in the bordering municipalities which might influence development in the Limpopo Province.

Table 10: Inter-Provincial Dynamics

NORTH WEST

Limpopo Province borders on North West Province, extending from the Botswana border at Madikwe game reserve to the N1 national freeway at Temba/ Hammanskraal (Gauteng). The area is largely characterised as rural with a variety of mineral deposits, especially along the Dwarsberg ridge, while also having high environmental sensitivity. The belt of land in Limpopo Province bordering on North West Province comprises commercial farming activities and mining activities in the west and east respectively.

- The **main linkages** between the North West and Limpopo Provinces are route R510 to Rustenburg and route R511 to Brits, both linking to the N4 freeway – the east-west corridor between Botswana and Mozambique.
- **Challenges shared between Limpopo and the North West Province:** (1) Groot Marico and Crocodile water catchment areas under pressure from mining and agriculture; (2) North West border posts not sufficiently staffed, could result on increasing pressure on Limpopo border posts.

Notable initiatives planned in North West Province that potentially impact Limpopo Province include:

- Phase 2A of the Mokolo Crocodile West Augmentation (MCWAP) project to provide bulk water to Lephalale. This project is also declared as SIP 19b
- The PHSHDA 11: Greater Northam in Limpopo Province and the Mokgalwaneng/ Spitskop PHSHDA in North West Province borders each other south-west of Northam. The Development plans for these two areas must be integrated across the provincial boundaries.
- The Bojanala SEZ is intended to focus on mineral beneficiation of platinum group metals (PGM).
- The R15million Vaalkop Dam project has been approved for implementation and will reportedly commence in the 2021/22 financial year.
- The Hydrogen Green Corridor stretching from Mogalakwena, is extended from the N1 freeway west along the N4 freeway, to link the Rustenburg platinum belt with the corridor.
- An agri-park is proposed at Makapanstad near the Limpopo border.

GAUTENG

Only a very small portion of Limpopo Province borders on Gauteng Province, but this includes the significant North-South Regional Corridor (N1 national freeway and railway line), making it one of the Province's most strategic spatial features, most notably with regards to the movement of people and freight. From a human settlements' perspective, Gauteng Province does not exert development pressure on Limpopo Province.

Notable initiatives planned in Gauteng that potentially impact Limpopo Province include:

- The Gauteng Province denotes an urban edge (compilation of municipal urban development boundaries) which limits the northward expansion of the City of Tshwane bordering on Limpopo and North West Provinces.
- In addition to the GSDF, a large-scale new project driven by the private sector should also be noted: The Department of Science and Innovation (DSI) and the South African National Development Institute (SANEDI), in partnership with Anglo American, Bambili Energy, and ENGIE are proposing to develop a "Hydrogen Valley" / Green Corridor stretching from Anglo American's Mogalakwena Precious Metal Groups (PGMs) mine to Johannesburg and along the N3 to the south coast at Durban (approximately 835 kilometres). A feasibility study for this concept (published in 2021) identifies three hydrogen hubs – Johannesburg, extending to Rustenburg and Pretoria; Durban, encompassing the city itself and Richards Bay; and Limpopo Province centred around Mogalakwena mine. The Mogalakwena hub will be centred on a hydrogen production, storage and refuelling complex, incorporating the largest electrolyser in Africa and a solar plant to support the operation of Anglo's new 2MW hydrogen-battery hybrid haul trucks.

MPUMALANGA

The south-eastern extents of Limpopo Province borders Mpumalanga Province. This bordering region is characterised by low income rural residential settlement, including the Siyabuswa and KwaMhlanga urban complexes of the Nkangala District. The central bordering region is characterised by the eastern limb mining activity around Steelpoort, Burgersfort and Lydenburg/ Mashishing. The Kruger National Park straddles the provincial boundaries of Limpopo and Mpumalanga and forms the north-eastern border of South Africa. The two Provinces share many strategic features, including large-scale mineral extraction industries and national nature tourism anchors.

- **Various, predominantly freight transport, strategic linkages:** (1) Lephalale – Ermelo – Richards Bay Corridor is a bulk export line for coal; (2) Pharaborwa – Richards Bay Rail Corridor connects the eastern parts of Limpopo to Richards Bay via Swaziland; (3) R555 and N4 freeway transports coal, chrome and platinum.
- **Challenges shared between Limpopo and the Mpumalanga Province:** (1) Olifants Water Management Area which exhibits major water quality issues and increasing pressure from the mining and agricultural sectors; (2) Northwards development pressure on Limpopo in the Acornhoek region; (3) The R577/D212 en route to the R37, R36 and N4 Freeway requires upgrading to a national road due to extensive commuting and freight volumes; (4) High volume of commuters and traffic accidents on the R573 Moloto corridor necessitates improved public transport (Moloto Corridor Project)

Notable infrastructure projects and planned initiatives impacting on Limpopo Province include:

- The potential construction of a new bulk water scheme in the lowveld is being investigated. A feasibility study in this regard has been concluded.
- One of the SIP projects is namely to upgrade the N11 and R35 coal haulage corridors. This project is reportedly underway.
- There are plans to potentially establish a Mining and Metals Technology Park along the N4 national freeway between eMalahleni and Middelburg.
- An Agro-processing Technology Park has been proposed as part of the Nkomazi SEZ near Komatipoort.
- The proposed Moloto passenger rail.

2.5. PROVINCIAL STRATEGIC DIRECTION

2.5.1. Overview and Synthesis

Table 11: Inter-Provincial Alignment Documents Reviewed

DOCUMENTS REVIEWED	FOCUS
Limpopo Development Plan, 2020 – 2025 (2020)	The LDP is the socio-economic development blueprint for the Limpopo Province. It outlines the contribution of the Limpopo Province to the National Development Plan and provides a framework for the strategic plans of provincial government departments and municipalities in the Province.
Limpopo Provincial Land Transport Framework, 2016	The LSDF, 2016 incorporated the Limpopo Provincial Land Transport Framework, 2016 in its revision. Although the framework is still in place, it is noted that it is currently under review.
Limpopo Multi-Year Human Settlements Development Plan, 2019 – 2024 (2020)	The plan is a spatial and fiscal planning document that it reviewed annually and aligned to the MTSF. The plan makes a unique proposal, namely, to align human settlements development with other national and provincial initiatives related to spatial targeting, consolidation and prioritised investment for asset poverty alleviation.
Limpopo Revitalisation of Agriculture and Agro-processing Value Chain Plan, 2021	The goal of the Limpopo Revitalization of Agriculture and Agro-processing Value Chain (RAAVC) Plan is an increased agricultural production that should increase jobs, improve food security and rural livelihoods, job creation, foreign exchange earnings through increased exports as well as overall contribution to the provincial socio-economic recovery.
Limpopo Industrial Master Plan, 2020 – 2030 (2020)	The plan contains very specific focussed economic growth proposals, recognising the Growth Points and supports industrial clusters to be implemented in pursuit of increasing manufacturing activities.
Limpopo Integrated Infrastructure Master Plan, 2017	The plan aims to guide strategic infrastructure integration and prioritisation planning in the Province, incusing the institutionalisation support thereof.
Limpopo Green Economy Plan, 2013	The plan centres on local production and consumption, efficient use of energy and water, and care of natural and created resources giving everyone the opportunity to participate in economic activities. It offers socially and environmentally just solutions to economic exclusion and resource degradation.
Limpopo Tourism Growth Strategy and Implementation Plan, 2018/19 – 2023/24	The strategy is holistic and integrated tourism strategy that is narrowly aligned with the Revised National Tourism Sector Strategy, 2016-2026, while addressing current issues specifically related to the Limpopo Province tourism sector environment. The objective of the strategy is to guide tourism growth and development in Limpopo, diversify the provincial tourism sector, strengthen its economic position and expand the competitiveness of Limpopo as a tourist destination in Southern Africa.

The provincial policy frameworks, and in particular the LDP 2020-2025 (Limpopo OTP, 2020), provide clear directives to inform the review of the LSDF. There is also synergy in the principles applied in the frameworks. A brief synopsis of the spatial informants derived from the provincial frameworks are as follow:

- Ease access to the LSDF as a provincial framework;
- Entrench the principles put forward in the LSDF in all spheres of government, but also in the broader public stakeholder domain;
- Ensure integrated planning and monitoring across all spheres;
- A prioritisation framework based on the hierarchy of nodes was previously applied. It is clear from both the weak implementation provincially, and the directives issued nationally, that a further re-prioritisation and consolidation approach should be followed. This resulted in a very strong directive that public investment in the

Province will be consolidated and targeted at the identified spatial targeting areas in the Province;

- The ten provincial growth points that form the provincial growth point programme, is further prioritised to the five growth points with the highest development potential and development pressure, thereby adding a further layer of prioritisation;
- Strategic infrastructure development must be used to unlock private infrastructure investment;
- There are various strategic initiatives and interventions prioritised and proposed by the Province for the realisation of the provincial development vision. Nine of these have been identified as having high growth and catalytic impact and together form the Nine High Impact Growth Catalytic Programmes;
- The realisation of the initiatives relies on enabling bulk infrastructure planning, project preparation and project management, innovative and digital solutions, partnerships and collaboration, environmental care and sustainable outcomes.
- At the centre of growing the provincial economy, lies the provincial industrialisation path to diversify the economy by means of beneficiation and value-addition of the mining, agriculture and manufacturing sector. The realisation of economic growth also relies on advancing connectivity, skills development and consolidating initiatives.

Other aspects that emanated from the various frameworks that were considered during the review of the LSDF include:

- Human settlements:
  - Introduce an integrated approach in the development of inclusive smart cities in order to obtain data at scale, and consequently realise cross-sectoral benefits;
  - The low proportion of urban residents, and the growth trends favouring rural population growth is an anomaly that must be taken into account in spatial planning and service delivery;
  - The policy shift in investment in human settlements is to enhance the realisation of spatial transformation and security of tenure. The human settlements programmes will be invested in the spatial targeting areas, be urban-biased and focus on serviced stands, FLISP, EPHP and rental housing options as opposed to large scale top structure development. The shift places as stronger focus on community empowerment to build their own homes.
  - There are no PHSHDAs identified in the Elias Motsoaledi, Mogalakwena and Ba-Phalaborwa LMs.
- Economic:
  - The Tubatse SEZ has not been licenced or promulgated yet. The emphasis for the next five years is on the feasibility to establish Tubatse Industrial Hub.
  - A well-maintained movement network (especially roads) is crucial to support nature tourism and business tourism in the Province, especially to recover the tourism industry from the impact of COVID-19 pandemic.

2.5.2. Key Outtakes

2.5.2.1. Limpopo Development Plan, 2020 – 2050

The Limpopo Development Plan (LDP) 2020-2025 is the socio-economic development blueprint for the Limpopo Province. It outlines the contribution of the Limpopo Province to the National Development Plan (NDP) and provides a framework for the strategic plans of provincial government departments and municipalities in the Province.

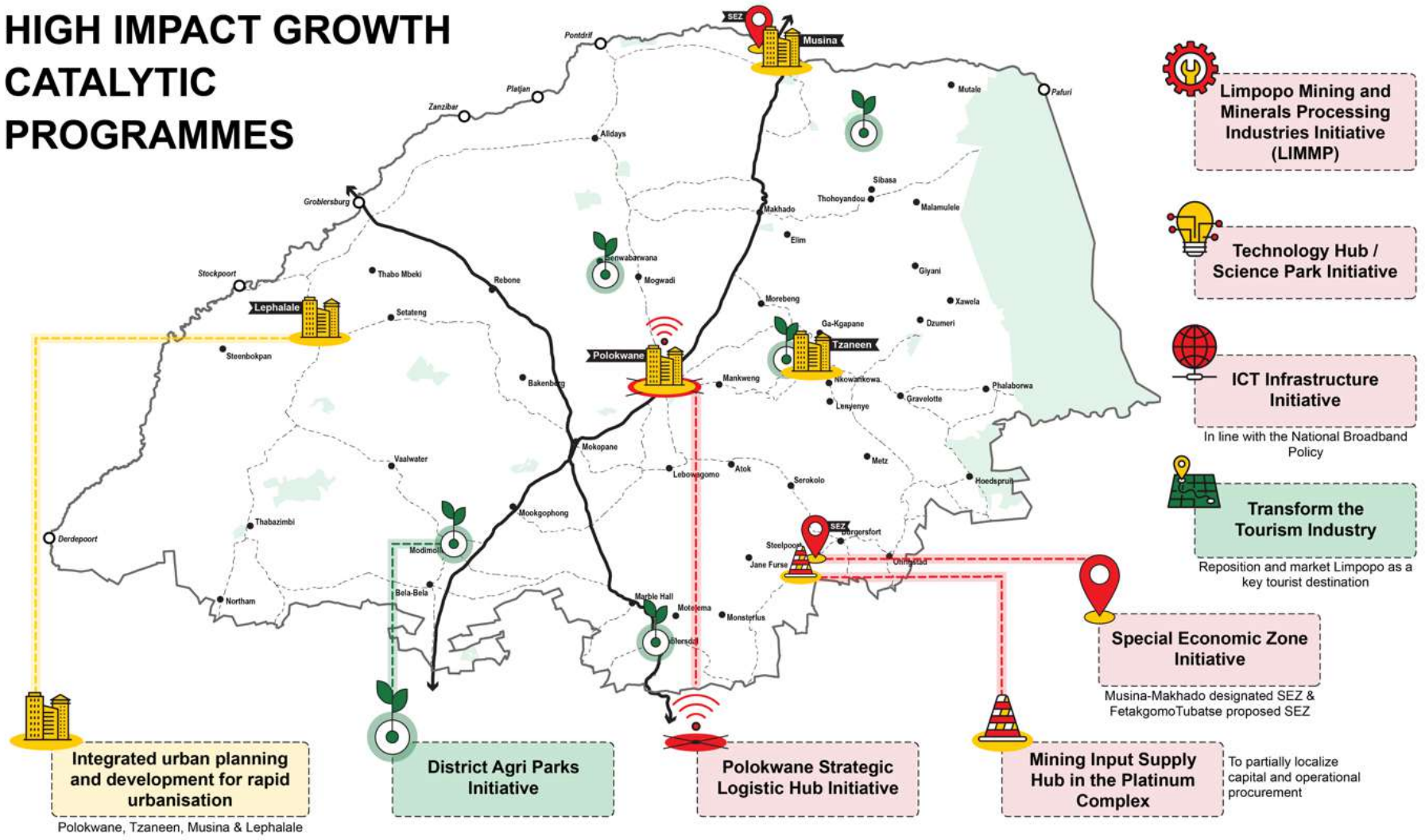
Figure 19: Limpopo Vision and Development Objectives, 2020 – 2050

Figure 20: Limpopo Development Plan, 2020 – 2025: Development Priorities

An extensive list of strategic responses to achieve the provincial development priorities were compiled and is available in Annexure A: Policy and Planning Context.

From the various strategic initiatives planned in the Province, nine were defined as the High Impact Growth Catalytic Programmes for Limpopo Province. The programmes are illustrated in Figure 21 below and is a clear summary of the key initiatives to drive economic diversification and growth in the Province.

Figure 21: Limpopo Province High Impact Growth Catalytic Programmes



2.5.2.2. Provincial Nodal Strategy and Growth Point Programme

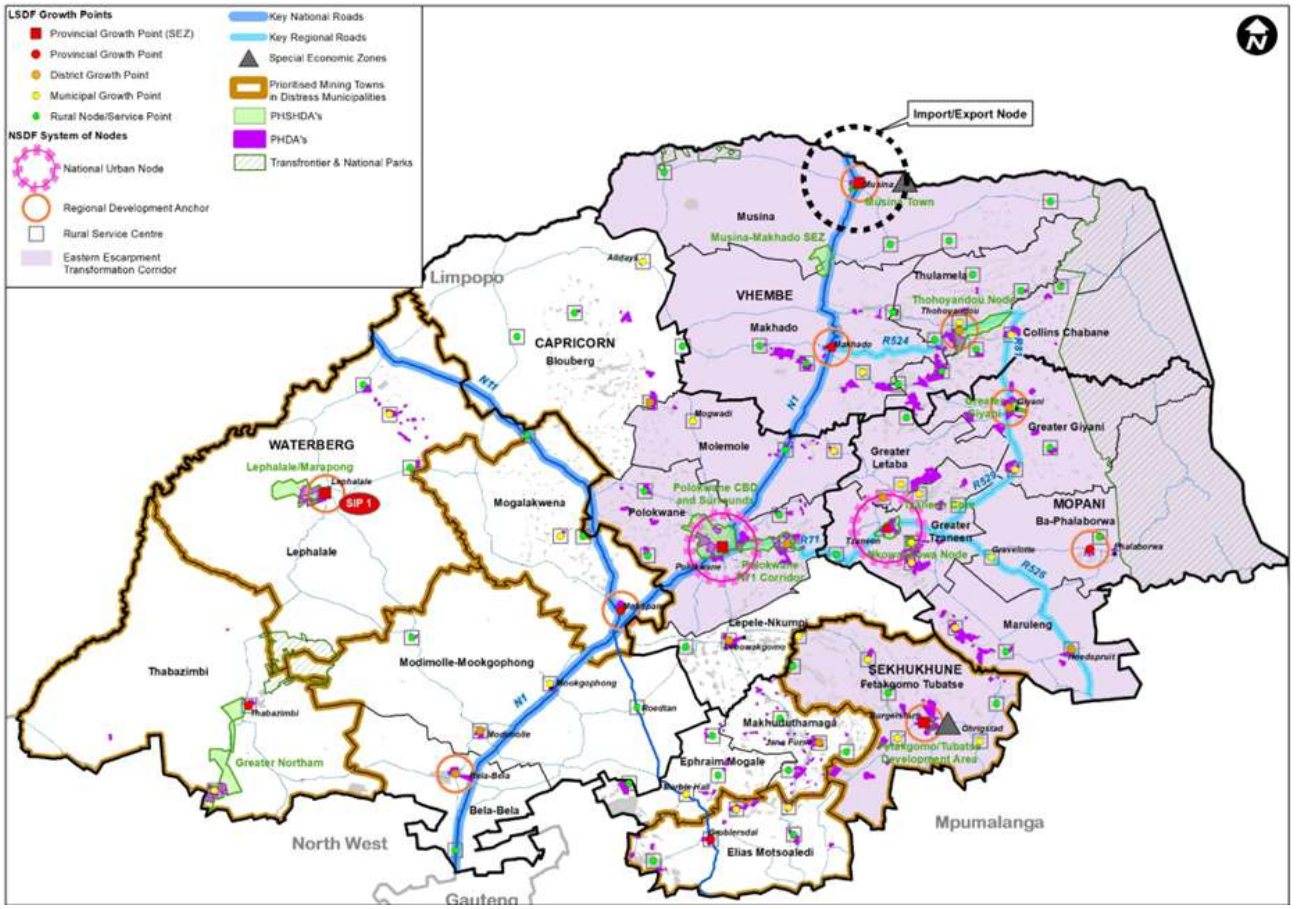
Following the adoption of the LSDF, 2016, the Provincial Growth Point Programme was initiated. The programme, also referred to as the provincial nodal strategy, applied the spatial nodal hierarchy in the allocation of public investment. Ten provincial growth points were identified but due to a lack of implementation over the last ten years, five priority provincial growth points for the current administration were identified:

- Lephalale in the Waterberg District
- Polokwane in the Capricorn District
- Musina-Makhado Corridor in the Vhembe District
- Fetakgomo Tubatse in the Sekhukhune District
- Tzaneen in the Mopani District

2.5.2.3. Limpopo Multi-Year Human Settlements Development Plan, 2019 – 2024

The MYHSDP makes a unique proposal, namely, to align human settlements development with other national and provincial initiatives related to spatial targeting, consolidation and prioritised investment for asset poverty alleviation. The resultant combined areas proposed as priority investment destinations are depicted in Figure 22 to the right.

Figure 22: Limpopo Spatial Targeting Areas According to the MYHSDP



(Limpopo CoGHSTA, 2020)

Two national human settlement catalytic projects are approved and underway namely:

- Joe Slovo Integrated Human Settlements (Altoostyd) in Lephalale together with Marapong CRU
- Bendor Extension 100 integrated human settlements in Polokwane

In addition, the provincial priority housing projects are:

- Makgathoville integrated human settlements (Polokwane Extension 121 and 86), Polokwane
- Annadale social housing, Polokwane
- Ivypark Extension 35 social housing, Polokwane
- Mogalakwena Extension 20, integrated human settlements, Mokopane
- Warmbaths Extension 25, Bela Bela

2.5.2.4. Limpopo Revitalisation of Agriculture and Agro-processing Value Chain Plan, 2021

The goal of the Limpopo Revitalization of Agriculture and Agro-processing Value Chain (RAAVC) Plan is “an increased agricultural production that should increase jobs, improve food security and rural livelihoods, job creation, foreign exchange earnings through increased exports as well as overall contribution to the provincial socio-economic recovery” (Limpopo DARD, 2022).

The following projects have been identified for production expansion (Limpopo DARD, 2022):

Figure 23: Agriculture Projects: Production Expansion

Project	Commodity	District	Proposed Funding Model	Extent (Ha)
HORTICULTURE : FRUIT INDUSTRY				
Makgoba Fruits	Avocado	Mopani	Commercial partner +DFI + Govt	150
Afrupro	Avocado	Mopani	Commercial partner +DFI + Govt	400
Morebene	Avocado	Mopani	Commercial partner +DFI + Govt	100
Tshakhuma CPA	Avocado	Vhembe	Commercial partner +DFI + Govt	700
Liafukhada –Sub Trop Development Plan	Avocado	Vhembe	Subtrop +SAAGA+ Govt	100
Sub total				**1650**
Estimated jobs - 2600				
Venmac	Macadamia	Vhembe	Commercial partner +DFI + Govt	1500
Tshivhase Macadamia	Macadamia	Vhembe	Commercial partner +DFI + Govt	500
Tshakhuma CPA	Macadamia	Vhembe	Commercial partner +DFI + Govt	200
Matshikiri Macadamia	Macadamia	Vhembe	Commercial partner +DFI + Govt	384
SAMAC Transformation	Macadamia	Vhembe	SAAMAC+ Govt	116
Sub total				**2700**
Estimated jobs =2393				
Zebediela Citrus	Citrus	Capricorn	Commercial partner +DFI + Govt	700
Limburg Citrus	Citrus	Waterberg	Commercial partner +DFI + Govt	1000
Mhinga -Xikundu	Citrus	Vhembe	Commercial partner +DFI + Govt	200
Boskop Citrus	Citrus	Mopani	Commercial partner +DFI + Govt	800
Letaba Ranch	Citrus	Mopani	Commercial partner +DFI + Govt	400
CGD Transformation	Citrus	Mopani, Vhembe & Capricorn	CGADC + Govt	500
Sub total				**2700**
Total estimated jobs - 2700				
HORTICULTURE : VEGETABLE INDUSTRY				
Potato Belt Development	Potato	Capricorn	Potatoes SA + Govt	500
HTX Tomato Production	Tomato	All District	Farmers and Govt Grant	3000
Pepperdew Project	Pepperdew	All	Grower contract model + Govt	100
Paprika	Paprika	All	Grower contract model + DFI + Govt	100
Sub total 3700				
Estimated jobs - 3000				
FIELD CROPS: OILSEEDS AND COTTON				
Cotton production expansion – Black producer development	Cotton	Sekhukhune and Vhembe	Cotton SA + Govt Grant	1000
Soya bean production for processing market	Soya Bean	Sekhukhune and Waterberg	Grower Contract and Govt Grant	1500
Sub Total				**2500**
Estimated Jobs =1000				

2.5.2.5. Limpopo Industrial Masterplan, 2020-2030

The Limpopo Industrial Masterplan (LIMP), 2020-2030, contains very specific spatially focussed economic growth proposals. It recognises the Growth Points and supports the following industrial clusters to be implemented "in pursuit of increasing manufacturing activities":

Table 12: LIMP Industrial Clusters for Growth Points

Growth Point	Industrial Cluster/s
Across all Districts	Tourism, Agribusiness and Meat Clusters
Polokwane	Logistics Cluster e.g. Airport, Inter-Nodal Hub etc.
Musina – Makhado Corridor	Logistics, Diamond Mining, Horticulture, Forestry, Coal and Metallurgical Clusters
Tzaneen	Horticulture and Forestry Cluster
Ba-Phalaborwa	Copper and Magnetite Cluster
Tubatse	Platinum and Chrome (PGM) Cluster
Elias Motsoaledi	Agribusiness & Mining related Industries
Lephalale	Coal and Energy Cluster
Mogalakwena	Platinum Cluster
Thabazimbi	Platinum Cluster

In support of the above, value chains were developed from each cluster. Opportunities for businesses to develop in particular industries are identified, focusing on either forward or backward linkages. The following projects are proposed in summary (Limpopo Provincial Government, 2020):

Table 13: LIMP - Catalytic Projects

Mega Industrialisation	Agro-Industrialisation	Public-Private Partnerships: Mega LED Projects
▪ Musina-Makhado SEZ ▪ Tubatse SEZ ▪ Industrial Parks (Nkowankowa ▪ Industrial Parks (Seshego) ▪ Industrial Parks (Thohoyandou) ▪ Limpopo Science and Technology Parks ▪ Limpopo High Speed Train ▪ Commercialisation of provincial nature reserves ▪ Waste Management and Green Economy-Establishment of District Recycling Centres and Industrial Symbiosis	▪ Venmac: 1500ha Macadamia orchard in Vhembe and pack house ▪ Makgoba Fruits: greenfield of 100 ha in Mopani ▪ Zebediela Citrus: Refurbishment of irrigation and electrical infrastructure ▪ Limburg citrus: 500 citrus orchards and pack house ▪ Tshakuma CPA: expansion of Macadamia orchards by 200 ha ▪ Tshivhase Macadamia: Macadamia orchards on 500ha ▪ Afrupro: 400ha of avos on community land ▪ Boskop: Re-development of the defunct restituted farm to re-establish 350 ha planted with a combination of high value citrus fruits, with a pack house. ▪ Morebene: 300ha of avos on community land, with a community taking 51% share ▪ Potato belt development: 500ha potato development linked with Tala Foods ▪ Production of tomato for Norjax Canning: 2500ha tomato production linked to Norjax Canning ▪ Cotton Production: 1000ha cotton production to broaden black producer participation ▪ Soybean Production: 1500ha Soybean production throughout grower partnership ▪ Lebowakgomo Poultry Abattoir: Operationalisation of Lebowakgomo Poultry Abattoir	▪ Lephalale Logistics Hub in Lephalale ▪ Agro-processing Pharmaceutical Hub ▪ Transport and Logistics Hub in Polokwane

2.5.2.6. Limpopo Integrated Infrastructure Master Plan, 2017

The Limpopo Integrated Infrastructure Master Plan (LIIMP) was concluded in 2017 (Limpopo, 2017). The LIIMP recognises the following growth points, from the former LDP and LSDF, and assigned its own nodal hierarchy based on population and economy size. The newly assigned hierarchy is provided in brackets:

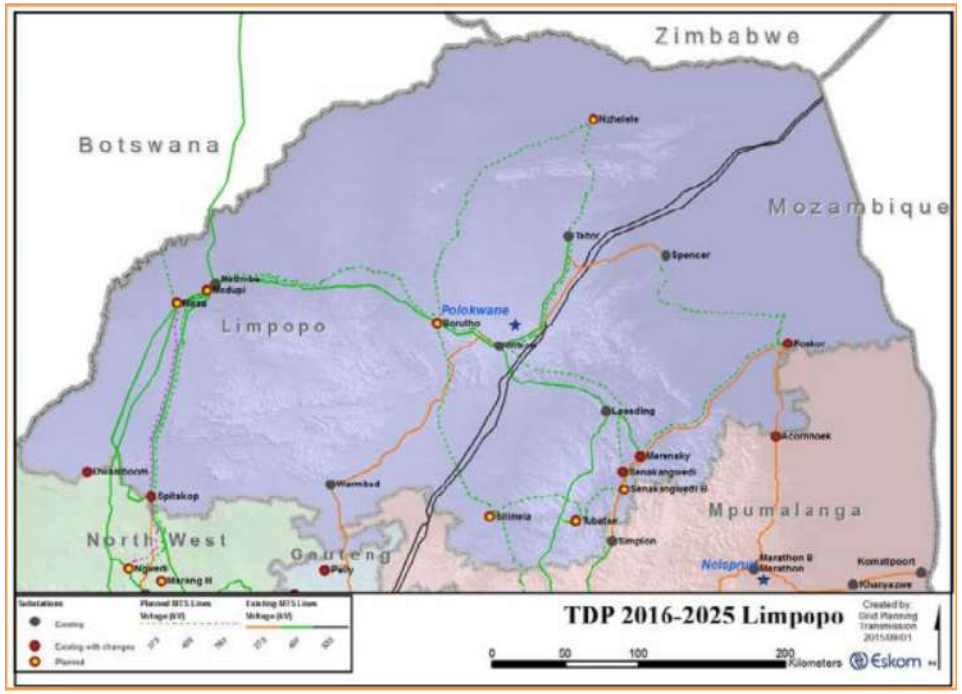
- Polokwane LM (primary)
- Makhado LM (primary)
- Thabazimbi LM (primary)
- Greater Tubatse LM (secondary)
- Elias Motsoaledi LM (secondary)
- Greater Tzaneen LM (secondary)
- Lephalale LM (secondary)
- Ba-Phalaborwa LM (secondary)
- Mogalakwena LM (secondary)
- Greater Giyani LM (secondary)
- Musina LM (tertiary)
- Bela-Bela LM (tertiary)
- Mookgopong LM (tertiary)
- Modimolle LM (tertiary)

In terms of energy, the LIIMP development plan is focused on the following four initiatives:

1. Additional transformer capacity (to accommodate load growth and provide firm capacity);
2. Extending 400kV and 275kV networks (to accommodate load growth);
3. Integrating Medupi power station (transferring generated power nationally); and
4. Establishing the 765kV network (in alignment with national grid strategy).

The listed projects will result in the future network depicted below in 2025.

Figure 24: Future Limpopo Province Network Diagram



It is noted that the Eskom Transmission Development Plan is reviewed annually, and the TDP projects updated as well. The further chapters of the LSDF provide the latest network planning.

2.5.2.7. Limpopo Tourism Growth Strategy and Implementation Plan, 2018/19 – 2023/24

The Limpopo Department of Economic Development, Environment and Tourism (LEDET) reviewed the Limpopo Tourism Growth Strategy (LTGS) in 2018. The project necessitated the development of a holistic and integrated tourism strategy that is narrowly aligned with the Revised National Tourism Sector Strategy, 2016-2026, while addressing current issues specifically related to the Limpopo Province tourism sector environment.

The following proposed projects/ initiatives have spatial implications, which were be considered in the LSDF review:

- International airport in Polokwane to be more tourist orientated.
- Support Hoedspruit as an important access point for international tourists into Limpopo.
- Prioritise Mapungubwe and Makapan Valley World Heritage Site (WHS) as unique tourist icons to visit.
- Develop Makapan Valley WHS as a tourist destination focussing on educators, learners, researchers, special interest and family groups.
- Construct off-ramp from N1 to R101 to ease access to Makapan Valley WHS.
- Improve gate access into Kruger National Park.
- Develop tourist routes in each biosphere reserve (Soutpansberg-, Waterberg-, and Kruger to Canyons Biosphere Regions).
- Facilitate the establishment and maintenance of routes that depict the diverse cultural experiences in Limpopo.
- Expand the African Ivory route experience.
- Develop and implement a workable model for community-based tourism projects.
- Creatively package the Moria City destination for domestic and regional religious tourism.
- Upgrade and develop iconic heritage sites e.g. Dzata, Tjate, Makgabeng, Makapan Valley, etc.
- National parks, biosphere reserves, provincial nature reserves, heritage sites and transfrontier conservation areas protected and managed as required by legislation and protocols.
- The impact of developments that has the potential to change the character of the mega conservation areas in Limpopo should be controlled and managed (e.g. mining and township development within green corridors).

2.6. DISTRICT SPATIAL DEVELOPMENT FRAMEWORKS

2.6.1. Overview and Synthesis

Table 14: Inter-Provincial Alignment Documents Reviewed

DOCUMENTS REVIEWED	FOCUS
Capricorn District Municipality Spatial Development Framework, 2017	The SDF seeks to guide overall spatial distribution of current and desirable land uses within Capricorn District Municipality.
Mopani District Municipality Spatial Development Framework (under review)	The SDF seeks to guide overall spatial distribution of current and desirable land uses within Mopani District Municipality. The SDF is currently under review.
Sekhukhune District Municipality Spatial Development Framework, 2018	The SDF seeks to guide overall spatial distribution of current and desirable land uses within Sekhukhune District Municipality.
Vhembe District Municipality Spatial Development Framework, 2019	The SDF seeks to guide overall spatial distribution of current and desirable land uses within Vhembe District Municipality.
Waterberg District Municipality Spatial Development Framework, 2021	The SDF seeks to guide overall spatial distribution of current and desirable land uses within Waterberg District Municipality.

The spatial directives emanating from the five District SDFs are summarised below:

- All five District SDFs have adopted the rationale of spatial targeting. To this end, there is broadly alignment between the LSDF nodes and District nodal hierarchies, though a more detailed comparison is provided in Section 4.
- There is broad agreement of the difficulties, as well as the need to integrate municipal and traditional council land use planning. The fact that large tracts of land are owned by the state and under custodianship by traditional authorities limits the availability of well-located land for economic development as well as human settlements projects.
- Economic growth in all the district's is premised on the growth of the primary economic sectors (Agriculture and Mining), as well as growing the Industrial sector and maximising the local tourism potential. The role of good roads and other supporting infrastructure is supported and highlighted.
- The greatest economic assets of the Province are protected areas and associated plant, bird and wildlife, as well as rich mineral deposits.
- There is support for green energy generation.
- The Province's strategic role with regards to the SADC countries is emphasised, noting opportunities of how to enhance and support freight movement, while maximising spin-off potential.
- Alignment of planning between LMs within a district, as well as with adjoining municipalities are of particular relevance to bulk infrastructure supply schemes, transport and movement, mining and industrial activities and linkages. There are also outcries for land use management schemes to be coherent to prevent different processes to be applied within the Province.

2.6.2. Key Outtakes

The following page provides the Spatial Development Framework maps of the relevant District Municipalities except Mopani District, which is currently under review.

Figure 25: Capricorn District Municipality SDF Consolidated Plan

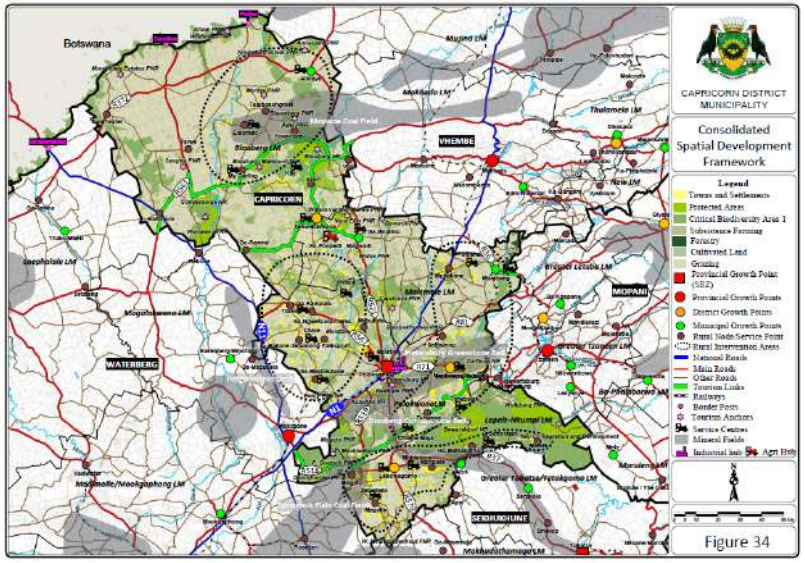


Figure 26: Sekhukhune District Municipality SDF Spatial Vision/Concept

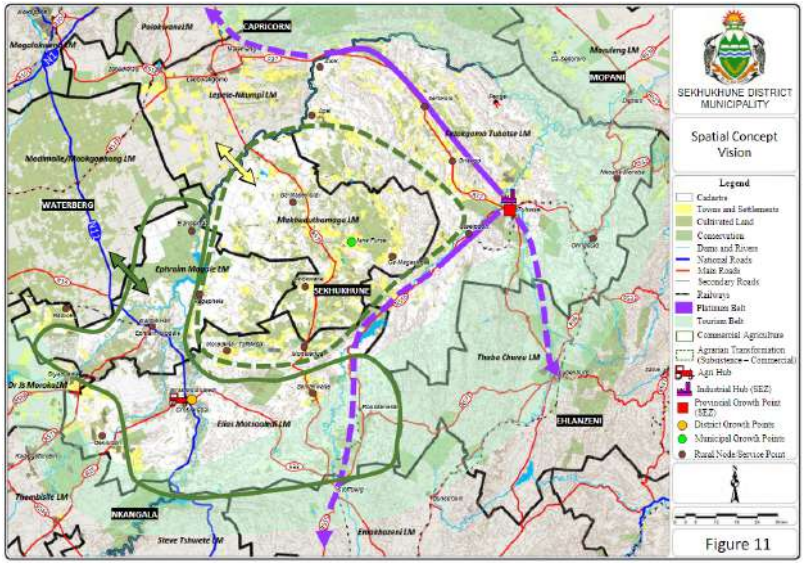


Figure 27: Vhembe District Municipality SDF, 2019

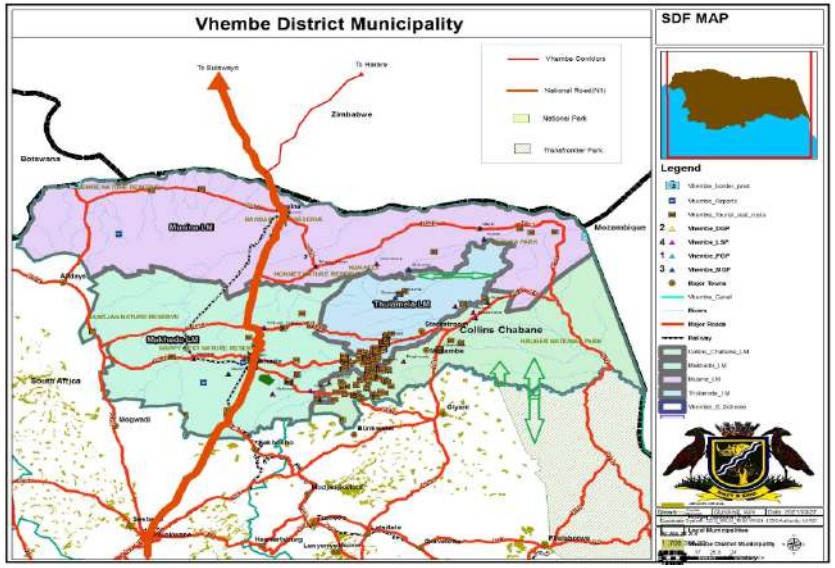


Figure 28: Waterberg District Municipality SDF, 2021 Composite Plan

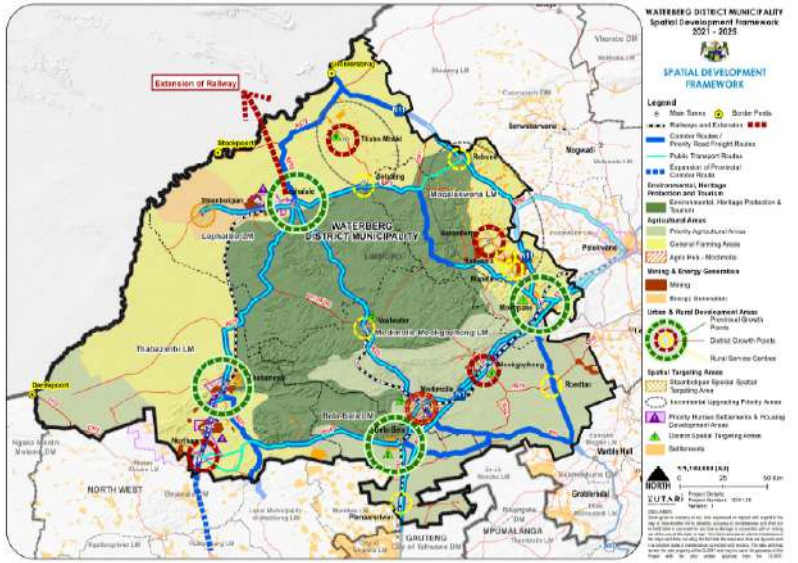


Table 15: Nodal Hierarchy as in District Municipality SDFs

Hierarchy	Capricorn District	Mopani District	Sekhukhune District	Vhembe District	Waterberg District
Provincial Growth Point (13)	Polokwane	Tzaneen; Phalaborwa; Giyani; Modjadjiskloof	Tubatse;	Makhado, Musina, Thohoyandou	Bela-Bela; Lephalale/ Marapong; Mokopane/ Mahwelereng; Thabazimbi/ Regorogile
District Growth Point (22)	Lebowakgomo; Mankweng; Senwabarwana	Nkowankowa; Lenyenye; Namakgale; Gravelotte; Ndhambi; Ga-Kgapane; Hoedspruit	Steelpoort; Jane Furse; Marble Hall; Groblersdal	Elim/ Waterval; Malamulele; Sibasa	Northam; Modimolle/ Phagameng; Mookhophong; Bakenberg; Thabo Mbeki
Municipal Growth Point (35)	Alldays; Mogwadi; Morebeng	Burgersdorp; Letsitele; Haenertsburg; Lulekane; Xawela; Nkomo; Xikhumba; Senwamokgope; Metz; Lorraine	Ohrigstad; Driekop; Mecklenburg; Atok; Apel; Apel Cross; Glen Cowie; Roossenekal	Vuwani; Hlanganani; Rabali; Bungeni; Masisi; Saselman; Tshaulu; Dzanani; Ka Majosi; Madombidzha; Makonde; Mukula; Khubvi; Tshilamba/ Mutale **Population Concentration Points:** Ravele; Tshino; Tshakhuma; Maebane; Magoro; Olifantshoek; Tiyani; Nhinga; Gijani	NA
Rural Node/ Service Points (89)	Taaiboschgroet; Eldorado; Kromhoek; Tolwe; Baltimore; Swartwater; My Darling; Avon; Vivo; Ga-Rawesi; Ga-Rampuru; Tibane; Ga-Ngwetsana/ Ceres; Mabukele; Bakone/ Setumong; Kalkspruit; Mphakane; Sebayeng; Ga-Mashashane; Tshwene; Mogoto; Mphalhele; Magatle; Ga-Mathabatha; Mafefe	Ka-Mazwi; Rikhotso; Senoppelwa; Ga-Mokgwathi; Runnymede; Serololo; Nkambako; Ga-Selwane; Mahale; Mukwanana; Mavalani; Thomo; Homu; Ngove; Xikukwani; Mooketsi; Thakgalane; Mamaila; Nakampe	Leboeng; Kgautswana; Praktiseer; Malokela; Mphanama; Manganeng; Schoonoord; Tshehlwaneng/ Magneethoogte; Ga-Mampuru; Elandskraal; Letebejane; Ragaphgela/ Ga- Rakwadi; Moganyaka/Leeuwfontein; Motetema/ Tafelkop; Phokwane; Vierfontein/ Takataka; Moratiwa; Hlogotlou; Sehlakwane; Elandsdoring; Letebejane/ Ditholong; Rathoka	Chavani; Dzwarani; Folovhodwe; Maebani; Phaphazela; Tshikuwi; Tshipise Resort; Tshirando; Vleifontein; Xikundu; Buysdorp; Thalane; Amancisini; Waterpoort; Valdezia'; Mukhomi; Tshimbupfe A & B; Lwamondo; Vhufuli; Tshixwadza; Tshikombani; Makuya; Madimbo; Muswodi Dipeni; Mopane; Valdezia; Waterpoort.	Ga-Mabusela; Rebone; Setateng; Vaalwater; Pienaarsrivier; Roedtan; Mapela

2.7. LIMPOPO SPATIAL DEVELOPMENT FRAMEWORK, 2016

2.7.1. LSDF 2016 Spatial Vision and Development Objectives

The **strategic vision** of the LSDF, 2016 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*" (Limpopo SDF, 2016: p. 147).

The LSDF subsequently sets out eleven Development Principles which build up to a final composite development framework and spatial form as depicted in Figure 29. The Development Principles (Limpopo SDF, 2016: p. 148 - 184) are:

- Define and protect a Provincial Regional Open Space System which ensures that ecosystems are sustained and natural resources are utilised efficiently.
- Facilitate efficient spatial targeting through the identification of a range of provincial, district, municipal and rural nodal points to serve as focal points for investment and service delivery.
- Establish a multi modal transport network to optimise the movement of people and goods between nodes within the Province and to all major destinations in Southern Africa.
- Direct engineering infrastructure investment towards the priority nodal points where the majority of economic activity and human settlement will establish.
- Prioritise consolidation of community infrastructure at the identified nodal points and in line with the concept of multi-purpose Thusong Centres/ Rural Development Centres in Rural Nodes.
- Create conditions conducive to development in multifunctional business areas and implement Urban Revitalisation Strategies in such areas where required.
- Optimise the utilisation of agricultural potential of Limpopo Province to provide sustainable livelihoods to marginalised communities in rural areas in partnership with commercial farms.
- Utilise the provincial environmental resources as attractions to promote sustainable tourism development (and conservation) in all parts of the Province.
- Promote mining activity and associated job creation potential in an environmentally sustainable manner.
- Address industrial sectoral diversification by way of area specific investment in high value production and value added technologies and industries.
- Sustainable Human Settlement in urban and rural Limpopo Province.

Figure 29: Limpopo Spatial Development Framework, 2016: Composite Plan

2.7.2. LSDF 2016 Nodal Hierarchy

The nodal hierarchy set out in the LSDF 2016 is reflected in Table 16.

Table 16: Limpopo SDF 2016 Nodal Hierarchy

Hierarchy	Capricorn District	Mopani District	Sekhukhune District	Vhembe District	Waterberg District
Provincial Growth Point (10)	Polokwane	Tzaneen; Phalaborwa	Tubatse; Elias Motsoaledi	Musina; Makhado	Lephalale; Mogalakwena; Thabazimbi
District Growth Point (10)	Lebowakgomo; Mankweng; Senwabarwana	Hoedspruit; Giyani; Modjadjiskloof	Jane Furse	Thohoyandou	Modimolle; Bela-Bela
Municipal Growth Point (23)	Elim; Sibasa; Malamulele	Dzumeri; Ga-Kgapane; Nkowankowa; Lenyenye; Gravelotte; Metz	Ephraim Mogale; Motetema/ Tafelkop; Monsterlus; Steelpoort; Orighstad; Atok; Serokolo	Elim; Sibasa; Malamulele	Mookgophong; Thabo Mbeki; Mmotong/ Bakenberg; Northam
Rural Node/ Service Points (47)	Mphakane; Ga-Ramuru; Ga-Mashane; Mogoto; Vivo; Eldorado; Sebayeng; Tolwe	Mandlakazi; Moleketla; Xawela; Mamalia; Lulekani; Haenertsburg; Diphute/ The Oaks	Dennilton; Rathoke; Elandskraal; Ragaphela; Sehlakwane; Phokwane; GaMagashoa Ga-Masemola; Apel; Driekop; Nkoane/ Moroba	Mutale-Masisi; Folovhodwe; Tshipise; Pontdrift; Dzanani; Makonde; Tshaulu; Mhinga; Phaphazela; Tshakhuma-Lwamondo; Vuwani; Ka Bungani; Madombidzha; Maebane	Ga-Mabusela; Rebone; GaSeleka; Setateng; Vaalwater; Pienaarsrivier; Roedtan

It is useful to compare the 2016 selection of nodes and hierarchy with the NSDF for the LSDF review currently underway, since the latter was developed and approved in the interim. Table 17 provides a comparison of the location (city/ town) of activity nodes in Limpopo Province; Figure 30 offers a visual comparison of both the location and the allocated status/ hierarchy of the NSDF and LSDF 2016 nodal hierarchies.

It is evident that there is largely consensus on which cities and towns in the Province are the highest order nodes. There is consensus that two of the highest order activity nodes are Polokwane and Tzaneen.

The Regional Development Anchors are found at the second tier of the NSDF. Understandably, these towns are considered high order nodes (provincial growth points) at a provincial level, though their role at national level is slightly lower, earning them a tier 2 status.

Two discrepancies are found at tiers 3 and 4 of the LSDF 2016. Mankweng and Modjadiskloof are not recognised as nodes in the NSDF. All other District Growth Points are recognised as either Regional Development Anchors (NSDF tier 2) or Rural Service Centres (NSDF tier 3).

It is acknowledged that the hierarchy of some towns is higher at a provincial scale than what their role is considered at a national scale.

Table 17: Comparison between NSDF and LSDF Nodal Hierarchy

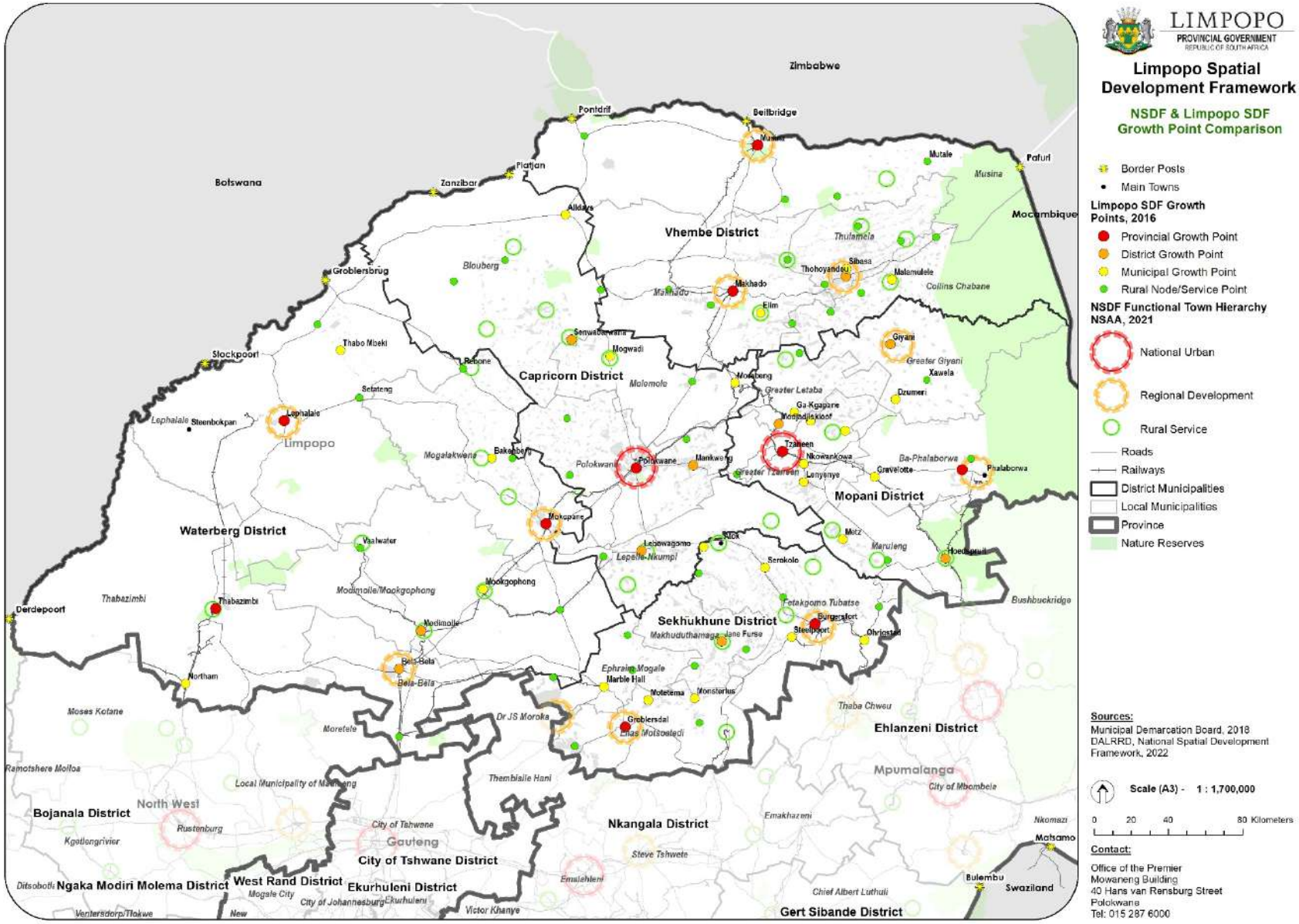
Current NSDF 2022 system of nodes (hierarchy)	Settlement hierarchy per District					Current LSDF 2016 growth point hierarchy
	Vhembe District	Capricorn District	Mopani District	Sekhukhune District	Waterberg District	
National urban node		Polokwane	Tzaneen			**Provincial growth points**
Regional development anchor	Musina, Makhado		Phalaborwa	Tubatse (Burgersfort); Elias Motsoaledi	Lephalale, Mokopane; Thabazimbi	
	Thohoyandou		Giyani		Bela-Bela	**District growth points**
Rural service centre		Lebowakgomo, Mankweng, Senwabarwana	Hoedspruit; Modjadjiskloof	Jane Furse	Modimolle	**District growth points**

KEY

NSDF & LSDF 2016 identified as a node

NSDF does not recognise as a node

Figure 30: Comparison of NSDF and LSDF 2016 Nodal Hierarchy



2.7.3. Measuring Achievements

The LSDF, 2016 defined a hierarchy of nodes comprising of provincial growth points, district growth points, municipal growth points and local service points across the provincial space. The various individual district and local SDFs had to adopt and implement the LSDF nodal hierarchy. To measure the implementation thereof, a comparison was made between the nodal hierarchies proposed in the five respective district SDFs and the LSDF. A visual representation of the comparison in nodal hierarchies are showed in Figure 31.

It is evident that there is strong alignment at tiers 1 and 2 and that the provincial and district growth points identified in the LSDF, were adopted on municipal level. There are slight differences in the hierarchy allocated to tiers 3 and 4, but the selection of towns/ settlements is mostly aligned. The District Municipalities tend to allocate a higher number of nodes than the LSDF.

Following the adoption of the LSDF, 2016, provincial government adopted a provincial nodal strategy to implement the LSDF nodal hierarchy. The strategy adopted was to prioritise the allocation of public funds according to the hierarchy, therefore firstly to the highest order nodes. The ten provincial growth points identified in the LSDF were adopted as the Provincial Growth Point Programme.

However, the Province has seen little success over the past ten years in implementing the growth point programme. The weakness in the implementation of the growth point programme has been the lack of dedicated funding and absence of bankable projects or investment book for the growth point municipalities. As a result, the LDP indicates that five of the ten provincial growth points – one municipality per district – will be prioritised during the current LDP term (2020-2025). The five priority provincial growth points for this administration are: (1) Lephalale in the Waterberg District, (2) Polokwane in the Capricorn District, (3) Musina-Makhado Corridor in the Vhembe District, (4) FetakgomoTubatse in the Sekhukhune District and (5) Tzaneen in the Mopani District.

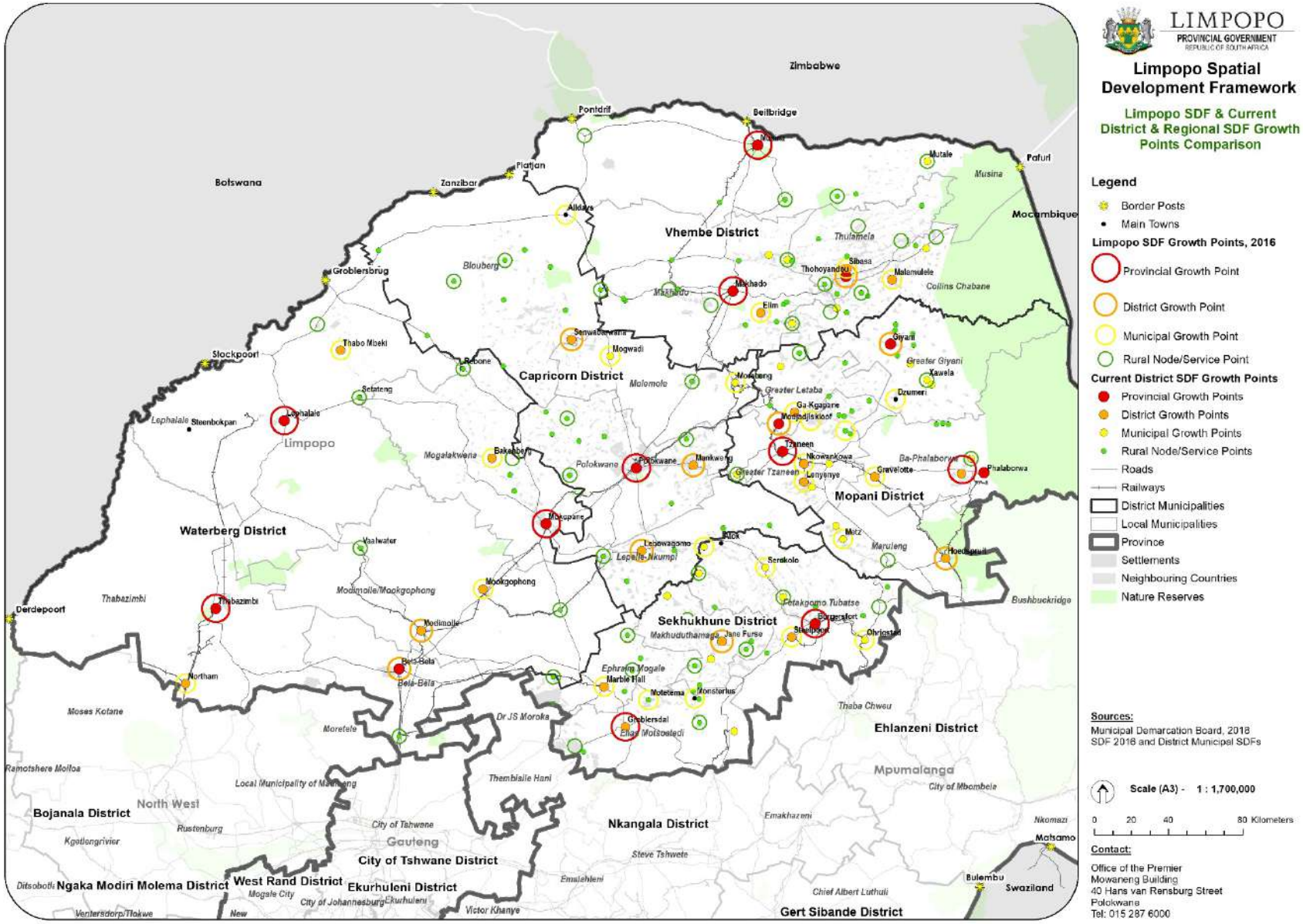
Further to the above, although the LIIMP recognised the growth points in the LSDF, it assigned its own nodal hierarchy based on population and economy size. Within the nodal areas, strategic development areas were defined that were a culmination of the urban edges, intervention areas, strategic development areas etc from the various municipal SDFs. The actual land development experienced since 2016 were measured against the planned development areas. What was evident, is that formalised land development respected the SDF policy framework for urban edges, but the challenge experienced by a large number of municipalities is the increasing rural densification along urban peripheries, development corridors on traditional or communal owned land. The rural expansion experienced at low densities, are significant and mostly outside of the planned urban edges or strategic development areas. The implementation of the SDF principles and framework is therefore not fully realised in traditional areas.

The realisation of spatial restructuring was prioritised to the provincial priority housing projects. Since 2016, progress was reported with the construction of the Marapong CRU, Bendor Extension 100 and bulk infrastructure to Joe Slovo Integrated Human Settlements. However the catalytic impact of these projects has not been realised as yet as spatially envisioned. Overall, the progress with implementation has been slow.

The same applies to the four SEZs recommended in the LSDF of 2016, namely Musina-Makhado, Tubatse, Polokwane and Lephalale. Only the Musina-Makhado SEZ has measured progress in terms of planning and not in terms of spatial impact as yet. The feasibilities for the other SEZs have not be confirmed. The LDP 2020-2025 noted the Musina-Makhado as the only SEZ, with Tubatse to become an industrial hub.

The evaluation of the relative slow progress with the implementation of the strategic projects revealed the lack of adequate conceptualisation of projects with proven feasibilities, business cases and well-defined funding models and implementation plans. Without these, the allocation of public funding to these initiatives are constrained. The LDP also recognised this weakness in the delivery across the Province and recommended the establishment of a project preparation unit in the Province.

Figure 31: Comparison of LSDF 2016 and District SDF Nodal Hierarchies



2.7.4. Updating the LSDF

From the review, it was found that the LSDF vision and development objectives are still largely relevant. There is, however, room for updating and improving the LSDF, particularly due to strategic decisions and policy shifts taken since, the formulation of the NSDF, the revision of the LDP, and the revisions of the majority of District and Local Spatial Development Frameworks that require consolidation within a provincial spatial overview and strategy.

In particular, the preceding policy review and assessment of the LSDF 2016 have highlighted the need to update the following components of the LSDF:

- Incorporate impact of climate change and make strategic recommendations to address/ mitigate/ avoid.
- Identify new and effective tools/ strategies for integrated spatial planning and land use management between provincial and local government, as well as with traditional councils – how can collaborative governance with regards to land use planning, public investment, settlement patterns be incentivised?
- Update population statistics and growth projections with latest available information.
- Identify means to speed up land reform to stabilise land tenure in the Province.
- Review the nodal hierarchy in line with the NSDF and inputs from District SDFs.
- Assess the phenomenon of middle to high-income rural densification mainly along urban peripheries and roads and provide spatial development guidelines.
- Incorporate the national programmes instituted since the LSDF, 2016 was developed such as the PHSHDAs, Revitalisation of Distressed Mining Communities, Small Town Revitalisation Strategy, Revitalisation of Industrial Parks, etc. The role of the PHSHDA development plans in relation to the SDFs should be clarified.
- Incorporate the LDP 2020-2025 that was developed and adopted in the interim, and consider how the LSDF could contribute to the LDP targets.
- Update recommendations with regards to water management, infrastructure provision and large-scale industrial development taking cognisance of national priority projects and the additional SIPs promulgated.
- Consider a viable model to support increasing quality of life for residents in densely populated rural areas.
- Review LSDF proposals for relevance and practicality, while leaving room for localisation at district and local level.
- Incorporate the LDP vision to equip residents for, and take full advantage of, the fourth industrial revolution.
- Consider the LDP recommendations to grow the waste economy.
- There is a need for a stronger Monitoring and Evaluation framework in order to track implementation progress and impact. This includes revisiting the LSDF Implementation Plan to give effect to the spatial targeting principle, improved project business cases and buy-in by all stakeholders, especially traditional authorities.

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

CHAPTER 3: SPATIAL ANALYSIS

Lets grow South Africa together

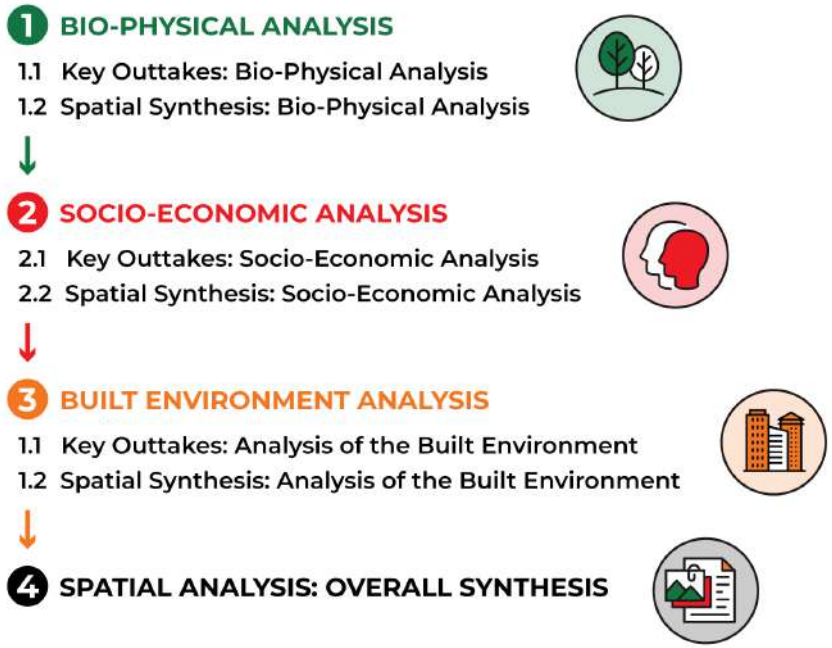
This chapter represents a high level overview summary of the detailed spatial analysis of Limpopo Province that was conducted as part of the review of the Limpopo Spatial Development Framework (LSDF), 2016. The spatial analysis focused on matters of provincial significance to inform provincial spatial planning, while also providing information at district and local municipality level as a resource to support municipal planning processes. The aim of the provincial spatial analysis was to identify spatial issues and trends that impact the spatial structure and space economy of Limpopo Province, to inform the review of the spatial strategies and proposals of the LSDF.

The following summary sections are contained in this chapter:

- Analysis of the bio-physical environment
- Socio-economic analysis
- Analysis of the built environment
- Overall synthesis of the spatial analysis

The detailed analysis sections are attached as annexures to the main report:

- Annexure B: Bio-Physical Analysis
- Annexure C: Socio-Economic Analysis
- Annexure D: Built Environment Analysis
- Annexure E: Spatial Synthesis



3.1. BIO-PHYSICAL ANALYSIS

Limpopo's bio-physical environment is highly diverse, which offers both opportunities and constraints to development. These include:

- A rich natural resource base, in particular with regards to mineral resources, agricultural opportunities and eco-tourism.
- Significant environmental assets such as the Kruger National Park and other nature reserves, two World Heritage Sites, two Ramsar Wetlands, three Biosphere Reserves, two Transfrontier Conservation Areas, numerous Important Bird Areas and three Centres of Floristic Endemism.
- The key development constraint is a shortage of water. Further development of water resources is not a sustainable solution as most water resources are already over-allocated and under severe ecological pressure. The emphasis must be on water management and re-use and on promoting developments that are not water intensive.
- Ecosystems most under threat in the province are rivers, wetlands and mountain grasslands. Land uses that minimise pressure on these ecosystems should be preferred over intensive development.
- The main pressures on aquatic ecosystems are changes in hydrological regime and pollution, while the main pressure on terrestrial ecosystems is habitat loss due to clearing for agriculture, mining and afforestation.
- The province is vulnerable to the impacts of climate change, especially in areas where there is low resilience, such as where there is high reliance on subsistence farming.

3.1.1. Key Outtakes: Bio-Physical Analysis

Topography and geology

The diverse topography of the province is reflected in the variations in climate, biodiversity, distribution of natural resources and subsequent settlement patterns. The mountain ranges of the Drakensberg, Blouberg, Soutpansberg, Waterberg and Wolkberg are significant topographical features that constrain development but also provide valuable biophysical assets. They should be prioritised for conservation land uses.

The complex geology of the province results in a wide range of mineral resources being available. Dolomite and limestone areas need to be developed with caution as they are prone to sinkhole development, especially where there is poor water management or over-abstraction of groundwater.

Hydrology and water resources

The majority of rivers in the province are under severe ecological pressure, with only 35% of the total river reach being considered to be in a natural or near-natural condition.

Water is a key constraining issue to development. Overall demand in the province already exceeds supply, and forecasts in the Limpopo Water Master Plan indicate that even if water-saving and re-use measures are implemented in the future (2045), the water balance will still be negative. Further dam development and abstraction schemes cannot be recommended as ecologically sustainable in the long term. The focus should be on low water-use developments, water conservation and demand management, water reallocation between sectors and the re-use of wastewater rather than the development of additional large-scale abstraction or transfer schemes.

The three flagship free-flowing rivers in the province, the Luvuvhu, Mohlapitse and Mutale, should retain their free-flowing status and should not be impounded.

The further development of groundwater should be done with caution in areas where there is already high groundwater use and dependency, where supply already exceeds demand, and where groundwater recharge is likely to decrease in the future due to climate change. Risk areas include the Blouberg and Molemole municipalities. Other areas of concern where the use of groundwater is already high and supply cannot meet demand are Greater Letaba, Makhuduthamaga, Mogalakwena and Molemole. Groundwater abstraction in dolomitic areas should also be limited to prevent excessive draw-down, which could contribute to the formation of sinkholes.

Important Strategic Water Source Areas (SWSAs) in the province include the Wolkberg, Soutpansberg and Waterberg and Drakensberg areas for surface water and the Upper Sand (Polokwane) aquifer, Vivo Dendron, Blouberg, Phalaborwa, Crocodile River Valley and Giyani areas for groundwater. Water resource protection in these areas should be a high priority and conservation land uses preferred. The groundwater SWSAs in the central parts of the province are especially poorly protected (not designated as Critical Biodiversity Areas) and are thus more vulnerable to development-related impacts such as over-abstraction and pollution.

Biodiversity

The high level of terrestrial biodiversity in the province can be regarded as a natural asset that can be capitalised on for tourism and nature-based developments. In addition to National Parks, World Heritage Sites and Ramsar wetlands, the province has an exceptionally high level of floristic endemism (many plants that are found nowhere else in the world) with three Centres of Floristic Endemism. Bird diversity is also very high. These assets could form the core for special-interest tourism offerings for birdwatchers and botanists, for instance. The diversity of unique plant species also offers opportunities for research in areas such as traditional plant medicine.

The key threat facing terrestrial ecosystems in the province is continued habitat loss. An estimated 286,455 hectares of natural habitat was lost to mining, cultivation, afforestation and urban settlement between 2014 and 2020 (DFFE, 2022). This habitat loss needs to be managed to prevent the loss of the province's biodiversity assets. The Critical Biodiversity Areas as identified in the province's bioregional planning process need to be prioritised for conservation land uses.

Aquatic systems in the province are under severe threat and in poor condition: 75% of the river ecosystem types and 90% of the wetland ecosystem types are threatened and 65% of the river length is moderately to critically modified. The greatest pressures on the aquatic systems are increasing disruptions to the hydrological regime (e.g. abstraction and dams) and deteriorating water quality. The most threatened river ecosystems are in the southern and central parts of the province (particularly the Olifants River and its catchment), although most of the Crocodile and Luvuvhu systems are also critically endangered. Water resource protection needs to be prioritised.

Bioregional plans (Critical Biodiversity Areas)

Since 2016, bioregional plans have been completed for all five district municipalities and the outputs used to revise the Critical Biodiversity Area (CBA) plan produced as part of the Limpopo Conservation Plan v2, 2013. The CBA map provides a critical synthesis of environmental planning initiatives and should be used to inform all spatial planning decisions.

Some potential areas of conflict between proposed development and the CBA map that were noted in the bioregional plans include the following:

- Polokwane Nature Reserve – development proposed in reserve buffer zone.
- Polokwane-Moria Development Corridor – urban sprawl breaking up landscape connectivity.
- Kruger to Kalahari Corridor – Zebediela/Makapan/Waterberg Critical Landscape Link – mining proposed in critical biodiversity landscape corridor (the landscape link must be kept.).

- Fetakgomo Tubatse Local Municipality – urban sprawl is threatening biodiversity and the Sekhukhune Centre of Endemism (landscape connectivity must be retained).
- KwaMhlanga-Siyabuswa-Elandsdoring Rural Settlement – urban sprawl is threatening biodiversity corridor links to neighbouring provinces.
- Upper Limpopo valley between the Waterberg district and the Vhembe district, which borders Botswana – game fencing and other barriers are stopping the free-ranging wildlife between South Africa and Botswana (landscape connectivity must be retained).

Renewable energy

The potential for solar photovoltaic energy in the province is high. There is a linked beneficiation opportunity for the manufacturing of solar panels and chargers given the silicon reserves in the province and the existence of a silicon smelter in Polokwane.

Wind speeds in the province are generally too low to make wind energy an economically viable option except in a few, limited areas. Environmental concerns such steep terrain and the need to maintain extensive buffer zones from Important Bird Areas also limit this option.

Biopower, such as the conversion of waste to energy, could be investigated further, although options that involve the burning of biomass (e.g. driving steam turbines) should be implemented with caution, as they could result in further particulate matter emissions, which are already a concern in parts of the province.

Given the stressed state of the province's water resources, and the vulnerable environment in the mountains where dams for hydroelectric schemes will be most likely built, will have to be carefully considered as an option for renewable energy.

The strategic electricity transmission corridor should be incorporated into spatial plans to allow for proactive planning to prevent potential conflicts between power lines and other land uses in the future.

Air quality

The main air quality concerns for Limpopo are related to Particulate Matter (PM_{10}), Sulphur Dioxide (SO_2) and Nitrous Oxides (NO_x). The main sources of these pollutants are power generation activities, mining, metallurgical industries and biomass burning. Areas of particular concern include the following:

- SO_2 and NO_x levels around the power generation activities in the Waterberg district
- PM_{10} from the mining sector (mainly open-cast mines) around Lephalale, Steelpoort and Phalaborwa

The concentration of power generation and mining activities in the Waterberg and Bojanala districts led to the establishment of an Air Quality Priority Area for the Waterberg-Bojanala region (Government Gazette Notice 495 of 2012). It is estimated that, by 2030, SO_2 and PM_{10} levels in the priority area will exceed the acceptable levels stipulated in the National Ambient Air Quality Standards, especially around Lephalale.

Climate change risk areas

There are high flood risk areas in the Sekhukhune district and parts of the Greater Tzaneen, Polokwane, Makhado and Thulamela municipalities. Traditional settlement areas are particularly at risk where infrastructure may not be sufficiently designed to withstand flooding. Flood risk can be mitigated by reducing the hardening of catchments and prioritising the conservation of the wetlands and natural grasslands in the upstream catchment areas, as these will help regulate stream flow.

The western areas of the province along the Limpopo River valley are at risk of severe future heat stress (increasing temperatures and number of extreme hot days). Agricultural and other activities proposed in these areas should be drought- and heat-tolerant. Activities such as game farming will be more suitable than irrigated crops.

Areas most at risk of food security issues due to climate change are those that have a high level of subsistence agriculture or reliance on limited crop types. These areas include the Blouberg, Collins Chabane, Greater Letaba,

Fetakgomo Tubatse, Lepelle-Nkumpi, Makhuduthamaga, Maruleng, Mogalakwena and Molemole municipalities.

Agricultural resilience to climate change can be improved by focusing on crops/activities with low water demand and by diversifying the types of crops produced. Agro-processing should not be focused on a single specialised crop or product that is not climate-resilient.

Areas most at risk of groundwater depletion due to reduced recharge are those that currently rely heavily on groundwater, are already under water stress (demand exceeds supply) or are located in strategic groundwater source areas or on major aquifers. These high-risk areas include parts of the Mogalakwena municipality and the Blouberg, Molemole, Thabazimbi, Mookgopong and Polokwane municipalities. Further development of groundwater resources in these areas should be managed carefully and high water use developments discouraged.

Natural resource economic base

The diversity of the biophysical environment (e.g. terrain, climate and soil) lends itself to a diversity of agricultural opportunities, from the production of subtropical fruit to game farming, for instance. Diversifying agriculture will help improve adaptability to climate change by reducing reliance on only a few crop types.

A number of High Potential Agricultural Areas (HPPAs) have been identified in the province. They were identified based on land capability; and did not take other environmental planning initiatives such as the CBA maps, Protected Area Expansion Strategies or climate change predictions into account. Potential land use conflicts could exist and need to be assessed at a local level before an HPPA is earmarked for development. Potential conflict areas include the following:

- Critical Biodiversity Areas, especially in the Waterberg district and along the borders with neighbouring provinces and Botswana. A Critical Biodiversity Area corridor is broken up by the HPAA that lies on the border between the Capricorn and Vhembe districts.
- Areas close to the Nylsvley Ramsar wetland.
- Strategic Water Source Areas, where it will be critical to manage water use and prevent irrigation run-off that is potentially contaminated with fertilisers or pesticides.
- Severely water-stressed areas (where water demand already exceeds supply) in the Sekhukhune and Greater Letaba municipalities as well as around Mogwadi.
- The proposed HPPA for irrigation along the Limpopo River in the Lephalale municipality, as climate change predictions indicate an increase in drought tendencies and heat stress, making irrigation potentially unsustainable in the long-term.

The rich mineral resources of the province are an important natural asset, but further development must be undertaken in line with the Limpopo Conservation Plan (Critical Biodiversity Areas) and with due cognisance of the severe water constraints in the province.

The potential to develop the mineral resources are threatened to be sterilised by land invasion and uncontrolled occupation of land surrounding mining activity.

3.1.2. Spatial Synthesis: Bio-Physical Analysis

A spatial summary of the key points arising from the analysis of the biophysical environment in presented below.

The detailed analysis of the biophysical environment is contained in **Annexure B: Biophysical Environment Analysis** and consists of the following elements:

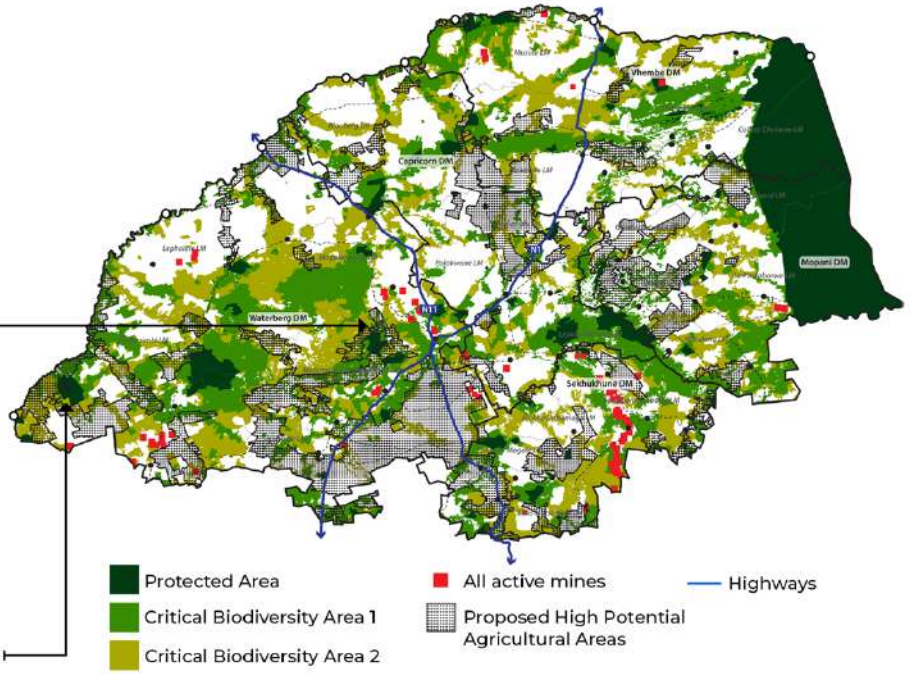
Content: Bio Physical Analysis	
Biodiversity protection	▪ Topography and geology ▪ Hydrology ▪ Biodiversity assessment ▪ National Protection Areas Expansion Strategy ▪ Flora and fauna ▪ Heritage
Ecosystem services	▪ Water Management Areas ▪ REDZs and power transmission corridors ▪ Renewable energy potential ▪ Air quality
Climate change	▪ Rainfall ▪ Temperature ▪ Impact on water resources ▪ Flood risk ▪ Fire hazard ▪ Impact on food security
Natural resource economic base	▪ Agriculture and land capability ▪ High Potential Agricultural Areas ▪ Mineral resources
National resource risk areas	▪ NSDF NSAAs

BIODIVERSITY

CRITICAL BIODIVERSITY AREAS AND HABITAT LOSS

Habitat Loss is one of the main threats to biodiversity

- The **high level of terrestrial biodiversity** is a natural asset that can be capitalised on for tourism and nature-based developments
- A **key threat facing terrestrial ecosystems** in the province is continued habitat loss - an estimated 286 455 hectare of natural habitat was lost between 2014 to 2020 to **mining, cultivation, afforestation and urban settlement development**
- Extensive parts of the province are covered by **Critical Biodiversity Areas,** in some areas **conflicting with current and proposed developments** such as mining, residential and agricultural development (see map to the right)

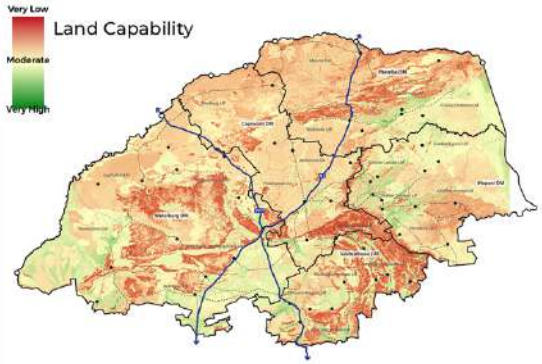


LAND CAPABILITY AND AGRICULTURAL ACTIVITIES

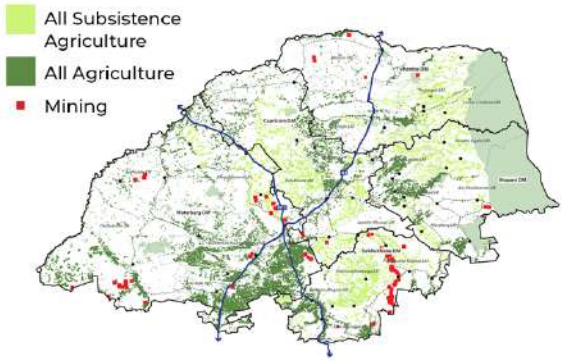
Extending Agricultural Development should be done with caution

- Overall the province has **low to very low Land Capability levels**, with only a few moderate to high capability clusters found in the southern and eastern parts
- **Subsistence agricultural** activities are spread throughout the **central parts** of the province, with **commercial agriculture largely clustered in the southern and eastern parts**
- Some of the **Proposed High Potential Agricultural Areas** in the province are in **conflict with the CBAs** and/or located in areas with low Land Capability levels

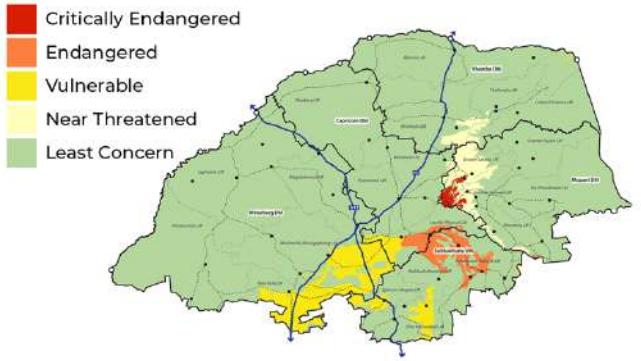
LAND CAPABILITY



AGRICULTURE AND MINING ACTIVITIES



TERRESTRIAL ECOSYSTEM THREAT STATUS



WATER RESOURCES

SEVERE PRESSURE ON AQUATIC SYSTEMS

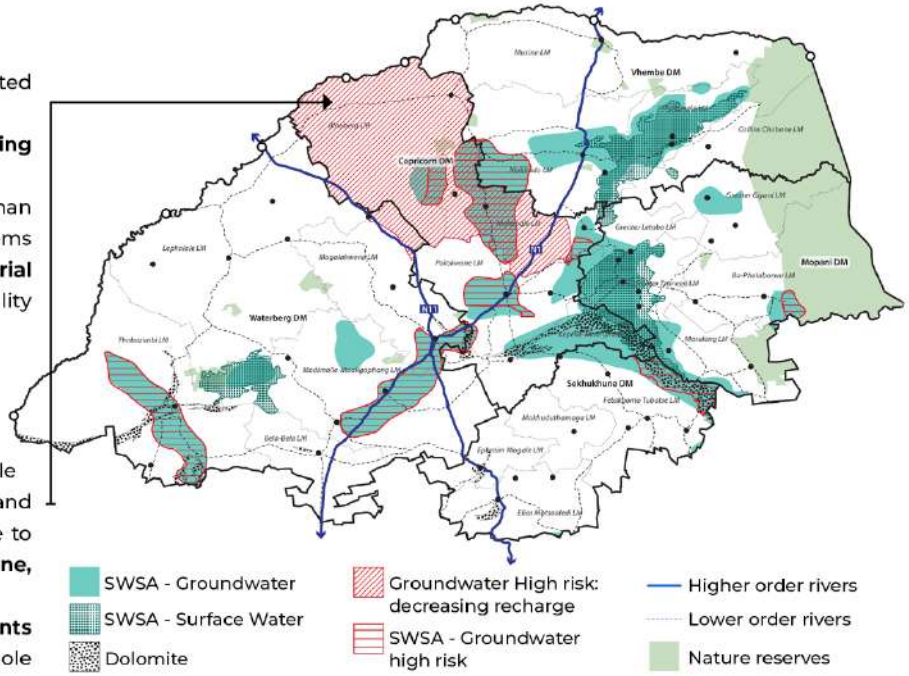
Only 35% of rivers in natural/near-natural condition

- The majority of the rivers in Limpopo are under severe pressure, with the rivers located in the central and southern parts of the province especially endangered
- The **greatest pressure** on aquatic systems are **abstractions, dams and deteriorating water quality**, with agriculture and mining as the biggest water users
- The **over-abstraction of water and building of dams** (primarily for crops, human settlements and mining) results in **direct negative impacts** on species and ecosystems
- The **pollution of inland aquatic ecosystems** by a combination of **mining, industrial and urban wastewater and agricultural** return flows negatively impacts water quality

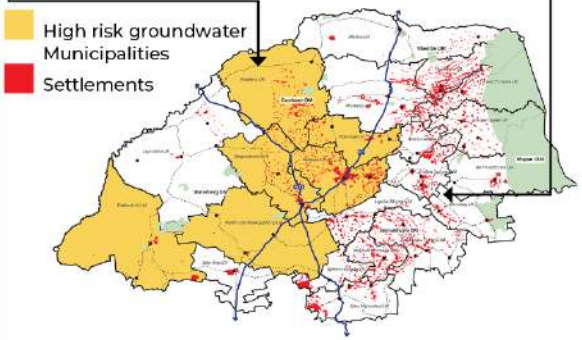
WATER AND DEVELOPMENT

Water is the key constraining factor for development

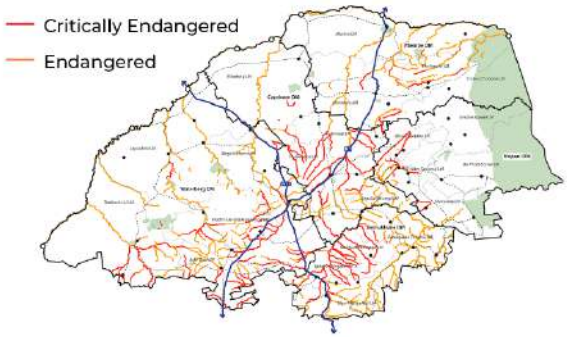
- Overall **water demand exceeds supply**
- Further dam development and abstraction schemes are not ecologically sustainable
- Further **groundwater extraction should be limited** in locations where demand already exceeds supply, and where groundwater recharge is likely to decline due to climate change, especially in SWSAs: **Blouberg, Molemole, Mogalakwena, Polokwane, Modimolle-Mookgophong and Thabazimbi**
- **Development should be carefully managed in SWSAs with extensive settlements** (eastern half of Limpopo Province), especially areas where Dolomite is present (sinkhole danger)



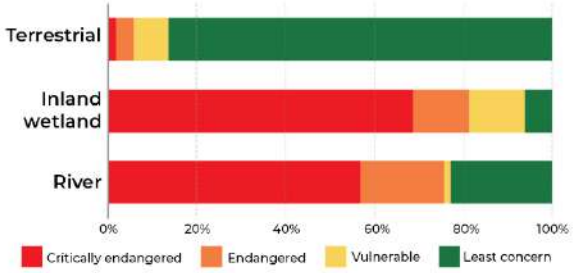
MUNICIPALITIES WITH HIGH RISK GROUNDWATER SOURCES



AQUATIC ECOSYSTEM THREAT STATUS



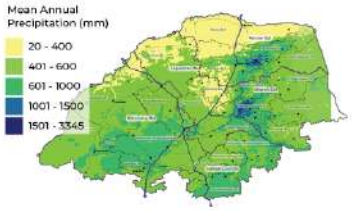
PERCENTAGE OF THREATENED ECOSYSTEMS IN EACH THREAT CATEGORY



CLIMATE CHANGE PREDICTIONS 2050

- The whole of Limpopo Province will experience an **increase in maximum temperature**, with the **eastern half increasing by +3°C**, in addition there will be up to more than a **100 day increase in very hot days** on the **north-western border**.
- Although there is a slight increase in mean annual precipitation in some areas, **half of Limpopo** will have a **very high drought tendency by 2044**, specifically in the centre of Limpopo.

ANNUAL RAINFALL



CHANGE IN VERY HOT DAYS 2050

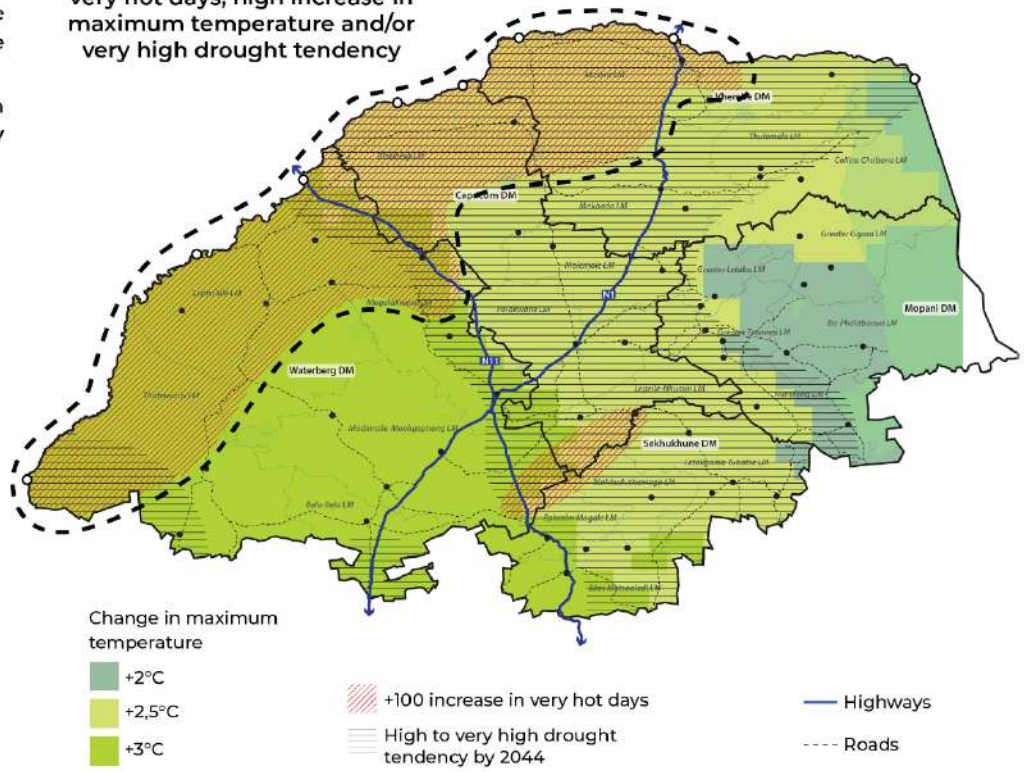
CHANGE IN ANNUAL RAINFALL 2050

CHANGE IN MAX TEMPERATURE 2050

CHANGE IN EXTREME RAINFALL EVENTS 2050

DROUGHT TENDENCY 2015 - 2044

Overlap of predicted increase in very hot days, high increase in maximum temperature and/or very high drought tendency



- Although the majority of Limpopo will be extensively impacted by climate change, it is the **municipalities bordering the north-western border of the province which will be most severely affected.** These areas already have relatively low rainfall levels, and it is predicted that these areas will experience an **increase in very hot days, as well as an increase in maximum temperature and/or very high drought tendency.**

MINERAL RESOURCES

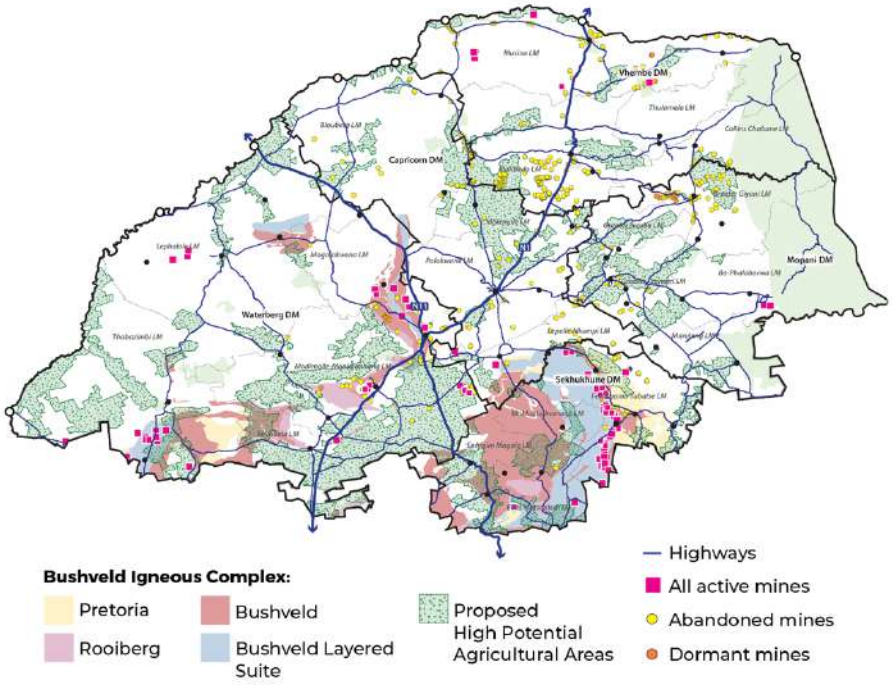
The significant mineral resources should be managed sustainable

- The province has **extensive mineral resources in various stages of exploitation:** The **world's largest reserves of platinum-group metals** as well as titanium, vanadium, iron, tin, chromatite deposits, coalfields (half of country's coal reserves), diamond-yielding Kimberlite deposits, copper, precious stones, gold, limestone and sand.
- Most current mining activities are clustered in the **Bushveld Igneous Complex areas**.
- The majority of the **mines are opencast**, which, if not managed properly, can result in **significant biodiversity loss as well as air quality problems**, with the release of particulate matter being of the most concern.
- The **rehabilitation of old mines** is also important, especially given the large number of abandoned mines in the province, located mainly in the central, northern and eastern parts of the province.

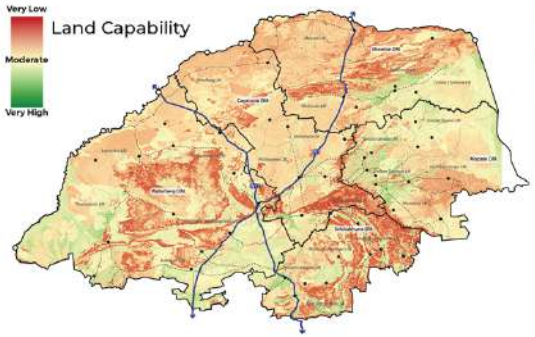
HIGH POTENTIAL AGRICULTURAL AREAS (HPAA)

Development of HPAAs should be done in line with environmental planning

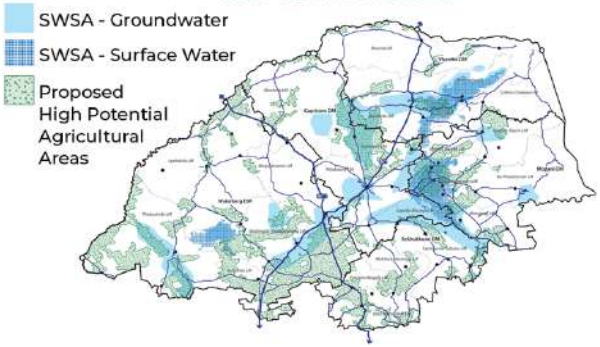
- HPAAs can be regarded as **large, relatively homogeneous portions of high-value agricultural land** that has the potential to **sustainably** contribute significantly to the **production of food** in the long term. It is important that the proposed HPAAs be considered in spatial planning and rural development documents.
- **Environmental planning initiatives were not taken into account** during the identification of the HPAAs, as a result some of the HPAAs **may conflict** with areas such as SWSAs and CBAs.



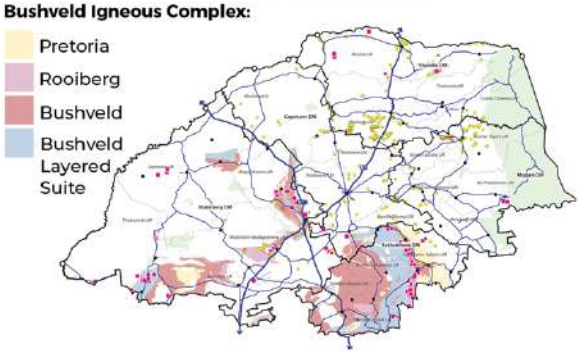
LAND CAPABILITY



PROPOSED HIGH POTENTIAL AGRICULTURE AND SWSA OVERLAP



MINING ACTIVITIES



3.2. SOCIO-ECONOMIC ANALYSIS

For provincial spatial planning, it is important to take a holistic view of spatial driving factors including demography, economic trends and main economic activities, as well as the enabling infrastructure. A comprehensive analysis of the status quo and current realities in terms of Limpopo's socio-economic environment was undertaken with the particular focus on these driving factors as the overarching themes.

The following are among the key spatial issues that were identified:

- Population concentrations are found in both urban nodes such as Polokwane and Tzaneen, but also in rural settlements mainly in the eastern half of the province. Population growth and growth of residential structures are occurring in both urban nodes and rural settlements. The latter trend is reinforcing spatial disparities with growth occurring where communities are already socio-economically vulnerable and spatially marginalised. The highest socio-economic vulnerability in terms of poverty and other social measures occur in rural settlements.
- Limpopo experienced a low but positive economic growth rate from 2016 to 2021. Four industries showed a positive growth rate from 2016 to 2021, namely agriculture; mining and quarrying; finance, insurance, real estate and business services; and government and community services. The province is highly reliant on the mining and quarrying sector, with the sector making a 31% contribution to provincial GVA in 2021. This reliance is also a vulnerability in some parts of the province, with five municipalities being predominantly mining dependent. Vulnerable municipalities with high population growth and/or single sector dependence were among those that experienced a decline or low growth in economic output from 2016-21.
- The province is experiencing challenges in terms of supportive infrastructure. Water sources are constrained with many areas facing a water deficit, which may be worsened due to climate change impacts. Sanitation services in all areas of the province are in a poor or critical state. Road conditions hamper access to certain nodes and rural areas, and combined with lack of rail capacity is a limiting factor in connectivity and freight transport. While most households do have access to electricity, the need for alternative energy supply projects are recognised and supported by various initiatives.

3.2.1. Key Outtakes: Socio-Economic Analysis

Demography:

The largest population in 2022 was found in Polokwane (843 459), Fetakgomo Tubatse (575 960), Thulamela (575 929), Makhado (502 452) and Greater Tzaneen (478 254). (StatsSAa, 2023)

The highest population density is in Sekhukhune and the lowest in Waterberg. The local municipalities with the highest population densities are Thulamela, followed by Polokwane, Greater Tzaneen and Makhuduthamaga. The local municipalities that experienced the most significant growth in population numbers from 2011-2022 were Fetakgomo Tubatse, Thulamela and Polokwane. (StatsSAb, 2023)

Residential structure growth from 2015 to 2020 show expansion of both urban and rural areas, with significant expansions of rural settlements. Settlements showing residential structure growth are in particular Seshego/ Polokwane/ Mankweng, Burgersfort/ Steelpoort and along the R37, at Lenyenye/ Nkowankowa, Namakgale/ Lulekani, Jane Furse, Lebowakgomo and the Thohoyando area. There is also a concentration at Senwabarwana, Lephalale and Modimolle. Growth is not concentrated in nodal areas only with rural settlements showing significant expansion. Higher growth is occurring towards Northam compared to Thabazimbi. The growth in Makhado seems to be in areas outside of the formal town. The growth pattern in Mogalakwena clearly follows the N11 north of Mokopane towards the mining activity and the surrounding settlements.

The largest growth in household numbers from 2011 to 2022 were in Polokwane, Fetakgomo Tubatse, Makhado, Mogalakwena and Thulamela. (StatsSAb, 2023)

There are slightly more females than males at provincial level. This pattern is repeated at municipal level, with the exception of the following municipalities where there are more males: Thabazimbi, Lephalale, Musina and Modimolle-Mookgopong. The following local municipalities have the highest portion of working age (and lowest economically dependent) populations: Thabazimbi (70,4%), Musina (67%), Bela Bela (63.9%), Lephalale (63.7%) and Modimolle-Mookgopong (61.8%) (StatsSAb, 2023). There are correlations between the male dominant gender structure, the highest portion of working age populations and a very low elderly population. The trend observed is typical from a mining or industry dominated area where the economically active labour force migrates to the area during their working age but return to their place of origin to retire. The opposite trend is found in certain rural areas such as Blouberg, Lepelle-Nkumpi and Molemole. The economic dependent population almost equal the working area population, and the elderly age group is higher. The female population is also a larger segment than males. This trend shows the elderly retiring at their place of origin, and women staying at home to care for dependents.

Vulnerability:

The highest concentration of vulnerable people staying in poverty in terms of numbers, are found in the following municipalities (2021): Polokwane (361,638), Fetakgomo Tubatse (240,591), Thulamela (265,324), Makhado (219,430) and Greater Tzaneen (211,413). Child headed households in inadequate dwellings are concentrated in rural areas namely Collins Chabane and Greater Giyani.

The eleven local municipalities where the functional illiteracy rate is higher than the rest of Limpopo are located in areas with lower access to overall services, in particular access to education facilities. These communities are also residing in areas furthest from development corridors and areas of highest economic activity in the province. Spatially, a correlation that do exist between areas with the highest level of no schooling, such as Blouberg, and the settlements identified to have no proper travel access to existing facilities. The attainment of primary education only, relate to the most sparsely populated regions of the province where pupils must travel long distances to access secondary education.

Overall, the spatially marginalised rural areas have the highest level of socio-economic vulnerability.

Economic trends and activities:

The main contributors to total provincial GVA in 2021 were the Capricorn (31.5%) and Mopani (22.8%) districts. At local municipal level, Polokwane alone contributed close to a quarter of the provincial GVA. The seven municipalities who contribute 5% or more towards Limpopo's economy are Polokwane (24.3%), Greater Tzaneen (7.6%), Thabazimbi (6.4%), Makhado (5.7%), Ba-Phalaborwa (5.5%), Thulamela (5.1%), Greater Giyani (5%) and Fetakgomo Tubatse (5%).

From 2016 to 2021, Limpopo experienced a positive average annual GVA growth rate of 0.5%, which is higher than the national growth rate of 0.3%. The Capricorn, Mopani and Vhembe districts experienced positive average annual GVA growth rates of 0.8%, 1% and 1.8% respectively, while the Sekhukhune and Waterberg districts experienced negative average annual GVA growth rates of -0.7% and -1.1% respectively.

The dominant economic sector in the province is mining and quarrying. It made the highest contribution to provincial GVA in 2021 (31%), followed by government and community services; finance, insurance, real estate and business services; and wholesale and retail trade, catering and accommodation. Five municipalities in the province are mining dependant, with the sector contributing more the 50% of the local GVA: Thabazimbi (95.3%), Maruleng (84.5%), a-Phalaborwa (81.3%), Fetakgomo Tubatse (77.5%) and Lephalale (77.5%).

At a provincial level, only four economic industries showed positive average annual growth rates from 2016 to 2021, namely agriculture (7.8%), mining and quarrying (2.0%), finance, insurance, real estate and business services (0.7%) and government and community services (0.5%). At a district level, the same four industries showed growth in Capricorn and Mopani. In the Vhembe district, in addition to the four industries mentioned above, the manufacturing

industry also showed growth. Greater Giyani is the only local municipality that showed growth in all economic industries. In the Sekhukhune and Waterberg districts, only agriculture and mining and quarrying showed positive average annual growth rates.

In general, employment showed a declining trend in all districts from 2016 to 2021. The declining trend in the overall employment rate, especially towards 2020 and 2021, is to a large extent due to the unforeseen outbreak of the COVID-19 pandemic. At a district level, unemployment showed the largest growth in the Sekhukhune and Waterberg districts from 2016 to 2021, both with average annual unemployment growth rates of 5.2%. In 2021, unemployment was the highest in the Sekhukhune district at 58.6%. At a local municipal level, unemployment was the highest in Makhuduthamaga (67.3%) and Fetakgomo Tubatse (61.0%). It is noteworthy that the latter is also one of the municipalities with high population growth rates.

The only two industries that showed a positive five-year period industry average annual growth in employment for the period 2016 to 2021, at a provincial level, were agriculture and mining and quarrying, in line with the national trend. Sekhukhune and Waterberg districts recorded negative five-year period industry average annual growth in employment for the period 2016 to 2021.

From 2016 to 2021, the tress index (and indicator of economic diversification) of Limpopo increased, which indicates that the economy of the province became more concentrated and vulnerable to exogenous variables. This was also the case for the districts Capricorn, Mopani and Vhembe. Over the same period, the tress indices of the Sekhukhune and Waterberg districts decreased, which indicates that the economies of these districts are becoming more diverse. The latter two districts currently have the least diversified economies with a heavy dependence on mining and quarrying.

In terms of competitive advantage, Capricorn has the highest number of industries (four) with high location quotients which indicates that the industries are strong enough to provide export products beyond the local border. Mopani has two highly rate industries, and the remainder of the districts only one each.

In terms of an analysis of industries which are “leading” as they have a growth rate that is greater than the rate of growth in the overall economy, or “lagging” as they are growing more slowly, industries with current or emerging strengths are identified. In Limpopo, the agriculture industry emerged as a current strength and the mining and quarrying industry as a high-priority retention target. Sub-industries in these sectors with specific potential are agriculture and hunting (current strength), forestry and logging (current strength) and fishing, operation of fish farms (emerging strength), as well as mining of gold and uranium ore (high-priority retention target), mining of metal ores (current strength) and other mining and quarrying (current strength). The finance and insurance and other business activities sub-industries are emerging strengths.

This document contains a detailed analysis of the following key sectors: agriculture, mining and quarrying, industry and manufacturing, logistics, and tourism. The key constraints to these sectors are accessibility in terms of the road and rail network hampering access to markets for heavy haulage and dampening the tourism sector, as well as the availability of water and energy challenges.

Supportive Infrastructure

Critical infrastructure to support human settlement and economic activity include road and rail, airports, water, sanitation and electricity.

Movement Network

Limpopo has a road network of about 24,000 km, of which SANRAL owns 3,645 km including the N1 and N11 and regional roads previously owned by the province. The Roads Agency of Limpopo (RAL) owns about 20,000 km of the road network of which approximately 67% is unpaved. Approximately 30% of the paved road network and about 40% of the unpaved network are in poor to very poor condition. The quality of the road network is a concern mainly in the rural areas but also for access road to nodes such as Phalaborwa, Makhado, Thohoyandou and Burgersfort. RAL has prioritised the paving of

3,793 km of which 60% are in Waterberg and Capricorn, which have the highest percentages of unpaved roads.

Limpopo's rail network consists of the following main lines: Pretoria–Polokwane–Musina–Beitbridge international mainline, Pretoria North (Pyramid) and Rustenburg to Thabazimbi and Lephalale, and Groenbult–Tzaneen–Hoedspruit (and Phalaborwa)–Kaapmuiden (Mpumalanga). These are freight lines and are experiencing constraints in terms of poor signal telecommunication systems, speed restrictions, low train frequency in certain areas leading to increased vandalism, and operational inefficiencies limiting capacity. None of the branch lines in the province are operational. Ost of the core rail network will be capacity constrained by 2035, with capacity interventions being prioritised over new lines according to Transnet. The following new rail lines are proposed by Prasa (2012) to serve the passenger demand in the province (although implementation time frames are not clear): extension of Moloto Rail/road Corridor into Limpopo, along the Sekhukhune corridor to Burgersfort, Makhado–Thohoyandou Link (to link Thohoyandou to the mainline at Makhado), Makhado–Lephalale (to provide a new line along the north-eastern corridor) and Pretoria–Polokwane high-speed rail.

Polokwane Airport is the only international airport in the province. Kruger Park Gateway (Phalaborwa) and Hoedspruit (Eastgate; located in an unlicensed military base) are domestic airports. The airports are important for both business and leisure travel and could support the provincial tourism sector if optimally used.

Water and Sanitation

In terms of water provision, large numbers of communities were still receiving services under the RDP standard in 2022. This includes rural areas to the far north and south of Polokwane in Capricorn district, many of the rural settlements in Vhembe and Mopani districts, and large parts of Sekhukhune district especially in Fetakgomo Tubatse.

Only 35,2% of households in Limpopo had access flush toilets connected to sewerage and 31.4% had access to piped water in dwellings in 2022, the lowest of all the provinces in South Africa. In the absence of flush toilets, the majority of households in Limpopo (62,4%) used other measures such as pit latrines (StatsSAa, 2023). Current sanitation infrastructure is inadequate, and the condition of existing sanitation infrastructure will not be able to cater for new major developments. Water is a scarce resource, and the construction of waterborne sanitation infrastructure will have to be aligned with water supply availability and planning. Alternative sanitation systems must be considered and investigated. At district level, currently no sanitation master plans are in place to assist in planning waterborne sanitation systems and aligning them with available water supply and required developments. Dry-sanitation infrastructure in rural communities should be considered for sanitation backlog eradication.

In terms of water demand, 77% of water demand is by the agriculture industry, followed by demand for potable water (12%), mining (7.7%), forestry (1.6%) and livestock (1.5%).

Limpopo faces a situation of serious water shortages, measured as both water source balance and water source infrastructure balance. The water source balance is the difference between the water demand and the water resources (and reflects either a surplus or a deficit). The water source balance was refined to accommodate source locality and feasible infrastructure constraints, resulting in the water source infrastructure balance.

In terms of groundwater demand (accessed through boreholes), demand is generally outstripping supply. Municipalities where water demand already significantly exceeds supply include mostly rural areas including Greater Giyani, Maruleng, Makhuduthamaga, Greater Letaba, Bela-Bela, Mogalakwena, Molemole and Blouberg. In terms of surface water, catchments in Limpopo are stressed with high demand for water for development activities. The majority of available dams are fully allocated and the quality of water renders surface water a limited resource for the province's future development needs. In terms of water source infrastructure balance, the province will reach an average deficit in 2027.

Water issues are further exacerbated by infrastructure challenges, with more than 70% of Limpopo's water infrastructure having medium to high refurbishment needs. More than 2500 households are affected by water infrastructure functionality challenges, mostly in rural communities across the

central and eastern parts of the province. In terms of water quality, four water services authorities face a high Blue Drop risk rating (Capricorn, Mogalakwena, Modimolle and Thabazimbi). In terms of sanitation, all water services authorities in the province face a "poor" or "critical state" Green Drop risk rating. Only the Vhembe district improved on their Green Drop score (from 12% in 2013 to 24% in 2021). The remaining water services authorities relapsed to lower Green Drop scores compared to 2013 baselines. The most prominent risks were observed at a treatment level, and pointed to works that exceeded their design capacity, dysfunctional processes (especially disinfection) and equipment, a lack of flow measurement, as well as effluent and sludge non-compliance.

In 2023, no water supply system in Limpopo received a Blue Drop Certification with only Bela Bela LM and Vhembe DM out of ten Water Services Authorities improving their scores while the others regressed. During the 2023 sanitation Green Drop risk assessments, there was no Waste Water Treatment Works (WWTW) in the low risk category and there is an increase in the number of critical-risk WWTWs from 13 in 2013 to 24 in 2022 and 40 in 2023. (DWSa, 2023 and DWSb, 2023)

Electricity

Eskom is the main supplier of electricity to households in Limpopo: Eskom supplies 83.5% of households, while the local municipalities supply 16.3% of households. Household access to electricity is generally high, in the high 80% to high 90% of households in different areas. The Eskom Generation Connection Capacity Assessment (GCCA) 2025 provides details of the generation connection capacity of the planned transmission network with all the projects that are expected to be commissioned by 2025. According to the GCCA 2025 results, the Limpopo supply area have remaining grid capacity of 3,360 MW. According to the TDP 2023-2032 (Rev 2), there is sufficient transmission network capacity to integrate future planned IPPs in the province. The three customer load networks in the province are all expected to experience a steady growth in demand of between 3.25 and 2.4% due to an increase in light and heavy industrial, commercial, residential and also mining and possibly smelting activities. To respond to increasing demand, various projects are being planned including the Medupi transmission integration (400 kV and 765 kV), Waterberg generation 400 kV stability enhancement, Nzhelele 400 kV integration, Strengthening of Limpopo East Corridor, the new Silimela substation and the new Sekhukhune substation. Alternative energy projects are being considered.

The Department of Science and Innovation, in partnership with Anglo American, Bambili Energy and ENGIE, is looking into opportunities to transform the Bushveld complex and larger region around Johannesburg, Mogalakwena and Durban into a hydrogen valley. The selection of the corridor from Durban to Mogalakwena as a hydrogen corridor was based on existing hydrogen potential to switch many of the industrial, mobility and buildings activities to hydrogen fuel or feedstock. One of the three catalytic green hydrogen hubs are located in Mogalakwena.

Solid Waste

Information on the capacity of landfill sites is not readily available. There are no hazardous waste disposal sites in the province; hazardous and medicinal waste is transported to disposal facilities in Gauteng.

Online Connectivity

In terms of online connectivity, 61.7% of households in Limpopo have access to the internet using a mobile device, indicating that mobile access to the internet has made it much more accessible to households in rural areas. Only 1.5% of households gain access to the internet by means of internet cafes or education facilities in the province, both in the urban and rural areas. In response to this service gap, the Premier mandated the provision of ICT infrastructure to educational and health facilities through the State of the Province Address in February 2023. Broadband telecommunications infrastructure is currently being implemented in Limpopo. According to Limpopo Connexion, 50 sites have been connected to date. There are plans to further expand the network into all districts in the province, including fibre, microwave masts and broadband to enable 5G connectivity.

3.2.2. Spatial Synthesis: Socio-Economic Analysis

A spatial summary of the key points arising from the socio-economic analysis is presented below.

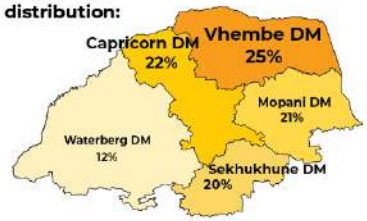
The detailed socio-economic analysis is contained in **Annexure C: Socio-Economic Analysis** and consists of the following elements:

Content: Socio Economic Analysis	
Demography	▪ Background to statistical sources ▪ Population and household characteristics ▪ Population and household projections ▪ Age and gender ▪ Migration
Vulnerability	▪ Poverty lines ▪ Grant dependency ▪ Child-headed households residing in inadequate dwellings ▪ Level of education ▪ Access to basic services
Economic trends	▪ Economic context and performance ▪ Labour and employment ▪ Economic concentration and diversification ▪ Competitive advantage
Economic activities	▪ Agriculture ▪ Mining ▪ Industrial and manufacturing ▪ Logistics (freight) ▪ Tourism
Supportive infrastructure	▪ Roads and transport ▪ Water and sanitation ▪ Electricity

POPULATION DISTRIBUTION

Limpopo Population 2022: 6 572 721 10,6% of SA

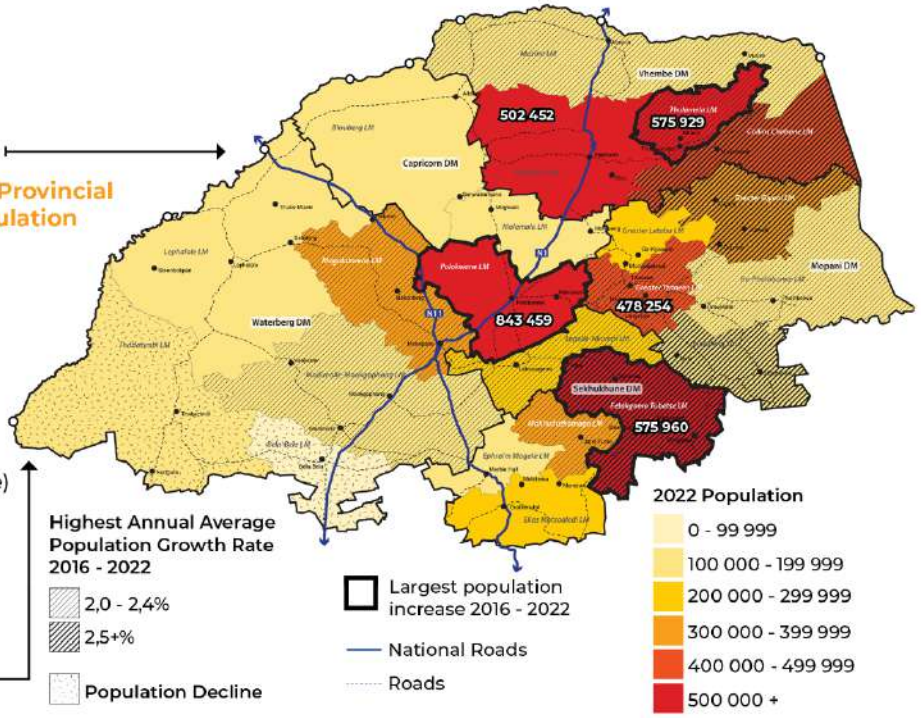
Population distribution:



Local Municipalities with largest populations:

1. Polokwane (13% of provincial population)
2. Thulamela (8,8% of provincial population)
3. Fetakgomo Tubatse (8,8% of provincial population)
4. Makhado (7,6% of provincial population)
5. Greater Tzaneen (7,3% of provincial population)

45% of Provincial Population



POPULATION GROWTH & PROJECTIONS

Local Municipalities with the largest increase in total numbers 2016 - 2022:

1. Fetakgomo Tubatse
2. Thulamela
3. Polokwane

The highest annual growth rate can be found on the eastern side of the province, with population decline in Thabazimbi and Bela-Bela.

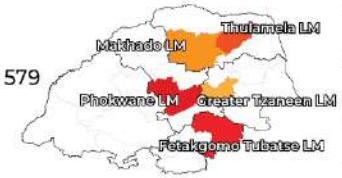
2031 Household Projections:

1. Sekhukhune DM (458 051, 23,4% increase)
2. Waterberg DM (290 015, 20,3% increase)
3. Capricorn DM (505 426, 20,1% increase)
4. Mopani DM (429 150, 17,6% increase)
5. Vhembe DM (481 287, 17,6% increase)

LOCAL MUNICIPALITIES WITH THE HIGHEST TOTAL HOUSEHOLD IN 2022

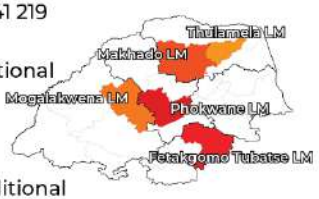
1. Polokwane LM: 249 443
2. Fetakgomo Tubatse LM: 147 167
3. Thulamela LM: 142 527
4. Makhado LM: 140 338
5. Greater Tzaneen LM: 129 579

44,6% of Provincial Households



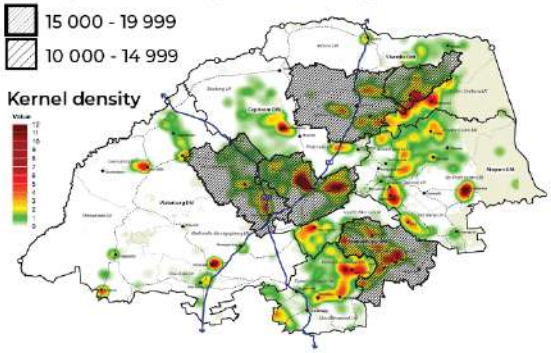
LOCAL MUNICIPALITIES WITH THE HIGHEST HOUSEHOLD GROWTH 2011 - 2022

1. Polokwane LM: 45 838 additional households
2. Fetakgomo Tubatse LM: 41 219 additional households
3. Makhado LM: 32 605 additional households
4. Mogalakwena LM: 30 662 additional households
5. Thulamela LM: 28 526 additional households



KERNEL DENSITY OF OVERALL RESIDENTIAL STRUCTURE GROWTH 2015 - 2020

Municipalities with largest Household growth 2016 - 2022
15 000 - 19 999
10 000 - 14 999
Kernel density



VULNERABILITY

52% of people in Limpopo Province live in poverty

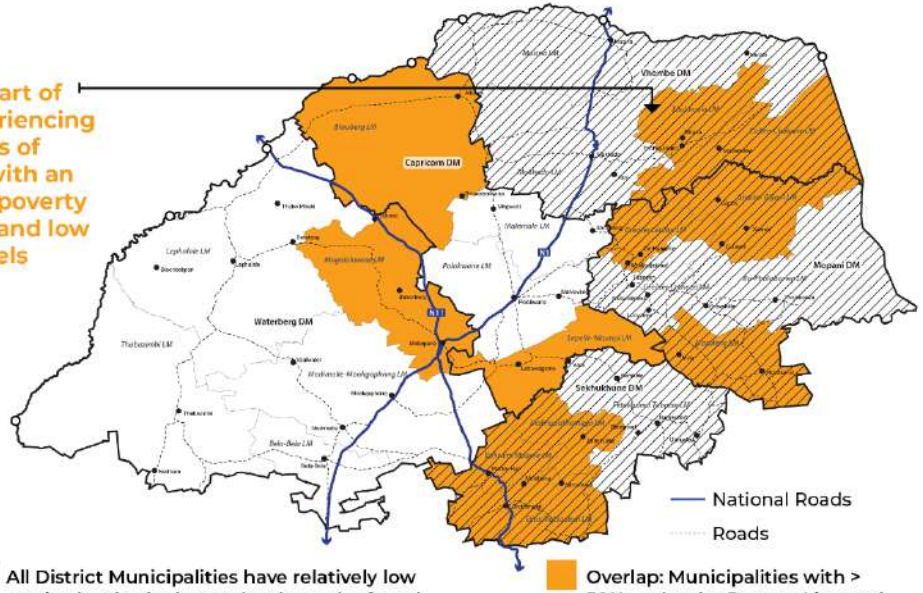
Sekhukhune (54,6%) and Mopani (53%) District Municipalities have the largest percentage of population living in poverty, with the following local municipalities reaching up to 60%:

1. Greater Giyani (62,8% of population)
2. Makhuduthamaga (60,2% of population)
3. Maruleng (60,1% of population)

ACCESS TO SERVICES

District Municipalities	Piped water on site	Flush toilet connected to sewerage	Weekly refuse removal	Electricity for lighting
Capricorn	75%	42%	40%	96%
Mopani	54%	29%	26%	97%
Sekhukhune	47%	24%	23%	94%
Vhembe	57%	29%	25%	96%
Waterberg	76%	58%	53%	93%

The eastern part of Limpopo is experiencing higher levels of vulnerability, with an overlap of high poverty levels, illiteracy and low service levels

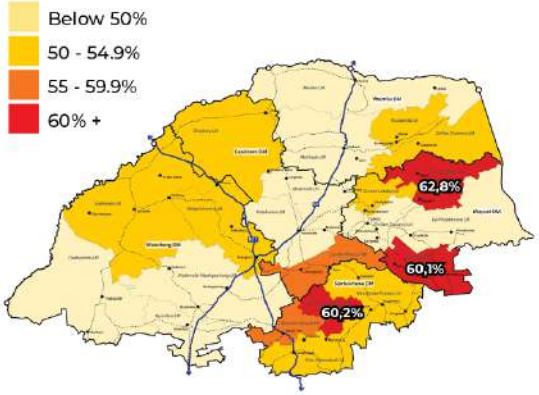


All District Municipalities have relatively low service levels, the lowest levels can be found in the following District Municipalities:

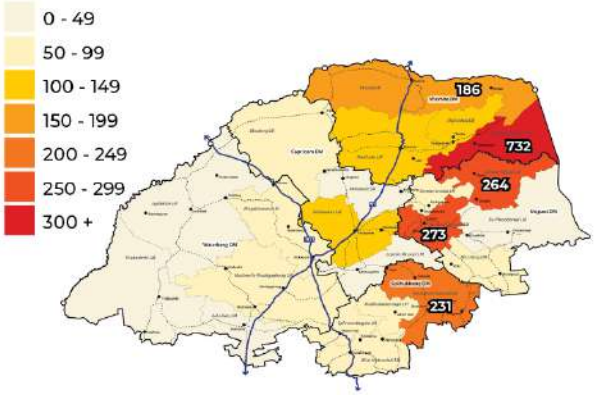
- Sekhukhune
- Mopani
- Vhembe

Overlap: Municipalities with > 50% under the Poverty Line and more than 30% Functionally Illiterate Adults

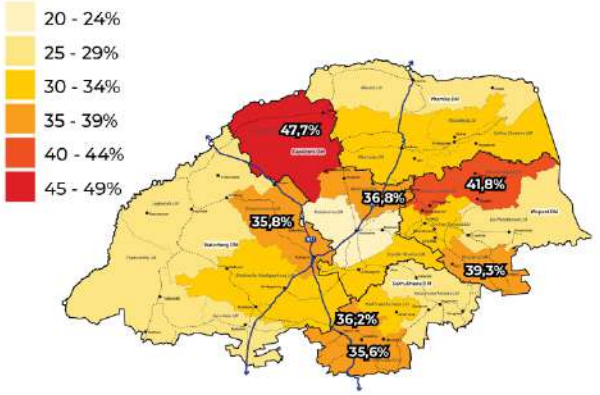
UPPER-BOUND POVERTY LINE: MUNICIPALITIES ABOVE 50%



CHILD HEADED HOUSEHOLDS RESIDING IN INADEQUATE DWELLINGS 2016



PERCENTAGE FUNCTIONALLY ILLITERATE ADULTS

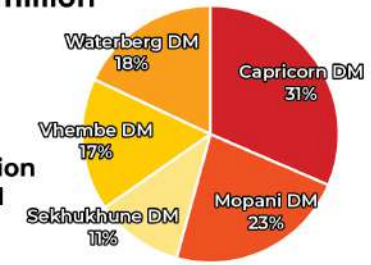


GVA STATISTICS

GVA 2021

R 421 780 million
Contributed
7,6% to
SA GVA 2021

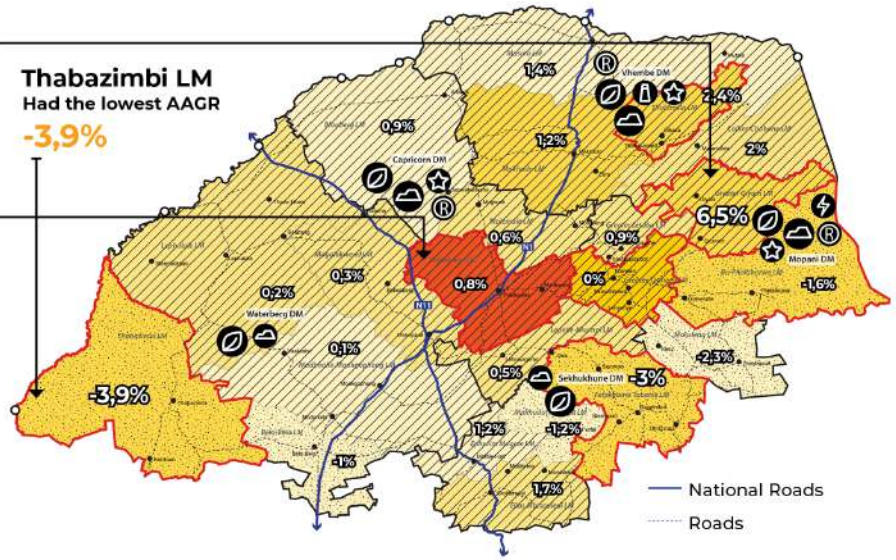
% Contribution to Provincial GVA



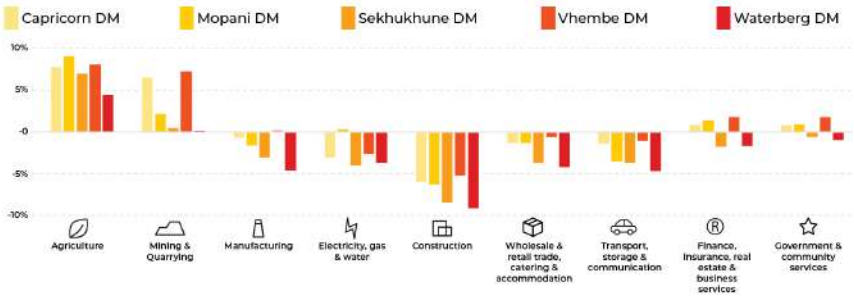
Greater Giyani LM
Had the highest AAGR
+6,5%

Polokwane LM
Contributed
24,3% to
Provincial GVA 2021

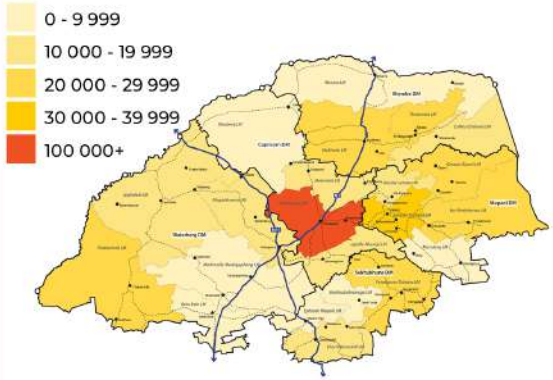
Thabazimbi LM
Had the lowest AAGR
-3,9%



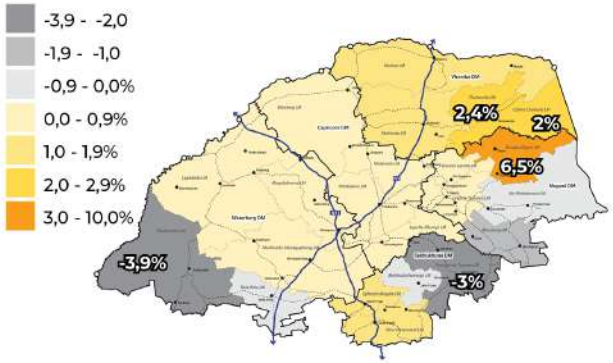
GVA INDUSTRY AVERAGE GROWTH 2016 - 2021



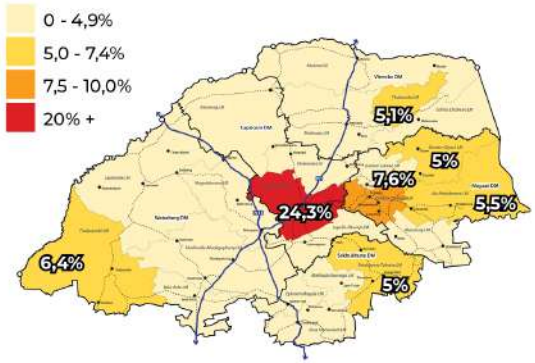
TOTAL GVA (R'millions) 2021



TOTAL GVA AVERAGE ANNUAL GROWTH RATE (AAGR) 2016 - 2021



% CONTRIBUTION TO PROVINCIAL GVA 2021



EMPLOYMENT STATISTICS

UNEMPLOYMENT

Total number of employed declined by 113 503 from 2016 - 2021

Percentage of Total Labour Force employed: **66,3%** (2016) ⟶ **58,1%** (2021)

All District and Local Municipalities saw a decline in the number of employed 2016 - 2021:

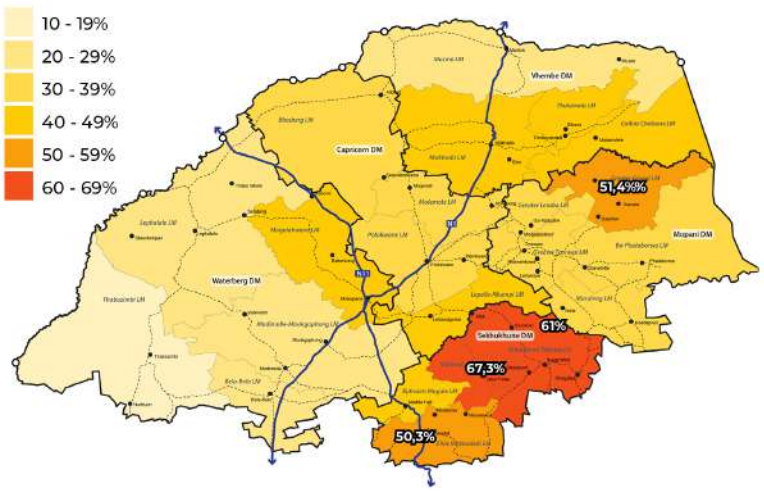
District Municipalities with the largest decline are:

- Mopani DM (-33 543 / -3,1% decline per year)
- Vhembe DM (-30 436 or a -2,7% decline per year)

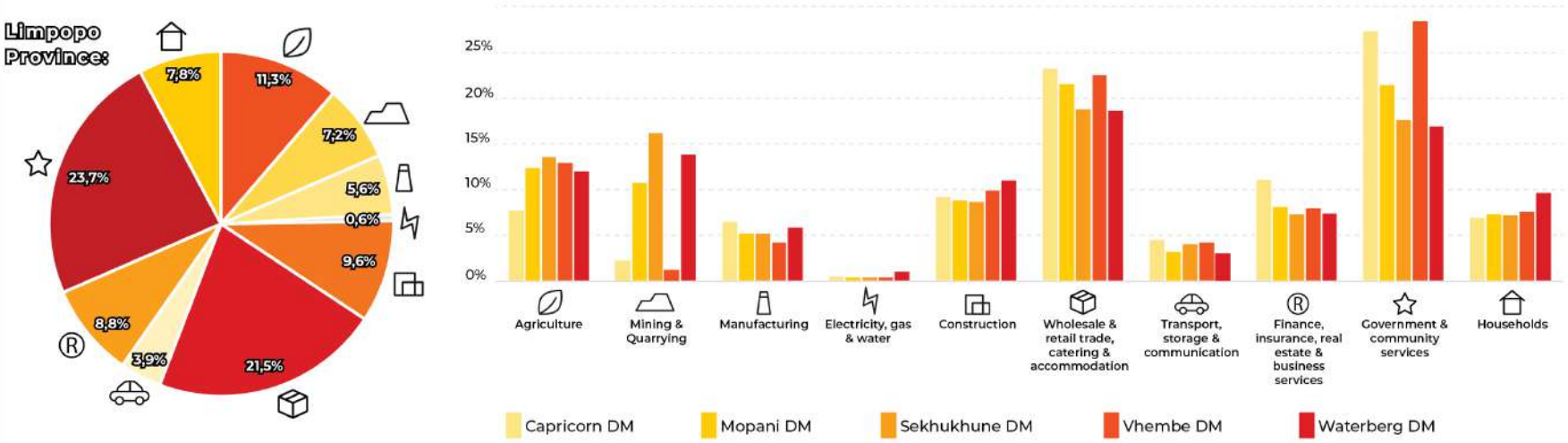
Local Municipalities with the largest decline are:

- Greater Tzaneen LM (-15 826 / -3,5% per year)
- Polokwane LM (-12 593 / -1,4% per year)
- Makhado LM (-10 179 / -2,7% per year)

LOCAL MUNICIPAL UNEMPLOYMENT RATE 2021



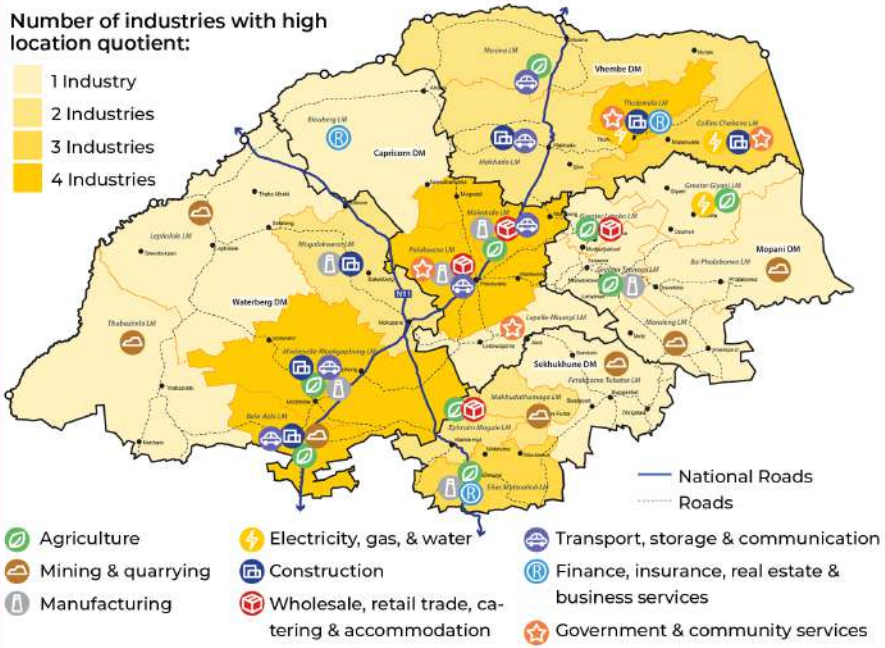
INDUSTRY CONTRIBUTION TO TOTAL EMPLOYMENT (FORMAL AND INFORMAL) 2021



COMPETITIVE ADVANTAGE

Sectors with high location quotient per District and Local Municipality

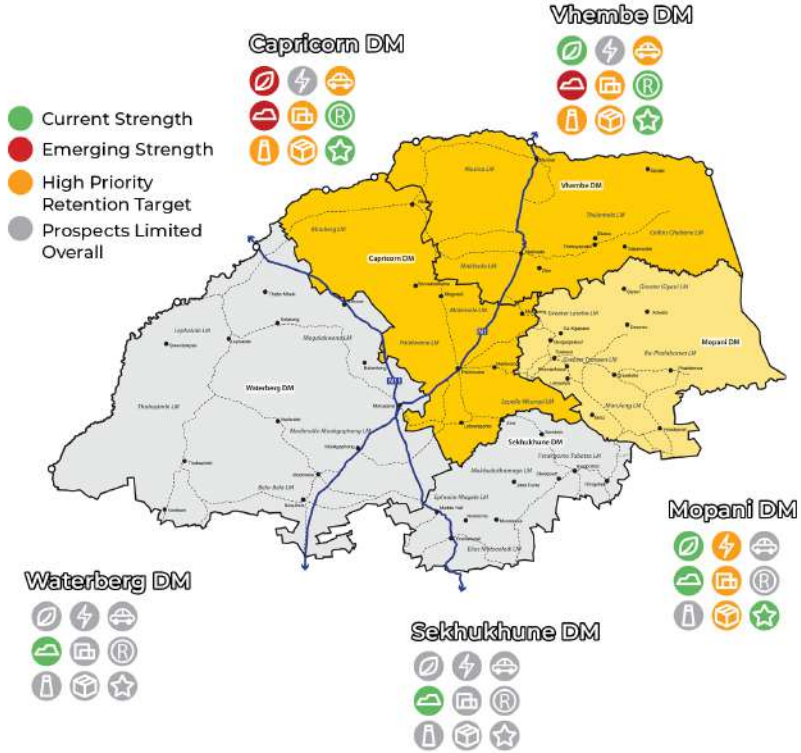
These industries are strong enough to provide export products beyond the local border:



LEADING AND LAGGING INDUSTRIES

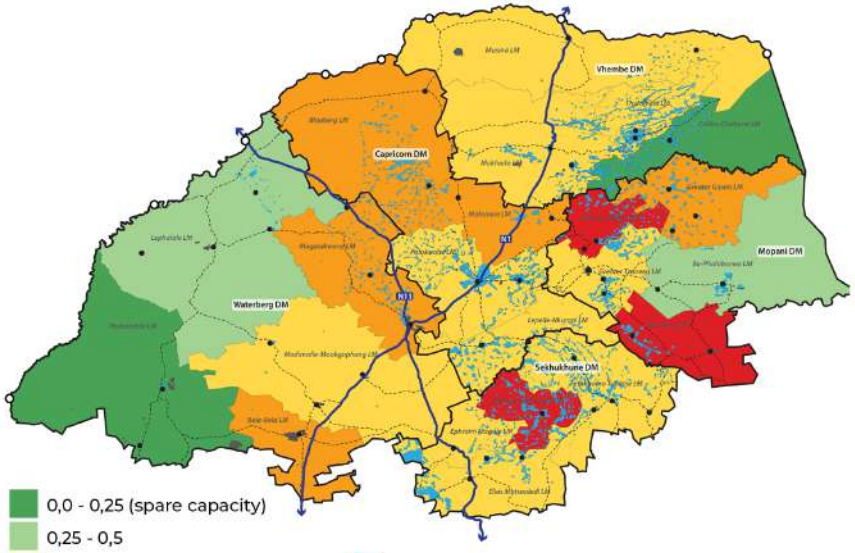
Limpopo Province Leading and Lagging industries:

Leading and Lagging industries per District Municipality:

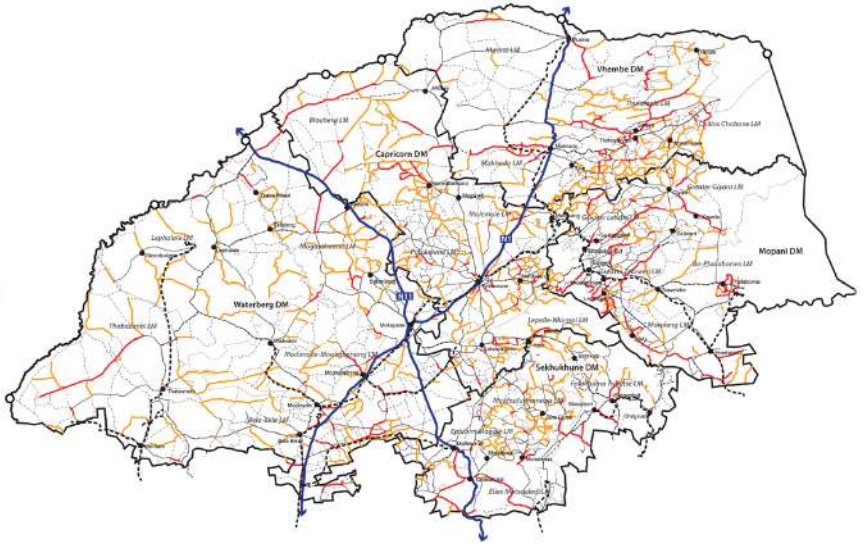


SUPPORTIVE INFRASTRUCTURE

WATER BALANCE PER LOCAL MUNICIPALITY



PAVED AND GRAVEL ROAD QUALITY



Functionality Problems found in:

Households: 51 103

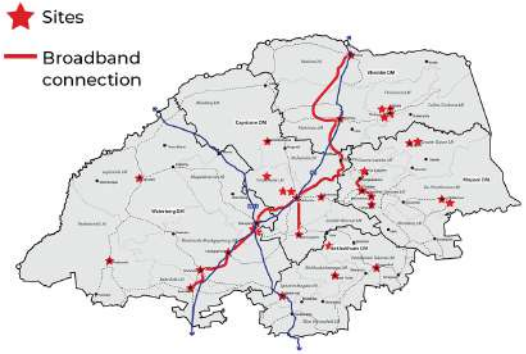
Population: 2 229 369

Affected Settlements: 2 528

- More than 93% of settlements in Limpopo have serious functionality problems with their water supply systems
- The functionality problems are not restricted to a specific area - it is a common problem throughout the province

GREEN DROP WASTEWATER SERVICES AUDIT SCORE PER SWA

BROADBAND NETWORK CONNECTED SITES IN LIMPOPO



3.3. BUILT ENVIRONMENT ANALYSIS

Limpopo has a spatial structure characterised by an established movement network and nodal system, set against a backdrop of rural regions with active resource economies including mining, agriculture and tourism.

The spatial structure of Limpopo has been determined by three factors that still play a role in its development and spatial transformation:

- Firstly, the movement network and the accessibility points it created lead to the establishment and further development of nodes, notably those along the N1 and N11.
- Secondly, the location of natural resource areas shaped the rural productive landscape with large scale land uses such as agriculture, mining, tourism and nature conservation forming important elements of the provincial spatial landscape.
- Thirdly, the history of apartheid and former 'homeland' system established a pattern of rural residential development in mostly inaccessible areas leading to a high level of spatial disparity in the province.

These three determinants of spatial structure have been reinforced by development trends and population growth and requires transformative action to ensure that sustainability and spatial justices will be achieved over the long term.

Current growth population and residential growth trends of dispersed rural settlements are reinforcing the disparate spatial structure that coincides with socio-economic vulnerability.

The nodal and movement networks present an opportunity to plan for integrated regional-rural networks to ensure higher levels of spatial justice and access to socio-economic opportunity. This should be done in cognisance of the constraints of the natural resources such as water, productive land and energy.

Spatial transformation is linked to spatial governance capacity and issues, which should strengths in aspects such as spatial planning but weaknesses in aspects such as legislative compliance infrastructure maintenance capacity.

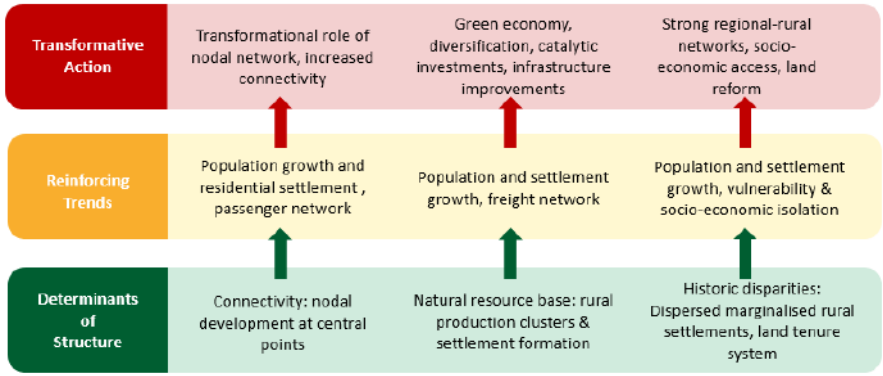


Figure 32: Built environment structuring elements

3.3.1. Key Outtakes: Analysis of the Built Environment

Connectivity and movement:

The N1 and N11 serve as trunk or backbone roads that contribute to the strategic connectivity of the province to neighbouring provinces Gauteng, North West and Mpumalanga, as well as neighbouring countries Zimbabwe and Botswana. The provincial regional road network encompasses an expanded network of roads than the network included in the LSDF 2016.

The key regional movement network connects nodal areas in Limpopo to Gauteng, North West and Mpumalanga and also to Botswana, Zimbabwe and Mozambique. The province has nine border posts with Botswana, Zimbabwe and Mozambique. The Phalaborwa corridor, and the regional route connecting Makhado to Thohoyandou, then to Giyani and finally to Mbombela via Hoedspruit/Bushbuckridge, are recognised as key regional routes in the NSDF. Since 2016, SANRAL has taken ownership of regional roads previously owned by the province.

Concentrations of settlements and economic activity that are not adequately served by the regional network include settlements in the north-western part of Blouberg, Senwabarwana that has also experienced significant settlement growth, the weak regional road link with high traffic between Gauteng via the Moloto road and N11 at Marble Hall/ Groblersdal to Jane Furse and Lebowakgomo (R579), the weak links between the platinum and chrome operations south of Steelpoort and Mashishing/Lydenburg where the chrome smelter and more residential opportunities are, and the concentrations of settlements in Makhuduthamaga, Fetakgomo Tubatse, Greater Letaba, Greater Giyani and Collins Chabane.

The national and regional routes carry the highest private vehicle traffic volumes (SANRAL 2021 and RAL 2016) are mostly between nodes and from rural settlement areas to nodes. The routes with high freight volumes clearly affirm the economic patterns in the province. The routes connect industrial and mining activity, as well as commercial agriculture in the various regions with freight corridors. It also shows the occurrence of freight corridors with truck traffic from neighbouring countries such as Zambia and Zimbabwe

The high passenger volumes clearly reflect commuting patterns in the province and the linkages to Gauteng. A lot of the movement occurs between outlying rural areas and nodes. The high passenger volumes on the R25, R33 and R579 between Gauteng, Groblersdal, Jane Furse and Lebowakgomo, re-affirms the community need and Ephraim Mogale municipal SDF proposals for improved and access to the settlements around Jane Furse and Lebowakgomo, from Gauteng.

Land tenure:

Land tenure has an impact on spatial structure in the province. The historical pattern created by the former homelands whereby land is held by the state for occupation by communities, has manifested in the scattered settlement pattern of the central and eastern parts of the province.

State land owned by national government entities cover large tracks of land in the central and eastern parts of the province, the two national parks namely the Kruger National Park and Marakele National Park. There are clusters of state land that are held either under custodianship for traditional communities or in trust. The main land tenure trend in the province is the transition of land from the state and private ownership to communities.

Provincial macro land use pattern:

Limpopo is characterised by large tracts of land used for agriculture and grazing. Settlements are concentrated in the central and eastern parts of the province, with Polokwane being the largest city and located in the centre of the province. The province is home to 2,684 settlements that range from large to medium-size formal towns, to small scattered villages, covering 4% of the total land area of the province. The N1 is the main north–south structuring element in the province, linking the city of Polokwane to Gauteng in the south and to Zimbabwe in the north. Apart from Polokwane, seven of the main towns in the province are situated along or close to this north–south

corridor. Four large population concentrations of small to medium-size villages are found in the north-western, central and eastern parts of the province, mainly on traditional or communally owned land.

Conservation uses cover approximately 21.5% of land, including the Kruger and Mapungubwe National Parks. Agriculture is the most extensive land use covering 75% of provincial land. The varied climatic regions found in the province allow for the production of a wide variety of agricultural produce, ranging from forestry to tropical fruits such as banana and mangos, citrus fruits, blueberries, nuts (macadamia and pecan), avocadoes, cereals such as maize and wheat, and vegetables such as tomatoes, onion and potatoes. Agriculture also includes grazing and game farming. The province has latent potential for more cultivation: 50% of the province is moderately to highly suitable for agricultural land uses, however, only about 9% is cultivated.

Limpopo has 147 operating mines. Limpopo's rich mineral deposits include over 50% of the country's untapped coal resources, platinum group metals (PGMs), iron ore, chromium high- and middle-grade coking coal, diamonds, antimony, phosphate and copper, as well as mineral reserves such as gold, emeralds, scheelite, magnetite, vermiculite, silicon and mica. Mining clusters have a high impact on land use structure and movement patterns, attracting not only residential use but also beneficiation uses such as smelters as well as the transport / logistics clusters and in some cases lead to nodal development. Platinum mining clusters are found at Mogalakwena, Northam/Amandelbult, and Burgersfort/ Steelpoort. The coal and petrochemical cluster is located at Lephalale and Steenbokpan. The Musina Makhado mining cluster (coal and diamonds) is located north of the Soutpansberg at Alldays. The Phalaborwa copper mining cluster is located at Phalaborwa town.

Settlement Form:

The settlement forms found in the province are formal townships, less formal townships or villages, agricultural holdings complexes and informal settlements, as well as farmsteads on agricultural land. The types of settlement patterns currently found in the province are clustered or nucleated settlements, linear settlements, and scattered or dispersed settlements. The dominant type of settlement pattern in the Waterberg district is clustered settlements, whereas scattered settlement types are dominant in the central and eastern parts of the province. Clustered settlements tend to concentrate along the main movement routes, or where those routes intersect. Scattered settlements occur in rural areas, in predominantly the traditional authority areas.

Rural densification is a current development trend where communities develop middle- to high-income residential houses on state or tribal land that borders main towns or road corridors, even where there is no formal tenure security and where no community and municipal services are planned. This development trend is beginning to restructure spatial patterns as well as local economies in the province. The downside of the trend is that it results in an increase in the backlog of planning and service provision and increases daily commuting to the closest urban area while public transport and road infrastructure is not properly planned and upgraded to accommodate such densification. This specific trend occurs along the R71 between Polokwane and Mankweng, the R37 to Burgersfort, the R37 between Nkowankowa and Lenyenye, the R524 between Thohoyandou and Sibasa and the N11 north of Mokopane.

Both urban and rural settlements have a fairly low density, as is characteristic of predominantly rural regions. Urban settlements have an average density of 12.58 units/ha and an average erf size of 2,035 m². Rural settlements have an average density of 4.46 units/ha and an average stand size of 3,310 m². If current low densiry rural development continues per the current trend, the additional land area needed by 2031 will be 68,074 ha (close to 70% of the area currently occupied by settlements in the Mopani District). Further additional land needed by 2051 will be 238,265 ha. The land area covered by settlements will increase by around 49%. This level of sprawl impacts negatively on both the agriculture and mining sectors and threatens natural resources such as water as well as ecosystems.

Settlement Role:

Currently there is a high level of correlation between the growth points identified in the LSDF 2016 and the national urban nodes and regional

development anchors identified in the NSDF 2022. The settlement hierarchy for Limpopo was evaluated to determine which nodes or settlements play, or should play, a prominent role in the province and the respective regions. Factors taken into account include current national, provincial and district planning, household growth patterns, connectivity of settlements in terms of national and provincial corridors, priorities and proposals, and national and provincial spatial targeting. Polokwane, Tzaneen, Burgersfort and Musina emerged as strong nodes.

To optimise the potential for spatial transformation the role of each Growth Point needs to be defined in terms of spatial transformation, economic development prospects and access to social services. This includes special consideration of the changing roles of Burgersfort and Lephalale due to population and economic dynamics.

Human Settlements and Housing

The larger concentrations of informal structures are found in the main formal towns of the province such as Polokwane, Mankweng, Mokopane, Tzaneen/Nkowankowa/Lenyenye, Phalaborwa, Modimolle, Northam/Thabazimbi, Lephalale and Burgersfort. Notable concentrations are also found in Musina, Senwabarwana, Dennilton, Monsterlus, Ga-Kgapane, Giyani, Thohoyandou, Malamulele, Mookgophong and Vaalwater. The largest concentrations of informal settlement growth occurred in Northam and Modimolle, followed by Lephalale and Bela-Bela. High concentrations of informal residential structure growth are also evident in the Polokwane-Seshego urban complex, and at Nkowankowa/Lenyenye.

The 2019 - 2024 housing demand for Limpopo Province is estimated at 307,844 households in the Limpopo MYHSDP 2019-2024. Eleven Priority Human Settlements and Housing Development Areas (PHSHDAs) were declared in Limpopo in Polokwane, Greater Giyani, Greater Tzaneen, Fetakgomo Tubatse, Musina/Makhado, Thulamela, Lephalale and Thabazimbi. The provincial priority projects led are: Makgathoville (Polokwane extensions 121 and 86), Ivypark Extension 35, and Annadale Social Housing in Polokwane, Warmbaths Extension 25, Bela-Bela and Mogalakwena Extension 20, Mokopane. The provincial priority housing projects are also included in the PHSHDAs except for Warmbaths Extension 25 and Mogalakwena Extension 20. Alignment is observed between areas with high levels of residential structure growth in the delineation of spatial targeting areas in Polokwane, Lephalale, Tzaneen and Northam. However, the following areas have experienced significant household growth, but are excluded as PHSHDAs: Jane Furse, Senwabarwana, Phalaborwa/Namakgale/Lulekani, Lenyenye, Malamulele, Lebowakgomo and Mokopane.

The Limpopo Development Plan proposes the following nodes to be prioritised or developed as smart cities in the province: Polokwane, Tzaneen, Musina and Lephalale. In addition, the Nkuna smart city is a private greenfields initiative located on 119 ha near the Nkuzana village, between Elim and Giyani along the R578.

Social infrastructure:

An analysis of social facilities show that some rural areas have low accessibility to various social services such as schools and health facilities. This lack of access correlates with socio-economic vulnerability in terms of poverty and low levels of schooling as described in the socio-economic analysis.

Spatial Governance:

Only four municipalities are currently fully SPLUMA compliant. All municipalities and districts, with the exception of Capricorn and Mopani, have current SDFs, with four of those SDFs under review. All municipalities have Gazetted SPLUMA by-laws.

3.3.2. Spatial Synthesis: Built Environment Analysis

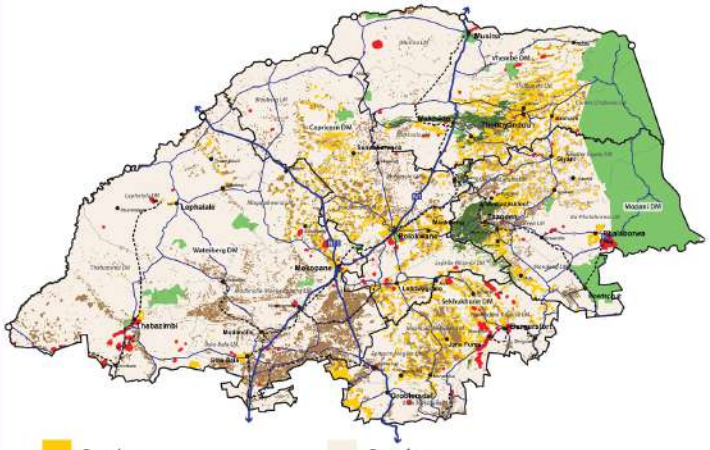
A summary of the key points arising from the analysis of the built environment in presented below.

The detailed analysis of the built environment is contained in **Annexure D: Built Environment Analysis** and consists of the following elements:

Content: Built Environment Analysis	
Structuring elements	▪ Inter-regional connectivity ▪ Provincial land tenure perspective ▪ Provincial spatial structure ▪ Settlement pattern and trends per district ▪ Hierarchy of settlements/nodes
Built environment trends	▪ Main transport movement patterns ▪ Human settlements ▪ Land provision for settlement growth ▪ Smart cities ▪ Rural development ▪ Social infrastructure
Spatial governance	▪ Legislative compliance ▪ Spatial forward planning and land use management ▪ Spatial governance directives ▪ Spatial data integration and management

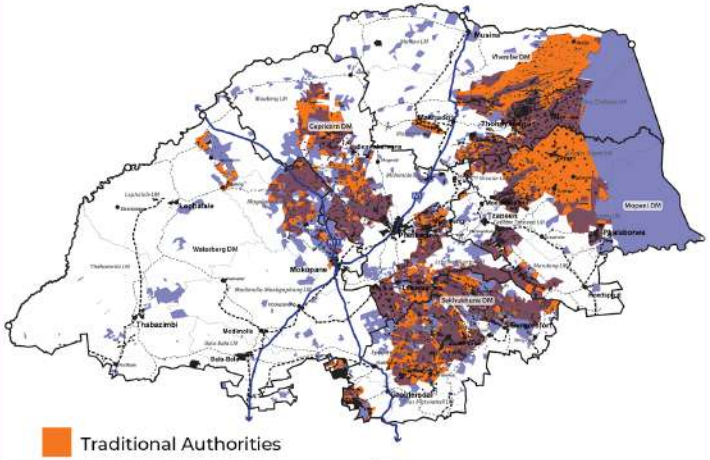
MAIN STRUCTURING ELEMENTS

MACRO LAND USES



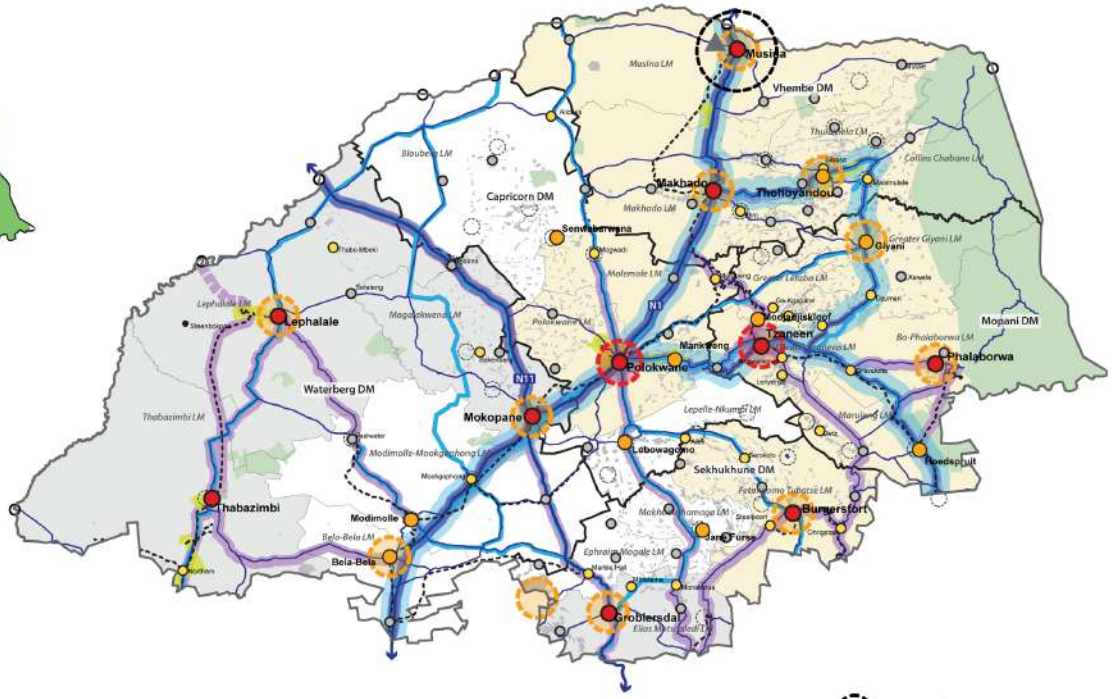
- Settlements
- Forestry
- Crop Farming
- Grazing
- Conservation & Protected Areas
- Mining Areas

PROVINCIAL TENURE PERSPECTIVE



- Traditional Authorities
- National Government Land
- Settlements

STRUCTURING ELEMENTS



NSDF Functional Town Hierarchy 2021:

- National Urban Node
- Regional Development Anchor
- Rural Service Centre
- NSDF Eastern Escarpment Spatial Transformation and Economic Transition Region
- NSDF National Development Corridor
- NSDF Key National Roads
- NSDF Key Regional Roads
- Inter-Provincial Public Transport Corridors
- Limpopo Strategic Freight Network

Limpopo SDF Growth Points 2016:

- Provincial Growth Point
- District Growth Points
- Municipal Growth Point
- Rural Node/Service Point

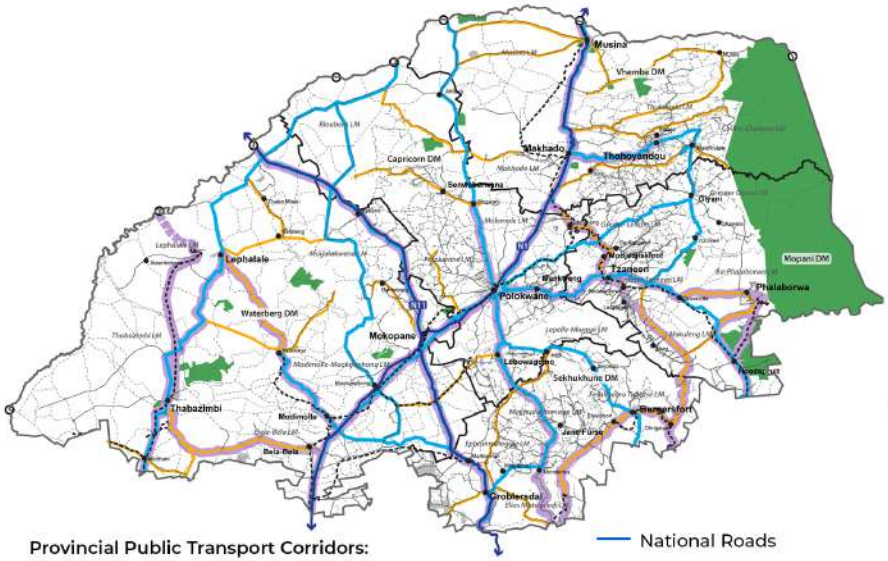
Human Settlements Spatial Targeting:

- Priority Human Settlements & Housing Development Areas
- Revitalisation of Distressed Mining Communities Intervention

- Import/Export Node
- Special Economic Node
- Railway Line
- Settlements
- Nature Reserves

MOVEMENT SYSTEM

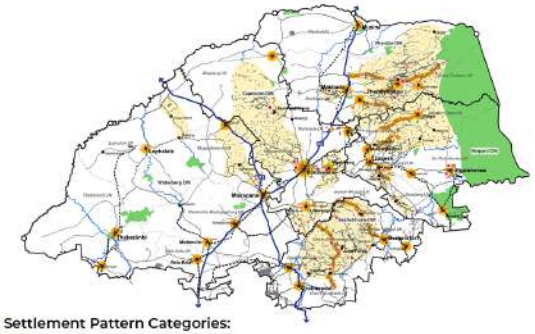
MOVEMENT SYSTEMS



Provincial Public Transport Corridors:

- Inter-Provincial Public Transport Corridor
- Intra-Provincial Public Transport Corridor
- Limpopo Strategic Freight Network

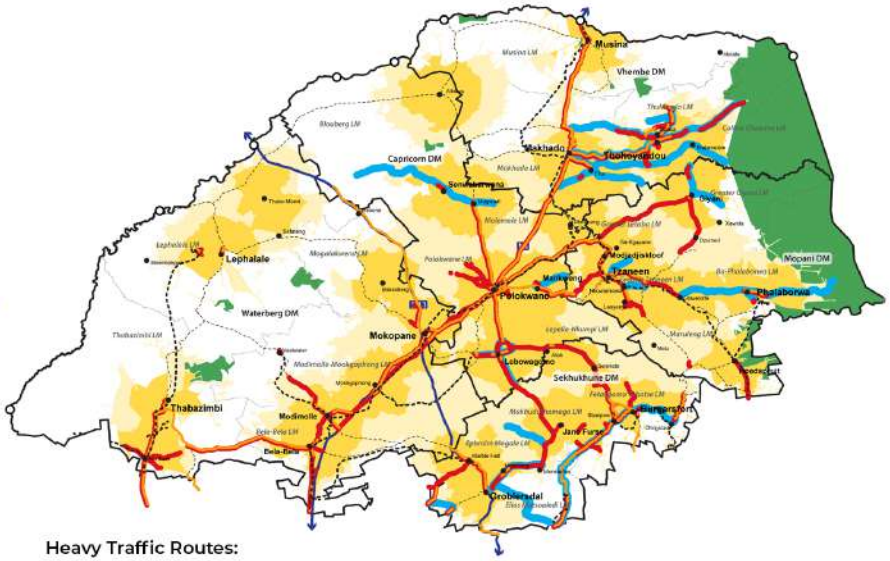
- National Roads
- Roads
- Gravel roads
- Railway Line



Settlement Pattern Categories:

- Scattered Settlements
- Clustered Settlements
- Linear Settlements
- Settlements
- Nature Reserves

ROAD TRAFFIC & CONNECTIVITY



Heavy Traffic Routes:

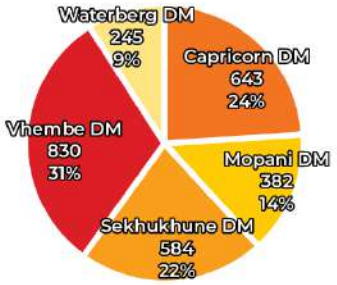
- Vehicles: 3001 - >10 000
- Heavy Vehicles: 501 - >2 000
- Public Transport: 30 001 - > 50 000

- National Roads
- Roads
- Railway Line

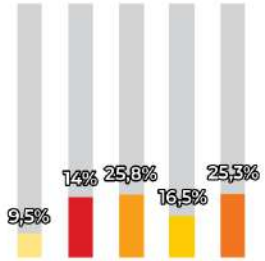
Travel Distance from Nodes: 0 - 30km; 30 - 50km

- The provincial public transport corridors tend to run through the scattered and linear settlements in more rural areas, providing access to urban nodes, mines and other key economic activities.
- Heavy traffic for Public Transport can predominantly be found in, and to and from, the scattered settlements in more rural areas and urban nodes.
- The majority of the heavy traffic for normal vehicles can be found on the N1 and other national routes in the eastern part of Limpopo.
- Heavy traffic of Heavy Vehicles is predominantly found along the N11 and N1, all the way through Musina and across the border.

SETTLEMENT NUMBERS



Estimated number of settlements



% of settlement area of the province

SCENARIOS FOR FUTURE USE OF SPACE (LAND) FOR RESIDENTIAL PURPOSES

Scenario 1: Business as usual

In this scenario, it is assumed that growth in the rural areas will continue at the rate of 4.7 units/ha and in the urban areas at a rate of 8.8 units/ha, with an assumption that the rural households represent 78% and the urban households 22% of the total number of households in the province.

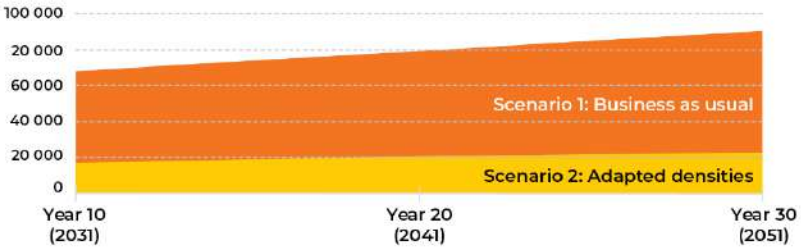
After a **30-year period** (up to 2051), an estimated **additional 238,265 ha** of agricultural land will have to be released to provide for settlement growth. The land area covered by settlements will increase with **+/-49%** to **721,660 ha.**

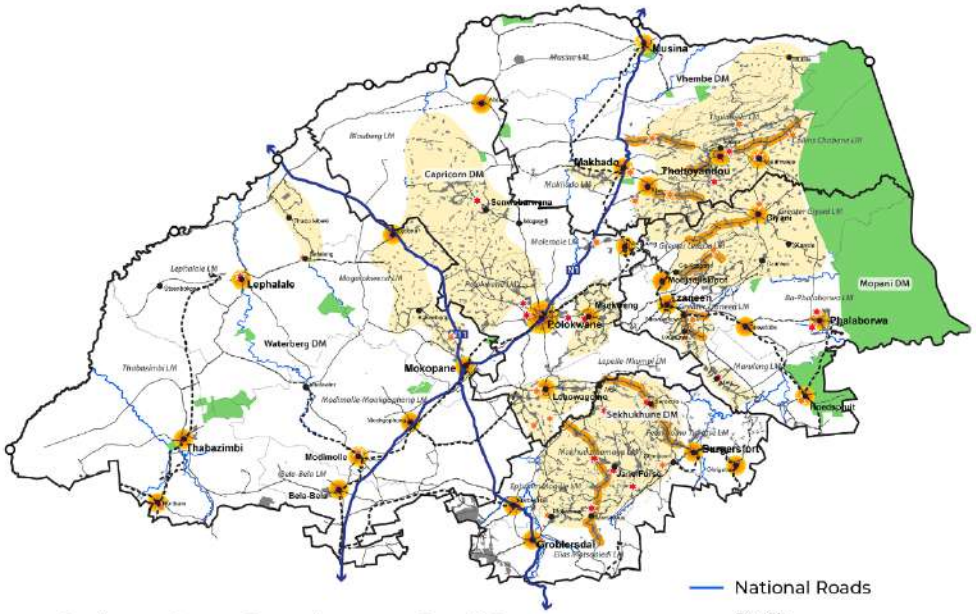
Scenario 2: Adapted densities

Scenario 2 assumes a slight increase in the urbanisation rate and that after 30 years, 25% of households will live in urban areas and 75% in the rural areas.

Densities is assumed to vary between 20 and 40 units/ha, which will accommodate erven between 250 m² and 500 m² in size.

After a **30-year period** (by 2051), an **additional 60,174 ha** will be required for settlement growth, which means that the area covered by settlements in the province will increase by **+12%** to a total area of **543,569 ha.**





CLUSTERED & NUCLEATED SETTLEMENTS

Mainly formal townships at the intersection of national and provincial routes, or areas with strong economic base and central pace function.

The clustered settlements accommodate a large spectrum of community facilities and services such as government offices, shopping facilities and businesses, banks, medical facilities.

Population size: 15 000 - 30 000

Examples: Polokwane, Bela-Bela, Mokopane, Modimolle and Tzaneen.

SCATTERED & LINEAR SETTLEMENTS

Found mainly in the non-urbal (rural) areas on state or communally owned land.

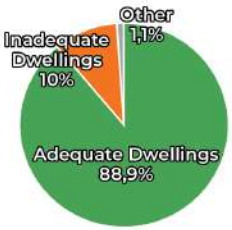
Linear settlements are more evident in traditional areas along routes or rivers.

Population size: Mostly 1000 - 2500, with an increase in 2 500 - 7 500 settlements.

Examples: Linear settlements are found in the Thohoyandou/ Sibasa area in the Vhembe district, along the main roads to Jane Furse and Burgersfort in the Sekhukhune district, and along the R71 from Polokwane to Mankweng and Badimong

DWELLING TYPES PER CATEGORY

Limpopo Province Dwellings

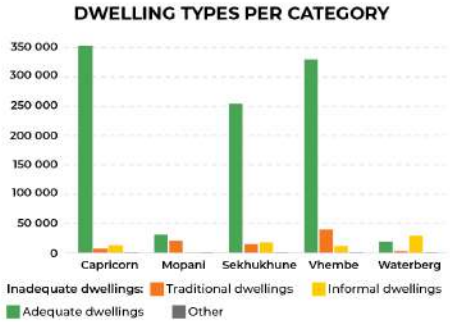


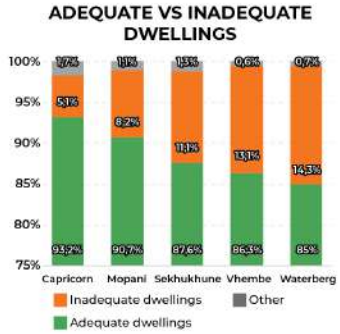
Informal residential structures:

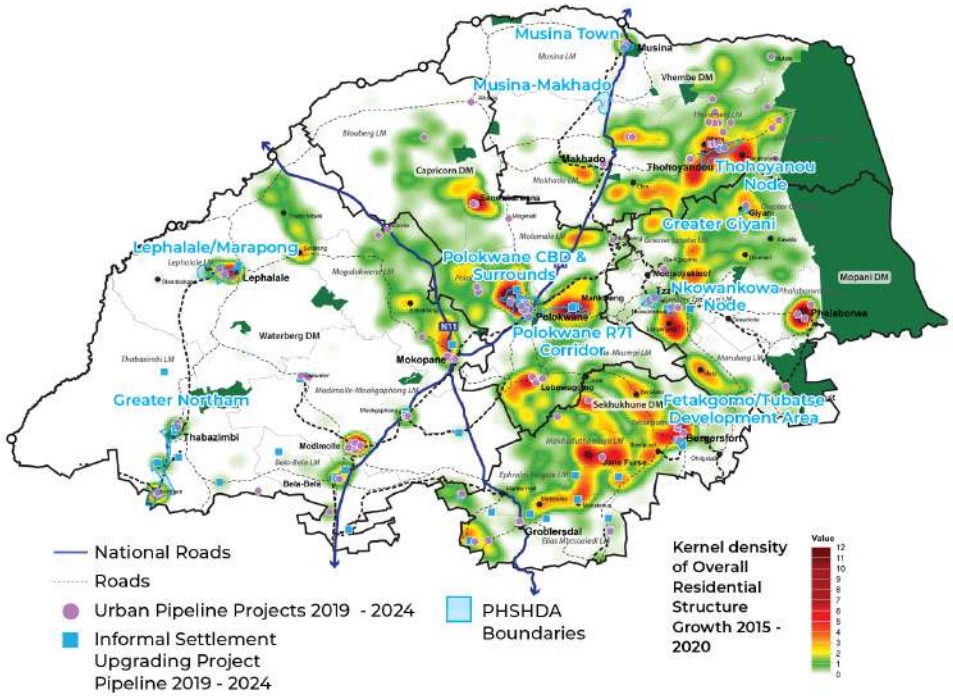
117 153 (2015) ⟶ **125 777** (2020)

Percentage Change

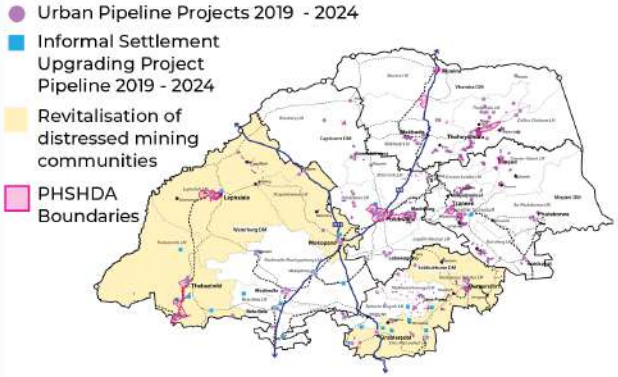
7,36%



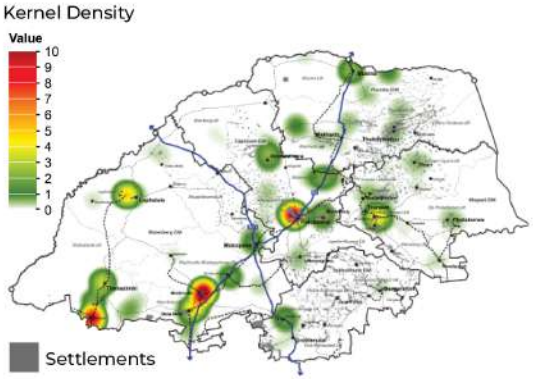




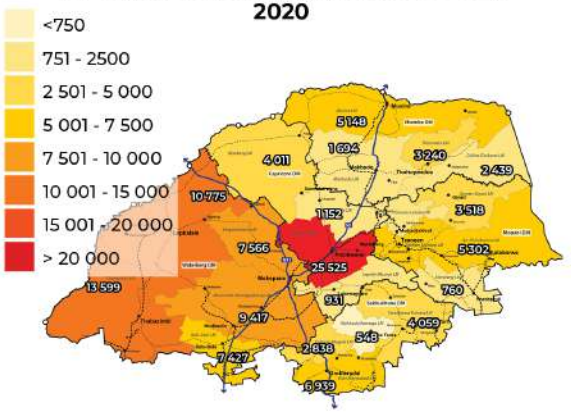
PRIORITY HUMAN SETTLEMENTS & HOUSING DEVELOPMENT AREAS



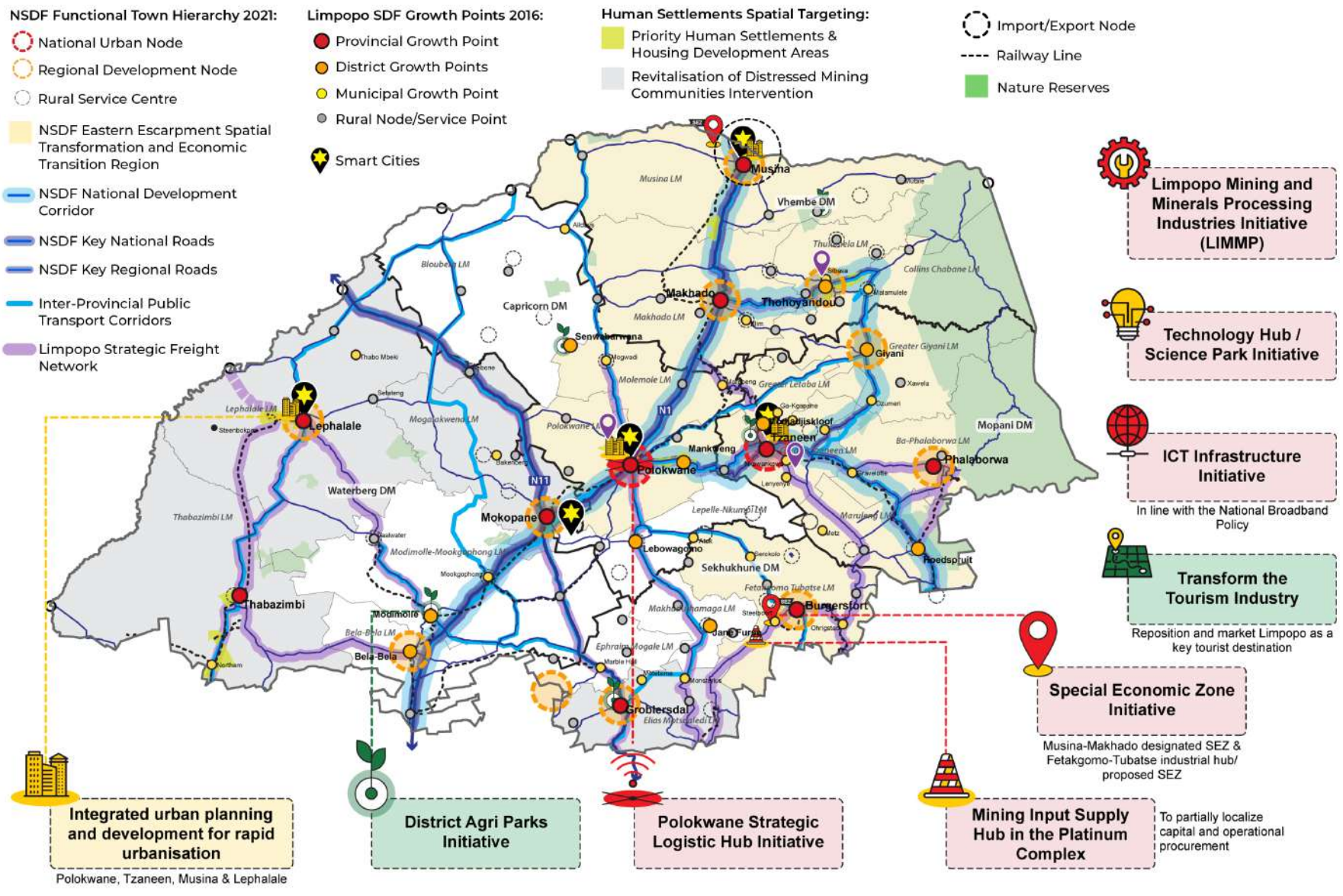
KERNEL DENSITY OF INFORMAL DWELLING UNIT GROWTH



INFORMAL RESIDENTIAL STRUCTURES 2020



STRATEGIC INITIATIVES



3.4. SPATIAL ANALYSIS: OVERALL SYNTHESIS

In this section, a high level overview of the key spatial issues is presented. The findings of the spatial analysis are synthesised in relation to the five Provincial Spatial Outcomes - refer to Section 4.1.2.

Provincial Spatial Outcomes

Provincial Spatial Outcome One
A network **of consolidated, transformed and well-connected urban nodes, regional development anchors and rural service centres that enable Limpopo to derive maximum transformative benefit from urbanisation and concentrated rural settlements**, enabling climate change adaptation, inclusive economic development and equal, effective and efficient access to social services in support of equitable and inclusive provincial human capital development

Provincial Spatial Outcome Two
Provincial-scale corridors and productive rural regions enable sustainable livelihoods supported by economic diversification through green industrialisation and participation in the Fourth Industrial Revolution, mutually beneficial urban-rural linkages, and wise management, nurturing and conservation of ecological assets and ecosystem services.

Provincial Spatial Outcome Three
Provincial connectivity and movement infrastructure systems are strategically located, extended and maintained, to support a diverse, ecologically sustainable, adaptive, regenerative and inclusive economy, and a set of key provincial, national and regional gateway cities and towns.

Provincial Spatial Outcome Four
Productive **rural regions are supported by sustainable resource economies and strong and resilient regional development anchors provide** effective, efficient and equitable access to people living in rural areas to the provincial, national and global economy

Provincial Spatial Outcome Five
The provincial **ecological infrastructure and natural resource foundation are well-protected and managed,** to enable climate change mitigation and sustainable and equitable access to water, high-potential agricultural land, minerals and other natural resources, both for current and future generations.

Development Objectives

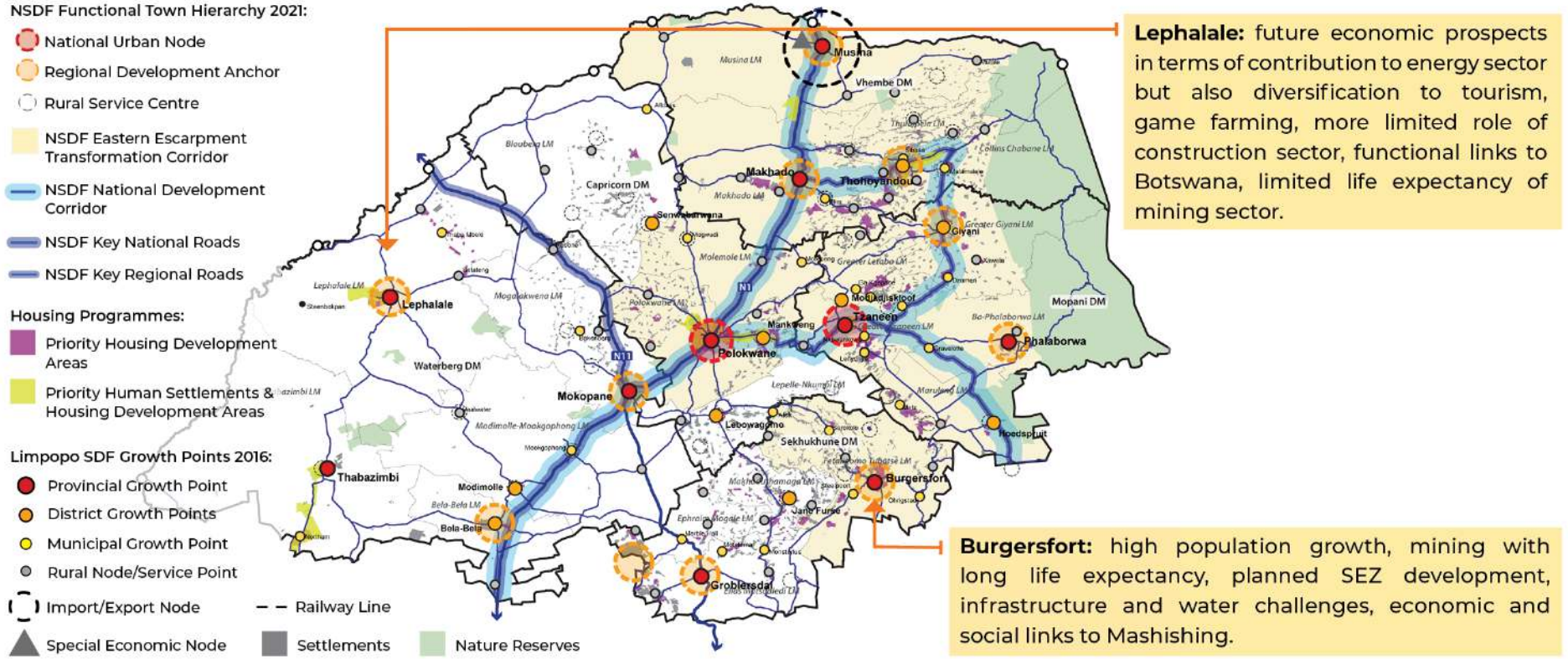
- Capitalise on the Province's strategic location within the SADC region **to facilitate trade links and regional cooperation on resource sharing**;
- Capitalise on, and improve regional and local connectivity **to establish a connected network of nodes and settlements**;
- Provide a strategic and coherent rationale for public sector investment, including engineering, community and economic infrastructure, to optimise service delivery;
- Encourage urban and rural spatial restructuring **to address spatial injustice and facilitate climate change mitigation and adaptation**;
- 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 diversification and industrialisation through** green economy initiatives
- Create an enabling environment for both large- and small-scale business development (retail, office, commercial, industrial)

Provincial Spatial Outcome One

A network **of consolidated, transformed and well-connected urban nodes, regional development anchors and rural service centres that enable Limpopo to derive maximum transformative benefit from urbanisation and concentrated rural settlements**, enabling climate change adaptation, inclusive economic development and equal, effective and efficient access to social services in support of equitable and inclusive provincial human capital development.

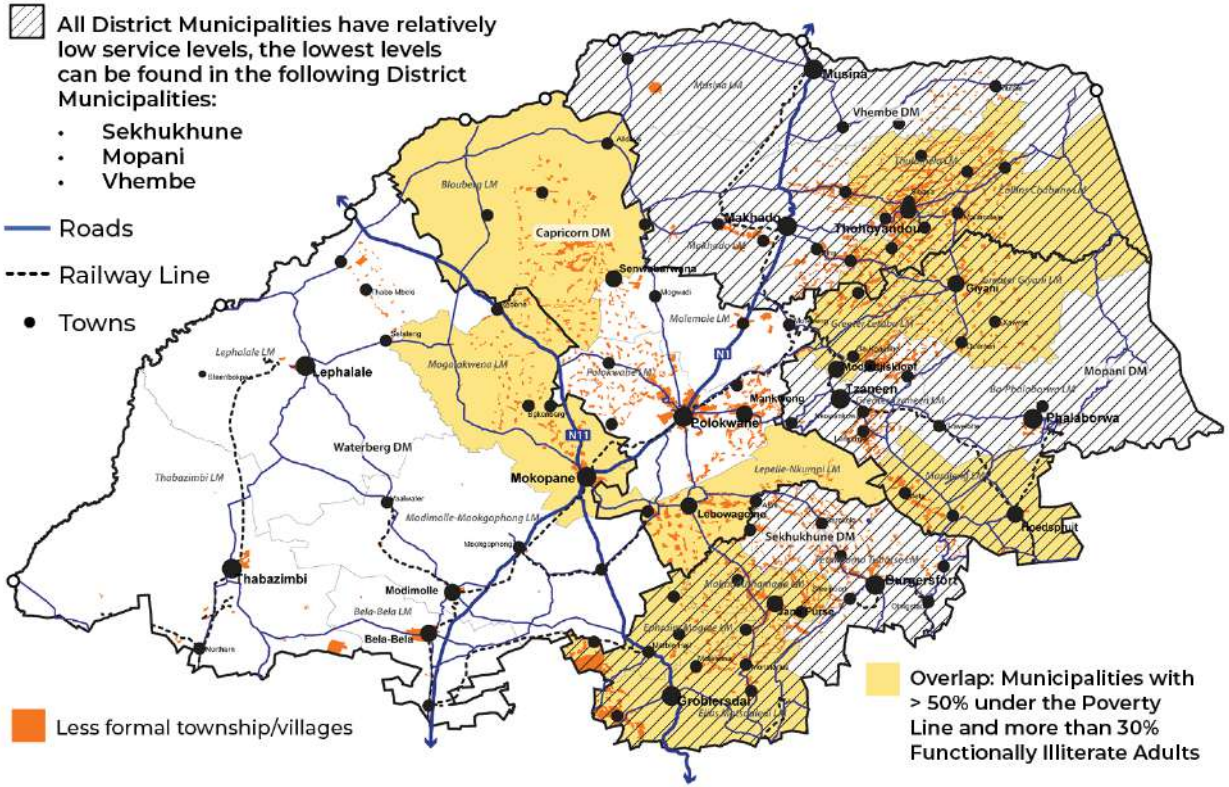
1- More nuanced roles need to be defined for the nodal network to support spatial transformation

The hierarchy of Limpopo Growth Points largely coincides with the NSDF functional nodal typology. Polokwane, Tzaneen, Burgersfort and Musina emerged as strong nodes in an assessment of current national, provincial and district planning, household growth patterns, connectivity of settlements in terms of national and provincial corridors, priorities and proposals, and national and provincial spatial targeting. To optimise on the potential for spatial transformation the role of each Growth Point needs to be defined in terms in spatial transformation, economic development prospects and access to social services. This includes special consideration of the changing roles of Burgersfort and Lephalale.



2- Current peri-urban and rural settlement trends are reinforcing spatial injustice and vulnerability

Current population growth and settlement trends in rural and peri-urban areas are reinforcing spatial disparities. Sprawling residential structure growth in peri-urban and rural settlements, not only reinforces the pattern of the most vulnerable communities living in areas that are inaccessible to social service and economic opportunity. It also places undue pressure on land availability with settlement expansion taking over agricultural land and encroaching on mining land at an alarming and unsustainable rate.



ADDITIONAL LAND NEEDED BY 2031:

68,074 ha (close to 70% of the area currently occupied by settlements in the Mopani District).

Further **additional land** needed by 2051: **238,265 ha.**

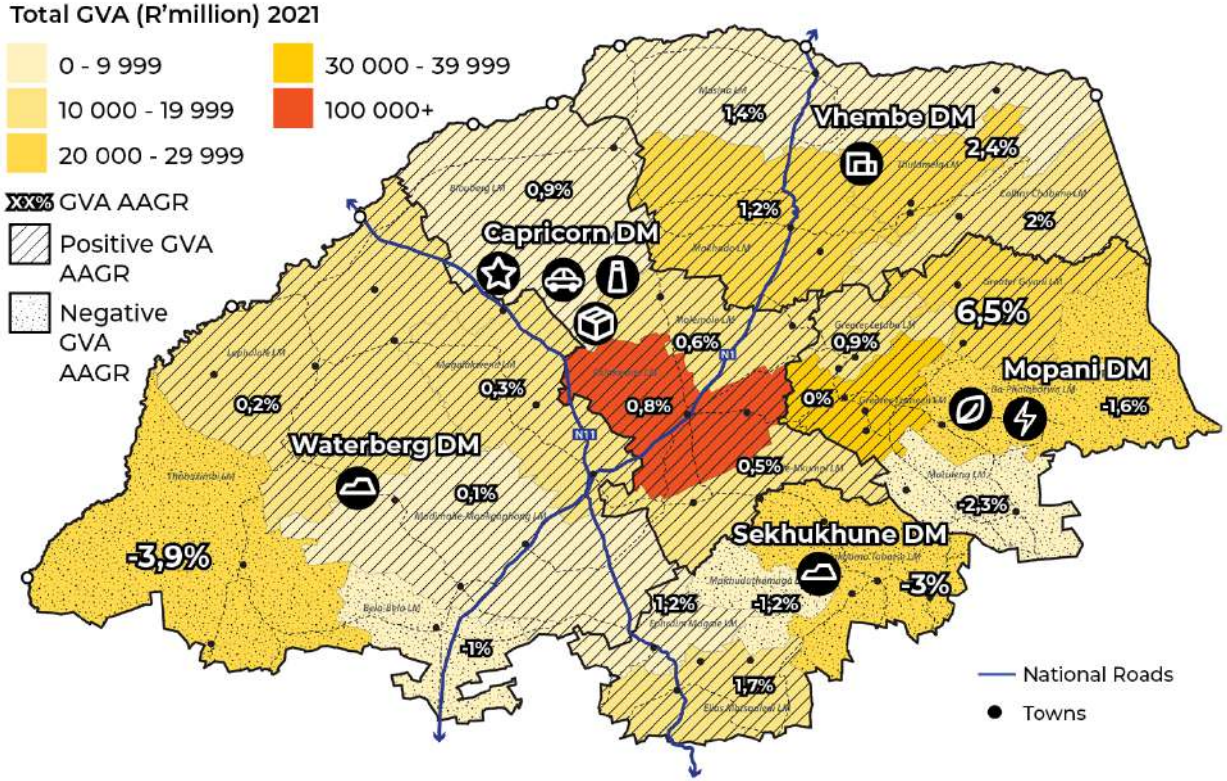
The land area covered by settlements will increase with around **49%.**

Provincial Spatial Outcome Two

Provincial-scale corridors and productive rural regions enable sustainable livelihoods supported by economic diversification through green industrialisation and participation in the Fourth Industrial Revolution, mutually beneficial urban-rural linkages, and wise management, nurturing and conservation of ecological assets and ecosystem services.

1- Current economic performance, advantage and diversification not addressing spatial disparities

Polokwane is currently the hub of economic activity in Limpopo, with the most diversified and also largest economy if measured by output. Vhembe and the northern parts of Mopani showed the highest growth rates, albeit off a lower base than Polokwane. Economic decline was the most significant in Waterberg and Sekhukhune, driven in part by large declines in the construction industry. Waterberg and Sekhukhune also have the least diversified economies with a heavy reliance on a single sector (mining and quarrying).



SECTORS WITH HIGH LOCATION QUOTIENTS:

Capricorn DM:
- Manufacturing;
- Wholesale and retail trade, catering and accommodation;
- Transport, storage and communication; Government and community services

Mopani DM:
- Agriculture;
- Electricity, gas and water

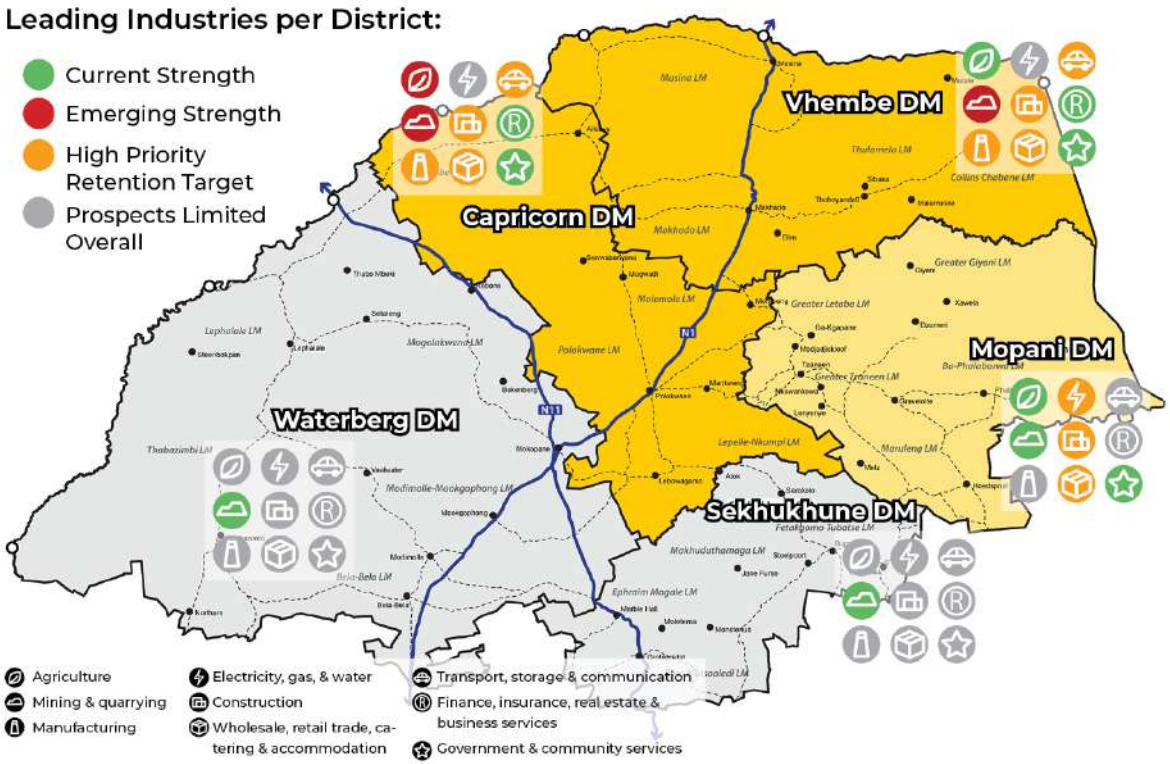
Sekhukhune DM:
- Mining and quarrying

Vhembe DM:
- Construction

Waterberg DM:
- Mining and quarrying

2- Economic prospects: towards diversification and inclusion

The agricultural and mining and quarrying industries show a current strength in the overall provincial economy, either through driving or accelerating the provincial economy. Sekhukhune and Waterberg have the most limiting prospects in terms of economic growth and development, with most industries characterised by limiting or declining industry trends. In both districts, only the sub-industry of the mining of coal and lignite shows current strengths. The current reliance on limited sectors emphasises the importance of exploring new potential (e.g. green energy), linking into international markets and promoting sectors that could contribute to high value addition and diversification such as manufacturing and services.



LEADING INDUSTRIES PER DISTRICT:

Capricorn DM: Agriculture (emerging strength), mining and quarrying (emerging strength), manufacturing (high retention target)

Mopani DM: Agriculture (current strength), mining and quarrying (current strength with gold and uranium as priority retention target)

Sekhukhune DM: Mining and quarrying (current strength)

Vhembe DM: Agriculture (current strength with fishing as emerging strength); mining and quarrying (emerging strength), manufacturing (high priority retention target)

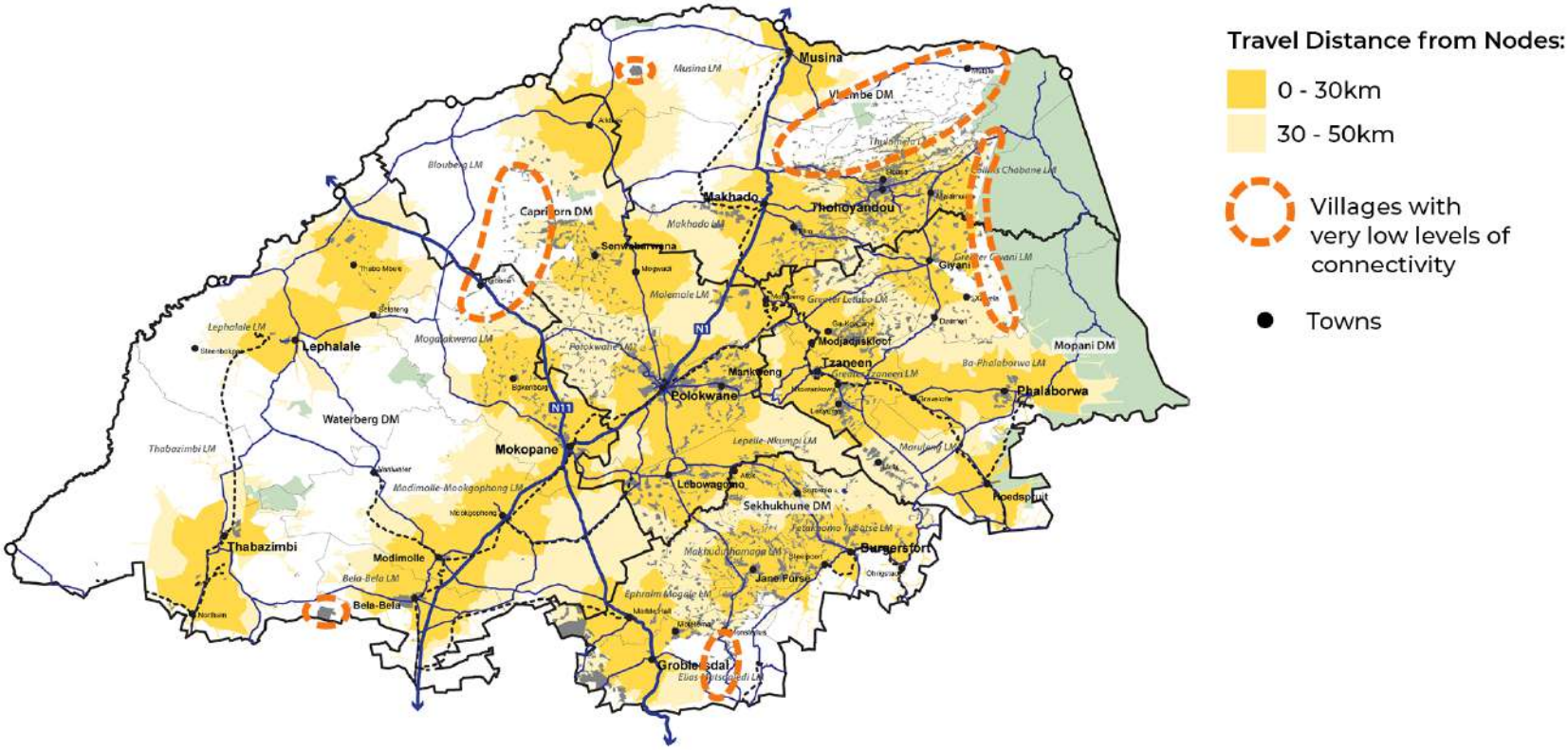
Waterberg DM: Mining and quarrying (current strength)

Provincial Spatial Outcome Three

Provincial connectivity and movement infrastructure systems are strategically located, extended and maintained, to support a diverse, ecologically sustainable, adaptive, regenerative and inclusive economy, and a set of key provincial, national and regional gateway cities and towns.

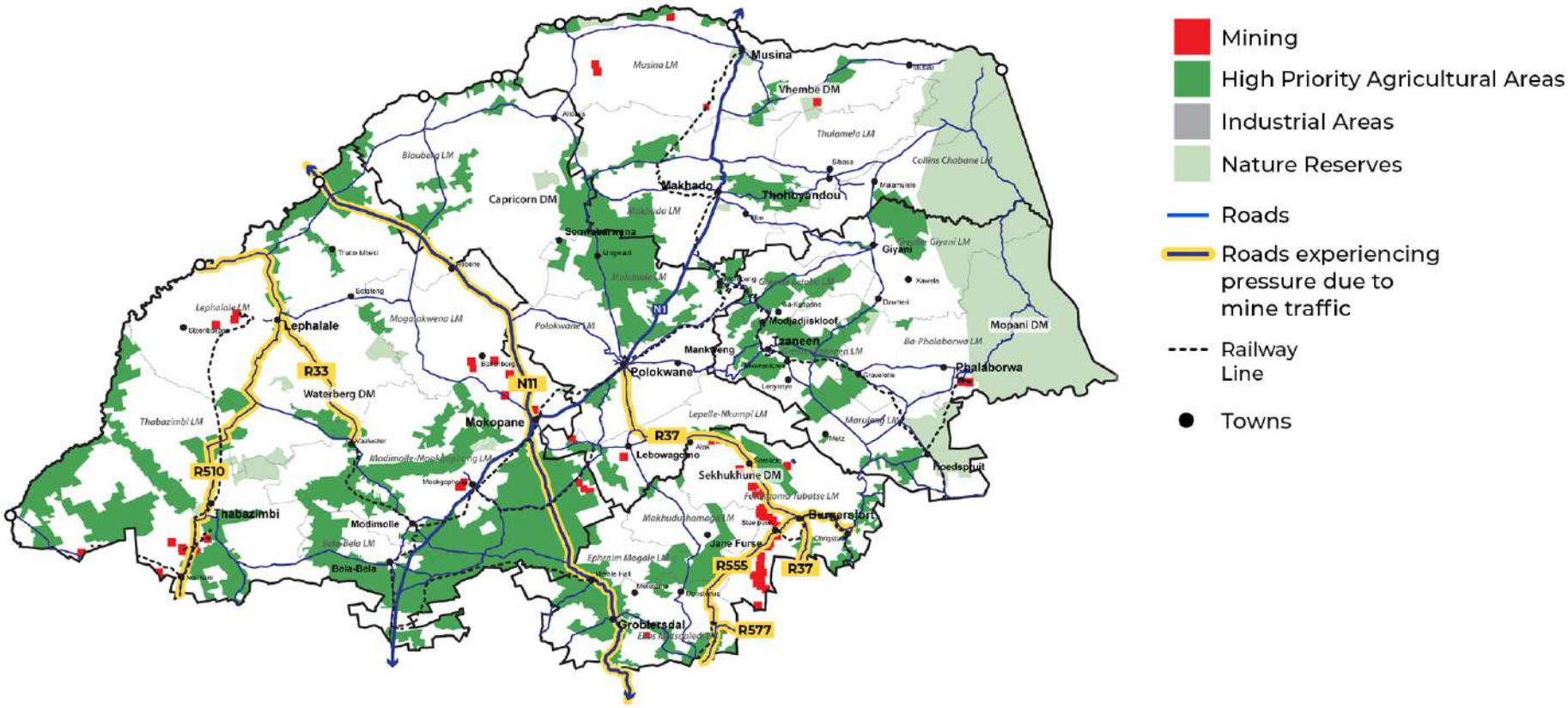
3- Connectivity in support of the nodal network is limited in some rural areas and for some nodes

Most of the urban and rural communities in Limpopo are connected to the nodal network within 50km access via the road system. The exceptions are marginalised rural areas namely the Blouberg area in the northern part of Capricorn District, areas north of Thohoyandou up to Motale and areas to the east and southeast of Giyani. The quality of the road network is a concern mainly in the rural areas but also for access road to nodes such as Phalaborwa, Makhado, Thohoyandou and Burgersfort.



4- Connectivity in support of productive regions is road based and not functioning optimally

The role of rail in the province must be reconsidered and prioritise for heavy duty freight haulage. The lack of rail infrastructure to transport export-grade coal and chrome to the Richards Bay harbour is a major constraint. Mine traffic put roads under pressure with transport from mines to smelters in Rustenburg, Mashishing and Middelburg and to export destinations via the N4 and N3. This includes the N11, R33, R510, R555, D212, R577 and R37. In terms of rail, Transnet anticipates significant growth in commodities on the two core systems in Limpopo between 2015 and 2046, i.e. Lephalale to Ogies (coal system), Groenbult to Kaapmuiden and Musina to Pyramid (north-eastern system).

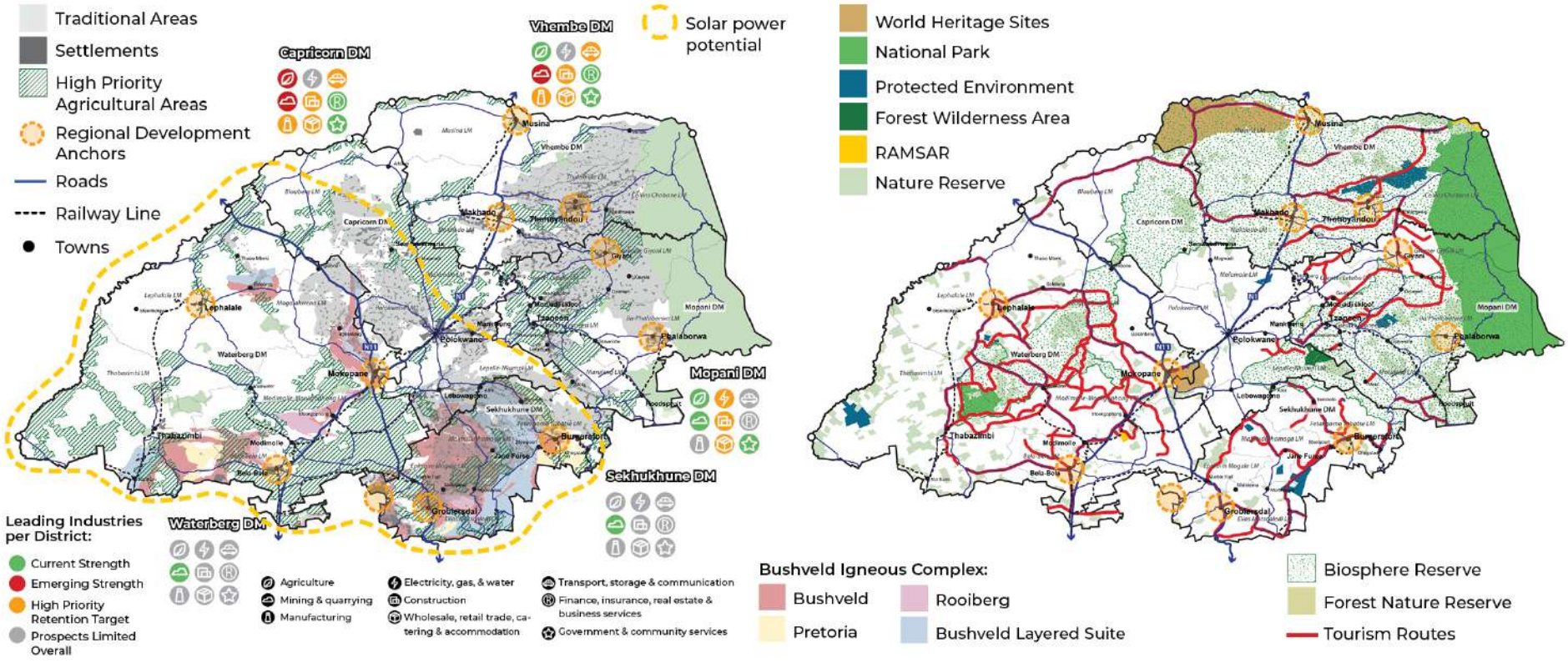


Provincial Spatial Outcome Four

Productive **rural regions are supported by sustainable resource economies and strong and resilient regional development anchors provide e**ffective, efficient and equitable access to people living in rural areas to the provincial, national and global economy.

1- Lack of an optimally functioning regional-rural network

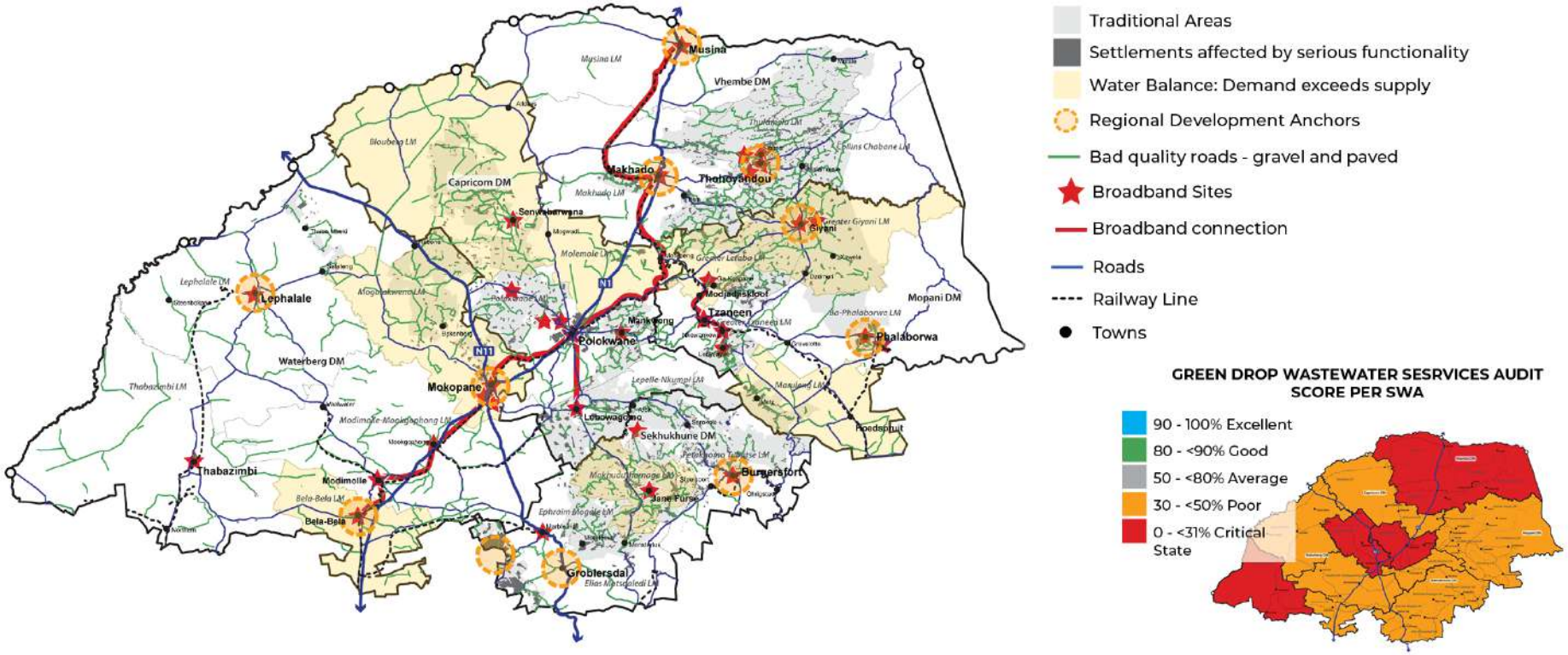
Regional development anchors should act as economic growth and value addition points, access points to wider markets and hubs for social service provision and human capital development. While Limpopo has established nodes that could act as regional development anchors, the role of each anchor in terms of economic growth and social service provision need to be more clearly defined. The same goes for the elements of the rural regions linking to each anchor.



2- Supportive infrastructure challenges hampering optimal development of productive rural regions

A functioning regional-rural network requires supportive infrastructure for both human capital development and economic activities. The key challenges in Limpopo revolve around:

- Road quality and lack of use of rail infrastructure
- Serious water shortages
- Functionality limitations in service provision to settlements, in terms of both water and sanitation
- Energy availability challenges
- Limited broadband availability especially in rural areas

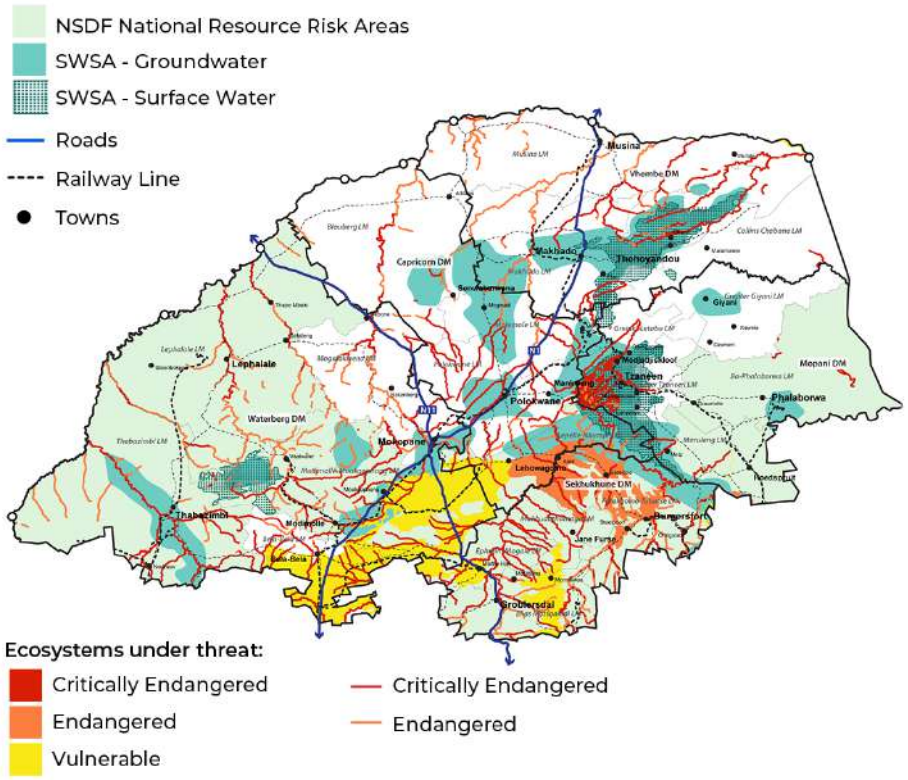


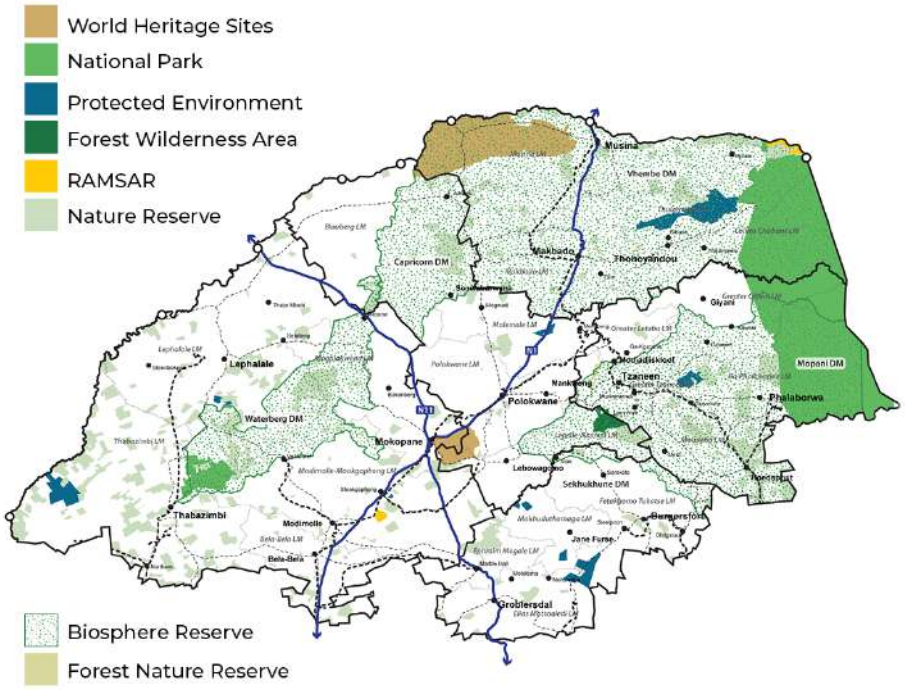
Provincial Spatial Outcome Five

The provincial **ecological infrastructure and natural resource foundation are well-protected and managed,** to enable climate change mitigation and sustainable and equitable access to water, high-potential agricultural land, minerals and other natural resources, both for current and future generations.

1- Conservation and management or sensitive ecosystems and resource areas requires action

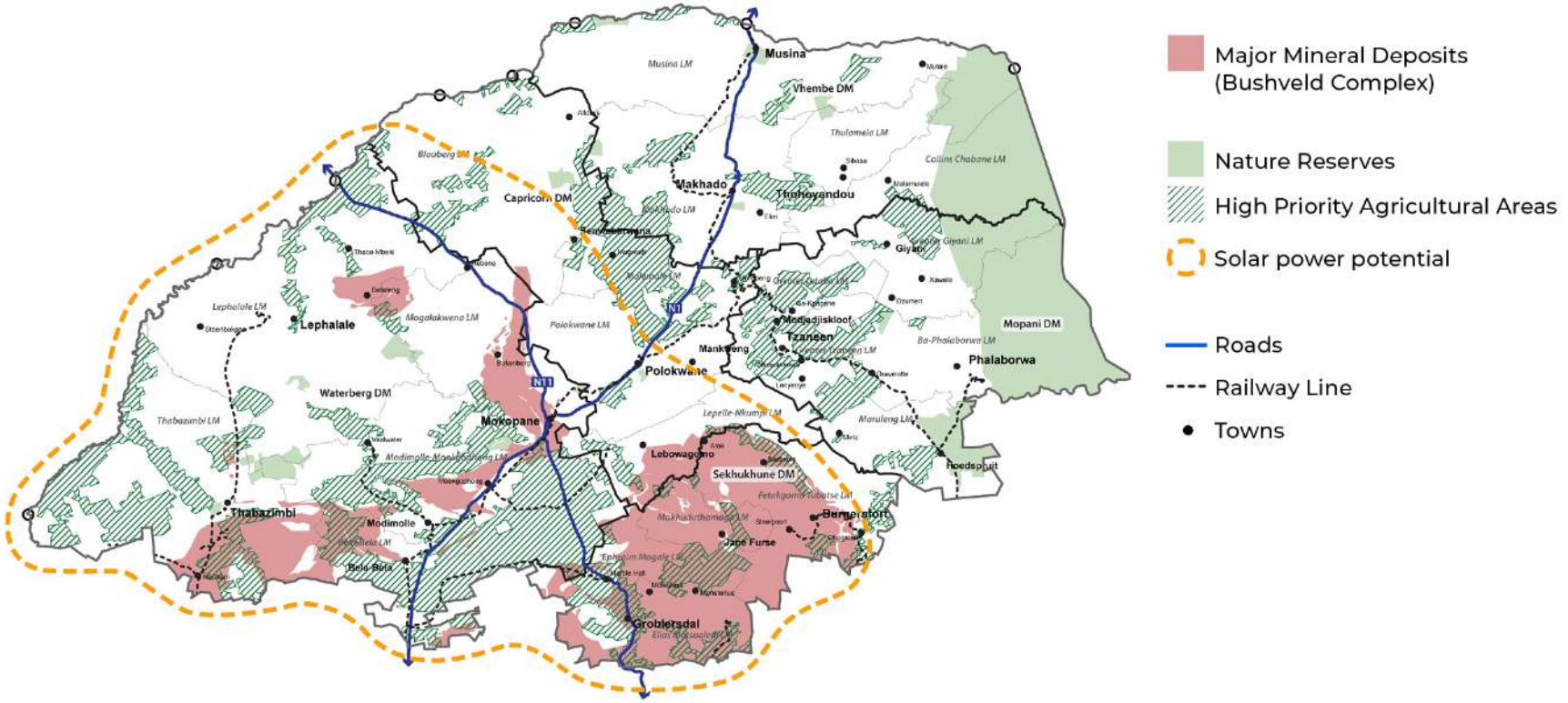
Limpopo's natural resource base makes a nationally significant contribution to the economy and conservation. In addition to Critical Biodiversity Areas including wetlands affecting much of the provincial space, strategic water source areas and vulnerable ecosystems that are not well protected and thus under threat of damage and destruction should be prioritsed for conservation and management.





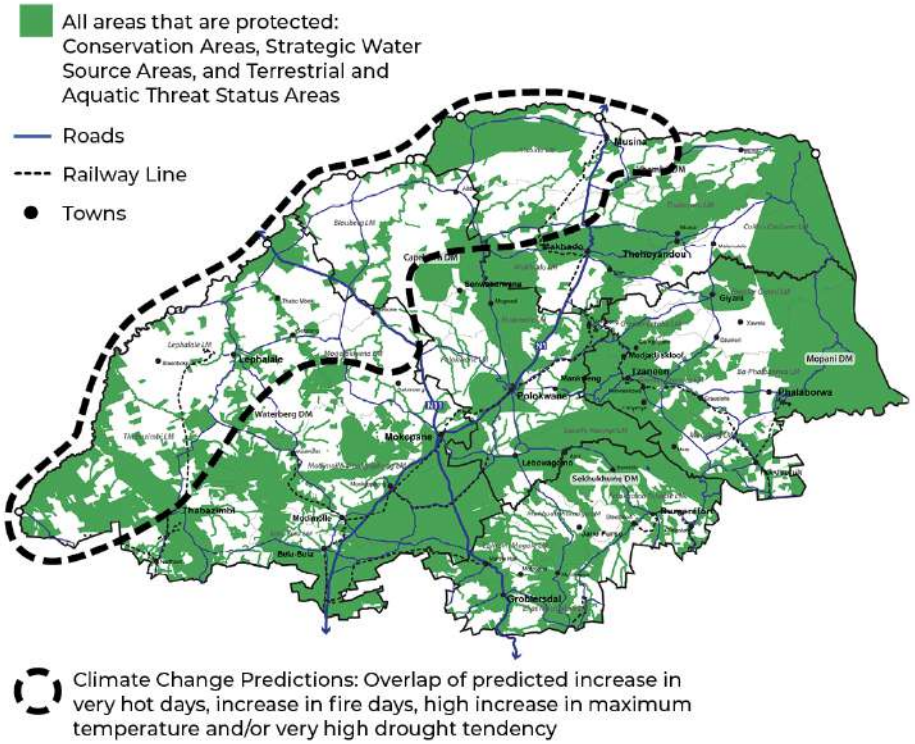
2- Resource potential is not used optimally

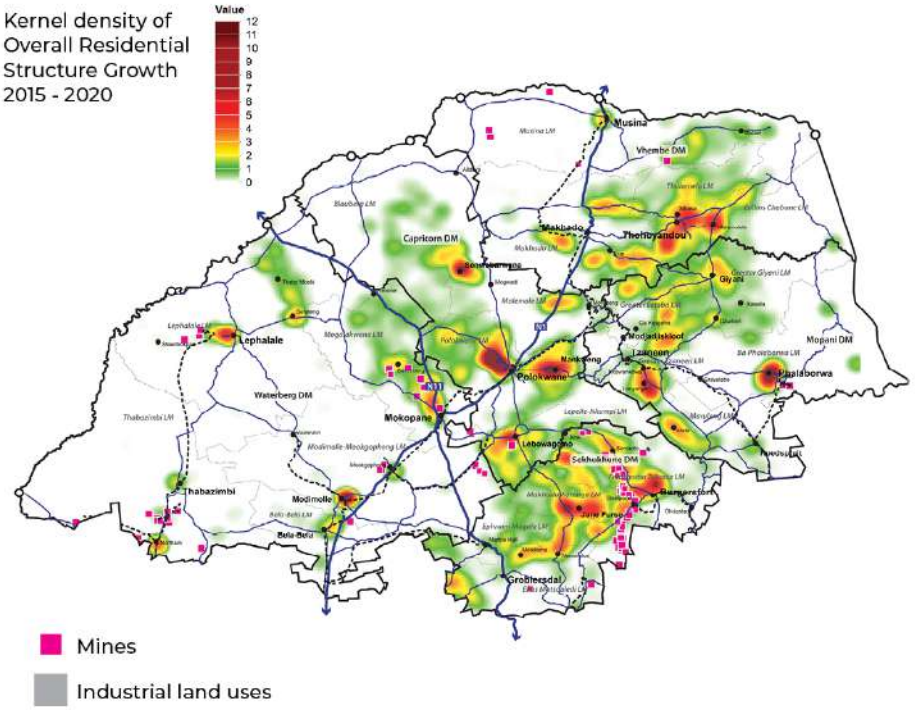
Limpopo has a strong resource economy. Its economic future, including creating a more diverse economy and reduce carbon reliance would be supported by it natural resources base. Its main natural resource potentials are anchored in it mineral deposits, high potential agricultural areas and photovoltaic (solar) power potential. The realisation of this potential is however hampered by issues such as water shortages, unabated peri-urban and rural residential sprawl, and lack of appropriate freight movement infrastructure as highlighted earlier.



3- Resource pressure and competition are threatening sustainability and limiting economic growth and diversification

One of the biggest challenges facing Limpopo in promoting spatial justice and ensuring inclusive, diversified growth is managing resource pressures and competition. With its abundance of natural resources, the provincial economy is largely a resource economy. The sustainable use of these resources, as well as value addition through beneficiation, manufacturing and establishing a supportive service industry, present a challenge as activities compete for the same resources and often spatially overlap with and impact on sensitive ecosystems and high potential natural resource areas. Added to this already challenging scenario is the impact of climate change. High drought tendencies and an increase in the number of very hot days will place increasing pressure on all industry sectors reliant on water and will also affect viability of certain agricultural crops and livestock.





LIMPOPO
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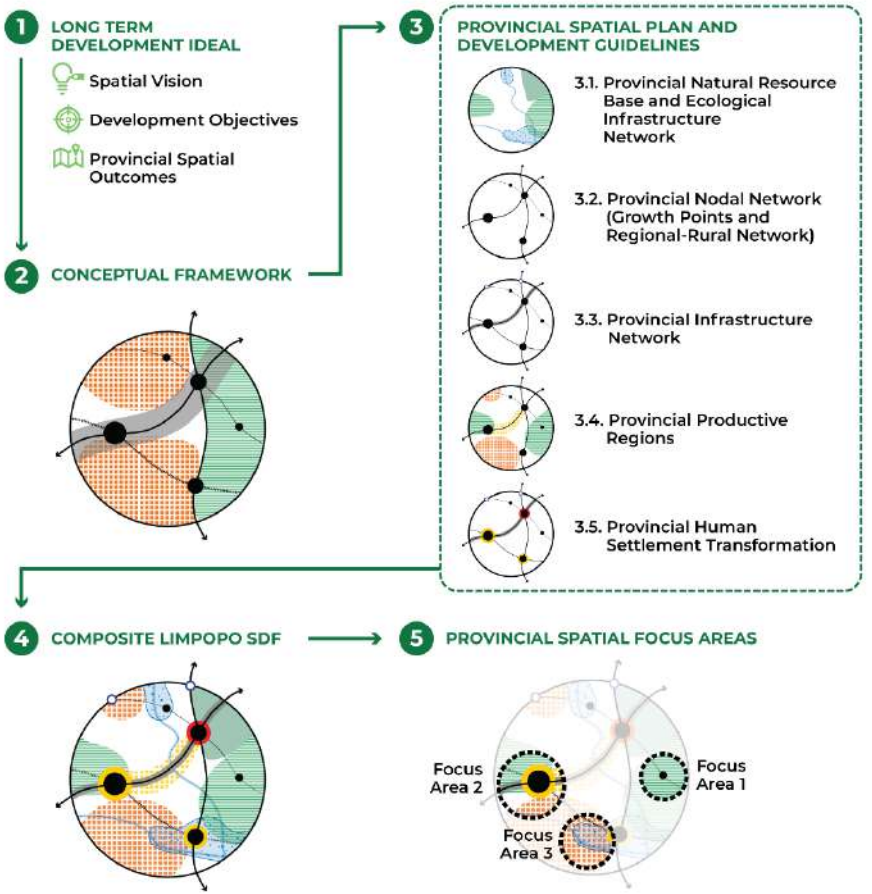
REPUBLIC OF SOUTH AFRICA

CHAPTER 4: INDICATIVE PLAN AND STRATEGIC FOCUS AREAS

Lets grow South Africa together

This chapter describes the future spatial form and decided spatial development of Limpopo province. In consists of:

- the long term development ideal of the province, including the spatial vision, development objectives, and development outcomes;
- the provincial spatial development concept, representing the visual expression of the long term development ideal;
- the provincial indicative spatial plan including spatial strategies and guidelines; and
- strategic spatial focus areas to ensure spatially aligned investment and spending.



4.1. LONG TERM DEVELOPMENT IDEAL

The long term development ideal for Limpopo is set through its long term spatial vision that has been in place since 2016, a set of desired spatial outcomes and overall spatial development objectives. These elements capture the essence of what provincial development stakeholders are striving for and what must be achieved by implementing the spatial strategies and catalytic initiatives presented in the LSDF.

4.1.1. Spatial Vision

The spatial vision guides the long term development pattern of Limpopo and represents a development ideal that is strived for:

The Limpopo Spatial Development Framework envisions a provincial spatial structure where the natural environment and valuable agricultural land are protected for future generations, with a strong, diverse and growing economy, and that offers its residents high quality living environments and good job opportunities.

4.1.2. Provincial Spatial Outcomes

The provincial spatial outcomes are the tangible achievements that are strived for, to realise the spatial vision for Limpopo:

Provincial Spatial Outcome One

A network of consolidated, transformed and well-connected urban nodes, regional development anchors and rural service centres that enable Limpopo to derive maximum transformative benefit from urbanisation and concentrated rural settlements, enabling climate change adaptation, inclusive economic development and equal, effective and efficient access to social services in support of equitable and inclusive provincial human capital development.

Provincial Spatial Outcome Two

Provincial-scale corridors and productive rural regions enable sustainable livelihoods supported by economic diversification through green industrialisation and participation in the Fourth Industrial Revolution, mutually beneficial urban-rural linkages, and wise management, nurturing and conservation of ecological assets and ecosystem services.

Provincial Spatial Outcome Three

Provincial connectivity and movement infrastructure systems are strategically located, extended and maintained, to support a diverse, ecologically sustainable, adaptive, regenerative and inclusive economy, and a set of key provincial, national and regional gateway cities and towns.

Provincial Spatial Outcome Four

Productive regions are supported by sustainable resource economies and strong and resilient regional development anchors provide effective, efficient and equitable access to people living in rural areas to the provincial, national and global economy.

Provincial Spatial Outcome Five

The provincial ecological infrastructure and natural resource foundation are well-protected and managed, to enable climate change mitigation and sustainable and equitable access to water, high-potential agricultural land, minerals and other natural resources, both for current and future generations.

4.1.3. Development Objectives

Building on the spatial vision and desired spatial outcomes, the spatial development objectives for Limpopo are the following:

- Capitalise on the Province's strategic location within the SADC region to facilitate trade links and regional cooperation on resource sharing;
- Capitalise on, and improve regional and local connectivity to establish a connected network of nodes and settlements;
- Provide a strategic and coherent rationale for public sector investment, including engineering, community and economic infrastructure, to optimise service delivery;
- Encourage urban and rural spatial restructuring to address spatial injustice and facilitate climate change mitigation and adaptation;
- 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 diversification and industrialisation through green economy initiatives; and
- Create an enabling environment for both large- and small-scale business development (retail, office, commercial, industrial).

4.2. CONCEPTUAL FRAMEWORK

4.2.1. Role of the Conceptual Framework

The conceptual framework is a tangible expression of the spatial vision, the desired spatial outcomes and development objectives. It is a schematic illustration of the desired spatial form of Limpopo. It consists of ideas or concepts, including the form-giving elements that create the overall spatial structure or pattern. The conceptual framework will guide and inform the more detailed LSDF and the implementation of the LSDF. The conceptual framework is not site-specific, but an indication of the macro spatial patterns that give shape to and are described in more detail in the Provincial Spatial Plan in Section 4.3.3 below.

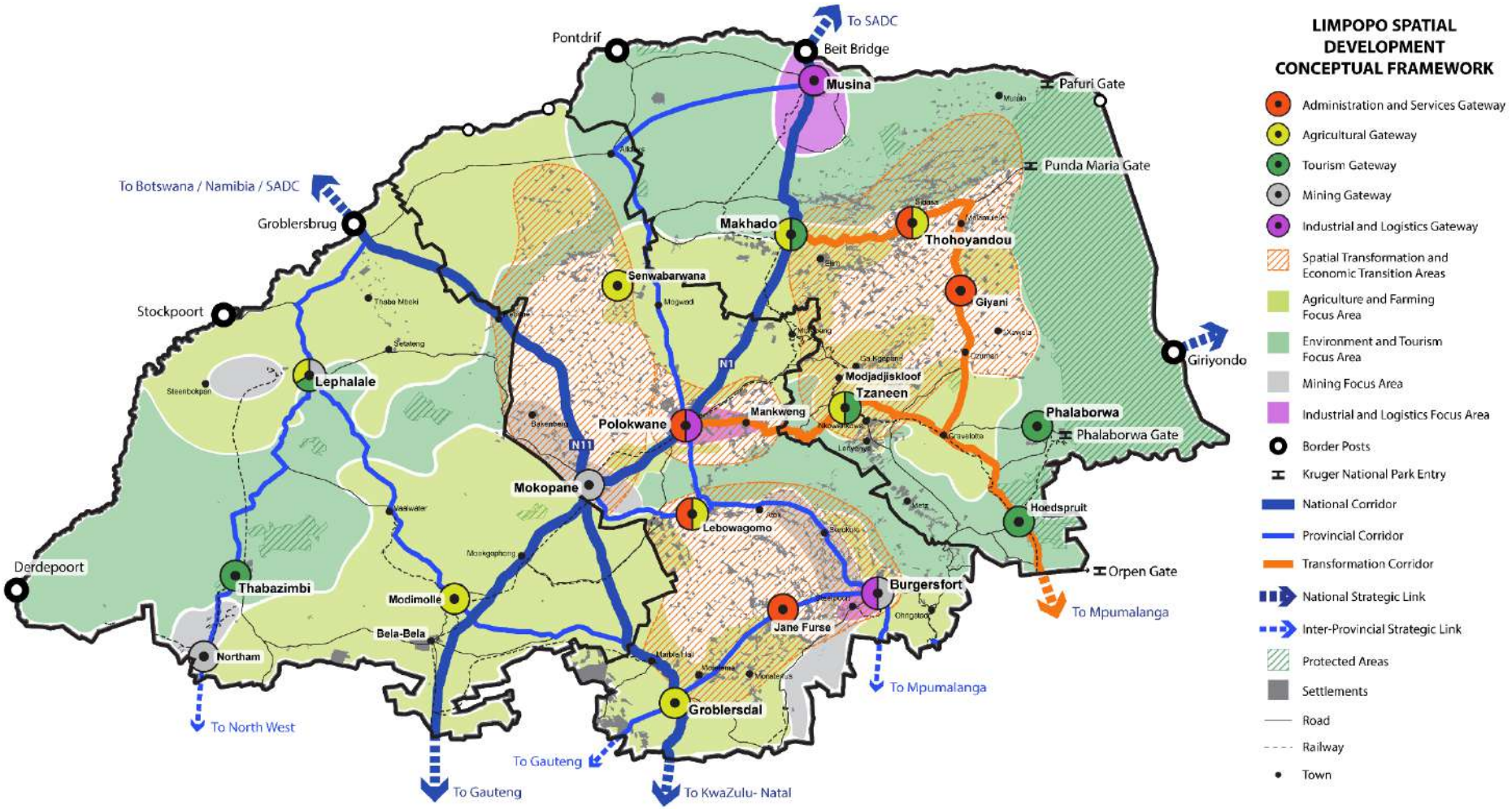
4.2.2. Components of the Conceptual Framework

The Conceptual Framework for the LSDF as reflected in

visualises the following main spatial components:

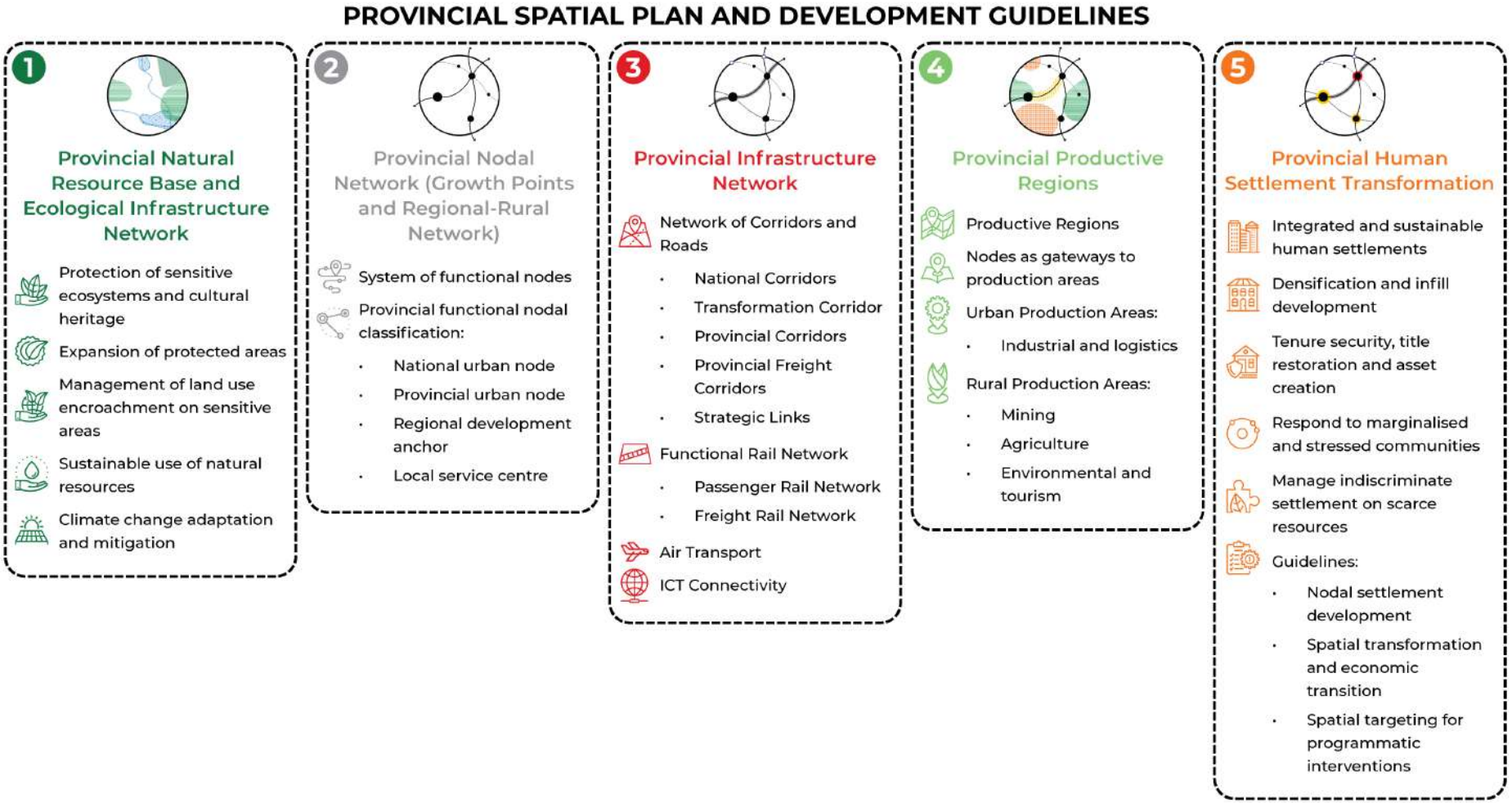
- An **interconnected system of nodes**. The nodes are the primary concentration points of economic activity and social service delivery, and also act as gateways to the productive regions of the province.
- A **system of corridors and primary access routes** which are focused on providing high access and mobility by connecting nodes within the region, as well as to external nodes. These connectivity components include:
  - National corridors: the N1, N11 and Eastern Escarpment Spatial Transformation and Economic Transition Region Corridor
  - Provincial corridors
  - National and inter-provincial strategic links and border posts
- Three **integrated provincial productive regions** with different development characteristics and investment needs, i.e.:
  - Western Region: Characterised by mostly expansive agriculture, game farming, nature reserves and a few mining areas.
  - Central Region: featuring the main node in the province (Polokwane) with its associated economic activity, the mining and industrial region around Burgersfort, rural settlement areas and more intensive agriculture and tourism areas.
  - Eastern Region: Dense rural settlement areas surrounded by high intensity agriculture and tourism.
- Within the regions, a series of **spatial focus areas** occur:
  - Industrial and logistics focus areas: The focus of provincial industrialisation, including special initiatives and SEZs, where the potential exists to diversity the provincial economic base.
  - Environment and tourism focus areas: High concentrations of National Protected and Expansion Areas, Biosphere Reserves, sensitive ecosystems and Strategic Water Source Areas, as well as cultural heritage elements, tourist attractions and tourism potential.
  - Agriculture and farming focus areas: A substantial share of the High Potential Agriculture Areas and other farming areas, including small farmers. Strategic Water Source Areas also occur.
  - Mining focus areas: Areas where mining surface infrastructure and related activities and potentials are clustered.
  - The spatial transformation and economic transition focus areas: Areas of dense and growing human settlements that require strengthening of nodes, connectivity and basic service provision to improve quality of life, open up access to economic opportunity, and limit sprawl. Large parts of these areas are also within the national Eastern Escarpment Spatial Transformation and Economic Transition Region as provided for in the National SDF, 2022.

Figure 33: Conceptual Framework



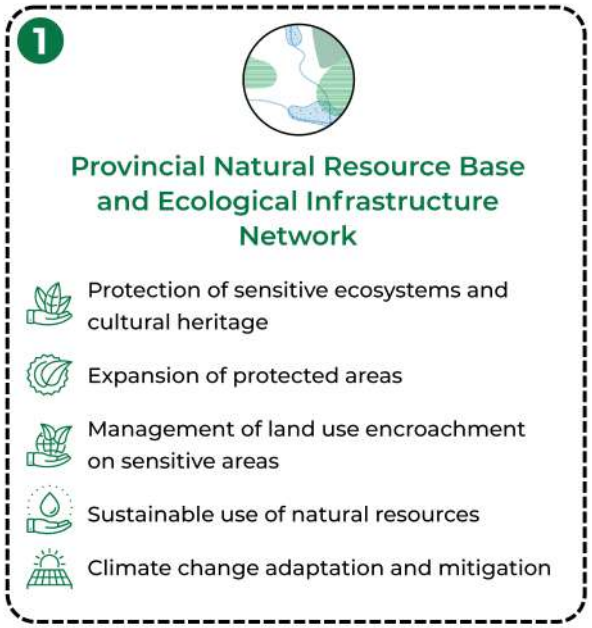
4.3. PROVINCIAL SPATIAL PLAN AND DEVELOPMENT GUIDELINES

In this section, the elements of the indicative provincial spatial plan, the Limpopo Spatial Development Framework, will be described:



4.3.1. Provincial Natural Resource Base and Ecological Infrastructure Network

The provincial natural resource based in ecological infrastructure network is the foundation that sustains human life and the provincial economy. In this section, spatial strategies and development guidelines will be provided to support the protection of natural resources. This focus of this section will be defining the “no-go” areas for development and human activity, places where risks to sensitive areas should be managed, and areas where the impact of climate change should be planned for as a priority. The use of natural resources, e.g. for agriculture and mining, will be addressed in Section 4.3.3: Provincial Productive Regions.



4.3.1.1. Spatial Strategies

Protect sensitive ecosystems and cultural heritage

- All national, provincial or municipal implementation programmes or projects should recognise the sensitive and protected areas and heritage sites shown on Figure 34. All restrictions and requirements pertaining to specific categories of protected areas as stipulated in Section 4.3.1.2 below should be adhere to.
- Each District must ensure that sensitive and protected areas are included in the Municipal SDFs (District and Local) by aligning to the relevant Environmental Management Framework/s and the requirements pertaining to specific categories of protected areas as stipulated in Section 4.3.1.2 below.
- Municipal SDFs should contain specific land use guidance and restrictions pertaining to sensitive and protected areas.
- Bio-diversity stewardship by traditional leadership, local communities and private landowners should be supported through formal stewardship agreements and through programmes in the Integrated Development Plans of Municipalities and One Plans of Districts.

Expand the natural areas under formal protection

- Implement the National Protected Areas Expansion Strategy (NPAES) as indicated in Figure 35.
- Prioritise expansion in terms of the NPAES for terrestrial ecosystems and inland aquatic ecosystems that are critically endangered, endangered, vulnerable and near threatened in terms of the National Biodiversity Assessment, and not yet protected.
- Prioritise the protection of the centres of endemism (flora) as follows:
  - Sekhukhuneland Centre of Endemism,
  - Soutpansberg Centre of Endemism, and
  - Wolkberg Centre of Endemism.

Figure 34: Sensitive and Protected Areas

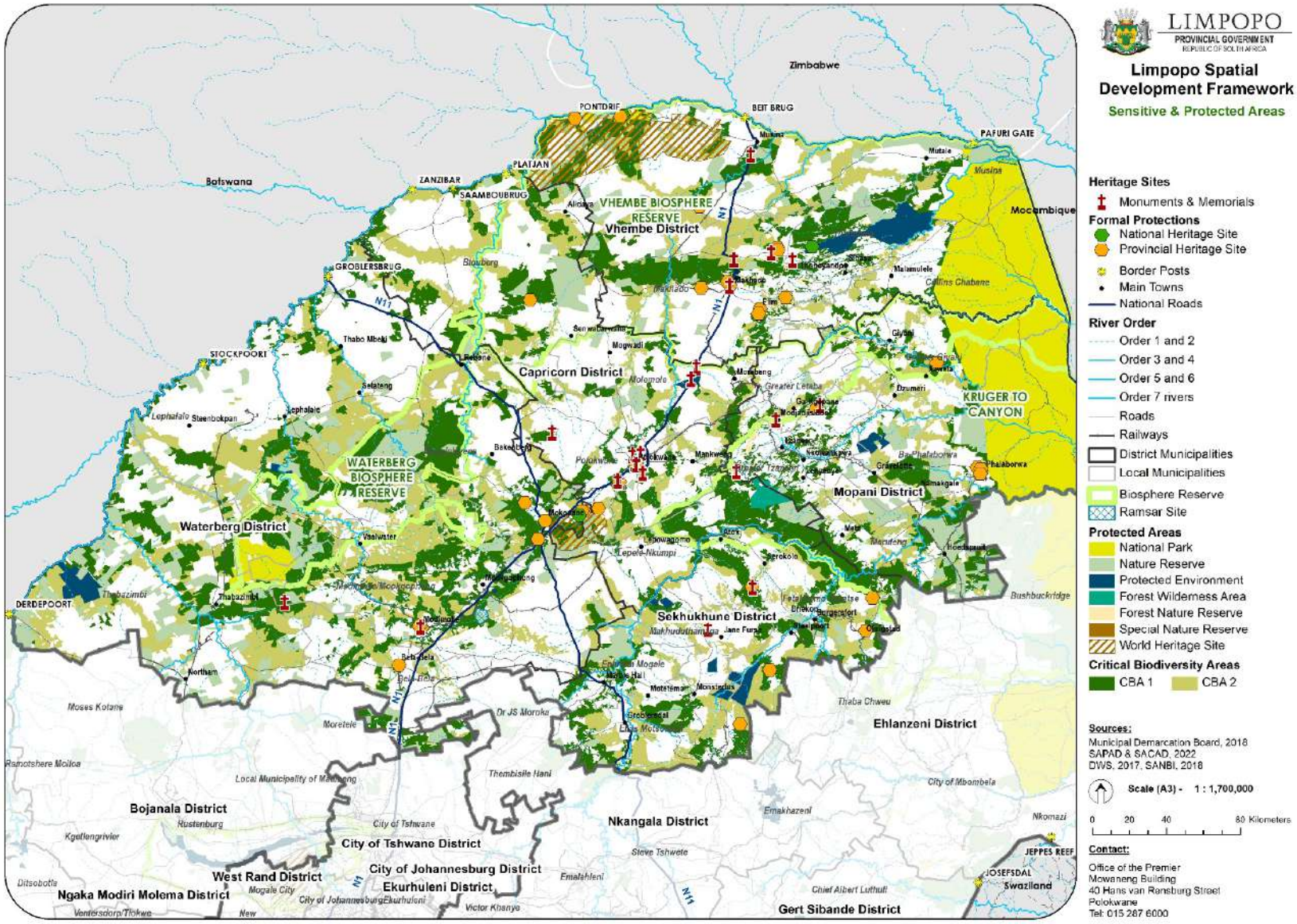
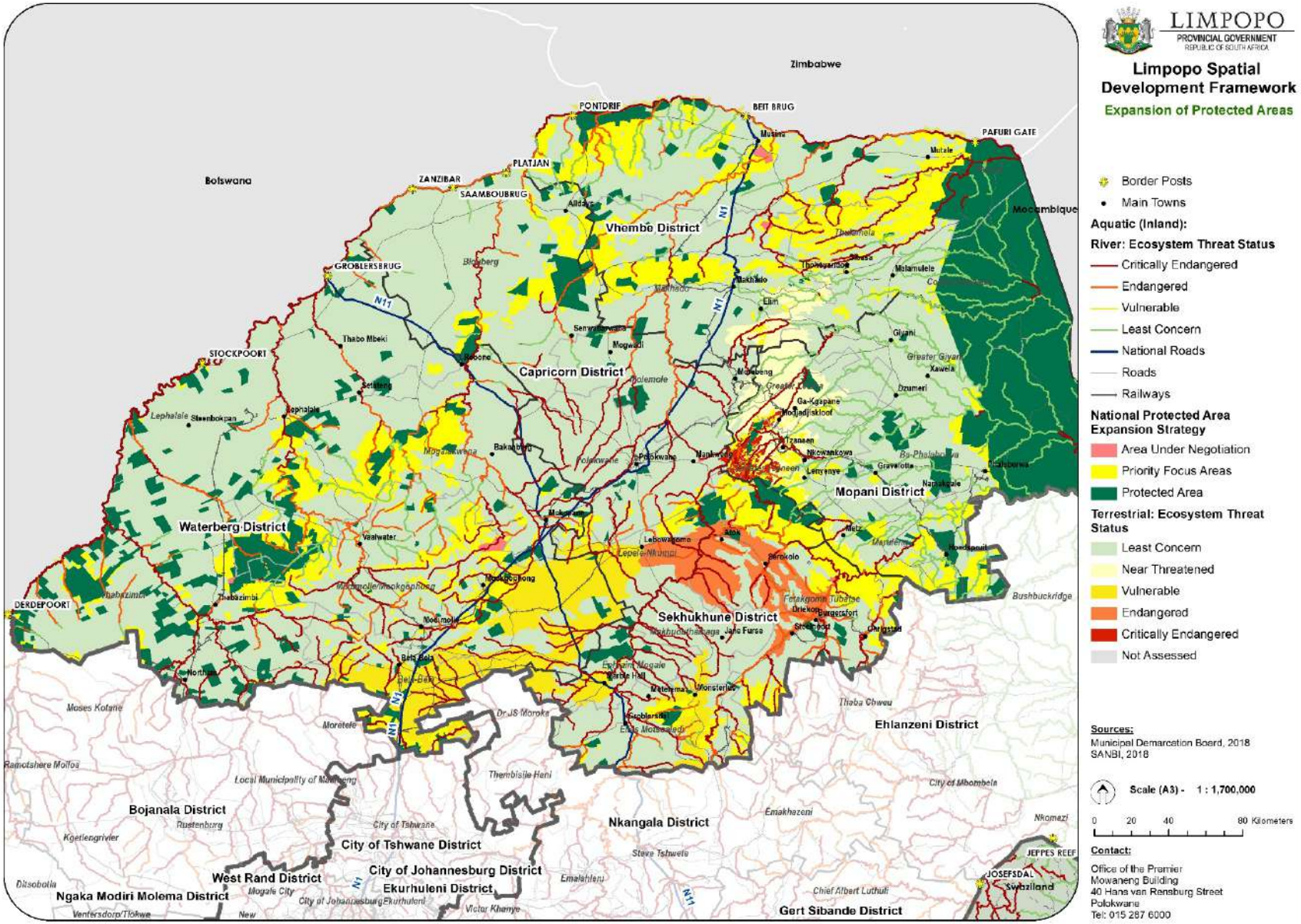


Figure 35: Expansion of Protected Areas



Manage areas of encroachment by high impact land uses and human settlement

- Manage the following risk areas by ensure compliance to the provisions of the Limpopo Conservation Planv2 (2013), District Bioregional Plans and updated CBA spatial data base (2018). These areas should receive special attention in local scale spatial planning and land use management:
  - Polokwane Nature Reserve: development proposed in reserve buffer zone.
  - Polokwane-Moria Development Corridor: urban sprawl breaking up landscape connectivity.
  - Kruger to Kalahari Corridor: Zebediela/Makapan/Waterberg Critical Landscape Link, mining proposed in critical biodiversity landscape corridor (the landscape link must be kept).
  - Fetakgomo Tubatse Local Municipality: urban sprawl is threatening biodiversity and the Sekhukhune Land Centre of Endemism (landscape connectivity must be retained).
  - KwaMhlanga-Siyabuswa-Elandsdoring Rural Settlement: urban sprawl is threatening biodiversity corridor links to neighbouring provinces.
  - Upper Limpopo valley between the Waterberg district and the Vhembe district, which borders Botswana: game fencing and other barriers are preventing the free-ranging wildlife between South Africa and Botswana (landscape connectivity must be retained).

- In the development of the high potential agriculture areas (HPAAs), the management of existing mines and development of new mines, ensure compliance with the provisions of the Limpopo Conservation Planv2 (2013), District Bioregional Plans and updated CBA spatial data base (2018), as well as any other guidelines or requirements for the protection of the natural environment as listed in Section 4.3.1.3. These provisions should be incorporated into Municipal Spatial Development Frameworks and should be considered in land use management. High risk areas are shown on Figure 36**.** Specific issues that require consideration at a local scale before development of an HPAA commences include:
  - Critical Biodiversity Areas, especially in the Waterberg district and along the borders with neighbouring provinces and Botswana.
  - A Critical Biodiversity Area corridor is broken up by the HPAA that lies on the border between the Capricorn and Vhembe districts.
  - Areas close to the Nylsvley Ramsar wetland.
  - Strategic Water Source Areas, where it will be critical to manage water use and prevent irrigation run-off that is potentially contaminated with fertilisers or pesticides.
  - Severely water-stressed areas (where water demand already exceeds supply) in the Sekhukhune and Greater Letaba municipalities as well as around Mogwadi.
  - The proposed HPAA for irrigation along the Limpopo River in the Lephalale municipality, as climate change predictions indicate an increase in drought tendencies and heat stress, making irrigation potentially unsustainable in the long term.

- Limit settlement expansion into environmentally sensitive areas by applying measures such as urban and rural development edges in municipal spatial planning, land use management mechanisms, and providing guidance to traditional authorities in the process of granting permission to occupy site for specific land uses. High risk areas are shown on Figure 37.

Figure 36: High impact Land Use: Environmental Risk Areas

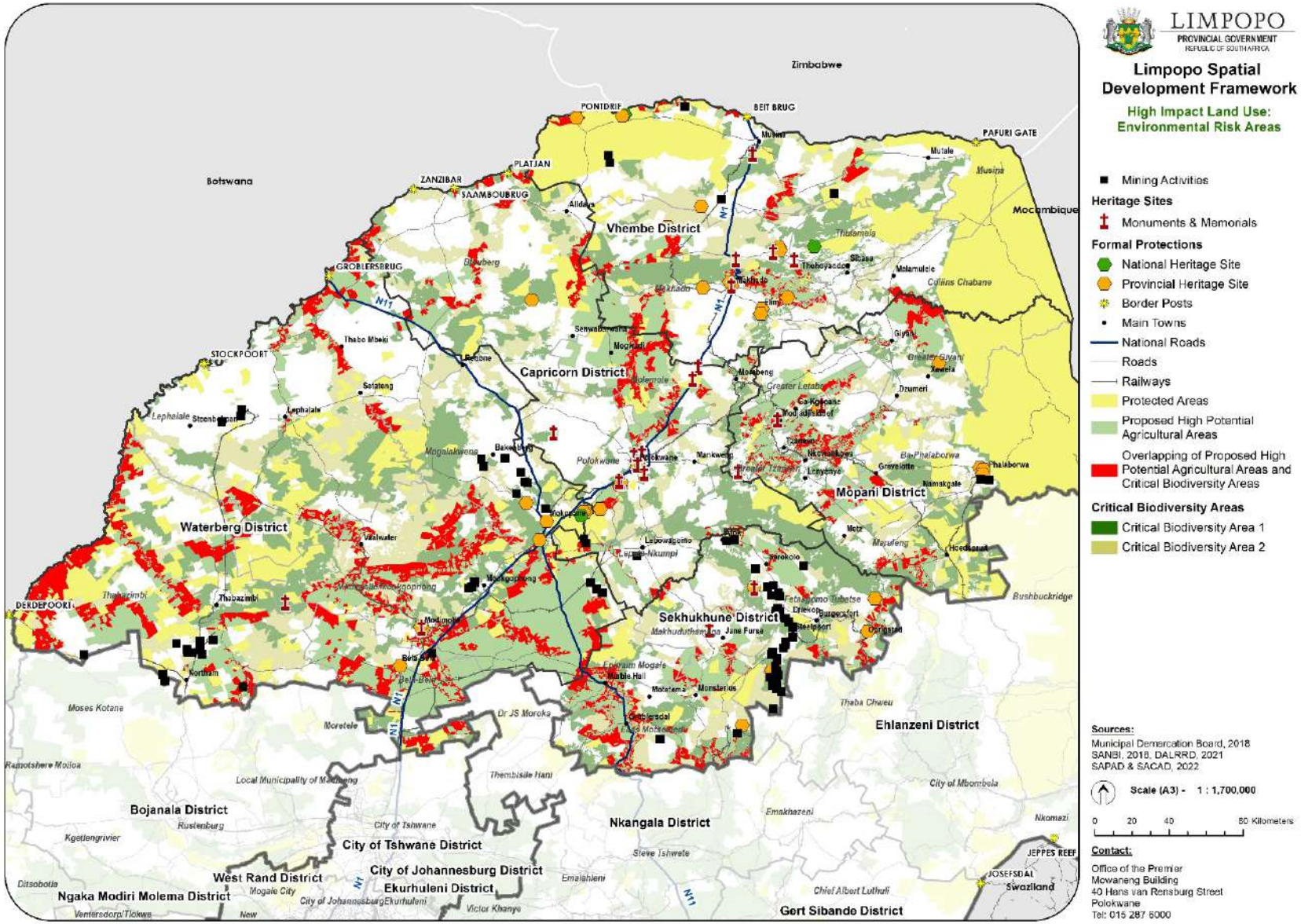
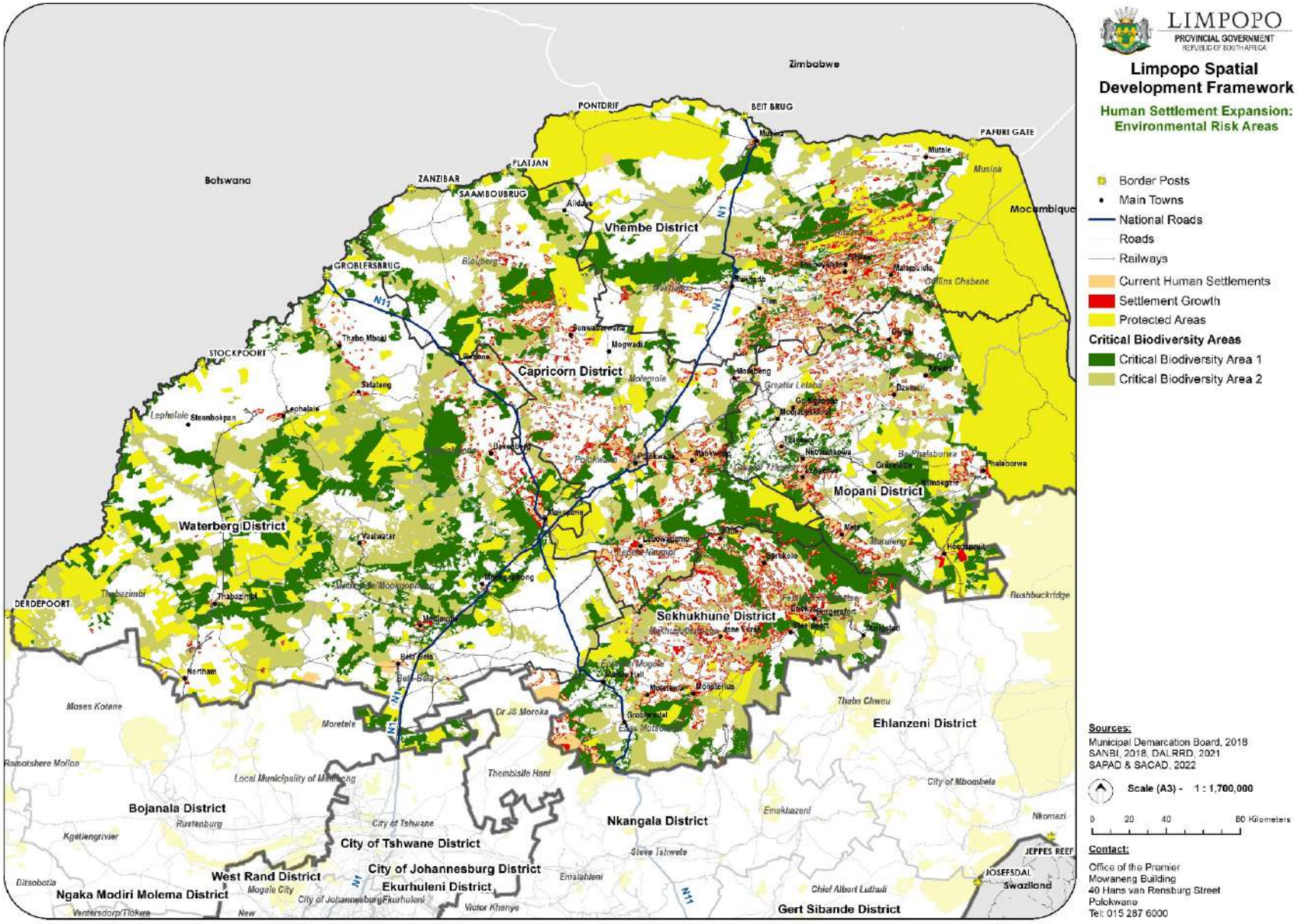


Figure 37: Human Settlement Expansion: Environmental Risk Areas



Support the sustainable, effective use and beneficiation of the natural resource areas

- Limit human settlement expansion into mining areas and high potential agriculture areas by applying measures such as urban and rural development edges in municipal spatial planning, limiting expansion in terms land use management (e.g. consideration of new township establishments), and providing guidance to traditional authorities in the process of granting permission to occupy site for specific land uses. High risk areas are shown on Figure 38.
- Manage the risk of pollution and overuse of Strategic Water Source Areas (SWSAs) and restore at risk SWSAs by dedicated provincial level bioregional planning and/or the implementation of plans for the National Spatial Action Areas from the NSDF. Any outcomes of these processes should be included in reviews of District Bioregional Plans and Municipal Spatial Development Frameworks. Measures such as land use limitations, wastewater and effluent control, as well as climate change mitigation measures should be considered. Risks to Strategic Water Sources areas are shown on Figure 39.

Figure 38: Risk for Settlement Encroachment on Natural Resources Areas

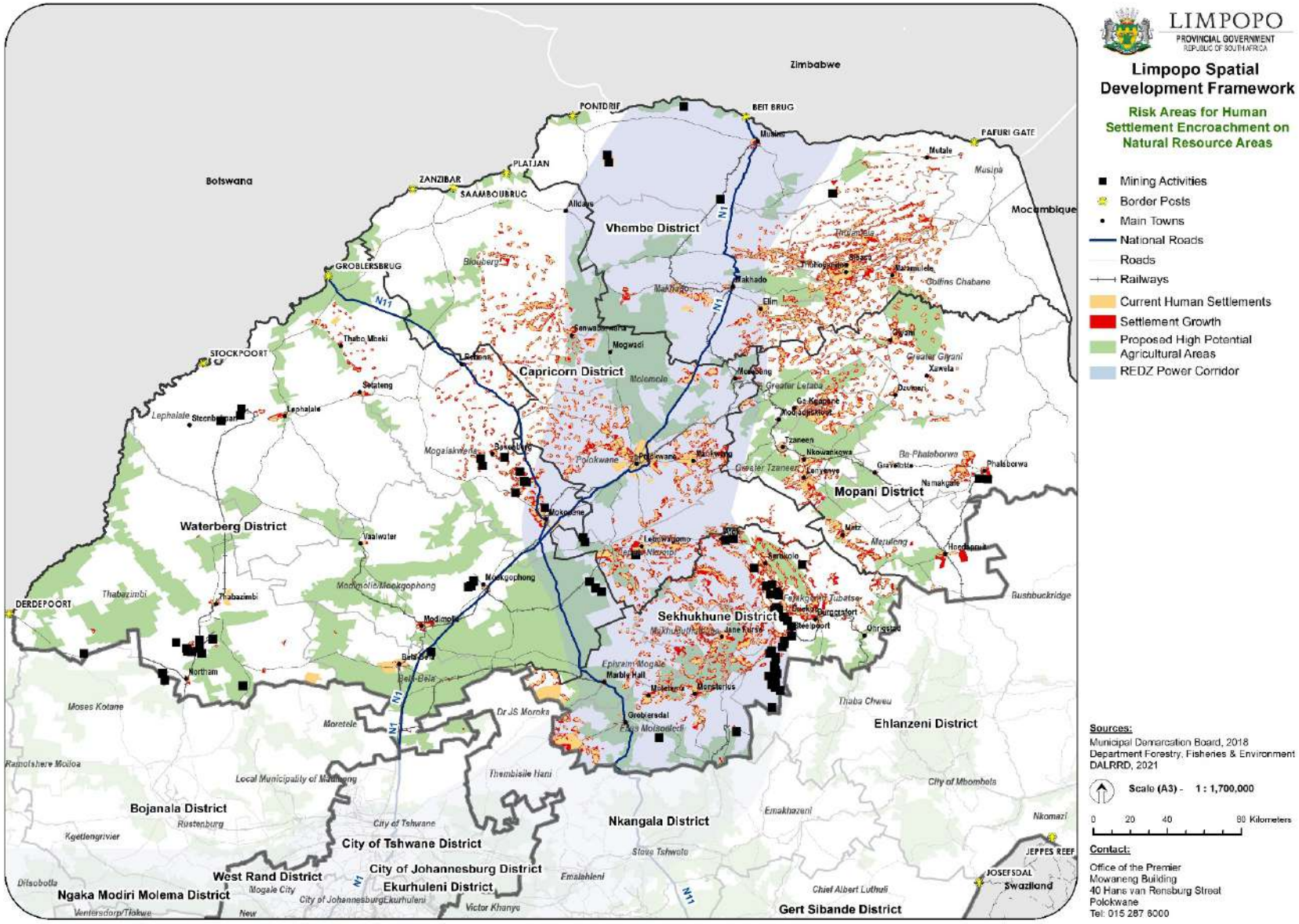
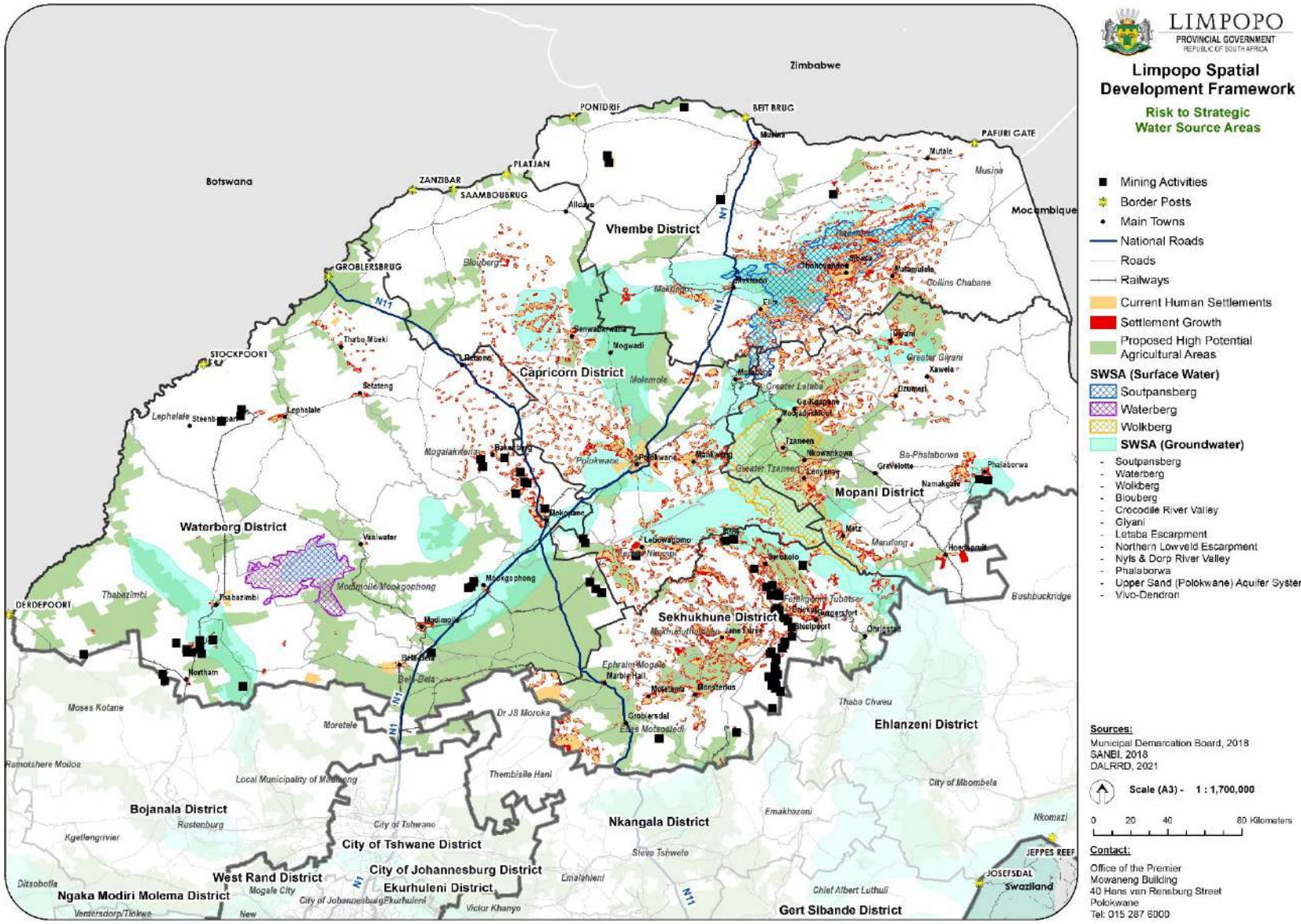


Figure 39: Risk to Strategic Water Source Areas



Develop plans for climate change

A two-pronged approach is recommended to mitigate and adapt to the impact of climate change. Firstly, intervention is required at policy level in anticipation to the promulgation into law of the Climate Change Bill, 9 of 2022, as referred to in Section 4.3.1.3 below. A key element of the provincial scale, policy level intervention will be the development of a Provincial Climate Change Response Implementation Plan as envisage in the Bill. At a provincial scale, key risk areas for human settlements and agriculture are indicated in Figure 40 and Figure 41.

Secondly, whilst the provincial scale policy framework is being put in place, steps should be taken to develop district level climate risk profiles and responding climate change adaptation plans based on specific district-scale context and climate hazards or threats as part of the CSIR's GreenBook programme (CSIR. 2019). GreenBook: Adapting South African settlements to climate change. Available at: www.greenbook.co.za). The climate risk profiles and adaptation plans should focus on the following elements:

Table 18: Planning for Climate Change

Climate Risk Profile	Climate Change Adaptation Plan
District context, including high risk settlement and agriculture areas	Climate change adaptation vision and priorities
Climate baseline	Climate change adaptation goals
Climate hazards or threats	Climate change adaptation programmes
Climate impact of key resources and sectors	Implementation framework

In local planning and land use management, in addition to being guided by the above adaptation plans and while those are being developed, the CSIR's GreenBook adaptation measures should be considered in the development of Municipal SDFs and precinct planning, as well and land use management mechanisms such as consideration of new developments, layout plans and site plans. The GreenBook adaptation measures can be accessed at: (https://adaptationactions.greenbook.co.za/).

Figure 40: Settlements in Highest Climate Change Risk Reas

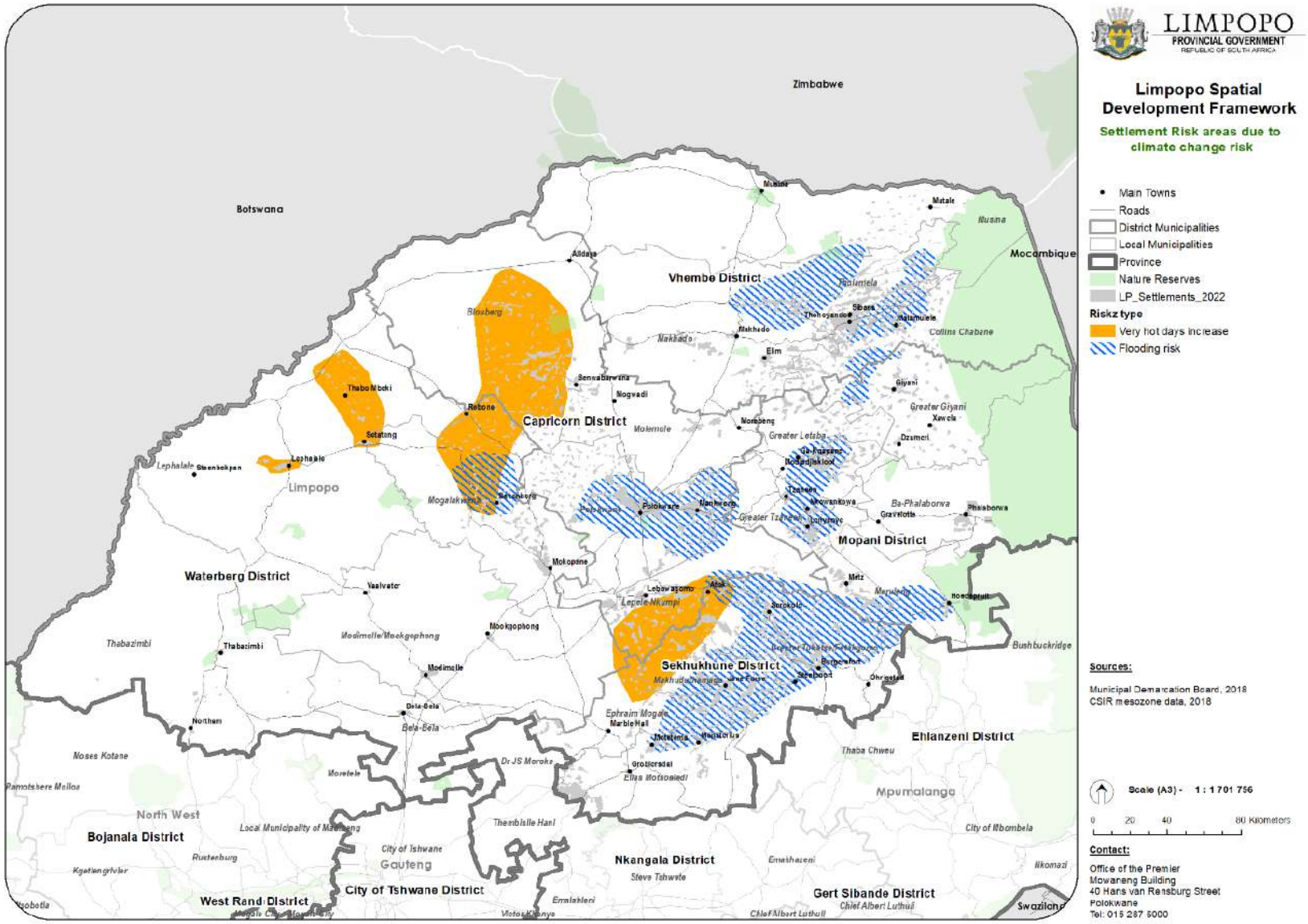
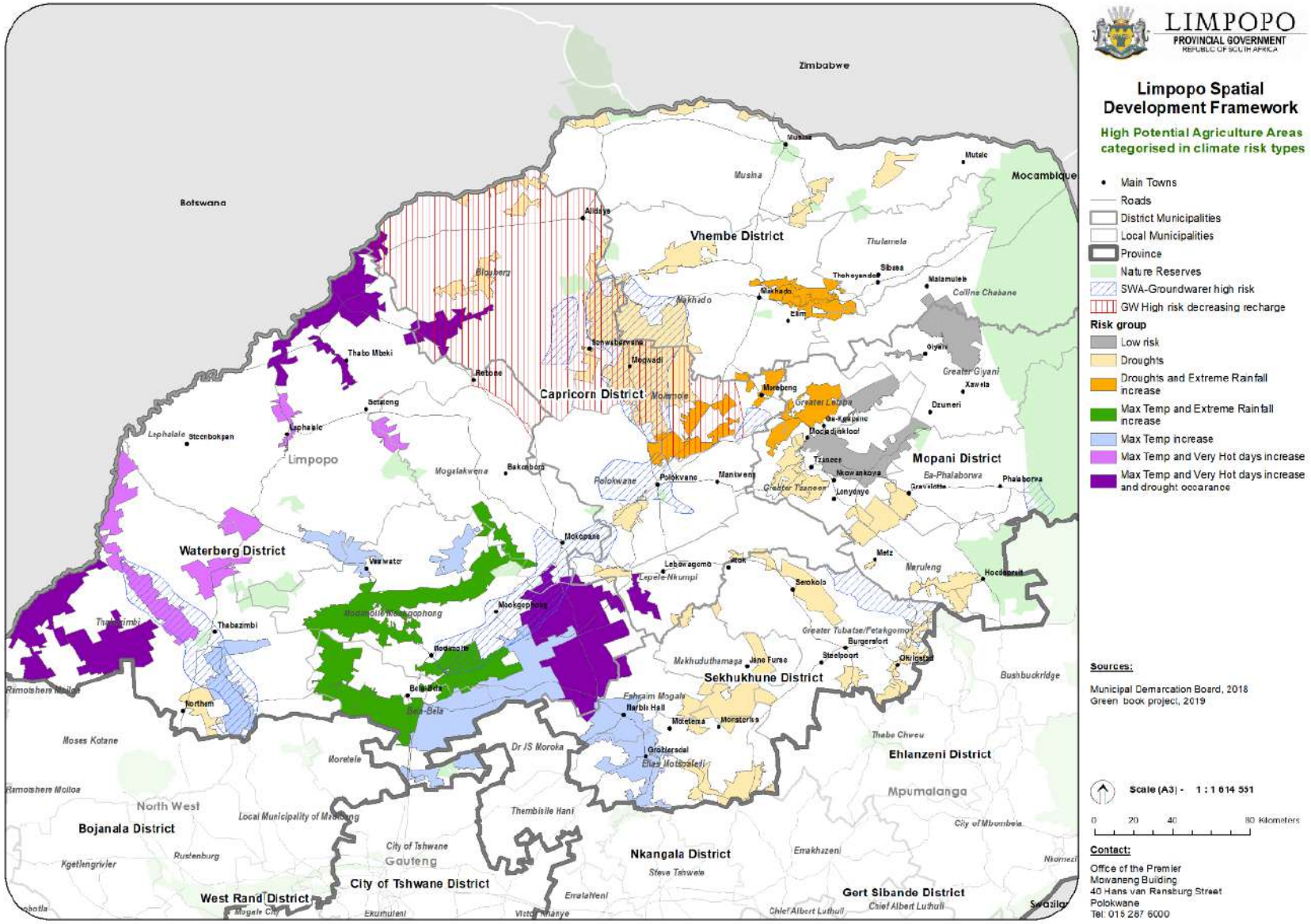


Figure 41: High Potential Agriculture Areas in Climate Change Risk Areas



4.3.1.2. Spatial Proposals and Development Guidelines

The following conditions, restrictions and guidelines should be applied to the different categories of sensitive and protected areas:

Table 19: Environmental Management Conditions, Restrictions, Guidelines

Environmental Management Element	Applicable Condition / Restrictions / Guidelines
National parks (x3)	National Environmental Management: Protected Areas Act (NEM:PAA), 57 of 2003 and related regulations, guidelines and norms and standards. National Environmental Management: Biodiversity Act (NEM:BA), 10 of 2004 and associated regulations, guidelines and norms and standards. Buffer zones as set out in the Park Management Plans prepared in terms of NEM:PAA for Marakele (2014-2024) and Kruger National Park (2018-2028)
Biosphere Reserve (x3)	UNESCO Technical Guidelines for Biosphere Reserves, 2022 Environmental management documents and guidelines developed by the Waterberg Biosphere Reserve, the Kruger to Canyons Biosphere Reserve and the Vhembe Biosphere Reserve.
World Heritage sites (x2)	UNESCO World Heritage Convention, 1972 and related operational guidelines World Heritage Convention Act, 49 of 1999 and related regulations National environmental Management: Protected Areas Act (NEM:PAA), 57 of 2003 and related regulations
Ramsar sites (wetlands) x2	Convention on Wetlands of International Importance (Ramsar Convention), 1971
Trans frontier parks (x2)	National Environmental Management: Protected Areas Act (NEM:PAA), 57 of 2003 and related regulations, guidelines and norms and standards. National Environmental Management: Biodiversity Act (NEM:BA), 10 of 2004 and associated regulations, guidelines and norms and standards.
Other protected areas: • Botanical garden • Forest reserve • Nature reserves • Protected environment	National Environmental Management: Protected Areas Act (NEM:PAA), 57 of 2003 and related regulations, guidelines and norms and standards. National Environmental Management: Biodiversity Act (NEM:BA), 10 of 2004 and associated regulations, guidelines and norms and standards Limpopo Environmental Management Act, 7 of 2003 National Forests Act, 84 of 1998
Critical Biodiversity Areas (CBAs)	Limpopo Conservation Planv2 (2013); with spatial data as updated in 2018 and associated land use management guidelines National Environmental Management: Biodiversity Act and associated regulations on the development of bioregional plans

Environmental Management Element	Applicable Condition / Restrictions / Guidelines
	Bioregional plans for the Waterberg, Mopani, Vhembe, Sekhukhune and Capricorn District Municipalities (Refer to Figure 42 and Table 20 below)
Heritage Areas (Provincial and National Heritage Sites)	South African Heritage Resources Act, 25 of 1999 and associated regulations and guidelines
High Potential Agriculture Areas	Conservation of Agricultural Resources Act, 1983 (Act no. 43 of 1983). Any future regulations and guidelines in terms of the Act pertaining to the high potential agriculture areas (in particular the Draft Preservation and Development of Agricultural Land Bill of 2016.
REDZ Power Corridor	Conditional exemptions from EIA in terms of Government Gazette Notice 2313 of 27 July 2022
Waterberg-Bojanala Air Quality Priority Area	Air Quality Management Plan and Threat Assessment in 2015 (Government Gazette Notice 1207 of 2015).
Development of wind farms	Cape Vultures and Wind Farms: Guidelines for impact assessment, monitoring and mitigation (Birdlife South Africa, 2018) Environmental Impact Assessment regulations, 2014, as amended

Figure 42: Critical Biodiversity Areas

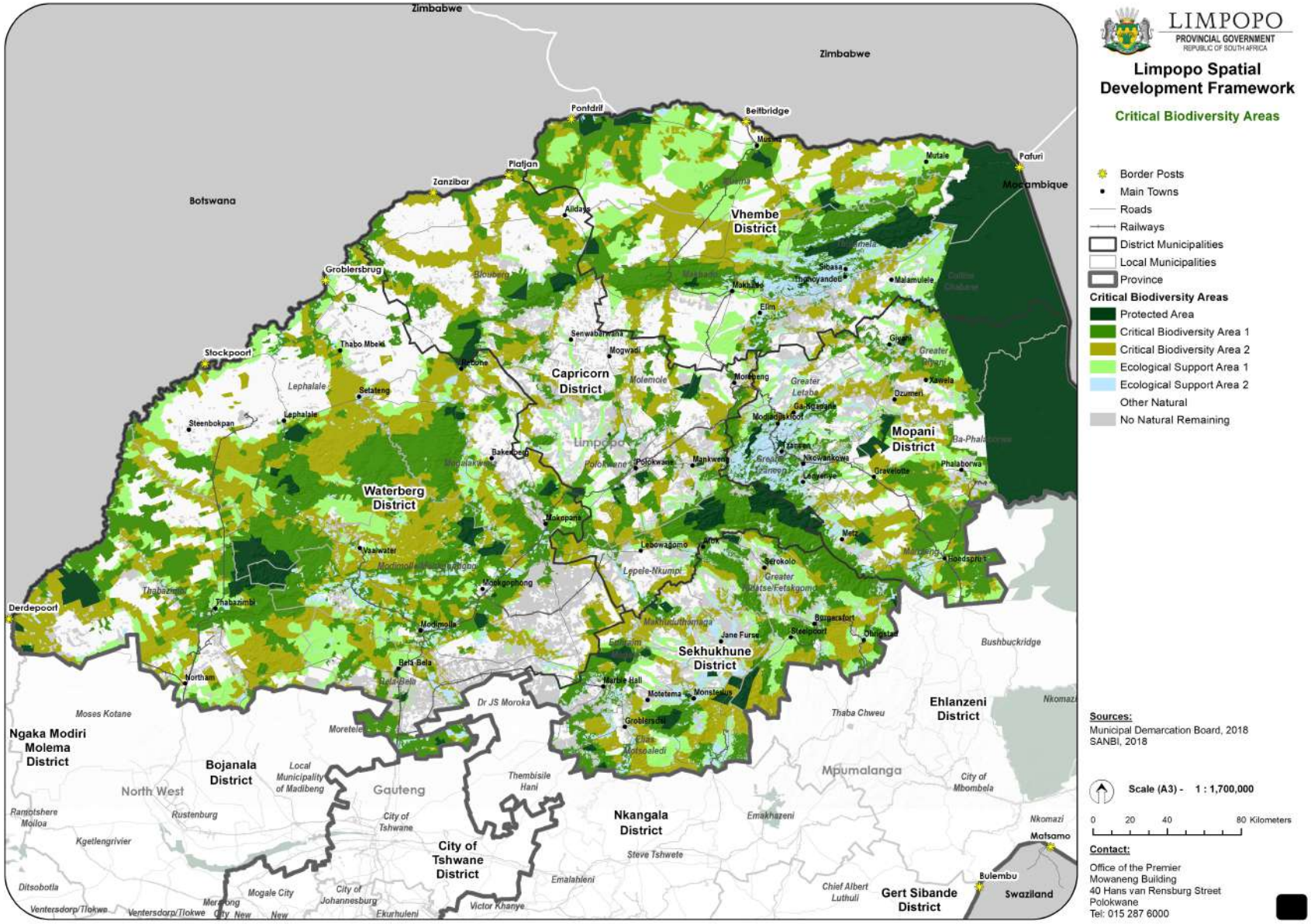


Table 20: CBA Classifications and Land Uses (modified from SANBI, 2018)

CBA map category	Description	Desired ecological state	Examples of likely compatible land use
Protected area	Areas formally protected in terms of legislation. Each protected area has a management plan.	As per the protected area's management plan.	Conservation
Critical Biodiversity Area 1 (CBA1)	Areas irreplaceable for meeting biodiversity targets. No other options for conserving the ecosystems, species or ecological processes in these areas.	Maintain in natural or near natural state	Open space, low impact ecotourism or recreation
Critical Biodiversity Area 2 (CBA 2)	Areas that are the best option for meeting biodiversity targets, in the smallest area, while avoiding conflict with other land uses.		
Ecological Support Area 1 (ESA 1)	Areas that support the ecological functioning of protected areas or CBAs or provide important ecological infrastructure. May include biodiversity corridors or buffer zones.	Maintain in at least semi-natural ecological condition.	Low-impact ecotourism or recreation, sustainably managed rangelands, certain forms of low-density housing
Ecological Support Area 2 (ESA 2)		No further intensification of land use.	Intensive agriculture
Other natural area (ONA)	Natural or semi-natural areas that are not required to meet biodiversity targets or support natural ecological processes.	Best determined through multi-sectoral planning processes.	Range of intensive land uses such as industry or dense settlement
No natural remaining (NNR)	Areas in which no natural habitat remains.		

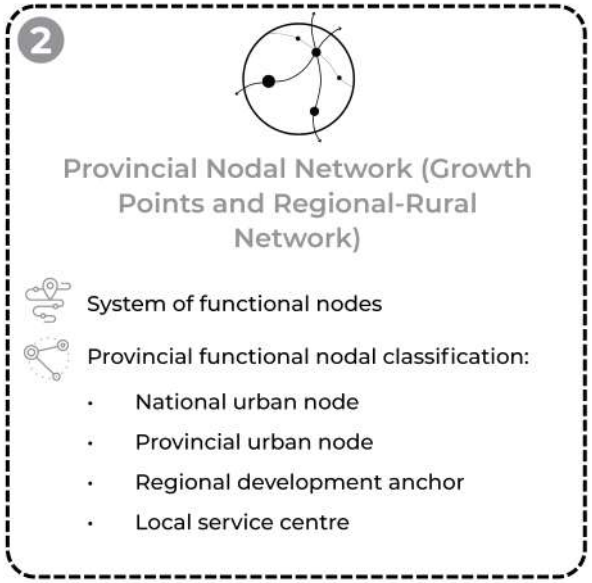
4.3.1.3. Policy Recommendations

- A provincial ecological and natural resources spatial database containing spatial data delineating protected and sensitive areas and related buffer zones and restricted areas should be established to support municipalities in their spatial planning and land use management practices.
- Limpopo province must be prepared for implementing the provisions of the Climate Change Bill, 9 of 2022 which requires:
  - that every Premier's intergovernmental forum, established in terms of section 16 of the Intergovernmental Relations Framework Act, also serves as a Provincial Forum on Climate Change (RSA, 2022). Such a forum must coordinate climate change response actions in the relevant Province and provide a report to the President's Coordinating Council which report must include climate change considerations, and
  - that the relevant MEC within one year of the publication of the National Adaptation Strategy and Plan undertake a climate change needs and response assessment (RSA, 2022). Following this, within two years of undertaking the climate change needs and response assessment, the MEC (Province) must develop and implement a climate change response implementation plan as a component of, and in conjunction with, provincial, metropolitan or district municipal planning instruments, policies and programmes.
- It is recommended that the required climate change response implementation plan incorporates Ecosystems based Adaptation (EbA) as set out in the Strategic Framework and Overarching Implementation Plan for Ecosystem-Based Adaptation (EbA) in South Africa 2016 – 2021 (DEA & SANBI, 2016)). This includes the investments in the management, restoration and rehabilitation of ecosystems and their services in the communities who depend on them.
- The new Provincial Agriculture Masterplan must include guidelines on climate change mitigation and adaptation.
- Master planning for water and disaster management plans must be aligned to the LSDF. Opportunities for new dam construction for agricultural and residential use must be investigated, also as a measure for flood attenuation / water retention.

4.3.2. Provincial Nodal Network

The provincial nodal network is the core structuring element of the provincial space. The nodes are concentration points for economic activity and human settlement and serve as gateways to the productive regions of the province. In some cases, the strengthening of nodes and associated settlement patterns are required to correct distorted spatial patterns and to ensure the optimal utilisation or provision of infrastructure and engineering services.

In this section, the hierarchy and function of each of the nodes in of the nodal network will be described.



4.3.2.1. Spatial Strategies

Develop a system of functional nodes in support of productive regions

- The nodal system of the Province should recognise the unique function of each node within its region to determine its function and classification within the Province,
- The system of nodes should recognise the urban-rural relationship between settlements,
- For nodes to fulfil its function, it must be supported by good connectivity,
- The difference between nodes that support larger growth and urbanisation vs nodes or settlements that are stagnant, should be recognised,
- Recognition should be given to issues of spatial transformation.
- Traditional roles of nodes, settlements or areas should be recognised.

4.3.2.2. Spatial Proposals and Development Guidelines

Approach: system of functional nodes

The approach in this spatial development framework is to classify nodes in terms of their context and spatial function within the region.

It is however necessary to understand that because nodes fulfil different functions, they are indeed different from each other. Although they are different, this doesn't mean that one node is more important than another.

All nodes and their surrounding regions support each other and have different "roles" within the Province and its spatial structure.

A ***node*** represents a centralised and well located hub with good connectivity or access to other nodes and its rural hinterland. It is a focus area or centre of intensified activity and includes places where residential, business, industrial and other community facilities are support by the necessary infrastructure.

Therefore, nodes do not function in isolation. The approach in this spatial development framework is also to consider the node's central place function or the spatial distribution of a system of nodes (nodal network) in the province.

Furthermore, apart from a node's central place function, it also serves as a gateway or hub to its hinterland or service area in terms of the production within the region. For example, a town such as Modimolle serves a rural hinterland which mainly focus on the agricultural sector, whilst Tubatse mainly serves the mining industry.

Other towns such a Phalaborwa was previously recognised as mining town, but there was a shift towards tourism, hence it can serve as tourism gateway to the Kruger National Park.

The following aspects were considered in terms of classifying the nodes in this spatial development framework:

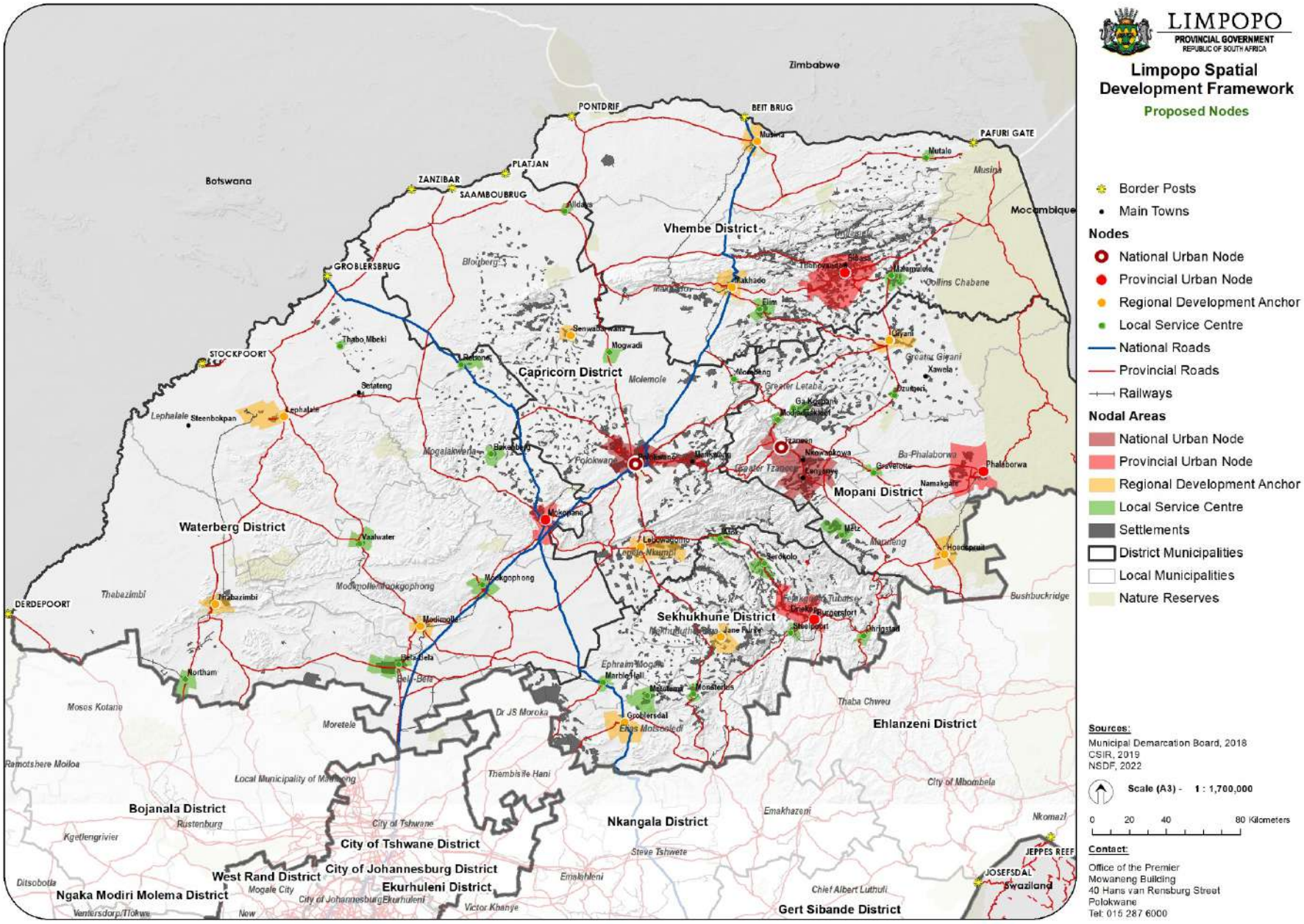
- The current central place function of the node.
- The necessity to maintain the status of the node to ensure continued service delivery to communities and the region.
- The future function and role of a node in the region, including its role in the national space.
- The role of the higher order nodes in terms of:
  - the productive region and gateway function (refer to Section 4.3.4),
  - connectivity (intra- and inter regional), and
  - developmental and investment opportunities.

The potential investment in public and private funds should therefore not be based on a hierarchy where the larger or more important nodes receive larger financial support, but rather to invest in the nodes depending on their unique contribution and role within the Province and the country.

Subsequently, the nodes for the Limpopo Province are depicted in Figure 43 and Table 22 described hereinafter.

The nodal classification in terms of function in the nodal network will be addressed in this section. Nodal role, in terms of nodes servicing as gateways to productive regions, will be addressed in Section 4.3.4.

Figure 43: Network of functional settlement nodes



Provincial nodal classification

The functional classification of nodes in the province includes the following typologies. This typology was based on aspects such as the level connectivity of the node (role as central place in economic and social systems), economic development diversity and intensity and prospects for growth, population growth, and need for spatial transformation.

Table 21: Provincial Nodal Classification

Nodal Classification	Description
National Urban Node	National Urban Nodes (previously known as Provincial Growth Points) represent urban core areas or nodes within in the Province which is also recognised in the national spatial context. These urban core areas have established and diverse economies, together with a range of higher order social and government services, rendering them existing and/or future core nodes in the provincial and national economy. They should be managed as compact, productive, sustainable, inclusive and well-governed urban areas. It is acknowledged that the bulk of future economic development will be undertaken by the private sector, but should be supported by public investment in quality engineering infrastructure and social services, in order to serve the rapid urbanisation and population growth. Continued investment in infrastructure and social facilities is therefore a prerequisite to maintain these nodes' status and national role.
Provincial Urban Node	Provincial Urban Nodes (previously also known as Provincial Growth Points) represent the fast growing urban areas or nodes within the Province, both in terms of population growth and prospects for economic growth. Settlement growth should preferably be consolidated in the existing large and emerging and fast-growing urban nodes. However, the development and emergence of new cities in identified densely populated and high-potential transformation corridors, should be proactively supported. Most of these existing urban nodes have established and diverse economies, together with a range of higher order social and government services contributing towards its preference for human settlement development. However, some nodes are currently experiencing rapid urbanisation and population growth but lacks the necessary infrastructure and bulk services to growth and investment. Although these nodes have immense resource potential, predominantly mineral and agriculture, they require a consolidated effort to ensure development and economic prosperity. Unlike National Urban Nodes however, these Provincial Nodes require public sector intervention and investment to ensure that future economic development will be undertaken by the private sector. Investment in new or additional engineering infrastructure and social services to serve the fast-growing local population, is therefore necessary.
Regional Development Anchors	Regional Development Anchors (previously known as District or Municipal Growth Points) comprise nodes which are strategically located in productive rural regions and priority national development, trade and transport corridors. These nodes provide a range of services within the specific towns/cities and surrounding network of settlements and productive rural regions, of which most of them are very well positioned along the national and provincial movement networks and have a strong resource base (including mineral potential and agricultural activities), whilst others represent large rural settlement clusters, but with very small economic and institutional bases, and very limited local resources on which to build. They function as high order service centres, have relatively large local populations, and have relatively well established institutional cores, and most of them, relatively strong economies. However, while some of them may have well-established local economies, others lack economic-and engineering infrastructure due to years of under-investment or due to recent rapid population growth. Despite the above mentioned, all these nodes have potential for economic growth, which should be supported by public investment in infrastructure. However, high levels of public investment are needed to unlock the potential of historically under-invested nodes. Regional Development Anchors must be supported and strengthened through:

Nodal Classification	Description
	▪ Targeted settlement planning and development ▪ Higher-order social infrastructure provision ▪ Focused support for small and medium-sized enterprise development, industrialisation and economic diversification These development anchors should further: ▪ Serve as rural regions for commuting labour to reside in, and contribute to the local economy, instead of commuting to larger towns or cities on a daily or weekly/monthly basis ▪ Create gateways and interchanges on the regional public transportation network, and to incorporate it into the planning of 'functional rural regions' ▪ Connect traditional areas and rural settlements with higher-order urban settlements and economic systems in functional rural regions, by making use of the road and rail network and regional corridor development ▪ Use investment and planning of social infrastructure to establish and create well-functioning, compact and lively rural settlements and 'regional rural systems'
Rural Service Centre	Rural Service Centres (previously also known as Rural Nodes or Service Points) generally have limited economic and institutional bases at present. Social services are to be consolidated at these nodes to efficiently serve the extensive surrounding rural communities. Although small local economies might emerge over time because of the proposed agglomeration of public services, it is acknowledged that the economic potential of these nodes is less than in Urban Nodes and Regional Development Anchors. The focus should thus be on community infrastructure and not necessarily economic infrastructure. Rural development must be supported through this network of prioritised service centres where people in rural areas and settlements can be optimally provided with municipal and social services, and where rural logistics and support can be provided to support rural development. Specific support must be provided to: ▪ Towns that act as border towns and trade posts ▪ Growing towns in border regions ▪ Town in dense rural settlement regions. Consolidation within nodal centres and rural design is required.

The designated place of the nodes in the nodal functional hierarchy is summarised in Table 22 below:

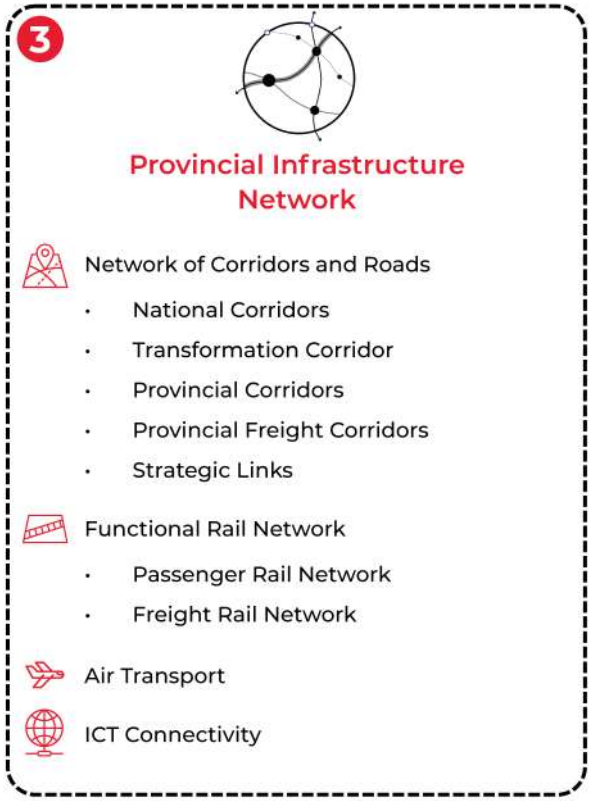
Table 22: Nodal Hierarchy and Roles

Map key	Functional classification	Settlement or cluster	Local Municipality	District Municipality
	National Urban Node	Polokwane/Mankweng	Polokwane	Capricorn
		Tzaneen/Lenyenye/Nkowankowa	Greater Tzaneen	Mopani
	Provincial Urban Node	Thohoyandou/Sibasa	Thulamela	Vhembe
		Mokopane/Mahwelereng	Mogalakwena	Waterberg
		Phalaborwa/Namakgale/Lulekane	Ba-Phalaborwa	Mopani
		Burgersfort/Tubatse/Driekop	Fetakgomo Tubatse	Sekhukhune
	Regional Development Anchors	Giyani	Greater Giyani	Mopani
		Senwabarwana	Blouberg	Capricorn
		Lebowakgomo	Lepelle Nkumpi	Capricorn
		Groblersdal	Elias Motsoaledi	Sekhukhune
		Musina	Musina	Vhembe
		Makhado	Makhado	Vhembe
		Lephalale	Lephalale	Waterberg
		Modimolle	Modimolle-Mookgophong	Waterberg
		Thabazimbi	Thabazimbi	Waterberg
		Jane Furse	Makhuduthamaga	Sekhukhune
		Hoedspruit	Maruleng	Mopani
	Local Service Centre	Mogwadi	Molemole	Capricorn
		Ga-Kgapane	Greater Letaba	Mopani
		Modjadjiskloof	Greater Letaba	Mopani
		Atok	Fetakgomo Tubatse	Sekhukhune

Map key	Functional classification	Settlement or cluster	Local Municipality	District Municipality
		Serokolo	Fetakgomo Tubatse	Sekhukhune
		Marble Hall	Ephraim Mogale	Sekhukhune
		Elim	Makhado	Vhembe
		Malamulele	Collins Chabane	Vhembe
		Rebone	Mogalakwena	Waterberg
		Bakenberg	Mogalakwena	Waterberg
		Vaalwater	Modimolle-Mookgophong	Waterberg
		Mookgophong	Modimolle-Mookgophong	Waterberg
		Bela Bela	Bela Bela	Waterberg
		Northam	Thabazimbi	Waterberg
		Thabo Mbeki	Lephalale	Waterberg
		Mutale	Musina	Vhembe
		Ohrigstad	Fetakgomo Tubatse	Sekhukhune
		Steelpoort	Fetakgomo Tubatse	Sekhukhune
		Metz	Greater Tzaneen	Mopani
		Gravelotte	Ba-Phalaborwa	Mopani
		Monsterlus	Elias Motsoaledi	Sekhukhune
		Motetema	Elias Motsoaledi	Sekhukhune
		Dzumeri	Greater Giyani	Mopani
		Morebeng	Molemolle	Capricorn
		Alldays	Blouberg	Capricorn

4.3.3. Provincial Infrastructure Network

This section sets out spatial proposals to ensure that the provincial connectivity and movement infrastructure systems are strategically located and extended, to support a diverse, ecologically sustainable, adaptive, regenerative and inclusive economy.



4.3.3.1. Spatial Strategies

Develop a functional network of corridors and roads in support of good connectivity between nodes and to support regions

- Nodes should be connected to each other to increase mobility and ensure access to goods and services.
- Ensure proper connectivity to other areas (provinces and countries).
- Distinguish between the different functions of corridors, i.e. public transport and freight transport.
- Acknowledge the role that certain routes play in the national spatial structure.
- Provide for freight corridors that would improve the efficiency of the road freight transport system in the Province.
- Provide for freight corridors with recognition of international cross border corridors.

Develop a functional railway network in support of transport of people and goods

- Provide for freight rail facilities that would improve the efficiency of the freight transport system in the Province.
- Provide in a passenger rail network for passenger rail transport and commuter facilities between nodal areas and in support of spatial transformation to be developed in the Province over the long term.

ICT network

- Expand the province's broadband connectivity network in critical areas.

4.3.3.2. Spatial Proposals and Development Guidelines

Connectivity or linkages between nodes, both on inter-regional and intra-regional level, is crucial to support the nodes and to ensure that nodes function optimally. The point of departure is that good connectivity stimulates and ensure economic activity and support the development potential of nodes.

Good connectivity could only be obtained by means of a proper road and rail networks and the identification of strategic linkages or corridors. The strategy in this spatial development framework is therefore to ensure that nodes are connected by means of functional corridors.

Corridors are functional transport links that carry people or goods between nodes or other regions. It can either consist of road or rail corridors. However, corridors in this context does not include development corridors or other geographical areas targeted for investment or land development, unless specifically mentioned.

The priority of corridors is to ensure that all nodes within the Province are well connected to each other (intra-regional connectivity) or to areas outside the Province (inter-regional connectivity).

Intra-regional connectivity implies:

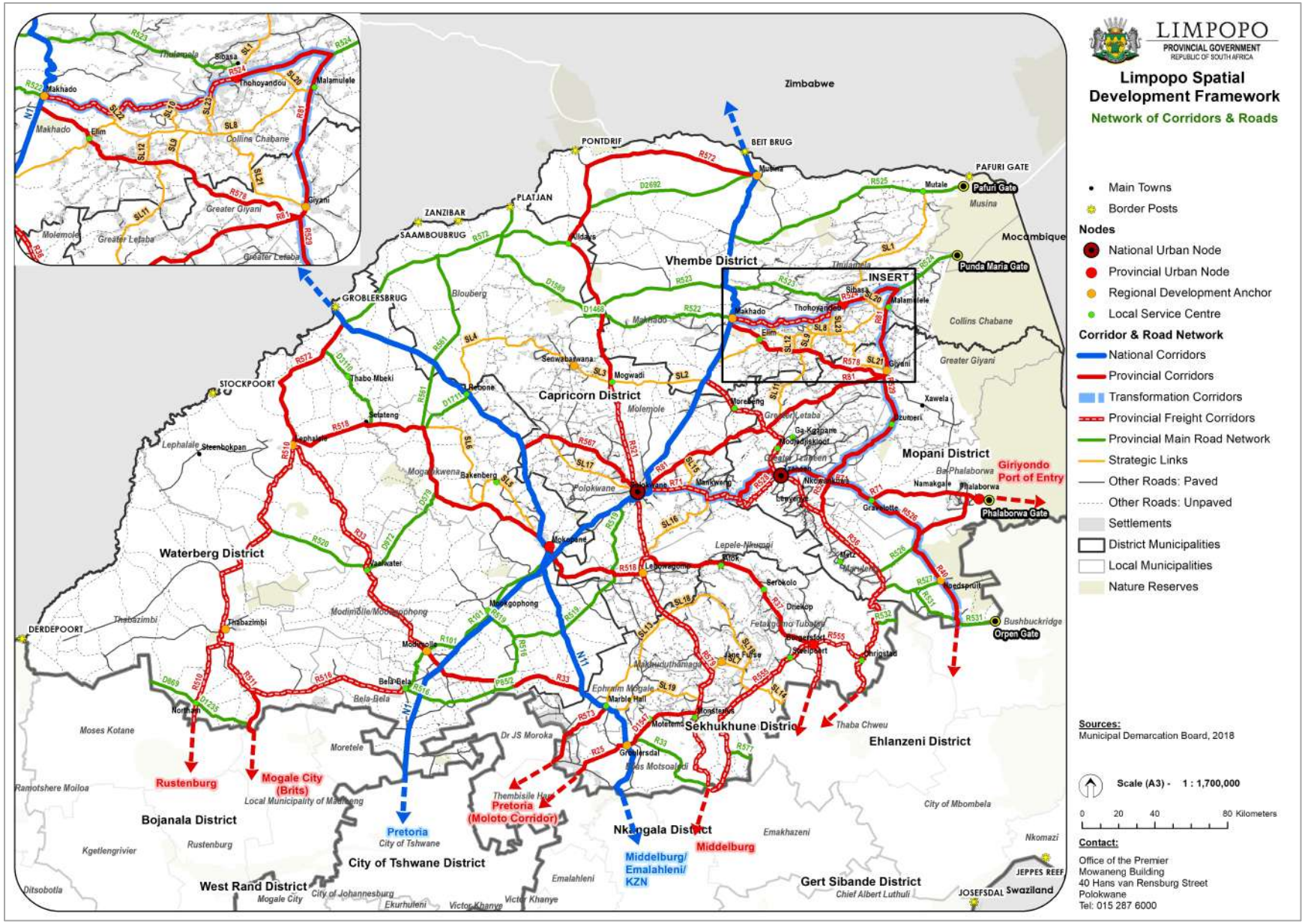
- all nodes must be well connected to each other, and
- all urban nodes must ensure a high level of access to rural hinterland areas and lower order nodes (local service centres).

The provincial road network is depicted in Figure 44.

The corridors and strategic road network consist of:

- National Corridors
- Transformation corridors
- Provincial Corridors
- Provincial Freight Corridors
- Strategic Links

Figure 44: Network of corridors and roads



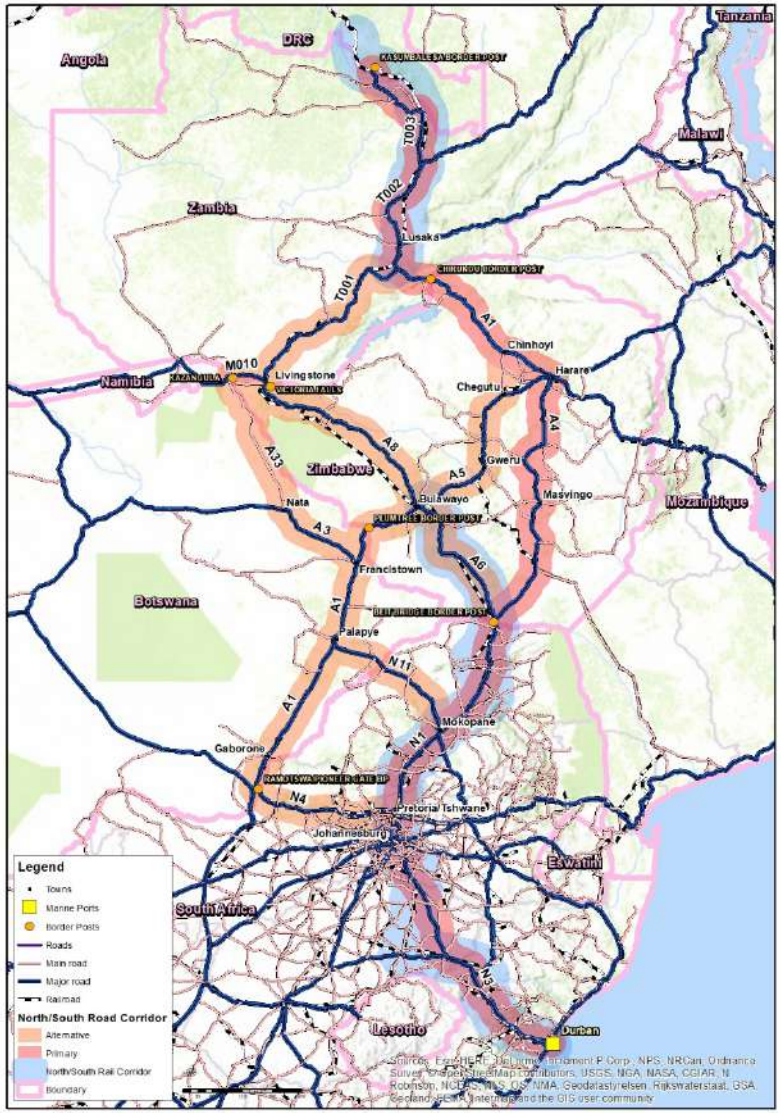
Network of Corridors and Roads

The network of corridors and roads in the province is as follows:

Table 23: Network of Corridors and Roads

Corridors and Roads	Description
National Corridors	The National Corridors include key national roads and derive their names from its national importance and serves the national interest of South Africa as well as the interest of the Province. The Province therefore supports the national request to maintain and strengthen these corridors because they also serve as inter-regional and National Development Corridors whereby these roads must be: ▪ Adequately planned for and enable SADC-focused trade, which includes: – a focus on SADC corridors, and – improving cost and efficiency at border and port facilities to handle greater international and regional trade flows. ▪ Ensure that all the roads in this network are appropriately surfaced and the key routes prioritised for regular maintenance. ▪ Logistics hubs, ports (airports) and border posts are maintained and expanded, and their capacity and efficiency optimised. The National Corridors in the Province as depicted in Figure 44 include: ▪ The N1 from Gauteng in the south passing many towns in the Province up to the Beit Bridge port of entry in the north at the border with Zimbabwe. This corridor serves both as public/tourist transport and road freight route. It should further be noted that this corridor forms part of the SADC North-South corridor that carries traffic between the countries of DRC, Zambia, Zimbabwe and South Africa (Trans-Limpopo Corridor). ▪ The N11 running from Mpumalanga in the south across the N1 (at Mokopane) and up to Grobler's Bridge port of entry with the Botswana border. This route serves as an alternative to the Gauteng-Zimbabwe corridor, for long distance traffic that wants to avoid congestion and long waiting times at Beitbridge border post. As in the case with the N1, it also serves as public transport and tourism route (East West Corridor). The draft Limpopo Province Land Transport Framework (Limpopo Dept. of Transport and Community Safety, 2023) mentions that: "*The Trans-Limpopo Corridor and the East-West Corridor form part of the larger North-South Corridor that links the ports of Durban and Richards Bay to the Copperbelt in Zambia and the DRC.* *The N1 up to the Beit Bridge Border Post between South Africa and Zimbabwe (also known as the Trans-Limpopo Corridor connecting Polokwane with Musina) as well as the N11 from Mokopane to the Groblersbrug / Martin's Drift Border Post between Botswana and*

Corridors and Roads	Description
	South Africa (also known as East West Corridor linking Polokwane via Mokopane to Botswana) are both located in Limpopo and form part of the NSC." The North-South Corridor routes as depicted in Figure 45 include: ▪ From Zambia to Harare (through the Chirundu border post), Beitbridge, Gauteng and ultimately the Port of Durban. ▪ From Zambia into Zimbabwe (through the Livingstone border post), to Beitbridge, Gauteng and the Port of Durban. ▪ From Zambia into Botswana (through the Kazungula border post), into South Africa (through either the Grobler's Bridge or Lobatse border post), to Gauteng and the Port of Durban. **Figure 45: International North South Corridor routes** *Source:* (Limpopo Dept. of Transport and Community Safety, 2023)



Corridors and Roads	Description
Transformation Corridor	The Transformation Corridor is concerned with the national interest of transforming the north-eastern parts of the Province as intended with the Eastern Escarpment Spatial Transformation and Economic Transition Region (STETR) as set out in the National SDF (DALRRD, National Spatial Development Framework, 2022), located in the eastern part of the province. In the LSDF, the corridor is recognised as supporting the Eastern Escarpment STETR. However, in provincial context it still fulfils the function as Provincial Corridor with a wider impact on the Province and to ensure connectivity to Mpumalanga Province. The following national priorities in terms of connectivity and the provincial road network are adopted as strategic intervention in Limpopo Province: ▪ Extend and improve the transportation networks, ensure regular maintenance and upgrading of existing infrastructure, notably roads, and enhance urban-rural and rural-rural connectivity. ▪ Provide road infrastructure to support: – consolidated settlement development and support the development of new cities in the Eastern Escarpment STETR, – the development of a network of strong and vibrant existing and emerging cities and large towns to fulfil the role of nodes and local service centres, – fast-growing formal and traditional settlement areas within a strategic network of nodes, and – the tourism sector and creative industries in the area, with an emphasis on small-and-medium-sized farming activities and agri-eco production. ▪ Introduce and upgrade transport infrastructure with a focus on: – human settlements development (housing), – basic service delivery, – public transport, and – rural-urban and rural-rural connections, which will also act as a trigger for enterprise development and expansion.
Provincial Corridors	As in the case with national corridors, the identified Provincial Corridors serve national and provincial interest by ensuring that: ▪ all nodes within the Province are well connected to each other, and ▪ all nodes in the Province are well connected to other provinces and nodes outside the province. The highest priority in the identification of these corridors was to ensure that the National Urban Nodes, Provincial Urban Nodes and Regional Development Anchors are well connected to each other by means of a system of corridors using the provincial primary road network. These corridors are further supported by other provincial R-routes as part of the primary road network of the province as well as other district roads (D-routes). The national corridors discussed in above also complete the provincial corridors and connectivity between nodes. The Provincial Corridors depicted in Figure 44 include:

Corridors and Roads	Description
	▪ R510 from the boundary with Nort-West Province close to Northam up to Lephalale. The future connectivity via this route to Rustenburg in the Nort-West Province is regarded as essential in supporting economic interaction. ▪ R511 from Thabazimbi to Mogale City in the North-West Province. ▪ R516 from the R511 to Bela-Bela and the N1. ▪ R572 from Lephalale to the N11 close to the border with Botswana. Together the R510 and R572 serve as corridor. ▪ R518 from Lephalale to Mokopane and the N1. ▪ R518 from Mokopane to Lebowakgomo and connecting to the R37 towards Burgersfort and Mpumalanga. ▪ R37 from Polokwane to Burgersfort and onwards to Mashishing in Mpumalanga and finally to Kwazulu-Natal. ▪ R33 from Lephalale via Modimolle over the N1 to the N11 which then connects to Marble Hall and Groblersdal and eventually into Mpumalanga (Middelburg and eMalahleni). ▪ R521 from Polokwane to Alldays. ▪ R572 from Alldays to Musina and the N1 which finally links with Beit Bridge into Zimbabwe. ▪ R71 from Polokwane via Tzaneen and Gravelotte to Phalaborwa, and finally into the Kruger National Park. ▪ R81 from Polokwane via Mooketsi to Giyani where it joins the National Eastern Escarpment Transformation Corridor. ▪ R36 from the N1 close to the Capricorn Toll Plaza via Morebeng, Mooketsi, Modjadjiskloof and Tzaneen to Orighstad and eventually into Mpumalanga. ▪ R578 from n1 close to Makhado via Elim to the R81 close to Giyani. ▪ R573 from Marbel Hall to the border at Siyabuswa in Gauteng towards Pretoria (known as the Moloto Corridor). ▪ R25 from Groblersdal to the border with Gauteng at Dennilton/Elandsdoring. ▪ D1547 from the R33 just outside Groblersdal via Motetema to the R579 at Monsterlus. ▪ R579 from the R37 just outside Lebowakgomo passing west of Jane Furse to the border where it joins the R33 in Mpumalanga where it runs to Belfast and eventually towards Kwazulu-Natal. ▪ R555 from Orighstad via Burgersfort and Steelpoort to the border with Mpumalanga to Middelburg and eMalahleni. ▪ R40 from Phalaborwa via Hoedspruit to Mpumalanga.
Provincial Freight Corridors	The identified Provincial Freight Corridors' function is to ensure movement of freight commodities in the Province. It further accommodates large volumes of transit traffic, specifically traffic travelling between countries, ports, provinces and nodes. Key commodities being produced in the Province and for which the Provincial Freight Corridors has been identified are: ▪ Mining: Coal, magnetite, stone, limestone, rock phosphate and chrome. ▪ Manufacturing: Processed food, cement, bricks, animal feed, ferrochrome. ▪ Agriculture: Forestry, citrus, vegetables, maize.

Corridors and Roads	Description
	The Limpopo Provincial Land Transport Framework (PLTF) (Limpopo Dept. of Transport and Community Safety, 2023) indicates that "*A strategic freight network was developed for the province, to identify key road and rail infrastructure and facilities that enable freight movement, and to prioritise this network for future preservation and for rollout of any future programmes in support of freight movement.* *By focussing resources on a strategic freight network, one can achieve improved efficiency along key corridors. It can also reduce freight transportation's environmental impact by promoting increased utilisation of rail transport, where appropriate.* *The strategic freight network integrates the different modes of transport into a single network, for the efficient movement of goods and products from the point of origin to the point of consumption. This can also involve the use of terminal facilities that enable the transfer of freight between different modes of transport*." The Provincial Freight Corridors as depicted in Figure 44 follows the strategic freight network proposals from the PLTF. The strategic freight network include in instances only certain parts of the Provincial Freight Corridor or the other primary road network, namely: ▪ R71 from Polokwane to Haenertsburg thereafter it follows the R526 through Tzaneen and thereafter following the R36 south towards Mpumalanga. This corridor caries large volumes of agricultural products, and specifically forestry related products. (part of the Phalaborwa Corridor). ▪ R524 from Thohoyandou to Makhado; which is also part of the forestry network and in support of industrial activity in Thohoyandou and area. ▪ R33, R516 and R510 routes which support mining related activities around Lephalale and Thabazimbi to North-West Province in the south-west, and in a southern direction to Mpumalanga and Gauteng with connection to the N1. (East West Corridor) ▪ R521 from Polokwane to Mogwadi (north) and the R37 to Lebowakgomo (south), to support local industrial activity. (Dilokong Corridor). ▪ The R555, R33 and R36 from Burgersfort and Steelpoort to Mpumalanga. The R555 route supports mining related activities, linking up with the R33 and the R36 to cross into Mpumalanga.
Strategic Links	Strategic Links (SL) are identified routes that either need to be upgraded to a higher level (e.g. from district to provincial route) or need at least to be maintained properly in order to ensure proper connectivity between nodes, and to hinterland areas (urban-urban; urban-rural). Many of these links are not only important to link the nodal areas, but provide critical access to a large number of rural settlements, especially in the Eastern Escarpment Spatial Transition and Economic Transition Region. These routes mainly include identified district roads. It is proposed that: ▪ The maintenance of these routes should receive high priority. ▪ The possible upgrading to Provincial R-routes be investigated by the roads authorities

Corridors and Roads	Description
	As depicted in Figure 44 these links include: ▪ SL1: Local Road P227/1 from Sibasa (Thohoyandou) to Mutale. ▪ SL2: Road D1200 (extension of the R36) from the N1 close to the Capricorn toll gate to Mogwadi. ▪ SL3: Road D1200 from Mogwadi to Senwabarwana. ▪ SL 4: Road D1200 from Senwabarwana to Rebone at the N11. ▪ SL 5: Road D3500 and D4380 from R518 close to Mokopane, passing through Ga-Mapela to Bakenberg and back to the D192 close to the R518 at Lyden. ▪ SL 6: Road D192 from the R518 close to Lyden passing rural settlements such as Rantlakane, Jakkalskuil and Ga-Monare to road D1711 and the R518 at Marken. ▪ SL7: From the R555 at Ga-Malekana following the D2219 road through Jane Furse to the R579 close to Ga-Moloi. ▪ SL 8: Road D4 from the N1 through Elim, passing Vuwani up the D3756 (SL20) close to Malamulele. ▪ SL 9: Road D3744 from the D4 (SL8) route to road R578 close to the new Nkuna Mall at Ka-Majosi. ▪ SL 10: Road D 1253 from Tshukuma to D4 (SL8) route. ▪ SL 11: From the R578 following roads D3827, D3150 and D11 to the R81. ▪ SL 12: Road D3748 from the D4 (SL8) route to road R578. ▪ SL 13: From Marble Hall following the D2534, D4356 and D4100 routes to the R579 at the Apel Fourway Crossing, approximately 25km from Lebowakgomo. ▪ SL 14: From the R555 following the D212 route up to the border with Mpumalanga, eventually leading towards the R37 to Mashishing (Lydenburg). ▪ SL 15: From the R81 following the D844 route at Sebayeng to the D617 road at Mankweng. ▪ SL 16: From R71 close to Moria following the D4020 and D4040 to the R37 just before Chuenespoort. ▪ SL 17: The D19 Matlala road from Polokwane to the R567 at Tibane. ▪ SL 18: From the D2219 (SL7) at Jane Furse following the D4190, D4204, , D191, and D4250 to the R579 at the Apel Fourway Crossing. ▪ SL 19: From the N11 approximately 5km outside Marble Hall, following the D4323, D4300, D4373, D988 and d4285 route to the D1547 at Maserumo on the way to Monsterlus. ▪ SL 20: The D3756 road from the R524 close to Thohoyandou to Malamulele. ▪ SL 21: From the D4 (SL8) close to Vuwani following the D3778 and D3634 routes to Giyani. ▪ SL 22: From the D4 (SL 8) road approximately 6km outside Elim following the local road over the Albasini Dam wall, linking with the R524 at Levubu between Makhado and Thohoyandou. ▪ SL 23: From the R524 at Mathule, following the D3750 road (known as the Vuwani-Zwkengani Main road) to D4 (SL8) close to Vuwani.

Functional railway network

The proposed railway network for the Province is depicted in Figure 46 and Figure 48 and deals with passenger railway and freight railway networks.

Existing passenger rail

Currently there is only one passenger rail service in the Province between Gauteng (Johannesburg) and Musina. According to the draft Limpopo Province Land Transport Framework (Limpopo Dept. of Transport and Community Safety, 2023), this passenger rail service was re-introduced in 2022 and only runs ones a month.

Proposed future passenger rail network

Since 2010, PRASA and the Department of Roads and Transport (DoRT) is investigating the possibilities of extending passenger rail services in the Province.

Initially the feasibility study identified the following corridors:

- Corridor A: Polokwane-Mokopane Commuter Corridor.
- Corridor B: Polokwane-Gauteng Improved service and considered as part of a new high-speed railway network for South Africa.
- Corridor C: Mankweng-Polokwane-Seshego passenger transport service.
- Corridor D: Polokwane-Jane Furse Regional Rail Corridor, via Zebediela and Lebowakgomo. This line has the potential to connect to the Moloto Corridor service, which connects Tshwane with the Greater Sekhukhune area.

Later on, the study only focussed on the following proposed passenger rail services, possibly as a first phase:

- Corridor A: Polokwane-Mokopane Commuter Rail Service.
- Corridor D: Polokwane Moloto Rail Corridor.

It is accepted that all the above-mentioned studies and proposals were based on older proposals and not taking the latest aspects such as the National SDF into account. Secondly, the LSDF also moves towards a somewhat different approach from the 2016 version.

Linking passenger rail facilities to remote areas (e.g. Makhado to Lephalale) with low prospects of human settlements development or where growth pressure is much lower, should not be supported from a strategic planning point of view.

For purposes of this SDF and in support of the spatial patterns and strategies described in this framework, the following is proposed.

That future passenger rail or commuter rail facilities should be focussed on linking nodes and other rural areas where the largest human settlements development and population growth in the Province is expected.

This includes major urban core areas such as Polokwane-Mankweng area, Lebowakgomo-Jane Furse-Tubatse area, Mokopane-Mahwelereng-Bakenberg area, Tzaneen-Nkowankowa area and the Makhado-Thohoyandou-Malamulele-Giyani area.

The Province and passenger rail should further be connected to nodes in other provinces, of which the linkage to Gauteng is already envisaged along the existing line between Johannesburg and Musina, and future High Speed Rail services.

The additional link from Groblersdal to Tshwane along the Moloto Corridor, is also another proposal already under investigation, and hence supported in these proposals.

Therefore, Figure 46 depicts a conceptual idea of linking the nodal areas with highest expected settlement development, mostly in rural areas, with passenger rail facilities.

These proposals are also consistent with ensuring proper connectivity of areas within the Eastern Escarpment Transformation and Economic Transition Region as envisaged in the National SDF.

It must however be accepted that the proposed routes/linkages are mostly strategic in nature and to be considered in any planned future passenger rail facilities to align with the long term spatial patterns of the Province. There are some proposed routes in the map (Figure 46) that indeed aligns

with existing railway lines, e.g. the branch line from Mookgophong to Zebediela. Although this railway line is part of the freight rail network (see Figure 48), it may be converted to passenger rail services or serve a dual purpose.

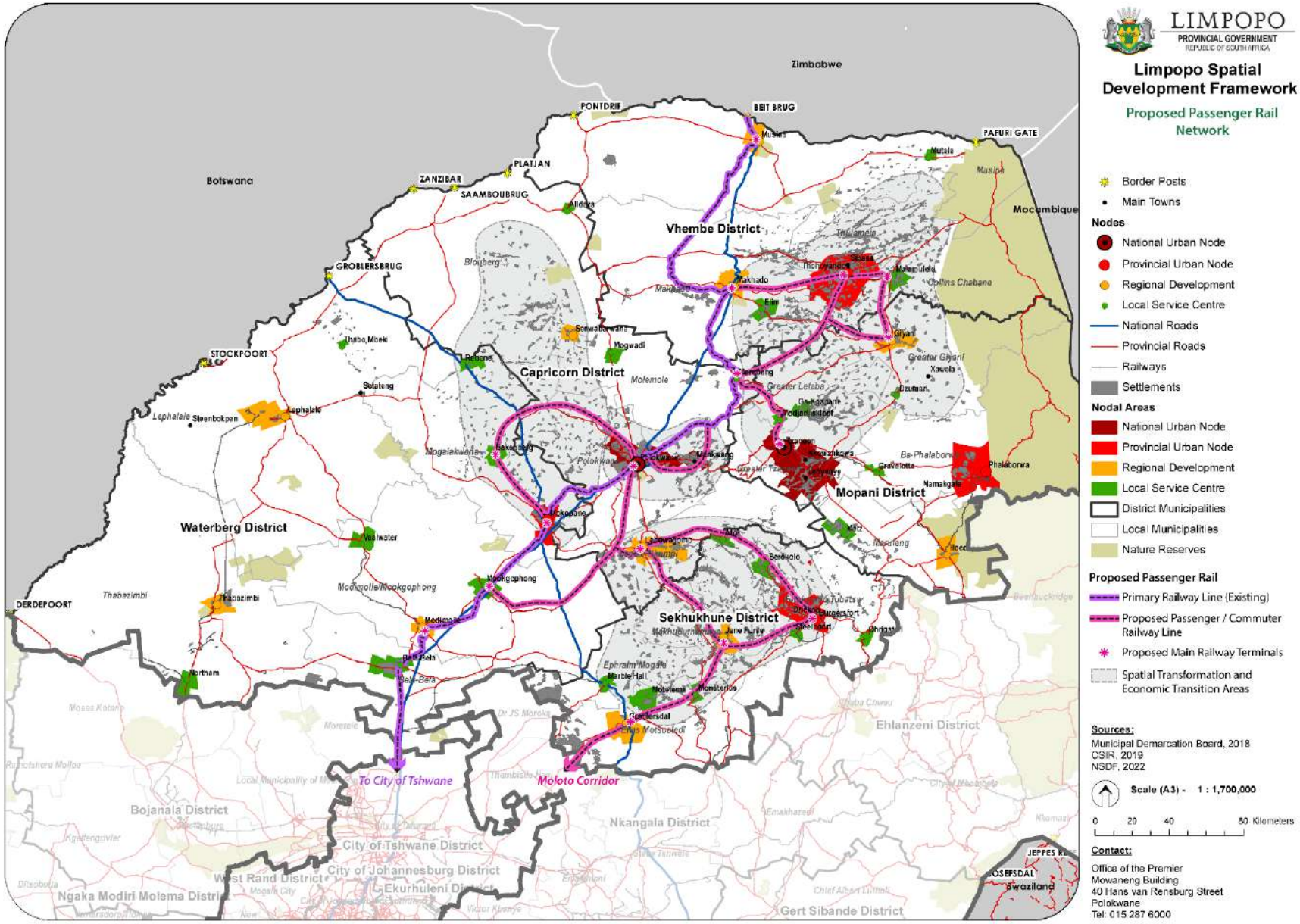
The rail authorities (PRASA and DoRT) should therefore investigate and refine the proposals and indicated routes/linkages in more detail.

Lastly, it must be realised that the proposals presented in this section should be regarded as a long term view dependent on feasibility – perhaps even a thirty year view, but it will provide strategic direction to planning authorities.

It is therefore proposed that a phased approach be taken as follows:

- First stage: Linking major Urban Nodes, such as Mokopane and Polokwane, Polokwane and Tubatse, Thohoyandou and Tzaneen, Polokwane and Tzaneen, with each other.
- Second stage: Linking second order nodes (Regional Development Anchors) with Urban Nodes, e.g. Makhado with Thohoyandou, Giyani with Thohoyandou, Jane Furse and Lebowakgomo with Polokwane and Tubatse, Groblersdal with the network and extending it into Gauteng, etc.
- Third stage: Ensuring that third order nodes (Local Service Centres) and rural areas/villages are connected to the network, e.g. Bakenberg with Mokopane and Polokwane running through rural areas/villages.

Figure 46: Proposed passenger railway network - Conceptual



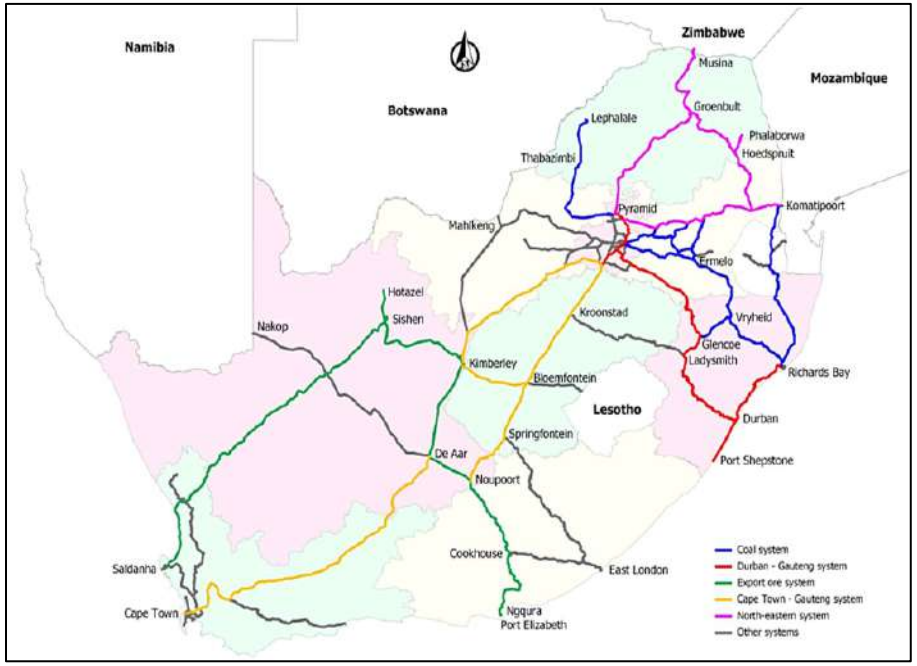
Existing freight rail network

Limpopo Province's freight rail network in South Africa includes two systems of Transnet's core network of five systems as depicted in Figure 47.

The two systems in Limpopo are the Coal System and the North-eastern System.

Figure 47: Transnet five freight rail network systems in South Africa

Source: (Limpopo Dept. of Transport and Community Safety, 2023)



The Province's freight rail network as depicted in Figure 48 consist of the following mainlines:

- Gauteng - Beit Bridge line: Pretoria – Polokwane – Musina – Beitbridge international mainline
- Groenbult – Mpumalanga line: This line has two parts in Limpopo and finally runs from Hoedspruit through Mpumalanga and eSwatini to Richards Bay in Kwazulu-Natal and Maputo. The sections include:
  - From Marobeng (Groenbult) via Tzaneen to Hoedspruit
  - From Phalaborwa to Hoedspruit
- Lephalale – Richard's Bay Rail Corridor: From Pretoria North (Pyramid) via Rustenburg to Thabazimbi and Lephalale.

The Gauteng to Beit Bridge mainline forms part of the SADC North-South corridor and links the DRC, Zambia, and Zimbabwe with South Africa's largest industrial hub in Gauteng, as well as onward journeys to the Ports of Durban and Richards Bay.

The Limpopo sections of the north-south corridor railway system mainly transports fuel, spare parts and general goods to Polokwane and Zimbabwe.

The Groenbult line from Marobeng via Hoedspruit to Mpumalanga connects the eastern parts of Limpopo to the ports of Maputo and Richards Bay, through Swaziland. This line also runs from Phalaborwa where it joins the Groenbult line at Hoedspruit.

The line predominantly carries magnetite and rock phosphate from Phalaborwa, as well as some agricultural products and fuel. It is also poised as the main artery for South Africa's eastern ports to capture over-border traffic across Beitbridge and further onto the North-South Corridor to Zimbabwe, Zambia, and the DRC.

The Lephalale to Richards Bay corridor, via the so-called Coal Line in Mpumalanga, is a bulk export line for coal deposits in Limpopo and Mpumalanga.

This system is predominantly sustained by feeder lines from the Mpumalanga coal fields, but it also receives exports from mines in Lephalale. Apart from coal, it also carries significant volumes of domestic iron ore and chrome.

The branch lines which are currently in-active include:

- Northam – Middelwit (and Dwaalboom) line which link to the Pretoria North (Pyramid) and Rustenburg at Boshoek.
- Pienaarsrivier – Marble Hall line which extends from Marble Hall to link with Pretoria – Polokwane – Musina – Beitbridge.
- Modimolle – Vaalwater which is currently closed. This line also links with Pretoria – Polokwane – Musina – Beitbridge.
- Mookgophong – Zebediela line links with Pretoria – Polokwane – Musina – Beitbridge.

The freight terminals in the Limpopo Province in support of the rail freight railway network include:

- Pietersburg Station (Polokwane)
- Phalaborwa container terminal
- Lephalale terminal

Revival and expansion of rail network

The current rail network should be maintained and it used at optimum capacity. Currently inactive branch lines should be considered for re-activation.

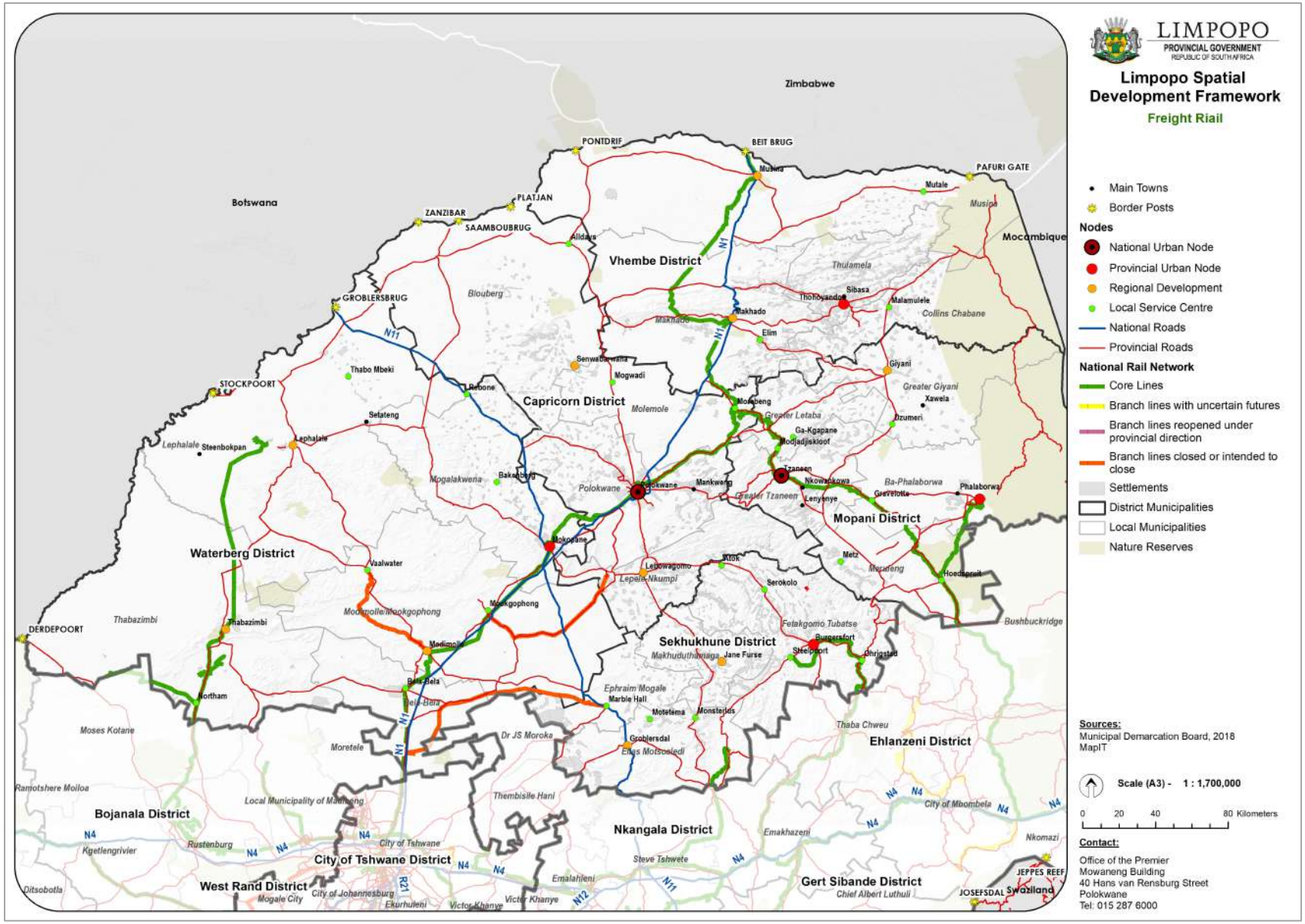
The expansion of the rail network in Sekhukhune should be considered, even in in the form of a public-private partnership. This is required to alleviate pressure on the road network and to support future economic diversification.

Planned international freight rail network

The rail authorities plan to extent Lephalale - Richards Bay corridor/line from Lephalale over the Limpopo River close to the Stockpoort port of entry into the rich coal fields of Mahalapye in Botswana. This initiative is captured in the Botswana National Spatial Plan 2036.

The Botswana National Spatial Plan 2036 also proposes a link between Palapye and Polokwane.

Figure 48: Freight rail network



Air transport

The three airports in Limpopo which can be regarded as meaningful include:

- Polokwane International Airport (formerly known as Gateway International Airport) in Polokwane.
- Eastgate Airport in Hoedspruit.
- Kruger Park Gateway Airport in Phalaborwa.

There are also several municipal airfields or civil airports throughout the province. They are mostly used for private small aircraft and not for commercial use as in the case with the airports.

The Polokwane International Airport is located on the fringe of Polokwane City. This airport was converted in the late 1990's from the former Pietersburg Air Force Base. It is now an international port of entry into Limpopo Province and offer both passenger and cargo transport services.

The Eastgate Airport in Hoedspruit is a commercial airport located on a part of the Hoedspruit Air Force Base which was converted into an airport in the 1990's. It serves passengers mainly visiting Kruger National Park and several private game reserves in the area. The locality close to the Phalaborwa and Hoedspruit Tourism Gateways referred to in Section 4.3.4, makes it ideal to promote tourism in the area.

The Kruger Park Gateway Airport, also known as the Phalaborwa Airport, is located on the fringe of Phalaborwa town and 2km from the Phalaborwa gate of the Kruger National Park. It offers national flights and as in the case of Eastgate Airport, it is ideal to promote tourism in the area.

It is proposed that the Polokwane International Airport retain its international port status, and that Eastgate Airport and Kruger Park Gateway Airport (Phalaborwa) be used a "link airports" for flights from OR Tambo or Polokwane to support the tourism industry.

There are also plans to upgrade Hoedspruit Airport with an international air licence to develop the area as a precinct.

ICT network

Information and communication technology connectivity is critical for both business / economic development and social development including access to education resources.

It is proposed that measures be investigated to improve ICT connectivity province wide, focussing a priority on (1) the entire nodal network and (2) the provincial spatial and economic transition areas as described in Section 0.

Alternative options to land based systems should be considered due to the inaccessibility of some of the rural settlements and rural nodes, e.g. satellite technology. Public-private partnerships should be explored in this regard.

4.3.4. Provincial Productive Regions

An integrated, regional approach to development is proposed, where specific development and investment guidelines are provided based on a productive regional development typology. The regional development typology is guided by the dominating land uses and economic potential of each region, as well as the need for inclusive growth and spatial transformation while at the same time ensuring the sustainable use of natural resources.

The elements of a productive region are:

- A regional nodal network consisting of a main node or regional development anchor and smaller nodes and service centres. In this context, the role or function each node fulfils in the province and within a specific region is more significant than its mere hierarchic classification. In a regional context, the nodes serve as “gateways” to or as “hubs” for a productive rural region.

  A **gateway** is a node with its own identity that serve as an entrance to an area with common elements, components of a specific economic value chain, or a region.

- A connective infrastructure network, supporting the nodal network as well as connections beyond regional boundaries.
- Urban production areas, e.g. industries and logistics facilities.
- Rural production areas, e.g. small scale and large scale commercial agriculture, tourism routes, facilities and attractions, mining and power generation.
- In some instances, rural residential settlements containing elements of subsistence agriculture.
- The natural resource base supporting the productive elements, including high potential agriculture land, mineral resources, water sources and natural features including sensitive ecosystems.

4.3.4.1. Spatial Strategies

Support productive regions through a regional development approach

The systems of nodes and connecting infrastructure is nestled in productive regions. As alluded to in Section 4.3.2, the nodes do not exist in isolation. They fulfil a central place function in their areas of influence or hinterland, but at the same time also act as gateways to certain production functions and natural assets that are located in surrounding regions.

To ensure a focused development and investment approach that recognises the interrelated nature of the elements of productive regions referred to in Section **Error! Reference source not found.**, as well as the unique characteristic of specific regions, three broad, integrated productive regions were identified in Limpopo Province.

For the purpose of the LSDF, a **productive region** is defined as a functionally linked area with an interconnected system consisting of nodes which serve as gateways to economic activity, connective infrastructure that is the conduit for moving people, goods and information, areas of value adding urban economic activity (e.g. manufacturing, retail, services), and areas of value adding rural economic activity (e.g. mining, agriculture and tourism).

For the purpose of delineating the productive regions, the following spatial criteria were used:

- Areas with functional economic linkages, for example where related economic activities take place and / or where different elements of the economic value chain are functioning in a connected system.
- Areas with functional social linkages, for example where social services are delivered and accessed by surrounding communities.
- Current administrative boundaries were given preference where functionally possible to ensure ease of implementation in local spatial planning and monitoring of implementation.

The three regions are mostly aligned with District boundaries for ease of implementation, with the exception of the area around Mokopane that was included in the Central Region for functional reasons.

The three regions are:

Western Region

This region is characterised by a mix of mostly extensive agriculture, and crop farming concentrated to the east of the N1 and cattle and game farming/game reserves across the region. It contains the Waterberg Biosphere Reserve and Marakele National Park, with the natural assets of the Reserve holding high tourism potential. In addition, the region boasts a number of mines, with clusters of mining activity near Northam and Thabazimbi in the south (part of the Western Limb of the Bushveld Igneous Complex stretching into North West Province) and the Waterberg coalfields with the coal-fired power stations in the vicinity of Steenbokpan / Lephalale, all forming part of SIP1. The region is in need of more focused economic diversification, with the western and southern parts of the region being very reliant on mining as a single industry sector.

In terms of human settlement form, this region is characterized by settlements mostly concentrated in towns, with a small densely populated rural settlement cluster east of Lephalale.

This region mostly aligns with Waterberg District.

Central Region

The central region in general has a high intensity development pattern, centred around nodes such as Polokwane, Mokopane and Burgersfort. It contains the main provincial node, Polokwane, as well as major mining areas around Mokopane, and along the R37 to Burgersfort and Steelpoort area, part of the Northern and Eastern Limb of the Bushveld Igneous Complex. It has both urban and rural population concentrations, which are growing. The region has a strong investment focus on economic diversification and industrialisation, including a proposed SEZ/industrial hub near Burgersfort / Steelpoort, with the mining supplier park to support the surrounding platinum and chrome mining activities, the Industrial Park in Seshego (Polokwane) and the planned expansion of platinum mining north-

east and south-east of Mokopane. Polokwane has a central place in the provincial logistics network, with the four provincial freight corridors converging in Polokwane. Mogalakwena is part of the national Hydrogen Valley initiative and the end point of the hydrogen corridor stretching from Durban.

The region is also home to growing rural residential settlements located around nodes such as Burgersfort, Jane Furse, Lebowakgomo, Groblersdal and Senwabarwana. The nodes in the rural settlement areas require focused investment to strengthen their service offering and connectivity to the surrounding area, whilst the sprawl of the rural residential areas need to be contained.

This region mostly aligns with Capricorn and Sekhukhune Districts, but includes a small part of Waterberg District around Mokopane.

Part of this region, as far west as Senwabarwana, falls within the national Eastern Escarpment Spatial Transformation and Economic Transition Region as provided for in the National SDF, 2022.

Eastern Region

The Eastern Region is a mix of different types of agriculture, ranging from high production commercial irrigation agriculture, game reserves to subsistence farming. The region is known as the sub-tropical fruit basket of the country with Tzaneen as the main urban node. It contains vast natural features and assets, including part of the Kruger National Park, the Mapungubwe Word Heritage site, the Vhembe Biosphere Reserve as well as part of the Kruger to Canyon Biosphere Reserve. In its northern area, the developing industrial and logistics area around Musina features the Musina-Makhado SEZ. Over time, the development of this urban production area and the strong link provided by the N1, may place it more appropriately in the Central Region, forming part of the central development spine of the province.

Existing mining activity of significance is concentrated at Phalaborwa and west of Musina (Venetia) with smaller activities in the Giyani and Vhembe area.

In addition to the agricultural, natural and cultural heritage areas, the region is home to a densely populated and growing rural residential area around Thohoyandou, Giyani and Nkowankowa/Lenyenye. The inert potential of the two nodes that are supporting the growing population, and the need to fully develop the nodes and connections to the nodes, require a critical development intervention. The sprawling settlements should also be managed and contained to prevent encroachment on natural and agricultural areas.

This region aligns with Vhembe and Mopani Districts.

Most of this region falls within the national Eastern Escarpment Spatial Transformation and Economic Transition Region as provided for in the National SDF, 2022.

The three regions are indicated in Figure 49.

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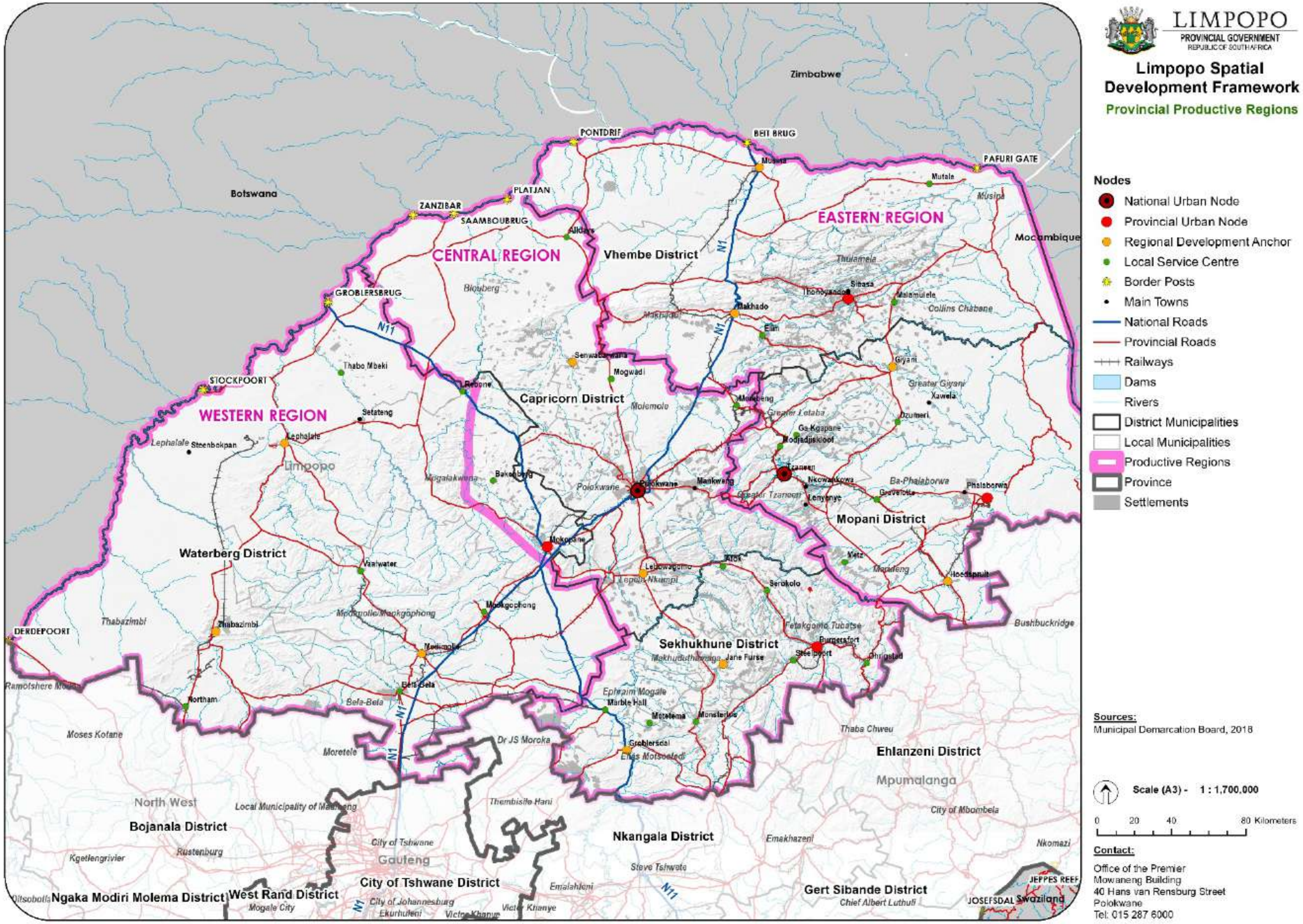
Figure 49: Provincial Productive Regions



4.3.4.2. Spatial Proposals and Development Guidelines

Western Region

The regional elements in the western region are as follows, also refer to

Figure 50:

Table 24: Proposals and Guidelines Western Region

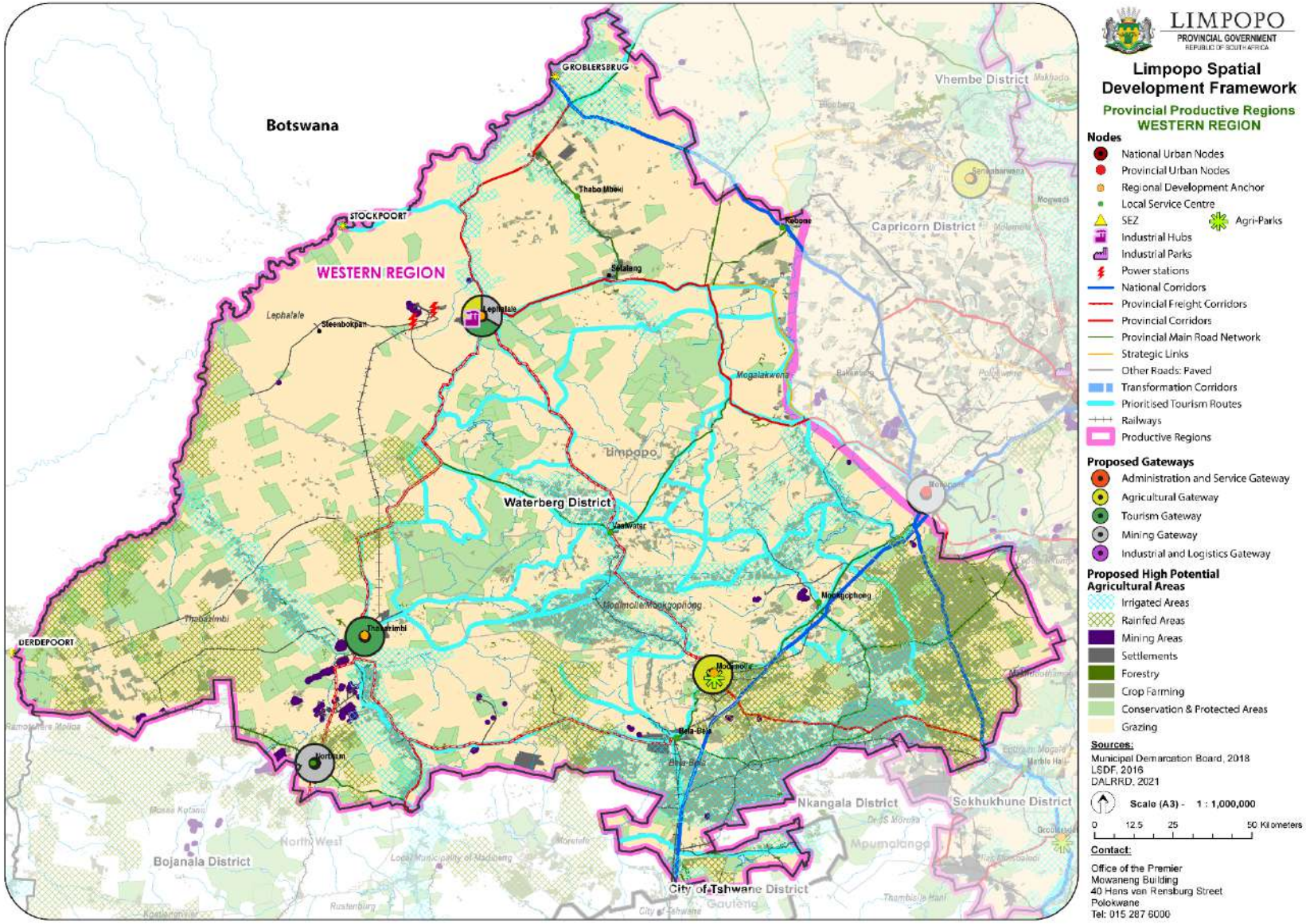
Regional Element	Proposals and Guidelines
Regional nodal network Regional Development Anchors: • Lephalale: Mining, tourism and agriculture gateway • Thabazimbi: Tourism gateway • Modimolle: Agriculture gateway Local Service Centres: • Northam (also acting as mining gateway) • Bela-Bela • Vaalwater • Mookgophong • Thabo Mbeki	**Lephalale Regional (Lephalale Green City/Smart City): Mining, Tourism and Agriculture Gateway** The role of Lephalale is changing, with more focus in the future being expected on agriculture and tourism. It is located in strategic proximity to the Waterberg Biosphere Reserve and Botswana, in an area also known for game farming and leisure tourism. At the same time, the node and surrounding area still makes a contribution in terms of mining, and is prominent in the energy generation sector with expansions being planned. Its prominence as a node is also supported by the Lephalale Green City (Smart City initiative). The development of Lephalale as a green city, and in particular the Joe Slovo Integrated Human Settlements Development/Marapong CRU area, forms part of the projects in the SIP1 programme. **Thabazimbi: Tourism Gateway** Thabazimbi was previously in the 2016 SDF regarded as a Provincial Growth Point. Although the node has been under distress due to downscaling in mining activity, it still has an important central place function to fulfil in serving its rural hinterland. For this reason, it should remain as Regional Development Anchor. It supports large farming areas as well as tourism areas in the Waterberg Biosphere to its north and the Marakele National Park to its west. It is also well known for its hunting and cattle farming as well as irrigation crop farming of soya, maize, cotton, red pepper, sunflower and other fruits and vegetables along the Crocodile and Limpopo Rivers. **Modimolle: Agriculture Gateway** The town of Modimolle serves as central place for an agricultural hinterland including farms from the south in the Bela-Bela area to the north at Mookgophong, where the focus is on cattle and game farming, grapes and citrus. However, historically, and currently the town has an important administrative role with many government offices etc. also located in this node. **Northam**: **Mining Gateway** Historically Thabazimbi with its iron ore mines was the mining hub in the Thabazimbi municipal areas. The expansion of mining activity on the Western Limb of the Bushveld Igneous Complex around Northam and Amandalbult areas have resulted in the development boom of Northam. As a result, Northam can be regarded as the gateway for the mining industry in the western region. Its relatively close proximity to the platinum belt between Marikana and Rustenburg in the North-West Province provides it with a competitive advantage. The connectivity between Northam and Rustenburg along the R510 needs to be improved. This node is therefore an “upcoming” node which classification may change in future.

Regional Element	Proposals and Guidelines
Connective infrastructure network	Key connective infrastructure elements to be strengthened and prioritised for maintenance: ▪ National Corridor: N11 for movement of freight (mining and agriculture) as well as tourism access. ▪ Provincial Freight Corridors: R33 (also tourism), R516 (also tourism), R511 (also tourism), R 510. ▪ Provincial Corridors: R518 and R572 (agricultural produce and access to rural communities). ▪ Main road network to support access to agricultural areas: R101, R516, R519, R520, P85/2, D972, D310. ▪ Other paved road serving agriculture and tourism areas around Thabazimbi. The upgrade of these roads should be considered to increase accessibility to the area. ▪ The encroachment on the road reserves, especially national roads that bisect human settlement concentration point,s poses safety challenges and development and should be addressed. ▪ Groblersbrug border post as a significant gateway to Botswana, Namibia and the rest of the SADC region.
Urban production areas	The only urban production area in the western region is around **Lephalale**, with the energy sector being located in the area. It is also proposed that industrialisation should be support in line with dominant sectors in the region. Though Lephalale is leading as an urban production area, the rate is growing at a diminishing pace compared to other urban areas within the district. **Power Generation:** ▪ Support and maintain the role of Lephalale in power generation. Consider prioritising sustainable power generation e.g. photovoltaic power generation connection to existing grid and grid capacity expansion. ▪ Investigate additional PV power generation opportunities in the region, preferably close to existing regional development anchors such as Thabazimbi or areas already impacted on by human activity e.g. mining areas close to Northam and Steenbokpan. ▪ In the operation of current power plants and design of new plants, high standards should be implemented to control emissions and visual impact to protect the sensitive natural environment, tourist potential and agricultural activities in the region. **Industrialisation:** ▪ Support industrialisation in support of the mining, energy and agricultural sectors in Lephalale to promote economic diversification in the region. ▪ Consider a freight rail link from Lephalale to the current main line to relieve pressure on roads and not impact the tourism sector.
Rural production areas	The western region is mostly a rural production area, with agricultural and tourism activities as well as mining. Rural production areas are: ▪ Agricultural areas around **Modimolle, Bela-Bela and Lephalale** and to a lesser extent **Thabazimbi.** ▪ Tourism potential and activities, including the Waterberg Biosphere, around **Thabazimbi, Bela-Bela and Lephalale.** **Agriculture:** ▪ Proclaim and develop the proposed High Potential Agriculture Areas. ▪ Manage settlement expansion risk onto High Potential Agriculture Areas near Bela-Bela, Modimolle and Thabo Mbeki.

Regional Element	Proposals and Guidelines
	▪ Establish agricultural support facilities such as logistics centres with cold storage, abattoirs and agri-processing in nodes and regional development anchors that act as agriculture gateways: Modimolle and Lephalale. ▪ Support the establishment of agricultural educational institutions in agricultural gateways and focus areas. This includes Universities, TVET facilities and high schools with agricultural subjects. ▪ Established commercial agriculture should be supported by upgrading and maintaining the current movement network. The elements of the movement network that should be focussed on include: – Preserving the mobility function of regional routes by managing encroachment of land uses taking direct access off regional roads. – Maintenance of regional roads, including consideration of transferring critical routes still under provincial management to SANRAL. – Maintenance of minor roads that form the feeder system from farming areas to regional roads, which is currently a serious challenge. – Revitalisation of stations / terminals and the rail network to enable a move of produce from roads to rail. – Strengthen provincial freight corridor to accommodate transport of agricultural produce: R33. – Strengthen link roads to the N1 including the R101, R519, R516 and P852 to serve the agricultural areas east of the N1 and close to Bela-Bela, Modimolle and Mookgophong. – Strengthen the smaller access roads in the Thabazimbi area. – Strengthen the links to the N11 from the Thabo Mbeki area: R572, R518, D3110. ▪ Manage all human activity to improve and retain quality of water sources, including run-off from agricultural activities and avoiding pit latrine systems in areas that could affect ground or surface water. **Tourism:** ▪ Strenghthen the role of Thabazimbi and Lephalale as gateways to the regions tourism offering, by including dedicated precincts and facilities such as accommodation, tourist attraction precincts, and tourist information centres in local planning. Recognise and strenthen the role of Vaalwater and Bela-Bela as secondary tourism gateways. ▪ Urban management to ensure high quality environments at tourist gateways such as Thabazimbi and Lephalale should be prioritised. ▪ Recognise the R33 towards Vaalwater and Lephalale and the R511, R510 and R516 towards Thabazimbi and tourism routes. Prioritise maintenance and appropriate signage. ▪ Consolidate the tourism offering in the region to facilitate place marketing, for example under the umbrella of the existing Waterberg Biosphere initiative. **Mining:**

Regional Element	Proposals and Guidelines
	▪ Improve the capacity and maintenance of the rail line from the mining area between Lephalale and Steekbokpan, through Thabazimbi and Northam towards North West Province to relieve mining traffic pressure on the road network, especially the R510, R33 and N11 (all these routes also serves the agricultural and tourism sectors). ▪ New residential development to accommodate mining should be concentrated in nodes to facilitate access to social and basic services, e.g. Northam, Thabazimbi and Lephalale, as opposed to establishing new settlements. ▪ Manage the environmental impact of mining operations and after mine closure.

Figure 50: Western Region



Central Region

The regional elements in the central region are as follows, also refer to Figure 51.:

Table 25: Proposals and Guidelines Central Region

Regional Element	Proposals and Guidelines
Regional nodal network National Urban Node: Polokwane. Provincial Urban Nodes: • Mokopane: Mining gateway • Burgersfort: Mining, industrial and logistics gateway Regional Development Anchors: • Groblersdal: Agriculture gateway • Senwabarwana: Administrative and services, and agriculture gateway • Lebowakgomo: Administration and Services Gateway • Jane Furse: Administration and Services Gateway Local Service Centres: • Alldays • Mogwadi • Morabeng • Atok • Serokolo • Steelpoort	**Polokwane (Polokwane Smart City): Administration and Services, and Industrial and Logistics Gateway** The Polokwane/Mankweng National Urban Node is the administrative capital of the Province. Its administrative, financial role and logistic function in the Province cannot be ignored. However, it supports various other sectors as well such as agriculture, mining, transport and manufacturing. It is also one of the fastest growing urban areas and provides housing to a large percentage of the urbanised population of the Province. The Polokwane Municipality also envisages a Smart City and the city is an aspiring metro. The City's Vision-2030 of a Smart City identified six pillars: ▪ Smart economy ▪ Smart environment ▪ Smart governance ▪ Smart living ▪ Smart mobility ▪ Smart people The Municipality adopted a model of smart city governance or smart administration which uses technology to manage their systems rather than to identify a specific "place" for a smart city greenfields development. The SDF supports the Polokwane Municipality's mission to provide cost-effective services that promote sustainable livelihoods through socio-economic development and good governance. The municipality's planning towards 2030 is to achieve real and sustainable economic growth and development, as well as transforming and aligning the City to become a Smart City. **Mokopane/Mahwelereng: Mining Gateway** Mokopane is one of those nodes' which role has changed in the past decade, from being a small town which supported a farming community to being a mining hub. This is because of the large platinum fields (Platreef) located to the north of the node and mining activity south-east.

Regional Element	Proposals and Guidelines
• Ohrigstad • Monsterlus • Motetema • Marble Hall	As in the case with many other nodes, it also has components of agriculture, tourism and vast rural settlement areas. The node's strategic locality on the intersections of the N1 and N11 provide this gateway with a competitive advantage above any other node in the Province. **Burgersfort/Tubatse/Driekop: Mining, Industrial and Logistics Gateway** The Burgersfort/Tubatse/Driekop Provincial Urban Node, with areas from Atok to its north and Steelpoort to its south, forms the original platinum and chrome mining belt of the Province. Although this node has a strong (or primary) function to serve as Mining Gateway, it also has the potential for industrial development. This is specifically because of initiatives for the development of the Fetakgomo-Tubatse Platinum Industrial Hub, as mentioned in the Limpopo Development Plan. (Limpopo OTP, 2020). Fetakgomo Tubatse Local Municipality has a vision for the node to become a developed Platinum City for a sustainable human settlement. This area had the potential to become a strong development node and its nodal hierarchy should be reviewed when the LSDF is reviewed, depending on development growth in the area at that time. **Groblersdal: Agriculture Gateway** Groblersdal together with Mable Hall area is known for commercial irrigation faming where water is obtained from Loskop Dam. The main crop farming activities include cotton, tobacco, citrus fruit, table grapes, maize, wheat, vegetables, sunflower seeds, peanuts, lucerne and peaches. However, the area also provides in tourism areas close to Loskop Dam as well as cattle and hunting farms. **Senwabarwana: Administration and Services, and Agriculture Gateway** The Mogwadi/Senwabarwana area is well known for its irrigation and commercial potato crop farming. Both table potatoes and seed potatoes are produced. Other vegetables and fruit produced in this area include onions, butternut squash and dragon fruit. However, cattle and game farming are also prominent. Commercial game and cattle farms occur to the north along the Limpopo River and Alldays area, whilst small scale farming is more prominent in the central parts as far down as Moletji and Matlala area in Polokwane Municipality's area of jurisdiction and Bakenberg in Mogalakwena Municipality's area, where Traditional Authority land is found. Senwabarwana is also developing as a future administration and services gateway in a growing rural residential area. **Lebowakgomo: Administration and Services Gateway** Lebowakgomo has a strong central place function in the region which provides it with the status as Administrative and Services Gateway.

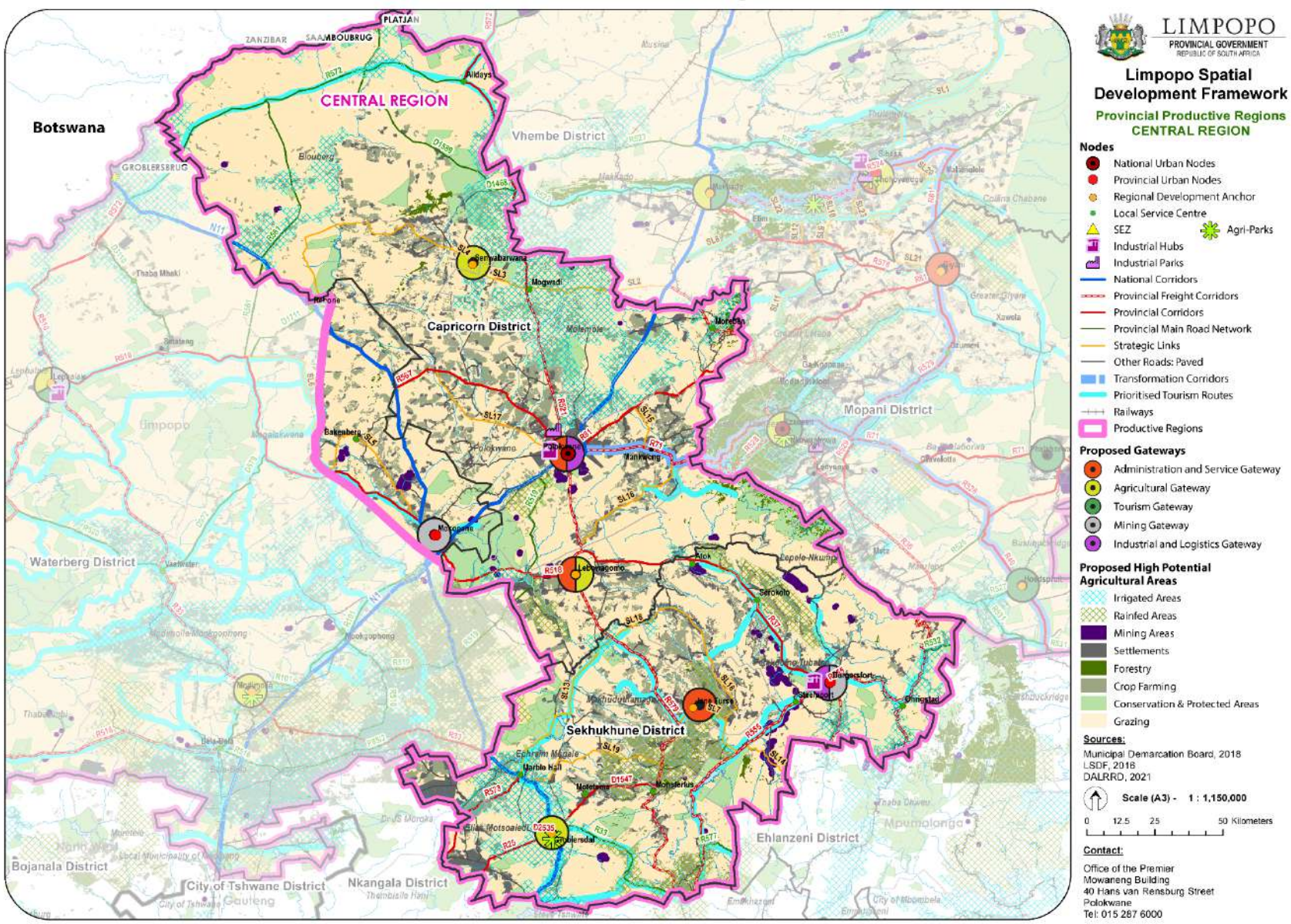
Regional Element	Proposals and Guidelines
	Although Polokwane is the capital of Limpopo and the seat of the provincial government, Lebowakgomo is still the home of many government offices which has its origin serving as capital of the former Lebowa Government. **Jane Furse: Administration and Services Gateway** Jane Furse and the surrounding rural areas is one of the fastest growing human settlements areas and provides housing to a large percentage of residents in the Province. This upcoming Regional Development Anchor forms for all practical purposes the core of Sekhukhune and can therefore serve as administrative and services gateway. It is strategically located between Burgersfort-Steelpoort, Lebowakgomo and Groblersdal, of which the latter nodes all have their own functions as Gateways to different productive regions. Jane Furse will also be the location of a new government precinct, cementing its role as an administrations and services gateway.
Connective infrastructure network	▪ Additional rail infrastructure should be considered for the Sekhukhune mining area to relieve pressure on the road network and support future industrialisation leading to economic diversification. This initiative could be implemented in the form of a public-private partnership. ▪ ▪ Key connective infrastructure elements to be strengthened and prioritised for maintenance: ▪ National Corridor: N1, N11 providing national and international accessibility. Expansion will assist in freight and passengers transport services. ▪ Provincial Freight Corridors: R555, R579, R532, R521, Moroke to Prakitseer Road, mostly used for mining freight. The R555 is a priority. R521 should be expanded for ease of movement and safety measures. ▪ Provincial Corridors: R33, R576, R81, R518, R37, R25, R573, D1547, also important for transport of agricultural produce and providing access to rural residential areas. R37 transport corridor: expansion of lanes Polokwane to Ga-Mathipa. Upgrading from Moroke to Praktiseer via Mabotsha). Upgrading of R33 ▪ Provincial Main Roads: R572, R561, D1589 giving access to agricultural areas in the far north of the region. ▪ Strategic Links: SL2, SL3, SL4 giving access to agricultural and rural residential areas around Senwabarwana. SL13, SL14,SL18, SL19 give access to agricultural, rural residential and mining.
Urban production areas	There are two urban production areas in the central region. **Polokwane** is an established urban node with a diverse economy. **Burgersfort** is the gateway to a significant mining area, but also to an area with plans for future industrialisation in the form of a proposed SEZ. Although not yet the gateway to an urban production area, **Mokopane** is currently servicing at the gateway to a mining area but may in future need to support a more economically diverse region including alternative power generation. **Industrialisation and Logistics:** ▪ Support industrial activities in Polokwane and the Burgersfort / Steelpoort area. Also consider Mokopane in the longer term. ▪ Support alternative power generation such as PV power and hydrogen power. ▪ Support industrial activities by the appropriate logistics facilities. Integrated, intermodal logistics facilities should be supported.

Regional Element	Proposals and Guidelines
	▪ Include freight transport options on the planned Polokwane to Gauteng high speed rail project. ▪ High intensity development should be located within an urban edge established by the City of Polokwane in their Municipal SDF. ▪ Rehabilitation of the existing rail from steelpoort to Belfast.And the same rail be extended to mines in close proximity for the transportation of goods. ▪ Proposed commuter's rail from Pretoria via Moloto connecting Marble hall and Jane Furse to Burgersfort. ▪ In the case of proposed new development, the water balance should be considered and it must be demonstrated how the new development will be accommodated within the limitation of water availability.
Rural production areas	In addition to urban production areas, the central region has significant mining and also agricultural activities. It also border on and contains some areas with tourism potential, although it is not the main focus of the region. Rural production areas are: ▪ Significant mining areas near **Burgersfort/Steelpoort and Mokopane**. ▪ Agricultural areas are mostly around **Senwabarwana, Lebowakgomo and Groblersdal, Marble hall and Ohrigstad.** and also including small centres such as Mogwadi. Groblersdal and Marble hall specialise in agriculture and oil production. **Mining:** ▪ Work towards the consolidated development of the two mining areas around Mokopane and around Burgersfort, by also supporting beneficiation and value adding activities, industrialisation, alternative power generation (e.g. hydrogen power and PV power), and appropriate skills development programmes. ▪ Improve the capacity and maintenance of the rail line through Steelpoort, Burgersfort, Ohrigstad to relieve mining traffic pressure on the road network, especially the R37, R555 and R577 near Steelpoort and Burgersfort. ▪ New residential development to accommodate mining should be concentrated in nodes to facilitate access to social and basic services, e.g. Mokopane, Burgersfort and Jane Furse, as opposed to establishing new settlements. Support facilities for residential communities should be supported in Burgersfort, Jane Furse and Mokopane: medical services, education facilities, business services ▪ Strict environmental management protocols should be followed during and after mining operations to ensure protection of sensitive ecosystems, water sources, agricultural land and residential communities. ▪ Investigate the resuscitation of the Blue Ridge mine in Groblersdal and Mapochsgronde mine in Roossenekal. ▪ Inter-provincial connectivity: the mining area around Burgersfort and Steelpoort is functionally link to Mashishing in Thaba Chweu Municipality in Mpumalanga. A Regional Spatial Development Framework should be developed for the mining and industrial and logistics regions around Burgersfort up to Lebakgomo, incorporating the region around Mashishing in Thaba Chweu Local Municipality in Mpumalanga. Refer to Section 4.3.4.3 for more detail. **Agriculture:** ▪ Proclaim and develop the proposed High Potential Agriculture Areas. ▪ Strengthen the role of Groblersdal as agriculture gateway by implementing the Agri Park and its supporting network elements, including agri-processing facilities.

Regional Element	Proposals and Guidelines
	▪ Strengthen the role of Senwabarwana as agriculture gateway by providing agricultural support facilities such as logistics points, cold storage and agri-processing facilities. ▪ Support the establishment of agricultural educational institutions in agricultural gateways and focus areas. This includes Universities, TVET facilities and high schools with agricultural subjects. Revitalisation of Tompi Seleka Agricultural college to function fully. ▪ Manage settlement expansion risk onto High Potential Agriculture Areas around Senwabarwana and Blouberg. ▪ Commercial agriculture should be supported by upgrading and maintaining the current movement network. The elements of the movement network that should be focussed on include: – Preserving the mobility function of regional routes by managing encroachment of land uses taking direct access off regional roads. – Maintenance of regional roads, including consideration of transferring critical routes still under provincial management to SANRAL. – Maintenance of minor roads that form the feeder system from farming areas to regional roads. – Revitalisation of stations / terminals and the rail network to enable a move of produce from roads to rail. – Strengthen the road network that connects agricultural areas around Zebediela to Groblersdal and across provincial boundaries to provide for transport of agricultural produce: the N11 national corridor, provincial corridors R25, R537, D1547, D2535, and the provincial main road R33, and provincial freight corridors R577 and J579. – Strengthen the connectivity to Senwabarwana by considering upgrade of strategic links SL2/3/4 and the R572 which connects Lephalale, Zwartwater, Alldays and Musina.the reroute R572 connects to N11 which links to gobblers bridge boarder post(Botswana). – Upgrading of SL2 ▪ Provide support for small-scale and subsistence farmers to improve production and access markets. ▪ Implement growth management of residential settlements and economic activities such as surface / open case mining to avoid encroachment on agricultural land, by including high potential agriculture areas and buffers around high potential agriculture areas in Municipal SDFs. ▪ Manage all human activity to improve and retain quality of water sources, including run-off from agricultural activities and avoiding pit latrine systems in areas that could affect ground or surface water. **Tourism:** ▪ Support the role of Polokwane as potential tourism entry point via the N1 and Polokwane International Airport by ensuring maintenance of facilities and access route, tourist information centres and appropriate signage. ▪ Protect natural areas and potential tourist areas by probibiting development and sprawl in protected and sensitive areas near Mokopane, north west of Senwabarwana and on the south eastern boundary of the region. Consider the upgrade of strategic link road S2/3/4 to give access to the N1 from the tourism areas to the west. Also consider strategic link for SL15-17. ▪ The central region is not a strong tourism destination point, but contain elements to make tourism opportunities in the western and eastern regions more accessible.

Regional Element	Proposals and Guidelines
	▪ Focus on initiatives such as: ▪ Develop DE-hoop dam as tourist attraction point (artificial beach and holiday resort). ▪ Ohrigstad (echo caves, the shoe) and Strydom Tunnels to be modernized to attract more tourists. ▪ Rossenekal to be supported for tourism activities and heritage sites. ▪ Development of tourism route e.g. Aram Lily Annual Festival to attract more tourists. ▪ Promote and marketing of Erholweni (in Roosenekal) tourist centre.

Figure 51: Central Region



Eastern Region

The regional elements in the eastern region are as follows, also refer to Figure 52.

Table 26: Proposals and Guidelines Eastern Region

Regional Element	Proposals and Guidelines
Regional nodal network National Urban Node: Tzaneen Provincial Urban Nodes: • Phalaborwa: Tourism gateway • Thohoyandou: Administrative and service, and agriculture gateway Regional Development Anchors: • Hoedspruit: Tourism gateway • Giyani: Administrative and services gateway • Musina: Industrial and logistics gateway • Makhado: Tourism and agriculture gateway Local Service Centres: • Mutale • Malamulele • Dzumeri • Ga-Kgapane • Modjadjiskloof • Gravelotte	**Tzaneen/Lenyenye/Nkowankowa: Agricultural and Tourism Gateway** Not only is Tzaneen/Lenyenye/Nkowankowa classified as National Urban Node because of its function in accommodating an urban population, but is a leading node in terms of agricultural production and tourism. Unlike Polokwane and Senwarbarwana in the Capricorn District, this node and the larger region including Mooketsi, Modjadjiskloof and Magoebaskloof is known for its tropical and subtropical agricultural products, including a wide range of vegetables and tropical fruits such as citrus, mangoes, bananas, avocados, litchis, tomatoes, macadamia nuts, blueberries, coffee, tea and timber. Tzaneen is also a designated Smart City in terms of the IUDF implementation programme. The economy of Tzaneen and surrounding areas also depend strongly on the agribusiness of these different types of fruits, vegetables, livestock, and timber. The node is expanding, with a need for human settlement development at Lenyenye. **Phalaborwa/Namakgale/Lulekani: Tourism Gateway** Phalaborwa changed from being a prominent copper mining town to an emerging tourist gateway, because of its location at one of Kruger National Park's (KNP) gates and because of the newly discovered route towards the Giriyondou port of entry on the Mozambique border. From the border post one can continue into the Greater Limpopo Transfrontier Park linking Zimbabwe via the Cengwe corridor towards Massingir and finally to the Mozambique coastal areas such as Xai-Xai and Inhambane. The area is also surrounded by many prominent game reserves and conservancies and borders the Kruger-to-Canyon (K2C) Biosphere. Mining still occurs in the area around the node, but the sector is not expanding in the areas. There is also potential for solar energy. This node therefore retains its status as Provincial Urban Node but can be regarded as transitioning to an "emerging" tourism gateway. **Thohoyandou/Sibasa: Administrative and Services, and Agricultural Gateway** Thohoyandou also has an important role that must be consolidated, i.e. that of an administrative and services gateway in a densely populated human settlement area. It already has a substantial tertiary economic sector present, as well as government and social services. Thohoyandou also has a role as an agriculture gateway. Like Tzaneen, the Thohoyandou, Levubu and Makhado area is also known for tropical and subtropical agricultural products, but also tobacco and some forestry. Further to commercial farming, the larger Thohoyandou/Giyani/Elim area is known for its small-scale farming mostly conducted in Traditional Authority areas.

Regional Element	Proposals and Guidelines
	Giyani: Regional Administrative and Services Gateway Giyani was always an administrative and services hub to a large rural area, which historically formed part of Gazankulu. Apart from its administrative function, it is a fast growing urban area with hidden potential to be developed as a tourism gateway in future, due to its favourable location towards the Punda Maria Gate of the Kruger National Park. There are also potential gold mining opportunities. **Hoedspruit: Tourism Gateway** Like Phalaborwa, Hoedspruit can be regarded as a tourism gateway, because of its location in the K2C biosphere and proximity to the Kruger National Park's (KNP). The Orpen Gate of the park is nearby, and it is also served by the Eastgate Airport, which provides additional benefits in terms of accessibility to this node. Although the Eastgate Airport is not an international airport, it can provide access to an international tourism market with the possibility of link flights from other tourism destinations. The potential of upgrading the licence of the Hoedspruit airport to an international licence is underway. Historically it also has close ties with Mpumalanga and areas such as Hazy View and Graskop in Mpumalanga which are also tourist destinations. **Musina (Musina/Makhado SEZ Smart City): Industrial and Logistics Gateway** Musina town which is located close to Beit Bridge, is recognise nationally as an import/export node. It is located one of the most important ports of entry from SADC countries. This node is therefore recognised as an emerging industrial and logistics gateway and part of the larger Musina-Makhado SEZ initiatives of government. However, it should be realised that it is located within an environment sensitive area and within the Vhembe Biosphere. It therefore also has a strong potential for tourism. The Smart City Model for the Musina-Makhado Special Economic Zone (Musina Makhado SEZ, 2021) proposes five steps over the next 25 years to implement the Musina Makhado corridor as a smart city: ▪ The making of the Smart City – Integration of the northern Antonvilla MMSEZ with its surroundings, the Beit Bridge border and the Musina CBD. ▪ The development of the N1 Musina Corridor. ▪ Strategic development along the corridor. ▪ Renew and regenerate CBDs of Musina and Makhado. ▪ Connect the villages to become a Smart City Region.

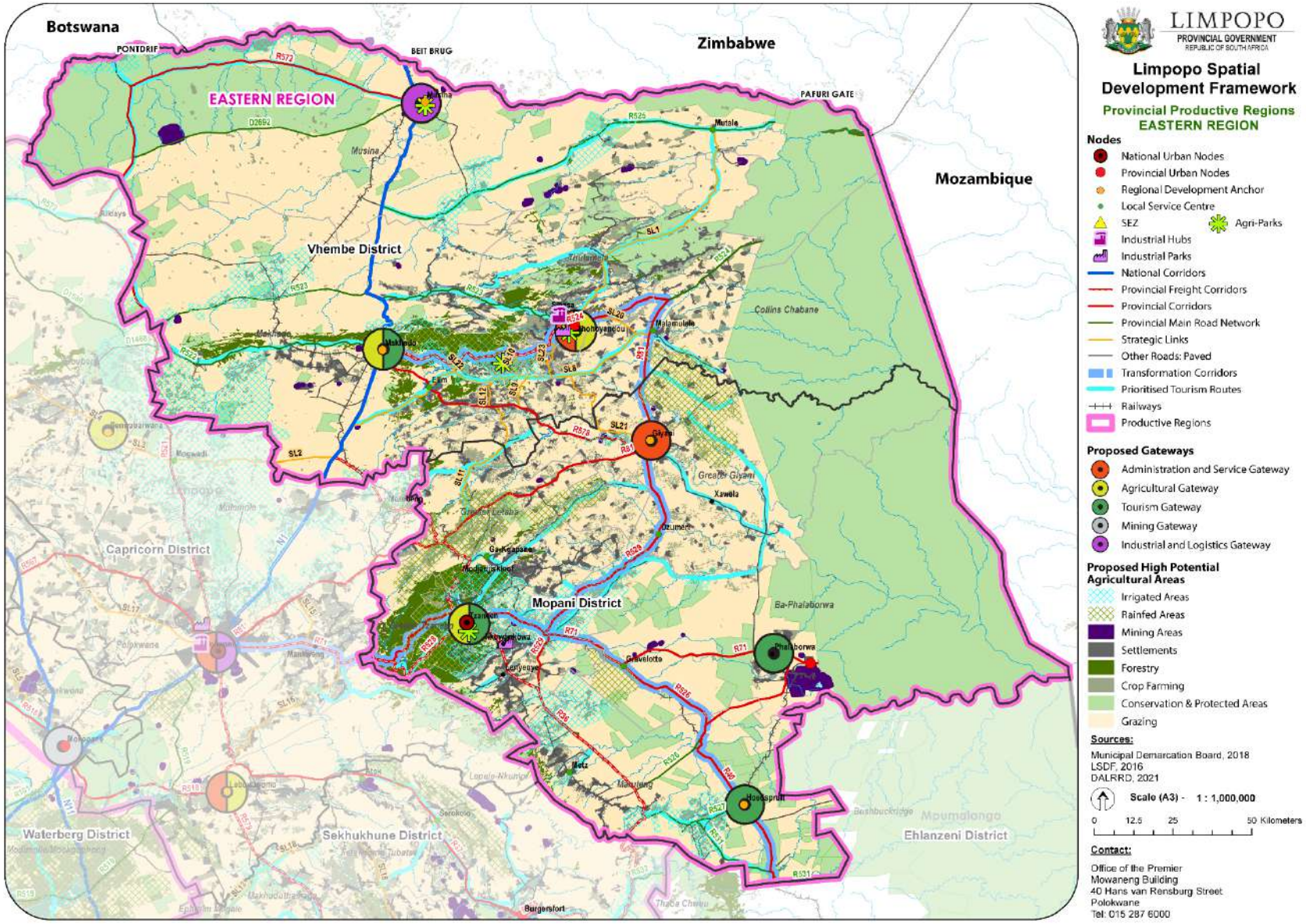
Regional Element	Proposals and Guidelines
	For purpose of this SDF, the focus should be on the making of the Smart City whereby Musina and the Northern Antonvilla SEZ site is integrated with its surroundings, the Beit Bridge border and the Musina CBD to form the "industrial core" of the region. This includes the development of the northern Antonvilla SEZ site located north—east of Musina town. The focus is to create investment opportunities for industrial, light manufacturing of metal products, electronics industries, food and beverage industries, wood and paper industries, packing, logistics and warehousing. Part of the first step, the Beit Bridge border post will be transformed to be a high quality precinct and upgraded with components such as retail, gateway park truck stop, etc. The second step is to upgrade the N1 corridor between Makhado and Beit Bridge to make the corridor a vibrant smart activity corridor. This includes development of human settlements, office parks freight facilities, shopping and leisure activities. These two steps in terms of space utilisation, forms a triangle between Musina town, Beit Bridge and the northern Antonvilla SEZ site. Once this has been successfully implemented in the region, the other initiatives such as the development of the N1 Musina-Makhado Corridor can continue. **Makhado: Agricultural and Tourism Gateway** Makhado Regional Development Anchor can serve as Agriculture and Tourism Gateway. The town has strong links with Thohoyandou and Levubu in terms of agricultural production, but also has great potential as tourism gateway, because of its location in the Vhembe Biosphere at the foot of the Soutpansberg Mountain range and on the N1 National Corridor. However, the connection with Musina and the MMSEZ initiatives as well as its location along the N1 National Corridor, provides various prospects for this node in future, such as logistics, industrial, agro-industry development as part of the MMSEZ. At this stage it is regarded as Agricultural and Tourism Gateway.
Connective infrastructure network	Key connective infrastructure elements to be strengthened and prioritised for maintenance: ▪ National Corridor: N1 giving access to Musina and Makhado and the MM SEZ, as well as Thohoyandou via the R524. ▪ Provincial Freight Corridors: The R524 giving access to Thohoyandou, the R36 and R71 giving access to Tzaneen, R40 near Hoedspruit, R523 for corridor N1 to Phafuri ▪ Provincial Corridors: The R81, R529, R526 giving access to agricultural areas as well as rural residential areas. The R71 towards Phalaborwa should also be prioritised as a tourism route to enable access to the Kruger Park. ▪ Provincial Main Roads: The R527 and R531 giving access to agricultural areas. ▪ R525 (Musina to Tshipise) and R523 (Williesport) as important access routes ▪ D3717 as tourism access road (Nandoni) ▪ D4 N1- via Elim to Motetete access to agriculture activities ▪ Beit Bridge and Giriyondo Border Posts, giving access to different parts of the SADC region with the latter being an important tourist port located in the Kruger National Park. ▪ Consider railroad from Makhado to Beitbridge. Other proposed rail: Makhado to Pundamaria, Mopani to Bende Mutale

Regional Element	Proposals and Guidelines
	▪ Airports: Musina Airport, Makhado Airport, Mphephu Airport and Louis Trichardt Airport
Urban production areas	There are two developing urban production areas in the eastern region: The industrial and logistics area around **Musina** in the form of the proposed MM SEZ site and **Thohoyandou**, which current services predominantly as an administrative and services gateway for surrounding rural communities, but has been earmarked for the development of an Industrial Park. **Industrialisation and Logistics:** ▪ The development of the Musina Makhado SEZ (MMSEZ) sites as stipulated in the relevant development plans should be supported, within the limitations posed by water resources and environmental management guidelines. ▪ The development of the MMSEZ sites should be complemented by upgrading of the relevant regional infrastructure, including the N1 and feeder roads to the N1. The extension and upgrade of the freight rail system is recommended. Also refer to the discussion regarding the MMSEZ above. Contributions will also be made by Shayandima, proposed Malamulele and Makhado Industrial. ▪ The development of a more diverse economy in Thohoyandou should be supported through the relevant critical infrastructure such as road upgrades and water provision. ▪ In the case of proposed new development in the above areas, the water balance should be considered and it must be demonstrated how the new development will be accommodated within the limitation of water availability.
Rural production areas	The eastern region hosts strong rural production areas with potential for further development, especially in tourism and agriculture: ▪ Environmental and tourism areas are centred around **Musina / Makhado** and also significantly **Phalaborwa and Hoedspruit**, as well as **Tzaneen**. ▪ Agricultural areas are mostly around **Thoyohandou and Tzaneen,** with redevelopment for example the revitalization of Tshivhase Tea Estate ▪ Mining occurs in small areas distributed in different localities in the region, most significantly near **Phalaborwa.** **Tourism:** ▪ Tourism is a significant activity in the eastern region, also in a national context. ▪ Access to the Kruger National Park via road and airports should be prioritised. The R71 and R40 are critical routes that need to be maintained. The airports Kruger Park Gateway Airport (Phalaborwa) and Eastgate Airport (Hoedspruit) should be regarded as important entry points to the area and earmarked for upgrade and maintenance as required. For access to Mapungubwe the R572 and R521 as well as the N1 is important. ▪ Urban management to ensure high quality environments at tourist gateways such as Phalaborwa and Hoedspruit should be prioritised. ▪ Establish and promote support facilities required by tourists in tourism gateways (Phalaborwa, Hoedspruit, Tzaneen, Makhado), e.g. medical facilities, banking facilities and public points where the internet can be accessed. ▪ Develop integrated tourism offerings such as branded tourism routes or meanders focusing on key natural and cultural attractions and/or leisure activities. ▪ Optimise the benefit and protect Vhembe Biosphere and capitalise on assets like the Makuya and Mapungubwe Parks.

Regional Element	Proposals and Guidelines
	▪ Commercialise existing municipal and provincial reserves and water bodies through public-private partnerships. ▪ Include local communities in cultural tourism initiatives through e.g. accommodation and hospitality activities. ▪ Combine nature conservation and tourism initiatives, e.g. by commercialising and / or providing accommodation in smaller reserves, charging conservation levies, private sponsorships of conservation programmes as part of a tourism offering / package. ▪ Provide skills development programmes in support of the conservation and tourism / hospitality sectors. **Agriculture:** ▪ Establish agricultural support facilities such as logistics centres with cold storage, pack houses, abattoirs and agri-processing in nodes and regional development anchors that act as agriculture gateways: Thohoyandou, Tzaneen, Makhado. ▪ Support the establishment of agricultural educational institutions in agriculture gateways and focus areas. This includes Universities, TVET facilities and high schools with agricultural subjects. ▪ DFFE developed a Wild Meat Strategy to ensure accessibility of wild meat to broader consumers and reduce poaching. Similar initiatives should be supported ▪ Established commercial agriculture should be supported by upgrading and maintaining the current movement network. The elements of the movement network that should be focussed on include: – Preserving the mobility function of regional routes by managing encroachment of land uses taking direct access off regional roads. – Maintenance of regional roads, including consideration of transferring critical routes still under provincial management to SANRAL. – Maintenance of minor roads that form the feeder system from farming areas to regional roads. – Revitalisation of stations / terminals and the rail network to enable a move of produce from roads to rail. – Roads important to support agriculture include provincial freight corridors R524, R71 and R36 that are also passing through forestry areas, the provincial corridors R81, R529, R526 that also passes through rural residential and small / subsistence farming areas and the main roads R527 and R531. In addition the quality of smaller tar roads in the regions should be addressed as some of these also serve as feeder roads for agricultural areas. ▪ Provide support for small-scale and subsistence farmers to improve production and access markets. ▪ Implement growth management of residential settlements and economic activities such as surface / open case mining to avoid encroachment on agricultural land, by including high potential agriculture areas and buffers around high potential agriculture areas in Municipal SDFs. ▪ Manage all human activity to improve and retain quality of water sources, including run-off from agricultural activities and avoiding pit latrine systems in areas that could affect ground or surface water. **Mining:** ▪ Existing mines exist in the vicinity of Phalaborwa, but does not constitute a growing mining area. Scattered mining also occur near Gravelotte, in the far north of the region, and on the D2692 in the vicinity of Musina.

Regional Element	Proposals and Guidelines
	▪ Existing mining areas should be supported in terms of accessibility, with the R2692 forming an important link to the N1, and the R40, R71 and existing railway line being important connectivity infrastructure for the Phalaborwa area. ▪ Manage the environmental impact of mining operations and after mine closure.

Figure 52: Eastern Region



4.3.4.3. Policy Recommendations

- It is proposed that Regional Development Plans be prepared for the three identified regions. These plans should focus on:
  - The development and investment priorities and opportunities that should be acted on in each region.
  - The identification of regional roleplayers in terms of each investment priority or opportunity.
  - Alignment between the initiatives of the relevant Local Municipalities and Districts.
  - Investigation of possible funding opportunities for investment priorities and opportunities, including public-private partnership strategies for investment
  - Land acquisition strategy
  - Land auditing (ownership and use)
  - Regional master plans for infrastructure
- It is proposed that a Regional Spatial Development Framework (RSDF) be prepared for the Polokwane, Mogalakwena, Lebowakgomo, Jane Furse, Burgersfort, Steelpoort and Mashishing area. The custodian of the RSDF will be the Office of the Premier of the Limpopo Province and Mpumalanga Province respectively. This RSDF should contain at least:
  - Proposals for the detailed location of land uses in regional context, including residential and residential support services and facilities, mining infrastructure and industrial use.
  - The roles of Polokwane, Mokopane, Lebowakgomo, Jane Furse, Burgersfort, Steelpoort and Mashishing respectively.
  - Agreement between the relevant provinces, district and local municipalities regarding cross-border issues such as infrastructure maintenance, bulk water transfer schemes and bulk water supply, renewable energy initiatives, cross-border commuting and cross border use of social services. In these agreements, the champions of each should be specified.
  - Detailed guidelines for high impact developments (e.g. proposed SEZ, industrial park/s, logistics facilities).
  - Land uses should be quantified and service infrastructure requirements calculated accordingly.
  - Clear delineations of buffer zones and no-development zones for specific uses, to manage impact of human activity on the natural environment and the encroachment of residential sprawl on mining and agricultural land and sensitive infrastructure.
- It is proposed that an RSDF be prepared for the Northam and Boshoek and surrounding area. The custodian of the RSDF will be the Office of the Premier of the Limpopo Province and North West Province respectively. The RSDF should focus on:
  - Proposals for the detailed location of land uses in regional context, including residential and residential support services and facilities, mining infrastructure and industrial use. This includes the alignment of Priority Human Settlement and Housing Development Areas (PHSHDAs) in both Limpopo and North West provinces.
  - The roles of nodes including Northam and Boshoek.
  - Land uses should be quantified and service infrastructure requirements calculated accordingly.
  - Clear delineations of buffer zones and no-development zones for specific uses, to manage impact of human activity on the natural environment and the encroachment of residential sprawl on mining and agricultural land and sensitive infrastructure. The protection of the Pilanesberg National Park should be included for consideration.
  - Agreement between the relevant provinces, local and district municipalities regarding cross-border issues such as infrastructure maintenance and the use of social services.

- It is proposed that the implications of the Smart Cities Framework (SCF) dated March 2021 be localised for the designated nodes in Limpopo. The SCF was developed by the Department of Cooperative Governance in collaboration with the Council for Scientific and Industrial Research (Dept Cooperative Governance, 2021) to guide decision-making and provide all role players with a structured approach to identifying, planning and implementing smart city initiatives that are appropriate to the local context. A **smart sustainable city** is an innovative city that uses information and communication technologies (ICTs) and other means to improve quality of life, efficiency of urban operation and services, and competitiveness, while ensuring that it meets the needs of present and future generations with respect to economic, social and environmental aspects."

  The Limpopo Development Plan (Limpopo OTP, 2020) proposed the following Smart Cities for the Province: (1) Polokwane smart city, (2) Musina/Makhado SEZ Smart City Model, (3) Lephalale green city, (4) Tzaneen smart city and (5) Steelpoort smart city. These Smart Cities are regarded as spatial targeting areas that would serve as pilot projects for the Province in order learn lessons and to expand the concept into the rest of the Province in time. However, insufficient detail is currently not available to introduce spatial proposals in this SDF. In the review of the programme, the individual target cities should be considered, e.g. the inclusion of Mogalakwena.

- It is proposed that the Agri Parks Programme and policies be aligned with the nodes acting as agriculture gateways.

- It is proposed that a capacity building programme be initiated to strengthen the capacity of municipal town and regional planners.

4.3.5. Provincial Human Settlement Transformation

In addition to the productive regions discussed above, the province also faces the challenge of persistent spatial disparities. These disparities mostly affect the rural residential areas in the eastern and central part of the province, and well as some urbanising areas around Polokwane. These areas require a multi-dimensional approach that includes aspects of social and economic upliftment together with the spatial restructuring of settlements.

The settlement areas show high population growth, and in addition to spatial disparities being perpetuated through the reinforcement of unjust spatial patterns, unmanaged growth of settlements also poses the risk of encroachment on areas earmarked for agriculture, mining and tourism or sensitive ecosystems. Unstructured and unmanaged growth is also not conducive to climate change adaptation and mitigation measures.

4.3.5.1. Spatial Strategies

The overall outcome envisaged to be achieved with the human settlements development spatial strategies is a transformed, cohesive and integrated society residing in liveable environments with adequate access to a variety of housing options, social, transport and engineering services and economic opportunities.

The strategies to achieve the human settlements outcomes are as follow:

Promote and coordinate the development of integrated and sustainable human settlements

- National, provincial and local government to coordinate and align the planning and development of human settlements in the province in an integrated and sustainable manner on well-located land, aligning public transport and social service provision and sustainable access to economic opportunities.
- Municipalities should identify through their municipal SDFs, well-located land development areas for integrated human settlements, aligned to development needs, that would realise spatial integration and restructuring, and the sustainability of development areas.
- Provincial and local government to align and prioritise investment in social infrastructure, transport and infrastructure to enable economic investment, and aligned to SDF land development areas.
- National and provincial human settlements programmes and projects should direct investment in land assembly, servicing and housing top structures to spatially targeted development areas.

Ensure densification and infill development as opposed to greenfield development in both urban and rural environments

The development footprint of urban and rural settlements has increased exponentially and poses a serious threat to scarce resources such as land and water, whilst placing a burden on the sustainable and affordable provision of infrastructure. The settlement pattern is mainly characterised as single storey and low density demarcation of stands.

A decisive shift is required in future land use planning (and demarcation of land) in both urban and rural environments in the province towards higher densities, mixed uses and infill development:

- Municipal SDFs and land use development policy must put development guidelines and incentives in place that ensure urban and rural land use planning apply higher densities and mixed-use developments.
- Municipal SDFs and land use development guidelines should promote the densification of existing development areas and identified infill development areas.

Promote tenure security, title restoration and asset creation through human settlement interventions

- In line with national targets for improved tenure security and title restoration, the completion or upgrading of the existing (mostly historical) settlements or housing projects by means of land release, infrastructural service provision and/or upgrading of the township and transfer of title should be undertaken.
- Human settlements programmes should be directed to spatially well-located land where land ownership opportunities will be created by the intervention, thus enabling tenure security and a healthy property market through the investments made.

Respond to marginalised and distressed communities

- Promote the social upliftment of marginalised communities through enhanced connectivity, mobility, access to services, and creation of sustainable livelihoods.
- Address informal settlements with incremental upgrading and community based participatory approaches.
- Identify and pro-actively relocate settlements in flood risk areas or unsafe development areas, taking into consideration to increased risk due to climate change.

- Respond to the distressed communities directly linked to the mining and energy industry activity through partnership approaches and community asset development.
- Discourage the creation of new distressed or new dispersed communities that are solely dependent for their livelihood on a specific local industry (such as mining, energy, manufacturing, construction and agriculture) without long term sustainable economic opportunities. If unavoidable, investment planning should provide for innovative design approaches that would yield multi-purpose use of infrastructure or buildings as options for live after closure or downscaling of the activity.

Actively manage indiscriminate settlement on scarce resources

- Municipalities through the SDFs to delineate urban and rural edges that identify and protect scarce resources such as minerals, high potential agricultural land, and water resource areas in consultation with relevant stakeholders.
- Provincial and local government to manage the protection of land and minerals as scarce resources from de-sterilisation due to the continued expansion of low density settlements, mostly in an informal manner.

The Limpopo Province should spatially focus human settlements and social development in:

- Areas earmarked as spatial targeting areas for human settlements intervention and infrastructure investment to realise spatial transformation and tenure security.
- Areas proposed for development as *Spatial Transformation and Economic Transition Areas.*
- Areas where the natural resources are not prejudiced or compromised.

4.3.5.2. Spatial Proposals and Development Guidelines

The spatial focus for the development of human settlements and related social services and infrastructure is illustrated in Figure 53. The spatial focus areas include:

- Nodal areas
- Spatial Transformation and Economic Transition Areas
- Spatial targeting areas for specific programmatic investments in support of human settlements:
  - The eleven (11) promulgated National Priority Human Settlements and Housing Development Areas (PHSHDAs).
  - The five (5) local municipalities prioritised under the national intervention for the Revitalisation of Distressed Mining Communities.
  - Towns prioritised under the Small Town Regeneration programme.
  - Areas/settlements earmarked as Special Economic Zones and/or for the development of industrial parks/hubs.

Human settlements development in nodal areas

The nodes, i.e., National Urban Nodes, Provincial Urban Nodes and Local Service Centres have been identified, categorised and delineated in the LSDF to direct the consolidation of investment in human settlements, social and engineering infrastructure aligned with the category of the node and its development function.

The nodes are the spatial areas proposed where local municipalities should identify land development areas for densification, infill, renewal and mixed use development, and also for residential areas in support of the development needs of the node.

Future land development should be within the Urban Edges as demarcated by local municipalities.

The pro-active planning of new development areas is the prerogative of local municipalities. However, provincial government and the district municipalities must provide the necessary support and monitoring to ensure that as a collective:

- Proper strategies are put in place by local municipalities to accommodate the expected population growth and need for housing, social services and infrastructure in their areas of jurisdiction. This includes the coordinated and aligned planning and budgeting of housing, social infrastructure, public transport and engineering infrastructure amongst the three spheres of government.
- Urban Edges are delineated by the local municipality to ensure compact urban forms and protection of natural resources.
- Densities are increased in existing and new areas earmarked for housing development to prevent unnecessary urban sprawl and use of valuable resources such as land.

Spatial Transformation and Economic Transition Areas

The Limpopo Province's Spatial Transformation and Economic Transition Areas (STETAs) refer to the existing settlement areas in the province, mostly marginalised and dispersed rural areas, where intervention is required to transform the settlements and enhance the economic transition of the area.

The Limpopo STETAs includes large areas aligned to the National SDF's Eastern Escarpment Spatial Transformation and Economic Transition Region (STETR). The latter is a national priority area and requires the spatial transformation and economic transition of large areas of the eastern part of the Province.

From the national region, the areas where the primary focus is on human settlements spatial transformation, were defined for this part of the report, and it exclude areas where valuable resources (e.g. agricultural and environmental sensitive area) occur. The Limpopo STETAs focusses on concentrations of existing rural settlements areas within the national region characterised by economic and social deprivation, with lack of access to economic opportunities, social and basic services.

The STETAs also include existing urban nodal areas which provides in the needs of larger cluster(s) of rural communities in their hinterlands. These

urban nodes should serve as “anchors” to the rural hinterland and provide in the demand for tertiary or specialised services sufficient for the nodal areas as well as its hinterland. Improved urban-urban, rural-urban and rural-rural connections are important to transition the local economy and functioning of these regions.

The following four (4) STETAs have been identified in the Province and are illustrated in Figure 53:

- STETA 1: Vhembe-Mopani
- STETA 2: Polokwane-Mankweng
- STETA 3: Capricorn-Sekhukhune
  STETA 4: Waterberg-Capricorn

These areas are identified in this LSDF as areas where priority must be given to connectivity, the provision of adequate access to at least basic services through incremental service delivery approaches, as well as access to social services and engineering infrastructure.

Aligned to the Eastern Escarpment STETR (DALRRD, National Spatial Development Framework, 2022), the Limpopo STETAs require the following interventions and development guidelines:

- Extending and improving of transportation networks, including regular maintenance and upgrading of existing infrastructure, increase investment in high-speed ICT infrastructure and enhance urban-rural and rural-rural connectivity.
- Develop a network of nodes as depicted in Table 27:
  - strong and vibrant cities to fulfil the role of fully-fledged national urban nodes,
  - viable regional development anchors, and
  - well-capacitated rural service centres.

The nodal networks that anchor the respective STETAs are summarised below:

Table 27: Nodal Network: STETAs

Spatial Transformation & Economic Transition Area	Nodes and Regional Development Anchors: Gateways to Productive Regions and STETAs	Local Service Centres
STETA1	Tzaneen, Makhado, Thohoyandou, Giyani	Malamulele, Dzumeri, Elim
STETA2	Polokwane / Mankweng	-
STETA3	Burgersfort, Jane Furse, Lebowakgomo	Atok, Serokolo, Steelpoort, Monsterlus, Motetema, Marble Hall
STETA4	Senwabarwana, Mokopane	Bakenberg

- Consolidate settlement development and support the development of cities in areas of significant population growth, with specific reference to Polokwane as the existing national urban node, and Tzaneen as the emerging city in the transformation region.
- Support the development areas that are facing significant challenges, but offer sizeable opportunities for spatial transformation, like Jane Furse.
- Introduce innovative settlement planning, rural design, urban land reform, urban and rural edges, and ensure effective land-use management and land administration to curtail sprawl and consolidate place-specific urbanisation in dense rural settlements and fast-growing formal and traditional settlement areas within a strategic network of rural service centres and villages.
- Introduce and upgrade the built environment, transport, basic services and communication infrastructure which will also act as a trigger for enterprise development and expansion, with the focus on:
  - residential development at 20 and 40 units per hectare and with the required social services,
  - basic service delivery through incremental service delivery approaches,
  - public transport services, and

  - urban-urban, rural-urban and rural-rural connections.

- Ensure the protection and management of ecological infrastructure, national resources and protected areas, including SWSAs and high-value agriculture land, by means of regional and municipal resource management and eco-agri-development strategies.
- Introduce and/or strengthen effective regional collaboration, partnerships and cooperative governance models, to ensure mutually beneficial natural resource-use and land development, and to optimise national, regional and local economic development benefits.
- Undertake integrated human capital development to enable a generation of young people to reap the benefits of urbanisation through human capital development, and the opening-up of urban economies to enable and support a multiplicity of livelihood options and opportunities.
- Provide catalytic, innovative and contextually suitable infrastructure and deliver life-enhancing social and basic services to support enterprise development, well-being and inclusive growth with both an ecological and human-focussed approach.
- Prioritise human capital and people-centred enterprise development, e.g. arts and culture, tourism, knowledge creation, education and innovation.
- Develop the tourism sector and creative industries in the regions, with an emphasis on small-and-medium-sized farming activities and agri-eco production.
- Establish strong regional growth and development compacts, including all role-players, i.e. the three spheres of government, traditional leaders/authorities, communities (notably youth), the private sector, CBOs, NGOs and organised labour, and ensure regional, cross-provincial and cross-municipal boundary collaborative spatial development planning and governance.

Spatial targeting areas for programmatic interventions

In addition to the nodal areas and STETAs, human settlement development is also focused in specific areas targeted as such in different programmes. These are set out in Table 28:

Table 28: Spatial Targeting Areas for national programmes and interventions

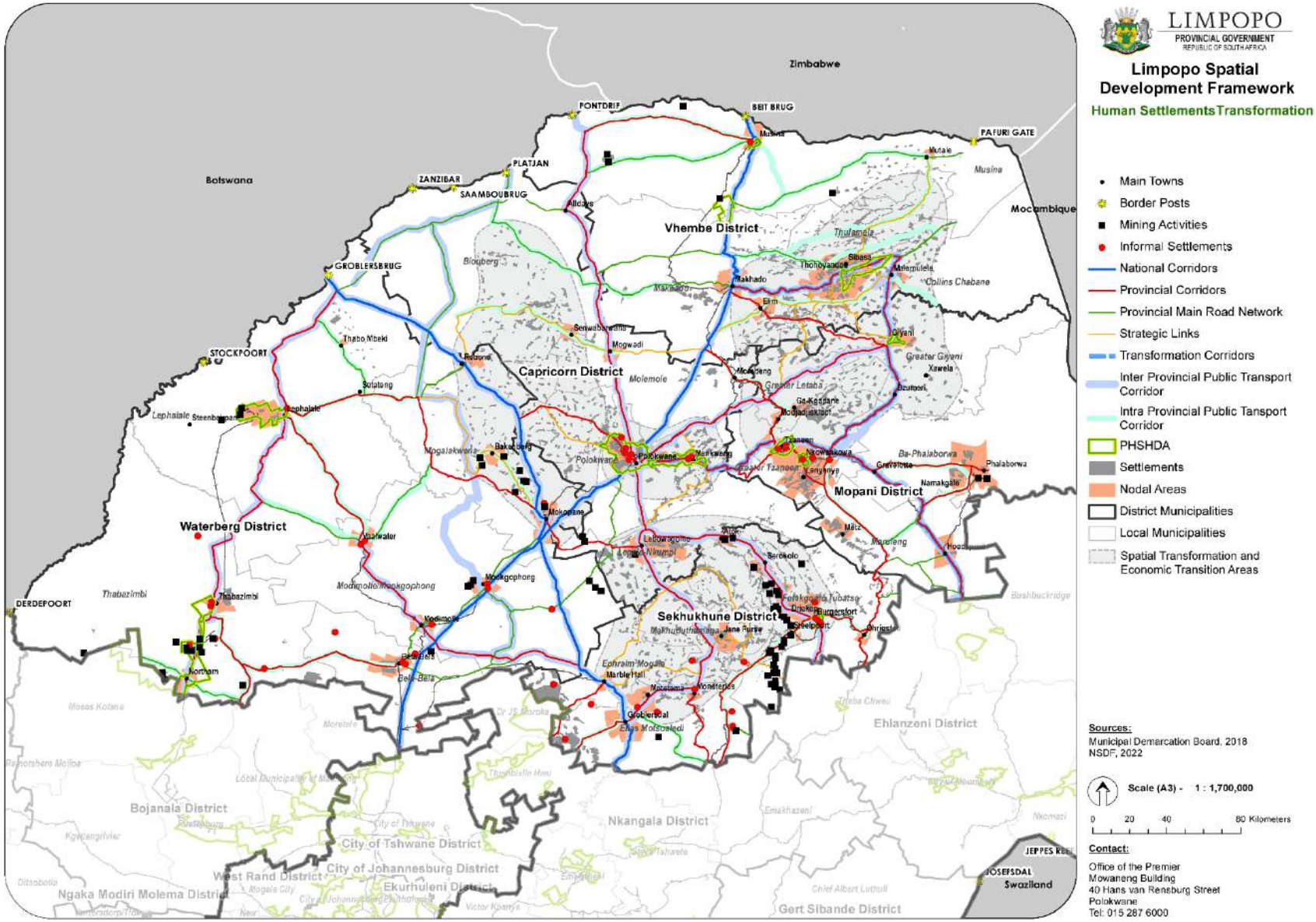
Area Typology	Relevant Nodes	Development Focus and Guidelines
PHSHDAs	**Nodes and regional development anchors:** PHSHDA 1: Polokwane CBD and surrounds (Polokwane) PHSHDA 2: R71 Corridor (Polokwane) PHSHDA 3: Greater Giyani (Giyani) PHSHDA 4: Nkowankowa Node (Tzaneen) PHSHDA 5: Tzaneen Core (Tzaneen) PHSHDA 6: Fetakgomo/Tubatse Development Area (Burgersfort) PHSHDA 7: Musina-Makhado SEZ (Musina, Makhado) PHSHDA 8: Musina Town (Musina) PHSHDA 9: Thohoyandou Node (Thohoyandou) PHSHDA 10: Lephalale/Marapong (Lephalale) **Local service centres** PHSHDA 11: Greater Northam (Northam – local service centre)	▪ Human settlements investment in the PHSHDAs should be aligned to the development trends (growth and decline) and socio-economic needs of the economic sectors that provide economic opportunities to the areas. The development plans in mining regions such as PHSHDA 10: Lephalale/Marapong and PHSHDA 6: Fetakgomo/Tubatse Development Area, in particular, should investigate the actual demand versus supply, consider commuting patterns, and identify innovative design options that are flexible to the changing economic environment. ▪ The human settlements interventions to be prioritised in the PHSHDAs are social and rental housing, integrated residential development programme, informal settlements upgrading and enhanced peoples housing process. ▪ Land assembly for human settlements purposes is prioritised to these areas, aligned to the provincial pipeline for land assembly and the PHSHDA Development Plans. ▪ Planning and implementation of bulk infrastructure supply and public transport should enable and support human settlements development. ▪ Human settlement investment in the PHSHDA should be catalyst for economic investment. ▪ Human settlements investment should realise spatial restructuring and transformation of the development areas. ▪ The development planning of PHSHDA 11: Greater Northam, should be aligned with the adjoining PHSHDA declared in North West Province. ▪ The delineation of Mokopane and its urban periphery as a PHSHDA should be considered.
Revitalisation of Distressed Mining Communities	▪ Fetakgomo Tubatse Local Municipality ▪ Lephalale Local Municipality ▪ Thabazimbi Local Municipality	Historically, mining towns and associated industries such as power generation have been catalysts for the improved socio-economic status of their respective communities and mines and Eskom took the responsibility

Area Typology	Relevant Nodes	Development Focus and Guidelines
	▪ Mogalakwena Local Municipality ▪ Elias Motsoaledi Local Municipality	of providing housing, bulk infrastructure services and social amenities, especially sport and recreation facilities. Unfortunately, the decline of mining activities over the years, and mines' withdrawing from providing urban services and transferring infrastructure to municipalities, left some mining communities in distress. On the other hand, expansion of mining and energy activities triggered opportunistic behaviour and resulted in establishments of townships for speculation purposes and informal settlement mostly on state land in proximity to mines or power stations. In 2012, Cabinet introduced intervention measures for the revitalisation of distressed mining communities and their labour-sending areas and the municipal areas listed in the column to the left. The focus of investment in these areas are: ▪ Creation of integrated and sustainable human settlements. ▪ Improved socio-economic conditions. ▪ Upgrading of informal settlements. ▪ Land assembly. ▪ Infrastructure upgrading. The proposal is that the diagnostic analysis should be done for defined mining regions (beyond municipal boundaries), and that the investment focus of the intervention should be on the directly linked distressed mining communities (not necessarily the entire municipal area). In addition to the national programme, Phalaborwa is included as a mining related community outside of the national intervention that are in need of revitalisation and stimulation of alternative economies following the downscaling activities.
Small Town Regeneration	Prioritised towns and villages under the national programme: ▪ Priority 2 – Bela Bela, Groblersdal ▪ Priority 3 – Burgersfort, Hoedspruit Spatial proposals made for the STETAs apply to the small towns and villages within the STETAs.	The focus of the Small Town Regeneration Programme is not on large scale development projects out of the reach of fiscal resources of government, but only on projects and incentives to make these small settlements a liveable place for residents, serving them with basic services, making the small town or villages a sustainable and efficient settlement in order to ensure that communities can have a decent life and

Area Typology	Relevant Nodes	Development Focus and Guidelines
	Additional small towns and villages, outside of the STETAs are proposed for revitalisation initiatives and include: **Local Service Centres:** ▪ Vaalwater ▪ Mookgophong ▪ Northam ▪ Thabo Mbeki ▪ Mutale ▪ Ohrigstad ▪ Alldays	able to participate in the country's economy as envisaged in the Constitution and the National Development Plan. The underlying principles for small town revitalisation are: ▪ Sustainable, integrated and efficient human settlements. ▪ Increased economic activity that will ensure job creation and empowerment. ▪ Upliftment and poverty alleviation that will improve general living conditions and create opportunities for economic activity and self-sustainability. ▪ Optimal utilisation of land as a valuable resource and instrument that will create security to families. Furthermore, in terms of human settlements development, housing projects, especially national human settlement programmes, should be utilised as an instrument for the development of sustainable human settlements, in support of urban renewal. However, the identified small towns should not be the focus for major housing projects, but only to address informal settlement upgrading, natural growth and local needs in an area – proportionate to scale. The use of associated infrastructure development in this regard should also be used to unlock the development potential of rural areas, especially in areas where higher densities occur and where nodal areas have been identified, because infrastructure investment is less cost effective in lower density areas with small economies of scale. Therefore, in all small towns and villages fragmented spatial patterns must be reduced and densities increased in urban areas (nodal areas), which will reduce high costs to households.
Special Economic Zones, industrial parks/hubs	Nodes and regional development anchors: ▪ Musina–Makhado SEZs (Musina, Makhado) ▪ Fetakgomo-Tubatse SEZ/ Industrial hub (Burgersfort/ Steelpoort) ▪ Lephalale Industrial hub ▪ Nkowankowa Industrial Park (Tzaneen) ▪ Seshego Industrial Park (Polokwane)	Where human settlement expansion is necessary to support special initiatives, the following should apply: ▪ Human settlement development should be concentrated in existing nodes. ▪ Higher density settlements between 20 and 40 unites per hectare should be strived for.

Area Typology	Relevant Nodes	Development Focus and Guidelines
	▪ Thohoyandou Industrial Park (Thoyohandou)	▪ Appropriate social services should be provided for new or expanded settlement. ▪ New settlement or settlement expansion should be subject to the provisions of the municipal SDF, including the application of growth management measures such an urban edge.

Figure 53: Provincial Human Settlement Transformation



4.3.5.3. Policy Recommendations

- It is proposed that the Social Services Wheel from the NSDF be applied to the functional nodal network to ensure that the appropriate mix and level of social service is achieved.
- Align human settlements planning, budgeting and implementation with transport and infrastructure budgeting and implementation.
- Prioritise land assembly for human settlements purposes only in spatial targeting areas or for title restoration purposes.
- Informal settlements should be upgraded to sustainable livelihoods through community participatory approaches and by enhancing the existing community assets.
- Development of a provincial policy on inclusionary housing.

4.4. COMPOSITE LIMPOPO SPATIAL DEVELOPMENT FRAMEWORK

The Limpopo Spatial Development Framework indicates the desired future spatial form of the province. It consists of the following structuring elements as described the preceding sections, giving spatial expression to the long term spatial vision, desired spatial outcomes and development objectives.

Natural ecosystems and the natural resource base:

The foundation that sustains human life and the provincial economy. Spatially, it represents the development parameter for the other spatial structuring elements in the form of "no-go" areas for development and human activity, places where risks to sensitive areas and competition for natural resources should be managed, and areas where the impact of climate change should be planned for as a priority. Refer to Section 4.3.1.

Functional nodal network:

A nodal typology describing the function and hierarchy of each node as a concentration point for economic activity, service delivery and human settlement in the network. Refer to Section 4.3.2

Connective infrastructure:

The road and rail system that connects the nodes to each other and also serve as conduit of flows of people and goods between the nodes and productive areas outside the nodes. Refer to Section 4.3.3

Productive regions:

An interconnected system consisting of nodes which serve as gateways to economic activity, connective infrastructure that is the conduit for moving people, goods and information, areas of urban economic activity (e.g. manufacturing, retail, services), and areas of rural economic activity (e.g. mining, agriculture and tourism). Refer to Section 4.3.4.

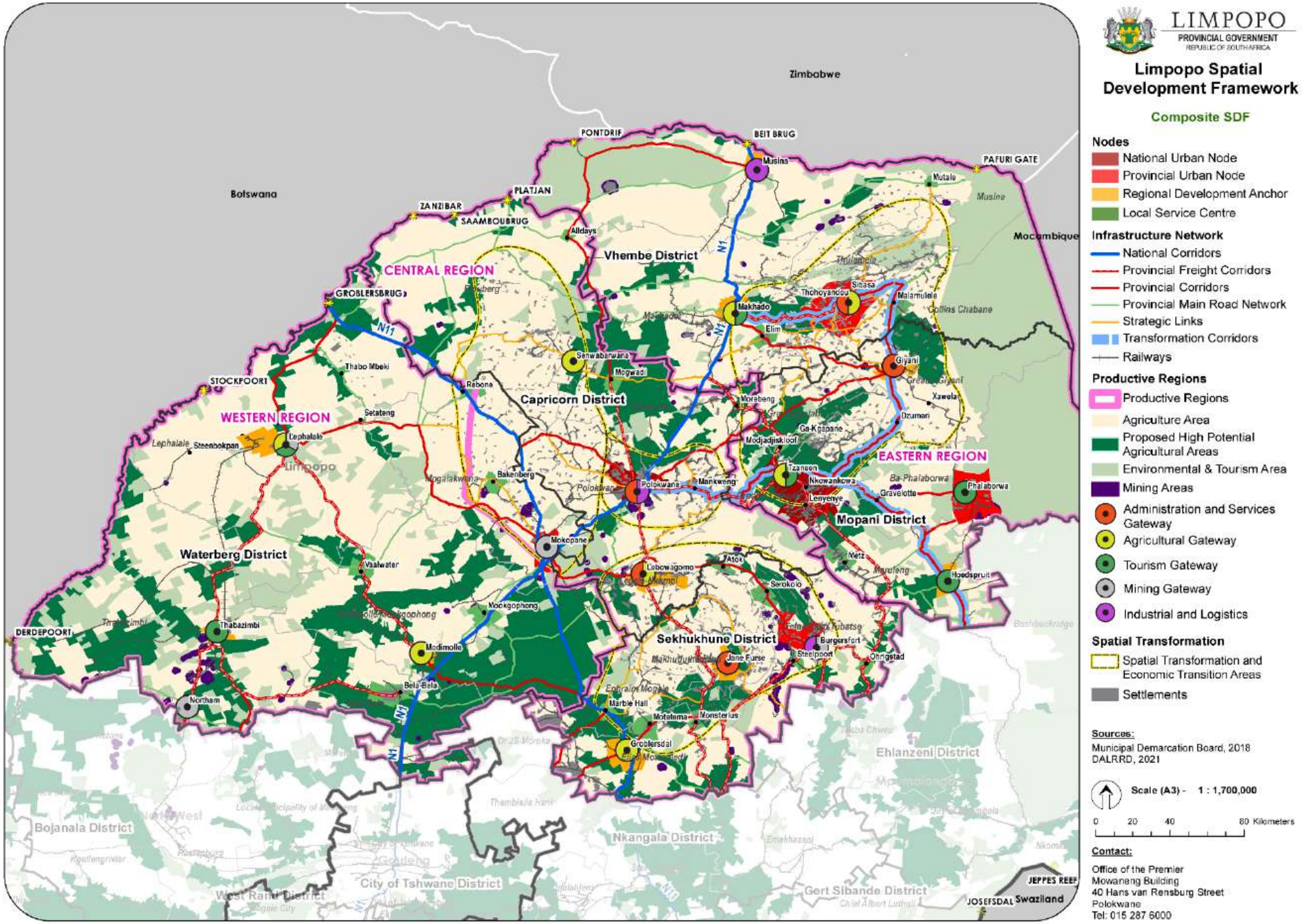
Transformation focus areas:

Areas where urgent intervention is required for social upliftment, economic consolidation and connectivity, and creation of sustainable livelihoods. Refer to Section 4.3.5.

The composite Limpopo Spatial Development Framework, consisting of the main elements above is shown on Figure 54. For more details on each specific elements, please consult the relevant sections of the document.

The above elements were translated into a set of **spatial focus areas** (refer to Section 4.5) to guide the spatial targeting of investment, forming the linking mechanisms between the indicative spatial plan and the implementation framework.

Figure 54: Limpopo Spatial Development Framework



4.5. PROVINCIAL SPATIAL FOCUS AREAS

4.5.1. Spatial Focus Areas: Typology

Limpopo Province has a long history of spatially targeted investment. To strengthen this approach and to ensure that investment and spending are aligned to the long term spatial vision for the province, spatial focus areas will be used as a mechanism to achieve spatial alignment in implementation.

In Section 4.3.4, the roles of nodes as gateways have been set out, as well as their relationship to specific urban and rural production areas in the three regions. For the purpose of guiding investment and implementation, these production areas have been broadly interpreted as spatial focus areas that require a specific investment focus in each instance.

The spatial focus areas in each region, with the national or provincial nodes of regional development anchor that act as gateway, are set out in the next section.

The typology of focus areas are as follows:

Table 29: Typology of Focus Areas

Spatial Focus Area Typology	Description
Spatial transformation and economic transition focus areas	The spatial transformation and economic transition focus areas represent areas where spatial, social and economic transformation of dense rural settlement areas are a priority. These regions form part of the Eastern Escarpment Spatial Transformation and Economic Transition Region as provided for in the NSDF (2022), as well as other areas where settlement growth pressure occurs. The areas are characterised by economic and social deprivation, with lack of access to economic opportunities, social and basic services prevailing. Development priorities include strengthening of the nodal network and public transport connectivity, basic and social service provision, skills development, residential formalisation, and residential densification and growth management to limit sprawl.
Agriculture and farming focus areas	The agricultural and farming focus areas include proposed High Potential Agriculture Areas and other established farming areas. These regions also contain Strategic Water Source Areas (SWSAs) requiring management and protection. Some of these areas do include small rural settlements and scattered rural residential developments that should be managed so as not to encroach on agricultural land. Rural communities should be supported to contribute to small scale agriculture
Environmental and tourism focus areas	The environment and tourism focus areas include a significant concentration of natural features and assets such as National Protected Areas and Expansion Areas, core and buffer zones of the Biosphere Reserves, and cultural heritage elements. Agricultural activities and rural settlements in these areas should be included in an integrated tourism offering and should be managed to prevent encroachment on sensitive ecosystems, cultural heritage sites and water sources.
Mining focus areas	The mining focus areas make a significant contribution to the provincial economy and are delineated where mining surface infrastructure and mining activities are predominant. Smaller clusters of mining activity do occur in other areas as well, but not to the spatially significant degree as the mining regions. Development priorities in the mining regions include road and rail connectivity and environmental management.
Industrial and logistics focus areas	These smaller focus areas are concentrated around three nodal areas and represent current and potential value adding and beneficiation activities such as mineral beneficiation, agro-processing, other manufacturing, power generation, logistics hubs, and other similar developments.

4.5.2. Spatial Focus Areas per Region

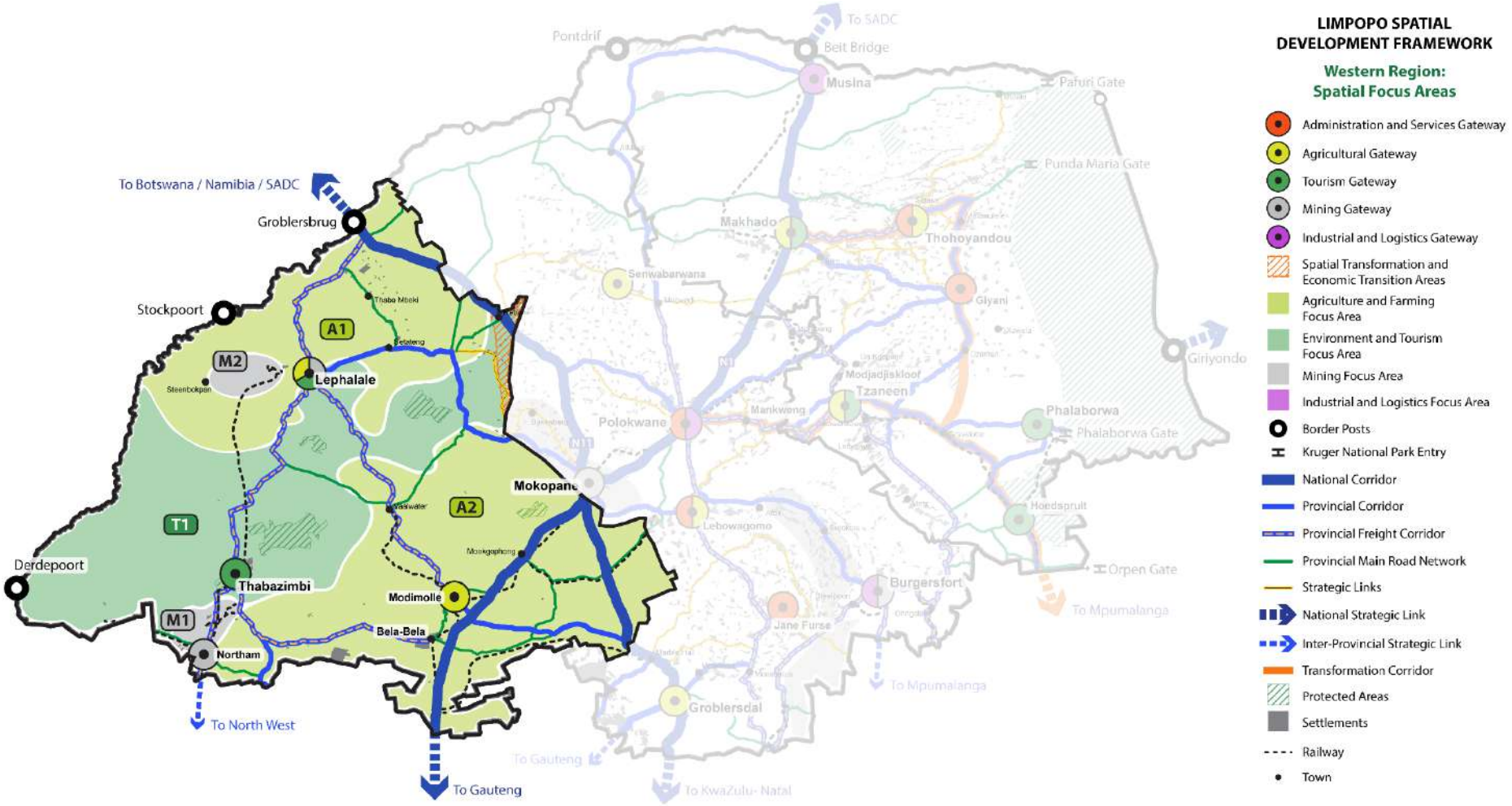
4.5.2.1. Western Region Spatial Focus Areas

The spatial focus areas in the western region are as follows. Also refer to Figure 55.

Table 30: Spatial Focus Areas in the Western Region

Focus Area	Gateways: National or Provincial Nodes, or Regional Development Anchors	Local Service Centres
Agriculture and Farming Focus Areas		
A1	Lephalale	Thabo Mbeki
A2	Modimolle	Bela-Bela, Mookgopong, Vaalwater
Environmental And Tourism Focus Areas		
T1	Lephalale, Thabazimbi	Rebone
Mining Focus Areas		
M1	Part of cross-border region with Bojanala (Rustenburg) in North West	Northam acts as the mining gateway in this region.
M2	Lephalale	-

Figure 55: Western Region Spatial Focus Areas



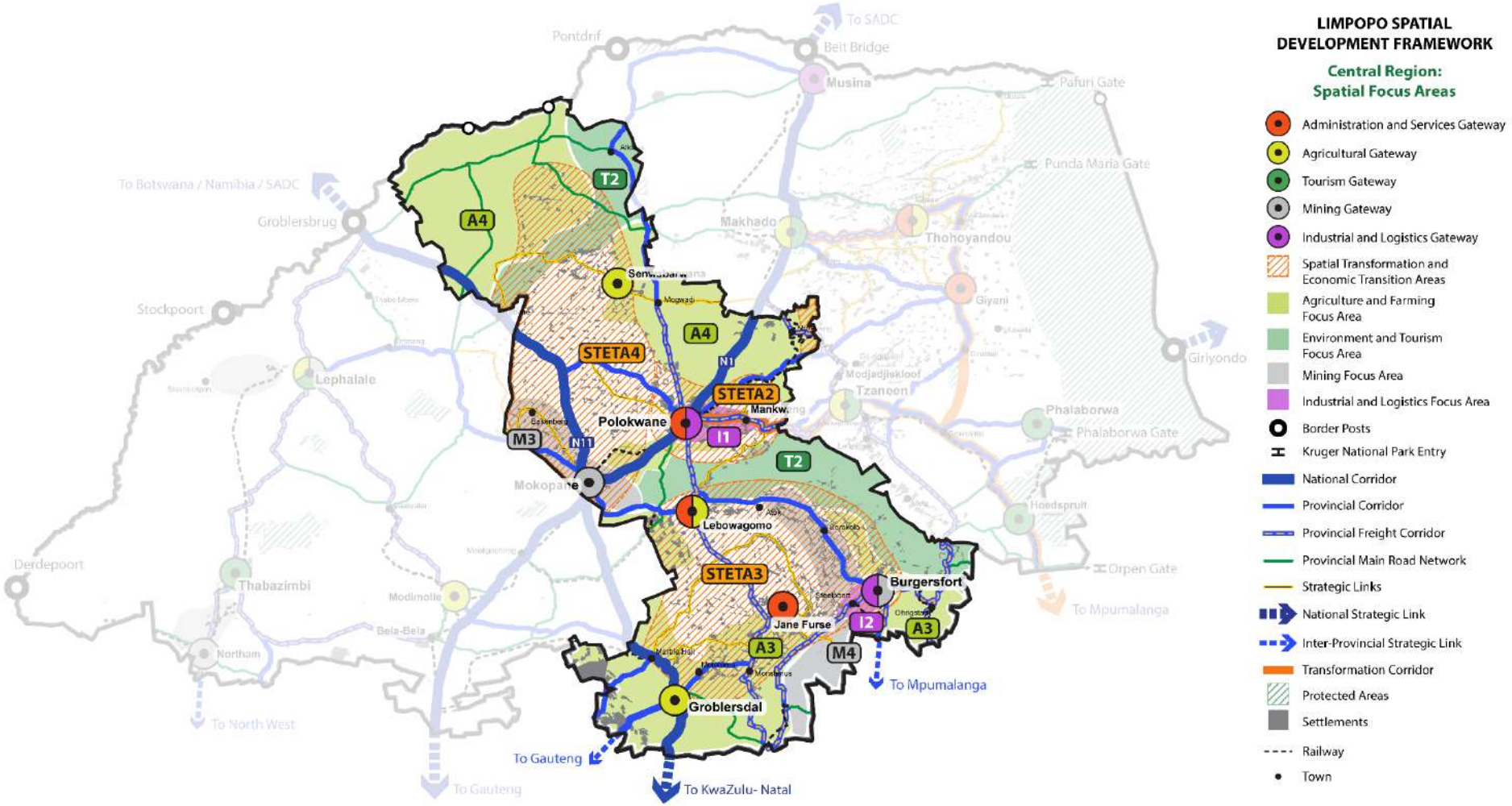
4.5.2.2. Central Region Spatial Focus Areas

The spatial focus areas in the central region are as follows. Also refer to Figure 56.

Table 31: Spatial Focus Areas in the Central Region

Focus Area	Gateways: National or Provincial Nodes, or Regional Development Anchors	Local Service Centres
Spatial Transformation and Economic Transition Focus Areas		
STETA2	Polokwane, Mankweng	Magatla, Alldays
STETA3	Burgersfort, Jane Furse, Lebowakgomo, Polokwane	Orighstad
STETA4	Senwabarwana, Polokwane	Mogwadi
Agriculture and Farming Focus Areas		
A3	Groblersdal	Marble Hall, Motetema, Monsterlus, Ohrigstad
A4	Senwabarwana	Mogwadi,
A5	Zebediela	-
Environmental and Tourism Focus Areas		
T2	Makhado	Alldays, Mutale
T4	Tzaneen, Hoedspruit, Phalaborwa (linked to eastern region)	Metz
T5	Polokwane	Mathabatha-Mafefe
Mining Focus Areas		
M3	Mokopane	Bakenberg
M4	Burgersfort	Steelpoort, Serokolo, Atok
Industrial and Logistics Focus Areas		
I1	Polokwane	-
I2	Burgersfort	Steelpoort

Figure 56: Central Region Spatial Focus Areas



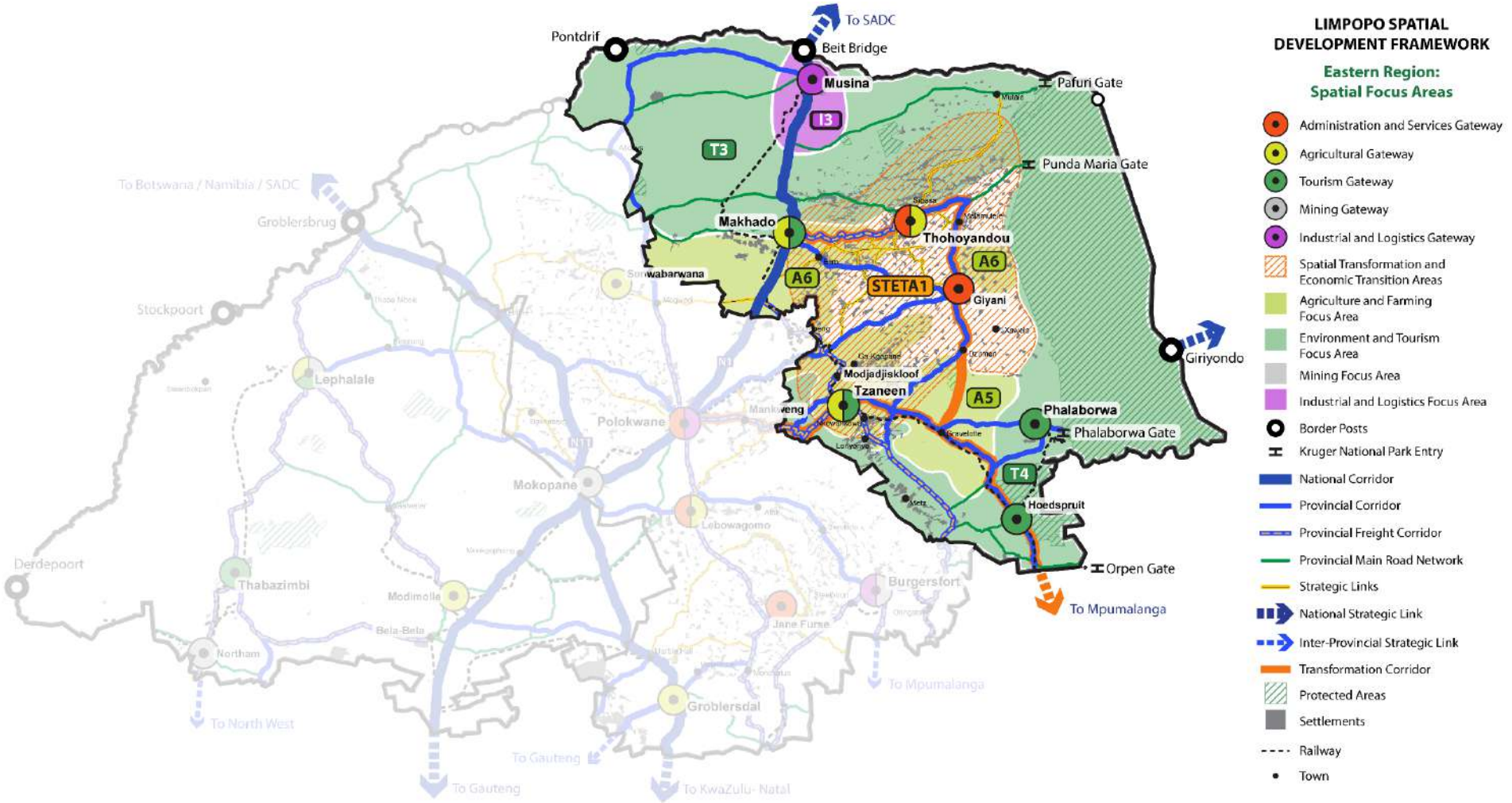
4.5.2.3. Eastern Region Spatial Focus Areas

The spatial focus areas in the eastern region are as follows. Also refer to Figure 57.

Table 32: Spatial Focus Areas in the Eastern Region

Focus Area	Gateways: National or Provincial Nodes, or Regional Development Anchors	Local Service Centres
Spatial Transformation and Economic Transition Focus Areas		
STETA3	Thohoyandou, Giyani, Makhado	Malamulele, Dzumeri
Agriculture and Farming Focus Areas		
A5	Tzaneen	Modjadjiskloof, Ga-Kgapane, Morebeng, Gravelotte
A6	Makhado, Thohoyandou	Elim, Malamulele
Environmental and Tourism Focus Areas		
T3	Makhado	Alldays, Mutale
T4	Tzaneen, Hoedspruit, Phalaborwa	Metz, Gravelotte
Industrial and Logistics Focus Areas		
I3	Musina	-

Figure 57: Eastern Region Spatial Focus Areas



LIMPOPO
PROVINCIAL GOVERNMENT
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CHAPTER 5: IMPLEMENTATION FRAMEWORK

Lets grow South Africa together

Chapter 5 includes the outcomes of Phase 4: Implementation Instruments of the LSDF review process. The chapter describes the framework to guide the implementation of the spatial proposals.

The implementation framework comprises of the following three elements:

Provincial strategic enablers of spatial development, which are the main interventions that provincial governments should invest in.

Implementation proposals for each of the five spatial focus areas to guide investment priorities and decision-making, and to coordinate and align provincial projects and programmes.

Institutional arrangements for coordination and alignment that deals with the governance directives and spatial policies to institutionalise the LSDF and the monitoring and evaluation framework.

5.1. FUNCTION OF THE IMPLEMENTATION FRAMEWORK

The LSDF Implementation Framework outlines the core actions and interventions that must be implemented through all government institutions to achieve the provincial spatial outcomes and realise the desired spatial patterns of the LSDF.

Section 16 (c) of SPLUMA stipulates that the provincial SDF must co-ordinate and integrate the spatial expression of the sectoral plans of provincial departments.

Section 17 (2) of SPLUMA further stipulates that all provincial development plans, projects and programmes must be consistent with the provincial spatial development framework.

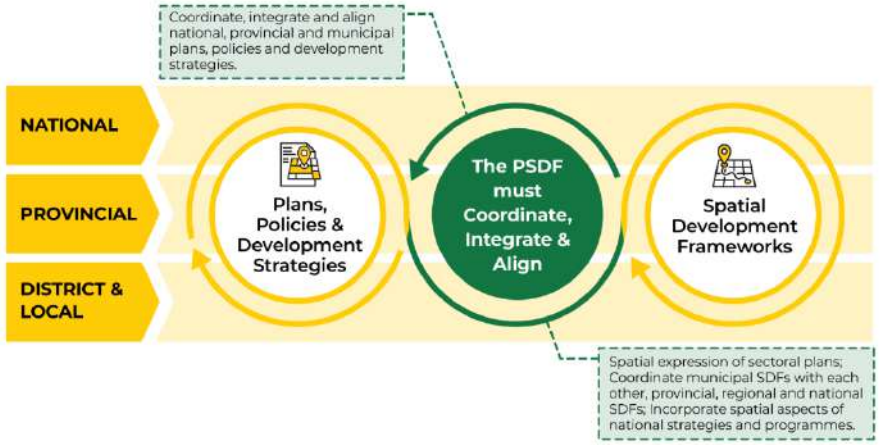
All plans within the province must be able to demonstrate alignment to the spatial development priorities of the province, and ultimately, their contribution to the crafting of the desired and shared spatial future as set out in the LSDF.

This requires:

- The alignment of strategic planning, budgeting and public-sector infrastructure investments to spatial development priorities for the province for all three spheres of government. Section 5.3 of this chapter will deal with this component.
- The institutionalisation of the LSDF in all spheres of government to ensure that implementation is in accordance with the plans, irrespective of which sphere of government is responsible for providing funds or implementation. Section 5.4 of this chapter will deal with this component.

The core actions of coordination and alignment require a process of structured and systematic dialogue between the spheres of government to collaborate and integrate efforts to achieve the desired spatial outlook for the province. All three spheres of government are put forward to institutionalise the provincial spatial rationale, and to strengthen intergovernmental alignment of provincial planning, budgeting, implementation as well as the monitoring and evaluation of spatial outcomes.

Figure 58: Core actions to implement the LSDF



Throughout the LSDF review, it was clear that private sector is a key contributor to land and infrastructure investment in the province. The Implementation Framework aims to include the major or key infrastructure interventions with a regional influence driven by public-private partnerships.

5.2. PROVINCIAL STRATEGIC ENABLERS OF SPATIAL DEVELOPMENT

The realisation of the provincial spatial outcomes is highly dependent on an enabling environment for investment. Five strategic enablers of spatial development in the province have been identified, and this section deals with the proposals for implementation of the following strategic enablers:


Integrated data management and geospatial decision support system


Enabling bulk water and sanitation infrastructure


Safe and functional road and freight network


Digital infrastructure and 4IR technologies


Secured energy supply and renewable energy

5.2.1. Integrated data management and geospatial decision support system

The alignment of provincial strategic planning, budgeting and public-sector infrastructure investments to clear spatial development priorities require integration of planned infrastructure investments, and spatial priorities on a provincial spatial platform. The intervention to integrate infrastructure data warehouses aligns to SIP 22 that deals with Digital Infrastructure and the sub-project National Spatial Infrastructure Hub.

In Limpopo Province, numerous government departments have implemented geospatial information systems (GIS). However, they frequently encounter challenges such as data silos, absence of standardisation, and limited mechanisms for data utilisation and integration within government contexts. In addition, project pipelines are not spatially digitised to enable integration of public investment across the province, and to inform provincial decision making.

Aligned to SPLUMA, the Office of the Premier need to coordinate, integrate and align spatial data and infrastructure investment data originating from national, provincial and local governments to spatial priorities in the LSDF. The primary objective should centre around enhancing coordination and alignment of data management and standardisation across all levels of government sectors and to utilise the data to empower decision-makers with actionable insights.

The standardisation of demographic datasets used for spatial and infrastructure planning in the province should also be established. The Department of Water and Sanitation (DWS) demographic dataset is referred to as the DWS Reference Framework. It forms the basis of the water services development plans (WSDPs) that all water services authorities (WSAs) must develop. It is calibrated to the census but includes updated information and settlement names that are used and understood by all stakeholders. Each settlement has a unique identity number, which will facilitate integrated infrastructure planning. It is advisable that this standard demographic dataset should be considered for all infrastructure planning purposes in Limpopo.

The initiative should not merely be the GIS integration of provincial data and projects. Ultimately, it should facilitate evidence-based decision-making processes especially during provincial and district strategic planning, budgeting and performance monitoring.

An integrated data management and geospatial support system is therefore recommended to coordinate and align provincial data. Some of the benefits from an integrated data management support system include:

- Efficient resource allocation: Integrated data management allows government to consolidate information from various sources, enabling more informed decisions regarding resource allocation, infrastructure development, and service delivery.

- Environmental Planning and Management: Geospatial data is instrumental in environmental planning and management, including land-use planning, conservation efforts, and monitoring of natural resources. Integrated systems enable governments to monitor environmental changes and assess their impact over time.
- Infrastructure Planning and Development: Geospatial data assists governments in identifying suitable locations for infrastructure development projects, such as roads, utilities, and public facilities. Integrated systems support the planning, construction, and maintenance of infrastructure networks.
- Economic Development: Geospatial data can inform economic development strategies by identifying areas with growth potential, supporting investment decisions, and monitoring economic trends over time.

Overall, integrated data management and geospatial decision support systems enable governments to make more informed, efficient, and effective decisions across various sectors, ultimately enhancing service delivery and improving the well-being of citizens.

The geospatial decision support system should also be used as the tool for the strategic marketing of the province and the attraction of investment due to the holistic view that the system would provide investor. This includes integration with the provincial websites.

5.2.1.1. Strategic interventions

Provincial framework for integrated data management and geospatial decision support system.

- Develop a framework that sets out the approach and methodology towards integrated data management across all provincial departments hosting data, and the integration of planned infrastructure investments with data systems hosted by national departments and SOEs, and the National Geospatial Hub. This include identifying those departments that need to digitise planned infrastructure investments, and private sector initiatives that could potentially support the initiative.
- The framework should recommend a standard demographic dataset calibrated to census, with agreed settlement names, boundaries and unique ID numbers for all infrastructure planning purposes in Limpopo.
- The framework should further define the system architecture of a provincial geospatial decision support system for improved and informed decisions during provincial strategic planning and budgeting.
- The framework should define the approach to use the tool for provincial strategic marketing of investment, and the system architecture to be developed for this purpose.

Institutionalise the provincial integrated data management and geospatial decision support system.

- Establish the institutional arrangements to execute and monitor the initiative.
- Facilitate the needs for capacitation and system development, and provincial website integration.
- Facilitate the institutionalisation of the provincial integrated data management and geospatial decision support system across all stakeholders involved, in particular applying the integrated and geospatial decision support approach to annual provincial departmental strategic plans, budgeting processes, sector plans and performance monitoring.

5.2.2. Enabling bulk water and sanitation supply

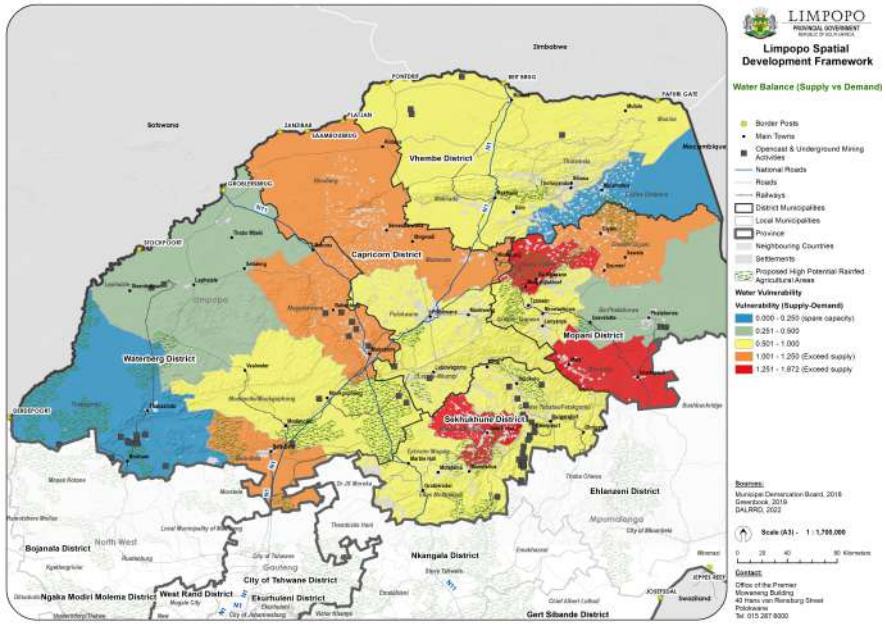
Significant progress has been made with regard to the delivery of water supply infrastructure to communities in Limpopo, but water for consumption is still unavailable in large parts of the province, as discussed in Chapter 3 of the LSDF. Water is a scarce resource in Limpopo. The estimated water requirements for the agriculture, livestock, forestry, mining, and potable water were projected for 2021 - 2031 in Chapter 3: Spatial Analysis. The agriculture sector, and in particular crop irrigation has the largest demand requirements for water, followed by domestic potable water. Another major consumer is the two power stations and associated coal industries in Lephalale that make up more than half of the demand in the mining sector.

Despite water resource limitations, the water demand requirements of domestic consumers are expected to increase with 76% from 2021 – 2031. The implication is that Limpopo water catchment areas will have a deficit water balance by 2027 with some areas of the province earlier. The seriousness of water resource scarcity is further exacerbated by the impact of climate change on the temperature and rainfall in the province.

5.2.2.1. Strategic interventions for sustainable water resources

- It is of prime importance to put Water Conservation and Water Demand Management (WC&WDM) measures in place to manage water as a sustainable resource, to protect the water environment, and to meet current and future economic and domestic demand. This includes sustainable abstraction from boreholes and preventing the uncontrolled use and wastage of water. Priority should be given to the most vulnerable areas in the province where the water demand exceeds the supply and where the water balance is in a deficit. These most vulnerable areas are Makhuduthamaga, Greater Letaba and Maruleng municipal areas, followed by Mogalakwena, Bela Bela, Blouberg, Molemole and Greater Giyani.

Figure 59: Priority vulnerable water areas



- Efficient use of water and sanitation resources require water efficient land use planning, land development and building design within urban and rural environments.
- Other threats to SWSAs include invasion by alien invasive plants, afforestation and other water-intensive land uses, as well as pollution (e.g. by sewage or wastewater) and ecosystem degradation. Spatial plans should be aimed at ensuring that ecological infrastructure (e.g. wetlands) in SWSAs is protected as far as possible. The focus should also be on limiting land uses that are water-intensive (e.g. afforestation, mining and crop irrigation) or that have a high potential for surface water pollution (e.g. heavy industry, mining or crops which require high levels of fertiliser or pesticides), and on preventing surface hardening as far as possible.
- Coordinate the alignment of provincial and interprovincial planning with the National Spatial Action Areas (NSAAs), in particular to the

National SDF Waterberg River Catchment and the Olifants River Catchment as National Resource Risk Areas (NRRAs).

5.2.2.2. Strategic actions required for potable water provision

The following actions are required for potable water provision:

- Embark on a water intervention plan that aims to fast track the installation of the bulk water infrastructure and ensure that there is uninterrupted water reticulation, and consistent water supply.
- The effective management of water services by Water Service Authorities (WSAs) requires the measurement of water volumes from source to tap. The Water Demand Model is an important planning tool, and it should be further developed and maintained to ensure the integrity of information for water demand, water resources and the water balance in the province.
- The accurate metering of water used needs to be made a priority at WSAs so that historical records can be used to calibrate theoretical models.
- Facilitate in collaboration with DWS the revival of the DWS GRIP network of borehole information. This data forms an important component in regional evaluations and management decisions. Monitoring data must be available for planners, consultants and managers.
- Monitoring data collected from mines and other sectors forms part of the National Water Act of 1998 and the requirements for water-use authorisation. Therefore, it needs to be included in a national database.
- Investigate the possibility of artificially recharging the groundwater from surface water sources during higher rainfall periods or seasons.
- Although it has limited application in the province, promote rainwater harvesting and rain fog harvesting in higher rainfall regions and mountainous areas respectively to supplement the existing water supply.
- Investigate the option of reclamation of mine water, especially unused and closed mines (refer to Figure 30 in Annexure C: Socio-Economic Analysis).
- Collaborate with WSAs and domestic users to execute efficient water practices, including domestic water re-use.
- The life cycle of the bulk water infrastructure of 30 years has been exceeded in the case of many of the bulk water supply infrastucture systems across the province. More than 70% of Limpopo's water infrastructure has medium to high refurbishment needs. A comprehensive infrastructure asset management system that is focused on effective and efficient service delivery should be put in place so that adequate infrastructure maintenance can be ensured. The system should cover all the contributing factors that affect the life cycle costs of infrastructure:
  - Current and future demand for services requiring infrastructure to support the delivery of those services
  - Current technology being used
  - Current condition of available infrastructure and the costs to operate and maintain the infrastructure
  - The potential remaining useful life of infrastructure
  - A replacement and disposal strategy for existing infrastructure
- The Water Treatment Works (WTW) /Water Treatment Purification plants (WTPP) earmarked as being in high need of refurbishment are listed in Table 33 and should be prioritised for refurbishment (noting that concept/design have started with some of the listed works):

Table 33: WTWs and Purification Plants with high need of refurbishment

Region	WTWs High need for Refurbishment
Central 	▪ Seshego WTW ▪ Steelpoort WTW ▪ Laaste Hoop WTW ▪ Molotone WTPP ▪ Dithabanang WTW ▪ Ramokgopa WTPP

5.2.2.3. Strategic actions to augment surface water supply in Limpopo

Catchments in Limpopo are stressed with high demand for water for development activities. The majority of available dams are fully allocated and the quality of water renders surface water a limited resource for the province's future development needs.

Aligned to the National Water Resource Strategy - NWRS-2, 2012, the following actions are recommended to augment surface water supply in the province:

.

Water Management Area	Actions to augment surface water supply
Limpopo North Water Management Area	▪ Mokolo River sub-area: feasibility for the rising of the level of the Mokolo Dam and construction of a dam in the upper reaches of Mokolo River. ▪ Mogalakwena River sub-area: The possibility of constructing the Rooipoort Dam as an additional supply source has been considered. The construction of infrastructure to transfer water from the Flag Boshielo Dam in the Olifants WMA to supply the mining focus area (M1) in Mokopane. ▪ Nzhelele sub-area: the rising of the level of Nzhelele Dam (irrigation water supply), and the rising of the level of the Mutshedzi Dam (domestic water supply) are possible future options. Importing water from the Mutale River or the Vondo Dam or transferring water from the Zhovhe Dam in Zimbabwe to supply coal mining developments and to augment the irrigation supply could be feasible options. Approximately 30 million m3/a can be purchased from ZINWA. Transfer from Nandoni dam a possibility. ▪ Sand River sub-area: possible future water sources identified include the development of well-fields at Albasini, Welgevonden, Nooitgedacht and Sand River in Louis Trichardt. Alternative developments include the proposed Mapungubwe Dam and Vryheid Dam. ▪ Growing domestic requirements in the Modimolle and Mookgophong areas will require an additional 8.5 million m3/a by 2040. The water will need to be supplied by the Roodeplaat Dam or the Klipvoor Dam on the Pienaars River (Crocodile River West).
Olifants River Water Management Area *The Olifants River Water Supply System provides water for domestic and industrial water use purposes, irrigation, mining and power generation. The catchment is fully allocated, and alternative sources of water are needed*	The intention of DWS is to operate Flag Boshielo Dam and the new De Hoop Dam in conjunction to alleviate the huge water demands placed on the Olifants River Water Supply System. Significant infrastructure investment is required. ▪ Groundwater development and wastewater re-use will play a major role in supplying enough water from the Olifants River Water System to meet the required demands. ▪ WC&WDM for irrigation and domestic water systems will free up a significant amount of water. ▪ Eradicating unlawful water use will ensure more water. ▪ Investigate the feasibility of sourcing water from the Tokwe Mukosi Dam in Zimbabwe to supply Limpopo has been tabled. ▪ The system yield in the Olifants WMA includes transfers of water into the Olifants River catchment from the Vaal, Usuthu and Komati River catchments, totalling 228 Mm3/a for the seven Eskom power stations in the catchment.
Letaba and Levuvhu catchments *The Letaba catchment falls in the Olifants Water Management Area and the Luvuvhu catchment in the Limpopo Water Management Area. The catchments are*	▪ The existing transfer of 2.4 Mm³/a from the Albasini Dam to Makhado in the Limpopo WMA will be removed when the Nandoni Dam supplies water to this area. ▪ Upgrade and refurbish the Dap Naude transfer scheme. A maximum of 18.1 Mm³/a is available from the Ebenezer and Dap Naudé dams for transfer to Polokwane in the Limpopo WSA.

Water Management Area	Actions to augment surface water supply
almost fully developed and demands from the Letaba River currently exceed the yield capability of the system. The Letaba River is regulated mainly by Middle Letaba, Ebenezer and Tzaneen dams. The completed Nandoni Dam in the Luvuvhu catchment will be used together with the Albasini, Vondo and Damani dams and managed as one system.	▪ Existing transfers of approximately 0.7 Mm³/a from the Groot Letaba River for mining near Gravelotte to domestic users in the Olifants WMA. ▪ To utilise Ebenezer Dam more efficiently, the risk needs to be shared by irrigators upstream and downstream of the Tzaneen Dam. ▪ The raising of the Tzaneen Dam project must be completed. ▪ A drought analysis is urgently required for the Thabina Dam. The Ngwabu Dam needs to be constructed to supply irrigation. ▪ While the Nandoni Dam will bring surplus in the Luvuvhu/Mutale sub-area, the availability of water in the Great Letaba and Klein Letaba rivers will be seriously impacted by the implementation of the reserve. The new surface water development is likely to be affordable for high-value uses such as mining and related uses. Water for poverty alleviation and rural development can partially be sourced from the Nandoni Dam or from the reallocation of irrigation water.

5.2.2.4. Strategic actions for major water resource transfer schemes

The analysis of the provincial water balance per water supply scheme area in Part 2 of the LSDF, states that the province will reach an average deficit in respect of its bulk resource development and distribution balance in 2027. (Some areas will reach this situation before 2027 and others after 2027.) The water balance for domestic use per water scheme area show that both national urban nodes Polokwane and Tzaneen already have a deficit water balance as well as a number of Regional Development Anchors (Modimolle, Bela Bela, Makhado, Jane Furse, Lebowakgomo, Giyani). Of further concern, is that the provincial mining, industrial and logistic areas of Tubatse/Steelpoort and Mogalakwena that attract domestic consumers, have also deficit water balances for domestic use.

Table 34 encapsulates the critical strategic actions identified for major water resource transfer schemes that are either under stress, under construction or being planned. The resource transfers are illustrated in Figure 60.

Figure 60: Major water resource transfers

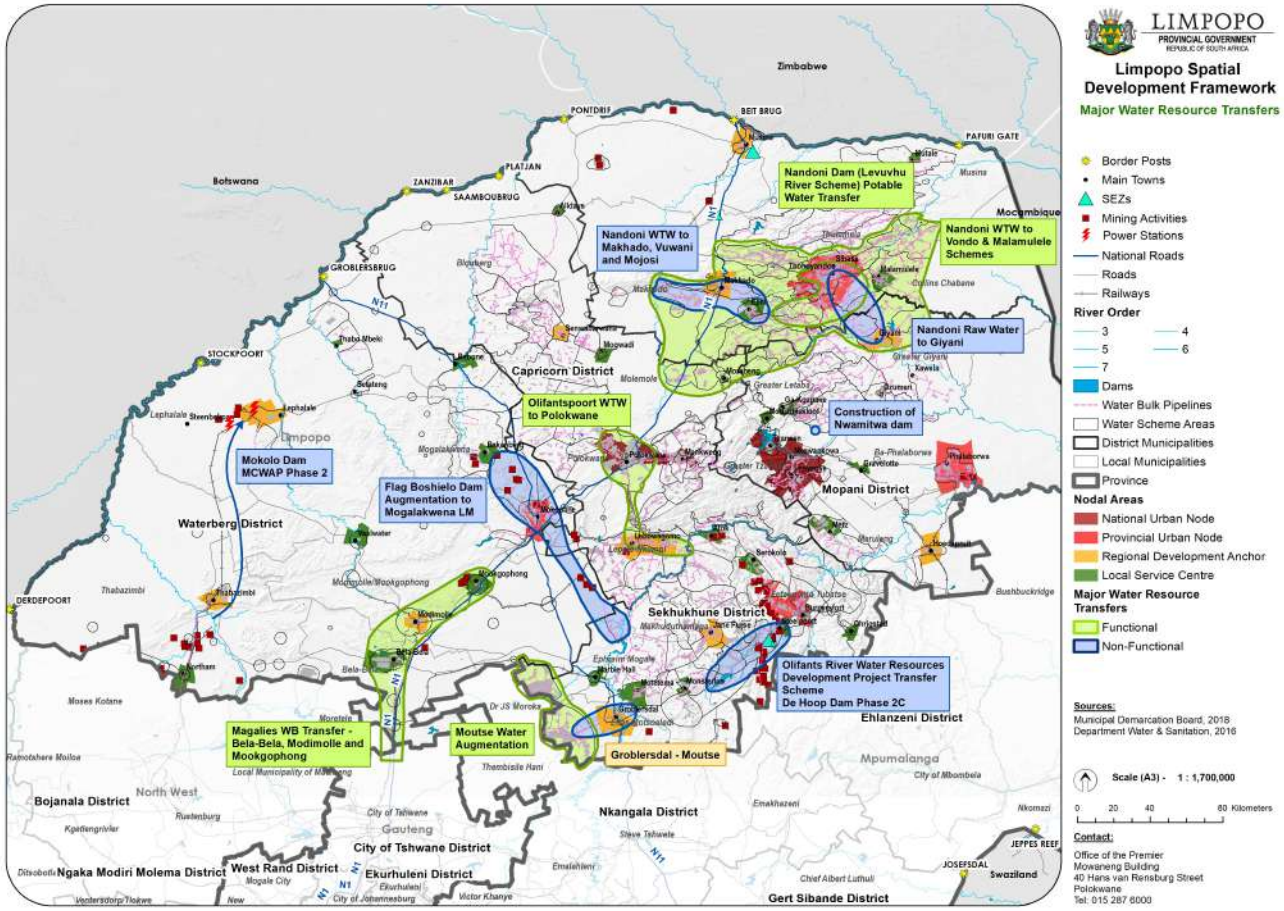


Table 34: Critical strategic actions for major water resource transfer schemes

Intervention	Critical strategic actions identified for major water resource transfer schemes	Spatial Region
Mokolo and Crocodile Water Augmentation Project (MCWAP)	Implementation of Phase 2 of MCWAP as mandated by the Minister of the Department of Water and Sanitation. The provision of water to local communities in the region must be accelerated by developing the available groundwater resources (as per the All Towns Reconciliation Strategy for the Lephalale municipality).	Western 
Magalies Water Board Transfer to Bela-Bela, Mookgophong and Modimolle	Increased water capacity for transfer system is urgently required. Funding of about R 2 700mil needs to be secured.	Western 
Mogalakwena Augmentation from Flag Boshielo Dam	Mining Development and Domestic Water distribution: ▪ Urgent intervention is needed to expedite the Flag Boshielo raw water pipe from the dam to Mokopane by engaging with DWS and the Lebalelo Water User Association. The programming of this pipe was recently changed for later implementation due to delays in mining development. The Mogalakwena Local Municipality has exhausted its available sources and needs this augmentation for potable water requirements as it is in a deficit situation already. ▪ It was proven that the Mogalakwena Local Municipality needs more than R3 billion to accelerate the implementation of their downstream 2020 bulk conveyance system for residential and mining requirements.	Central 
The Olifants River Water Resources Development Project (ORWRDP and ORWSDP)	De Hoop Dam bulk water services and regional bulk distribution: ▪ The signing of water supply agreements by commercial users (mines) and WSAs. ▪ The construction of bulk water resources and conveyance infrastructure needs to be rolled out at the same time as the municipal water services in order to minimise the risk that water infrastructure will be vandalised. ▪ The three regional WTWs (Ga-Malekane, Steelpoort and Mooihoek) and potable water distribution infrastructure need to be commissioned in order to provide water to communities and put an end to service delivery protests and the vandalism of infrastructure. ▪ The pipeline to the Olifantspoort WTW must be completed to improve the surety of supply to the Lepelle Nkumpi and Polokwane municipalities. ▪ RBIG funding needs to be secured to finalise and implement WSA RBIG distribution systems in parallel with reticulation systems. IRS and feasibility studies are required for some of these schemes and need to commence urgently (Nebo Plateau, Lebalelo and Tubatse).	Central 
The Groot Letaba River Water Development Project (GLeWaP)	The construction of the Nwamitwa Dam and its water distribution infrastructure: ▪ The availability of funds and the sources of funding need to be confirmed. The construction cost of the infrastructure components of the project is estimated to be in excess of R3,000 million. ▪ Lepelle Northern Water (as the Implementing Agent) for the construction of the Nwamitwa Dam and for raising of the Tzaneen Dam to commence with the detail design of both projects as a matter of priority.	Eastern 

Intervention	Critical strategic actions identified for major water resource transfer schemes	Spatial Region
	▪ The estimate of the amount of water available should be reviewed urgently once the hydrology of the Groot Letaba River has been recalibrated.	
Luvuvhu River Government Transfer Scheme (LRGWS)	Nandoni Dam and its bulk distribution systems: ▪ The adequacy of the Nandoni WTW's capacity needs to be evaluated for the Phase 2 extension (the next 60 Mℓ/d module). All planning, funding and programme issues for the pipe to Giyani must be addressed adequately. ▪ Assistance to the Vhembe District Municipality to fund downstream bulk infrastructure requirements of approximately R650 million.	Eastern 
Financial intervention	The provincial government, with support from CoGTA and National Treasury, must facilitate financial support to municipalities for them to provide water to domestic users at affordable tariffs.	All
	Additional funding must be provided to assist municipalities to refurbish and upgrade infrastructure in order to reduce losses.	All

5.2.2.5. Sanitation recommendations

A Provincial sanitation master plan is recommended to be developed to cater for the lack of district and municipal sanitation master plans across the province. The plan should be developed in alignment to the LSDF and the provincial water master plan. Since the sanitation issues and constraints are the similar across all districts, the plan should respond to the following:

- Consider and identify alternative sanitation systems. This recommendation is in the light of water being a scarce resource.
- Align the construction of waterborne sanitation infrastructure with water supply availability and planning. In future, the recommended integrated geospatial decision support system should be applied.
- Define an intervention plan to address the deteriorating conditions of existing sanitation infrastructure, operations and maintenance challenges, and inability to cater for new major developments.
- Investigate funding mechanisms for sanitation infrastructure, operations and maintenance that include partnerships.

Whilst the master plan is developed, a strategic intervention is required to refurbish the waste water treatment works (WWTWs) in high need, as illustrated in Figure 61 and listed in Table 35.

The WWTWs that are located in SWSAs are indicated in Figure 61. Priority should be given to refurbish the WWTWs that are polluting SWSAs.

Figure 61: Wastewater treatment works with high refurbishment need

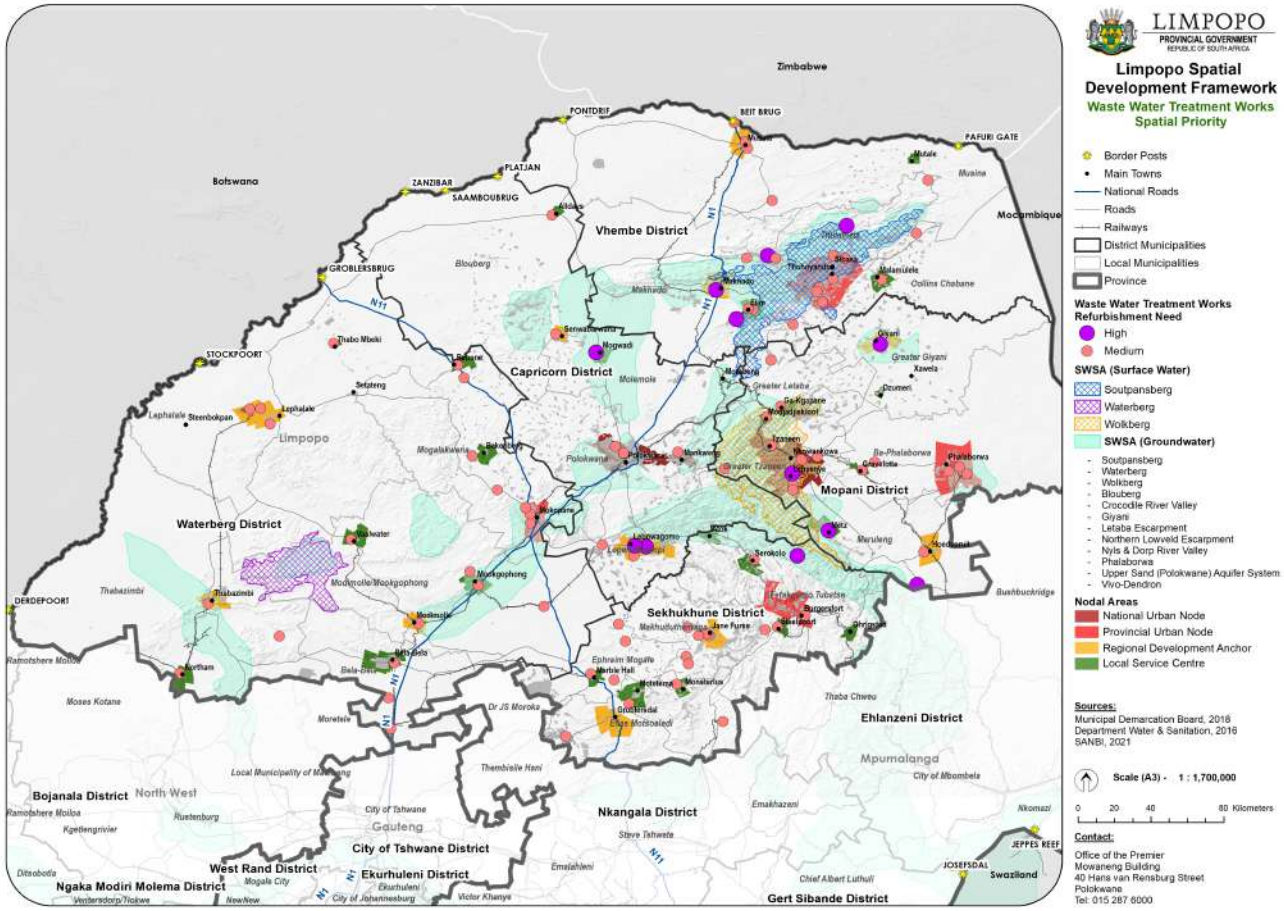


Table 35: New Regional and WWTWs in high need of refurbishment

Region	WWTW Refurbishment/ Upgrade – High need	New Regional WWTW
Western 	Northam WWTW (under construction)	
Central 	Lebowakgomo RWWTW (Middelkop) WWTW Lebowakgomo Oxidation Ponds WWTW Mogwadi (Dendron) WWTW Penge WWTW	Polokwane RWWTW Jane Furse RWWTW outfall system and oxidation ponds
Eastern 	Makhado (Louis Trichardt) WWTW Mutale WWTW Dzanani Ponds WWTW Kampersrus WWTW Giyani WWTW Lenyenye WWTW Sekororo WWTW Vleinfontein WWTW	

5.2.3. Safe and functional road and freight network

The condition of road infrastructure in the province is negatively impacting accessibility, operations, competitiveness, safety and security in the sectors of the economy. In addition, the insufficient rail system is not supporting efficient exports from the province. Safe and efficient transport infrastructure is also socially necessary to ensure mobility and accessibility of users in the province.

An integrated road network and freight system is important to connect the nodal network and spatial focus areas in the province, also with local and national markets and ports. For this purpose, a network of national, provincial and transformation corridors have been identified in the LSDF, as well as provincial freight corridors to serve as the strategic networks that needs to be prioritised for maintenance, upgrading and intelligent transport systems (ITS).

The following are implementation proposals and actions to coordinate and align the development of safe, trusted and operational transport infrastructure systems and networks in the province. The proposals are aligned to the recommendations made in the Provincial Land Transport Framework, 2023.

5.2.3.1. Alignment of transport planning and data management

- The Integrated Transport Plans (ITPs) of municipalities need to align the transport plan with the corridors, strategic links and spatial focus areas identified in the LSDF, and achieve greater and effective integration of land use and infrastructure planning to address national and provincial desired growth. This is likely to enable the right infrastructure to be delivered at the right place and time in a more sustainable and affordable manner.
- Provinces and municipalities are required to demonstrate road maintenance plans and budget applications based on life cycle analysis, through a Road Asset Management System (RAMS). It is therefore of paramount importance that the Province maintain or implement (where not available yet) a high quality and fit for purpose data gathering and infrastructure/ asset management system, specifically RAMS, to support infrastructure planning and investment decision-making. The RAMS should align with the provincial integrated data management and geo-spatial decision support system recommended in Section 5.2.1.

5.2.3.2. Strategic actions for road freight

The main issues with the current freight infrastructure network can be summarised as follow:

- Accelerated deterioration of roads used for coal haulage or mineral resource, coupled with inadequate funding for rehabilitation.
- Road safety and security issues.
- Poor performance of rail infrastructure and services to transport minerals to its destination.
- Delays experienced at border posts, particularly Beitbridge border post.
- Overloading results in higher repair and maintenance costs, shortens the life of a road and is a safety risk. A review of the weighbridges in Limpopo revealed that, outside of the N1 and N11, a large portion of the provincial strategic freight network are not effectively monitored against overloading.

The strategic actions recommended are as follow:

- It is proposed that overload control (either fixed facility or temporary monitoring) is implemented on the following:
  - Mining routes between Lephalale, Thabazimbi and connections to the N1 (roads R511, R33);
  - Mining routes in Sekhukhune District, and its connections to Mpumalanga (roads R555, R33 and R36).
- The Roads Agency Limpopo (RAL) should investigate the introduction of virtual weigh stations (e-WIMs) to extend reach to other parts of the

strategic freight road network instead of using costly static weighbridges. Portable weighing scales can also be considered as a solution to improve the efficiency of the inspection process.

- There is a key opportunity for the migration of freight to rail along the Gauteng-Zimbabwe corridor, where rail currently holds a small share of total freight volumes. Cross-border freight transport in specific holds opportunity for migrating to rail. The World Bank conducted a study in 2020 to investigate the feasibility of implementing a block train along this corridor, for the transport of mining related commodities between the Copperbelt and the Ports of Durban and Richards Bay, through Limpopo.
- Intelligent Transport Systems (ITS) can assist in better management of security risk areas, and in better response time in the case of incidents. It is recommended that ITS be introduced along the national, provincial corridors identified in the LSDF.
- The redevelopment of Ports of Entry with Public Private Partnership to finance, construct, maintain and provide broadband connectivity, prioritising Musina border post.
- Border operations and management need to enable the ease of freight movement at the border posts which require a multifaceted approach that includes measures to address staffing, technology, infrastructure, processes, and security. By implementing these measures, it is possible to reduce delays, boost trade, and promote economic growth.
- The district municipalities to expand the designated routes for transport of hazardous materials and dangerous goods to include the provincial freight corridors identified in the LSDF.

5.2.3.3. National corridor initiatives (SANRAL)

SANRAL Northern Region currently has a programme for the construction and upgrade of several roads under their mandate in the province. The programme spans for the years 2006 – 2030. The following are key major SANRAL projects in Limpopo that are either in the last stage of detailed design or about to go for construction:

- Dualling of N1 between Kranskop Toll Plaza and Polokwane - advanced stage of design;
- Upgrade of the N1 between Polokwane and Musina - advanced stage of design;
- N11 Mokopane ring road - design stage;
- N11 upgrade from Mokopane CBD to Grootsun River;
- Road capacity upgrades on the following roads:
  - R573 Moloto Road;
  - R71 Thohoyandou R524;
  - R71 Tzaneen to Phalaborwa;
  - R81 Mooketsi; and
  - R37 Steelpoort

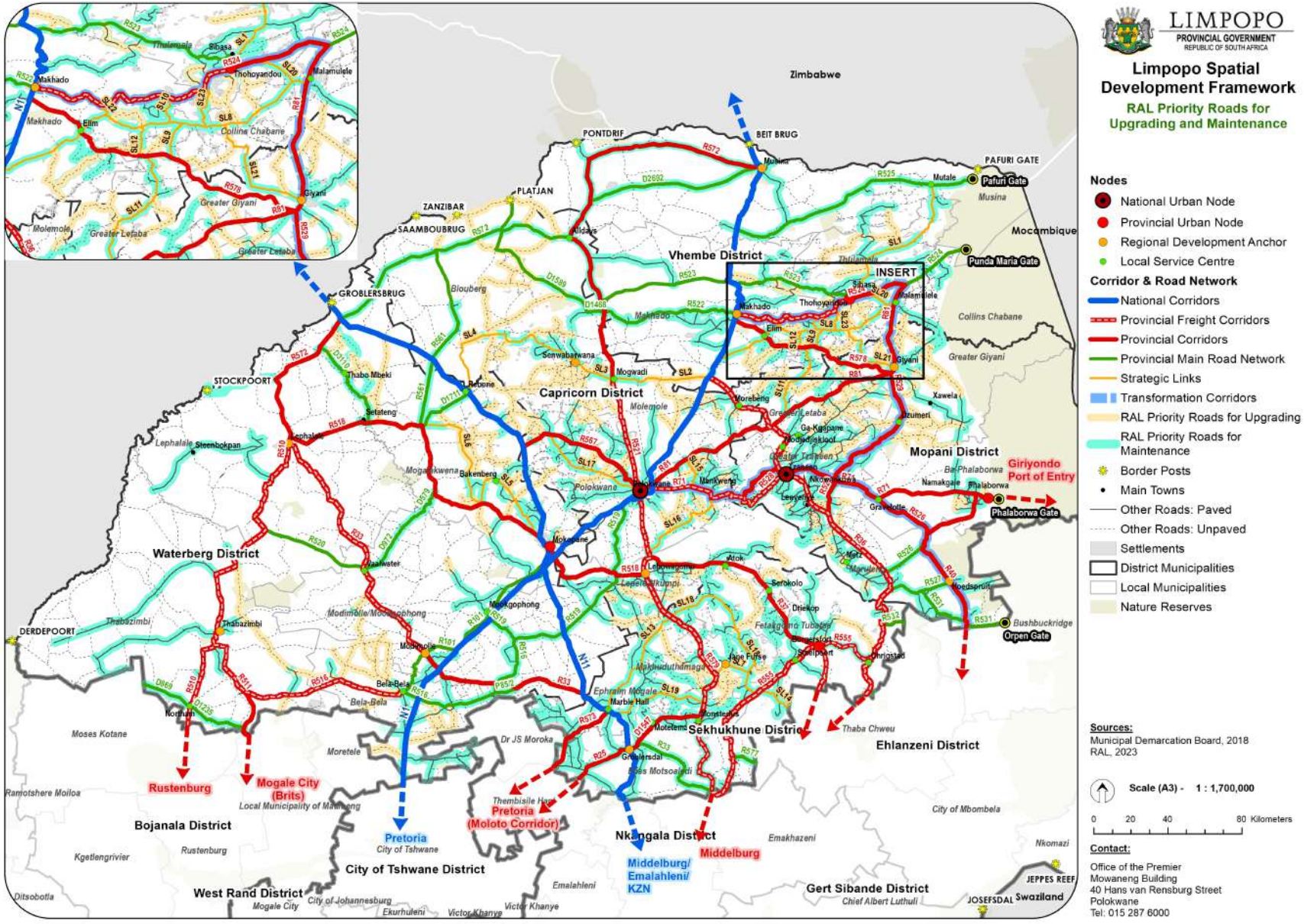
5.2.3.4. Provincial corridor initiatives (RAL)

RAL, through its Road Infrastructure Programme, has several planned projects per district municipality for the period of 2023 to 2030, at the various project cycles. The RAL prioritised roads for upgrading and maintenance for the period 2023-2030 are shown in Figure 62.

It is recommended that RAL introduce a programme for the progressive improvement of connectivity between nodal areas and nodal – rural areas with the upgrading and maintenance of the new strategic link roads put forward in the LSDF.

The implementation of the planned roads for upgrading and maintenance, should prioritise the provincial corridors and strategic link roads, including the transformation corridor. By doing so, the nodal network and strategic freight routes will be addressed.

Figure 62: RAL prioritised roads for upgrading and maintenance 2023-2030



5.2.3.5. Strategic actions for freight rail (Transnet)

According to the Annual Freight Rail 2022 Report and through stakeholder engagement with Transnet, currently, there are two key strategic priorities for rail infrastructure in the province:

- to improve the overall condition of the rail network, and
- to secure the network against the threats of theft, vandalism, and sabotage.

The Transnet Long Term Planning Framework contains a network plan for 2044 that envisages the future rail network, nationally, that will meet Transnet intended objectives. It is recommended that the framework review the network plan for the province by taking into considering the expansion of economic activity in the province, and the need for migration from road to freight, in particular the demand from the industries in the industrial and logistics, agriculture and mining focus areas.

The 2044 future planned rail network for the province in the Transnet Long Term Planning Framework includes the following:

- Planned axle loads: the Pyramid – Lephalale line is proposed to be a heavy haul line, catering for axle loads of 26 tons and above. This will also be the case for the Hoedspruit – Groenbult line as well as the Groenbult – Musina line. The Pyramid – Groenbult line is proposed to cater for general freight, ranging between 20 tons and 26 tons.
- Electrification: The Pyramid – Lephalale, Hoedspruit – Groenbult and Groenbult – Musina lines are proposed to use 25 kV AC lines as a form of traction. The Pyramid – Groenbult line is proposed to not be electrified and, therefore, diesel locomotives will be used along this line.
- Future traction energy strategies: The strategy adopted includes the following:
  - High-volume lines to be converted to 25kV (ore line will remain at 50kV);
  - Standardisation to 25kV to avoid traction changes;
  - Low-volume lines to be de-electrified and operated with diesel locomotives;
  - Refine to detail train and route level;
  - Optimise train length and mass with locomotive allocation;
  - Allocate locomotives to the required train service;
  - Apply optimal locomotive allocation rather than historic use; and
  - Apply design cycle times rather than historic cycle times with improvement target.
- Train control: The Pyramid – Lephalale, Hoedspruit – Groenbult and Groenbult – Musina lines are proposed to apply central train control (CTC). The Pyramid – Groenbult line is proposed to make use of track warrant system (TWS).

The following further strategic recommendations are made:

- The rail authorities should complete the planning process to extent the Lephalale - Richards Bay corridor/line from Lephalale over the Limpopo River close to the Stockpoort port of entry into the rich coal fields of Mahalapye in Botswana.
- It is proposed that there be a potential re-instatement of both the Pienaarsriver – Marble Hall and the Mookgophong – Zebediela branch lines for the development of the limestone, cement, agriculture and fluorspar industries.

5.2.3.6. Passenger rail service (PRASA)

The Passenger Rail Agency of South Africa (PRASA) runs its passenger rail services along Transnet's infrastructure, and owns and operates the rail stations. The continuation of the passenger rail services along the Gauteng-Polokwane-Musina line, as well as an improved service is required. The upgrade of station facilities along passenger routes, where the station is in poor condition (such as Soekmekaar station) is also recommended.

PRASA proposes to expand its service offering adding additional tracks on the existing rail corridor and to extend the rail network to reach unserved areas. In 2010, the Limpopo Department of Roads and Transport and PRASA investigated the passenger rail opportunities within the province of Limpopo. Corridor A and D were investigated at the time and it is recommended to revisit the two options. A project feasibility is therefore required in respect of Corridor A and D:

- **Corridor A: Polokwane–Mokopane Commuter Rail Service.** To provide rail services between the Polokwane and Mokopane stations. This service will link two major Urban Nodes in the province; and
- **Corridor D: Polokwane–Jane Furse Passenger Regional Rail Corridor - via Zebediela and Lebowakgomo.** The timing of this corridor will be impacted by the implementation of the Moloto Rail Corridor.

The Provincial Land Transport Framework, 2023 recommend the consideration of the following services for implementation in the long term:

- Mankweng-Polokwane-Seshego passenger transport service ("Corridor C").
- Orighstad-Burgersfort-Steelpoort-Roos Senekal-Groblersdal;
- Makhado-Thohoyandou;
- Lephalale-Marken;
- Tzaneen-Phalaborwa;
- Makhado-Ka-Majosi (about halfway to Giyani).

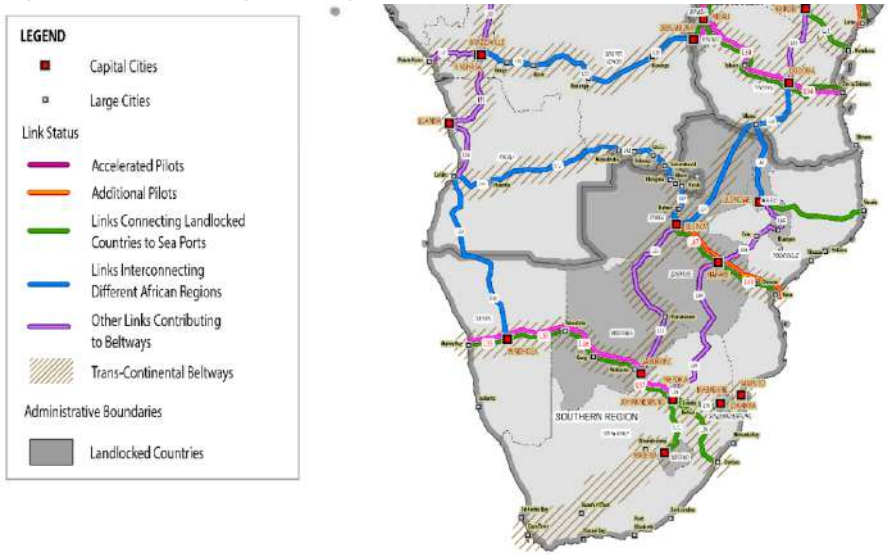
It is recommended that the implementation of the above long term service routes, prioritise routes linking urban nodes, regional development anchors and local service points, and extending it to Gauteng.

Currently, there are no immediate opportunities for urban rail in the province. The National Transport Master Plan (NATMAP) 2050 promoted the idea of developing new rail commuter services in all main urban nodes in the country, including Polokwane. Although an urban rail is not considered feasible in the short to medium term, the option should be reviewed in future as part of the strategy to establish Polokwane as the regional logistics hub.

5.2.3.7. High speed rail

The African Integrated High-Speed Railway Network is a flagship project of the African Union's Agenda 2063. This project aims to connect African capitals and commercial centers through a High-Speed Rail (HSR) network, thereby promoting connectivity and trade across Africa. The Master Plan 20331 of rail links prioritises the rail link between Mbeya-Lilongwe-Harare-Johannesburg-Maseru: 3,115 km (1,936 mi). This link includes connecting Musina to Harare to the north, and Musina to Johannesburg.

Figure 63: Africa Integrated High Speed Rail Network Masterplan 2033



(Source: AUDA-NEPAD, Detailed Scoping Study of Vision 2063 Africa Integrated High Speed Railway Network and Master Plan, Feb 2020)

[1] https://www.au-pida.org/download/detailed-scoping-study-dss-of-vision-2063-africa-integrated-high-speed-railway-network-and-master-plan/

In response to Agenda 2063, a Rail Policy was developed by the Department of Transport to fast-track funds into rail sector investment and to initiate the development of high-speed and heavy haul transit.

On 1 November 2023, Cabinet approved the High-Speed Rail Framework developed by the Department of Transport for implementation. The framework aims to connect the city-regions of Gauteng, Durban, and Cape Town, with a plan to extend further to neighbouring countries and connect to other national nodes. This has resulted in an indicative radial network emanating from Gauteng in all directions, together with a tangential corridor to connect the coastal metropolitan nodes.

In the HSR Framework, the Johannesburg to Durban corridor was identified as the highest-ranking potential high-speed rail corridor, with the Pretoria–Mbombela-Komatipoort corridor, and Johannesburg-Pretoria-Polokwane-Musina corridor, ranking second and third, respectively. Last-mentioned is also known as the Gauteng – Polokwane – Zimbabwe corridor.

The key intervention is securing the required funding, and to undertake a feasibility study for the Johannesburg-Pretoria-Polokwane-Musina high speed rail corridor in alignment to the Masterplan 2033.

The findings of the feasibility study are to be included in a further version of the HSR Framework, as well as the National Rail Master Plan, to be developed by the department in the next few years. It is further recommended to review the Limpopo Rail Plan of 2012.

5.2.4. Digital infrastructure and 4IR technologies

A great deal is being made of the 4th Industrial Revolution (4IR) and the potential it holds for the province, but this will not be possible in an environment where internet access is poor. The drive to connect people and businesses to the internet with digital infrastructure is urgent and imperative if the province is to prepare for 4IR adequately.

Today, digital infrastructure networks are part and parcel of the infrastructure that form the cornerstones of modern society. However future infrastructure is software-based, data-enabled and has cloud access. Digital infrastructure is set to improve access to information and build interconnected and empowered communities and therefor a key enabler in the province.

Digital infrastructure refers to the digital technologies that provide the foundation for an organisation's information technology and operations. Examples of digital infrastructure include Internet backbone, broadband, mobile telecom and digital communication suites, including applications, data centers and networks.

Information and communication technology (ICT) infrastructure, refers to the core digital infrastructure for connectivity (i.e. fibre broadband) and is foundational to the digital economy and 4IR technologies. The province relies on the availability of international and national fibre connectivity and data centres, but need to facilitate the installation of broadband internet connectivity and data centres across the province. In this respect, strategic ICT projects have been identified to expand the Limpopo broadband network, construct digital hub centres in industrial parks, and the plans to develop high speed competitive ICT infrastructure in the Musina-Makhado SEZ.

The implementation of 4IR infrastructure does not stand alone and ought to integrate with existing economic and social infrastructure. It is therefore important for the provincial government to coordinate and align digital infrastructure planning into the overall planning for infrastructure development in the province (i.e. Provincial Integrated Infrastructure Plan and individual infrastructure sector plans). Biotechnology, 3D printing and the digital economy all require an infrastructure base supported by availability of energy, access to roads, water, health etc. for a coherent and comprehensive infrastructure network.

There is room to consider leveraging more private investment and expertise in key areas such as infrastructure deployment, skills development, provision of ICT resources in schools and communities, and the roll-out of e-government platforms. The province should continue to enable the private investment in digital infrastructure through existing initiatives such as:

- Limpopo University Digital Innovation Hub
- Limpopo Education ICT and E-learning centres
- Vhembe ICT Resource Centre to boost teacher training
- Solar community hubs are solar-powered internet centres that connect community members in villages to the digital world.

Figure 64: Solar community hubs

5.2.4.1. Strategic ICT initiatives

The overall strategic recommendation is for the province to coordinate and align the integration of digital infrastructure planning with overall planning for public and private economic infrastructure in the province through the provincial infrastructure sector plans. This approach calls for a concerted effort to coordinate stakeholder investment needs and to integrate infrastructure development plans across the province.

Table 36 reflects the enabling ICT projects in the province aimed at advancing the province's position in the 4IR and enhancing inclusive learning.

Table 36: Strategic ICT initiatives

Initiative	Description	Region/s		
		Western 	Central 	Eastern 
Limpopo Science and Technology Park	The establishment of the Limpopo Science and Technology Park in Polokwane is a game changer project for the province in the provincial ICT sector. The park is an infrastructure, research and incubation initiative that will focus on research and development as well as services to support start-ups and small businesses.		◉	
Digital hub centres	As part of the Digital Hubs Programme established by the Department of Trade, Industry and Competition, digital hub centres will be established in Seshego and Nkowankowa to bridge the digital divide. The digital hubs will serve as training centres for community members, aiming to equip youth to participate in the 4IR and to promote digital transformation through access to ICT-related skills training, business development support services, and workspaces, and to enable incubation mainly for young entrepreneurs operating in ICT. Both digital hubs form part of the revitalisation initiatives for the industrial areas in which they are located.		◉	◉
Limpopo Broadband Network Project	The Limpopo Broadband Network Project aims to roll out broadband network in collaboration with Limpopo Connexion. The project has constructed a data centre in Polokwane, established a network operating control centre (NOCC) and call centre, and connected 56 sites to the network using both fibre and satellite technology. It is recommended that the project roll out fibre in all productive regions of the province, taking into consideration the development focus areas. Priority should also be given to expand the coverage and availability of high-speed internet to the tourism and agriculture focus areas, and STET areas where the lowest access to internet was recorded. Improved access to the poverty stricken locations in the STET areas will bridge the digital divide and enable the communities to have access to more services and opportunities.	◉	◉	◉
Provision of ICT resources in schools and communities	The project is aimed at bridging the digital divide and enhancing inclusive learning and teaching by providing ICT resources (tablets and laptops) to learners and educators, and communities. Private initiatives should be encouraged to supply ICT infrastructure to communities and schools in the province.	◉	◉	◉
SEZs to provide competitive ICT infrastructure	The objective is for the Musina-Makhado and Tubatse SEZ to provide competitive ICT technology infrastructure that will sustain the technology demands of the 4IR, such as high-speed networks and reliable cloud services		◉	◉

5.2.5. Secured energy supply and renewable energy

One of the key enablers to realise the industrialisation path set for the province, is the secure and adequate supply of energy. The need for security of energy supply is also a key enabler of agriculture, manufacturing and mining in the province.

One of the provincial catalytic projects in the LDP 2020-2025 is the electrification of Eskom projects. The following provincial strategic initiatives and/or interventions are recommended.

5.2.5.1. Transmission network strengthening

The major transmission development schemes planned by Eskom in their Transmission Development Plan 2023–2032 (Rev 2) consist of the following projects in Limpopo:

Table 37: Eskom planned transmission projects 2023–2032

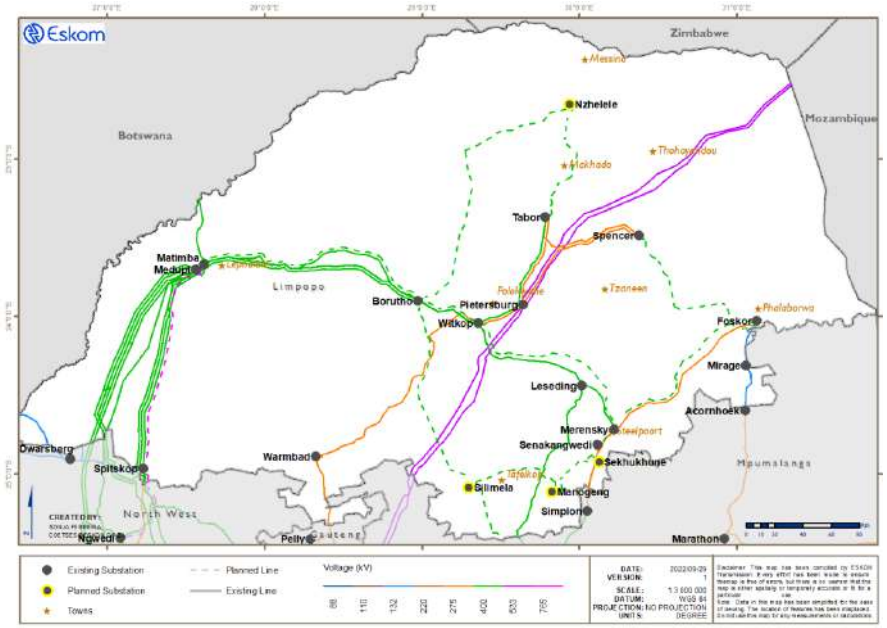
Eskom planned projects 2022-2031	Description
Medupi transmission integration (400 kV and 765 kV)	The project is part of the original scope for Medupi Power Station integration into the grid. It entails constructing the 400 kV and 765 kV lines from the vicinity of Medupi Power Station to bulk power evacuation points in Polokwane CLN and North West.
Waterberg generation 400 kV stability enhancement	The following projects are required due to future planned generation projects in the Waterberg area: 400 kV line Medupi to Witkop (~200 km) 400 kV line Borutho to Silimela (~100 km) Those projects were prioritised to ensure that the power stations in the area would remain transiently stable.
Nzhelele 400 kV integration	The integration of 400 kV into the Nzhelele substation is required to deload Tabor and Spencer substations and enable load growth in the northern parts of Limpopo to provide capacity to the MMSEZ southern site (Musina-Makhado RSDF). The 400 kV supply to enable this project will be sourced from Tabor and Borutho substations through two 400 kV lines.
Limpopo East Corridor strengthening	These projects will resolve transformation constraints and supply future load growth around the Spencer and Foskor substations for the next 20 years. This scheme will also introduce 400 kV corridors between the Spencer, Foskor and Merensky substations, resulting in higher transfer limits and savings in losses on the Limpopo transmission network.
New Silimela substation	A new 400/132 kV transmission substation will be introduced next to the existing Wolwekraal distribution substation to resolve network constraints in the Mapoch and Kwaggafontein areas. In addition, the substation will supply the long-term future load growth expected in the south-western part of the Phalaborwa CLN and deload the Simplon substation. This project is in execution.
New Sekhukhune substation	A new Sekhukhune 400/275/132 kV substation will be constructed near the Uchoba distribution substation to create additional transmission network capacity for forecasted future load growth in the Steelpoort area.

Source: Transmission Development Plan 2023–2032 (Rev 2)

The Eskom Transmission Development Plan (TDP) 2023–2032 also includes Eskom's network strengthening projects and new lines that will be established in the network as part of the Medupi integration requirements in order to ensure transient stability of the generation in the area, to connect new substations, and to alleviate network constraints.

The planned future transmission network for Limpopo is illustrated in Figure 65.

Figure 65: Future transmission network for Limpopo



Source: Eskom Transmission Development Plan 2023-2032 (Rev 2)

It is acknowledged that the TDP projects will take time to implement, and Eskom is thus pursuing interventions in parallel in an effort to attract wind and solar investors where the grid constraint is far less acute. In respect of Limpopo, the focus is on the attraction of solar investors.

Significant private sector investment in renewable energy generation is evident across the province in the form of solar and petroleum with concentrations of initiatives in the mining and agricultural focus areas of the province (refer to the planned renewable projects on https://egis.environment.gov.za/renewable_energy). No or limited initiatives are evident in petroleum, hydro and biofuels.

The Department of Mineral Resources and Energy (DMRE) has initiated the Renewable Independent Power Producer Programme (REIPPP) aimed at bringing additional generation capacity onto the country's electricity system through private sector investment in renewables such as wind, solar, biomass and small hydro, among others. Three PV plant projects with a total approved capacity of 118 MW have been approved in Limpopo.

Table 38: Approved projects in Limpopo under the REIPPPP

Name of project	Type	Capacity (MW)	Transmission substation
Tabor PV plant	PV	28	Tabor 132 kV
Witkop PV plant	PV	30	Witkop 132 kV
Matimba PV plant	PV	60	Matimba 132 kV
Total approved capacity		**118**	

Source: Eskom Transmission Development Plan 2023-2032 (Rev 2)

According to the TDP 2023-2032 (Rev 2), there is sufficient transmission network capacity to integrate future planned IPPs in the province. Therefore, no additional transmission projects are required to enable the future connection of the IPPs in Limpopo at this stage.

Figure 66: Eskom Generation Capacity within the Province

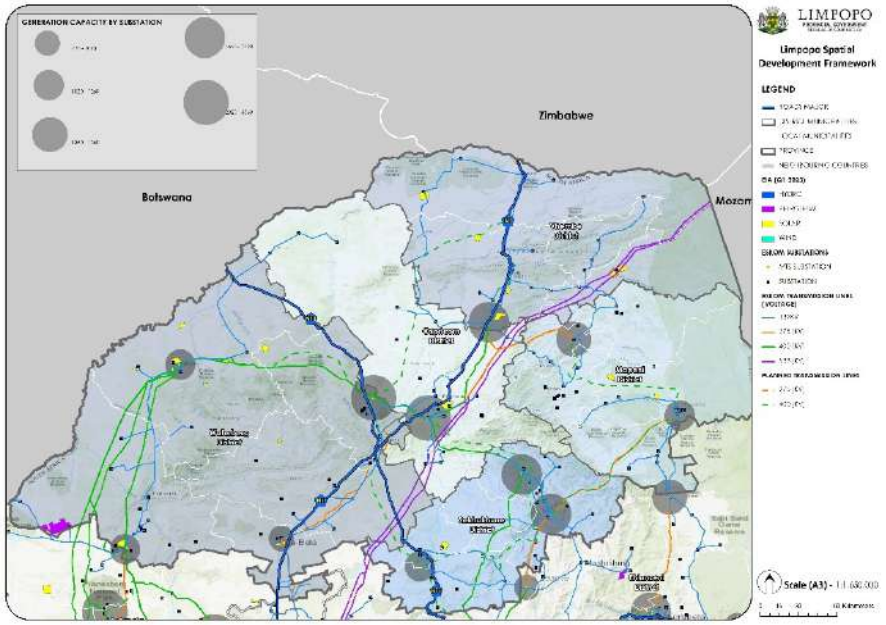
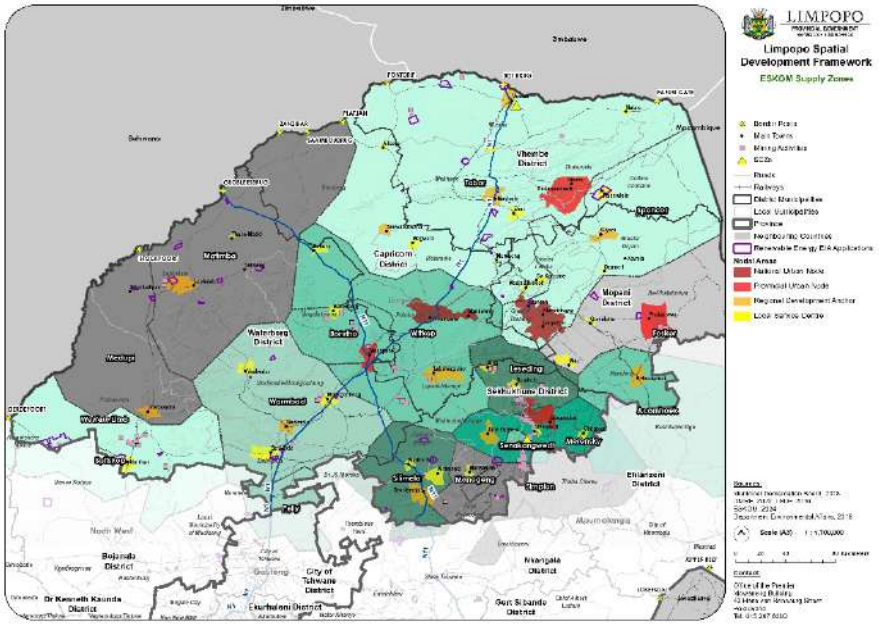


Figure 67: Eskom substation supply areas



The Eskom Generation Connection Capacity Assessment (GCCA) 2025 provides details of the generation connection capacity of the planned transmission network with all the projects that are expected to be commissioned by 2025. According to the GCCA 2025 results, the Limpopo supply area have remaining grid capacity of 3,360 MW and the local areas as follow:

- Lephalale 1660 MW
- Polokwane 1440 MW
- Warmbad 700 MW
- Phalaborwa 660 MW

5.2.5.2. Private sector participation

The energy landscape in South Africa is undergoing a significant transformation, driven in part by increasing participation of the private sector. This shift is characterised by a move away from a heavily centralized energy system dominated by Eskom, towards a more diversified and competitive market structure. Private sector involvement is now recognized as crucial for the development of a more resilient, efficient, and sustainable energy sector.

The government has been proactive in facilitating private sector involvement through a series of structured procurement programmes, managed by the IPP Office. These programmes are designed to solicit and manage new generation capacities from various sources.

Renewable Energy IPP Procurement Programme (REIPPPP):

The government's renewable energy procurement is now in its seventh bid window. This reflects the maturity and ongoing commitment to the sector. The Request for Proposal (RFP) for the seventh bid window was released to the market at the end of 2023. Up to the fourth bid window, all projects have been constructed, while the fifth bid window has seen some projects in construction and other reaching financial close. Projects from the sixth bid window are in the process of reaching financial close, demonstrating the progressive realisation of renewable energy goals.

Risk Mitigation IPP Procurement Programme (RMIPPPP):

As part of the efforts to mitigate risks in power generation, the RMIPPPP was established, with the determination gazetted on 7 July 2020. This program is aimed at procuring 2000 MW of new generation capacity from a diverse mix of energy source technologies to bolster the reliability and stability of power supply. The majority of these projects are focused on gas technologies.

Gas IPP Procurement Programme (GIPPPP):

The GIPPPP determination was gazetted on 25 September 2020, signalling the government's intent to procure 3000 MW of new generation capacity from gas technologies. The RFP for this programme was released at the end of 2023, opening the market for potential private sector investments in gas power generation.

Energy Storage IPP Procurement Programme (ESIPPPP):

Recognizing the critical role of energy storage in enhancing grid stability and supporting renewable energy integration, the DMRE is procuring new generation capacity from battery energy storage systems. This initiative aligns with the ministerial determinations under the Integrated Resource Plan. The first bid window for 513 MW was announced during 2023, and further capacity of 1231 MW is expected to be procured by March 2025 through two subsequent bid window RFPs, targeting 615 MW and 616 MW respectively.

Private Participation in Transmission Infrastructure:

The government is actively seeking to involve the private sector in the development of nation's transmission infrastructure. This move is largely driven by the recognition of the crucial role that the private sector can play in mitigating the current transmission constraints, which have become a major bottleneck for connecting much-needed private generation capacity.

To address a potential lack of public funding for grid strengthening and expansion, which has been identified as a critical constraint, there are growing calls for the separation of the National Transmission Company from Eskom. Additionally, there is a push for private-sector participation in financing, building, and operating parts of the grid. This would accelerate the development of the infrastructure needed to end load shedding and facilitate the energy transition.

Energy Action Plan:

The government has further created an Energy Action Plan aimed at addressing the ongoing energy crisis and ending loadshedding. The plan involves a multi-faceted approach that includes making improvements to Eskom, expanding generation capacity, enhancing transmission infrastructure, and involving private sector to ensure energy security. The private sector is encouraged to rollout more rooftop solar and invest in electricity generation.

The National Energy Crisis Committee (NECOM) was set up as part of South Africa's Energy Action Plan to ensure the thorough implementation of the plan, aiming to effectively end load shedding and secure energy supply. NECOM's role encompasses overseeing the execution of various strategies outlined in the plan, coordinating efforts across multiple stakeholders, and ensuring that the set objectives for a stable and sustainable energy landscape are met.

Ongoing collaboration between the renewables industry, private sector and Eskom is encouraged to further investigate ways to unlock the capacity that is already available, as well as to ensure better planning for future grid infrastructure.

The utility is also envisioning to accelerate future grid connectivity through a spatial planning approach that ensures that new renewables projects are developed in “clusters” around the major corridors.

Within Limpopo, renewable energy initiatives are already clustered around the mining focus areas of the province, with the highest concentrations in FetakgomoTubatse and Mogalakwena. This provides the opportunity to the utility and key customers to collaborate to find solutions and craft a consolidated control philosophy. The recommended areas of collaboration in the province are:

- Industrial nodes of Musina-Makhado in support of the SEZ (I3)
- Industrial and logistics focus area of Polokwane (I1)
- Mogalakwena Northern Limb mining focus area (M3)
- Sekhukhune Eastern Limb mining focus area (M4) and Industrial and Logistic focus area (I2)
- Northam Western Limb mining focus area (M2)
- Lephalale/ Steenbokpan energy and coal fields (M1)

5.2.5.3. Strategic interventions and recommendations

- Review of the Eskom load forecasts for the three customer load networks (CLNs): Lephalale, Polokwane and Phalaborwa, as specified in the ESKOM Transmission Development Plan 2023-2032, to align to the LSDF development trends and change in demands in the province.
- The implementation of the Eskom planned projects in the Eskom Transmission Development Plan 2023–2032 to take into account the spatial priority investment focus areas in Limpopo and prioritise implementation accordingly.
- The strengthening and expansion of the Eskom Transmission Network within the area are well-documented and follow a structured approach to implementation. The same is assumed for the relevant Eskom Distribution networks. However, this is not true for the majority of municipal distribution networks. There is very little public information available to gauge the adequacy of municipal distribution networks in the province, and it is recommended that an assessment of the status, adequacy, and readiness of the municipal distribution networks be initiated.
- The Integrated Resource Plan (IRP) 2023 was recently released for public comment. The current draft IRP assumptions are considered optimistic regarding the recovery of demand/supply balance by 2030, with the only scenario providing a path to recovery being the one for firm initiatives and the associated coal generation recovery plan. The energy availability factor (EAF) in this scenario is assumed to be the best that the coal fleet could achieve. Therefore, it is recommended to consider the development of a provincial supply/demand balance study to investigate the development and integration of potential energy sources to meet the predicted future demand in the province.

5.3. IMPLEMENTATION PROPOSALS FOR FOCUS AREAS

Five spatial focus areas have been identified in Chapter 4, section 5.4.1 to ensure that investment and spending are aligned to the long term spatial vision for the province. The spatial focus areas will be used as a mechanism to achieve spatial alignment in implementation as provided for in SPLUMA. This section aims to consolidate the spatial proposals that need to be implemented in each of the five spatial focus areas to guide the spatial prioritisation of investment in the province through provincial development plans, projects and programmes.

Across all focus areas, the success in the implementation of the proposals and interventions lies in a coordinated approach between role players and stakeholders, project preparation and project bankability, securing funding mechanisms, and partnerships between public and private sector.

5.3.1. Environment Protection and Tourism Focus Area

5.3.1.1. Implementation proposals

The Environment Protection and Tourism focus areas in Limpopo are linked to the areas of focus in the Limpopo Conservation Plan V2, the Limpopo Tourism Growth Strategy and Implementation Plan, 2018/19-2023/24 and the Limpopo Green Economy Plan, 2013. The implementation proposals also deal with climate change responses across all focus areas. There are four Environment Protection and Tourism focus areas identified in the province and the strategic proposals for implementation of these focus areas are included in Table 39. The table also shows the spatial focus areas and region where the proposal should be implemented.

Table 39: Environment and Tourism Focus Area: Implementation proposals

Strategic proposals for implementation	Focus Area/s	Region/s		
		Western 	Central 	Eastern 
Coordinate the participation in the implementation of the NSAA Implementation Plan for the Eco-Resource Production Region.	T1, T2, T3, T4, A2, A4, A5, A6, STETA 1 & 4,	◉	◉	◉
Implementation of the action plan for the National Protected Areas Expansion Strategy.	All	◉	◉	◉
Expansion of protected areas by prioritising the un-protected critically endangered, endangered, vulnerable and near threatened terrestrial ecosystems and inland aquatic ecosystems (refer to Figure 35 in Chapter 4)		◉	◉	◉
Protection of the priority centres of endemism (flora): Sekhukhuneland Centre of Endemism, Soutpansberg Centre of Endemism, and Wolkberg Centre of Endemism	T2, T3		◉	◉
Develop a Provincial Climate Change Response Implementation Plan, as envisaged in the Climate Change Bill, 9 of 2022.	Provincial	◉	◉	◉

Strategic proposals for implementation	Focus Area/s	Region/s		
		Western 	Central 	Eastern 
Develop district scale climate risk profiles and climate change adaption plans.	All DMs	◉	◉	◉
Establish and manage a centralised provincial spatial database containing ecological and natural resources, delineating protected and sensitive areas, and related buffer zones.	Provincial	◉	◉	◉
Pursue effective management and custodianship of strategic water source areas (SWSA). This is critical in the light thereof that the SWSA are mostly located in rural areas with increasing domestic water demand, low land development densities and unaccounted water usage.	A2, A6 STETA 1,3&4	◉	◉	◉
Investment and development of Lephalale and Thabazimbi as tourism gateways and regional development anchors to the Waterberg biosphere and surrounding region, with a focus on value-adding services to the game hunting industry, by developing tourism attraction precincts, and expanding leisure and adventure tourism.	T1	◉		
Develop Vaalwater as the wildlife and outdoor centre for the Waterberg region, and as secondary tourism gateway to Lephalale.	T1	◉		
Promote tourism initiatives related to hunting and conservation that can provide new revenue streams for local communities and support the conservation of wildlife.	T1, T2, T3, T4	◉	◉	◉
Develop Bela-Bela as secondary tourism gateway to the Waterberg biosphere, focussed around leisure tourism precinct investments.	T1	◉		
Enhance Polokwane as the tourism entry point from Polokwane International Airport with improved tourism information and signage, marketing of provincial tourism routes and destinations, business tourism accommodation and leisure, and maintenance of facilities	Polokwane Gateway	◉		
Develop Tzaneen, Phalaborwa and Hoedspruit as tourism gateways to the Wolkberg Reserve, Kruger-to-Canyon Biosphere and Kruger National Park, respectively, focused on improved urban management to ensure quality environments and tourism experience, and investment in tourism and conservation precincts.	T4			◉
Upgrading and continued maintenance of the RAL provincial priority tourism routes (refer to Figures 50 to 52 in Section 4.3.4 and Figure 37 in Annexure C: Socio-Economic Analysis) and road safety.	T1, T2, T3, T4	◉	◉	◉
Develop integrated tourism offerings such as branded tourism routes or meanders focusing on key natural and cultural attractions, leisure activities, state resorts and rural tourism offerings.	T1, T2, T3, T4	◉	◉	◉
Identify and develop tourism opportunities in the provincial biospheres, such as conservation hunting, adventure tourism etc.	T1, T3, T4	◉	◉	◉
Investigate the possibilities of exploiting the province's dams or water bodies as new tourism and recreation facilities, prioritising the dams in the STETAs.	STETA1, 3&4	◉	◉	◉
Investigate the options of water retention and/or conservation of flood water that would be otherwise lost to the province.	T3, STETA1		◉	◉
Regeneration of small towns as tourism gateways and local service centres linked to the tourism focus area: Bela Bela, Vaalwater, Hoedspruit and Orighstad	A2, T4, A3	◉	◉	◉
Investigate the opportunity of upgrading Hoedspruit airport to an international airport in support of its role as tourism gateway node.	T4			◉
Establish training and skills development facilities in the hospitality and conservation industry in the tourism focus areas.	T1, T2, T3, T4	◉	◉	◉

Strategic proposals for implementation	Focus Area/s	Region/s		
		Western 	Central 	Eastern 
Development of the Limpopo Science and Technology Park as provincial catalytic project and implementation of the "green digital" strategy, also in support the Green Hydrogen initiative where Hub C: Mogalakwena and Limpopo is one of three pilots.	Polokwane I1		◉	
Mogalakwena/Limpopo Hub Hydrogen Valley Feasibility Investigation: This project is driven by fuel cell, battery powered mining trucks of a payload bigger than 200 tons for diamond, open pit copper, titanium and platinum mines, and some demand from heavy- and medium-duty trucks via N1. The test pilot at Mogalakwena platinum mine can be replicated and possibly scaled (depending on distance within 300km) to other platinum, chrome, diamond, copper and titanium mines in Limpopo.	Polokwane I1, M4		◉	◉
Rhynbow H2 freight corridor project has been identified for Gauteng, Kwa-Zulu Natal and Limpopo. The project investigates the creation of the first H2 corridor in South Africa between Limpopo-Gauteng-KZN. Work is aligned with the overall Hydrogen society roadmap and the H2 Valley feasibility study. The project is focused on HD trucks, long distance buses and city buses in this geographic region.	Polokwane I1, M4, N1	◉	◉	
Promoting fuel cells in buildings (public, corporate, industrial etc.) to provide backup power while also helping the companies to achieve net zero or sustainability targets, and strengthening the Hydrogen valley initiative.	Polokwane I1, M4	◉	◉	◉

5.3.1.2. Alignment of priority and programme investment

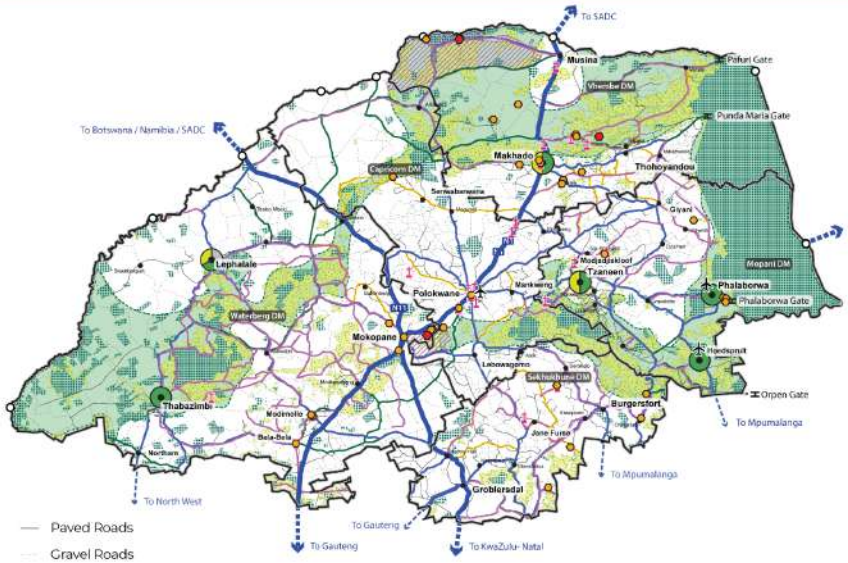
The figure overleaf summarises the provincial priority interventions for the Environment and Tourism focus areas, and outlines the programmatic interventions on national and provincial level that contribute to the focus area. The figure also illustrates the provincial departmental Annual Performance Plans (APPs) programmes and sub-programmes that should direct their plans, programmes, budgeting and infrastructure investment to the focus areas.

There are various role players and key stakeholders that need to be coordinated and partnerships established, to align investment in the focus area, as listed in the table below. It is not an all-inclusive list and should be updated as the developments unfold in the focus area.

Table 40: Environment Protection and Tourism Focus Area: Key stakeholders

Key stakeholders & role players	
SANParks	Waterberg Biosphere Region NPC
Limpopo Tourism Agency	Kruger to Canyons Biosphere Region NPC (K2C)
LEDET and LEDA	Provincial disaster management centre
Roads Agency Limpopo (RAL)	SAPS (safety in tourism)
Presidential Climate Commission (Just Transition Framework)	CSIR and Impact Catalyst
Department of Trade, Industry and Competition (the dtic)	Traditional authorities
Department of Science and Technology	Conservation SA
Department of Water and Sanitation	Hydrogen valley players: DSI, Anglo American, Engie, SANEDI, Bambili Energy, Truck producers, Mining industry players
Industrial Development Corporation of South Africa (IDC)	

ENVIRONMENT PROTECTION AND TOURISM FOCUS AREAS



SPATIALLY FOCUSED INTERVENTIONS

- Environment Protection and Tourism Focus Area
- Tourism Gateway — Accommodation, tourism information & support, arts & cultural hubs
- Agricultural Gateway
- Mining Gateway
- Protected Area — Continued management
- Provincial Heritage Sites
- National Heritage Sites
- Monuments & Memorials
- World Heritage Sites
- NPAES Priority Focus Areas

  (Provincial Heritage Sites … NPAES Priority Focus Areas: Continued management & protection)
- National Corridor
- Provincial Corridor
- Provincial Main Road Network
- Strategic Links
- Tourism Routes

  (National Corridor … Tourism Routes: Upgrade and maintenance of tourism access network)
- Airports
- Kruger Park Gates
- Border Posts

ENABLING INTERVENTIONS

Climate change adaptation
Manage impact of drought, heat and extreme rainfall events

Biodiversity conservation
Protection of CBAs against encroachment

Cultural assets
Maintain and develop cultural assets, including provincial theatre, arts and cultural hubs

Green industries and technology
Support green industries and technology, including green energy

Urban management
Urban management to enhance quality of tourism nodes; small town development programme to be expanded; improve safety and security measures

Human Resource Development
Skill development, small scale farmer support

PROVINCIAL PRIORITY PROJECTS

- Development of a provincial theatre
- Development of Bakone Malapa Arts and Cultural Hub
- RAL priority tourism routes implement
- Development of Kruger National Park gates: Shangoni gate, Phalaborwa and Punda Maria
- Revitalisation of Bela Bela, Vaalwater, Hoedspruit and Orighstad as small town tourism gateways
- Limpopo Science and Technology Park
- Hydrogen valley: Hub C (Mogalakwena and Limpopo) and Rhynbow H2 freight corridor

PROGRAMMATIC ALIGNMENT

NATIONAL PROGRAMMES:

- HySA national flagship program
- Green Hydrogen Commercialisation Strategy and Action Plan
- Just Transition Framework
- Revitalisation of small towns and villages

PROVINCIAL PROGRAMMES:

- Limpopo "green digital" strategy
- Limpopo Industrial Symbiosis Program (LIM-ISP) – waste minimisation programme
- Biodiversity/Bioprospecting/Wildlife Economy Programme
- Natural/Cultural Heritage Resource Preservation Programme

PRIORITY DEPARTMENTAL APP PROGRAMMES

DEPARTMENT OF ECONOMIC DEVELOPMENT, ENVIRONMENT AND TOURISM

3. Environmental Affairs

3.1. Environmental Quality Management

3.2. Biodiversity and Natural Resource Management

3.3 Environmental Empowerment Services

4. Tourism

4.1. Tourism Planning and Regulation

4.2. Tourism Destination and Transformation

DEPARTMENT OF AGRICULTURE, LAND REFORM AND RURAL DEVELOPMENT

Programme 6: Agricultural Economic Services

6.1 Production Economics and Marketing Support

DEPARTMENT OF PUBLIC WORKS, ROADS & INFRASTRUCTURE

Programme 4: Roads Infrastructure

DEPARTMENT OF TRANSPORT AND COMMUNITY SAFETY

Programme 2: Transport Operation

2.1 Public Transport Services

DEPARTMENT OF COOPERATIVE GOVERNANCE, HUMAN SETTLEMENTS AND TRADITIONAL AFFAIRS

Cooperative Governance Performance information

1. Municipal infrastructure development

3. Democratic Governance and Disaster Management

4. Development planning

5.3.1.3. Alignment and coordination of spatial development planning and implementation

- Each District must ensure that sensitive and protected areas are included in the Municipal SDFs (District and Local) and land use scheme by aligning to the relevant Environmental Management Framework/s and Bioregional plans, and the requirements pertaining to specific categories of protected areas.
- Particular attention must be given to the incorporation of CBAs (updated 2018) in municipal land use planning and land use decision making to give effect to the NSDF Waterberg River Catchment and the Olifants River Catchment as National Resource Risk Areas (NRRAs).
- Municipal SDFs should contain specific land use guidance and restrictions, including conservation buffer areas pertaining to sensitive and protected areas. This includes strict management and prevention of urban sprawl in protected areas.
- Municipal SDFs much plan for the impact of climate change on land use, in particular agricultural land use and flood risks.
- Disaster Management Plans should incorporate climate change impacts and identify the social receptors/communities potentially impacted, including communities/households at risks of inundation, and inform municipal SDFs to incorporate implementation actions to pro-actively avoid any disasters.
- LED strategies should coordinate the identification of tourism opportunities, tourism routes, marketing and skills development.
- Integrated transport plans must align tourism routes and RAL priority tourism roads, and incorporate newly developed local and district tourism routes.
- The provincial water master plan and municipal water master plans should define measures for water conservation, and water demand management.

Additional actions required to support the spatial development of the focus area are:

- Improved ICT connectivity and coverage to tourism facilities and on tourism routes.
- Marketing and branding of environmental and tourism assets and routes. This includes the marketing of festivals and agri-tourism.
- Management of the following risk areas by ensuring compliance to the provisions of the Limpopo Conservation Plan, 2013:
  - Development proposed in the Polokwane Nature Reserve
  - Urban sprawl along the Polokwane-Moria Development Corridor
  - Mining proposed in the Kruger to Kalahari Corridor: Zebediela/ Makapan/ Waterberg Critical Landscape Link
  - Urban sprawl in Fetakgomo Tubatse Local Municipality threatening biodiversity and Sekhukhuneland centre of Endemism
  - Urban sprawl at KwaMhlanga-Siyabuswa-Elandsdoring rural settlement threatening biodiversity corridor links.
  - Landscape connectivity in Upper Limpopo valley with Botswana at risk of game fencing and barriers preventing free-ranging of wildlife between countries.
- Create environmental and climate change awareness amongst communities and traditional authorities, especially in respect of the protection of environmental protected areas, high potential agricultural land, and conservation buffers.
- Municipalities, traditional authorities, and land owners to actively manage the encroachment of land use on environmental protected areas.

5.3.2. Agriculture and Farming Focus Area

5.3.2.1. Implementation proposals

The development of the agricultural industry in Limpopo aims to technologically advance the industry through smart agriculture, precision farming, and strong emphasis on skills development and training of especially youth.

The sustainability of the industry and its expansion potential is negatively impacted by climate change, water scarcity, safety and security challenges, and deteriorating infrastructure in the province that calls for a capable state intervention into energy security, maintenance of road infrastructure, rail and harbour infrastructure to support agrarian exports from the province, and access to functional local and national markets for both emerging and commercial farmers.

The Limpopo Revitalisation of Agriculture and Agro-processing Value Chain (RAAVC), adopted by the Provincial Government in June 2021 aims to maximise agricultural production to support agro-processing expansion, contribute towards the agricultural industrialisation of the province, increase job opportunities, increase food security and improve rural livelihoods. The following eleven RAAVC projects are prioritised for implementation in the province:

- Revitalisation of Zebediela citrus estate, Lepelle Nkumpi Municipality
- Revitalisation of Limburg citrus estate, Mogalakwena Municipality
- Majeje citrus development, Ba-Phalaborwa Municipality
- Kopano citrus development, Ephraim Mogale Municipality
- Magadima citrus development, Ephraim Mogale Municipality
- Mhinga-Xihundu fruit cluster, Collins Chabane Municipality
- Mogalatsane irrigation scheme (grains cluster), Ephraim Mogale Municipality
- Sekhukhune cotton cluster, Ephraim Mogale and Elias Motsoaledi Municipalities
- Tafelkop farmers association vegetable cluster, Elias Motsoaledi Municipality
- Thilwavhusiku secondary cooperative (vegetable cluster), Makhado Municipality
- Potato belt development (Lesedi and Mazeli projects), Capricorn District Municipality

Table 41 provides the recommended high level proposals to respond to the industry opportunities and challenges from a spatial perspective.

Table 41: Agriculture and Farming Focus Area: Implementation proposals

Strategic proposals for implementation	Focus Area/s	Region/s		
		Western 	Central 	Eastern 
Promulgation of the High Potential Agricultural Areas (HPPAs) as Protected Agricultural Areas (PAAs) by DALRRD and communicate the protected areas to industry stakeholders. This include making the digital datasets of the areas available to industry stakeholders.	A1 – A6	◉	◉	◉
Protection and productive use of the HPPAs/ PAAs as areas of high-value agricultural land to support provincial and national food security, this include identifying underutilised land in STET 1 – 3, and facilitating interventions for the productive use of the high value agricultural land.	A1 – A6	◉	◉	◉
Discourage further land and settlement development in HPPAs/ PAAs, and carefully manage existing settlements and land uses in productive agricultural regions that play a crucial role in food security, strategic water production and rural livelihoods.	A1 – A6	◉	◉	◉
DALRRD to model impact scenarios of climate change on land capability, and therefor on the delineated HPPAs/ PAAs, for both irrigation and rain-fed. The findings of the impact scenario model should be discussed with industry stakeholders to pro-actively apply mitigation measures and response plans.	A1 – A6	◉	◉	◉
Investigate the feasibility of rail networks to support agrarian exports from the province.	A1 – A6	◉	◉	◉
Enable the agricultural industry through access to ICT infrastructure/fibre coverage in the focus area.	A1 – A6	◉	◉	◉
Investigate options for alternative energy sources to support the industry. This is in the light of the ongoing electricity supply crisis and loadshedding that is crippling and threatening agricultural production and the entire food supply chain. Cold chains for the necessary export are under serious threat. Alternative energy sources are expensive and cannot be afforded.	A1 – A6	◉	◉	◉
Coordinate between industry stakeholders the identification of priority agricultural roads for maintenance and/or upgrading. (The condition of road infrastructure in the province is negatively impacting accessibility, operations, competitiveness and safety and security in the sector. Significant loss of earnings is due to produce being damaged during transportation and breakdown of trucks.)	A1 – A6	◉	◉	◉
Facilitate opportunities for agricultural research and innovation, training and skills development in support of the technological advancement of the industry, taking into consideration the re-use of existing educational facilities.	A1 – A6	◉	◉	◉
Facilitate interventions to improve access to markets for both emerging and commercial farmers	A1 – A6	◉	◉	◉

Strategic proposals for implementation	Focus Area/s	Region/s		
		Western 	Central 	Eastern 
Identify alternative sustainable land use for the old crop fields found in the northern parts of Vhembe and Capricorn districts (STETA 1 & 4) to support the sustainable livelihood of these vulnerable communities in the wake of climate change predictions.	A4, A6, T3		◉	◉
Pursue effective management and custodianship of strategic water source areas (SWSA) for agricultural use, especially in the light thereof that the SWSA are mostly located in rural areas (STETA 1,3 &4) with unaccounted water usage.	A2, A6 STETA 1,3&4	◉	◉	◉
Establish agricultural support facilities such as logistics centres with cold storage, abattoirs and agri-processing in nodes and regional development anchors acting as agriculture gateways: Thohoyandou, Tzaneen, Makhado, Modimolle and Lephalale	A1, A2, A5, A6	◉		◉
Develop Groblersdal as agricultural gateway. Implement the Sekhukhune Agri park with supporting network elements and agro-processing facilities, also considering Marble Hall for agro-processing facilities. A business plan was developed for the grain processing facility (broiler abattoir), poultry processing facility, fruit and vegetable pack and processing facility and agro-inputs supply centre.	A3		◉	
Develop Senwabarwana as agricultural gateway by investing in agricultural support facilities such as logistics points, cold storage and agri-processing facilities.	A4		◉	
Promote fresh produce markets, farmer support and agri-processing initiatives in all spatial regions linked to HPPAs/ PAAs.	A1 – A6	◉	◉	◉
Enhance the productive capacity of especially small scale farmers in STET 1 – 3 by improving rural-rural connections with upgraded road networks and ICT infrastructure, the market accessibility and key agricultural production infrastructure in these areas.	STET 1 – 3	◉	◉	◉
Investigate the potential for beneficiation, manufacturing, and value chain development within the agricultural sector in support of the provincial industrialisation path, the identified SEZs, industrial hubs and industrial parks.	A1 – A6	◉	◉	◉
Promote effective agrarian practices and enterprise development programmes	A1 – A6, STETA 1-3	◉	◉	◉
Review of the RAAVC projects against the information in the LSDF especially HPAAs, SWSA, climate change predictions, economic analysis.	A1 – A6	◉	◉	◉
Implementation of Agri-hubs, Farmer production support units, and Rural-urban market centre in all regions	A1 – A6	◉	◉	◉

5.3.2.2. Alignment of priority and programme investment

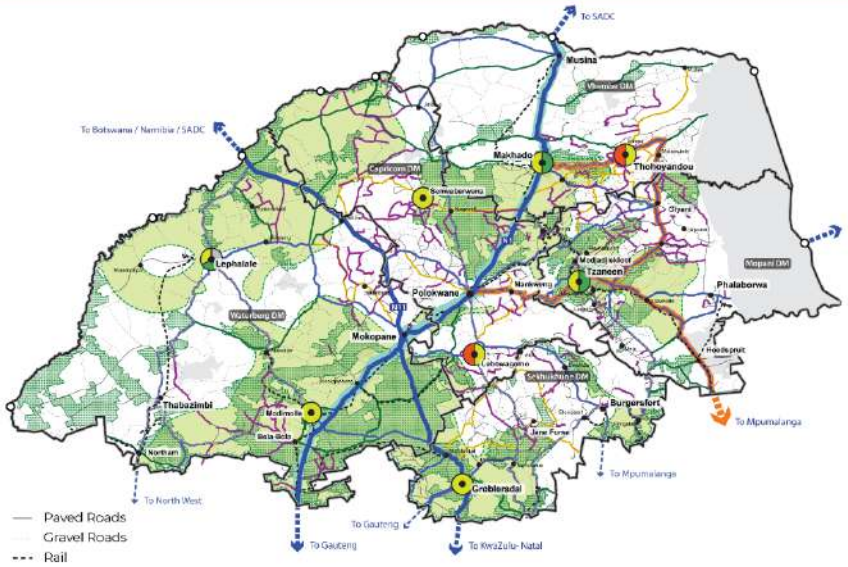
The figure overleaf summarises the provincial priority interventions for the Agriculture and Farming focus areas, as well as the key enablers to the sector. The national and provincial programmatic interventions that contribute to the focus area are listed to ensure alignment and coordination of efforts. The figure also illustrates the provincial departmental APP programmes and sub-programmes that should direct their plans, programmes, budgeting and infrastructure investment to the focus area.

The various role players and key stakeholders that need to be coordinated to align investment in the focus area, are listed in the table below and is not an all-inclusive list.

Table 42: Agriculture and Farming Focus Area: Key stakeholders

Key stakeholders & role players	
▪ DALRRD ▪ Limpopo Department of Agriculture ▪ Department of Transport and Community Safety ▪ District municipalities ▪ Development Finance Institutions (DFIs) ▪ SANRAL ▪ RAL ▪ Transnet ▪ SAPS	▪ Organised agricultural unions/ associations: – Cotton SA – Macadamias SA NPC – Citrus Growers Association – SA Avo Growers Association ▪ Commercial and subsistence farmers ▪ Traditional leaders ▪ Impact catalyst

AGRICULTURE AND FARMING FOCUS AREAS



SPATIALLY FOCUSED INTERVENTIONS

- Agriculture and Farming Focus Area
- Agricultural Gateway
- Tourism Gateway
- Mining Gateway
- Administration & Services Gateway

Agri-processing, logistics including cold storage, fresh produce markets

- HPAAs

Promulgation and protection of High Potential Agricultural Areas

- National Corridor
- Provincial Corridor
- Provincial Freight Corridor
- Provincial Main Road Network
- Strategic Links
- Transformation Corridor
- RAL Prioritised Roads for Upgrading
- High Speed Rail

Upgrade and maintenance of transport network

- Border Posts

ENABLING INTERVENTIONS

Climate change adaptation
Manage impact of drought, heat and extreme rainfall events

Water
Manage availability and use; management of SWSAs

Energy
Support in alternative energy provision

Beneficiation and diversification
Support processing, export, production of biofuels

Human Resource Development
Skill development, small scale farmer support

PROVINCIAL PRIORITY PROJECTS

- Implementation of the RAAVC projects
- District Agri Parks initiative

PROGRAMMATIC ALIGNMENT

NATIONAL PROGRAMMES:

- Comprehensive Rural Development Programme
- Land redistribution programme
- Agriculture and Agro-processing Master Plan (AAMP) as a national policy instrument

PROVINCIAL PROGRAMMES:

- Limpopo Revitalisation of Agriculture and Agro-processing Value Chain (RAAVC).
- The five agricultural development zones where support will be given to more than 1,000 small-scale farmers to promote production in the sector.
- Agrarian Expanded Public Works Programme
- District Agri Parks Initiative
- Revitalisation of irrigation schemes
- Integrated urban planning and development for rapid urbanisation (Smart cities of Polokwane, Tzaneen, Musina, Lephalale)

PRIORITY DEPARTMENTAL APP PROGRAMMES

DEPARTMENT OF AGRICULTURE, LAND REFORM AND RURAL DEVELOPMENT

Programme 2: Sustainable Resource Use and Management
2.2 Land Care
2.3 Land Use Management

Programme 3: Agricultural Producer Support and Development
3.1 Producer Support Services

Programme 5: Research and Technology Development Services
5.1 Agricultural Research
5.2 Technology Transfer Services
5.3 Research Infrastructure Support Services

Programme 6: Agricultural Economic Services
6.1 Production Economics and Marketing Support
6.2 Agro-Processing Support
6.3 Macroeconomics Support

Programme 7: Agricultural Education and Training
7.1 Higher Education and Training
7.2 Agricultural Skills Development

DEPARTMENT OF PUBLIC WORKS, ROADS & INFRASTRUCTURE

Programme 4: Roads Infrastructure

DEPARTMENT OF TRANSPORT AND COMMUNITY SAFETY

Programme 2: Transport Operation
2.1 Public Transport Services

5.3.2.3. Alignment and coordination of spatial development planning and implementation

- Coordinate the alignment of provincial and interprovincial planning with the 'to be developed' Implementation Plans for the National Spatial Action Areas.
- Review the RAAVC projects against the information in the LSDF especially HPAAs, SWSA, climate change predictions and the economic analysis.
- DALRRD to align the Department of Agriculture programme for the Revitalisation of Irrigation schemes to the HPAAs/ PAAs irrigated areas.
- Coordinate the drafting of an updated mapping of the agricultural field crops to inform a business plan for the identification of agricultural land.
- Alignment of planning for digital infrastructure with the infrastructure investment needs of the agricultural industry.
- Municipalities must incorporate HPAAs/ PAAs in spatial development frameworks and align land use management schemes accordingly, and put development guidelines in place for the enforcement of development edges and protection of high potential agricultural land.

Additional supportive actions include:

- Manage the risk of settlement sprawl onto HPAAs, on or in vicinity of HPAAs, especially at Senwabarwana, Bela Bela, Modimolle, Thabo Mbeki
- Manage all human activity to improve and retain quality of water sources, including run-off from agricultural activities and avoiding pit latrine systems in areas that could affect ground or surface water.

Private industry are key investors in the agricultural sector and alignment and support to the investments are encouraged. The list below is only some of the investments known to be underway or planned:

- Need for fresh produce market, farmer support and agro-processing facilities across all regions, in particular in Burgerfort/ Steelpoort, Groblersdal/ Marble Hall, Modimolle/ Bela Bela.
- Agro-processing in Waterberg (Limburg project, game meat value chain; Limpopo livestock cattle hub).
- Wildlife initiative in Waterberg (Refurbishment of Leadwood lodge; Lephalale biosphere reserve development).
- Cold storage depot for export fresh produce specifically focused on rail infrastructure opportunity Modimolle/Bela Bela (Private investment).
- Lebowakgomo abattoir (14) Molemolle Potatoes opportunity.

5.3.3. Mining Focus Area

5.3.3.1. Implementation proposals

The implementation proposals focus on the protection of the rich mineral resources of the province, and the enablers to support, advance, grow and sustain the mining sector and it sub-sectors. The implementation proposals also respond to the management of indiscriminate development and land invasions around mines, and the need for enabling digital and service infrastructure, integrated human settlements options, skills and a capable state.

The proposals also put forward recommendations to respond to the high dependency of a number of municipalities on the mining sector which include Thabazimbi, Fetakgomo Tubatse, Ba-Phalaborwa and Lephalale.

The proposals further emphasize the importance of managing and preventing the impact of mining activities on SWSAs, biodiversity and air quality. Lastly the large number of abandoned mines across the province necessitate a dedicated intervention.

Private sector investments in the provincial mining sector have shown significant advances in hydrogen, bulk infrastructure, renewable energy, ICT, skills development, conservation and economic diversification, to name a view, which need to be strengthened. However, the investment by this sector is influenced by operational feasibility, commodity prices and the ability of the state to secure an enabling environment in respect of roads, rail, ports etc. for the mining industry potential of the province to be realised.

It is notable that the linkages of the mining sector extend beyond municipal boundaries. The flow of labour, goods, equipment and services between the mining regions needs to be recognised and should inform the development investments necessary in nodes, roads and freight. For this reason, a regional planning approach is needed to address the development shortcomings in the mining regions of Northam, Burgersfort and Steelpoort. It is therefore recommended that the Revitalisation of Distressed Mining Communities initiative compile transformation development plans for mining regions as opposed to mining municipalities, and that the regions extend across municipal and provincial boundaries. This is relevant in the case of the linkage between the Eastern Limb of Sekhukhune, with Mashishing, and the linkage of Western Limb of Thabazimbi/Northam with the platinum belt of Rustenburg.

Table 43: Mining Focus Area: Implementation proposals

Strategic proposals for implementation	Focus Area/s	Region/s		
		Western 	Central 	Eastern 
Land Management: Municipality in cooperation with COGHSTA, to actively prevent and manage the increasing threat to the sterilisation of mineral resource potentials and project feasibility due to the indiscriminate occupation of land surrounding mining activity. This phenomenon is a development risk to many mining areas, but a high risk in the Northern Limb at Mogalakwena and the Eastern Limb of the Bushveld Igneous Complex in Sekhukhune district area. A community-based partnership approach is required to manage land.	M1-4	◉	◉	◉
Dedicated investment to diversify local economies that have a high dependency on the mining sector, especially Thabazimbi, Fetakgomo Tubatse, Ba-Phalaborwa and Lephalale municipal areas. This include implementing clear strategies, development plans and funding partnerships for the pro-active transformation of the mining affected communities, creating stronger linkages and connectivity to alternative economies, fostering asset based community development, and unlocking asset transformation opportunities.	M1-4	◉	◉	◉
Prioritisation of land assembly, infrastructure development, upgrading of informal settlements, integrated human settlements and asset transformation in the prioritised municipalities under the Revitalisation of distressed communities programme informed by mining region development plans.	M1-4	◉	◉	◉
Alignment of mine housing and living conditions plans with municipal spatial development framework and housing sector plans to ensure that municipal planning for services, housing options, transport, commercial and social facilities in nodal areas provide for potential expansions, and is resilient towards downscalings. This includes adequate provision for urban management of spaces and infrastructure to attract investments to the nodes.	M1-4	◉	◉	◉
Attract investment to nodes: The disconnect between urban demand and supply is evident is various mining affected nodal areas, but in particular in Steelpoort, Northam and Burgersfort, to such an extent that alternative housing solutions, some in other towns, are considered above investing in these nodes. It is therefore of critical importance that the demand is formulated,	M1, M3, M4	◉	◉	◉
Investing in infrastructure: Development of transport infrastructure such as roads, rail, and ports to reduce transportation costs and improve access to markets, thereby making mining operations more viable and profitable and alleviating these challenges. For this purpose, it is recommended that SANRAL and RAL with the mining industry, define the priority roads and linkages.	M1-4	◉	◉	◉
Expansion of the broadband connectivity network to the mining focus areas	M1-4	◉	◉	◉
Promoting exploration and research: Encouraging and supporting exploration and research activities can help identify new deposits of metal ores and improve the accuracy of resource estimates. This can lead to the discovery of new and more extensive mineral deposits, which can increase the longevity and profitability of mining operations. Investigate the potential of exploration and mining of rare earth minerals.	M1-4	◉	◉	◉

Strategic proposals for implementation	Focus Area/s	Region/s		
		Western 	Central 	Eastern 
Promoting local beneficiation and manufacturing: Encouraging the local beneficiation and manufacturing of metal ores can create new value-added industries. It includes the promotion of mineral beneficiation as an essential focus area for the Musina-Makhado Special Economic Zones (SEZs) and Tubatse Platinum SEZ/Industrial Hub, and investment in the mining supplier park.	M1-4	◉	◉	◉
Attracting investment: Providing incentives such as tax breaks, subsidies, and streamlined regulatory processes to the mining focus areas can attract local and foreign investment in the mining sector. This can lead to the creation of new mining operations, as well as the expansion and modernization of existing mining operations. Municipalities in mining focus areas to also provide incentives and streamline regulatory processing in the urban nodes to attract mining investment.	M1-4	◉	◉	◉
Investing in skills development and training programs for the mining workforce to build a highly skilled and specialized labour force, should preferable be established in the nodal areas of the mining focus areas.	M1-4	◉	◉	◉
The majority of the mines are opencast, which, if not managed properly, can result in significant biodiversity loss as well as air quality problems, with the release of particulate matter being of the most concern. Biodiversity offsets should be encouraged where possible.	M1-4	◉	◉	◉
Manage the risk of pollution and overuse of Strategic Water Source Areas (SWSAs) and restore the at risk SWSAs by dedicated provincial level bioregional planning, and the implementation of the NSDF National Spatial Action Areas (NSAAs) Implementation Plans, in particular the Olifants River Catchment NSAA.	M1-4	◉	◉	◉
The rehabilitation of mining areas, in particular the large number of abandoned mines in the province, located mainly in the central, northern and eastern parts of the province, and prevention of unauthorised mining activity.	M1-4		◉	◉
Urgent interventions are required to manage the increasing small scale mining and unauthorised mining at the edges of formalised mines, as well as in dormant or abandoned mines. This include taking the necessary measures to avoid health and safety disasters and risk, illegal occupation of land and buildings, as well as environmental degradation.	M1-4	◉	◉	◉

5.3.3.2. Alignment of priority and programme investment

The figure overleaf shows a summary of the Mining focus area and the key enablers to the sector. The figure also includes the provincial priority interventions for the focus area and lists the national and provincial programmatic interventions that contribute to the focus area. The figure further illustrates the provincial departmental APP programmes and sub-programmes that should direct their plans, programmes, budgeting and infrastructure investment to the focus area.

The various role players and key stakeholders that need to be coordinated to align investment in the focus area, are noted in the table below and does not represent an all-inclusive list.

Table 44: Mining Focus Area: Key stakeholders

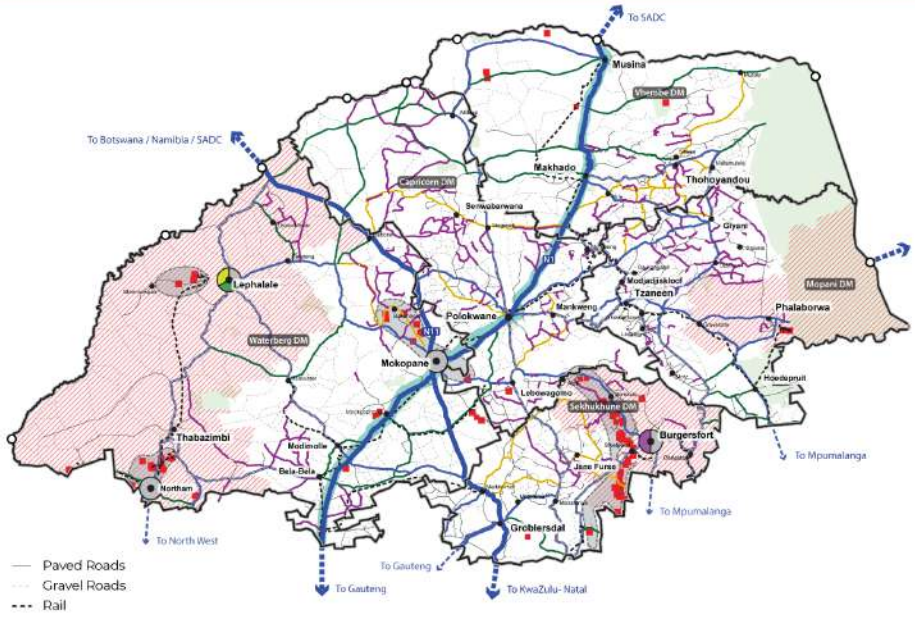
Key stakeholders & role players
▪ Department of Mineral Resources and Energy ▪ National Department of Human Settlements ▪ The Housing Development Agency ▪ Mining sector and agriculture ▪ SANRAL ▪ RAL ▪ Transnet ▪ LEDA ▪ PRASA

5.3.3.3. Alignment and coordination of spatial development planning and implementation

Key areas where coordination and alignment are required for the focus area are:

- Coordinate the alignment of housing and living conditions plans, and social and labour plans across mining regions.
- Consolidate municipal human settlements transformation plans for mining municipalities into development plans for mining regions.
- Coordinate the integration and consolidation of renewable energy initiatives amongst mining and industrial consumers and investors.

MINING FOCUS AREAS



SPATIALLY FOCUSED INTERVENTIONS

- Mining Focus Area
- Mining Gateway
- Tourism Gateway
- Agricultural Gateway
- Industrial and Logistics Gateway

Spatially focussed investment in industrial hubs for beneficiation, suppliers, support services, community services for residential populations

- Existing Mines
- High Dependency on Mining

Plans and partnerships for diversification, asset transformation, community asset based development

- National Corridor
- Provincial Corridor
- Provincial Freight Corridor
- Provincial Main Road Network
- Strategic Links
- Transformation Corridor
- RAL Prioritised Roads for Upgrading
- High Speed Rail

Upgrade and maintenance of transport network; PPPs for rail expansion

- Border Posts

ENABLING INTERVENTIONS

Water
Manage availability and use, pollution, including SWSAs; PPPs for water provision to mines and local communities

Energy
Support in alternative energy provision and major energy projects such as the Hydrogen Valley initiatives; PPPs for energy projects

Beneficiation and diversification
Support SEZs and Industrial Parks in support of mining industry

Revitalisation of distressed mining communities
Economic diversification, alignment of housing plans with municipalities, skills development and investment in social infrastructure

PROVINCIAL PRIORITY PROJECTS

- Tubatse mining supplier park
- Mineral beneficiation as an essential focus area for the Musina-Makhado SEZ and Fetakgomo-Tubatse SEZ/Industrial Hub.
- Revitalisation of distressed mining communities

PROGRAMMATIC ALIGNMENT

NATIONAL PROGRAMMES:

- Revitalisation of Distressed Mining Communities

PROVINCIAL PROGRAMMES:

- Limpopo Mining and Minerals Processing Industries Initiative (LIMMP)
- Integrated urban planning and development for rapid urbanisation (Polokwane, Tzaneen, Musina, Lephalale)

PRIORITY DEPARTMENTAL APP PROGRAMMES

DEPARTMENT OF ECONOMIC DEVELOPMENT, ENVIRONMENT AND TOURISM

2. Economic Development
2.1. Economic Planning and Research
2.2. Integrated Economic Development Services
2.3. Trade and Sector Development
2.4. Business Regulation and Governance

3. Environmental Affairs
3.1. Environmental Quality Management
3.2. Biodiversity and Natural Resource Management

DEPARTMENT OF PUBLIC WORKS, ROADS & INFRASTRUCTURE

Programme 4: Roads Infrastructure

DEPARTMENT OF TRANSPORT AND COMMUNITY SAFETY

Programme 2: Transport Operation
2.1 Public Transport Services
2.3 Transport Safety and Compliance
2.4 Transport Systems

DEPARTMENT OF COOPERATIVE GOVERNANCE, HUMAN SETTLEMENTS AND TRADITIONAL AFFAIRS

Cooperative Governance Performance information
1. Municipal infrastructure development
3. Democratic Governance and Disaster Management
4. Development planning

Human Settlements
1.3 Housing Needs, Research and Planning outcome and annual targets

5.3.4. Industrial and Logistics Focus Area

5.3.4.1. Implementation proposals

The implementation of the Limpopo Industrial Master Plan, 2020-2030 and the Limpopo Revitalization of Agriculture and Agro-processing Value Chain Plan, 2021 contain specific recommendations to be implemented in the three (3) Industrial and Logistics spatial focus areas that are identified for the province. The implementation proposals in this section aim to align the recommendations from these plans in the spatial focus areas to promote coordinated spatial investment.

The key enablers of this focus area is a functioning freight network, security of energy, bulk water supply and a demand-driven skilled workforce. It is also important that the freight network connect the Industrial and Logistics focus areas with the Agricultural and Farming, the Mining and the STETA focus areas for forward and backward linkages.

The development of the focus areas promote investment in the following:

- Polokwane Industrial and Logistics focus area: Freight and logistics
- Musina Industrial and Logistics focus area: Regional logistics, agro-processing, light industrial and metallurgic opportunities.
- Burgersfort/Steelpoort Industrial and Logistics focus area: Global centre of Excellence for sustainable solutions in green energy, manufacturing, agro-processing and mineral beneficiation

Table 45: Industrial and Logistics Focus Area: Implementation proposals

Strategic proposals for implementation	Focus Area/s	Region/s		
		Western	Central	Eastern
Coordination of planning, budgeting and implementation of the required provincial freight network and logistics in partnership with the manufacturing, logistics and mining industries in the focus areas.	I1 - I3	◉	◉	◉
Coordination of planning, budgeting and implementation to develop Polokwane as the provincial logistics hub and smart city, and as the digital hub of the province by means of the Limpopo Science and Technology Park.	I1		◉	
An integrated urban development, management and investment framework is required for Musina to pro-actively plan for its evolving role and function as an emerging industrial and logistics gateway and smart city that provide for the Musina port of entry, the regional logistics, metallurgical and agro-processing potential in the region, as well as the SEZ aspirations.	I3			◉
An integrated urban development, investment promotion and management framework is required for Burgersfort/Steelpport Industrial and Logistics focus area (I2). It should address the development of Burgersfort as industrial and mining gateway, supported by Steelpoort node, and align the planning and supply of bulk infrastructure, freight and logistic investments, renewable energy, digital infrastructure and industrial investments in partnership with stakeholders in the focus area, as well as in the mining focus areas.	I2, M4		◉	

Strategic proposals for implementation	Focus Area/s	Region/s		
		Western 	Central 	Eastern 
Implementation of the revitalisation of industrial parks in the province. The initiative to include reinventing and repurposing the old underutilised industrial areas/buildings and craft strategies for multiple businesses to share buildings aligned to the focus areas that they serve i.e Nkowankowa and Shayandima (Thohoyandou) serving the Agriculture and Farming focus areas, and Seshego the Polokwane Industrial and Logistics focus area.	I1, T2. T4		◉	◉
Alignment of provincial green economy initiatives and knowledge-driven economy/digital infrastructure to the industrial and logistics focus areas. Relevant opportunities include the Limpopo Science and Technology Park, waste recycling and reuse/circular economies, wildlife economy, biotrade or bioprospecting.	I1 – I3		◉	◉
Investing in skills development and training programs in gateway nodes to build a highly skilled and specialised labour force for the focus area, including the establishment of a Limpopo Skills Academy. The facilities to cater for the demand-driven specialised skills needs of both the Mining and Industrial and Logistics focus areas.	I1 – I3, M1 – M4		◉	◉
Promoting local beneficiation and manufacturing: Encouraging the local beneficiation and manufacturing of agriculture and mining to create new value-added industries, including the battery economy, furniture incubation etc. It includes the promotion of mineral beneficiation as an essential focus area for the Musina-Makhado Special Economic Zones (SEZs) and Fetakgomo-Tubatse Platinum SEZ/Industrial Hub, and investment in the mining supplier park.	I2		◉	◉
Attracting investment: Providing incentives such as tax breaks, subsidies, and streamlined regulatory processes to the industrial and logistics focus areas can attract local and foreign investment in the mining and industrial sector, and lead to the modernization of existing industrial operations. The development of a provincial incentive framework to align its recommendations to the focus areas.	I1 -I3		◉	◉

5.3.4.2. Alignment of priority and programme investment

The figure overleaf shows a summary of the provincial priority interventions for the Industrial and Logistics focus areas, and lists the national and provincial programmatic interventions that contribute to the focus area, and needs to be aligned. The figure also illustrates the provincial departmental APP programmes and sub-programmes that should direct their plans, programmes, budgeting and infrastructure investment to the focus area.

The various role players and key stakeholders that need to be coordinated to align investment in the focus area, are listed in the table below, and does not represent an all-inclusive list.

Table 46: Industrial and Logistics Focus Area: Key stakeholders

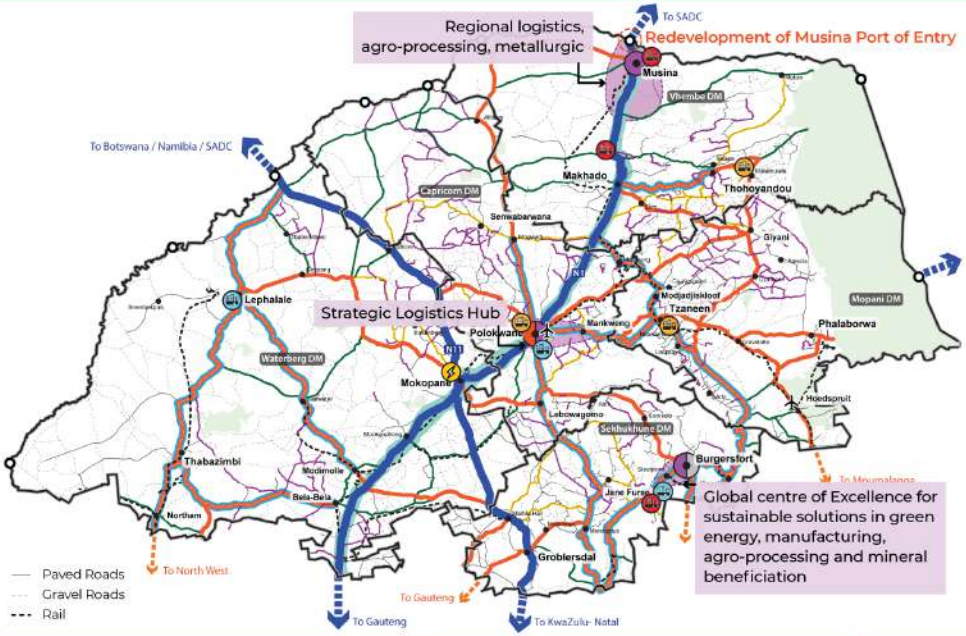
Key stakeholders & role players
▪ LEDET ▪ LEDA ▪ DTIC ▪ IDC ▪ SANRAL ▪ RAL ▪ Transnet ▪ Mining and agriculture industry ▪ Impact Catalyst ▪ DMRE ▪ PRASA

5.3.4.3. Alignment and coordination of spatial development planning and implementation

The following areas of alignment are recommended in the focus area:

- Coordination and alignment of the plans and projects under the Provincial Industrial and Enterprise Development with the spatial priorities in provincial and municipal SDFs.
- The development of sector support plans for the eight sectors that are considered the dominant and sunrise sectors in the Limpopo Industrial Master Plan, 2020-2030, needs to be aligned to the spatial priorities.

INDUSTRIAL AND LOGISTICS FOCUS AREAS



SPATIALLY FOCUSED INTERVENTIONS

- **Industrial & Logistics Focus Area**
- Industrial and Logistics Gateway
- Administration & Services Gateway
- Mining Gateway

→ Spatially focussed investment in industrial hubs for diversification, logistics services / hubs, support services, community services for residential populations

- SEZ
- Industrial Park
- Industrial Hub

→ Support SEZs and Industrial Parks in support of industrialisation, diversification

- Mogalakwena Hydrogen Hub
- National Corridor
- Provincial Corridor
- Provincial Freight Corridor
- Provincial Main Road Network
- Strategic Links
- RAL Prioritised Roads for Upgrading
- High Speed Rail

→ Upgrade and maintenance of transport network; PPPs for rail expansion

- Border Posts
- Airports

→ Redevelopment of Musina Port of Entry, and upgrade and maintenance in support of regional trade

ENABLING INTERVENTIONS

Water
Manage availability and use, pollution; PPPs for water provision to industrial developments and SEZs

Energy
Support in alternative energy provision and major alternative energy projects such as the Hydrogen Valley initiatives, battery economy; PPPs for energy projects

Functional freight network
Maintain and operationalise existing network

Demand-driven skills
Establish a Limpopo Skills Academy

PROVINCIAL PRIORITY PROJECTS

- Musina-Makhado SEZ
- Fetakgomo Tubatse SEZ
- Green economy
- Polokwane Strategic Logistic Hub Initiative and smart city
- Revitalisation of Seshego, Nkowankowa and Shayandima Industrial parks
- Limpopo Science and Technology Park
- Limpopo High Speed Rail
- Musina smart city
- Lephalale smart city and logistics hub
- Battery economy

PROGRAMMATIC ALIGNMENT

NATIONAL PROGRAMMES:

- National Industrial Participation Programme
- Green Hydrogen Commercialisation Strategy and Action Plan
- SEZ programme
- Revitalisation of industrial parks
- Agri Parks
- Redevelopment of Ports of Entry: Musina

PROVINCIAL PROGRAMMES:

- SEZ Initiative
- Industrial and enterprise development
- Integrated urban planning and development for rapid urbanisation (Polokwane, Tzaneen, Musina, Lephalale)
- Limpopo "green digital" strategy
- Limpopo Industrial Symbiosis Program

PRIORITY DEPARTMENTAL APP PROGRAMMES

DEPARTMENT OF ECONOMIC DEVELOPMENT, ENVIRONMENT AND TOURISM

2. Economic Development
2.1. Economic Planning and Research
2.3. Trade and Sector Development
2.4. Business Regulation and Governance

3. Environmental Affairs
3.1. Environmental Quality Management
3.2. Biodiversity and Natural Resource Management

DEPARTMENT OF PUBLIC WORKS, ROADS & INFRASTRUCTURE

Programme 4: Roads Infrastructure

DEPARTMENT OF TRANSPORT AND COMMUNITY SAFETY

Programme 2: Transport Operation
2.1 Public Transport Services
2.3 Transport Safety and Compliance
2.4 Transport Systems

DEPARTMENT OF COOPERATIVE GOVERNANCE, HUMAN SETTLEMENTS AND TRADITIONAL AFFAIRS

Cooperative Governance Performance information
1. Municipal infrastructure development
3. Democratic Governance and Disaster Management
4. Development planning

5.3.5. Spatial Transformation and Economic Transition Areas

The Spatial Transformation and Economic Transition Areas (STETAs) are focus areas for spatial transformation and economic transition, aligned to the National SDF's Eastern Escarpment Spatial Transformation and Economic Transition Region (STETR). It is the areas within the national region where there are concentrations of rural settlements characterised by economic and social deprivation, with lack of access to economic opportunities, social and basic services.

Implementation of the STETAs should apply a regional development approach where a nodal network is delineated for the STETA to consolidate and densify settlements accordingly. What will bring about change and transformation is to anchor the nodal network of each STETAs to the national network as well as the provincial priority nodal network. The coordination of investment in the STETAs should prioritise the social upliftment of the marginalised communities in these STETA, through enhanced connectivity, mobility, access to services, enterprise development, and creation of sustainable livelihoods.

In support of the regional planning approach, regional development plans are recommended to be developed for two regions to integrate and consolidate planning and investment efforts across the regions. The recommended areas are:

- STETA 2, 3 and 4: The regions include the Blouberg, Polokwane-Mankweng and Sekhukhune areas, as well as the mining focus areas of Mogalakwena (M3) and Burgersfort/Steelpoort (M4), and further includes Mashishing in Thaba Chweu local municipality, Mpumalanga. This region is the main mining, industrial and logistics heart of the province with strong linkages between the focus areas.
- STETA 1 which include parts of Mopani and Vhembe districts.

5.3.5.1. Implementation proposals

Table 47: STETAs: Implementation proposals

Strategic proposals for implementation	Focus Area/s	Region/s		
		Western 	Central 	Eastern 
Implementation and institutional coordination of the NSAA Implementation plan for the Eastern Escarpment National Spatial Transformation and Economic Transition Region once finalised and adopted. This includes establishment of interregional and inter-provincial structures between Limpopo and Mpumalanga, to coordinate and integrate the NSAA implementation plan.		◉	◉	◉
Develop a network of nodes within the STETAs with Tzaneen as the emerging smart city for STETA1 and Polokwane as the smart city for STETA 2, supported by gateways to the areas.	STETA 1-4		◉	◉
Consolidate and densify settlement development in support of the nodal network in each of the STETAs.	STETA 1-4		◉	◉
Provincial departments and municipalities to align the implementation of social services according to the social services provisioning model.	All	◉	◉	◉
RAL and district municipalities to prioritise maintenance and upgrading of identified strategic link roads that strengthen urban-urban, rural–urban and rural-rural connectivity.	STETA 1-4		◉	◉
Upgrade the built environment in the STETAs with the digital/ICT infrastructure, incremental upgrading of basic services and public transport that trigger enterprise development in the region.	STETA 1-4		◉	◉
Prioritise enterprise development, knowledge creation, innovation and skills development opportunities in the STETAs and establish the facilities in the identified nodes and/or in support of the identified small town regeneration initiatives.	STETA 1-4		◉	◉
Coordinate the development of small town regeneration strategies for Groblersdal, Bela Bela, Burgersfort and Hoedspruit, as well as the local service centres recommended in Chapter 4, section 4.3.5.2.	STETA 1-4, A2	◉	◉	◉
Facilitate effective regional collaboration and partnerships, as well as cooperative governance models with the stakeholders within the STETA region, as well as collaboration with the agriculture and farming, mining, and industrial and logistic focus areas.	STETA 1-4		◉	◉
Review the provincial land assembly strategy and prioritisation tool to align it to the provincial spatial priorities	PHSHDAs	◉	◉	◉
Prioritise land assembly for human settlements purposes in PHSHDAs in support of tenure security.	PHSHDAs	◉	◉	◉

Strategic proposals for implementation	Focus Area/s	Region/s		
		Western 	Central 	Eastern 
Fast-track the approval and proclamation of Social Housing Restructuring Zones in the PHSHDAs, and the implementation of social and rental housing programmes.	PHSHDAs	◉	◉	◉
Prioritise upgrading responses to informal settlements in the PHSHDAs and distressed mining areas with community-based partnership approaches.	All	◉	◉	◉
The planning and budgeting of provincial land development areas for human settlements interventions to prioritise land development areas in PHSHDAs.	PHSHDAs	◉	◉	◉
Projects addressing housing backlog and livelihood restoration should be focused in the STETAs and implemented with community empowerment (Ndzelele) and community asset development initiatives.	STETA 1 – 4	◉	◉	◉
Facilitate the alignment of the planning and implementation of PHSHDA 11: Greater Northam, with the adjoining PHSHDA in North West Province.	M1	◉	◉	◉
Consideration of delineating a PHSHDA for Mokopane and its urban periphery.	STETA 4	◉	◉	◉
Develop a regional development plan for STETA 2, 3 and 4: The regions include the Blouberg, Polokwane-Mankweng and Sekhukhune areas, as well as the mining focus areas of Mogalakwena (M3) and Burgersfort/Steelpoort (M4), and further includes Mashishing in Thaba Chweu local municipality, Mpumalanga.	STETA 2 -4, M3, M4	◉	◉	◉
Develop a regional development plan for STETA 1 that include parts of Mopani and Vhembe districts	STETA 1	◉	◉	◉

5.3.5.2. Alignment of priority and programme investment

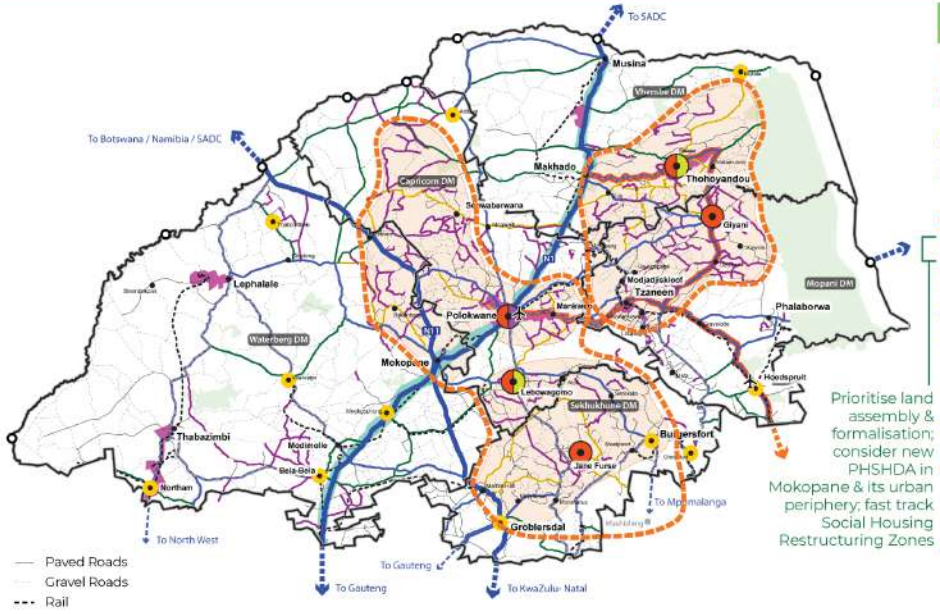
The figure overleaf shows a summary of the provincial priority interventions for the Spatial Transformation and Economic Transition Areas, and the key enablers. The figure outlines the national and provincial programmatic interventions that contribute to the focus area and it lists the provincial departmental APP programmes and sub-programmes that should prioritise their plans, programmes, budgeting and infrastructure investment to the Spatial Transformation and Economic Transition Areas.

The various role players and key stakeholders that need to be coordinated to align investment in the focus area, are listed in the table below. It is not an all-inclusive list and should be updated where applicable.

Table 48: STETA Focus Area: Key stakeholders

Key stakeholders & role players
▪ National Department of Human Settlements ▪ COGTA ▪ COGHSTA ▪ Department of Education/Department of Higher Education ▪ Institutions of higher education/Universities ▪ The Housing Development Agency ▪ RAL

SPATIAL TRANSFORMATION AND ECONOMIC TRANSITION AREAS



Prioritise land assembly & formalisation; consider new PHSHDA in Mokopane & its urban periphery; fast track Social Housing Restructuring Zones

SPATIALLY FOCUSED INTERVENTIONS

- Spatial Transformation & Economic Transition Areas
- Administration & Services Gateway
- Agricultural Gateway
- Industrial and Logistics Gateway

Spatially focussed investment in social services including government precincts, tertiary education facilities and higher order health facilities

- RSDFs
- PHSHDAs

Develop integrated regional development plans to support formalisation, densification, economic diversification & consolidation of nodal structure

- Small Town Redevelopment

Prioritise Groblersdal, Bela Bela, Burgersfort & Hoedspruit for small town development

- National Corridor
- Provincial Corridor
- Provincial Freight Corridor
- Provincial Main Road Network
- Strategic Links
- Transformation Corridor
- RAL Prioritised Roads for Upgrading
- High Speed Rail
- Border Posts

Upgrade & maintenance of transport network to facilitate access to nodes

ENABLING INTERVENTIONS

Water
Provision of bulk and reticulation services in support of enterprise development and residential communities

Energy
Support in alternative energy provision in support of enterprise development and residential communities

Sanitation
Addressing sanitation backlog by prioritising upgrade op WWTWs and considering alternative, non- water borne sanitation options

ICT
Develop ICT infrastructure in support of enterprise development

Human Resource Development
Focus on continued basic education, adult basic education and training, specialised skills development aimed at prominent economic sectors, and tertiary education

PROVINCIAL PRIORITY PROJECTS

- Polokwane Smart city
- Tzaneen Smart city
- Human settlements catalytic projects: Joe Slovo Integrated Human Settlements and Marapong CRU; Bendor Extension 100.
- Limpopo Central Academic Hospital
- Vhembe Innovation and Incubation Centre

PROGRAMMATIC ALIGNMENT

NATIONAL PROGRAMMES:

- Implementation of the Integrated Urban Development Framework – priority areas
- The eleven (11) promulgated National Priority Human Settlements and Housing Development Areas (PHSHDAs)
- The five (5) local municipalities prioritised under the national intervention for the Revitalisation of Distressed Mining Communities
- Towns prioritised under the Small Town Regeneration programme
- Title Restoration Programme
- Small Town Regeneration Programme

PROVINCIAL PROGRAMMES:

- Integrated urban planning and development for rapid urbanisation (Polokwane, Tzaneen, Musina, Lephalale)
- Provincial Priority Human Settlements Projects

PRIORITY DEPARTMENTAL APP PROGRAMMES

DEPARTMENT OF ECONOMIC DEVELOPMENT, ENVIRONMENT AND TOURISM

2. Economic Development
2.1. Economic Planning and Research
2.2. Integrated Economic Development Services
2.3. Trade and Sector Development
2.4. Business Regulation and Governance

DEPARTMENT OF PUBLIC WORKS, ROADS & INFRASTRUCTURE

Programme 2: Infrastructure Operation
Property and Facilities Management

Programme 4: Roads Infrastructure

OFFICE OF THE PREMIER

Programme 3: Governance and Policy
- Planning Coordination
- Provincial Policy Management

DEPARTMENT OF TRANSPORT AND COMMUNITY SAFETY

Programme 2: Transport Operation
2.1 Public Transport Services
2.3 Transport Safety and Compliance
2.4 Transport Systems

DEPARTMENT OF COOPERATIVE GOVERNANCE, HUMAN SETTLEMENTS AND TRADITIONAL AFFAIRS

Human settlements:
- Housing Needs, Research and Planning outcome and annual targets

Cooperative Governance Performance information
- Municipal infrastructure development
- Development planning

5.3.5.3. Alignment and coordination of spatial development planning and implementation

Planning across all spheres of government needs to be aligned in respect of human settlements, social infrastructure, transport, ICT and engineering infrastructure, and align to spatial priorities.

The alignment and coordination of planning for human settlements and social infrastructure is critical and require that municipal SDFs and land use development policy include the following:

- Development edges for urban and rural settlements that delineate and protect scarce resources such as minerals, high potential agricultural land, and water resource areas in consultation with relevant stakeholders.
- Development guidelines and incentives for higher densities and mixed-use developments in both urban and rural settlements.
- Identify well-located land development areas for integrated human settlements.
- Alignment of SDFs and local area planning with transport and infrastructure planning, and vice versa.

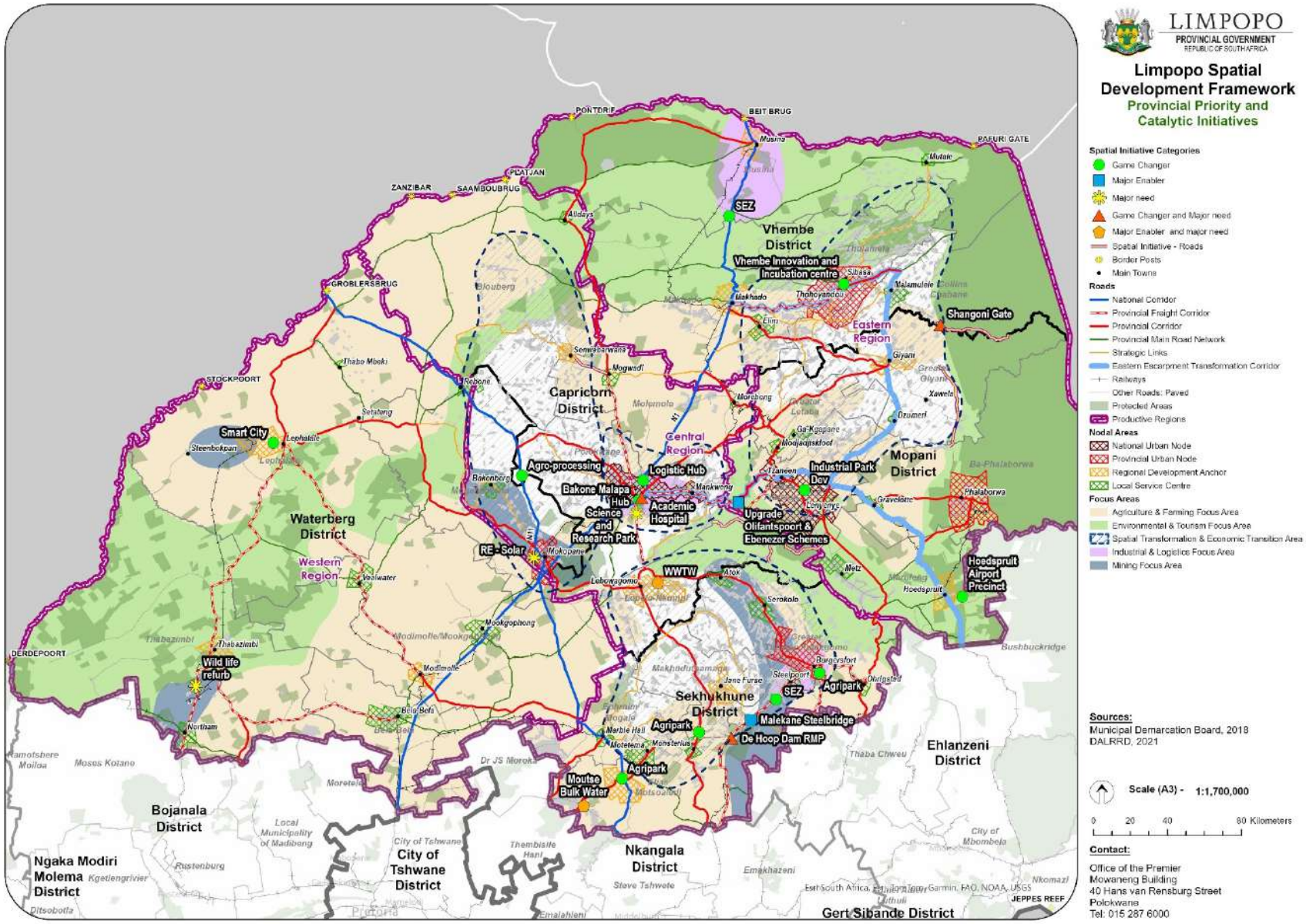
A review of the Limpopo Multi-Year Human Settlements Development Plan, 2019-2024 is required in order to coordinate and align the planning and development of human settlements in the province in an integrated and sustainable manner on well-located land, aligning public transport and social service provision and sustainable access to economic opportunities.

5.3.6. Consolidation of provincial strategic projects and initiatives

Existing provincial priority projects and catalytic initiatives are indicated in Figure 68 below, in relation to the main elements of the LSDF and the spatial focus areas.

In most instances these initiatives are spatially aligned to either the nodal structure or the spatial focus areas within which the nodes act as gateways to specific economic activities. The contribution of these projects and initiatives to the spatial outcomes envisioned for the LSDF should be continuously monitored and realigned if necessary.

Figure 68: Provincial priority and catalytic initiatives



5.4. INSTITUTIONAL ARRANGEMENTS FOR COORDINATION AND ALIGNMENT

5.4.1. Directives for alignment to the LSDF

To bring about spatial change and transformation, the spatial proposals put forward in the LSDF necessitate the institutionalisation of the spatial objectives and outcomes, the revised nodal areas, the new nodal gateways and spatial focus areas to ensure land development and infrastructure investment is consistent with the LSDF. Institutional arrangements for the adoption of the LSDF as a transversal planning instrument serving all spheres of government need to be developed.

The following spatial governance directives need to be enforced across provincial strategic planning, budgeting and infrastructure projects, policies and programmes:

5.4.1.1. National alignment

- Implementation and institutional coordination will be required for the actioning of the National Spatial Action Area (NSAA) Implementation plan for the Eastern Escarpment National Spatial Transformation and Economic Transition Region, once finalised and adopted. This includes establishment of interregional and inter-provincial structures between Limpopo and Mpumalanga, to coordinate and integrate the NSAA implementation plan.
- Alignment of national programmes and interventions is largely through structures facilitated by the relevant provincial departments that should promote the need for consistency of the national programme to the LSDF.

5.4.1.2. Provincial alignment

On provincial level the Office of the Premier (OTP) in partnership with the Department of Agriculture, Land Reform and Rural Development (DALRRD) ensures cross-sector planning and alignment of investment to spatial priorities within the province through a number of functional IGR structures on provincial and district level, such as:

- Limpopo Provincial SPLUMA Forum, overseeing matters of spatial planning, land use management, and land development.
- Provincial Development Planning Forum
- District Development Planning Forum
- Cluster Committees (infrastructure, social, economic, governance and administration and JCPS)
- Provincial IGR Forum
- Technical HoD/ Municipal Managers' Forum

It is important that the forums should be vehicles to reinforce the LSDF and to report on performance.

In addition, the spatial governance directives to provincial strategic planning and budgeting to ensure a spatially transformed province are as follow:

- Departmental Strategic Plans and Annual Performance Plans must align its planning and performance assessment to the provincial spatial rationale and spatial priorities of the LSDF.
- The Limpopo Integrated Planning Framework (LIPF) ensures inter-sphere integration utilising districts as centre of planning and should be aligned to the LSDF.
- The review of the Limpopo Development Plan 2020 – 2025 must align the reviewed development path for the province to the spatial outlook envisaged for the province in the LSDF.
- Provincial sectoral plans and programmes, including provincial infrastructure plans and programmes, must align its investment plans to the spatial rationale and prioritise investment in the provincial nodes, gateways and spatial focus areas.

- Provincial budgeting processes must reinforce budget prioritisation aligned to the LSDF spatial priorities. This includes institutionalising the revisions to the existing prioritisation of provincial growth points of the 2016 LSDF.

5.4.1.3. District and Local Municipal alignment

Integrated planning in the province is largely undertaken on municipal level through the municipal IDP process and IDP Representative Forums where sector departments and government agencies are represented, and their plans included in the five-year IDP plan of the respective municipalities. The following spatial governance directives are made to ensure that district and municipal planning and investment aligns and is consistent with the LSDF:

- The District Development Plan (DDM) One Plans must seek alignment with the LSDF in all respects and coordinate the relevant implementation proposals and interventions in section 3 of this Chapter, as well as coordinate the efforts of the stakeholders and role players identified.
- District and municipal sector plans, especially plans forming part of the municipal IDP reports, must be consistent with the LSDF. Project business plans considered for provincial or grant funding, must prove alignment to the LSDF spatial priorities and outcomes.
- Municipal SDFs must find expression in the LSDF and must include in particular the provisions applying to the nodal network, connective infrastructure network, sensitive and protected areas and spatial focus areas.

5.4.1.4. Private sector alignment and partnership

Private sector industry and land owners, as well as traditional leaders are critical partners to the implementation of the LSDF. The buy-in from stakeholders and role players in the provincial spatial vision and rationale is key to the successful implementation of the LSDF proposals. It is therefore of paramount importance that implementation forums or delivery vehicles, and all spheres of government ensure participation by all relevant stakeholders, especially private sector.

All spheres of government should assist with awareness creation by making private sector industry players aware of the provincial information and data available to make informed investment decisions, attract capital and investors. The participation of the private industry in the establishment of the recommended integrated data management and geospatial decision-making system is encouraged.

It is also important to create awareness of the guidelines for development, in particular the guidelines for resource conservation and the role these role players can play in the protection of valuable agriculture, mining and environmental assets, and prevention of encroachments and pollution.

The formulation of public private partnership to steer major catalytic projects in the spatial focus areas is promoted. It is recognised that existing partnerships are in place to support government in the delivery of services, but it should not negate the mandate that still lie with the state to create a conducive environment for investment, and to secure continued operations and maintenance of new assets funded by private sector.

5.4.2. Spatial policies

In response to the stipulations of Section 15 (3) of SPLUMA, the LSDF sets out in this section the required alignment, coordination and integration of provincial policies, plans and development strategies of provincial departments, with the policies of national government and direct how alignment on municipal level is to be coordinated.

The following provincial sectoral plans, policies and development strategies are recommended to be reviewed to ensure alignment to the LSDF:

- Limpopo Development Plan 2020-2025
- Provincial Nodal Strategy and Growth Point Programme
- Limpopo Integrated Infrastructure Master Plan, 2017

- Limpopo Multi-Year Human Settlements Development Plan, 2019-2024
- Limpopo Revitalization of Agriculture and Agro-processing Value Chain Plan, 2021
- Limpopo Industrial Master Plan, 2020-2030 – update, more spatialised
- Limpopo Green Economy Plan, 2013
- Limpopo Tourism Growth Strategy and Implementation Plan, 2018/19-2023/24
- Limpopo Provincial Land Transport Framework, 2023 – minor re-alignment because the framework was based on the 2016 LSDF

The new provincial policies proposed to be developed are:

- Review of the Provincial Nodal Strategy and Growth Point Programme to align priority investment areas with the provincial nodal hierarchy (national urban nodes and regional development anchors), spatial focus areas and the gateways to the focus areas.
- Preparation of Regional Development Plans for the three identified regions with the purpose of highlighting development and investment priorities and opportunities and ensuring alignment between the relevant Local Municipalities and Districts.
- Provincial framework for integrated data management and geospatial support system.
- Provincial climate change needs and response assessment and climate change response implementation plan
- A Limpopo Integrated Renewable Energy Strategy to frame proposals for sustainable energy security and supply, and to build a just energy transition.
- Provincial ICT /Digital infrastructure strategy
- Regional Spatial Development Framework (RSDF) be prepared for the Mogalakwena, Polokwane, Lebowakgomo, Burgersfort, Steelpoort, Jane Furse, Mashishing and Moloto Corridor area.
- Guidelines for human settlements urban and rural densification and delineation of development edges, transition areas
- The implications of the smart cities framework (SCF) dated March 2021 be localised for the designated nodes in Limpopo. Polokwane smart city, Musina/Makhado SEZ Smart City Model, Lephalale green city, Tzaneen smart city
- The Social Services Wheel from the NSDF be applied to the functional nodal network to ensure that the appropriate mix and level of social service is achieved.

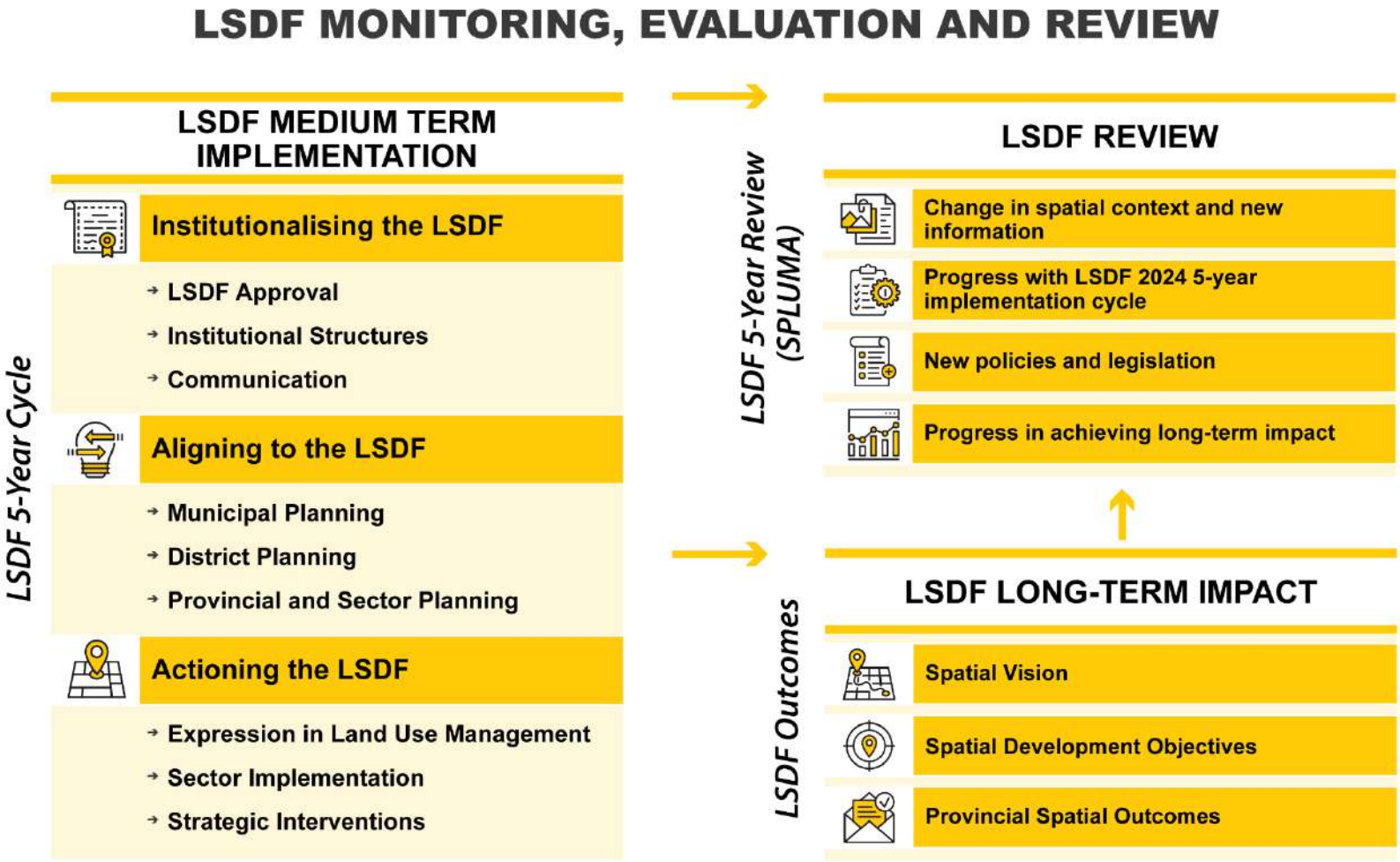
5.4.3. Monitoring, evaluation and review

5.4.3.1. Elements of Monitoring, Evaluation and Review

The LSDF Is a long-term strategic spatial framework, intended to guide, align and coordinate the different frameworks, plans, policies and programmes produced by the different spheres of government in as far as it influences the spatial development of Limpopo. The implementation of the LSDF is far-reaching and multidimensional. It includes shaping local scale spatial planning, informing national and regional scale spatial planning, giving spatial direction on prioritisation to sector plans and potentially guiding the spatial alignment and coordination of capital projects and government spending and investment. In addition, the LSDF has dual planning horizons: it is a medium-term framework for spatial development for at least five years, but at the same time provides a longer term spatial development vision for the province.

The multi-dimensional nature of LSDF implementation and impact should be reflected in the monitoring and evaluation approach. The components of the monitoring and evaluation process are summarised below:

Figure 69: Monitoring, Evaluation and Review



5.4.3.2. Indicator guidelines

It is proposed that the five-year implementation cycle of the LSDF 2024 be monitored according to the implementation phases set out above. During this 5-year cycle, the emphasis should be on institutionalisation, achieving planning alignment across sphere and sectors, and ensuring that the planning alignment results in alignment of land use management and sector implementation. The priority indicators and targets are set out below:

Table 49: Priority Indicators and Targets

LSDF 5-year Implementation Phase	Indicators	Targets	Responsible	Target Dates
Institutionalising the LSDF 2024	Approval of LSDF	Approval by Provincial Executive Council	PEC supported by Office of the Premier	2024
	Publication of LSDF	Publication of approved LSDF in Provincial Gazette	Office of the Premier	2024
	LSDF Launch Workshop	Workshop lead by Office of the Premier to set way forward for institutionalisation and implementation of LSDF, achieving at least 80% attendance from Local Municipalities, District Municipalities and Provincial Departments respectively	Office of the Premier	2024
	Distribution of LSDF electronic document and GIS files to all Provincial Departments, District Municipalities and Local Municipalities	Distribution of memory sticks at Lauch Workshop or delivery to non-attending entities confirmed by signing distribution register	Office of the Premier	2024
	Web presence	LSDF published on official Limpopo Province website	Office of the Premier	2024
		Links to LSDF on all provincial departmental websites	All Provincial Departments supported by Office of the Premier	2024
		Links to LSDF on all municipal websites	All DMs and LMs supported by Office of the Premier	2024
		LSDF spatial data available as web map service on Limpopo Province website	Office of the Premier supported by DALRRD	2024-5
	Addition of LSDF as standing item on Provincial SPLUMA Forum Agenda	Item appears on Provincial SPLUMA Forum Agenda with discussion points set before each meeting	Office of the Premier / DALRRD	2024

LSDF 5-year Implementation Phase	Indicators	Targets	Responsible	Target Dates
Aligning to the LSDF	Inclusion and alignment in DM and LM SDFs	The next review of the district and local municipal SDFs include the provisions of the LSDF, specifically provisions applying to: ▪ Nodal status and role ▪ Connective infrastructure network ▪ Sensitive and protected areas (natural resource base) ▪ Spatial focus areas	All DMs and LMs supported by Office of the Premier	2024-29
	Alignment of Integrated Development Plans to LSDF	The IDPs of municipalities are aligned to the LSDF and include the catalytic interventions where applicable	All DMs and LMs supported by Office of the Premier	2024-25 and future cycles
	Alignment of One Plans to LSDF	The One Plans for the districts are aligned to the LSDF and include the interventions where applicable	All DMs supported by Office of the Premier	2024-25 and future cycles
	Alignment of Sector Plans and Programmes to LSDF	All relevant provincial sector plans and programme are aligned to the LSDF and include the prioritised catalytic interventions where applicable	All Provincial Departments supported by Office of the Premier	2024-9
Actioning the LSDF	Reinforcement of proposed spatial development patterns in municipal land use management	Municipal land use decisions reinforce the provisions of the LSDF: ▪ New residential projects, including land reform projects, located within nodal areas or other identified priority areas ▪ Residential densities of 20 to 40 units per hectare are approved for new residential development within urban edges ▪ Applications for land uses in line with proposals for spatial focus areas are approved subject to relevant conditions ▪ No applications are approved contrary to environmental management guidelines and regulations ▪ Encroachment of unauthorised land uses onto designated, proclaimed or zoned	All municipalities with support of Office of the Premier	2024-9

LSDF 5-year Implementation Phase	Indicators	Targets	Responsible	Target Dates
		agricultural or mining land are managed and appropriate corrective action are taken		
	Sector implementation priorities	Sector-specific implementation and maintenance programmes reinforces the spatial patterns and spatial priorities provided for in LSDF	Relevant departments or agencies	2024-9
	Implementation of Strategic Interventions	The catalytic interventions, province-wide and in specific spatial focus areas, set out in Sections 5.2 and 5.3, are implemented by the responsible departments and agencies as captured in integrated project data base with spatial referencing.	Relevant departments or agencies	2024-9
Reviewing the LSDF	Active monitoring of spatial trends	Spatial data base established containing spatial capturing of land use applications and sector projects from sector programmes and District One Plans linked to the LSDF Spatial Focus Areas	Office of the Premier	2027-29
		Implementation progress of strategic interventions is captured with a spatial reference linked to the LSDF Spatial Focus Areas	Office of the Premier based on reporting by relevant departments and agencies	2025-29
	LSDF Review (SPLUMA)	The LSDF review process is initiated in terms of Section 15(5) of SPLUMA	Office of the Premier	2029

Measuring the long-term outcomes of the LSDF is a process that will depend on the availability of spatial data to populate potential spatial indicators. The following suggested indicators could most likely be populated using existing spatial data as a baseline and monitored for progress over time:

Table 50: Long-Term Outcomes

LSDF Long-Term Outcomes	Potential Indicators
A network of consolidated, transformed and well-connected urban nodes, regional development anchors and rural service centres that enable Limpopo to derive maximum transformative benefit from urbanisation and concentrated rural settlements, enabling climate change adaptation, inclusive economic development and equal, effective and efficient access to social services in support of equitable and inclusive provincial human capital development.	Increase in residential densities in nodal areas
	Urban and rural development edges in municipal SDFs
	Number of government social services provided per nodal area
	Scale of government social services provided per nodal area
	Number of economic sectors present per nodal area
	Level of ICT connectivity per nodal area
	Level of access to basic services per nodal area

LSDF Long-Term Outcomes	Potential Indicators
Provincial-scale corridors and productive rural regions enable sustainable livelihoods supported by economic diversification through green industrialisation and participation in the Fourth Industrial Revolution, mutually beneficial urban-rural linkages, and wise management, nurturing and conservation of ecological assets and ecosystem services.	Implementation of catalytic interventions aimed at economic diversifications (e.g. SEZs, Industrial Parks, support for agricultural beneficiation)
	Increase in ICT connectivity in nodes and Spatial Focus Areas for Agriculture, Tourism and Mining
	Increase in the number of alternative energy projects (solar / PV, hydrogen)
	Increase in water availability for residential consumption and agriculture, mining and industry
Provincial connectivity and movement infrastructure systems are strategically located, extended and maintained, to support a diverse, ecologically sustainable, adaptive, regenerative and inclusive economy, and a set of key provincial, national and regional gateway cities and towns.	Increase in percentage good quality roads (tar and gravel)
	Increase in percentage tarred roads
	Increase in settlements within lesser travel time segments from nodal areas
	Increase in settlements within lesser travel time segments from social services
	Increase in access to public transport facilities
Productive regions are supported by sustainable resource economies and strong and resilient regional development anchors provide effective, efficient and equitable access to people living in rural areas to the provincial, national and global economy.	Improved range of government social services in regional development anchors
	Increase number of economic sectors present in regional development anchors
	Greater percentage of non-residential land uses in STETAS
	Increase in rural settlements withing lesser travel time segments from regional development anchors
	Improved public transport facilities in regional development anchors
	Increase in regional GDP in agriculture, mining, tourism and manufacturing
	Increase in employment in agriculture, mining, tourism and manufacturing
	Decrease in residential encroachment on agricultural land, minig land and protected areas
	Improved Blue Drop scores
	Improved Green Drop scores
	Improved quality of road network in STETAS
The provincial ecological infrastructure and natural resource foundation are well-protected and managed, to enable climate change mitigation and sustainable and equitable access to water, high-potential agricultural land, minerals and other natural resources, both for current and future generations.	Incorporation of spatial environmental data bases in district and local SDFs and sector plans
	Improved Blue Drop scores
	Improved Green Drop scores
	Decreased encroachment on restricted areas
	Climate change mitigation and adaptation plans in place
	Climate change mitigation measures being implemented / progress

5.4.3.3. LSDF review

SPLUMA Section 15 (5) requires that a provincial spatial development framework must be reviewed at least every five years. The following should be taken into account with the review of the LSDF:

- Change in development context, e.g. the implementation of new projects, changes in economic activities, e.g. new or closed mines, changed agricultural production, improvements in transport infrastructure, energy projects, etc.
- Progress with implementation of LSDF 2024, e.g. degree of take-up in municipal SDFs, spatial prioritisation of sectors plan, etc.
- New and updated information that has become available for consideration.
- New or revised policies and legislation with spatial implications.
- Progress in achieving long-term impact.

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CHAPTER 6: IMPLEMENTATION ACTION PLAN

Lets grow South Africa together

This chapter sets an action plan for implementing the key interventions required to action the LSDF, 2024. It includes interventions, and responsibilities of main actors linked to timeframes.

This action plan should be incorporated into the official implementation management and monitoring systems and processes of the province. The interventions should be read in conjunction with Chapter 5 of the LSD, 2024 to ensure an understanding of the strategic context of each intervention.

6.1. PROVINCIAL STRATEGIC ENABLERS: ACTION PLAN

Table 51: Provincial Strategic Enablers

Theme	Intervention	Reference (Sections in LSDF, 2024)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2045	
					Sept 2028	March 2030	March 2035	March 2045
ICT	Compile a provincial framework for integrated data management and a geospatial decision support system	Section 5.2.1.1	OTP All LM's All DM's Sector departments Telkom Network Service Providers	x				
ICT	Develop and institutionalise the provincial integrated data management and geospatial decision support system.	Section 5.2.1.1	OTP All DM's Sector Departments		x	x		
ICT	Broadband network infrastructure rollout in the Sekhukhune District	Section 5.2.1.1	LEDA			x		
Water	Implement Water Conservation and Water Demand Management (WC&WDM) measures	Section 5.2.2.1	DWS WSAs DALRRD WRC Lepelle Northern Water DMs	x	x	x	x	x
Water	Manage threats to Strategic Water Source Areas (SWSAs)	Section 5.2.2.1	LEDET WSAs DWS DALRRD	x	x	x	x	x
Water	Coordinate the alignment of cross-border implementation of National Spatial Action Areas (NSAA) for the Waterberg River Catchment and the Limpopo and Olifants River Catchment as National Resource Risk Areas in SWSAs	Section 5.2.2.1	OTP DALRRD COGHSTA LEDET DWS WSAs BMA LIMCOM	x				
Water	Formulate a provincial bulk water intervention plan that aims to fast track the installation of the bulk water infrastructure and	Section 5.2.2.2	OTP COGHSTA	x	x	x		

Theme	Intervention	Reference (Sections in LSDF, 2024)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2045	
					Sept 2028	March 2030	March 2035	March 2045
	ensure that there is uninterrupted water reticulation, and consistent water supply		DWS WSAs WRC Lepelle Northern Water LMs					
Water	Further development and maintain the Water Demand Model	Section 5.2.2.2	DWS WSAs WRC Lepelle Northern Water DMs	x				
Water	Revival of the DWS GRIP network of borehole information	Section 5.2.2.2	DWS WSAs DMs	x				
Water	Investigate and undertake actions to enhance and protect water sources, including rainwater harvesting, artificial ground water recharging, working with communities to use water more efficiently	Section 5.2.2.2	DWS WSAs COGHSTA DMs	x	x	x	x	x
Water	Establish a comprehensive infrastructure asset management system that is focused on effective and efficient service delivery	Section 5.2.2.2	DWS WSAs COGHSTA DPWRI DMs & LMs	x				
Water	Prioritise Water Treatment Works (WTW) /Water Treatment Purification plants (WTPP) earmarked as being in high need of refurbishment	Section 5.2.2.2	DWS WSAs DMs	x	x	x		
Water	Implement the actions set out in Section 5.2.2.3 in each of the Water Management Areas (WMAs) to augment surface water supply in the province	Section 5.2.2.3	DWS WSAs	x	x	x	x	x
Water	Implement the actions set out in Section 5.2.2.4 for each major water resource transfer schemes that are either under stress, under construction or being planned • Mokolo and Crocodile Water Augmentation Project (MCWAP) • Mogalakwena Augmentation from Flag Boshielo Dam • Olifants River Water Resources Development Project (ORWRDP and ORWSDP) • Luvuvhu River Government Transfer Scheme (LRGWS)	Section 5.2.2.4	DWS COGHSTA WSAs	x	x	x	x	x

Theme	Intervention	Reference (Sections in LSDF, 2024)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2045	
					Sept 2028	March 2030	March 2035	March 2045
	• Groot Letaba River Water Development Project (GLeWaP) • Magalies Water Board Transfer to Bela-Bela, Mookgophong and Modimolle							
Sanitation	Develop Provincial Water and Sanitation Master Plan	Section 5.2.2.5	DWS COGHSTA WSAs OTP Lepelle Northern Water	x				
Sanitation	Refurbish the wastewater treatment works (WWTWs) in high need, prioritising those in SWSAs	Section 5.2.2.5 Table 35	DWS WSAs Lepelle Northern Water	x	x	x		
Roads, Freight & Transport	The Integrated Transport Plans (ITPs) of municipalities to align to LSDF	Section 5.2.3.1	OTP DTCS DPWRI COGHSTA Transnet District & Local Municipalities	x	x	x		
Roads, Freight & Transport	Rural Road Asset Management System (RRAMS): maintain or implement (where not available yet) a high quality and fit for purpose data gathering and infrastructure/ asset management system	Section 5.2.3.1	DPWRI RAL SANRAL COGHSTA DMs	x	x	x	x	x
Roads, Freight & Transport	Implement overload control (either fixed facility or temporary monitoring on mining routes between Lephalale, Thabazimbi and connections to the N1 (roads R511, R33) and mining routes in Sekhukhune District, and its connections to Mpumalanga (roads R555, R33 and R36). Further make improvement on R521 from Polokwane to Alldays.	Section 5.2.3.2	RAL DPWRI COGHSTA Municipalities	x				
Roads, Freight & Transport	Investigate the introduction of virtual weigh stations (e-WIMs)	Section 5.2.3.2	RAL SANRAL	x				
Roads, Freight & Transport	Introduce Intelligent Transport Systems (ITS) along the national, provincial corridors identified in the LSDF.	Section 5.2.3.2	RAL SANRAL DMs	x				
Roads, Freight & Transport	Investigate feasibility of migration of freight to rail along the Gauteng-Zimbabwe corridor	Section 5.2.3.2	Transnet Spoornet		x	x		

Theme	Intervention	Reference (Sections in LSDF, 2024)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2045	
					Sept 2028	March 2030	March 2035	March 2045
			DTCS Home Affairs LEDET					
Roads, Freight & Transport	Redevelopment of Ports of Entry with Public Private Partnership to finance, construct, maintain and provide broadband connectivity, prioritising Musina border post	Section 5.2.3.2	Transnet GCIS Home Affairs BMA DTIC	x	x	x		
Roads, Freight & Transport	Implement Provincial Corridor Initiatives as listed in Section 5.2.3.4	Section 5.2.3.4	RAL DTCS	x	x	x		
Roads, Freight & Transport	Implement National Corridor Initiatives as listed in Section 5.2.3.3	Section 5.2.3.3	SANRAL RAL	x	x	x		
Roads, Freight & Transport	Implement actions in the 2044 future planned rail network for the province in the Transnet Long Term Planning Framework	Section 5.2.3.5	Transnet				x	x
Roads, Freight & Transport	Complete the planning process to extent the Lephalale - Richards Bay corridor/line from Lephalale over the Limpopo River close to the Stockpoort port of entry into the rich coal fields of Mahalapye in Botswana.	Section 5.2.3.5	Transnet		x	x		
Roads, Freight & Transport	Investigate and implement re-instatement of both the Pienaarsriver – Marble Hall and the Mookgophong – Zebediela branch lines for the development of the limestone, cement, agriculture and fluorspar industries.	Section 5.2.3.5	Transnet RAL		x	x		
Roads, Freight & Transport	Conduct feasibility studies for Corridor A: Polokwane–Mokopane Commuter Rail Service to provide rail services between the Polokwane and Mokopane stations, Corridor D: Polokwane–Jane Furse Passenger Regional Rail Corridor - via Zebediela and Lebowakgomo.	Section 5.2.3.6	DTCS PRASA Transnet	x	x	x		
Roads, Freight & Transport	Implement the long term passenger rail recommendations of the Provincial Land Transport Framework, 2023	Section 5.2.3.6	PRASA COGHSTA DTCS RAL				x	x
Roads, Freight & Transport	Undertake a feasibility study for the Johannesburg-Pretoria-Polokwane-Musina high speed rail corridor in alignment to the Africa Integrated High Speed Rail Network Masterplan 2033	Section 5.2.3.7	OTP DTCS PRASA Transnet RAL LEDA	x				

Theme	Intervention	Reference (Sections in LSDF, 2024)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2045	
					Sept 2028	March 2030	March 2035	March 2045
Roads, Freight & Transport	Review the Limpopo Rail Plan, 2012	Section 5.2.3.7	DTCS Transnet PRASA		x	x		
4IR Systems and Infrastructure	Continue current ICT initiatives: Limpopo Science and Technology Park, Digital hub centres, Limpopo Broadband Network Project Provision of ICT resources in schools and communities, and SEZs to provide competitive ICT infrastructure	Section 5.2.4.1	DSAC LEDET/LEDA OTP MMSEZ/ FTSEZ	x	x	x		
Energy	Implement the major transmission development schemes planned by Eskom in their Transmission Development Plan 2023–2032	Section 5.2.5.1	Eskom				x	x
Energy	Implement approved and future PV Plant projects	Section 5.2.5.1	Eskom Private Sector DMRE	x	x	x	x	x
Energy	Support private sector alternative energy projects, prioritising the following initiatives in the relevant focus areas: Industrial nodes of Musina-Makhado in support of the SEZ (I3); Industrial and logistics focus area of Polokwane (I1); Mogalakwena Northern Limb mining focus area (M3); Sekhukhune Eastern Limb mining focus area (M4) and Industrial and Logistic focus area (I2); Northam Western Limb mining focus area (M2); Lephalale/ Steenbokpan energy and coal fields (M1)	Section 5.2.5.2	Eskom Private Sector DMRE	x	x	x		
Energy	Review the Eskom load forecasts for the three customer load networks (CLNs): Lephalale, Polokwane and Phalaborwa, as specified in the ESKOM Transmission Development Plan 2023-2032, to align to the LSDF development trends and change in demands in the province	Section 5.2.5.3	Eskom DMRE Relevant Municipalities	x				
Energy	Initiate an assessment of the status, adequacy, and readiness of the municipal distribution networks	Section 5.2.5.3	Eskom DPWRI DMs	x	x	x		
Energy	Develop a provincial supply/demand balance study to investigate the development and integration of potential energy sources to meet the predicted future demand in the province	Section 5.2.5.3	Eskom DPWRI DMRE OTP LEDET		x	x		

6.2. FOCUS AREAS: ACTION PLAN

6.2.1. Environmental Protection and Tourism Focus Area

Table 52: Environmental Protection and Tourism Interventions

Theme	Intervention	Reference (Focus Area/s)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2045	
					Sept 2028	March 2030	March 2035	March 2045
Environment & Tourism	Coordinate the participation in the implementation of the NSAA Implementation Plan for the Eco-Resource Production Region.	T1, T2, T3, T4, A2, A4, A5, A6, STETA 1 & 4,	OTP LEDET DFFE LTA	x				
Environment & Tourism	Implementation of the action plan for the National Protected Areas Expansion Strategy.	All	DFFE LEDET LIMPOPO TOURISM & PARKS BOARDS SANBI		x	x		
Environment & Tourism	Expansion of protected areas by prioritising the un-protected critically endangered, endangered, vulnerable and near threatened terrestrial ecosystems and inland aquatic ecosystems. Also consider and include cultural and religious areas.	All	DFFE LEDET LTA		x	x		
Environment & Tourism	Protection of the priority centres of endemism (flora): Sekhukhuneland Centre of Endemism, Soutpansberg Centre of Endemism, and Wolkberg Centre of Endemism	T2, T3	DFFE LEDET		x	x		
Environment & Tourism	Develop a Provincial Climate Change Response Implementation Plan, as envisaged in the Climate Change Bill, 9 of 2022.	Provincial	LEDET		x	x		
Environment & Tourism	Develop district scale climate risk profiles and climate change adaption plans.	All DMs	LEDET DMs		x	x		
Environment & Tourism	Establish and manage a centralised provincial spatial database containing ecological and natural resources, delineating protected and sensitive areas, and related buffer zones.	Provincial	OTP LEDET DWS	x				
Environment & Tourism	Pursue effective management and custodianship of strategic water source areas (SWSA).	A2, A6 STETA 1,3&4	DFFE LEDET DWS	x				
Environment & Tourism	Investment and development of Lephalale and Thabazimbi as tourism gateways and regional development anchors to the Waterberg biosphere and surrounding region, with a focus on value-	T1	LEDET Waterberg DM & LMs	x	x	x		

Theme	Intervention	Reference (Focus Area/s)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2045	
					Sept 2028	March 2030	March 2035	March 2045
	adding services to the game hunting industry, by developing tourism attraction precincts, and expanding leisure and adventure tourism.							
Environment & Tourism	Develop Vaalwater as the wildlife and outdoor centre for the Waterberg region, and as secondary tourism gateway to Lephalale.	T1	LEDET Waterberg DM & LMs	x	x	x		
Environment & Tourism	Promote tourism initiatives related to hunting and conservation that can provide new revenue streams for local communities and support the conservation of wildlife.	T1, T2, T3, T4	LTA LEDET DMs, LMs	x				
Environment & Tourism	Develop Bela-Bela as secondary tourism gateway to the Waterberg biosphere, focussed around leisure tourism precinct investments.	T1	LTA LEDET Waterberg DM & LMs	x	x	x		
Environment & Tourism	Enhance Polokwane as the tourism entry point from Polokwane International Airport with improved tourism information and signage, marketing of provincial tourism routes and destinations, business tourism accommodation and leisure, and maintenance of facilities	Polokwane Gateway	DTCS GAAL LEDET/LTA DM, LMs	x	x	x		
Environment & Tourism	Develop Tzaneen, Phalaborwa and Hoedspruit as tourism gateways to the Wolkberg Reserve, Kruger-to-Canyon Biosphere and Kruger National Park, respectively, focused on improved urban management to ensure quality environments and tourism experience, and investment in tourism and conservation precincts. Related is the Greater Limpopo Transfrontier conservation Area (GLTFCA) connected to Cengwe Corridor and Mozambique through Limpopo National Park for regional integration and the development of Shangoni Gate linking Mopani (Muyexe) and Kruger National Park which is funded by GEF Project managed by SANPARKS. Development of Phafuri gate and Punda Maria Gate.	T4	LEDET/LTA DFFE SANPARKS Mopani DM & LMs	x	x	x		
Environment & Tourism	Upgrading and continued maintenance of the RAL provincial priority tourism routes and road safety.	T1, T2, T3, T4	RAL DTCS DPWRI SANRAL DMs	x				
Environment & Tourism	Develop integrated tourism offerings such as branded tourism routes or meanders focusing on key natural and cultural attractions, leisure activities, state resorts and rural tourism offerings.	T1, T2, T3, T4	LEDET/LTA RAL DMs		x	x		
Environment & Tourism	Identify and develop tourism opportunities in the provincial biospheres, such as conservation hunting, adventure tourism etc.	T1, T3, T4	LEDET LTA		x			
Environment & Tourism	Investigate the possibilities of exploiting the province's dams or water bodies as new tourism and recreation facilities, prioritising the dams in the STETAs.	STETA1, 3&4	LEDET DWS		x			

Theme	Intervention	Reference (Focus Area/s)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2045	
					Sept 2028	March 2030	March 2035	March 2045
Environment & Tourism	Investigate the options of water retention and/or conservation of flood water that would be otherwise lost to the province.	T3, STETA1	DWS WSAs		x	x		
Environment & Tourism	Regeneration of small towns as tourism gateways and local service centres linked to the tourism focus area: Bela Bela, Vaalwater, Hoedspruit and Orighstad	A2, T4, A3	LEDET Cogta CoGHSTA		x	x		
Environment & Tourism	Investigate the opportunity of upgrading Hoedspruit airport to an international airport in support of its role as tourism gateway node. Also consider local airports such as Mphephu and Makhado airports.	T4	DTCS GAAL LEDET LTA DM & LM	x				
Environment & Tourism	Establish training and skills development facilities in the hospitality and conservation industry in the tourism focus areas.	T1, T2, T3, T4	LEDET DoE DSAC LTA		x	x	x	x
Environment & Tourism	Development of the Limpopo Science and Technology Park as provincial catalytic project and implementation of the “green digital” strategy, also in support the Green Hydrogen initiative where Hub C: Mogalakwena and Limpopo is one of three pilots.	Polokwane I1	DSAC LEDET DSI LMs	x				
Environment & Tourism	Mogalakwena/Limpopo Hub Hydrogen Valley Feasibility Investigation. Also consider establishment of Innovation Hub in partnership with Univen.	Polokwane I1, M4	LEDET DMRE Private Sector LMs	x				
Environment & Tourism	Rhynbow H2 freight corridor project has been identified for Gauteng, Kwa-Zulu Natal and Limpopo.	Polokwane I1, M4, N1	Private Sector DSI Transnet		x	x		
Environment & Tourism	Promoting fuel cells in buildings (public, corporate, industrial etc.) to provide backup power while also helping the companies to achieve net zero or sustainability targets, and strengthening the Hydrogen valley initiative.	Polokwane I1, M4	LEDET DMRE Private Sector		x	x		

6.2.2. Agriculture and Farming Focus Area

Table 53: Agriculture and Farming Interventions

Theme	Intervention	Reference (Focus Area/s)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2035	
					Sept 2028	March 2030	March 2035	March 2045
Agriculture & Farming	Promulgation of the High Potential Agricultural Areas (HPPAs) as Protected Agricultural Areas (PAAs) by DALRRD and communicate the protected areas to industry stakeholders. This include making the digital datasets of the areas available to industry stakeholders.	A1 – A6	DALRRD GCIS	x				
Agriculture & Farming	Protection and productive use of the HPPAs/ PAAs as areas of high-value agricultural land to support provincial and national food security, this include identifying underutilised land in STET 1 – 3, and facilitating interventions for the productive use of the high value agricultural land. Provide monitoring support on agricultural land to avoid use for other alternative purposes e.g. settlement. Develop agri-tourism.	A1 – A6	DALRRD DARD CoGHSTA DMs and LMs Traditional Authorities		x	x	x	x
Agriculture & Farming	Discourage further land and settlement development in HPPAs/ PAAs, and carefully manage existing settlements and land uses in productive agricultural regions that play a crucial role in food security, strategic water production and rural livelihoods.	A1 – A6	DALRRD DARD CoGHSTA DMs and LMs Traditional Authorities	x	x	x	x	x
Agriculture & Farming	DALRRD to model impact scenarios of climate change on land capability, and therefor on the delineated HPPAs/ PAAs, for both irrigation and rain-fed. The findings of the impact scenario model should be discussed with industry stakeholders to pro-actively apply mitigation measures and response plans.	A1 – A6	DALRRD LEDET DFFE		x	x		
Agriculture & Farming	Investigate the feasibility of rail networks to support agrarian exports from the province.	A1 – A6	Transnet DTCS DARD		x	x		
Agriculture & Farming	Enable the agricultural industry, inclusive of agri-processing, through access to ICT infrastructure/fibre coverage in the focus area.	A1 – A6	LEDET DPWRI OTP GCIS Network Providers		x	x	x	x

Theme	Intervention	Reference (Focus Area/s)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2035	
					Sept 2028	March 2030	March 2035	March 2045
Agriculture & Farming	Investigate options for alternative energy sources to support the industry. This is in the light of the ongoing electricity supply crisis and loadshedding that is crippling and threatening agricultural production and the entire food supply chain. Cold chains for the necessary export are under serious threat. Alternative energy sources are expensive and cannot be afforded.	A1 – A6	Eskom DMRE DPWRI LEDET OTP DMs Agri Associations Private Sector		x	x	x	x
Agriculture & Farming	Coordinate between agricultural industry stakeholders the identification of priority agricultural roads for maintenance and/or upgrading.	A1 – A6	RAL SANRAL DPWRI DARD DMs	x				
Agriculture & Farming	Facilitate opportunities for agricultural research and innovation, training and skills development in support of the technological advancement of the industry, taking into consideration the re-use of existing educational facilities.	A1 – A6	DARD DoE DSI CSIR	x	x	x		
Agriculture & Farming	Facilitate interventions to improve access to markets for both emerging farmers, small-scale farmers and commercial farmers including pack houses. Foster and strengthen the relationship between the commercial, emerging and small scale farmers	A1 – A6	DARD LEDA LEDET TRANSNET SEDA	x				
Agriculture & Farming	Identify alternative sustainable land use for the old crop fields found in the northern parts of Vhembe and Capricorn districts (STETA 1 & 4) to support the sustainable livelihood of these vulnerable communities in the wake of climate change predictions.	A4, A6, T3	DARD DALRRD COGHSTA LEDET Traditional Authorities	x	x	x		
Agriculture & Farming	Pursue effective management and custodianship of strategic water source areas (SWSA) for agricultural use, especially in the light thereof that the SWSA are mostly located in rural areas (STETA 1,3 &4) with unaccounted water usage.	A2, A6 STETA 1,3&4	LEDET DALRRD DARD WRC DWS		x	x	x	x
Agriculture & Farming	Establish agricultural support facilities such as logistics centres with cold storage, abattoirs and agri-processing in nodes and regional	A1, A2, A5, A6	DALRRD DARD		x	x		

Theme	Intervention	Reference (Focus Area/s)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2035	
					Sept 2028	March 2030	March 2035	March 2045
	development anchors acting as agriculture gateways: Thohoyandou, Tzaneen, Makhado, Modimolle, Marble Hall, Groblersdal and Lephalale		LEDET LEDA Private Sector					
Agriculture & Farming	Develop Groblersdal as agricultural gateway. Implement the Sekhukhune Agri park with supporting network elements and agro-processing facilities, also considering Marble Hall for agro-processing facilities. A business plan was developed for the grain processing facility (broiler abattoir), poultry processing facility, fruit and vegetable pack and processing facility and agro-inputs supply centre. Also consider Nwanedi Agri Park, Levubu, Musina for agri-processing.	A3	DALRRD DARD LEDET SDM		x	x		
Agriculture & Farming	Develop Senwabarwana as agricultural gateway by investing in agricultural support facilities such as logistics points, cold storage and agri-processing facilities.	A4	DALRRD DARD LEDET		x	x		
Agriculture & Farming	Promote fresh produce markets, farmer support and agri-processing initiatives in all spatial regions linked to HPPAs/ PAAs.	A1 – A6	DALRRD DARD LEDET LEDA DMs and LMs		x	x	x	x
Agriculture & Farming	Enhance the productive capacity of especially small scale farmers in STET 1 – 3 by improving rural-rural connections with upgraded road networks and ICT infrastructure, the market accessibility and key agricultural production infrastructure in these areas.	STET 1 – 3	DALRRD DARD DPWRI LEDET DMs Network Providers		x	x	x	x
Agriculture & Farming	Investigate the potential for beneficiation, manufacturing, and value chain development within the agricultural sector in support of the provincial industrialisation path, the identified SEZs, industrial hubs and industrial parks, as well as agriparks	A1 – A6	DALRRD DARD LEDET MMSEZ/FTSEZ		x	x		
Agriculture & Farming	Promote effective agrarian practices and enterprise development programmes.	A1 – A6, STETA 1-3	DARD LEDET				x	x
Agriculture & Farming	Review of the RAAVC projects against the information in the LSDF especially HPAAs, SWSA, climate change predictions, economic analysis.	A1 – A6	DARD LEDET LEDA	x				

Theme	Intervention	Reference (Focus Area/s)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2035	
					Sept 2028	March 2030	March 2035	March 2045
Agriculture & Farming	Implementation of Agri-hubs, Farmer production support units, and Rural-urban market centre in all spatial regions	A1 – A6	DALRRD DARD LEDET DMs		x	x		

6.2.3. Mining Focus Areas

Table 54: Mining Interventions

Theme	Intervention	Reference (Focus Area/s)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2035	
					Sept 2028	March 2030	March 2035	March 2045
Mining	Land Management: Municipality in cooperation with DMRE and COGHSTA, to actively prevent and manage the increasing threat to the sterilisation of mineral resource potentials and project feasibility due to the indiscriminate occupation of land surrounding mining activity. This phenomenon is a development risk to many mining areas, but a high risk in the Northern Limb at Mogalakwena and the Eastern Limb of the Bushveld Igneous Complex in Sekhukhune district area. A community-based partnership approach, including traditional authorities, is required to manage land.	M1-4	Municipalities COGHSTA OTP LEDET DMRE Council of Geoscience	x	x	x		
Mining	Dedicated investment to diversify local economies that have a high dependency on the mining sector, especially Thabazimbi, Fetakgomo Tubatse, Ba-Phalaborwa and Lephalale municipal areas. This include implementing clear strategies, development plans and funding partnerships for the pro-active transformation of the mining affected communities, creating stronger linkages and connectivity to alternative economies, fostering asset-based community development, and unlocking asset transformation opportunities.	M1-4	NDHS Municipalities COGHSTA LEDET HDA DMRE Private sector		x	x	x	x
Mining	Prioritisation of land assembly, infrastructure development, upgrading of informal settlements, integrated human settlements and asset transformation in the prioritised municipalities under the Revitalisation of distressed communities programme informed by mining region development plans.	M1-4	NDHS HDA COGHSTA DMRE LEDET Municipalities		x	x	x	x

Theme	Intervention	Reference (Focus Area/s)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2035	
					Sept 2028	March 2030	March 2035	March 2045
			Traditional Authorities					
Mining	Alignment of mine housing and living conditions plans with municipal spatial development framework and housing sector plans to ensure that municipal planning for services, housing options, transport, commercial and social facilities in nodal areas provide for potential expansions, and is resilient towards downscalings. This includes adequate provision for urban management of spaces and infrastructure to attract investments to the nodes.	M1-4	Municipalities COGHSTA OTP DMRE Private sector	x	x	x		
Mining	Attract investment to nodes: The disconnect between urban demand and supply is evident is various mining affected nodal areas, but in particular in Steelpoort, Northam and Burgersfort, to such an extent that alternative housing solutions, some in other towns, are considered above investing in these nodes. It is therefore of critical importance that the demand is formulated.	M1, M3, M4	Municipalities COGHSTA NDHS HAD DPWRI Private sector		x	x	x	x
Mining	Investing in infrastructure: Development of transport infrastructure such as roads, rail, and ports to reduce transportation costs and improve access to markets, thereby making mining operations more viable and profitable and alleviating these challenges. For this purpose, it is recommended that SANRAL and RAL with the mining industry, define the priority roads and linkages.	M1-4	SANRAL RAL Transnet DPWRI Private sector	x	x	x	x	x
Mining	Expansion of the broadband connectivity network to the mining focus areas	M1-4	DPWRI LEDET Network Service Providers		x	x		
Mining	Promoting exploration and research: Encouraging and supporting exploration and research activities can help identify new deposits of metal ores and improve the accuracy of resource estimates. This can lead to the discovery of new and more extensive mineral deposits, which can increase the longevity and profitability of mining operations. Investigate the potential of exploration and mining of rare earth minerals.	M1-4	LEDET DMRE Council of Geoscience Private Sector		x	x	x	x
Mining	Promoting local beneficiation and manufacturing: Encouraging the local beneficiation and manufacturing of metal ores can create new value-added industries. It includes the promotion of mineral beneficiation as an essential focus area for the Musina-Makhado Special Economic Zones (SEZs) and Tubatse Platinum SEZ/Industrial Hub, and investment in the mining supplier park.	M1-4	LEDET LEDA IDC SEZs Private sector		x	x	x	x
Mining	Attracting investment: Providing incentives such as tax breaks, subsidies, and streamlined regulatory processes to the mining focus	M1-4	LEDET SARS		x	x	x	x

Theme	Intervention	Reference (Focus Area/s)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2035	
					Sept 2028	March 2030	March 2035	March 2045
	areas can attract local and foreign investment in the mining sector. This can lead to the creation of new mining operations, as well as the expansion and modernization of existing mining operations. Municipalities in mining focus areas to also provide incentives and streamline regulatory processing in the urban nodes to attract mining investment.		DTIC Municipalities Private Sector					
Mining	Investing in skills development and training programs for the mining workforce to build a highly skilled and specialized labour force, should preferable be established in the nodal areas of the mining focus areas.	M1-4	DoE DSD LEDET CSIR Mining Qualification Authority		x	x	x	x
Mining	The majority of the mines are opencast, which, if not managed properly, can result in significant biodiversity loss as well as air quality problems, with the release of particulate matter being of the most concern. Biodiversity offsets should be encouraged where possible. Implementation of the developed Rehabilitation Plans should be enforced.	M1-4	DFFE DMRE LEDET Private sector	x	x	x	x	x
Mining	Manage the risk of pollution and overuse of Strategic Water Source Areas (SWSAs) and restore the at risk SWSAs by dedicated provincial level bioregional planning, and the implementation of the NSDF National Spatial Action Areas (NSAAs) Implementation Plans, in particular the Olifants River Catchment NSAA.	M1-4	LEDET DFFE DALRRD DWS DMs		x	x	x	x
Mining	The rehabilitation of mining areas, in particular the large number of abandoned mines in the province, located mainly in the central, northern and eastern parts of the province, and prevention of unauthorised mining activity.	M1-4	DMRE LEDET Private sector		x	x	x	x
Mining	Urgent interventions are required to manage the increasing small scale mining and unauthorised mining at the edges of formalised mines, as well as in dormant or abandoned mines. This include taking the necessary measures to avoid health and safety disasters and risk, illegal occupation of land and buildings, as well as environmental degradation.	M1-4	DMRE LEDET COGHSTA SAPS/DHA Municipalities DWS Traditional leaders	x	x	x		

6.2.4. Industrial and Logistics Focus Area

Table 55: Industrial and Logistics Interventions

Theme	Intervention	Reference (Focus Area/s)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2035	
					Sept 2028	March 2030	March 2035	March 2045
Industrial & Logistics	Coordination of planning, budgeting and implementation of the required provincial freight network and logistics in partnership with the manufacturing, logistics and mining industries in the focus areas.	I1 - I3	SANRAL RAL DPWRI DTCS Private Sector DTCS LEDET	x	x	x		
Industrial & Logistics	Coordination of planning, budgeting and implementation to develop Polokwane as the provincial logistics hub and smart city, and as the digital hub of the province by means of the Limpopo Science and Technology Park.	I1	Polokwane LM DTCS SANRAL RAL LEDET LEDA DSI		x	x		
Industrial & Logistics	An integrated urban development, management and investment framework is required for Musina to pro-actively plan for its evolving role and function as an emerging industrial and logistics gateway and smart city that provide for the Musina port of entry, the regional logistics, metallurgical and agro-processing potential in the region, as well as the SEZ aspirations.	I3	BMA SANRAL Musina LM MMSEZ	x				
Industrial & Logistics	An integrated urban development, investment promotion and management framework is required for Burgersfort/Steelpoort Industrial and Logistics focus area (I2). It should address the development of Burgersfort as industrial and mining gateway, supported by Steelpoort node, and align the planning and supply of bulk infrastructure, freight and logistic investments, renewable energy, digital infrastructure and industrial investments in partnership with stakeholders in the focus area, as well as in the mining focus areas.	I2, M4	OTP Fetakgomo Tubatse LM Thaba Chweu LM DALRRD COGHSTA LEDET DM	x				
Industrial & Logistics	Implementation of the revitalisation of industrial parks in the province. The initiative to include reinventing and repurposing the old underutilised industrial areas/buildings and craft strategies for multiple businesses to share buildings aligned to the focus areas that they serve i.e Nkowankowa and Shayandima, serving the Agriculture	I1, T2. T4	LEDET LEDA IDC DSI		x	x		

Theme	Intervention	Reference (Focus Area/s)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2035	
					Sept 2028	March 2030	March 2035	March 2045
	and Farming focus areas, and Seshego in the Polokwane Industrial and Logistics focus area.							
Industrial & Logistics	Alignment of provincial green economy initiatives and knowledge-driven economy/digital infrastructure to the industrial and logistics focus areas. Relevant opportunities include the Limpopo Science and Technology Park, waste recycling and reuse/circular economies, wildlife economy, biotrade or bioprospecting.	I1 – I3	LEDET LEDA IDC		x	x	x	x
Industrial & Logistics	Investing in skills development and training programs in gateway nodes to build a highly skilled and specialised labour force for the focus area, including the establishment of a Limpopo Skills Academy. The facilities to cater for the demand-driven specialised skills needs of both the Mining and Industrial and Logistics focus areas. Adapt the curriculum for the existing training facilities to offer relevant skills in line with the comparative advantages.	I1 – I3, M1 – M4	LEDET LEDA DoE DSD DMRE DMs SDA DHE TVET colleges, Universities		x	x	x	x
Industrial & Logistics	Promoting local beneficiation and manufacturing: Encouraging the local beneficiation and manufacturing of agriculture and mining to create new value-added industries, including the battery economy, furniture incubation etc. Further, promote mineral beneficiation as an essential focus area for the Musina-Makhado Special Economic Zones (SEZs) and Fetakgomo-Tubatse Platinum SEZ/Industrial Hub, and investment in the mining supplier park.	I2	LEDET LEDA IDC MMSEZ FTSEZ LMs and DMs	x	x	x		
Industrial & Logistics	Attracting investment: Providing incentives such as tax breaks, subsidies, and streamlined regulatory processes to the industrial and logistics focus areas can attract local and foreign investment in the mining and industrial sector, and lead to the modernization of existing industrial operations. The development of a provincial incentive framework to align its recommendations to the focus areas.	I1 -I3	OTP LEDET LEDA IDC TREASURY SARS DTCI DIRCO		x	x		

6.2.5. Spatial Transformation and Economic Transition Areas (STETAs)

Table 56: STETAs Inverventions

Theme	Intervention	Reference (Focus Area/s)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2035	
					Sept 2028	March 2030	March 2035	March 2045
STETAs	Implementation and institutional coordination of the NSAA Implementation plan for the Eastern Escarpment National Spatial Transformation and Economic Transition Region once finalised and adopted. This includes establishment of interregional and inter-provincial structures between Limpopo and Mpumalanga, to coordinate and integrate the NSAA implementation plan.		OTP DALRRD COGHSTA LEDET DMs and LMs	x	x	x		
STETAs	Develop a network of nodes within the STETAs with Tzaneen as the emerging smart city for STETA1 and Polokwane as the smart city for STETA 2, supported by gateways to the areas.	STETA 1-4	OTP DMs & LMs COGHSTA		x	x		
STETAs	Consolidate and densify settlement development in support of the nodal network in each of the STETAs. Include the PHSHDAs in the initiative	STETA 1-4	OTP DMs & LMs COGHSTA	x	x	x	x	x
STETAs	Provincial departments and municipalities to align the implementation of social services according to the social services provisioning model.	All	All		x	x	x	x
STETAs	RAL and district municipalities to prioritise maintenance and upgrading of identified strategic link roads that strengthen urban-urban, rural–urban and rural-rural connectivity.	STETA 1-4	RAL DMs COGHSTA DPWRI	x	x	x		
STETAs	Upgrade the built environment in the STETAs with the digital/ICT infrastructure, incremental upgrading of basic services and public transport that trigger enterprise development in the region.	STETA 1-4	LEDET LEDA IDC GCIS		x	x		
STETAs	Prioritise enterprise development, knowledge creation, innovation and skills development opportunities in the STETAs and establish the facilities in the identified nodes and/or in support of the identified small town regeneration initiatives.	STETA 1-4	DoE LEDET LEDA IDC DSI CoGHSTA		x	x		
STETAs	Coordinate the development of small town regeneration strategies for Groblersdal, Bela Bela, Burgersfort and Hoedspruit, as well as the local service centres recommended in Chapter 4, section 4.3.5.2.	STETA 1-4, A2	OTP COGTA COGHSTA DMs & LMs		x	x	x	x
STETAs	Facilitate effective regional collaboration and partnerships, as well as cooperative governance models with the stakeholders within the STETA region, as well as collaboration with the agriculture and farming, mining, and industrial and logistic focus areas.	STETA 1-4	OTP COGHSTA DMs & LMs		x	x	x	x

Theme	Intervention	Reference (Focus Area/s)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2035	
					Sept 2028	March 2030	March 2035	March 2045
STETAs	Review the provincial land assembly strategy and prioritisation tool to align it to the provincial spatial priorities	PHSHDAs	COGHSTA HDA	x	x	x		
STETAs	Prioritise land assembly for human settlements purposes in PHSHDAs in support of tenure security.	PHSHDAs	COGHSTA DMs & LMs HAD DALRRD Traditional Authorities	x	x	x	x	x
STETAs	Fast-track the approval and proclamation of Social Housing Restructuring Zones in the PHSHDAs, and the implementation of social and rental housing programmes.	PHSHDAs	COGHSTA	x	x	x		
STETAs	Prioritise upgrading responses to informal settlements in the PHSHDAs and distressed mining areas with community-based partnership approaches.	All	COGHSTA NDHS DMs & LMs HDA		x	x	x	
STETAs	The planning and budgeting of provincial land development areas for human settlements interventions to prioritise land development areas in PHSHDAs.	PHSHDAs	COGHSTA DMs & LMs NDHS HAD DALRRD	x	x	x	x	x
STETAs	Projects addressing housing backlog and livelihood restoration should be focused in the STETAs and implemented with community empowerment (Ndzelele) and community asset development initiatives.	STETA 1 – 4	COGHSTA DMs & LMs HDA		x	x	x	x
STETAs	Facilitate the alignment of the planning and implementation of PHSHDA 11: Greater Northam, with the adjoining PHSHDA in North West Province.	M1	COGHSTA NDHS DMs & LMs HDA	x	x	x		
STETAs	Consideration of delineating a PHSHDA for Mokopane and its urban periphery.	STETA 4	COGHSTA NDHS DMs & LMs HDA	x				
STETAs	Develop a regional development plan for STETA 2, 3 and 4: The regions include the Blouberg, Polokwane-Mankweng and Sekhukhune areas, as well as the mining focus areas of Mogalakwena (M3) and Burgersfort/Steelpoort (M4), and further includes Mashishing in Thaba Chweu local municipality, Mpumalanga.	STETA 2 -4, M3, M4	OTP DALRRD COGHSTA DMs & LMs	x				
STETAs	Develop a regional development plan for STETA 1 that include parts of Mopani and Vhembe districts	STETA 1	OTP DALRRD		x	x		

Theme	Intervention	Reference (Focus Area/s)	Responsible	Time Frame				
				ST 2024-5	MT 2030		LT 2035	
					Sept 2028	March 2030	March 2035	March 2045
			COGHSTA DMs and LMs					

6.3. INSTITUTIONAL ACTION PLAN

Table 57: Institutional Interventions

Theme	Intervention	Reference (Sections in LSDF, 2024)	Responsible	Time Frame				
				ST 2024-25	MT 2030		LT 2045	
					Sept 2028	March 2030	March 2035	March 2045
Institutionalising the LSDF, 2024	Approval of LSDF by PEC	Section 5.4.3	OTP	x				
	Publication of LSDF in Provincial Gazette		OTP	x				
	LSDF Launch Workshop		OTP	x				
	Distribution of LSDF electronic document and GIS files to all Provincial Departments, District Municipalities and Local Municipalities		OTP	x				
	Web presence on Limpopo Province Website, links on all provincial department websites, links on all municipal websites		OTP	x				
			All Provincial Departments	x				
			All District and Local Municipalities	x				
	Addition of LSDF as standing item on Provincial SPLUMA Forum Agenda		OTP DALRRD Coghsta	x				
Aligning to the LSDF, 2024	Inclusion and alignment in DM and LM SDFs: The next review of the district and local municipal SDFs include the provisions of the LSDF, specifically provisions applying to: Nodal status and role ▪ Connective infrastructure network ▪ Sensitive and protected areas (natural resource base) ▪ Spatial focus areas	Section 5.4.3	All District and Local Municipalities	x	x	x		
	Alignment of Integrated Development Plans to LSDF		All District and Local Municipalities	x	x	x	x	x
	Alignment of One Plans to LSDF and include the interventions where applicable		All District Municipalities	x	x	x	x	x
	Alignment of Sector Plans and Programmes to LSDF and include the prioritised catalytic interventions where applicable		All Provincial Departments	x	x	x	x	x
Development of Regional Plans	Development of the Focus Area Regional Plans to inform the provincial infrastructure development of the major departmental or SOE/Agents projects that cut across districts and regions. ▪ Roads and storm water management ▪ Electrification ▪ Reservoir, Dams etc	Section 4.3.4	OTP All Departments	x	x			

Theme	Intervention	Reference (Sections in LSDF, 2024)	Responsible	Time Frame				
				ST 2024-25	MT 2030		LT 2045	
					Sept 2028	March 2030	March 2035	March 2045
	▪ Schools, Libraries etc ▪ Clinics/hospital							

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