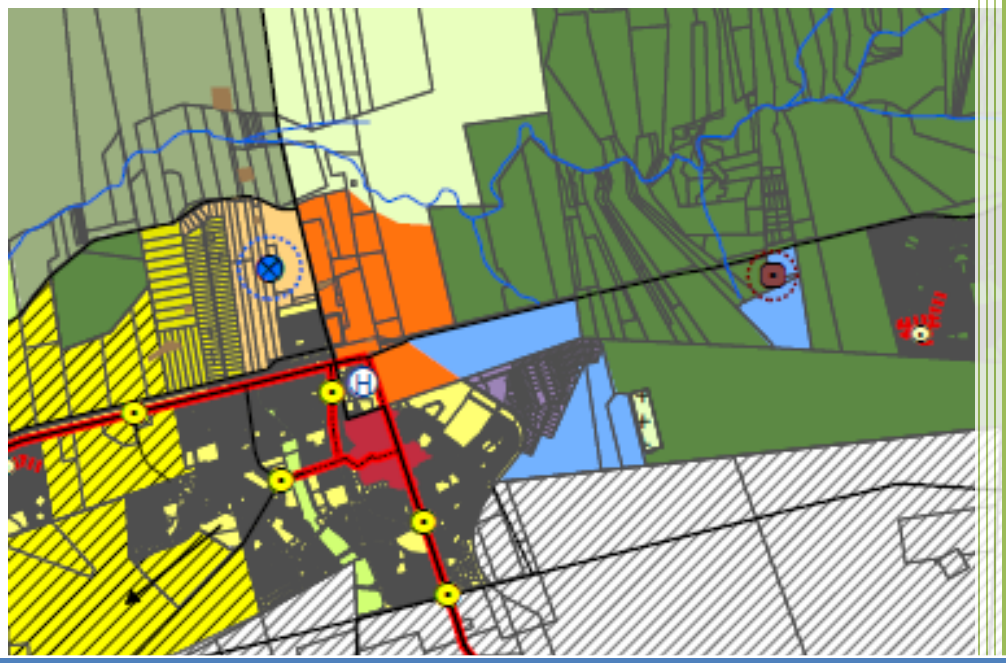
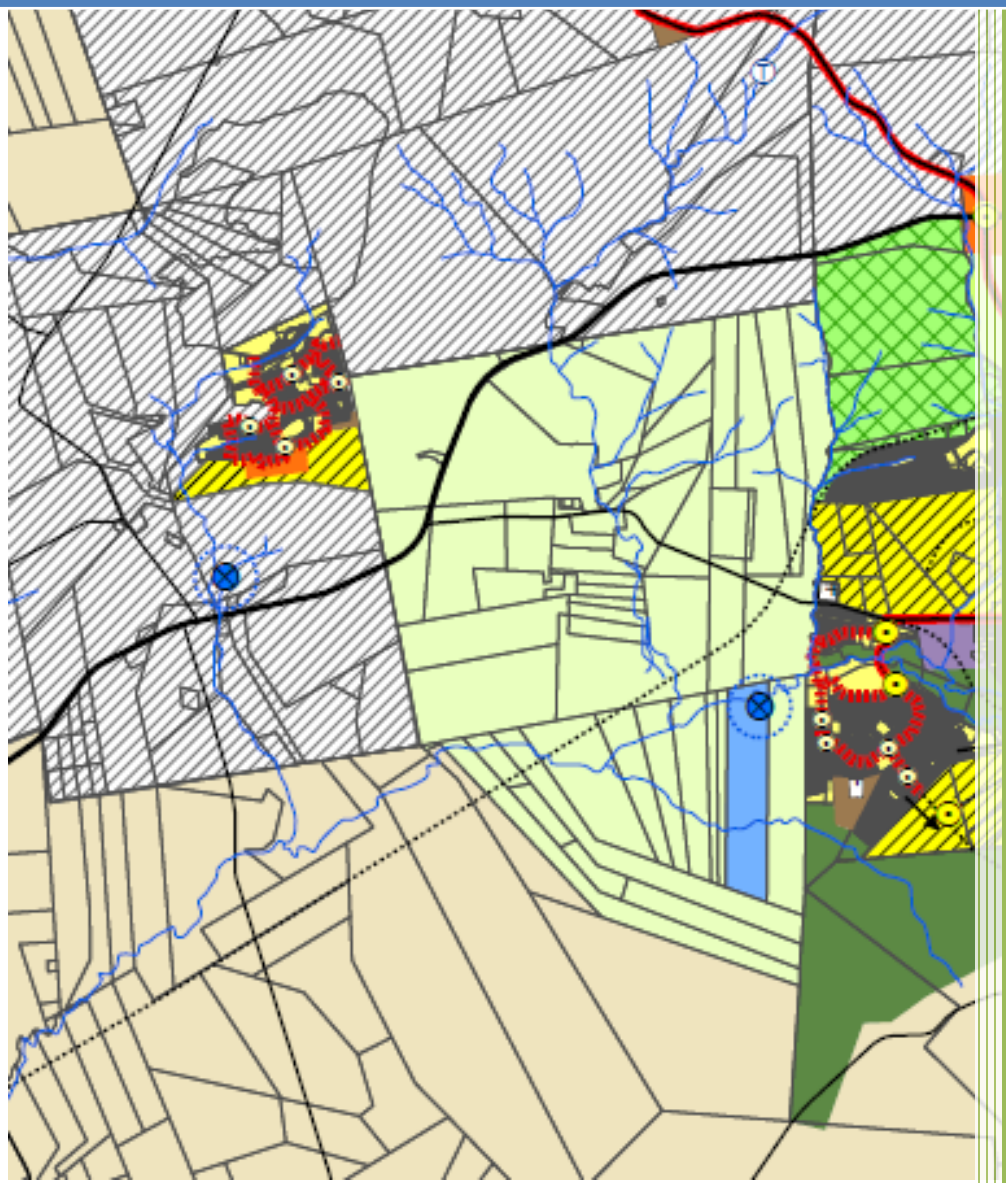


2019

Merafong Municipal Spatial Development Framework



Spatial Planning & Environmental Management Section

Merafong City Local Municipality

Table of Contents

1. INTRODUCTION AND BACKGROUND

In terms of chapter 5 of the Municipal Systems Act, 2000 (Act 32 of 2000), the municipality's Integrated Development Plan "…must reflect a Spatial Development Framework which must include the provision for basic guidelines for a Land Use Management System for the municipality". The Merafong Municipal Spatial Development Framework (MSDF), forms part of a hierarchy of plans feeding into the Integrated Development Plan (IDP). The Spatial Development Framework serves as an input into the IDP and concentrates on the spatial aspects of development planning, whereas the IDP focuses on broader developmental issues. Following the SDF in the hierarchy are Sector Plans.

The approach followed to compile this document was to emphasise on strategic planning, taking into consideration the broader development strategies of the municipality. During 2013 the Spatial Planning & Land Use Management Act (Act 16 of 2013) (SPLUMA) was promulgated and comes into effect on 1 July 2014. This legislation puts forward principles to influence spatial planning, land use management and land development. It also provides for national and regional spatial frameworks as well as provincial and municipal frameworks, meaning that a package of plans will be undertaken from national to municipal level to direct spatial planning as well as land use management, while providing for uniform regulation of land use management. The general principles endorsed by this Act is that spatial planning, land use management and land development must promote and enhance five main Development Principles: Spatial Justice, Spatial Sustainability; Spatial Efficiency; Spatial Resilience, and Good Administration.

Chapter 2 sect. 7 of SPLUMA. The following principles apply to spatial planning, land development and land use management:

(a) The principle of spatial justice, whereby—

(i) past spatial and other development imbalances must be redressed through improved access to and use of land;
(ii) spatial development frameworks and policies at all spheres of government must address the inclusion of persons and areas that were previously excluded, with an emphasis on informal settlements, former homeland areas and areas characterised by widespread poverty and deprivation;
(iii) spatial planning mechanisms, including land use schemes, must incorporate provisions that enable redress in access to land by disadvantaged communities and persons;

(iv) land use management systems must include all areas of a municipality and specifically include provisions that are flexible and appropriate for the management of disadvantaged areas, informal settlements and former homeland areas;
(v) land development procedures must include provisions that accommodate access to secure tenure and the incremental upgrading of informal areas; and
(vi) a Municipal Planning Tribunal considering an application before it, may not be impeded or restricted in the exercise of its discretion solely on the ground that the value of land or property is affected by the outcome of the application;

(b) the principle of spatial sustainability, whereby spatial planning and land use management systems must—

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

(c) the principle of efficiency, whereby—

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

(d) the principle of spatial resilience, whereby ---

flexibility in spatial plans, policies and land use management systems are accommodated to ensure sustainable livelihoods in communities most likely to suffer the impacts of economic and environmental shocks; and

(e) the principle of good administration, whereby—

(i) all spheres of government ensure an integrated approach to land use and land development that is guided by the spatial planning and land use management systems as embodied in this Act;
(ii) all government departments must provide their sector inputs and comply with any other prescribed requirements during the preparation or amendment of spatial development frameworks;
(iii) the requirements of any law relating to land development and land use are met timeously;

(iv) the preparation and amendment of spatial plans, policies, land use schemes as well as procedures for development applications, include transparent processes of public participation that afford all parties the opportunity to provide inputs on matters affecting them; and
(v) policies, legislation and procedures must be clearly set in order to inform and empower members of the public.

The Department of Rural Development & Land Reform (DRDLR) is drafting a Spatial Planning Outcomes Framework which will give much more details on the practical execution of these principles and will be included once available.

SPLUMA REFERENCE GUIDE	
This table gives a reference to where in the document the contents mentioned in Section 21 of the Spatial Planning & Land Use Management Act (Act 16 of 2013) can be found. It should be noted that references and small aspects may occur throughout the document and this table is only to be used as a quick reference on major aspects.	
(a)	Mentioned on page 2. Principles followed throughout
(b)	Section 6
(c)	Section 5, especially 5.1.1
(d)	Section 5, especially 5.1.2
(e)	Section 4
(f)	Section 5 - 5.1.3 and 5.2.2
(g)	Section 4
(h)	Section 5 - 5.3.4 as well as the Implementation Plan
(i)	Section 5- 5.2.2
(j)	Section 5 – 5.4
(k)	Section 5 – 5.3.7 as well as Local Spatial Directives
(l)	Local Spatial Directives and Implementation Plan
(m)	Implementation Plan (Annexure A) and Section 4
(n)	Implementation Plan (Annexure A)
(o)	Annexure A, C and Section 5 – to be expanded upon with planned research associated with development of a new scheme
(p)	Annexure C, Annexure A

MERAFONG MSDF 2016-2021 AT A GLANCE
MERAFONG VISION “A prosperous, Sustainable and Community-Oriented City”
SPLUMA PRINCIPLES

a) The principle of spatial justice
b) The principle of spatial sustainability
c) The principle of efficiency
d) The principle of good administration

SPATIAL PLANNING VISION STATEMENT

Develop the fragmented towns of Merafong into a unified city that is liveable, sustainable, and efficient and provides opportunities for economic growth and social development.

SPATIAL STRATEGIES

1. IMPROVE URBAN EFFICIENCY AND RECTIFY APARTHEIT SPATIAL DISPARITIES

POLICY	Integrate segregated urban areas and restructure the urban form to meet current and future challenges with greater efficiency.
OUTCOMES/ DESIRED STATE	▪ An efficient system of towns functioning as an integrated network. ▪ Reduced costs of infrastructure provision. ▪ An urban system that offers convenience and choice to its inhabitants and users. ▪ An urban system that provides universal access to all users. ▪ An urban system that encourages business development by providing in the needs of all kinds of enterprises.
IMPLEMENTATION STRATEGIES	▪ Re-align the urban structure of Merafong settlements into 3 distinct urban areas namely the northern, central and southern urban areas. Connect all 3 urban areas through a primary development corridor that will restructure settlements into the desired state. ▪ Develop infrastructure in accordance with the restructuring strategies. ▪ Establish a hierarchy of nodes and corridors to facilitate restructuring. ▪ Implement 3 growth management boundaries in order to manage growth in a sustainable manner: ✓ A land use intensification boundary, within which appropriate mixed land uses and densification are encouraged. ✓ An urban development boundary, which contains urban development and indicates where future urban expansion may take place. ✓ An Urban–Rural Interface boundary, within which appropriate mixed land uses are allowed. ▪ Determine settlement viability of mine settlements and develop accordingly ▪ Integrated transport and mobility should form part of decision making processes.

POLICY ALIGNMENT	From the national and provincial primary policy synthesis: Grouping 2 and 5

2. IMPROVE URBAN AND RURAL LIVEABILITY

POLICY	Create a liveable environment for the community where basic needs are met, the cost of living is bearable, amenities and employment is accessible and urban space is aesthetically pleasing and healthy.
OUTCOMES/ DESIRED STATE	▪ Public facilities are adequately provided for in the right localities with the necessary amenities. ▪ All social facilities contribute to human development, meeting basic needs and act as social development safety 'nets' to protect human rights and human dignity. ▪ Urban design provides quality of place and the maximum utilisation of spaces for their most appropriate uses. ▪ The urban environment is aesthetically pleasing and unique ▪ Green infrastructure provides ecosystem services to the benefit of the human and natural environment. ▪ All residents have adequate housing with different options of tenure.
IMPLEMENTATION STRATEGIES	▪ Social infrastructure development ▪ Sustainable human settlements ▪ Improve urban design and green infrastructure in order to promote universal access and create a unique identity. Develop an Urban Design Framework. ▪ Rural development ▪ Promote or enforce principles of design and land use patterns that reduce crime, the fear of crime and also promote safety.
POLICY ALIGNMENT	From the national and provincial primary policy synthesis: Grouping 3, 4 and 5

3. FACILITATE SUSTAINABLE ECONOMIC GROWTH AND DIVERSIFICATION

POLICY	Facilitate the development of new economic drivers and the diversification of the economy and to revitalize stagnant economic activity nodes.

OUTCOMES/ DESIRED STATE	▪ A broader economic base consisting of a mix of mining, agriculture and manufacturing. ▪ A more diverse non-basic sector that absorbs local purchasing power. ▪ Accelerated economic growth in leading sectors that stimulates job creation. ▪ Provide for the needs of the informal economy and to facilitate harmonious co-existence with the formal sector. ▪ A more developed economy will enlarge the tax base, which will in turn provide more capital for municipal investment.
IMPLEMENTATION STRATEGIES	▪ Enable industrial development through the provision of industrial land and infrastructure according to demand coupled with well researched incentives for investment. Develop an Industrial Development Strategy for Merafong to guide municipal actions in this regard. ▪ Enable faster development and growth of the agricultural sector and its associated value chains. ▪ Target decaying areas within development nodes for urban renewal initiatives. ▪ Develop new strategic nodes with base economic potential in order to utilise their latent potential. ▪ Continuously identify spatial threats and constraints to economic development and mitigate. ▪ Create an enabling environment for informal enterprises to thrive without adversely affecting the formal sector.
GUIDING PRINCIPLES	▪ Enable non-basic economic expansion through land provision and Land Use Management. Designate more land for business and services expansion. ▪ Economic development and job creation is of great importance and as such administrative processes related to Land Use Management, building plan assessment and property disposal should prioritise economic development activities.
POLICY ALIGNMENT	From the national and provincial primary policy synthesis: Grouping 1, 3, 4 and 5

4. PROTECT NATURAL AND AGRICULTURAL RESOURCES

POLICY	▪ Protect and actively manage the natural environmental resources in Merafong in order to ensure a sustainable coexistence between urban, mining, agricultural and ecological land uses. ▪ Protect valuable agricultural land from development.

OUTCOMES/ DESIRED STATE	▪ Sustainable development that will keep resources intact for future generations. ▪ Urban and rural land uses and systems that will be resilient in the face of climate change.
GUIDING PRINCIPLES	▪ Protect and enable ecosystem services in urban and rural areas. ▪ Actively expand green infrastructure for ecological, economic and social purposes. ▪ Minimise environmental impacts of developments. ▪ Mitigate impacts of local activities on neighbouring areas. ▪ Mitigate and manage impacts caused by climate change ▪ Urban pollution, especially storm water pollution, should be minimised. ▪ Mining pollution should be addressed. ▪ Improve on unsustainable farming practices near previously disadvantaged areas.
POLICY ALIGNMENT	From the national and provincial primary policy synthesis: Grouping 2, 3 and 5

2. NATIONAL, PROVINCIAL AND DISTRICT SCALE POLICY GUIDELINES

Relevant policy guidelines will be discussed from national down to district level and the most important policies have been synthesized and grouped into categories applicable to the MSDF. Although many policy directives do not make direct spatial statements they have spatial implications and spatial planning can make a significant impact on an indirect level.

National level

National Development Plan, 2030 (NDP) and the national outcomes

- Objective 3: Economy and Employment. Spatially the focus is on reducing the cost of living whilst increasing the standard of living of poor households as well as removing constraints on economic growth and development.
- Objective 4: Economic infrastructure. In terms of spatial planning the emphasis is placed on consolidating and expanding transport and logistics infrastructure as well as improving public transport infrastructure.
- Objective 5: Environmental sustainability and resilience. The focus is on environmental sustainability and resilience in the face of change through an equitable transition to a low-carbon economy, which will also have implications on spatial planning and development in Merafong.
- Objective 6: Inclusive rural economy. A more inclusive rural economy can be established through integrated rural development. Spatially the focus is on research and the development of adaptation strategies for the protection of rural livelihoods and expansion of commercial agriculture.
- Objective 8: Transforming Human Settlements. Discusses the spatial planning system of South Africa and focusses on transforming SDFs into spatial contracts that are binding across national, provincial and local levels; encouraging cross border planning and cooperation between municipalities and provinces and it also promotes having an explicit spatial restructuring strategy identifying priority precincts for spatial restructuring.
- Objective 12: Building Safer Communities. In spatial terms, community participation should be increased and design interventions should be implemented where possible.
- Objective 13: Building a capable and developmental state. Proactive steps are needed to resolve coordination problems between different government entities and government in general needs to be more accessible to the public.

Spatial planning implications:

- The NDP suggest that rural interventions will differentiate less dense marginal areas primarily needing appropriate service provision from more viable and denser areas with transport and market access, including:

- ✓ Prioritising agricultural and rural development along mobility corridors, to build local economies and contribute to national food security;
- ✓ Identification of non-agricultural opportunities such as tourism and mining, especially with a "green" focus';
- ✓ Small-town development as nodes of rural development;
- ✓ Mechanisms to make land markets work more effectively for the poor, especially women.

- Gauteng is identified as a national node of competitiveness where planning should focus on enabling innovation and the development of leading sectors.
- The NDP reports that in urban areas in-migration, especially by the young and poor, increases pressure on services and transport, complicated by apartheid-fragmented geography. Economic growth has been slower than the demand for employment. In particular, accommodation faces challenges, including financing for lower end housing and its incorporation into the market, and slow progress on rental accommodation (CRU and Social Housing) and upgrading of informal settlements. In urban areas, key NDP recommendations include:
  - ✓ Upgrading all informal settlements on suitable, well-located land by 2030;
  - ✓ Increased urban densities to reduce sprawl and costs;
  - ✓ Investments to shift jobs and investment to the urban townships on the peripheries;
  - ✓ Substantial investments in safe, reliable and affordable public transport and better co-ordination among the various modes;
  - ✓ A comprehensive review of the grant and subsidy regime for housing to ensure diversity in product and finance options and spatial mix;
  - ✓ A focused strategy on the housing gap market, involving banks, subsidies and employer housing schemes;
  - ✓ The development of spatial compacts that are currently being addressed by the Department of Rural Development & Land Reform.

Areas of spatial targeting have been identified. The West Rand is targeted for job intervention (employment creation) due to a significant decline in formal employment.

The National Outcomes approach

Twelve Outcomes for public-service delivery priorities were identified in 2010. Ministers signed Performance Agreements linked to these Outcomes. More detailed Delivery Agreements have since been developed to extend targets and responsibilities to national and provincial departments, agencies and municipalities. Below are the 12 Outcomes and their respective outputs:

Outcome 1: Improve the Quality of Basic Education
• **Output 1: Improve the quality of teaching and learning.**
• **Output 2: Undertake regular assessment to track progress.**
• **Output 3: Improve early childhood development.**
• **Output 4: Ensure a credible outcomes-focused planning and accountability system**
Outcome 2: Improve Health and Life Expectancy
• **Output 1: Increasing life expectancy**
• **Output 2: Decreasing maternal and child mortality rates**

- **Output 3: Combating HIV and AIDS and decreasing the burden of disease from Tuberculosis**
- **Output 4: Strengthening health system effectiveness**

Outcome 3: All People in South Africa Protected and Feel Safe

- **Output 1: Address overall levels of crime and reduce the levels of contact and trio crimes**
- **Output 2: Improve effectiveness and ensure integration of the Criminal Justice System (CJS)**
- **Output 3: Combat corruption within the Justice, Crime Prevention and Security Cluster to enhance its effectiveness and its ability to serve as deterrent against crime**
- **Output 4: Manage perceptions of crime among the population**
- **Output 5: Ensure security at the border environment**
- **Output 6: Secure the identity and status of citizens**
- **Output 7: Integrate ICT systems and combat cyber crime**
- **Output 8: Corruption**

Outcome 4: Decent Employment Through Inclusive Economic Growth

- **Output 1: Faster and sustainable inclusive growth**
- **Output 2: More labour absorbing growth**
- **Output 3: Multi-pronged strategy to reduce youth unemployment**
- **Output 4: Increased competitiveness, to raise net exports, grow trade as a share of world trade and improve its composition**
- **Output 5: Improved cost structure in the economy**
- **Output 6: Improved support to small business and cooperatives**
- **Output 7: Implementation of the expanded public works programme**

Outcome 5: A Skilled and Capable Workforce to Support Inclusive Growth

- **Output 1: Establish a credible institutional mechanism for skills planning**
- **Output 2: Increase access to programmes leading to intermediate and high level learning**
- **Output 3: Increase access to occupationally-directed programmes in needed areas and thereby expand the availability of intermediate level skills (with a special focus on artisan skills)**
- **Output 4: Increase access to high level occupationally-directed programmes in needed areas**
- **Output 5: Research, development and innovation in human capital for a growing knowledge economy**

Outcome 6: An Efficient, Competitive and Responsive Economic Infrastructure Network

- **Output 1: Improving Competition and Regulation**
- **Output 2: Ensure reliable generation, distribution and transmission of electricity**
- **Output 3: To ensure the maintenance and strategic expansion of our road and rail network, and the operational efficiency, capacity and competitiveness of our sea ports.**
- **Output 4: Maintenance and supply availability of our bulk water infrastructure**
- **Output 5: Communication and Information technology**
- **Output 6: Develop a set of operational indicators for each segment**

Outcome 7: Vibrant, Equitable and Sustainable Rural Communities and Food Security

- **Output 1: Sustainable agrarian reform**
- **Output 2: Improved access to affordable and diverse food**
- **Output 3: Rural services and sustainable livelihoods**
- **Output 4: Rural job creation linked to skills training and promoting economic livelihoods**
- **Output 5: Enabling institutional environment for sustainable and inclusive growth**

Outcome 8: Sustainable Human Settlements and Improved Quality of Household Life

- **Output 1: Accelerated delivery of housing opportunities**
- **Output 2: Improve access to basic services**
- **Output 4: More efficient land utilisation**
- **Output 4: Improved property market**

Outcome 9: A Responsive, Accountable, Effective and Efficient Local Government System

• **Output 1: Implement a differentiated approach to municipal financing, planning and support**
• **Output 2: Improving access to basic services.**
• **Output 3: Implementation of the Community Work Programme**
• **Output 4: Actions supportive of the human settlement outcome**
• **Output 5: Deepen democracy through a refined Ward Committee model**
• **Output 6: Administrative and financial capability**
• **Output 7: Single window of coordination**
Outcome 10: Protection and Enhancement of Environmental Assets and Natural Resources
• **Output 1: Enhanced quality and quantity of water resources**
• **Output 2: Reduced greenhouse gas emissions, climate change impacts and improved air/atmospheric quality**
• **Output 3: Sustainable environmental management**
• **Output 4: Protected biodiversity**
Outcome 11: A Better South Africa, a Better and Safer Africa and World
• **Output 1: Enhanced African agenda and sustainable development**
• **Output 2: Enhanced regional integration**
• **Output 3: Reformed global governance institutions**
• **Output 4: Enhanced trade and investment**
Outcome 12: A Development-Orientated Public Service and Inclusive Citizenship
• **Output 1: Service delivery quality and access**
• **Output 2: Human resource management and development**
• **Output 3: Business processes, systems, decision rights and accountability management**
• **Output 4: Tackling corruption in the public service**

Spatial planning implications:

All spatial planning interventions have to be measured against these national outcomes.

National Spatial Development Perspective (NSDP)

The NSDP is a relatively old policy document, however its principles and perspectives given on the national space-economy is still very relevant. In order to contribute to the broader growth and development policy objectives of government, the Presidency's **National Spatial Development Perspective** puts forward a set of five normative principles:

- Principle 1: **Rapid economic growth that is sustained and inclusive** is a prerequisite for the achievement of other policy objectives, among which poverty alleviation is key
- Principle 2: Government has a constitutional obligation to **provide basic services to all citizens** (e.g. water, energy, health and educational facilities), wherever they reside
- Principle 3: Beyond the constitutional obligation identified in Principle 2 above, **government spending on fixed investment should be focused on localities of economic growth and/or economic potential** in order to gear up private-sector investment, to stimulate economic activities and to create long term employment opportunities
- Principle 4: Efforts to address past and current social inequalities should focus on people, not places. **In localities where there are both high levels of poverty and demonstrated economic potential, this could include fixed capital investment beyond basic services to exploit the potential of those localities**. In localities with low demonstrated economic

potential, government should, beyond the provision of basic services, concentrate primarily on human capital development by providing education and training, social transfers such as grants and poverty-relief programmes. It should also reduce migration costs by providing labour-market intelligence to give people better information, opportunities and capabilities, to enable them to gravitate – if they choose to – to localities that are more likely to provide sustainable employment and economic opportunities

- Principle 5: **In order to overcome the spatial distortions of apartheid, future settlement and economic development opportunities should be channeled into activity corridors and nodes that are adjacent to or that link the main growth centres**. Infrastructure investment should primarily support localities that will become major growth nodes in South Africa and the Southern African Development Community (SADC) region to create regional getaways to the global economy.

Spatial planning implications:

All spatial planning interventions have to adhere to these principles. Municipal actions in contradiction with these principles have to be discouraged.

Urban Network Strategy

Cities are the origin of the problems, but they are also the origin of the solutions. A strategic approach is required that:

- Does more with less
- Is people based
- Is Investment based
- Simplifies rather than complicates

The NDP's approach sees our cities as two distinct but interdependent networks. At the centre of the primary network is the CBD of the city (and there may be a few within a multi-nodal urban system) which functions as the anchor access precinct. A secondary network feeds the primary network. At the centre of each secondary network is a set of significant urban hubs. These hubs function as portals between the secondary networks in a township or group of townships and the primary network of the city, as they offer access to the primary network via a combination of higher order public transport links, the most important of which is rail (understood to be the backbone of the public transport network). They can be regarded as gateways to the broader urban region. It is these points of maximum connectivity within the secondary network that then become the places for logical reinforcement and a concentration of resources if we are to give meaning to the restructuring imperative of the NDP that focuses on more equitable patterns of access through spatial and socioeconomic integration. Investment in these hubs will be catalytic with the intention of changing the market dynamics that play themselves out within South African urban settlement areas.

The focus of social investment should occur at hubs in order to do more with less.

Spatial planning implications:

This strategy is aimed at metropolitan municipalities, however there are many aspects that Merafong can learn from and implement at a lower order scale such as the urban hubs which should be implemented in marginalized township areas.

Integrated urban Development Framework, 2016

IUDF Vision: Liveable, safe, resource efficient cities and towns that are socially integrated, economically inclusive and globally competitive, where residents actively participate in urban life.The IUDF's overall outcome is spatial transformation → reversing the inefficient spatial patterns in a way that promotes both social and economic development while protecting the environment.The IUDF proposes an urban growth model of **compact, connected and coordinated cities** and towns. Land, transport, housing, and jobs are key structuring elements critical for the attainment of the outcome.
The overall objectives are to create efficient urban spaces by:

- Reducing travel costs and distances
- Aligning land use, transport planning and housing
- Preventing development of housing in marginal areas
- Increasing urban densities and reducing sprawl
- Ensure more jobs and investment in dense peripheral townships
- Improve public transport and the coordination between transport modes

Strategic goals of the IUDF:

- Spatial Integration: To forge new spatial forms in settlement, transport, social and economic areas.
- Inclusion and Access: To ensure people have access to social and economic services, opportunities and choices.
- Inclusive Growth: To harness urban dynamism for inclusive, sustainable economic growth and development.
- Efficient Governance: To enhance the capacity of the state and its citizens to

Spatial planning implications:

The growth model with its outcomes and goals have to be taken up into all areas of spatial planning in order to shift planning and development in the right direction. The IUDF has good linkages with the Gauteng Growth Management Perspective and the Urban Network Strategy and will be used in conjunction to re-align planning in Merafong. Merafong City has been designated as an Intermediate City Municipality and as such will receive support from the Department of Cooperative Governance in developing an IUDF based Capital Expenditure Framework in order to receive the Integrated urban Development Grant.

Provincial level

Draft Gauteng Spatial Development Framework 2030 (2016)

In giving expression to the legal requirements and guidelines for provincial SDFs, the GSDF assists in (i) providing a platform for ensuring cooperative spatial governance in the province, (ii) establishing a shared, high-level understanding on spatial, economic and social development challenges facing and affecting the province as a whole, and (iii) developing a joint approach to attending to, and addressing these challenges.

The GSDFs spatial development concept is based on a polycentric growth model for the province which is considered to be one where the spatial structure is based on a hierarchy of integrated business, employment and community nodes (or urban centres) that are well connected by means of movement infrastructure and systems, in particular public transport, and growth is directed in accordance with the proximity of a particular location to this network.

The Gauteng SDF spatial development strategies:

a) Building an Integrated Network. Which focuses on creating a strong functionally and spatially integrated and connected economic network where economic development can be concentrated to create economic clusters, agglomeration advantages and synergies.
b) Capitalising on Proximity. Considers the patterns of intensification and densification in the province in relation to the economic and transportation network.
a) Managing Settlement Development, Growth and Integration. Deals with the development, restructuring and growth of settlements outside of the priority densification areas.
b) Creating a Viable and Productive Hinterland. Is concerned with the areas in the province that lie outside the main urban networks, and comprise large natural environments, agriculture, mining and resource related industries, tourism and secondary towns

Spatial Planning implications for the Western Corridor in terms of the spatial development strategies:

a) Building an Integrated Network
   - Activity Spines and Activity Corridors
     - ✓ Route R28 serves as a development corridor linking the urban fabric from Mogale City to Westonaria
     - ✓ N14 and N12 routes represent the major east-west mobility corridors connecting the corridor with the space economy of the province
   - Nodes, including Major Mixed-Use Nodes and CBD's, Major Employment Nodes and Secondary Nodes
     - ✓ The larger Lanseria node is a major catalytic intervention in the west. Development and investment should be managed to
     - ✓ ensure an integrated development that are able to contribute to spatial transformation;

- ✓ Direct urban renewal initiatives to CBDs that are declining, (such as Krugersdorp, Westonaria, Randfontein, Carltonville-
- ✓ Khutsong, Fochville and Wedela) to ensure their survival and to capitalise on existing infrastructure and investment in these areas.
- ✓ Development of Secondary nodes to service and develop a hinterland economy in tourism, agriculture, agro-processing,
- ✓ Carltonville, Fochville, Randfontein, Tarlton, Magaliesburg, Hekpoort

- Transportation Linkages
  - ✓ The extension of the BRT network towards Krugersdorp

b) Capitalising on Proximity

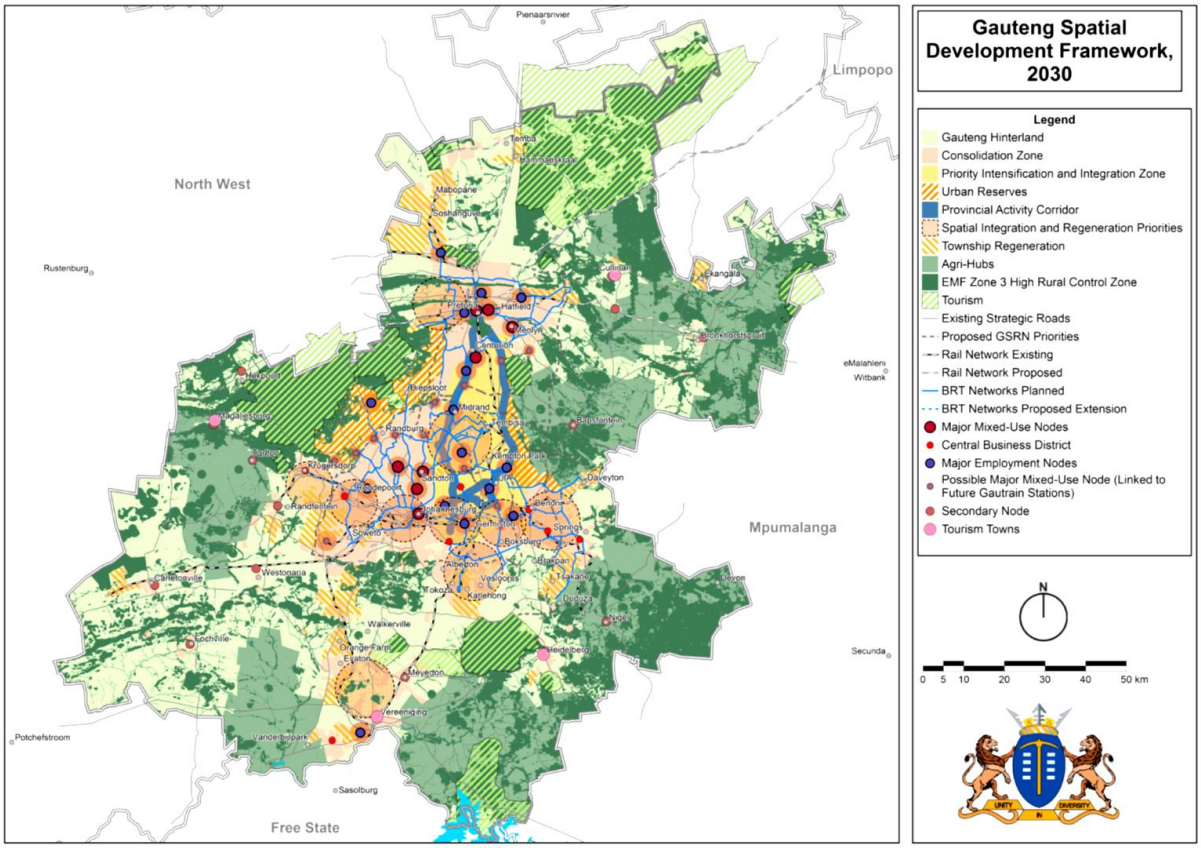
- Intensification and densification linked to public transport and economic opportunity
  - ✓ Capitalise on PRASA station refurbishment in Mogale City
  - ✓ Around transport hub development within the Lanseria node with the development of this node (cross-boundary coordination required)
  - ✓ Growth in the Lanseria Node must be supported through the development of green Infrastructure

c) Managing Settlement Development, Growth and Integration

- Consolidation Zones
  - ✓ Focus on the creation of sustainable, convenient and liveable residential neighbourhoods;
  - ✓ Generally lower density residential except for higher densities located directly adjacent to public transport networks and
  - ✓ local activity nodes (e.g. Mogale City and Randfontein)
  - ✓ Areas between Randfontein and Mogale City should be utilized for infill development and densification
  - ✓ Transitioning to green Infrastructure to address ageing infrastructure and support ongoing consolidation.
- Township Renewal and Urban Integration Zones
  - ✓ Township Regeneration should focus on the creation of Urban Networks (viz. National Treasury);
  - ✓ Urban Hubs and transportation networks should form the priority investment locations within townships in order to ensure
  - ✓ the development of efficient and effective urban centres for the surrounding township or cluster of townships;
  - ✓ The location of Urban Hubs must be aligned with public transport networks and should be in a location with the greatest degree of centrality and accessibility on neighbourhood level;
  - ✓ Aligned to township spatial reconfiguration (and the UNS):
    - allocation of space and support for SMME and light industry; and
    - centres for further education and training to advance township economies
  - ✓ The mining belt area around Mogale City and Randfontein is a priority area for integration into the existing urban fabric – detailed plans are required

d) Creating a Viable and Productive Hinterland

- Environmental Management Zones
  - ✓ Apply GPEMF High Control Zone within Urban Development Zone
- Agriculture
  - ✓ Support and development of West Rand and Emfuleni Agri-hubs in accordance with GDARD rural strategies
  - ✓ Promote and enhance both large and small-scale agricultural and employ sustainable agricultural technologies and practices
  - ✓ Promote small-scale agriculture in closer proximity to secondary towns to support access to services and markets
- Environmental Conservation
  - ✓ Investigate the possibility of legislating the GPEMF Control Zone 3 as a "Green Belt" to protect the natural environment from urban expansion;
  - ✓ Protect sensitive areas such as ridges, wetlands and flood-prone areas;
  - ✓ Rehabilitate degraded areas - in particular those mitigating the impacts of mining dumps and acid mine drainage on agriculture, tourism and human settlement
- Tourism
  - ✓ Promote and support Cradle of Humankind as the primary tourism resource on the West Rand
  - ✓ Gatsrand tourism resources to be developed and protected;
  - ✓ Strengthen Magaliesburg as a tourism destination
  - ✓ Identify opportunities along water resources for tourism and recreational potential



Gauteng Growth Management Perspective (2014)

Municipalities are ultimately responsible for the implementation of growth management in their respective jurisdictions, and will have to take responsibility for formulating and exercising a package of tools and mechanisms. Coordination of the actions of different municipal departments is key in successful growth management. This will require improved administrative procedures and collaboration.

Given the massive gap in information on engineering services, a proper Growth Management Strategy for Merafong would be impossible for now. The development dynamics also differs from the metros and many proposals such as densities are completely impractical for smaller urban areas. Therefore basic principles have been developed for the interim based on proposals from the document.

The purpose of the Gauteng Growth Management Perspective is to provide the provincial government and its constituent with a clear perspective and understanding of the implications of unabated spatial growth and how it should approach and intervene as far as the implementation and coordination of growth management in the province and the City-Region is concerned.

The implementation of tools and mechanisms for growth management must follow a three-pronged approach, namely:

- Preventing development in sensitive environments (i.e. environmental protection);
- Discouraging development in peripheral locations (i.e. curbing urban sprawl); and
- Encouraging development primarily in strategic locations (i.e. ensuring internal spatial restructuring).

Principle perspective themes:

- Change is Necessary
- Sprawl has to be addressed
- Support the creation of a regional polycentric spatial structure
- Movement systems are key restructuring elements
- Capital investment has to align with growth management
- Alignment with and interaction between government entities is important.

Spatial planning implications:

- Land Use Management mechanisms have to be applied to either restrict development in certain areas or facilitate development in others.

- Investment in infrastructure and services should be aligned with the growth management objectives and targets.
- Development should be planned and managed in a manner that enhances revenue generation whilst promoting affordability.
- The affordability of infrastructure and the promotion of an efficient public transport system are important factors in managing development.

Gauteng 10 Pillar Program of Transformation, Modernisation, and Re-industrialisation.

The core mandate of the 5th administration of Gauteng is to elaborate and give practical and programmatic effect to the meaning of radical change in all aspects of governance in the province, as we build Gauteng into;

“An integrated city-region, characterised by social cohesion and economic inclusion; the leading economy on the continent, underpinned by sustainable and socio-economic development.”

Transform:

1. **RADICAL ECONOMIC TRANSFORMATION:** Interventions in key sectors of the economy to unlock growth and employment potential and bring in blacks, youth and women and revitalise township economy.

2. **DECISIVE SPATIAL TRANSFORMATION:** Through public transport and new sustainable and integrated human settlements and new cities.

3. **ACCELERATING SOCIAL TRANSFORMATION:** Modernise education and build smart schools; improve quality of care and modernise health institutions and rollout NHI; tackle urban poverty and social development challenges; dramatically improve community safety.

4. **TRANSFORMATION OF THE STATE AND GOVERNANCE:** Build developmental state capabilities through better organisation and professionalisation; promote activist, purpose-driven and results-based government; active citizenry, sectoral engagement and community mobilisation.

Modernise:

1. **MODERNISATION OF THE PUBLIC SERVICE:** Build green and smart public services and infrastructure to deliver services effectively and efficiently: build a connected government; vertically, horizontally, back office, intranet, and government to citizens, citizens to government etc.

2. **MODERNISATION OF THE ECONOMY:** Focus on economic modernisation through deployment of research, innovation science and green technology

3. **PLANNING OF NEW HUMAN SETTLEMENTS:** Modernisation of human settlements through green and high density settlements

4. **MODERNISATION OF PUBLIC TRANSPORT:** Planned urbanisation and urban development: Radically improve on better urban planning , public transport.

Industrialise:

1. **RE-INDUSTRIALISE GAUTENG AND SOUTH AFRICA:** re-build the manufacturing sector in Gauteng, increasing manufacturing output and increasing employment in manufacturing and related up and downstream sectors.

2. **TAKE THE LEAD IN AFRICA'S NEW INDUSTRIAL REVOLUTION**: Entrench and expand on Gauteng's status as the Gateway to Africa to realise the economic opportunities offered by the continent.

Spatial planning implications:

- **Transform**. Economic and social transformation starts with the way settlements function. Spatial planning must change the way settlements function, in order to improve efficiencies. This will bring about an improvement in urban liveability.
- **Modernise**. The economy of Merafong is lagging behind and inefficiencies abound. Planning has to focus on new growth sectors and ways for the public sector to perform better and create an enabling environment for leading sector businesses.
- **Reindustrialise**. Gauteng is intent on taking the lead in the industrialisation of Africa and the focus for the West Rand is in the green and blue economy as well as agriculture and its value chains.

<u>Gauteng Environmental Management Framework</u>

The GEMF replaces all other EMFs in Gauteng. The objective of the GEMF is to guide sustainable land use management within Gauteng. It serves the following purposes:

- To provide a strategic and overall framework for environmental management in Gauteng.
- To align sustainable development initiatives with the environmental resources, developmental pressures as well as growth imperatives of Gauteng.
- Determine geographical areas where certain activities can be excluded from an EIA
- Identify appropriate, inappropriate and conditionally compatible activities in various Environmental Management Zones in a manner that promotes proactive decision making.

Spatial Planning implications:

- An extensive analysis and prioritisation of ecological resources and land use conflicts was done, resulting in the development of control zones and Environmental Management Zones. These zones provide good guidance for spatial planning and land use management.

Gauteng 25 Year Integrated Transport master Plan

The Gauteng Integrated Transport Master Plan (GITMP25) aims to deliver a world class and sustainable transport system that supports Gauteng's economic, social and cultural, and environmental goals. It provides a planning framework, which assists government at all three levels to develop a comprehensive transport system over the next 25 yearsIt also strives to embody the principles of an efficient, competitive and responsive economic infrastructure network that prioritises public transport.

The founding principles for the GITMP25 are:

- Integration of land use with transport, as well as integration of networks, modes and services;
- Being "smart" by using scarce resources more effectively and application of suitable technology;
- Social inclusion and beneficiation; and
- Promotion of a more sustainable Gauteng City Region (GCR).

Spatial Planning implications:

- GITMP25 is centered around the following ten interventions of which the first three relate to land use directly. The other intervention however also have spatial planning and land use implications.

INTEGRATED TRANSPORT INTERVENTIONS	
Land Use Development	
1	Subsidised housing provision within urban core areas
2	Facilitating local economic development outside the urban core
3	Land use densification in support of public transport
Strategic Public Transport Network	
4	Reinforcing passenger rail network as the backbone of the system
5	Extending the integrated rapid and road-based public transport networks
6	Capacity building in the transport industry
Freight Transport	
7	Strengthening intermodal freight hubs
Road Transport	
8	Travel demand management
9	Mainstreaming non-motorised transport
10	Continued provincial wide mobility

(Adapted from the WRDM SDF)

- Key to the GITMP25 is the focus on public transport with the rail system being the backbone of the network, in order to enable a shift from private vehicles to reduce congestion, enhance efficiency and promote sustainability. This means planning for the transport of people as opposed for private transport infrastructure which tend to separate communities, create barriers and promote an individual “conscience”. The GITMP25 believes that public transport is a catalyst towards social integration of society and should be applied as such in the Gauteng City Region.
- Freight rail and the movement of freight from road to rail is a key departure point, which includes the focus on the development of major rail-based freight logistic hubs, located on the periphery of the core urban areas. This is to reduce extensive heavy vehicle freight traffic moving through core urban areas, taking up road space and adding to congestion.
- The Gauteng 25-Year Integrated Transport Master Plan, 2013, sets out the following density guidelines for the efficient intensification of areas related to priority public transport routes:
    - ✓ High Density: 80 units per hectare and higher within 1 kilometre from the provincial IRPTN network and activity nodes served by this network;
    - ✓ Medium Density: 30 to 79 units per hectare within 1 kilometre from the remaining provincial Strategic Public Transport Network (SPTN) which include bus and taxi routes; and
    - ✓ Low Density: Densities up to 29 units per hectare should not be promoted in any areas served by public transport. Such low densities should be reserved for the peripheral parts of the province and areas not being prioritised for any form of public transport.

Draft Gauteng Township Economic Revitalisation Strategy (2016)

The strategy is an attempt to create a foundation for a Township Economy Revitalization Action Plan through dialogue and collection of quantitative and qualitative information on the township economy and its potential by taking into account local dynamics and social organisation.

The strategy is guided and enabled by the following strategic pillars of support:

- Economic Infrastructure
- Resourcing
- Entrepreneurship developments
- Market support and competitiveness
- Networking and partnerships among SMEs
- Market access
- Support for indigenous Knowledge systems

Spatial planning implications:
Although most aspects are not directly affected by spatial planning, the MSDF could have significant effects on an indirect level. Aspects such as economic infrastructure, accessibility and land availability in the right localities is crucial from a spatial perspective.

District Level

West Rand Growth & Development Strategy

The vision of the WRDM Regional Growth and Development Strategy is to "*develop and sustain an integrated, socio-economically and economically thriving and green environment with a unified society*."

In order to achieve the above Vision, the Regional Growth and Development Strategy identified the following critical requirements:

- *Ensure the WRDM is connected* – with more people enjoying the benefits of flourishing activity centres where shops, jobs, services and recreation are within walking and travelling distance of their homes, with fast and reliable travel to and from local centres and regional opportunities, with a comprehensive, efficient and networked public transport system and pedestrian routes and access to rural and tourism areas.
- *Ensure the WRDM is attractive* – with quality urban and rural areas that are well-maintained, new developments which comply with high design standards, clean and safe environments and well-preserved heritage and natural areas.
- *Ensure the WRDM is sustainable* – with resources well managed and planned for, viable and cost-effective service provision; and where the environment is valued as a vital resource and meaningful open space is provided for all.
- *Ensure the WRDM is well managed* – where development decisions are predictable, fair and cost-effective, partnerships are developed, planning takes place on a continuous basis, formal systems for data collections are in place, and data is used to support and improve planning.

Subsequently, the study then identified the following six strategic priorities/key focus areas for the West Rand District Area and these form the basis of the West Rand Regional Growth and Development Strategy:

Strategic Priority 1: Spatial Integration
• Suitable development planning around dolomitic areas • Optimise opportunities/spin-offs from neighbouring areas' initiatives: • Nodal densification • Corridor development and diversification • Mining rehabilitation to increase land availability

• Informal Settlement Management • Development Incentive Schemes • Urban Renewal and Inner City Rejuvenation in the four main business areas
Strategic Priority 2: Physical Infrastructure
• Promoting Information and Communication Technology (ICT) • Focus on strategic economic infrastructure programmes • Planning for current and future infrastructure • Maintenance of current infrastructure • Securing investment for infrastructure development
Strategic Objective 3: Economic Development
• Expanding the Agriculture/Agro-processing industry in the District • Stimulating mining activity and mineral processing and -beneficiation activities in the District • Increasing manufacturing opportunities and activities in the District • Strengthening and promoting the tourism industry in the District
Strategic Objective 4: Environmental Management
• Biofuel • Alternative energies (such as photovoltaic) • Hazardous and new waste types • Mine water pollution (e.g. Acid Mine Drainage) • Nanotechnology • Land Degradation • Creating a renewable energy sector • Managing and addressing mining-related environmental impacts • Waste Management and Recycling Programmes • Mitigate and prevent land degradation
Strategic Objective 5: Social Development
• Reducing Poverty & Unemployment • Promoting Sustainable Human Settlements • Ensuring adequate education and training facilities • Ensuring efficient Health Care and Facilities • Promoting Safety and Security • Developing Sports, Recreation, Arts and Culture (SRAC) facilities
Strategic Objective 6: Governance
• Promote Community Participation • Ensure Clean Audits • Effective implementation of Council policies • Maximise resources from other spheres • Regular Monitoring and evaluation • Promote easy and affordable business

(ADAPTED FROM THE WRDM SDF)

WRDM Green IQ

The WRDM Green IQ was compiled in (2012) and is a commitment to make the West Rand District the greenest district in South Africa and an African example of how sustainable development should be conducted. The Green IQ is a comprehensive strategy, built on 5 pillars, namely:

- **PEOPLE**: To create a place where people come first, a place characterized by equity, dignity and possibility; where everyone has the opportunity to build a better life for themselves, their children.

- **ECONOMY:** To restructure the economy to seize future development opportunities; to foster local resilience; to serve the people of the West Rand and to be an example of participatory prosperity.
- **ENVIRONMENT:** To make the precious natural resources available for future generations; create a low-carbon built environment dedicated to quality of life; and regenerate rural areas with a new sense of purpose.
- **ENERGY**: To facilitate the creation of new independent power producers to generate renewable, affordable and reliable energy to power new industries and create competitive advantages.
- **INNOVATION**: To establish itself as a centre of excellence in green technology and green living; attract the best minds; and encourage and support the industries of the future.

Seven Key Programmes have been identified in the WRDM Green Economy Programme

Sector	Description
Energy Efficiency	• Expanding off-grid options in rural and urban areas • Refit optimization for large scale renewable and localization, and • Up-scaling Solar Water Heater rollout
Food security	• Integrate sustainable agricultural production
Water and sanitation	• Water harvesting • Alternative technology for effluent management • Comprehensive municipal water metering (demand and management) • Reduce water losses in agriculture, municipalities and mining
Waste	• Waste beneficiation • Zero waste community programme for 500 000 households
Transportation	• Promoting non-motorized transport and • Conversion to solar powered traffic lights
Spatial planning and land use	• Investing in sustainable land use which will contribute to the WRDM economic vitality • Investing in the WRDM's green space which creates opportunities to socialize and rest, fundamentally boost quality of life and socio-economic integration, and the associated economic benefits
Green buildings and the built environment	• Greening of private and public buildings.

(ADAPTED FROM THE WRDM SDF)

WRDM Spatial Development Framework

The following points are fundamental to the Vision for the future spatial structure of the West Rand District:

- Containment of urban growth;
- Densification of urban areas;
- Eradicate large housing backlog in sustainable manner, integrating communities;
- Incorporate environmental management principles in the management of land;
- Protect high value agricultural land;
- Improve and rehabilitate mining areas for future agricultural use;

- Provide different typologies of housing;
- Establish niche tourism opportunities; and
- Address the large infrastructure backlog in the West Rand.

The key elements of alignment between the WRDM RGDS, Green IQ and IDP and which need to be incorporated into the WRDM SDF are summarised in the following table.

WRDM Regional Growth and Development Strategy		Green IQ	WRDM Integrated Development Plan
Vision Elements	**Key Focus Areas**	**Pillars**	**Spatial Issues**
• Connected • Attractive • Sustainable • Well-Managed	• Spatial Integration • Physical Infrastructure • Economic Development • Environmental Management • Social Development • Governance/Management	• Innovation • Energy • Economy • Environment • People	• Contain urban sprawl • Establish nodes and corridors • Improve eastward connectivity • Protect natural environment • Promote tourism • Sustainable utilisation of mining potential • Enhance agricultural production • Diversify industries • Manage rural residential use on small holdings • Consolidate rural infrastructure at nodes • Actively promote urban renewal • Upgrade/expand engineering services

(ADAPTED FROM THE WRDM SDF)

West Rand Economic & Industrial Development Plan

The Gauteng Provincial Government calls for an inclusive and spatially balanced approach across Gauteng towards addressing the threats of unemployment, poverty and inequality. Developed from the G2055 concept the West Rand Economic & Industrial Development Plan addresses the development disparities between metro and non-metro areas based on actual potential for development within the West Rand.

The plan focusess on 6 key economic sectors or development niches that have good development potential:

- The Westrand Green City;
- The Blue Economy Sector;
- The Westrand Tourism City;
- The Westrand Agro-Processing Cluster;
- The Westrand Logistics Hub; and
- The Mining Equipment and Supply Cluster.

Spatial planning implications:

Within the framework of recommendations made by the plan, investigate the broad feasibility of locating some of these activities in Merafong especially a Mining Equipment and Supply Cluster, Green Economy and the Blue Economy. Find possible localities for development.

Synthesis of the primary policy documents on a national and provincial level

From the National Development Plan, the National Outcomes and the Gauteng Multi Pillar Program, which are deemed the most important policy directives in Gauteng, 5 broad themes are discernible namely:

1. Economy, Employment And Economic Infrastructure
2. Protection Of The Environment
3. Human settlements, Social Development And Urban Liveability
4. Rural Development
5. Development Oriented Public Service

The synthesis into themes assists with contextualising these policies down to ground level and these themes have been taken up into analysis and strategies that address the analysis. The 5 themes have been summed up very shortly as follows:

1. Economy, Employment And Economic Infrastructure	
National Development Plan	Objective **3: Economy and Employment**. ▪ Spatially the focus is on reducing the cost of living, increasing the standard of living of the poor and removing constraints on economic growth and development. Objective **4: Economic infrastructure**. ▪ In terms of spatial planning the emphasis is placed on consolidating and expanding transport and logistics infrastructure and improving public transport.
National outcomes	**Outcome 4: Decent Employment Through Inclusive Economic Growth** ▪ Output 1: Faster and sustainable inclusive growth ▪ Output 2: More labour absorbing growth ▪ Output 3: Multi-pronged strategy to reduce youth unemployment ▪ Output 4: Increased competitiveness, to raise net exports, grow trade as a share of world trade and improve its composition ▪ Output 5: Improved cost structure in the economy ▪ Output 6: Improved support to small business and cooperatives ▪ Output 7: Implementation of the expanded public works programme **Outcome 5: A Skilled and Capable Workforce to Support Inclusive Growth** ▪ Output 1: Establish a credible institutional mechanism for skills planning ▪ Output 2: Increase access to programmes leading to intermediate and high level learning ▪ Output 3: Increase access to occupationally-directed programmes in needed areas and thereby expand the availability of intermediate level skills ▪ Output 4: Increase access to high level occupationally-directed programmes in needed areas ▪ Output 5: Research, development and innovation in human capital for a growing knowledge economy

	Outcome 6: An Efficient, Competitive and Responsive Economic Infrastructure Network ▪ Output 1: Improving Competition and Regulation ▪ Output 2: Ensure reliable generation, distribution and transmission of electricity ▪ Output 3: To ensure the maintenance and strategic expansion of our road and rail network, and the operational efficiency, capacity and competitiveness of sea ports. ▪ Output 4: Maintenance and supply availability of our bulk water infrastructure ▪ Output 5: Communication and Information technology ▪ Output 6: Develop a set of operational indicators for each segment
Gauteng Multi-Pillar Program	▪ **RE-INDUSTRIALISE GAUTENG AND SOUTH AFRICA:** re-build the manufacturing sector in Gauteng, increasing manufacturing output and increasing employment in manufacturing and related up and downstream sectors. ▪ **TAKE THE LEAD IN AFRICA'S NEW INDUSTRIAL REVOLUTION**: Entrench and expand on Gauteng's status as the Gateway to Africa to realise the economic opportunities offered by the continent. ▪ **MODERNISATION OF THE ECONOMY:** Focus on economic modernisation through deployment of research, innovation science and green technology ▪ **RADICAL ECONOMIC TRANSFORMATION:** Interventions in key sectors of the economy to unlock growth and employment potential and bring in blacks, youth and women and revitalise township economy.

2. Protection Of The Environment	
National Development Plan	**Objective 5: Environmental sustainability and resilience** ▪ The focus is on environmental sustainability and resilience in the face of change through an equitable transition to a low-carbon economy, which will also have implications on spatial planning and development in Merafong.
National outcomes	**Outcome 10: Protection and Enhancement of Environmental Assets and Natural Resources** ▪ Output 1: Enhanced quality and quantity of water resources ▪ Output 2: Reduced greenhouse gas emissions, climate change impacts and improved air/atmospheric quality ▪ Output 3: Sustainable environmental management ▪ Output 4: Protected biodiversity

3. Human settlements, Social Development And Urban Liveability	
National Development Plan	**Objective 8: Transforming Human Settlements** ▪ Discusses the spatial planning system of South Africa and focusses on transforming SDFs into spatial contracts that are binding across national, provincial and local levels; encouraging cross boundary planning and cooperation between municipalities and provinces and it also promotes having an explicit spatial restructuring strategy identifying priority precincts for spatial restructuring. **Objective 12: Building Safer Communities** ▪ In spatial terms, community participation should be increased and design interventions should be implemented where possible.
National	**Outcome 1: Improve the Quality of Basic Education**

outcomes	▪ Output 1: Improve the quality of teaching and learning. ▪ Output 2: Undertake regular assessment to track progress. ▪ Output 3: Improve early childhood development. ▪ Output 4: Ensure a credible outcomes-focused planning and accountability system **Outcome 2: Improve Health and Life Expectancy** ▪ Output 1: Increasing life expectancy ▪ Output 2: Decreasing maternal and child mortality rates ▪ Output 3: Combating HIV and AIDS and decreasing the burden of disease from Tuberculosis ▪ Output 4: Strengthening health system effectiveness **Outcome 3: All People in South Africa Protected and Feel Safe** ▪ Output 1: Address overall levels of crime and reduce the levels of contact and trio crimes ▪ Output 2: Improve effectiveness and ensure integration of the Criminal Justice System (CJS) ▪ Output 3: Combat corruption within the Justice, Crime Prevention and Security Cluster to enhance its effectiveness and its ability to serve as deterrent against crime ▪ Output 4: Manage perceptions of crime among the population ▪ Output 5: Ensure security at the border environment ▪ Output 6: Secure the identity and status of citizens ▪ Output 7: Integrate ICT systems and combat cyber crime ▪ Output 8: Corruption **Outcome 8: Sustainable Human Settlements and Improved Quality of Household Life** ▪ Output 1: Accelerated delivery of housing opportunities ▪ Output 2: Improve access to basic services ▪ Output 4: More efficient land utilisation ▪ Output 4: Improved property market
Gauteng Multi-Pillar Program	▪ **PLANNING OF NEW HUMAN SETTLEMENTS**: Modernisation of human settlements through green and high density settlements ▪ **MODERNISATION OF PUBLIC TRANSPORT**: Planned urbanisation and urban development: Radically improve on better urban planning, public transport. ▪ **DECISIVE SPATIAL TRANSFORMATION**: Through public transport and new sustainable and integrated human settlements and new cities. ▪ **ACCELERATING SOCIAL TRANSFORMATION**: Modernise education and build smart schools; improve quality of care and modernise health institutions and rollout NHI; tackle urban poverty and social development challenges; dramatically improve community safety.

4. Rural Development	
National Development Plan	**Objective 6: Inclusive rural economy** ▪ A more inclusive rural economy can be established through integrated rural development. Spatially the focus is on research and the development of adaptation strategies for the protection of rural livelihoods and expansion of commercial agriculture.
National outcomes	**Outcome 7: Vibrant, Equitable and Sustainable Rural Communities and Food Security** ▪ Output 1: Sustainable agrarian reform ▪ Output 2: Improved access to affordable and diverse food ▪ Output 3: Rural services and sustainable livelihoods ▪ Output 4: Rural job creation linked to skills training and promoting economic livelihoods ▪ Output 5: Enabling institutional environment for sustainable and inclusive growth

5. Development Oriented Public Service	
National Development Plan	**Objective 13: Building a capable and developmental state** ▪ Proactive steps are needed to resolve coordination problems between different government entities and government in general needs to be more accessible to the public.
National outcomes	**Outcome 9: A Responsive, Accountable, Effective and Efficient Local Government System** ▪ Output 1: Implement a differentiated approach to municipal financing, planning and support ▪ Output 2: Improving access to basic services. ▪ Output 3: Implementation of the Community Work Programme ▪ Output 4: Actions supportive of the human settlement outcome ▪ Output 5: Deepen democracy through a refined Ward Committee model ▪ Output 6: Administrative and financial capability ▪ Output 7: Single window of coordination **Outcome 11: A Better South Africa, a Better and Safer Africa and World** ▪ Output 1: Enhanced African agenda and sustainable development ▪ Output 2: Enhanced regional integration ▪ Output 3: Reformed global governance institutions ▪ Output 4: Enhanced trade and investment **Outcome 12: A Development-Orientated Public Service and Inclusive Citizenship** ▪ Output 1: Service delivery quality and access ▪ Output 2: Human resource management and development ▪ Output 3: Business processes, systems, decision rights and accountability management ▪ Output 4: Tackling corruption in the public service
Gauteng Multi-Pillar Program	▪ **TRANSFORMATION OF THE STATE AND GOVERNANCE**: Build developmental state capabilities through better organisation and professionalisation; promote activist, purpose-driven and results-based government; active citizenry, sectoral engagement and community mobilisation. ▪ **MODERNISATION OF THE PUBLIC SERVICE**: Build green and smart public services and infrastructure to deliver services effectively and efficiently: build a connected government; vertically, horizontally, back office, intranet, and government to citizens, citizens to government etc.

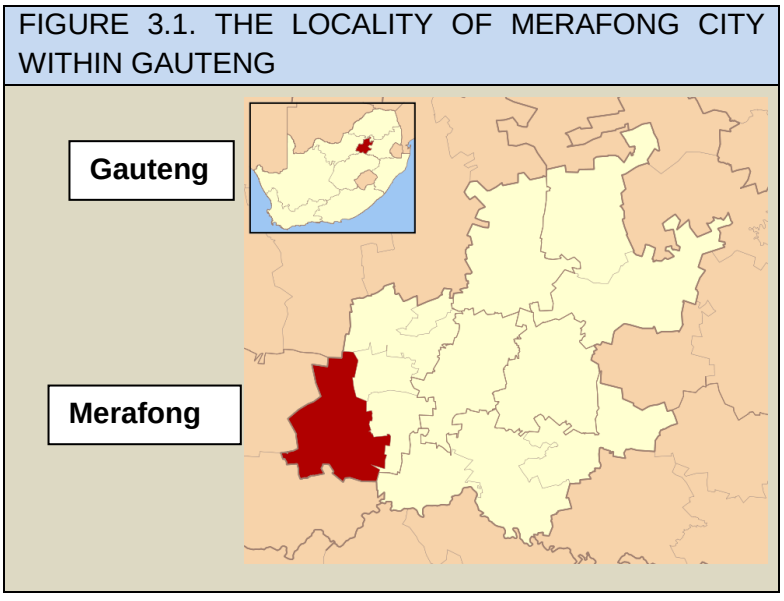
3. THE STUDY AREA

Merafong City Local Municipality (referred to as the Municipal Area) is located in the southwestern extreme of the Gauteng Province (See Figure 3.1). The municipal area is bordered by JB Marks municipality (North West Province) in the West and Mogale-, Randfontein- and Westonaria municipalities in the north and east. To an extent, the study area is peripherally located within Gauteng in terms of access to core employment opportunities found within the core of the Gauteng City Region (Johannesburg, Pretoria and Ekurhuleni). This simultaneously puts the municipal area at a spatial advantage as well as disadvantage which is discussed in the following sections. The study area can be divided into 3 broadly defined areas:

- The north which contains high value agricultural land and contains the most populous urban centres in the municipality, namely the Carletonville-Khutsong-Welverdiend urban area, with Carletonville being the most significant service centre.
- The central mining belt is characterised by intensive mining activities with a scattered pattern of small mining settlements and is physically dominated by the Gatsrand mountainous formations.
- The southern area contains the relatively wealthier town of Fochville and the surrounding townships of Kokosi and Greenspark.

Merafong's historical development is closely knit with the discovery of rich gold deposits. Fochville is the oldest town in the area, and was declared a town in 1951. The town Carletonville was named after Guy Carleton Jones, an engineer from the Gold Fields Ltd mining company, who played a prominent role in the discovery of the West Wits gold field. Carletonville was proclaimed in 1948 and attained Town Council Status on 1 July 1959. Wedela is situated between Western Deep Levels and Elandsrand mine. Wedela was established as a mining village in December 1978 by Harry Oppenheimer, and municipal status was granted to the town on 1 January 1990. Closely associated with Fochville and Carletonville are the towns of Khutsong, Kokosi, Greenspark, Welverdiend, and Blybank. (Wikipedia)

FIGURE 3.1. THE LOCALITY OF MERAFONG CITY WITHIN GAUTENG



4. SPATIAL ANALYSIS & SYNTHESIS

The spatial analysis was conducted in terms of three themes, Biophysical, Socio-Economic and Built Environment. Each theme is divided into subthemes and analysis is done from regional level down to local level and includes a very short summary with challenges, strengths and opportunities relevant to the specific sub-theme.

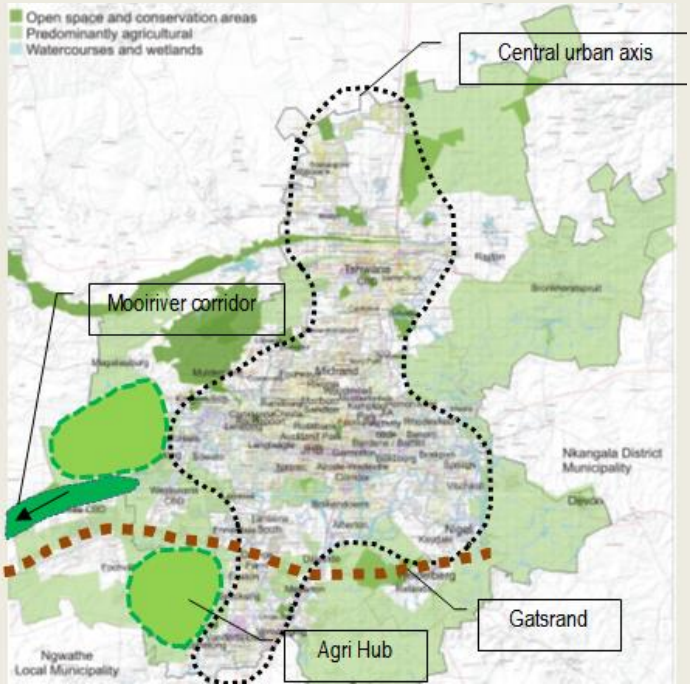
Biophysical Analysis

4.1 BROADER REGIONAL OVERVIEW

Located in the south west of Gauteng, Merafong is influenced by broader natural features that are present on a provincial scale. Gauteng is dominated by grassland. Intermittent savannah and occasional patches of forest also occur and are associated with ridges. Mountainous formations traverse the southern parts of Gauteng in an east-west direction, called the Suikerbosrand to the east and Gatsrand to the west. These formations are of major ecological and tourism significance. The western portions of the province generally have more natural and agricultural land remaining and contain 2 Agricultural Hubs namely the Emfuleni and West Rand hubs. Geologically the most significant aspect is the occurrence of dolomite especially in the western and central northern areas, as well as the south east of the province. The valleys of the Mooiriver (Vaal watershed) and its tributary the Wonderfonteinspruit form a major biodiversity corridor that stretches from the western part of Gauteng into the North West Province and includes 2 provincial nature reserves namely, Abe Bailey (Gauteng) and Boskop Dam (North West), and also the proposed Highveld Park (North West). This eco-corridor has major significance for the protection of the grassland biome in the northern Highveld region.

Synthesis

- Western Gauteng predominantly grassland. Savannah and Northern Highveld Afrotemperate Forest associated with ridges.
- Gatsrand is a significant topographical feature, ecological and tourism corridor.
- North-South urban core axis, west and east → less urbanised.
- 2 Agri-hubs in the west.
- Dolomite prevalent in many parts of the province including northern parts of the West Rand.
- Eco-corridor links Gauteng and North West in southern West Rand.



4.2 AGRICULTURE (NON-ECONOMIC FACTORS)

From a biophysical perspective, Merafong is well endowed with proportionately large areas of high value agricultural land. These favourable conditions occur predominantly north of Carletonville and east and south west of Fochville with rocky outcrops and ridges lowering the workability of soil in the central and south central areas. These rocky areas have mostly moderately high grazing capacities. Currently many areas that were cultivated previously are now lying fallow, particularly areas west of Fochville. These areas have the potential to be productive again in future. Mining activities and mine ownership of land has reduced the potential areas under cultivation and grazing. In addition to this water and soil has been contaminated in some places which will inhibit agricultural production in the future.

Legacy challenges

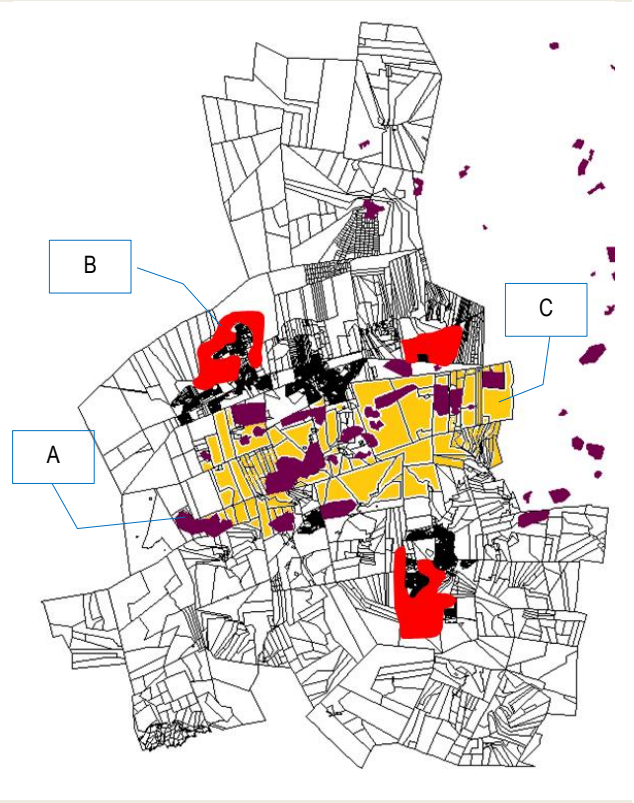
- Lack of control over mining pollution (A).
- De-watering of Bank and Oberholzer underground dolomitic water compartments
- No protection of valuable agricultural land resulting in scattered mosaic in places

Current challenges

- Increasing water demand
- Unsustainable farming practices on prime agricultural land around previously disadvantaged areas, e.g. over grazing and subsistence farming (B).
- Trade-off: Potential agricultural land lost due to mining (C).

Future challenges

- Climate change.
    - Increased frequency of disasters
    - Increased rainfall over a shorter rain season
    - Changes in vegetation, e.g. bush encroachment
    - Shifts in biome and veld ranges
    - Incorrect farming practices can increase climate change pressure on the environment.
- Rehabilitation of mine land for agricultural use and dealing with contaminated areas that cannot be rehabilitated sufficiently.



Current strengths

- Large tracts of high value agricultural land in Merafong
- Underground aquifer with vast amounts of water
- Moderately high grazing capacity in areas that cannot be cultivated

Opportunities

Refer to economic analysis.

4.3 GEOLOGY, HYDROLOGY AND TOPOGRAPHY

The most significant geological and hydrological factor in Merafong is the prevalence of dolomitic rock north of the Gatsrand. A number of settlements were developed on dolomite before the adverse effects thereof was well understood. Associated infrastructure was not designed to mitigate the risks. New technology and techniques have made mitigation much more successful although there are cost implications. Merafong and some of its neighbours are underlain by a vast dolomitic aquifer that could potentially be utilised once more is known about its geophysical properties. Mining has made its mark on the geophysical environment. Merafong hosts the deepest mines in the world and as mining continues deeper, changes in seismic activity are likely. Mine closures in the future could also have a big impact on underground and surface water. Apart from dolomitic constraints, the geophysical environment is generally favourable for urban development and dolomitic risks can be mitigated. Property damage due to dolomite has been minimal.

Legacy challenges

- Settlements located on dolomitically unsuitable land (A). Carletonville, Khutsong and Welverdiend.
- Infrastructure in many areas is not suitable to mitigate dolomitic risks.
- Some erven in Welverdiend are affected by a floodline (B) .

Current challenges

- Lack of information on dolomitic conditions of public and private land (C) .
- The costs associated with testing and mitigation of dolomitic land is escalating rapidly.
- Mine discharges of water into streams and rivers is highly variable and could cause fluctuations in water quality and increase erosion.

Future challenges

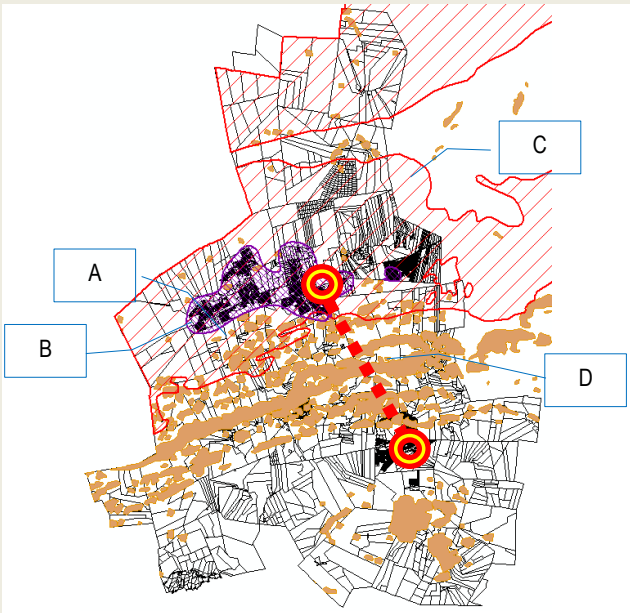
- The topographical barriers between Carletonville and Fochville will partially inhibit spatial integration (D) .
- The geohydrology will be affected by future mine closures.
- Deeper mining could cause greater seismic instability leading to stronger earthquakes.

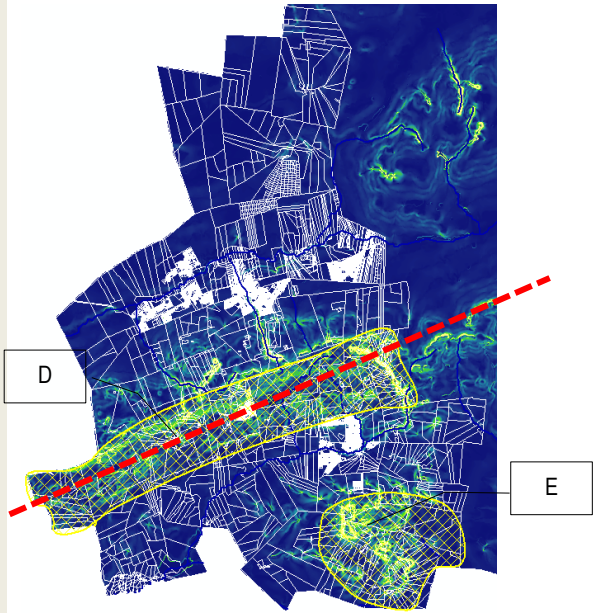
Current strengths

- The topography in the central and south eastern parts of Merafong has created aesthetically appealing landscapes (D). The N12 Treasure Corridor runs through a scenic area (E).
- Generally slopes in the urban development areas are well suited for infrastructure provision.
- Aside from dolomite, most areas where urban development is suitable have very few geotechnical constraints.

Opportunities

Refer to economic analysis.





4.4 BIODIVERSITY AND ECOSYSTEMS

Legacy challenges

- Invasive Alien Plants associated with mining tailing storage facilities and villages. (A).
- Pollution of soils and water associated with mining.

Current challenges

- Water pollution from urban runoff, agriculture, mining and municipal sewage spills. (B)
- Some veld types are not sufficiently protected, especially grassland types.
- Moderate development pressure on high value agricultural land and valuable grassland.
- Habitat over-utilisation and destruction near previously disadvantaged areas. (C).

Future challenges

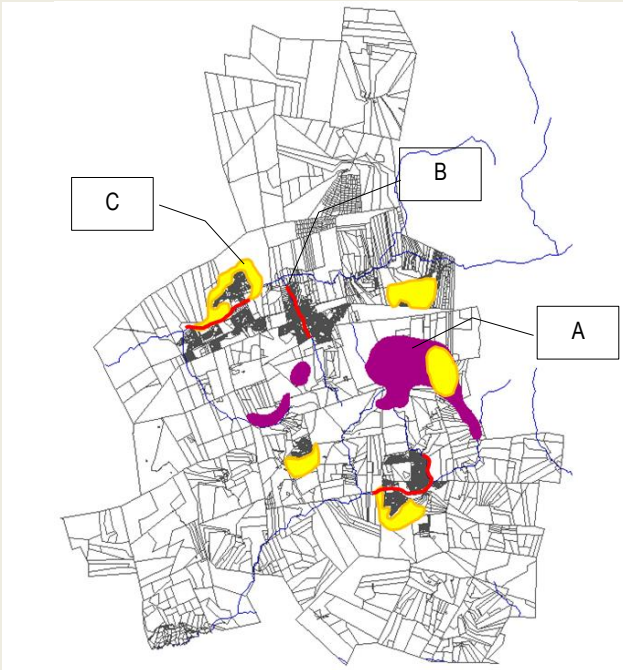
- Avoidance of creating isolated pockets of natural vegetation.
- Migration of animal and plant species due to climate change.
- Aquatic ecosystem destruction due to decanting from closed mine shafts.

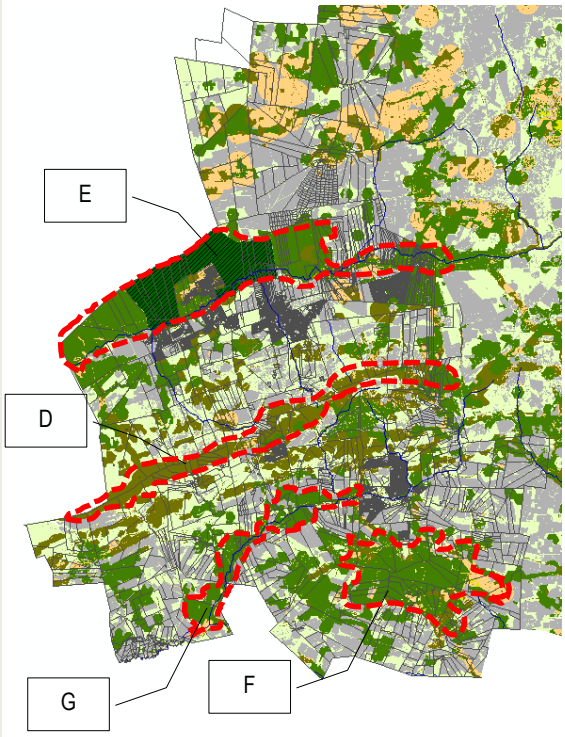
Current strengths

- Variety of different habitats within 3 biomes and 6 veld types.
- Significant amount of land lies untransformed or only partially transformed.
- Existing provincial nature reserve (Abe Bailey) within a major ecological corridor and Critical Biodiversity Area.
- Mining ownership has left some potential areas for conservation undisturbed.

Opportunities

- Protect existing eco-corridors and hotspots through the establishment of conservancies and managing development in the following areas:
  - Gatsrand (D)
  - Wonderfonteinspruit-Mooiriver (E)
  - Losberg and Klein Losberg (F)
  - Loopspruit (G)
- Promote the creation and protection of micro-scale corridors to avoid isolated pockets of biodiversity by acting as Ecological Support Areas.





4.5 THE REGIONAL SPACE ECONOMY

Merafong forms part of the Gauteng Global City Region often referred to as the GCR. The GCR is a system of networks created by the interaction of numerous urban nodes that function in an integrated manner. Each node (City/town) fulfils a role and influences and is influenced by the other nodes in the system, forming an interdependent system that has a global influence. Spatially the GCR is characterised by a central core area that contains the metropolitan cities of Johannesburg, Ekurhuleni and Pretoria. Nodes (Towns and cities) in the GCR have their origins in mining, industry or as agricultural central places. Through the evolutionary development of the GCR most of these nodes have changed their functions, adapting to economic changes. Upon examination of spatial patterns of settlement within the GCR a concentric pattern emerges with the large metros at the core. On the outer ring are the secondary cities that are very strongly linked to the city region. Between the inner and outer rings there is another ring of smaller towns among which the Merafong urban areas can be found. Interestingly the nodes within this intermediate ring have generally under performed and in most cases have retained their original urban functions such as mining in the case of Merafong. The regional core historically and also the secondary cities more recently have drained the intermediate ring of investment, although the proximity to national routes has benefited many of these towns to a degree in recent years. Over spilling of urban growth from Johannesburg into the West Rand has started taking place in Westonaria and Krugersdorp. In the case of Westonaria it is to accommodate subsidised housing and in the case of Krugersdorp it is a result of high income polarisation reversal. This trend will continue in the future and affect more areas further away from the core. It simultaneously presents challenges and offers opportunities which need to be examined. Merafong is located along 3 corridors traversing the region namely the N12 (Potchefstroom-Johannesburg), N14 (Pretoria – North West, Trans Kgalagadi) and the R 500 (Rustenburg – Vaal Triangle) and has strong linkages with Potchefstroom in the North West that provides manufactured goods for mining, higher order professional services, retail as well as research and educational functions.

Legacy challenges

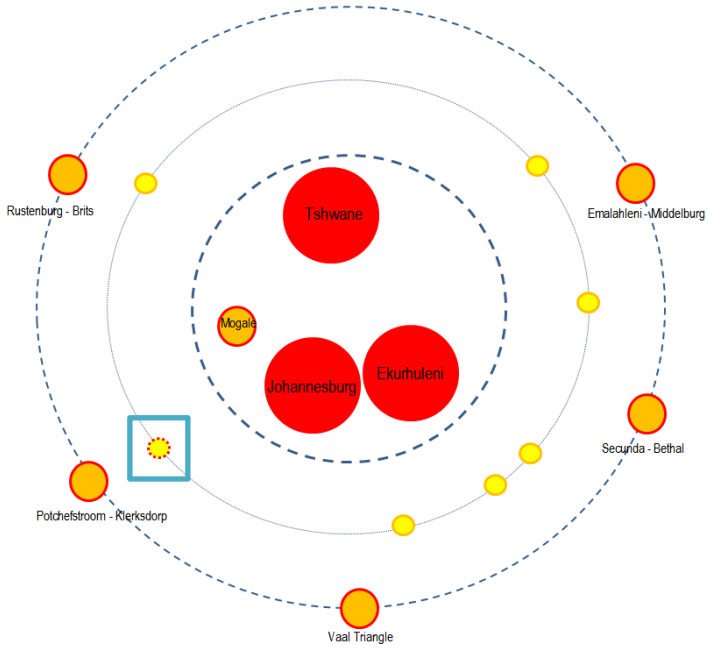
- Merafong is drowned out by larger more well-known centres
- Development of an outer band of secondary cities caused a less active development inner ring within the GCR consisting mostly of resource related economies (Mining and agriculture) with weakly developed urban nodes.

Current challenges

- West Rand as a sub-region of the GCR is underperforming in terms of economic growth.
- Many nodes in the West Rand are less connected to the core due to transport connectivity gaps.
- Stepwise migration of destitute rural population is taking place at a rapid pace, outgrowing the capacity of the labour market and municipal services to accommodate them.
- Significant proportion of the West Rand economy falls within lagging and declining sectors, e.g. mining, metal related industry.

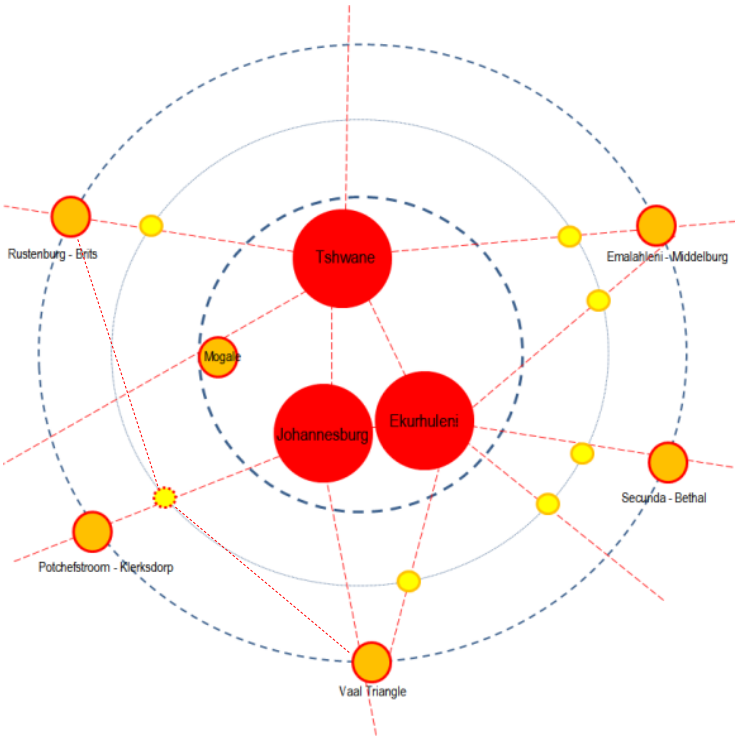
Future challenges

- Increased spatial marginalisation of the West Rand and especially Merafong.
- Mining as main base economic driver of the West Rand will have lost its significance and cause instability if it is not replaced with other basic drivers in the near future.
- Parts of the West Rand and specifically



Merafong could end up exclusively as dormitory areas for workers commuting to the Gauteng core if diversification of the economy does not take place.

- Over spilling from Johannesburg into the West Rand has started taking place in Westonaria and Krugersdorp. In future the demand for land from within the core will increasingly affect the West Rand.

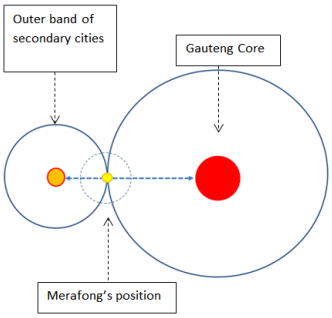


Current strengths

- Position on the N12, N14 and R 500
- Proximity to the Gauteng core without experiencing negative externalities of the core.

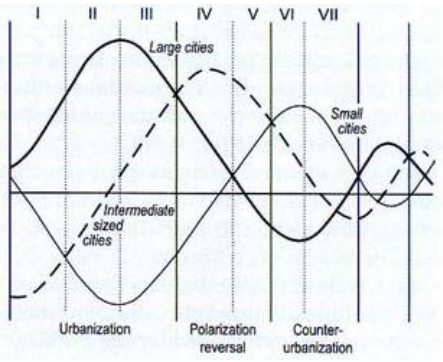
Opportunities

- Utilise transport corridors to better integrate with the Gauteng core, e.g. road, rail and petroleum pipe connections.
- Better integration with and utilisation of opportunities related to the N12, N14, R 500 and the 2 major railway lines in Merafong.
- Attract investors that are averse to the negative externalities of the Gauteng core (High land prices, congestion, pollution, crime, grime).
- Theoretically (In terms of Differential Urbanisation) the future holds good growth opportunities due to overspill effects from the core.
- Develop Merafong into, and market as a rural setting with amenities and within reach of the 'big city'.
- Rather than competing with neighbours in the GCR, develop unique opportunities related to leading and potential leading sectors.
- Gauteng-Cape Town heavy haul rail will traverse West Rand in future.



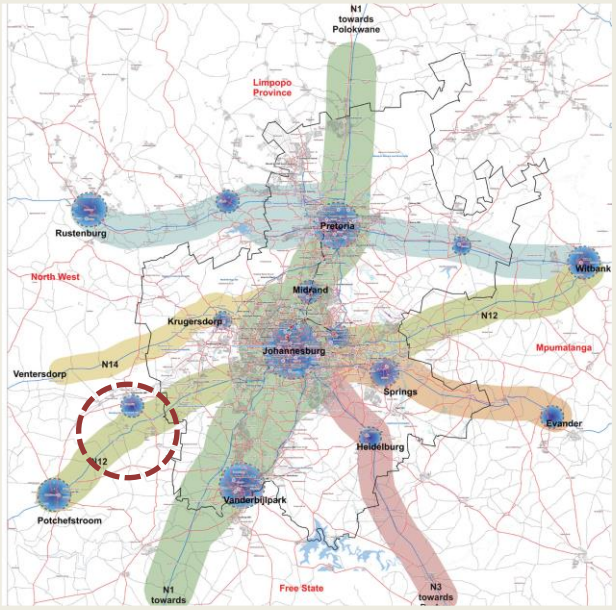
Exploit position on growing freight corridors.

The timing for development is improving due to the start of Polarisation Reversal.

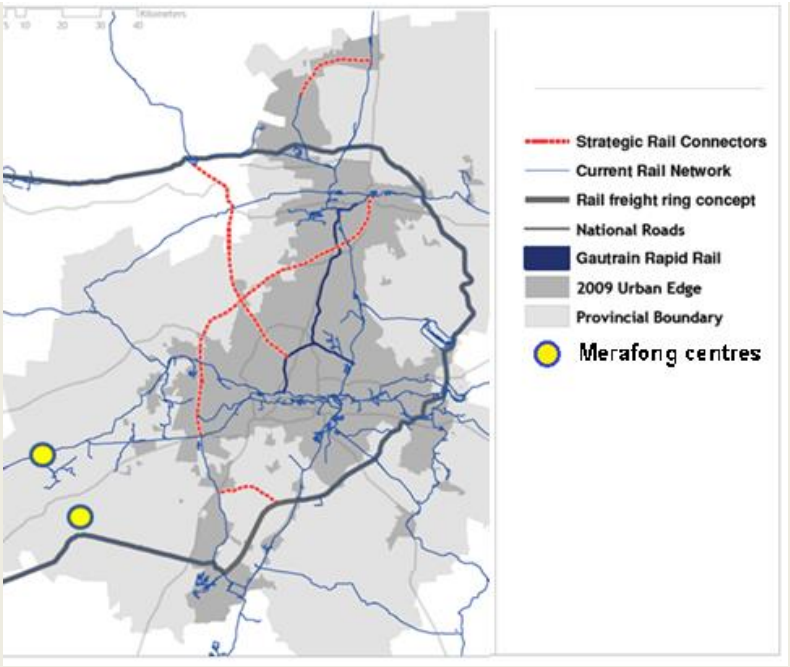


4.6 PROVINCIAL AND REGIONAL MOBILITY PATTERNS

Gauteng province is highly connected with major national routes converging on the province from all areas in South Africa and beyond. The West Rand is connected to the rest of the Gauteng City Region (GCR) on an east-west axis through the N12 and the N14 and the north-south axis through the R28 and the R500. Through the movement network the West Rand has access to the GCR core as well as the major centres surrounding it including Rustenburg-Brits, Potchefstroom-Klerksdorp and the Vaal Triangle. The N12 and N14 have been neglected somewhat and have not been upgraded to the level of other similar routes such as the N17. Urban centres in Merafong link up with their West Rand counterparts mainly through the N12 and N14, but also the R559. These links are adequate, however they only perform transport functions and do not have major development corridor potential from an intra-regional perspective, although the N12 has major potential as a corridor from an inter-regional perspective.



Regionally Merafong forms part of the rail network with 2 railway lines traversing the municipality. A Transnet Freight Rail (TFR) line (The Figure) linking Potchefstroom-Merafong-Johannesburg carrying freight as well as passenger services traverses the north of Merafong. A TFR line (B in the Figure) links Potchefstroom-Merafong-Vereeniging. The TFR line from Vereeniging has been designated for an upgrade to a heavy haul freight line in 2022 and will become the main freight link between Cape Town and Gauteng. This line also connects with the Trans Kgalagadi Corridor (Through Sentrarand) that links Namibia and Botswana with South Africa. Currently there are 3 railway stations in Merafong, namely Welverdiend, Oberholzer and Fochville/Losberg. Oberholzer is the only operational station; however the Passenger Rail Association of South Africa (PRASA) is investigating the feasibility of building a new station in Khutsong for commuters which has proven viable so far, although the study is not completed.



Short summary of road and rail connections to and from Merafong		
Origin/Destination	**Passenger/Commuter**	**Business/Freight**
Johannesburg	N12,PR	N12,FR
Pretoria	N14, PR	N14, FR
Ekurhuleni	N12, PR	N12, FR
Krugersdorp	N14	N14, FR
Randfontein	R559	R559, FR
Westonaria	R559, N12, PR	R559, N12, FR
Vereeniging	R54	R54, FR
Potchefstroom	N12, PR	N12, FR
Rustenburg	R500	R500, FR
Free State	R500, N12	R500, N12
Limpopo	R500, N12, N14	R500,N12,N14,FR
Botswana	N14	N14, FR
Namibia	N14, N12	N14, N12, FR
PR=Passenger Rail, FR=Freight Rail		

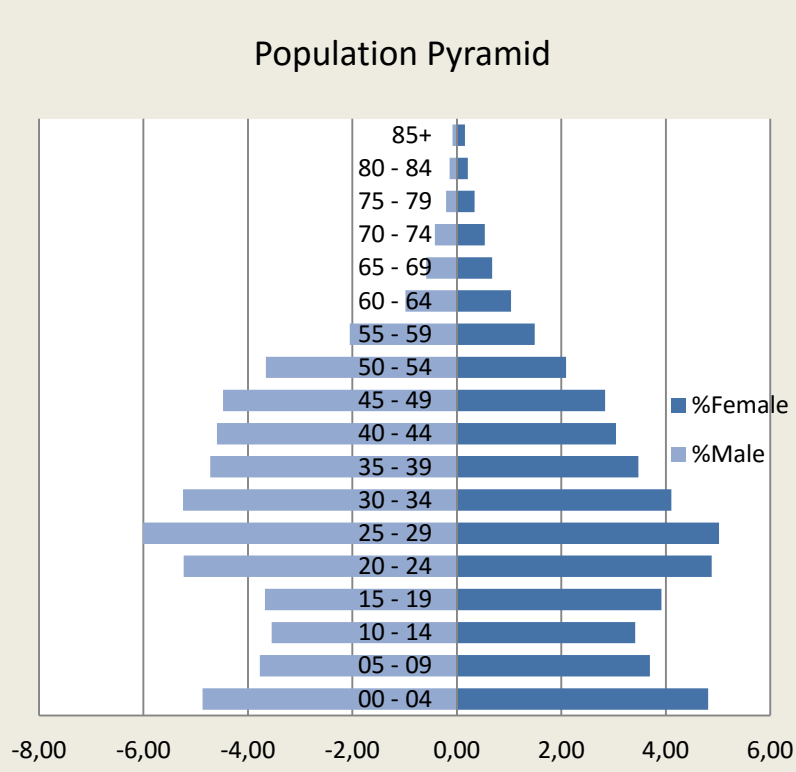
4.7 SETTLEMENT PATTERNS

The patterns of settlement in the West Rand was dictated by the presence of gold and as such all major settlements can be found in a broad band stretching through the central parts of the district and a temporal line of establishment can be traced from east to west as gold exploration and mining moved from east to west.

Urban ranking, roles and functions within the West Rand			
Town/City	**Hierarchical Ranking**	**Role within the GCR**	**Functions that support roles**
Krugersdorp	1	Emerging GCR core expansion, Emerging as major industrial area	High order retail + service, air freight related industrial expansion
Randfontein	2	Regional agro-processing hub	Aggregation and processing of produce
Carletonville	3	Gold mining and agri service centre	Retail, service and industrial mostly in support of mining
Fochville	4	Gold mining and agri service centre	Retail, service, high income residence and industrial mostly in support of mining
Westonaria	5	Gold mining service centre	Retail and service mostly in support of mining

Urban ranking, roles and functions within the Merafong			
Town	**Ranking**	**Role within Merafong**	**Functions that support roles**
Carletonville	1	Higher order urban centre	Dominates with regard to retail, service, industrial & institutional functions
Fochville	2	Specialised services and residential	Significant quaternary sector, high income residential
Khutsong	3	Dormitory township	Dominated by low income residential
Welverdiend	4	Lower order urban centre and mid income dormitory town	Middle income dominated with small scale retail, service and industrial
Kokosi	5	Dormitory township	Dominated by low income residential
Wedela	6	Mining dormitory township	Dominated by mine labour residences
Blybank	7	Mining dormitory township	Dominated by mine labour residences
Greenspark	8	Dormitory township	Dominated by low income residential

4.8 DEMOGRAPHY AND SOCIAL DEVELOPMENT



According to the Stats SA census 2011 the population of Merafong is 197 520. This is 1.6% of the total Gauteng population. Between 2001 and 2011 the Merafong population has declined by 2.4% from 215 868. This population decline is mainly attributable to mine labourers being laid off and the closure of some mine shafts. Some migrant labourers have moved away after losing their jobs. In contrast to this the population of Gauteng has experienced significant growth reaching over 12 million. Figure (Left) illustrates the population pyramid of Merafong. The pyramid is indicative of a constrictive (Slow growth) profile where most of the population is concentrated in the economically active population group and is male dominated. The Merafong population has a gender ratio of 118.59 males per 100 females. This has decreased from a ratio of 132 males per 100 females in 2001. Most of the population falls within the younger stages of the economically active age group. This implies that youth unemployment is high.

INDICATOR	2001	2011	
Total population	210,481	197,520	▼
Young (0-14)	22,4%	24,1%	▲
Working Age (15-64)	72,5%	72,5%	▶
Elderly (65+)	2,4%	3,4%	▲
Dependency ratio	33%	37,9	▲
Sex ratio	135,1	118,6	▼
Unemployment rate	28,1%	27,2%	▼
Youth unemployment rate	39,9%	37,8%	▼
No schooling aged 20+	12,9%	6,5%	▼
Higher education aged 20+	4,4%	7,1%	▲
Number of households	56,336	66,624	▲
Average household size	2,1	2,7	▲
Female headed households	24,6%	29,4%	▲
Formal dwellings	67,7%	74,7%	▲
Housing owned/paying off	36,7%	29,8%	▼
Flush toilet connected	83%	81%	▼
Weekly refuse removal	68,2%	74,9%	▲
Piped water inside dwelling	29,7%	52,9%	▲
Electricity for lighting	80,1%	82,8%	▲

Although the population has declined, the number of households has increased during the same period from 56 336 to 66 623. The increase in the number of households has concurrently reduced the average size of households to 2.97 persons per household. This can mainly be attributed to the significant presence of migrant labourers from rural areas such as parts of the Eastern Cape. These men work in the mines and send a large portion of their income back home to their families. Another factor which is having an effect around the country is the greater availability of housing stock which enables extended family members to move into different houses and form nuclear family units, where extended families used to live under one roof in many cases.

Merafong is characterised by the presence of many different cultures and languages as illustrated by the differing language choices. The variety of languages can be attributed to migrant labourers, specifically IsiXhosa speakers from the Eastern Cape. The other three prominent languages namely Setswana, Sesotho and Afrikaans are more characteristic of this region.

There has been a general improvement in socio-economic conditions however the progress is generally slow and some indicators have deteriorated.

Legacy challenges

- Separate social development during apartheid causing a lagging effect amongst the previously disadvantaged.

Current challenges

- Decreasing population
- Increasing dependence ratio
- High unemployment especially amongst the youth
- In-migration of low education job seekers and out-migration of skilled labour in Merafong.

Future challenges

- High probability of mass layoffs in the mining sector in the long term which will result in high unemployment and social decay.
- The current lowering in unemployment and youth unemployment is not sustainable in the long term.
- Levels of dependency are increasing.

Current strengths

- Large pool of semi-skilled and technically skilled labour.
- Improvements in living conditions are discernible.
- The dependency ratio is relatively low.
- The gender ratio is improving which will lead to more sustainable family units.

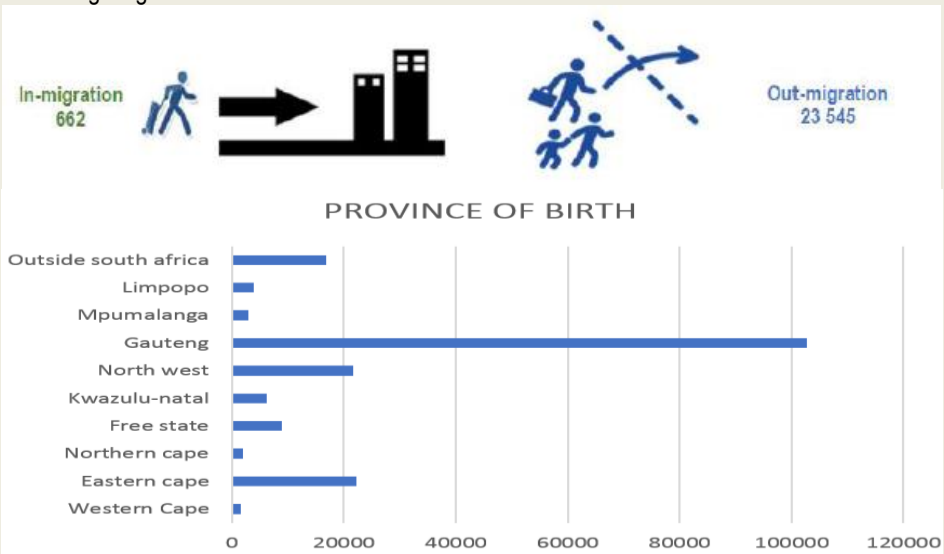
Opportunities

- Invest in infrastructure related to sectors that require technical knowledge such as agriculture and manufacturing in order to retain the technical skills base.
- Build on the gains made in terms of human development by providing more social development opportunities. Focus on allowing people to help themselves by providing resources for them to start Community Based Organisations and micro enterprises instead of trying to do it for them.
- Dependency levels are low, however it is increasing. This opportunity should be utilised and basic services and social 'buffers' should be developed to face increasing levels of dependency.

4.8 MIGRATION AND RESIDENTIAL MOBILITY

For the purpose of this document migration is defined as a process of population movement into and/or out of the Merafong municipal area. Merafong is subject to a relatively complex set of migratory patterns and these differ from most other municipalities in Gauteng. Between 2011 and 2017 about 23 545 people migrated out of Merafong, mostly to other parts of Gauteng. As opposed to this only about 662 people moved in to the area leaving Merafong with a negative net migration of about 23 000. A significant proportion of the population are migrant labourers mostly from the Eastern Cape, North West and neighbouring countries.

The population growth projections are calculated from Stats SA and municipal data with extrapolations performed based on expected trends per urban area. Between 2019 and 2024 the Merafong City population is expected to decline from 185 240 to 179 659. It should be noted that many factors could change the actual population trend such as an unexpected mine closure. The central mining belt has in recent years experienced significant population reductions whilst the northern and southern urban areas have experienced moderate increases. The population decline is expected to bottom out in the long run after the economy has entered a post-mining stage.



POPULATION PROJECTION		Population 2011	2019 Projection	2024 Projection
NORTHERN URBAN AREA	Carletonville	26 486	26 950	29 800
	Welverdiend	2 706	2 801	2 901
	Blybank	1 889	4 750	3 250
	Khutsong (North)	62 457	37 630	28 519
	Khutsong South		21 907	26 317
	Elijah Barayi	0	1200	4 953
	Northern Total	93 538	95 238	95 740
SOUTHERN URBAN AREA	Fochville	9 504	9 837	10 811
	Kokosi	26 400	26 400	25 576
	Greenspark	2 586	3 312	3 362
	Wedela	17 931	18 245	17 995
	Losberg	0	0	0
	Southern Total	56 421	57 794	57 744
MINING BELT	Mining Belt Total	40 341	26 721	22 044
PROCLAIMED URBAN TOTAL		149 970	153 390	153 659
NON-URBAN		7 220	4 860	4 131
GRAND TOTAL		**197 520**	**185 240**	**179 659**

Legacy challenges

- Migrant labourers. Some have families back home, others bring families with and some have families both in Merafong and back home.

Current challenges

- Decreasing population
- Many workers do not leave after being retrenshed at mines, especially foreigners. Housing options for foreigners are limited. Some unemployed former miners resort to illegal mining.
- A significant influx of foreign nationals that are not refugees is descernable. Many of these people establish micro enterprises that operate within networks of support. These networks push south africans out of the market.
- In-migration of low education job seekers and out-migration of skilled labour in Merafong.

Future challenges

- High probability of mass layoffs in the mining sector in the long term which will result in further out migration unless economic development plans succeed.
- If the current trend continues, Merafong will host a proportionately very high number of foreign nationals. Provision should be made for them in future planning. Guidance from national and provincial government will be crucial.
- A Blyvooruitzicht scenario (Mine closure without rehabilitation or formalisation) should be avaided at all cost when dealing with future mine closures.

Current strengths

- Large pool of semi-skilled and technically skilled labour. Re-skilling of mine labourers to move into other sectors is important.

Opportunities

- Invest in infrastructure related to sectors that require technical knowledge such as agriculture and manufacturing in order to retain the technical skills base.
- Build on the gains made in terms of human development by providing more social development opportunities. Focus on allowing people to help themselves by providing resources for them to start Community Based Organisations and micro enterprises instead of trying to do it for them.

4.9 AGRICULTURE AND FORESTRY

The agricultural sector has historically been neglected in Merafong. Vast areas of land were bought up by the Far West Rand Dolomitic Water Association (FWRDWA) to compensate for dewatering dolomitic compartments and drying up boreholes in some areas. This land has not been utilised and most of it is prime dry land for agriculture. Recently the agricultural sector in Merafong has experience significant growth and has outperformed SA and the West Rand. Merafong has significant tracts of high value agricultural land (A), possible proportionately the most of any Gauteng municipality. Many opportunities for agro-processing exist. Merafong has a very small forestry sector related to the mining sector. A few thousand hectares are planted up with Eucalyptus species that provide wood for underground supports (B).

Legacy challenges

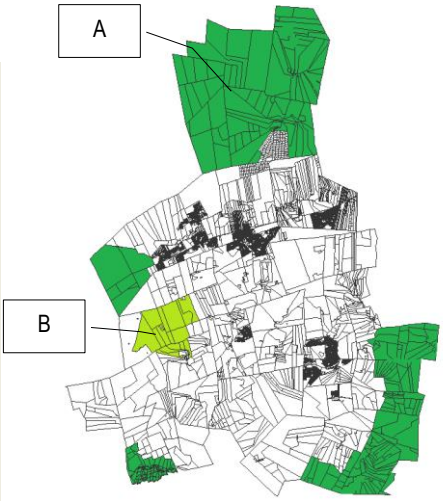
- Lack of government focus and support for agriculture.

Current challenges

- Uncertainty over government policy changes is causing an investment slump in private infrastructure.

Future challenges

- Climate change may cause unforeseen changes in weather patterns, soil conditions, disaster frequencies and seasonal changes.
- Land use conflicts where agriculture loses out unless valuable land is protected.

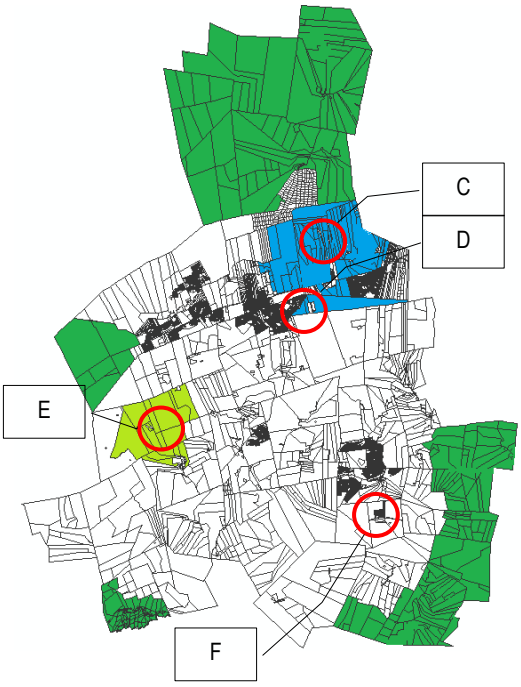


Current strengths

- There are vast areas of unutilised and underutilised agricultural land in Merafong which can contribute to increased production and also bring emerging farmers into the sector.
- Most of the decanted mine water sources in Merafong are completely safe for irrigation and treated waste water from municipal sources could be utilised for non-human consumption produce.
- The locality of Merafong within the GCR is highly favourable for agricultural production and agro-processing.

Opportunities

- Land belonging to the FWRDWA, north east of Carletonville can be utilised for intensive agriculture and/or forestry (C).
- FWRDWA land directly adjacent to the Carletonville industrial area (Ext 6 and 14) can be utilised in support of agro-processing (D).
- A proposed bio-energy project based on agro-processing will offer opportunities for high intensity/industrial scale agriculture such as cattle feedlots and floriculture (D).
- Existing Eucalyptus plantations can be expanded and new value chains developed such as bee husbandry, paper and pulp, bio-energy and essential oils (E).
- Existing large scale piggeries can be expanded and vertical integration could be introduced with infrastructure available in either Losberg (F) or with a bioenergy component in Carletonville (D).
- Opportunities exist for the development of bio-energy and biofuel value chains with large tracts of land, industrial infrastructure and co-digestion opportunities available. Agro-ecological practices should be considered.
- Large tracts of contaminated land can be utilised for energy crops related to the proposed bio-energy project.



4.10 MINING

Gold mining is the primary base economic driver in Merafong. It has dominated the economy for more than half a century (A). Unfortunately the shallower gold reserves have been depleted and this has resulted in some shafts being closed. Significant reserves remain, however they are located deeper beneath ground level. This has resulted in mining reaching depths greater than anywhere else globally. The mining industry has reached a point where rising input costs such as labour and energy are forcing new approaches. The biggest change in the long term will be the shift towards automation. The introduction of automation will have positive and negative effects on the economy. Lower skilled job losses on a large scale are likely, which will result in a difficult socio-economic transition for Merafong characterised by high unemployment, public unrest, high crime rates and eventual large scale emigration. However automation will also create new economic opportunities, specifically in manufacturing and advanced services. More gold reserves exist to the west and the Potchefstroom gold field is currently being explored (B). Improvements in technological efficiency and the global gold price will determine when this new gold field will be mined. Given the amount of resources that still remain and the resources that lie unexploited, mining will continue for many decades, although not in the manner we have become accustomed to. Therefore it is of great importance to adapt to change and utilise the existing opportunities in mining and expand into other sectors in order to build the foundations of a new economy.

<u>Legacy challenges</u>

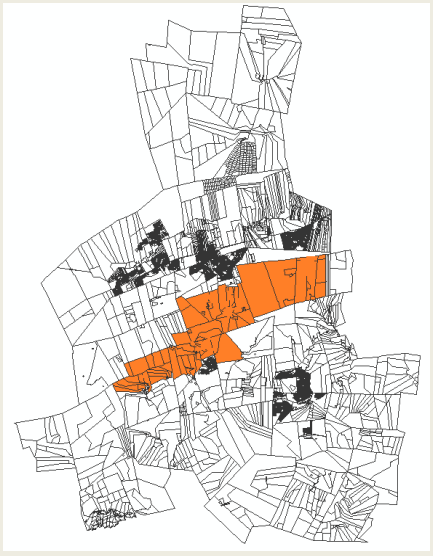
- Intensive mining has depleted the 'easy' gold reserves.
- A lack of control has led to inefficient and scattered mine settlements and the mushrooming of informal settlements next to mine shafts. Mining companies are struggling to deal with this problem.

<u>Current challenges</u>

- The proliferation of informal settlements associated with mining is a major concern.
- Soil and water pollution coupled with

<u>Future challenges</u>

- Dealing with mining wastelands after mining has ceased.
- Developing new resources in a sustainable manner so as not to make the same mistakes as in the past.
- Decanting water from abandoned mines without polluting it.

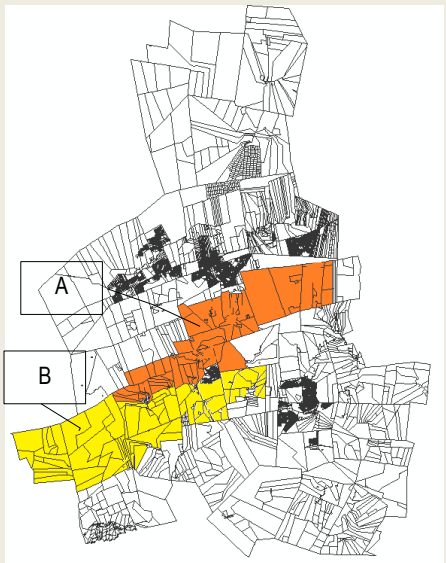


<u>Current strengths</u>

- Merafong is the most active gold mining area in the country and new reserves could still be exploited.
- Business, institutional and physical infrastructure exists to support the development of new reserves.

<u>Opportunities</u>

- Value chain opportunities related to mining can be acted upon including:
  - ✓ Mining automation and related industrial and service activities.
  - ✓ A mining technical education institution (Mining Centre of Excellence)
  - ✓ A mining supplier development focussing on manufacturing and industrial services.
- The adaptive re-use of mine infrastructure should be investigated.
- The purification of semi-potable mine water for residential, industrial and especially agricultural use.
- Deep mining opportunities in the Potchefstroom gold field (B). Will not be labour intensive - automated



4.11 MANUFACTURING AND SERVICE INDUSTRY

The industrial sector in Merafong is very strongly geared towards serving the mining industry. A few strong companies have emerged that have started operating at a global level because of the competitive advantage Merafong offers, namely Telegenix, Master Drilling and Bulk Mining Explosives. Despite the dominance of mining related industries, Merafong offers great investment value for many other types of industrial activities such as agro-processing, capital equipment manufacturing, metal fabrication, recycling, chemicals & polymers and bio-fuels. The most viable are agro-processing and bio-fuels given the vast tracts of unutilised prime agricultural land and bio-energy development opportunities. Merafong is well positioned for exporting food products and capital equipment to Botswana, Namibia and beyond via road or rail. Industrial land and infrastructure is available and with small targeted investments great capacity for expansion can be created. Merafong is strategically well located for industrial development given its position within the GCR space-economy and its links to the Northern Cape and SADC countries. Many countries in Africa are experiencing mining booms.

Legacy challenges

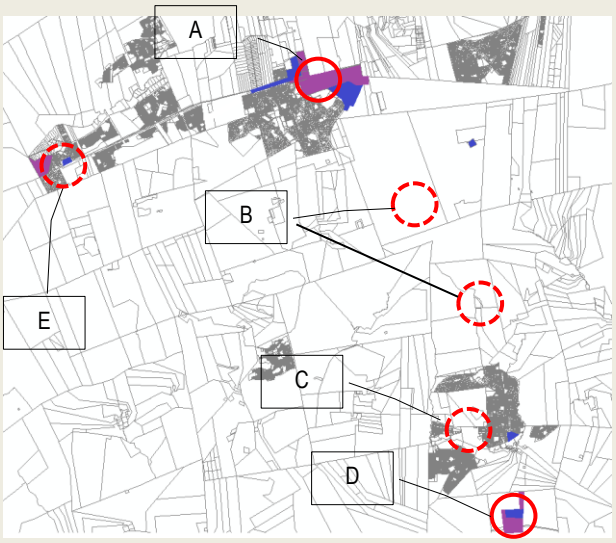
- Strong government focus only on mining at the expense of other sectors, even mining related manufacturing.
- Merafong's gold reserves were only more recently exploited and the gold mining towns to the east had industrialised in the meantime, producing goods and services without relocating westwards.

Current challenges

- Minor infrastructure deficiencies at Losberg and unproclaimed Cltv Ext 14.
- Lack of bulk infrastructure in the vicinity of strategic localities e.g. N12 node.
- Political unwillingness to dispose of property.
- Lack of incentives and marketing.

Future challenges

- Containing industrial encroachment into residential areas in Fochville.
- Servicing strategic development areas.



Current strengths

- Very affordable industrial land at between R20.00/m² to R100.00/m²
- Serviced stands available.
- Locality within the GCR and for export

Opportunities

- Develop bio-energy industrial park opportunity at Carletonville Ext 14 adjacent to unutilised agricultural land belonging to the FWRDWA (A).
- Link Oberholzer and Carletonville industrial nodes through the "Bloubos" and create new warehousing and light industry development with rail access by accessing mine railway line (A).
- Develop the N12 or West Driefontein-West Wits proposed node as a logistics node and mining supplier park to serve the mining industry in the region as well as the Platinum, Northern Cape and SADC mining regions (B).
- Light industrial between Fochville and Kokosi (C)
- Develop infrastructure at Losberg (D).
- Welverdiend:Mixed use,including light industrial (E)

4.12 UTILITIES AND CONSTRUCTION

The utilities and construction sector in Merafong is benefiting from significant investments in subsidised housing with more than 10 000 housing units constructed in recent years and about the same number planned in the near future. Private sector initiatives in the sector have decreased since the recession, however significant retail developments are currently underway with a total of about 25 000m² GLA under construction in Carletonville, Fochville and Kokosi. Some large scale affordable housing projects are also planned for the near future in Carletonville, Welverdiend and Kokosi. Infrastructure upgrading to accommodate growth is necessary at regular intervals. The construction of unapproved structures in Khutsong, Blybank, Carletonville, Wedela and Kokosi is becoming proliferous.

Legacy challenges

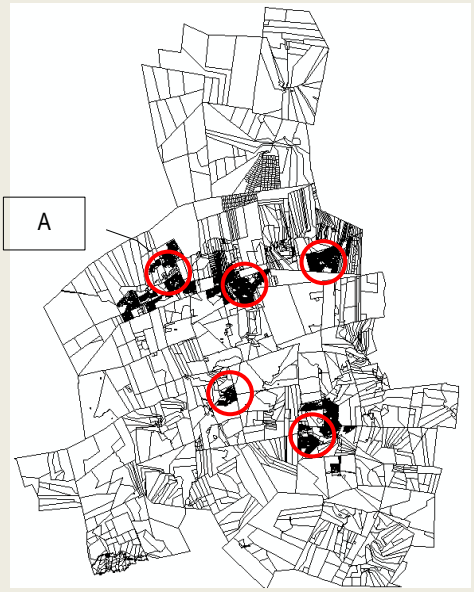
- A lack of economic diversity and growth has hampered the development of the construction sector.

Current challenges

- Illegal construction and the sporadic appearance of builders yards in residential areas (A).
- Stricter legislation related to energy conservation and mitigation of dolomite are escalating costs and increasing technical knowledge requirements.
- Lack of professional skills in Merafong related to the construction sector such as Engineers, Town Planners, Architects, Quantity Surveyors, Land Surveyors.
- Capacity constraints within the government sector to manage subsidised housing and public works projects.
- Municipal water losses cost millions. Lack of municipal infrastructure planning

Future challenges

- Regulating the construction of new buildings in all urban and rural areas of Merafong

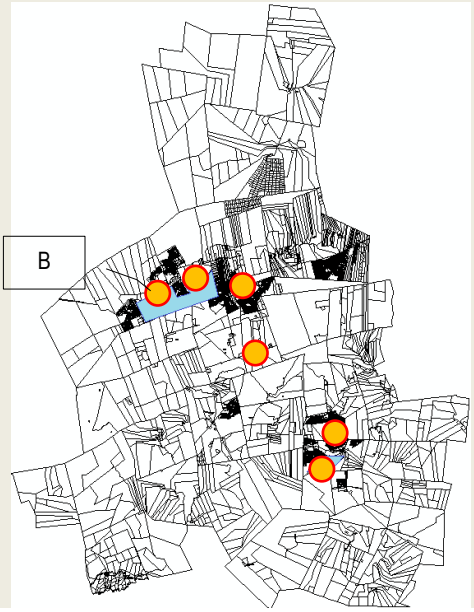


Current strengths

- Large scale public projects stimulate the sector and provide incubation conditions for small and micro enterprises to develop.

Opportunities

- Persistent backlogs in subsidised housing will ensure construction projects for decades to come in Khutsong, Khutsong South, Carletonville, West Wits, Fochville and Kokosi (B).
- Merafong should conduct geotechnical investigations on strategically located land such as the Carletonville CBD and new industrial areas to reduce development costs.
- Purify semi-potable water that is being decanted from Blyvooruitzicht for residential, industrial and agricultural uses.
- Develop a comprehensive infrastructure master plan aligned with spatial planning.



4.13 TRANSPORT AND COMMUNICATION

Merafong is relatively well connected to the GCR and other regions through road and rail links with airports not far away. There are relatively few activities taking place within this sector in Merafong however there has been a surge of interest lately with applications for fuel depots and filling stations. Merafong has a lack of warehousing as identified by the West Rand Industrial Development Strategy. The N14, R500 and especially the N12 has experienced increased freight volumes in recent years due to the development of mining in the Northern Cape and high economic growth in Potchefstroom which explains the surge in interest and investment.

Legacy challenges

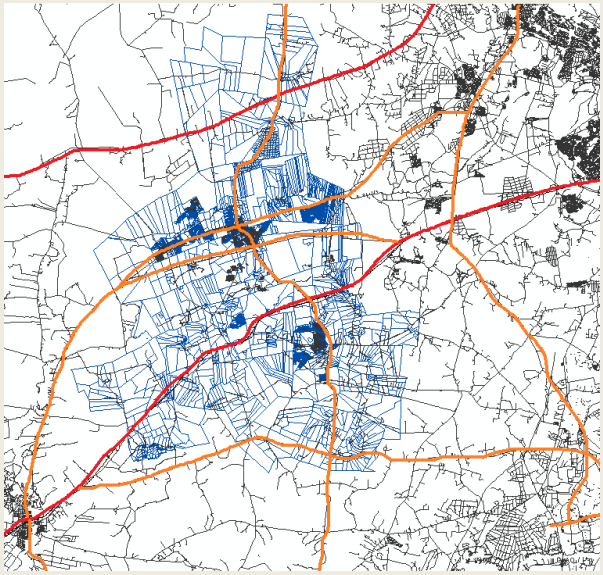
- Slow development in this sector mainly due to a lack of diversity in the local economy and the municipality's positioning relative to other urban centres within the GCR.
-

Current challenges

- Lack of warehousing to support industrial and agricultural production expansion.
- Lack of bulk infrastructure to support the development of the sector at its most strategic development location, namely the N12 node.
- Increasing traffic volumes on major routes.

Future challenges

- Congestion on the N12 and R501.

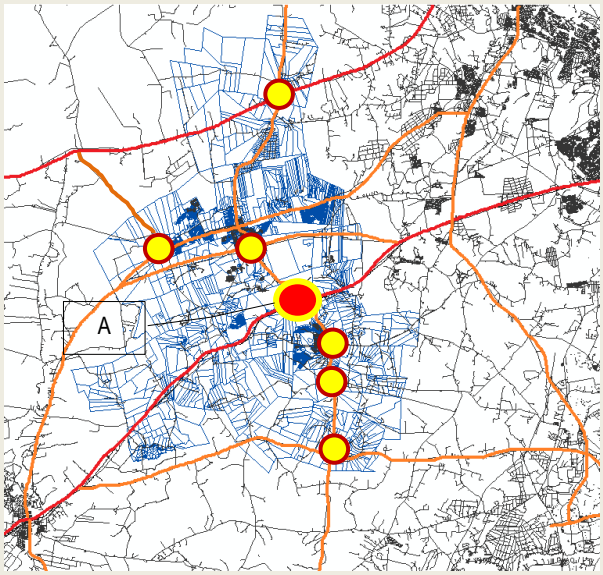


Current strengths

- Large grain silos serve the northern and southern parts of Merafong offering opportunities for industrial processing.

Opportunities

- Develop infrastructure for the N12 node to facilitate development of logistics. Develop a Logistics Village to capitalise on freight traffic on the N12 (A).
- Enable logistics support land uses such as warehousing and filling stations to develop is strategic localities such as the N14 node, Welverdiend, Carletonville, Fochville and the R54.
- Develop the "Bloubos" in Carletonville by providing serviced erven with rail access and use this development to link the 2 industrial nodes in Carletonville and Oberholzer.



4.14 WHOLESALE AND TRADE

The tertiary Sector consisting mostly of retail and services is historically under developed in Merafong which resulted in massive haemorrhaging of purchasing power. However in recent years there has been a steady expansion of activities in this sector. This has helped to boost employment and improve the economic base multiplier from 1 to 3 (2 additional jobs are created for every basic sector job). Many opportunities still exist for development in new residential areas as well as niche markets. Currently 2 community sized shopping centres with a combined GLA of ± 50 000 m² are under construction with new types of retail offerings which will further retain purchasing power. The Wholesale & Trade Sector in Merafong is the second largest in the West Rand and has grown at an average of 4% annually for the last decade, outpacing the SA average of 3%. The Transport & Communication Sector has also grown by 4%, slightly below the SA average of 5%. Unfortunately employment in this sector has declined by 6%. The Merafong Services sector has grown at 3% compared to the national average of 4% with decline in employment of 1%.

Legacy challenges

- Underperformance and massive losses of purchasing power.

Current challenges

- Declining mining base is putting pressure on certain sub-sectors.
- Encroachment of informal trade in CBDs
- Unaesthetical appearance of CBDs (Especially Carletonville).
- Decay zones appearing due to the migration of investment (Investment migration moving west in Carletonville and north in Fochville).

Future challenges

- Risk of capital flight from CBDs to planned shopping centres.
- Changing land uses and infrastructure to adapt to economic changes with regard to urban design, parking, Non-Motorised Transport and public transport.

Current strengths

- Land is available to be sold for development in some localities and privately owned vacant land also exists in many localities.
- Market niches exist and new residential areas are opening up new markets.

Opportunities

- Develop niche market and market growth opportunities in Carletonville and Fochville.
- Develop untapped markets in Khutsong, Welverdiend and Kokosi.
- Develop a whole new business district in Khutsong South Ext 7.
- Plan for long term development of a West Wits business district.

4.15 FINANCE AND BUSINESS SERVICES

The development of this sector had a slow start; however it showed significant growth after in the last decade. Services were historically procured from surrounding cities and towns. In recent years businesses have recognised market gaps and have started filling them. The sector contributes towards diversifying the economy and by offering support services and facilitating growth. The sector is concentrated in Carletonville and Fochville. Fochville experienced significant growth, mostly related to the property market and higher income residence.

Legacy challenges

- The sector's development lagged due to procurement of services from other centres and government's lack of focus on non-mining sectors.

Current challenges

- Under supply in some areas where services are obtained from Potchefstroom and Johannesburg.
- Current uncertainty about the economy is resulting in a cautious approach taken by potential investors.

Future challenges

- The handling of economic change as the economy shifts away from mining in the long run.

Current strengths

- Active mining in Merafong provides opportunities for underground training and to incubate small firms in the Finance & Business Services sector.

Opportunities

- Market gaps exist which should be exploited. Public sector led investment will boost investor confidence.
- The Fochville Civic Centre is currently underutilised and could be leased for business process outsourcing.
- Land next to the Fochville Civic Centre is available for purchase to develop an office park.
- Office and related land uses must be encouraged within CBDs and on the main development corridors linking up with the CBDs.
- The opportunity exists to establish an internationally recognised mining technical training institution with practical experience gained underground as part of the education process. Often referred to as a Mining Centre of Excellence.

4.16 TOURISM

Merafong is not a traditional tourism destination with many of its neighbours outperforming the municipality by a wide margin. There are however numerous tourism development opportunities in Merafong. The municipality is endowed with significant scenic beauty especially along the Wonderfonteinspruit, Gatsrand and Losberg. Given the locality of Merafong close to the GCR core there are many opportunities for weekend tourism and the Johannesburg Skydiving Club has seized this opportunity by operating in these less congested skies.

Legacy challenges

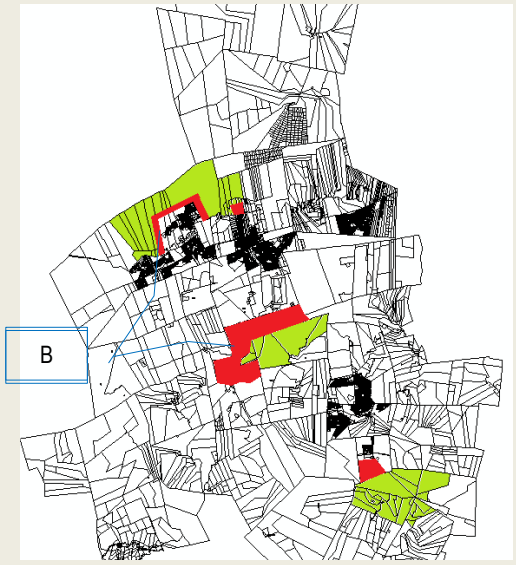
- Mining activities have scarred landscapes in the centre of Merafong where much of the areas scenic beauty is concentrated.

Current challenges

- Not enough tourist attractions. The existing historical attractions are not at all well preserved, making them worthless from a tourism point of view.
- Almost no events are hosted in Merafong such as music festivals, agricultural shows, etc.

Future challenges

- Preserving scenic areas for tourism and ecological purposes (B).

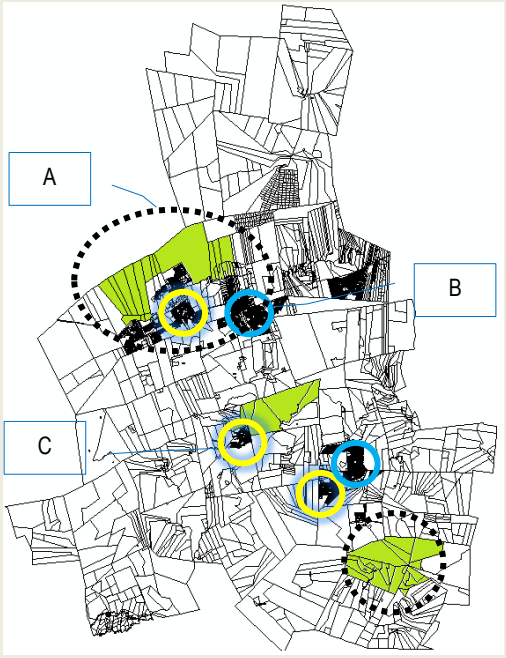


Current strengths

- Merafong is endowed with valuable and interesting natural resources such as Gatsrand, Losberg, the Wonderfonteinspruit, dolomitic caves and other geological features.
- The presence of large gold mining companies in Merafong creates a demand for business tourism.

Opportunities

- Build upon existing eco-tourism areas and offer protection against threats to the ecology and aesthetics of the following areas: Abe Baily–Mooiriver Eco-corridor; Gatsrand Eco-corridor and Losberg & Klein Losberg (A).
- Business tourism opportunities should be exploited focussing on Carletonville and Fochville (B).
- Lodges, guest houses and events venues should be encouraged with due consideration to ecological sensitivities.
- Township tourism opportunities exist in Khutsong, Wedela and Kokosi. Land Use Management should encourage tourism development in townships (C).
- Caving and geological tourism is an opportunity that should be explored given the fact that Merafong has large caves and unique geological features.



4.17 EMPLOYMENT AND SPACE

As is the case with most cities and towns in South Africa, there are great distances between places of residence and work caused by apartheid spatial policies. Although spatial restructuring of Merafong's urban areas are underway, there are still many challenges that remain. The previously disadvantaged areas of Khutsong and Kokosi are experiencing the greatest burden from these commuting distances.

Legacy challenges

- Segregation of people and places through government policy.
- Scattered development of mining villages.

Current challenges

- Long commuting distances especially in Khutsong.
- Lack of transport options for captive users.
- Employment concentrations remaining in place.
- Drawing capital investment into previously disadvantaged areas.

Future challenges

- Developing a viable and sustainable public transport system.
- Drawing capital investment into previously disadvantaged areas will remain a problem for some time.

Current strengths

- The ability and will to restructure urban areas into more efficient forms exists.

Opportunities

- Develop a primary development and commuter corridor that connects all urban areas and acts as the primary restructuring tool for Merafong.
- Draw private investment into previously disadvantaged areas and provide micro enterprises with land to develop their businesses.

4.18 URBAN STRUCTURE, MORPHOLOGY, LAND USE AND ACTIVITY PATTERNS

Merafong municipality is primarily rural in nature with significant tracts of mining and agricultural land. Scattered unproclaimed settlements dot the central mining belt and proclaimed townships are located close to the belt on the northern and southern side. This scattered settlement pattern is a result of under-regulated mining surface rights, where mining companies established mining dormitory villages without any regards for post mining use and the municipalities governing these spaces did not apply proper spatial logic. This is over and above the apartheid legacy that Merafong shares with the rest of South Africa. Despite policy interventions, development is still occurring mostly along apartheid divisions and not breaking through these divisions. Most post-apartheid subsidised housing developments have the same layouts as during apartheid. Some settlements such as Khutsong are far removed from economic opportunities and others such as Blybank and Wedela are currently located close to mining operations which will not be sustained indefinitely. Fortunately, through restructuring, based on development corridors, nodes, infill development and growth boundaries, greater integration is obtainable and is already showing results. Urban efficiency is greatly dependent on the structure morphology and land use patterns of an urban area.

Legacy challenges

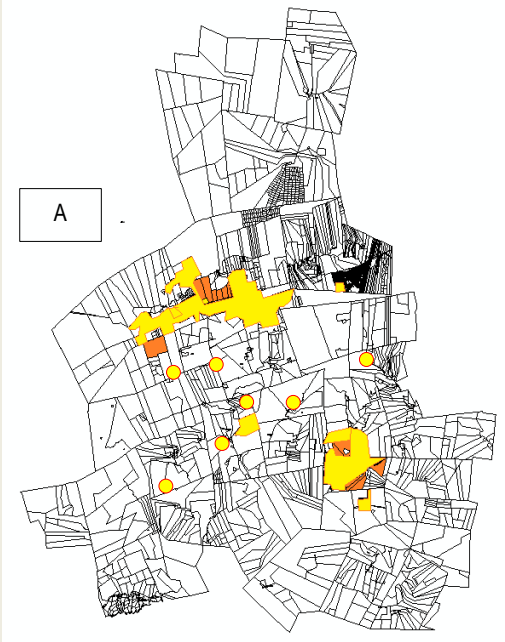
- Scattered settlements (A)
- Urban development in dolomitic areas
- Land use separation
- Spatial exclusion of previously disadvantaged

Current challenges

- Lack of sufficient land use diversity, especially in previously disadvantaged areas.
- Virtually no densification taking place due to a lack of geotechnical data and lack of information on infrastructure.
- Mine owned erven in corridors and nodes remain undeveloped.
- Urban restructuring in the north is adversely affected by dolomite and significant tracts of land lie unused due to bad dolomitic conditions.

Future challenges

- Mine village viability after mine closures
- Adaptive re-use of mine related land uses will be required.

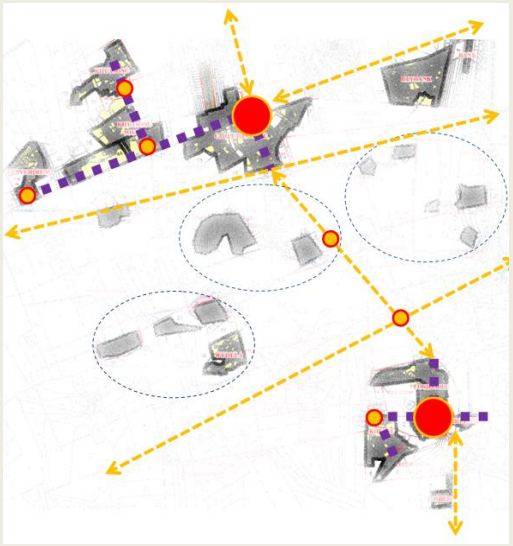


Current strengths

- Existing corridors and nodes help strengthen the sustainability of urban systems.

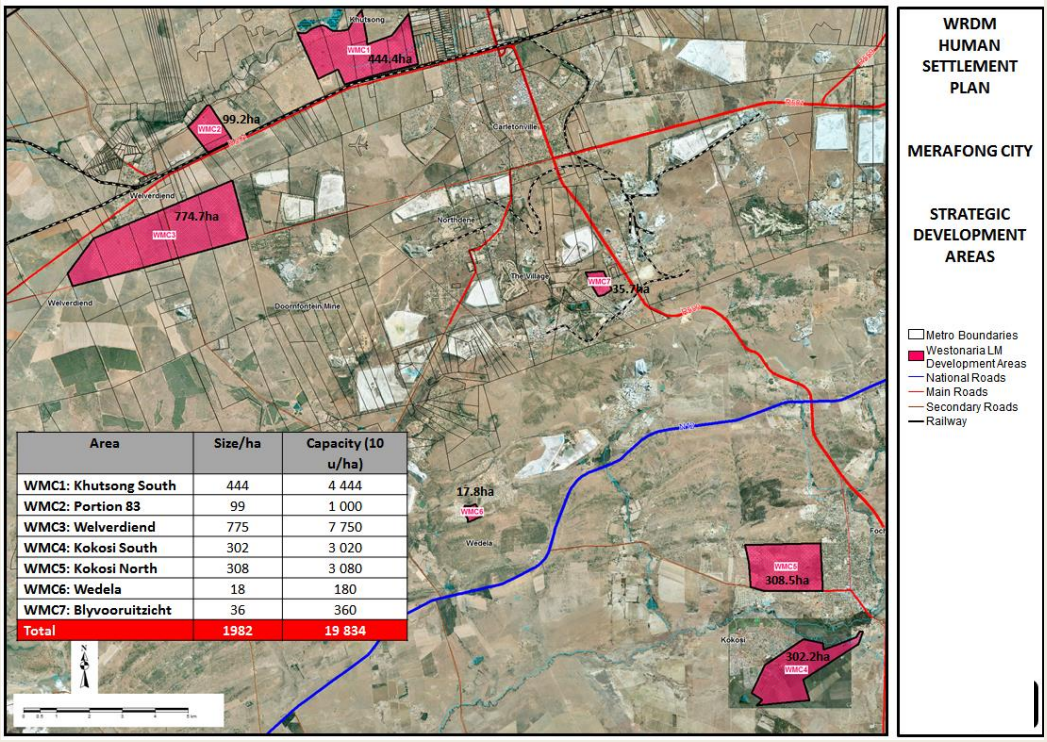
Opportunities

- Develop new nodes and corridors to strengthen the sustainable development of urban areas and to integrate the north and south.
- Consolidate into 3 development areas namely North, South and Mining Belt, each with its own development constraints and opportunities.
- Opportunities for densification are numerous. Information to support growth management is required.
- Land abandoned due to geotechnical constraints can be utilised for other suitable uses. An investigation into possible uses should be conducted.



4.19 INFRASTRUCTURE

In Merafong there is a massive gap in information on the status quo of infrastructure. Currently there are no major infrastructural shortages and the Department of Human Settlements finances most of the infrastructure requirements of subsidised housing expansion. Infrastructure master planning is needed urgently in Merafong.



Area	Size/ha	Capacity (10 u/ha)
WMC1: Khutsong South	444	4 444
WMC2: Portion 83	99	1 000
WMC3: Welverdiend	775	7 750
WMC4: Kokosi South	302	3 020
WMC5: Kokosi North	308	3 080
WMC6: Wedela	18	180
WMC7: Blyvooruitzicht	36	360
Total	1982	19 834

Code	Project Name	Project Yield	Water Reservoir		
			Mega Litre per Day		
			Reservoir	Capacity	Demand
WMC1	Khutsong South	4 444	Welverdiend	-6.79	2.13
WMC2	Portion 83	1 000	Welverdiend	-7.27	0.48
WMC3	Welverdiend	7 750	Welverdiend	-10.99	3.72
WMC4	Kokosi South X6 X7	8 027	Fochville	1.04	3.85
WMC5	Fochville X8	3 080	New Reservoir	18.52	1.48
WMC7	West Wits	360	Mining Village	Ample	0.17
	TOTAL	24 661			8.85

Code	Project Name	Project Yield	Waste Water Treatment Works		
			Mega Litre per Day		
			WWTW	Capacity	Demand
WMC1	Khutsong South	4 444	Welverdiend	-5.66	1.78
WMC2	Portion 83	1 000	Welverdiend	-6.06	0.4
WMC3	Welverdiend	7 750	Welverdiend	-9.16	3.1
WMC4	Kokosi South X6 X7	8 027	Kokosi	-0.8	3.21
WMC5	Fochville X8	3 080	Kokosi	-2.03	1.23
WMC7	West Wits	360	Wedela	0.93	0.14
	TOTAL	24 661			8.85

Code	Project Name	Project Yield	Electricity		
			Mega Volts Ampere (MVA)		
			Substation	Capacity	Demand
WMC1	Khutsong South	4 444	Khutsong	40.61	11.11
WMC2	Portion 83	1 000	Welverdiend	4.5	2.5
WMC3	Welverdiend	7 750	Khutsong	21.24	19.38
WMC4	Kokosi South X6 X7	8 027	Fochville	-16.07	20.07
WMC5	Fochville X8	3 080	Fochville	-23.77	7.7
WMC7	West Wits	360	ESKOM (new)	-0.9	0.9
	TOTAL	24 661			8.85

Legacy challenges
- Scattered settlements with uncoordinated infrastructure
- Urban development in dolomitic areas which impact on water and sanitation services.
- Under provision of services in previously disadvantaged areas

Current challenges
- Lack of information on the status quo of existing infrastructure. Lack of planning and coordination in future planning.
- Inefficient urban structure and low densities reduce economies of scale.
- Regulation standards with regard to infrastructure on dolomitic land are becoming stricter.

Future challenges
- Mine village viability after mine closures
- Adaptive re-use of mine related land uses will be required.

Current strengths
- Existing corridors and nodes help strengthen the sustainability of urban systems.

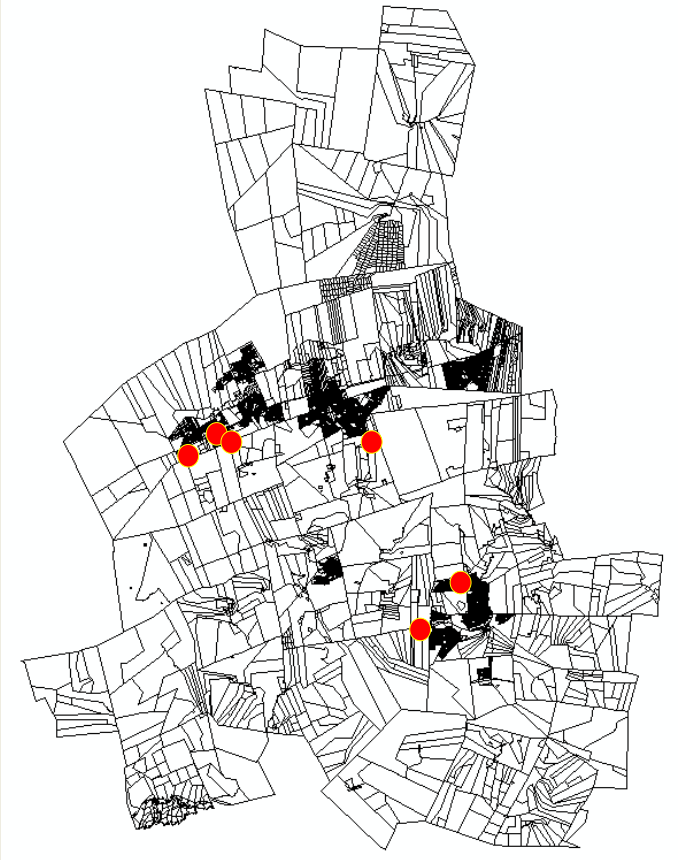
Opportunities
- Develop new nodes and corridors to strengthen the sustainable development of urban areas and to integrate the north and south.
- Consolidate into 3 development areas namely North, South and Mining Belt, each with its own development conditions.
- Opportunities for densification are numerous. Information to support growth management is required.
- Land abandoned due to geotechnical constraints can be utilised for other suitable uses.

4.20 CRITICAL INFRASTRUCTURE BOTTLENECKS

In some areas critical infrastructure projects have been halted due to funding constraints. The freezing of these projects are blocking significant urban and economic development projects from continuing. About 10 township establishments and a number of 'game changer' economic projects are being held back. This is hampering the restructuring of the local economy and causing a worsening of the tax base imbalance currently experienced (worsening cross-subsidisation ratio). The unblocking of these bottlenecks is of paramount importance and will eventually threaten the viability of the municipality if not addressed. Many of these situations have been worsened by under spending on economic infrastructure and a lack of infrastructure maintenance.

Khutsong South – Welverdiend area

- **20 Ml Water reservoir** (Khutsong South) – R 70,000,000
- Of the required 48 hour water holding capacity, currently 0 hours available.
- Bulk Supply Khutsong South **132kV Substation** - R86,000,000
- Bulk supply Khutsong South **secondary network** - R17,500,000
- Projects affected:
  - Khutsong South Extension 6 and 7 (±1519 erven mixed typologies)
  - Elijah Barayi mixed use development (±10 000 erven mixed housing including BNG, Walk-Ups, FLISP and Social Housing as well as retail, office and government institutional developments)
  - Welverdiend Gap housing development (256 erven)
  - Welverdiend mixed use node (Truck stop and retail with envisaged expansion)



Fochville - Kokosi area

- **30 Ml Water reservoir** – R159,000,000
- Kokosi **Waste Water Treatment Works modular addition** – R98,500,000
- Projects affected:
  - Fochville Extension 3 (156 Middle income units)
  - Fochville Extension 7 (700 High income erven)
  - Fochville Extension 8 (1429 Gap market erven)
  - Fochville Extension 14 (± 50 Industrial erven)
  - Kokosi Extension 7 (3211 Mixed typologies with business uses)
  - Residential densification within the designated Restructuring Zone.

4.21 HOUSING

A socio-economic analysis of informal settlements in Merafong has revealed that 3 distinguishable groups exist, namely, persons living on the fringes of townships, persons living close to mine shafts, and persons living on farms, not associated with those localities mentioned above. This report focuses on township and mine informals because those in the rural areas are too dispersed for data accuracy. A survey of, amongst other things, population distribution in rural areas has been budgeted for in the 2013/2014 financial year. About 55% of households in mine settlements consist of a single person as opposed to 38% of the township settlements. About 55% of households in mining settlements consist of 1 person. Only ±17% of population in mining settlements of school going age as opposed to ±40% in township informal areas. There are ±20% more men than women in informal settlements. A large proportion of people in mining settlements are unemployed. A significant number of people living in informal settlements would qualify for affordable housing bonds.

Legacy challenges

- Apartheid policies have caused massive disparities in meeting basic human rights among which housing is one of the most important.

Current challenges

- Large backlogs in subsidised housing provision.
- Although the localities of new housing projects are highly sustainable, there is largely a continuation of apartheid style urban layouts.

Future challenges

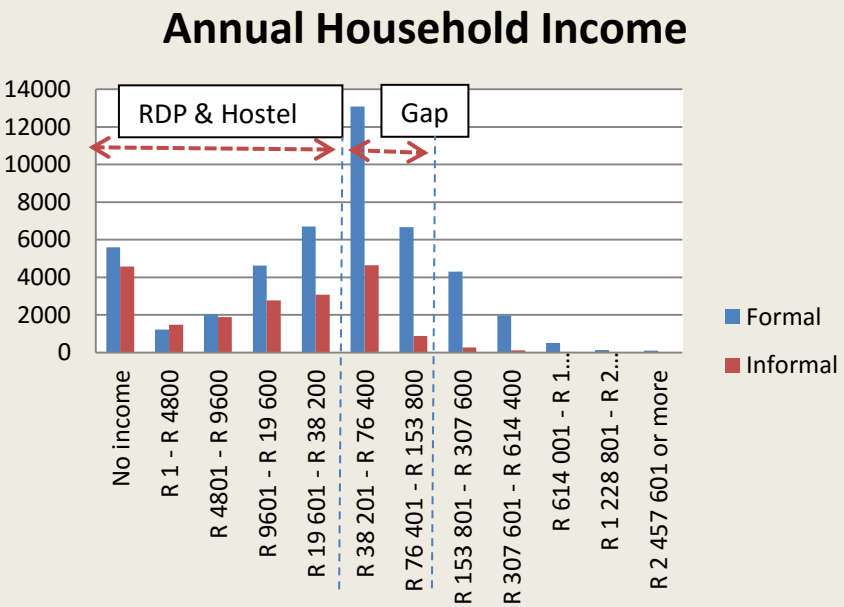
- To continue constructing settlements filled with subsidised housing. Finding space, financing infrastructure and dealing with the lack of revenue from these areas.

Current strengths

- Large projects underway that are bringing about massive reductions in housing backlogs.
- Attention to mining social problems are leading to increased investment and urgency within government.

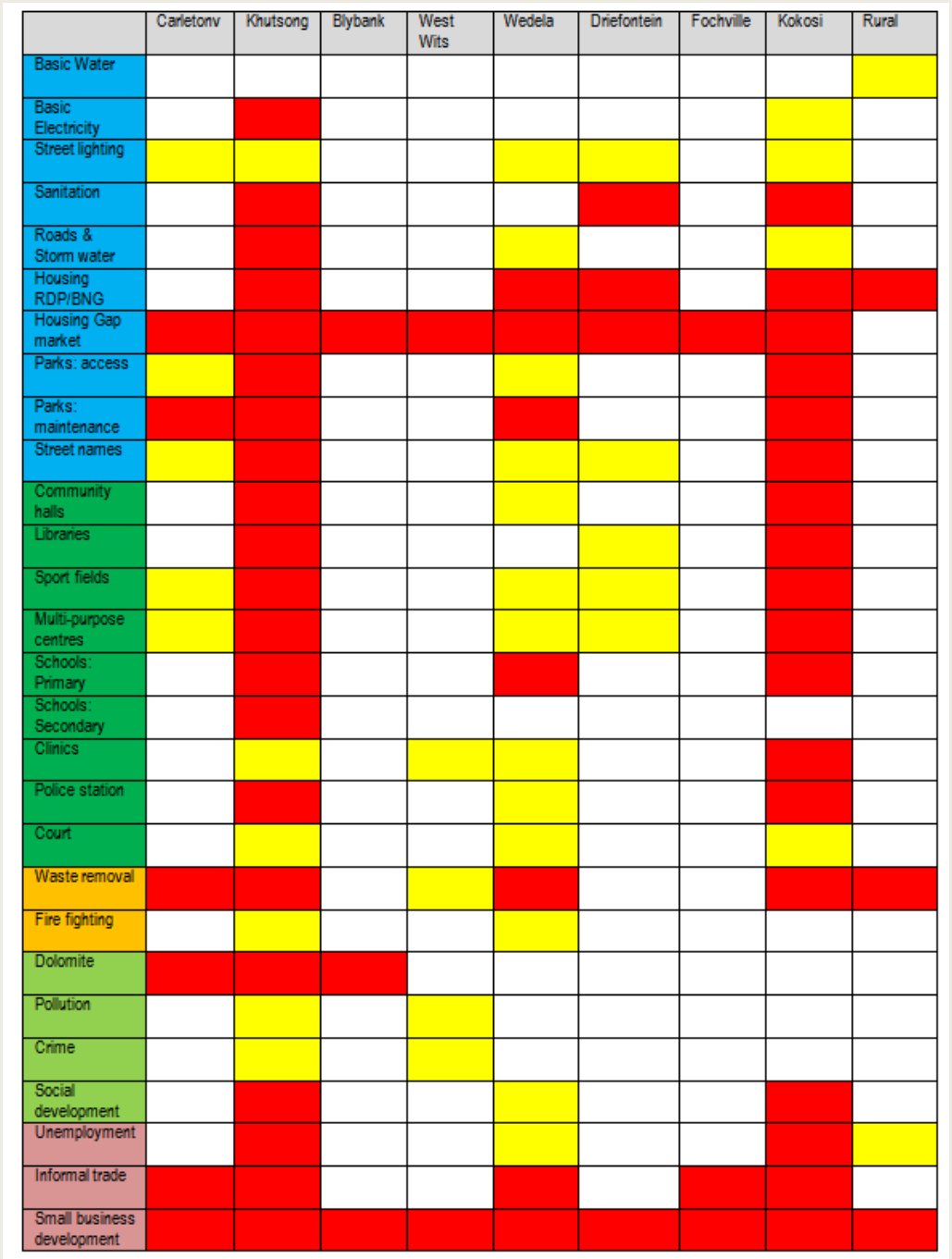
Opportunities

- Develop more sustainable human settlements in future that are more adaptable and have much greater opportunity generating capacities.



4.22 COMMUNITY PRIORITIES

The community priorities have been derived from the public participation process of the 2016/17 IDP and has been backed by desktop analysis, surveys and observations. The table below depicts the results with yellow indicating problems flagged by the community and red indicating problems confirmed by analysis and or observations. The reason for having yellow and red is that in some instances a problem identified by the community has been adequately addressed by government in accordance with its standards, e.g. it has been indicated that there is a lack of sports facilities in Carletonville wilst the provision is more than adequate in terms of accepted standards (CSIR standards for facilities).



	Carletonv	Khutsong	Blybank	West Wits	Wedela	Driefontein	Fochville	Kokosi	Rural
Basic Water									
Basic Electricity									
Street lighting									
Sanitation									
Roads & Storm water									
Housing RDP/BNG									
Housing Gap market									
Parks: access									
Parks: maintenance									
Street names									
Community halls									
Libraries									
Sport fields									
Multi-purpose centres									
Schools: Primary									
Schools: Secondary									
Clinics									
Police station									
Court									
Waste removal									
Fire fighting									
Dolomite									
Pollution									
Crime									
Social development									
Unemployment									
Informal trade									
Small business development									

FUTURE SCENARIOS

In order to assist in the strategic decision making process and to assess the consequences of policies and plans a very basic scenario building exercise was undertaken based on existing precedents for policy choices. Background information was mostly qualitative in nature although quantitive instruments were used where possible. A Business As Usual Scenario was built to demonstrate the consequences of current policies and a number of alternatives were explored. The INNOVATIVE AND SUSTAINABLE COMPACT CITY SCENARIO was by far the most promising and as such was included here to demonstrate the alternative that will be strived for.

BUSINESS AS USUAL

Development practices

- Relatively low residential densities
- Sprawling low density subsidised housing
- Scattered settlement pattern proliferated
- Insignificant attempts to replace mining as economic base
- Few attempts to diversify the economy from its base upwards
- No attempts to consolidate the infrastructure network
- Little pro-active action by the municipality on mine closures and pollution
- No mitigation steps are taken to shield against climate change impacts

Results

- Slow subsidised housing delivery in bad localities
- Public transport viability remains low and the cost of living increases, especially for the poor
- Numerous small lower order public facilities stretch the municipal fiscus and does not promote social development
- The economy shrinks, businesses close down, unemployment increases
- The large over stretched infrastructure network puts a severe strain on municipal finances and maintenance falls further behind
- Municipal financial position deteriorates further.
- Health impacts of pollution worsen and HIV infection rates remain high
- Urban areas suffer impacts from climate change
- Crime rates soar and social unrest increases

Synopsis

The economy remains chronically recessive and enters a depressed state. Social development becomes unaffordable and environmental problems multiply. Urban efficiency drops and Merafong's towns become socio-economic traps for the poor. The municipal revenue base shrinks and the municipality enters an economic death-spiral which will be irrecoverable without massive capital injections and painful reforms.

INNOVATIVE AND SUSTAINABLE COMPACT CITY DEVELOPMENT

Development practices

- Planning to achieve a compact urban form with increased densities at human scale
- Infill development and socio-economic integration
- Increased intensity and mixtures of land use
- Strong focus on diversifying the economic base and developing further complexity from the bottom upwards
- Pro-active efforts from the munic to enable adaptive re-use of viable mine infrastructure.
- Rehabilitation of mine impacted land
- Clustering of facilities to maximise their potential socio-economic dividends
- Rationalisation of, and targeted capital investment in the core infrastructure network
- Municipal financial viability and sustainability is always considered in decision making
- Ecology is valued and green infrastructure is expanded

Results

- Fast housing delivery in well located areas close to jobs, transport, shopping and public services support socio-economic integration.
- New large employment nodes emerge with enterprises in leading economic sectors. Nodes become economic clusters that enable businesses to thrive.
- Economic output increases and the economy becomes more resilient and adaptive in the face of rapid disruptive economic change within the context of the 4th Industrial Revolution.
- Adaptive re-use of viable mining infrastructure enables rapid industrialisation.
- Unviable mine villages rehabilitated to a natural state for use as agriculture or ecological preservation. The economic opportunities of the remediation process are utilised.
- Compact city development enables the development of larger facility clusters offering more variety to residents.
- Opportunity generation brought about by increased urban efficiency enables residents to have more choices and to reduce the cost of living.
- The significantly improved urban efficiency enables more revenue generation per capita and the municipality is able to render increasing levels of service.
- HIV infection rates decline as informal settlements disappear
- Urban greening and other improvements to ecological infrastructure enable a higher level of ecosystem services to protect against climate change and improve the quality of life.

Synopsis

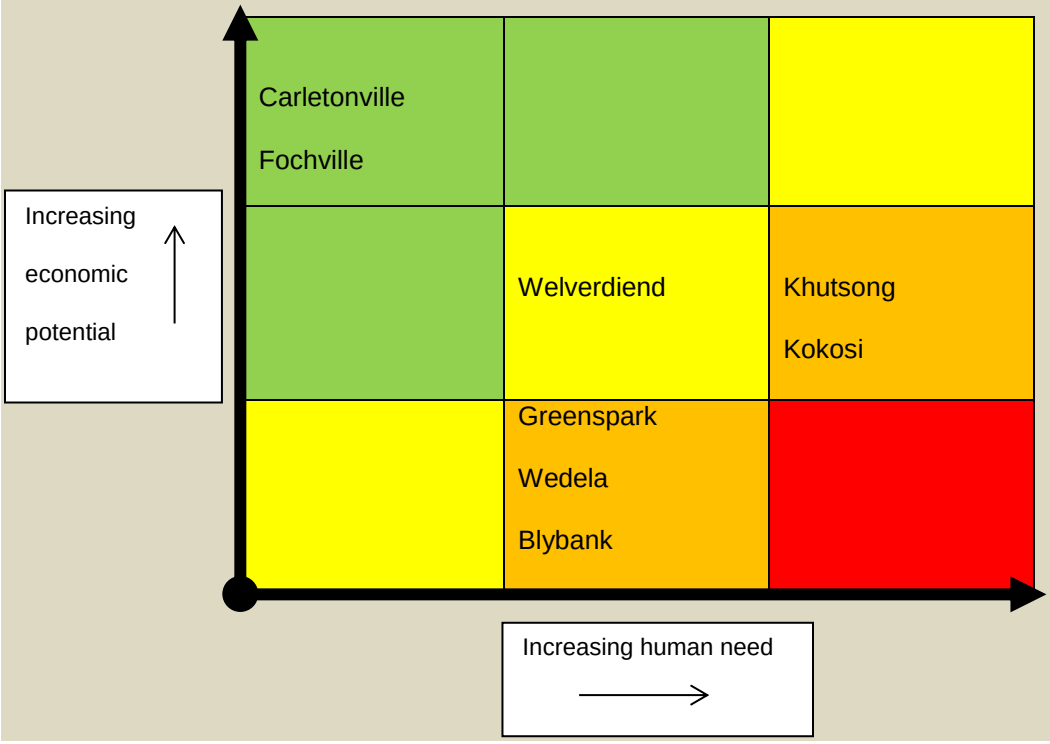
Compact city development based on proven spatial planning practices drives rapid improvements in urban efficiency. Well located development enables opportunity generation at levels never seen in Merafong, leading to reduced living costs and improved satisfaction. Economic complexity multiplies rapidly leading to a sustained virtuous cycle of growth in output and employment. Green infrastructure heals the scars of mining and buffers the citizens of Merafong against the onslaught of climate change. Municipal revenue generation improves rapidly and sustainably through reductions in cost from more efficient infrastructure and increased economic output.

SPATIAL SYNTHESIS

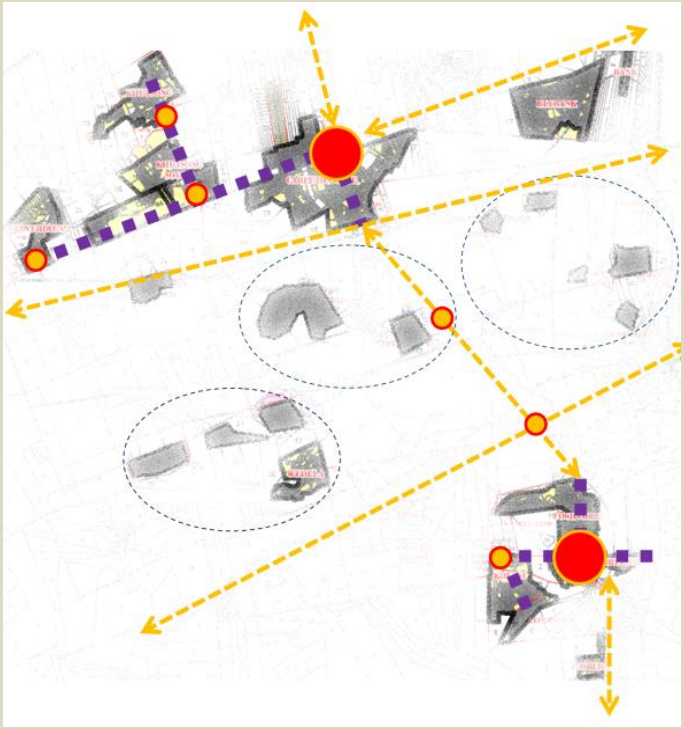
The first figure below gives a synopsis of the spatial development logic for Merafong. It divides the various towns within Merafong City into fields, indicating the investment priority based on economic potential vs. social development (human need). This is the most important basis for formulating spatial development proposals for the municipality. Settlements in FIELD 1 (indicated in the green block) should receive public investment priority with broad based, as well as targeted economic development. Settlements in FIELD 2 (indicated in the pink block) should receive broad based social as well as economic development. Settlements in FIELD 3 (indicated in the orange block) are not feasible for public economic investment, and should therefore be the of focus investment in social development.

It is of great importance that the 3 main urban areas (Northern Urban Area, Central Mining Belt and Southern Mining Area) are integrated with each other and in order to achieve the desired growth characteristics a hierarchical network of nodes and corridors will be utilised as the main structuring tool. The network will be dominated by the primary development corridor that connects all 3 urban areas. It will also form the backbone of future public transport. As such all major economic, institutional and residential developments will take place along this corridor. The corridor will form the spine of development and Public Transport in future with primary Public Transport node localities located along the corridor. Transit Oriented Development and Universal Access principles are focused on these nodes. The main development corridor links all the most important nodes and all major/strategic future nodes are also connected by the corridor. Secondary corridors branch out to connect areas currently removed from the main development axis. The restructuring of Merafong's settlements into the proposed future form will greatly improve the efficiency of urban systems to perform their functions in sustaining the livelihoods of citizens.Planning decisions have to take into account the spatial vision of a unified future city built from what is today the Primary Development Corridor (PDC). No actions should undermine the development objective of the PDC.

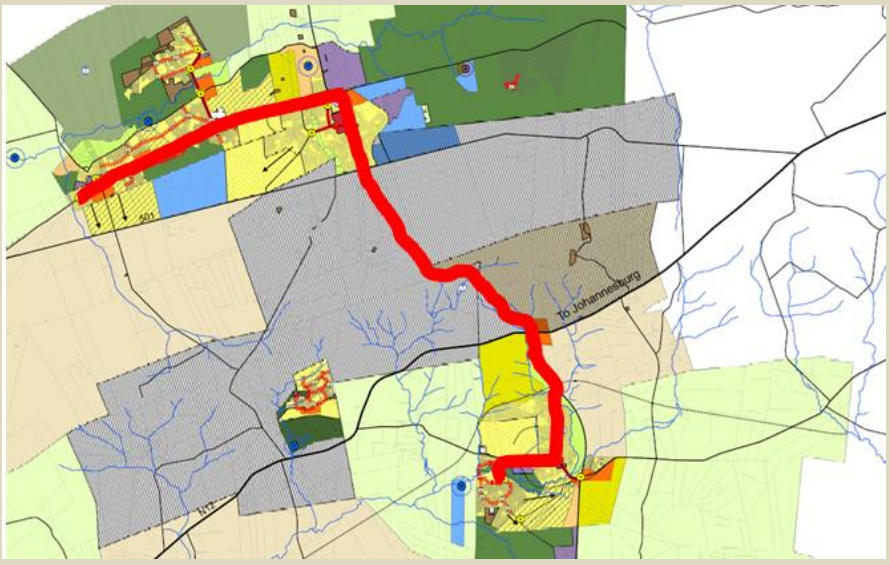
The basic spatial logic of the Merafong MSDF



A basic representation of the spatial synthesis within the Merafong space economy:



The Primary Development Corridor, derived from the spatial logic and synthesis of the spatial analysis.



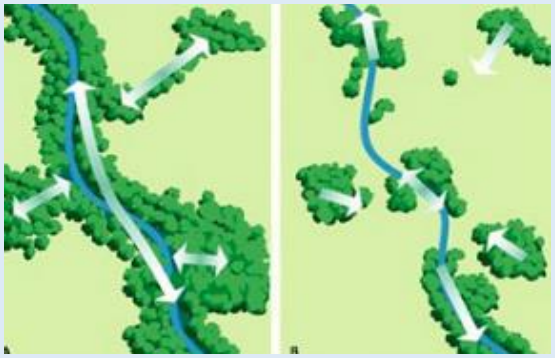
For more information on the Primary Development Corridor refer to Section 5.

SPATIAL PLANNING PRINCIPLES

A number of spatial principles (Read with page 61) have been identified upon which the Municipal Spatial Development Framework is based. These principles will ensure consistency in decision making. All decisions made in terms of the MSDF must take the principles into account.

1. PROTECT AND UTILISE ECOLOGICAL RESOURCES SUSTAINABLY

Ensure that Critical Biodiversity Areas and Ecological Support Areas are utilised sustainably and that eco-corridors are protected. Mine impacted land must be rehabilitated.



Ecological corridors and urban green spaces should not be interrupted.

Strengthen green infrastructure in urban areas to mitigate climate change impacts.

2. PROMOTE A SMALL-TOWN CHARACTER

Compaction and densification may not occur at the expense of human scale and architectural choices should create a small-town sense of place. The Mid-Century Modern and farm town rural characters of Carletonville and Fochville has to be protected and unique identities developed for other areas.

A rural scene outside Fochville

A Mid-Century Modern church in Carletonville

3. ENABLE COMPACTION AND DENSIFICATION

Densify residential development and cluster supportive land uses in strategic areas in order to maximise urban efficiency with regards to social, economic and environmental sustainability.

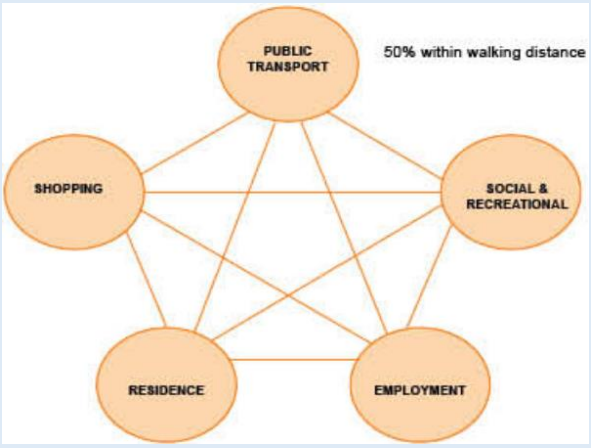
Densification that improves neighbourhood liveability.

Densification along a development corridor.

Mixed housing typologies in the same development.

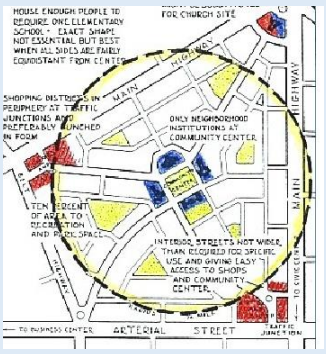
4. STRIVE FOR FUNCTIONAL INTEGRATION AND THE PROMOTION OF CHOICE

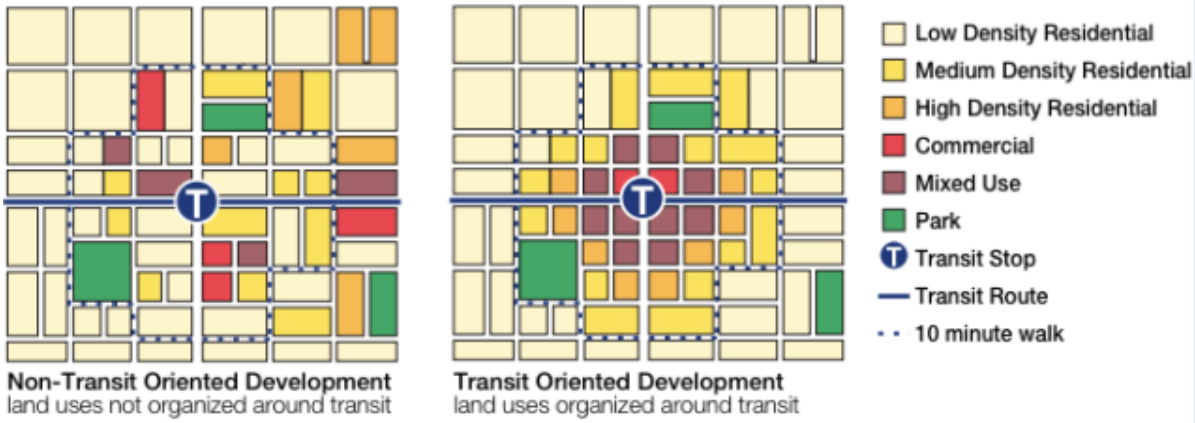
In order for walkability and the generation of greater choice to be successful, about 50% of activities need to be within walking distance of urban users.



5. DESIGN AND IMPLEMENT WALKABILITY & TRANSIT ORIENTED DEVELOPMENT

Design layouts & infrastructure, and manage land use in settlements so that residents can access public transport within a 1km walk.





6. CONSOLIDATE INFRASTRUCTURE INTO A CORE NETWORK

Scattered, economically inefficient infrastructure must be consolidated into compact densification areas to become financially viable. Restrict major investment to the core infrastructure network.

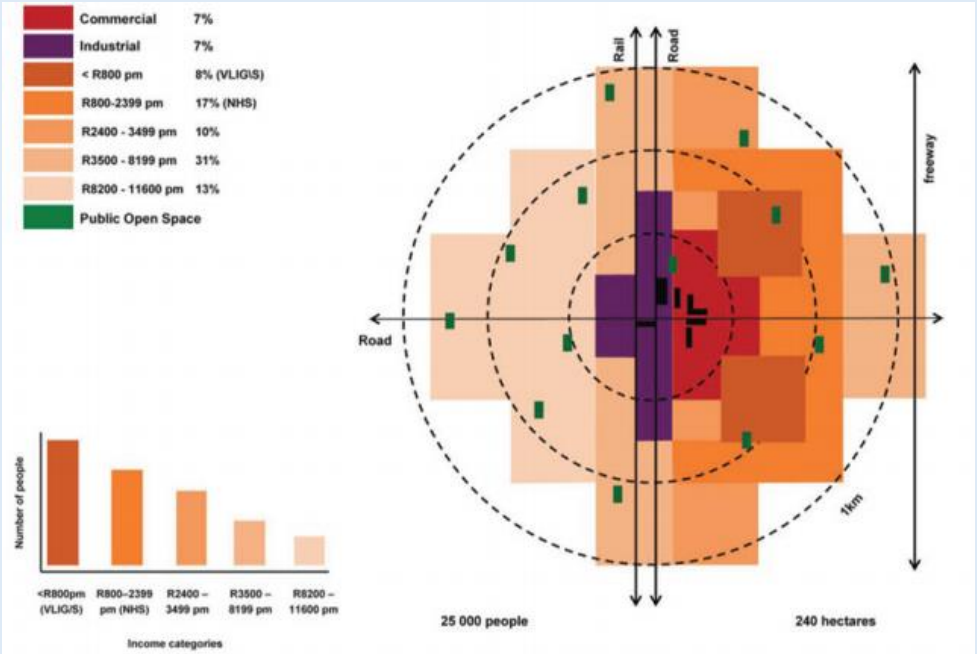
7. DEVELOP ROBUST MIXED-USE NODES AND CORRIDORS

Promote mixed land uses and increased densities around nodes and along corridors.

Mixed-use buildings with retail on ground level and residential uses above (Left) and retail on ground level with residential and office uses above (Right).

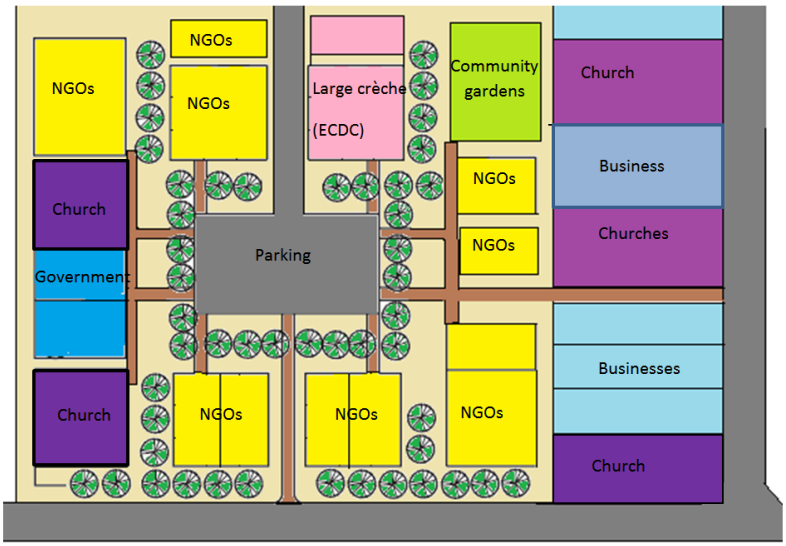
8. PROMOTE SOCIO-SPATIAL INTEGRATION

Initiate a strong drive towards socio-economic integration through different types of infill development.



9. CLUSTER FACILITIES IN THE MOST VIABLE LOCALITIES

Government and municipal facilities must be clustered in order to maximise their efficiency and opportunity generation



A development conceptual design for facilities and associated uses clustered and sharing infrastructure.

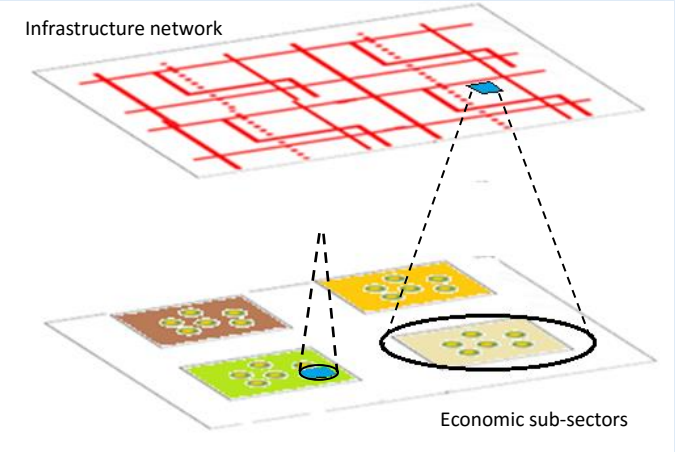
10. PROMOTE THE DEVELOPMENT OF STRONG ECONOMIC NODES THAT ENABLE ECONOMIC SPECIALISATION AND CLUSTER FORMATION

Enable and pro-actively develop the right conditions for specialised economic activities to thrive.

Special economic development zones enable industry agglomeration and economic cluster formation.

11. ECONOMIC DEVELOPMENT AND SPATIAL PLANNING EFFORTS MUST FOCUS ON EXPANDING AND DIVERSIFYING TRADABLE SECTORS OF THE ECONOMY

The economy has to be developed from the base upwards in order to maximise latent potential. A more diversified Basic Sector (Tradable Sectors) will multiply economic opportunities throughout.



Develop projects and invest in infrastructure to benefit an entire tradable subsector in order to promote agglomeration as opposed to investment in a small scale stand-alone venture

12. MAINTAIN AND IMPROVE MUNICIPAL FINANCIAL VIABILITY AND SUSTAINABILITY

All development actions must serve to improve municipal financial viability and sustainability.

A residential development that retains a suburban feel whilst increasing densities which leads to improved municipal financial sustainability with regards to infrastructure maintenance and service delivery costs.