



Mogale City Spatial Development Framework 2011





SPATIAL DEVELOPMENT FRAMEWORK 2011

Prepared by



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Executive Summary

1. Introduction

In terms of Chapter 5 of the Municipal Systems Act, 2000 (Act 32 of 2000), the municipality's Integrated Development Plan in turn “must reflect ... a spatial development framework which must include the provision of basic guidelines for a land use management system for the municipality”.

The central question that all urban and regional planners and city managers grapple with is how to ensure the development of sustainable cities, towns and rural areas in a climate where the immediate needs of poverty and lack of basic services overshadow the development agenda. This is the fundamental role that the Mogale City Municipal Spatial Development Framework must play in Mogale City's municipal area, namely ensuring the development of a sustainable urban and rural environment while at the same time creating an enabling environment for the implementation of the developmental agenda of national government.

The Spatial Development Framework is structured around the following sections:

- Institutional context and directives for spatial development.
- The Municipal area in context.
- Objectives of the SDF.

- The Spatial Development Concept.
- Implementation

2. Institutional Context

The planning and development of cities, towns and rural areas in South Africa are governed by a national developmental agenda that aims to improve the manner in which urban and rural areas develop so as to increase the efficiency, sustainability and investment potential of urban areas, better the conditions in which people live and conduct their daily lives, and protect valuable resources from irresponsible consumption. This developmental agenda finds expression in numerous sets of national and provincial legislation and policy documents. In order to ensure legitimacy the Mogale City Spatial Development Framework must be formulated within the parameters of this institutional framework. In addition, the Spatial Development Framework is also affected by existing local strategic planning documents, such as the Integrated Development Plans, that direct development of the district and local municipality.

An analysis of all the existing legislation and policy frameworks from the three spheres of government that impact on spatial planning and development in Mogale City produced a set of



directives which form the foundation of the spatial development framework. These directives all relate to the national spatial development principles of –

- Sustainability
- Efficiency
- Equity
- Integration
- Economic development

3. Contextual Analysis

Mogale City lies directly west and south of the Johannesburg and Tshwane metropolitan areas respectively, and forms part of one of three districts that make up the peripheral areas of Gauteng province. To the north, west and south it borders onto Madibeng Local Municipality, the West Rand District Management Area, Rustenburg Local Municipality and Randfontein Local Municipality respectively.

The spatial structure of Mogale City is made up of four major development/use zones, namely:

- The extensive rural environment
- The urban area
- Muldersdrift rural/urban transition zone
- The Buffer Zone around the Cradle of Humankind World Heritage Site

Due to its location on the edge of Gauteng's conurbation, the largest part of Mogale City is rural in nature. The rural environment is characterised by intensive as well as extensive agricultural development, agricultural holdings, physical elements such as mountains and rivers, wilderness areas and nature conservation areas.

The largest urban concentration in Mogale City is found in the south-eastern part of Mogale City, around Krugersdorp and Kagiso. This area forms part of a band of development stretching

from the Johannesburg Inner City westwards along the mining belt up to Krugersdorp. The Krugersdorp/Kagiso area therefore forms an integral part of the Gauteng conurbation. Krugersdorp comprises the Krugersdorp CBD, which is the main business, social and administrative centre in Mogale City and fulfils a regional function.

The areas to the south of Krugersdorp, namely Kagiso, Azaadville and Rietvallei are predominantly previously disadvantaged settlements with more limited access to services and facilities than the Krugersdorp areas. These areas are also physically separated from the Krugersdorp urban areas by an extensive mining belt that runs in an east-west direction through the area. This makes future integration of these areas very difficult, if not impossible.

Other settlements in Mogale City are Tarlton, Magaliesburg and Hekpoort, located in the western part of Mogale City. These are generally small settlements that are in essence no more than rural service centres providing a central place service to the surrounding rural and farming communities. Magaliesburg is perhaps the best developed of the three with a distinctive tourism function.

The Muldersdrift area lies to the north of Krugersdorp, on either side of the R28. To the east it is bounded by urban development in Johannesburg, while the Cradle of Humankind World Heritage site lies to the west thereof. The clash between pressure for urban expansion and the conservation requirements results in conflicting development agendas in the area.

The Cradle of Humankind World Heritage Site lies predominantly in the West Rand District Management area to the north of Mogale City, but also extends into the western, central and eastern part of Mogale City. The new buffer zone around the Cradle of Humankind World Heritage Site however extends deep into Mogale City in a western, southern and eastern direction.

The major movement linkage that exists in the municipal area is the R28/N14 route, which runs through Mogale City from the City of Tshwane, across part of Johannesburg and onto Randfontein Municipality and North-west Province. The strongest east-west movement linkages between Mogale City and Johannesburg are along the R512 (Malibongwe Road),



Beyers Naudé Drive, Hendrik Potgieter, Voortrekker/Ontdekkers/ Main Reef Road and Randfontein Road, as well as the east-west railway line.

The major pressure points for development are –

- Around Krugersdorp, which sees natural continuous urban expansion as this urban area grows;
- The Muldersdrift area which have begun to experience more and more development pressure, especially as development in Johannesburg moves further outward, and
- The area around Lanseria Airport.

The following constraints have an impact on the spatial structure and the development potential of the municipality:

- The band of dolomite that runs through the central part of Mogale City restricts long term westward urban expansion. These dolomite areas are precisely that natural feature that gave rise to the cave formations that led to the creation of the Cradle of Humankind World Heritage Site.
- The Gauteng Urban Edge, 2009 has been drawn conservatively around existing urban areas, and virtually no provision has been made for urban expansion.
- The new buffer zone around the Cradle of Humankind covers a large section of Mogale City, and places a constraint on the development potential of the area.
- Natural elements such as mountains, ridges, rivers and conservation areas are constraints to physical development in the sense that linkages between developments are often broken by the natural elements.
- The mining belt that runs in an east-west direction through the south-eastern part of Mogale City poses a constraint for the integration of the urban areas to the north and south thereof.
- The availability of engineering services in the Muldersdrift and Lanseria area will prevent any development in the short to medium term, depending on when major engineering infrastructure investment take place in this area.

4. Spatial Development Objectives

The spatial development objectives for Mogale City are informed by the legislative and policy framework as well as the contextual analysis of Mogale City itself. The objectives are –

- The integration of various areas in Mogale City to form a cohesive, well functioning space economy;
- The development of sustainable human settlements and urban renewal of existing settlements;
- The promotion and facilitation of economic development;
- The sustainable management of the natural environmental assets and heritage;
- The promotion of tourism development;
- The promotion of sustainable rural development;
- The development and improvement of linkages with Johannesburg, Tshwane, Madibeng, the rest of Gauteng and the broader region, and
- Service delivery, specifically focusing on providing sufficient capacity in development priority areas.

5. The Spatial Development Concept

The Spatial Development Concept for Mogale City has been developed around a number of key spatial structuring elements that together make up the desired spatial development arrangements of the area. The Mogale City Spatial Development Framework is broad strategic planning framework due to the large geographic space that it covers. It cannot therefore make detail proposals for specific areas. For that purpose, local spatial development frameworks or precinct plans must be drafted.

The spatial structuring elements that are addressed in the spatial development concept are-

- Natural Structuring Elements



- Growth Management
 - Urban Edge
 - Supporting strategies for growth management
- Urban Areas
 - Activity network
 - Activity nodes
 - Activity spines
 - N14/R28 Development Corridor
 - Lanseria Aerotropolis
 - Specialised Activity Areas
 - Densification
 - Residential settlements
 - Future of mining land adjacent to urban areas
 - Urban Open Space System
- Rural Areas
 - Rural Development
 - High Potential Agricultural Land
 - Cradle of Humankind World Heritage Site and Buffer Zone
 - Muldersdrift rural transition zone
 - Rural Service Centres
 - Rural housing development
 - Tourism
- The movement system
- Cultural heritage
- City Image and Public Spaces

One of the major issues that face the future development and spatial structure of Mogale City is urban growth management and the application of the provincial urban edge strategy. National

and provincial policy directives demand of local authorities to compact urban areas and prevent continuous outward urban sprawl. To this effect, the Gauteng Provincial Government has introduced an urban edge or growth boundary in a bid to manage the outward growth of the provincial urban areas. Peripheral locations such as Mogale City are due to their location on the edge of the urban conglomerate the recipients of continuous outward development pressures and are typically seen as the perpetrators of sprawl.

Future growth opportunities in Mogale City were therefore investigated from a provincial and structural perspective as opposed to looking at individual pockets of development pressure. In this regard, the area that presents the most meaningful opportunity for future development is the area to the east of the N14, between Hendrik Potgieter in the south and the R512 in the north. This section of the N14 is seen as one of the future provincial development corridors, spurred on by the development proposals currently taking shape around Lanseria Airport. The highway forms a physical boundary between urban and rural development, and the areas to the west of the corridor development will be reserved for rural environmental purposes as part of the Cradle of Humankind Buffer Zone.

The activity areas that form part of the spatial development concept are focused on the following –

- Strengthening the Krugersdorp Central Business District,
- Ensuring a network of interlinked activity nodes that ensures an equitable distribution of services and facilities throughout Mogale City; and
- Utilising the energy created by major movement infrastructure and public transport networks to create activity spines. These spines are especially focused on linking up with activity areas to the east of Mogale City to ensure functional integration with the Johannesburg urban system.

Densification proposals for the urban areas are focused around these major activity areas in order to ensure increased population concentrations around areas with the highest levels of job opportunities, social services, business opportunities and transport services.



Because of the fact that the largest part of Mogale City is rural in nature, a specific focus of the spatial development framework is on how to enhance and support rural development in the area. To this effect the spatial development framework looks at strengthening the inherent functions of the three existing rural towns without promoting unsustainable development, the protection of valuable agricultural land, the protection of pristine and valuable natural environments and the promotion of rural based tourism which is one of Mogale City's main competitive advantages.

Lastly, the spatial development concept sets out principles for the protection and promotion of cultural heritage. Although cultural heritage is not necessarily always spatial in nature, or are not necessarily always of the same scale as other components of the spatial development concept, it is necessary to address it as part of the spatial development proposals as it forms an important part of the spatial environment and development proposals can have a harmful impact on the area's cultural heritage.

Introduction

A spatial development framework (SDF) seeks to arrange development activities, land uses and the built form in such a manner that they can accommodate the ideas and desires of people without compromising the natural environment and how services are delivered. If not done properly, the system will be very costly, inefficient and can even collapse. A fine balance must be maintained at all times: too much emphasis on one element can harm the system; if development happens too quickly, infrastructure provision cannot keep up.

Many issues will need ongoing discussion and debate: integration with provincial development strategies, linking urban and rural development, functional integration of settlements often located far apart, infrastructure provision, social justice, poverty, etc. All of these are complex and all are connected. The key is optimising development and access to development opportunities for all people.

A SDF integrates various sector plans. The emphasis is on developing an inter-disciplinary approach, to bring different sectoral knowledge to bear on a shared objective. Spatial development frameworks are not comprehensive development blueprints. They must however be proactive and clearly define the desirable directions and outcomes of future growth.

The central question that all urban and regional planners and city managers grapple with is how to ensure the development of sustainable cities, towns and rural areas in a climate where the immediate needs of poverty and lack of basic services overshadow the development agenda. This is the fundamental role that the Mogale City Municipal Spatial Development

Framework should play in Mogale City's municipal area, namely ensuring the development of a sustainable urban and rural environment while at the same time creating an enabling environment for the implementation of the developmental agenda of national government.

1. Legislative Requirements for the Formulation of Spatial Development Frameworks

In terms of Chapter 5 of the Municipal Systems Act, 2000 (Act 32 of 2000), each municipal council “must adopt a single, inclusive and strategic plan for the development of the municipality”, which is known as the municipality's Integrated Development Plan. In terms of the Act, the municipality's Integrated Development Plan in turn “must reflect ... a spatial development framework which must include the provision of basic guidelines for a land use management system for the municipality”.

Chapter 2 of the Local Government: Municipal Planning and Performance Management Regulations, 2001 provides directives for the detail and content of integrated development plans and spatial development frameworks. In terms of section 2(4), a spatial development framework reflected in a municipality's integrated development plan must –



- give effect to the principles contained in Chapter 1 of the Development Facilitation Act, 1995 (Act No. 67 of 1995);
- set out objectives that reflect the desired spatial form of the municipality;
- contain strategies and policies regarding the manner in which to achieve the objectives referred to in paragraph (b), which strategies and policies must-
 - indicate desired patterns of land use within the municipality;
 - address the spatial reconstruction of the municipality; and
 - provide strategic guidance in respect of the location and nature of development within the municipality.
- set out basic guidelines for a land use management system in the municipality;
- set out a capital investment framework for the municipality's development programs;
- contain a strategic assessment of the environmental impact of the spatial development framework;
- identify programs and projects for the development of land within the municipality;
- be aligned with the spatial development frameworks reflected in the integrated development plans of neighbouring municipalities; and
- provide a visual representation of the desired spatial form of the municipality, which representation -
 - must indicate where public and private land development and infrastructure investment should take place;
 - must indicate desired or undesired utilisation of space in a particular area;
 - may delineate the urban edge;
 - must identify areas where strategic intervention is required; and
 - must indicate areas where priority spending is required.

2. The Purpose of a Spatial Development Framework

Although the legislation provides comprehensive directives for the content and focus areas of spatial development frameworks, it does not create a general understanding of the purpose and importance of spatial development frameworks.

The objectives of the SDF are not all necessarily specific to the SDF; some are also the objectives of city planning and of local government in general. The fundamental objectives that the SDF process is intended to achieve are as follows:

- ***To improve the physical environment of the community as a setting for human activities-to make it more functional, beautiful, decent, healthful, interesting, and efficient.*** This objective is in accord with the broad objective of local government to promote the health, safety, morals, order, convenience, prosperity, and general welfare of the community. These phrases actually pertain to all acts of government.
- ***To promote the public interest, the interest of the community at large, rather than the interests of individuals or special groups within the community.*** The comprehensive nature of the SDF contributes to this purpose, for it facilitates consideration of the over-all physical development of the entire community. Because the plan is based on facts and on studies that attempt to be thorough and impartial, it helps to prevent arbitrary, capricious and biased actions. The contributions of the plan to democratic, responsible government help to safeguard the public interest.
- ***To facilitate the democratic determination and implementation of community policies on physical development.*** The plan is primarily a policy instrument. The plan constitutes a declaration of long-range goals and provides the basis for a program to accomplish the goals. By placing the responsibility for determining policies on the city council and providing an opportunity for citizen participation, the plan facilitates the democratic process.
- ***To effect political and technical coordination in community development.*** Political coordination signifies that a large majority within the community is working toward the



same ends. Technical coordination means a logical relationship among the physical elements dealt with in the plan and the most efficient planning and scheduling of actual improvements so as to avoid conflict, duplication and waste. Effective coordination of such a complex subject requires a unified, integrated plan if the physical elements of the environment are to be managed without costly conflicts of function and if the political forces of the community are to deal with controversial development issues, including the plan itself, in a constructive manner.

- **To inject long-range considerations into the determination of short-range actions.** In effect, this purpose is intended to achieve coordination through time, to attempt to make sure that today's decision will lead toward tomorrow's goal. The extensive use of forecasts and the establishment of long-range goals are significant features of the SDF. The plan represents an effort to add the important time dimension to the decision-making process.
- **To bring professional and technical knowledge to bear on the making of political decisions concerning the physical development of the community.** This purpose is intended to promote wiser decision-making, to achieve informed, constructive government. Through the general plan, the special knowledge of the professional city planner is brought into play in the democratic political process.¹

¹ These objectives with the development of an SDF sound familiar and fall comfortable into our current views regarding development planning. However, they appear in a book title, *The Urban General Plan*, authored by T.J. Kent in 1964 which gives a review of urban planning approaches since 1910. The context and approach may differ, but the objectives remain.

3. The SDF Within the Context of Municipal Planning

All human activities have a spatial dimension. On the one hand human action impact on space and on the other hand space helps to shape and direct human action. It is this dynamic relationship that is addressed in a spatial development framework. It is critical that the SDF recognise both the integrated and dynamic nature of development. Developing and implementing a sustainable spatial development framework is a pivotal activity in any municipality. However, the need to integrate spatial planning and delivery with other core activities in the municipality is critical.

- **The SDF focus:** The extent of the municipal area requires a dual approach. The focus is on the total municipal area. At this level the emphasis is on determining and assessing municipal wide trends and tendencies with the aim of:
 1. Improved spatial functionality across the whole municipal area;
 2. Integration with the district and provincial SDFs; and
 3. Identifying and developing a settlement typology for more detailed spatial planning.
- **Key points of integration:** Spatial development planning does not happen in isolation. It is necessary to be guided by and linked into other core planning processes in the municipality. The basis of development planning processes is the municipality's IDP which will guide the process in terms of strategic priorities and links. Within the constitutional mandate of municipalities, namely access to services and local economic development, the infrastructure investment plan (IIP) and the local economic development plan (LED) becomes the basis for other planning and integration activities.

Where the Medium Revenue and Expenditure Framework (MTREF) involves the municipality's objectives in monetary terms, the SDF shows where these objectives will be achieved in spatial terms. The MTREF and SDF link with the municipality's project prioritization and implementation processes which in turn, is a derivative of the



outcomes of the sector plans which are based on the IIP and SDF within the context of the IDP.

4. The Structure of the SDF

An SDF is developed within a very specific legislative and policy framework. Legislation plays an enabling role while policy directs planning within the framework of the constitutional obligations of local government. It is therefore necessary to understand the context within which development takes place. The realities of the development context within the framework of legislation and policies determines the objectives of the SDF and in this way leads to the development of a spatial concept that eventually translates into sustainable implementation strategies and programmes. These elements determined the structure of the SDF which is thus dealt with as the:

- Institutional Context and Directives for Spatial Development.
- The Municipal area in context.
- Objectives of the SDF.
- The Spatial Development Concept.
 - Natural Structuring Elements
 - Growth Management
 - Urban Areas
 - Rural Areas
 - Movement System
 - Cultural Heritage
 - City Image and Public Space
- Implementation.

Institutional Context and Directives for Spatial Development

1. Introduction

The planning and development of cities, towns and rural areas in South Africa are governed by a national developmental agenda that aims to improve the manner in which urban and rural areas develop so as to increase the efficiency, sustainability and investment potential of a municipality, better the conditions in which people live and conduct their daily lives, and protect valuable resources from irresponsible consumption.

This developmental agenda finds expression in numerous sets of national and provincial legislation and policy documents. In order to ensure legitimacy the Mogale City Spatial Development Framework must be formulated within the parameters of this institutional framework. In addition, the Spatial Development Framework is also affected by existing local strategic planning documents, such as the Integrated Development Plans, that direct development of the district and local municipality.

The section below will provide an overview of the relevant legislation, policies and planning frameworks from national, provincial, district and local government that impact on and direct spatial development in South Africa and in particular in Mogale City.

Rather than replicating the contents of each piece of legislation, policy or framework, the aim is here rather to achieve a concise but clear understanding of the intention and implications of these documents for the formulation of the Spatial Development Framework.

The methodology that was therefore followed in this chapter is to –

- Provide a concise summary of the intention and principles/directives of the relevant acts, policies and frameworks; and
- Draw a conclusion on the most pertinent directives for spatial planning and development as promoted by the various levels of government.

2. National and Provincial Institutional Context

There exist a multitude acts and policies from national and provincial government that deal with spatial and physical development in some way or another, and it is impractical in the scope of a document such as this to deal with each and every of these documents. This section therefore instead focuses on those legislation and policies that have a fundamental impact on the manner in which we address spatial and physical development in cities and towns in South Africa.



The general intention of and relevant directives/principles² from the legislation and policies are dealt with in table format for ease of reference. At the end of this section, a summary will be provided of the overarching principles that emerge from these documents and which have to be taken forward as basic principles of the Mogale City Spatial Development Framework.

2.1 Legislation

South African legislation is largely enabling in nature. It therefore does not prescribe to municipalities but creates the necessary legal environment within which development and planning can take place. Recognizing local government as one of the three spheres of government puts a specific emphasis on intergovernmental relations. The implication is that the municipality is primarily responsible to do their own planning while considering the interest and demands of the communities and stakeholders. This happens within a reciprocal consideration of the planning done in neighbouring municipalities and the other spheres of government.

² *The legislation and policies often contain a large number of principles or directives, only some of which impact directly on the formulation of the spatial development framework. Other principles might deal with administrative or governance aspects, and will not be included in these tables in order to focus on the essential issues.*

Table 1: Relevance of national legislation to the SDF

National Legislation	Relevant Principles/Directives
<p><u>Constitution of the Republic of South Africa, 1996</u></p> <p>The Constitution is the supreme law of the land. The Bill of Rights enshrines the rights of all people in our country and affirms the democratic values of human dignity, equality and freedom.</p>	<ul style="list-style-type: none"> • Section 24: Everyone has the right to an environment which is not harmful to their health or well-being. • Section 26. (1): Everyone has the right to have access to adequate housing. • Section 152 spells out the objectives of local government as insuring access to at least basic services and facilitating economic development within a framework of financial sustainability.
<p><u>National Environmental Management Act, 1998 (Act 107 of 1998)</u></p> <p>Establishes principles for decision-making on matters affecting the environment.</p>	<ul style="list-style-type: none"> • Development must be socially, environmentally and economically sustainable. • Equal access to environmental resources, benefits and services to meet basic human needs. • The utmost caution should be used when permission for new development is granted.
<p><u>Municipal Systems Act, 2000 (Act 32 of 2000)</u></p> <p>In terms of the Act and the Local Government: Municipal Planning and Performance Management Regulations, 2001 all municipalities must prepare a Spatial Development Framework (SDF) as a core component of the Integrated Development Plan (IDP).</p>	<ul style="list-style-type: none"> • It must give effect to the Chapter 1 Principles of the Development Facilitation Act, 1995. • Set out objectives that reflect the desired spatial form of the city. • Contain strategies and policies regarding the manner in which the objectives will be achieved. • Set out basic guidelines for a land-use management system in the municipality. • Set out the Capital Investment Framework for the municipality's development programs. • Contain a strategic assessment of the environmental impact of the SDF. • Identify programmes and projects for the development of land. • Provide visual representation of the desired spatial form of the city, indicating the following: <ul style="list-style-type: none"> • where public and private development and infrastructure investment should take place; • desired or undesired utilisation of space in particular areas; • urban edge; • areas where strategic intervention is required; • areas where priority spending is required; and • alignment with the spatial development frameworks of neighbouring municipalities.

National Legislation	Relevant Principles/Directives
<p><u>Development Facilitation Act, 1995</u></p> <p>The most significant Act defining principles to guide planning and development</p>	<ul style="list-style-type: none"> • Promote the integration of social, economic, institutional and physical aspects of land development. • Promote integrated land development in rural and urban areas in support of each other. • Promote the availability of residential and employment opportunities in close proximity to or integrated with each other. • Optimise the use of existing resources relating to agriculture, land, minerals, bulk infrastructure, roads, transportation and social facilities. • Promote a diverse combination of land uses, also at the level of individual erven or subdivisions of land. • Discourage the phenomenon of urban sprawl in urban areas and contribute to the development of more compact towns and cities. • Contribute to the correction of historically distorted spatial patterns of settlement in the Republic and to the optimum use of existing infrastructure in excess of current needs. • Encourage environmentally sustainable land development practices and processes.
<p><u>National Environmental Management Protected Areas Act, 2003 (Act 57 of 2003)</u></p> <p>Provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes.</p>	<p>Of particular importance for spatial planning is the fact that the Act (Chapter 2) makes provision for a System of Protected Areas in South Africa. These include nature reserves, wilderness areas, protected environment, world heritage sites, forest areas and mountain catchment areas. The Cradle of Humankind World Heritage Site, of which a part falls in Mogale City, falls under the protection of this act.</p>
<p><u>UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972</u></p>	<p>The Cradle of Humankind World Heritage Site was established in terms of the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972. <i>In terms of the Convention, "Each State Party to this Convention recognizes that the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage referred to in Articles 1 and 2 and situated on its territory, belongs primarily to that State. It will do all it can to this end, to the utmost of its own resources and, where appropriate, with any international assistance and co-operation, in particular, financial, artistic, scientific and technical, which it may be able to obtain."</i> The Convention further states that "To ensure that effective and active measures are taken for the protection, conservation and presentation of the cultural and natural heritage situated on its territory, each State Party to this Convention shall endeavor, in so far as possible, and as appropriate for each country to adopt a general policy which aims to give the cultural and natural heritage a function in the life of the community and to integrate the protection of that heritage into comprehensive planning programmes". In South African context, the National Environmental Management Protected Areas Act, 2003 (Act 57 of 2003) fulfils the role of such a policy.</p>

National Legislation	Relevant Principles/Directives
<p><u>World Heritage Convention Act, 1999 (Act 49 of 1999)</u></p> <p>Provides for the incorporation of the UNESCO World Heritage Convention into South African Law.</p>	<p>Section 5 makes provision for the enforcement and implementation of the World Heritage Convention in South Africa and the protection of listed World Heritage Sites, including the Cradle of Humankind World Heritage Site. Chapter 5 of the Act sets out the requirements for preparation and implementation of integrated management plans for a World Heritage Site.</p> <p>For purposes of spatial planning and development, the following fundamental principles are applicable-</p> <ul style="list-style-type: none"> • cultural and natural heritage management must be sensitive to the people and their needs and must equitably serve their physical, psychological, developmental, cultural and social interests; • development must be socially, culturally, environmentally and economically sustainable; • community well-being and empowerment must be promoted through cultural and natural heritage education, the raising of cultural and natural heritage awareness, the sharing of knowledge and experience and other appropriate means; • the social, economic, cultural and natural heritage consequences of activities, including disadvantages and benefits, must be considered; • policy, administrative practice and legislation and the interpretation of existing legislation relating to the cultural and natural heritage must promote the integration of these resources in provincial, urban and rural planning and social and economic development; • the cultural and natural heritage is held in public trust for the people, the beneficial use of cultural and environmental resources must serve the public interest and the cultural and natural heritage must be protected as the common heritage of the people; and • sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, dolomitic land and ridges, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.
<p><u>The National Land Transport Act, 2009 (Act 5 of 2009)</u></p> <p>The purpose of the act is to provide for the transformation and restructuring of the national land transport system of the country. Chapter 4 of the Act sets out general principles for transport planning and its relationship with land use and development planning.</p>	<p>“Land transport planning must be integrated with the land development and land use planning processes, and the integrated transport plans required by this Act are designed to give structure to the function of municipal planning mentioned in Part B of Schedule 4 to the Constitution, and must be accommodated in and form an essential part of integrated development plans, with due regard to legislation applicable to local government, and its integrated transport plan must form the transport component of the integrated development plan of the municipality.”</p>

National Legislation	Relevant Principles/Directives
<p><u>National Housing Act, 1997 (Act no. 107 of 1997) and National Housing Code</u></p> <p>To provide for the facilitation of a sustainable housing development process and to lay down general principles applicable to housing development.</p>	<ul style="list-style-type: none"> • Prioritise the housing needs of the poor. • Provide as wide a choice of housing and tenure options as is reasonably possible. • Be economically, fiscally, socially, and financially affordable and sustainable. • Be based on integrated development planning. • Consider and address the impact on the environment. • Socially and economically viable communities. • Safe and healthy living conditions. • Racial, social, economic, and physical integration in urban and rural areas. • Effective functioning of the housing market and level playing fields. • Higher densities and the economical utilisation of land and services. • Community and recreational facilities in residential areas.

The provincial planning legislation contextualises national legislation.

Table 2: The implications of provincial planning legislation

Provincial Legislation	Relevant Principles/Directives
<p><u>Gauteng Planning and Development Act, 2000 (Act 3 of 2000)</u></p> <p>The Act inter alia sets out principles for planning and development in the Province and creates a framework for the preparation of development plans and frameworks</p>	<ul style="list-style-type: none"> • Promote the more compact development of urban areas and the limitation of urban sprawl and the protection of agricultural resources. • Support the correction of historically distorted spatial patterns of settlement in Gauteng. • Promote integrated land development in rural and urban areas in support of each other. • Promote the use and development of land that optimises the use of existing resources such as engineering services and social facilities. • Achieve positive development qualities, particularly with regard to public environments. • Establish viable communities with convenient access to economic opportunities, infrastructure and social services. • Balance environmental considerations of preserving natural resources for future generations with economic development practices and processes. • Promote the integration of social, economic, environmental, institutional, infrastructural and spatial aspects of development. • Provide for the development of formal and informal settlements. • Discourage illegal occupation of land.

2.2 National Policies and Frameworks

South Africa has put a strong emphasis on the development of policy. Policy shows government's intent and objectives and guides planning and decision making. The key is to assess the impact of policy at local level in terms of its applicability and the municipality's ability to sustain the development within set policy frameworks.

Table 3: Principles and directives embedded in national policies and frameworks

National Policy/Framework	Principles/Directives
<u>Millennium Development Goals, 2000</u> The United Nation's Millennium Development Goals is an ambitious agenda for reducing poverty and improving lives. The target for achieving most of the goals is 2015, using 1990 as a benchmark.	<ul style="list-style-type: none"> • Halving extreme poverty and hunger. • Achieving universal primary education. • Promoting gender equality. • Reducing under-five mortality by two-thirds. • Reducing maternal mortality by three-quarters. • Reversing the spread of HIV and AIDS, malaria and TB. • Ensuring environmental sustainability. • Developing a global partnership for development, with targets for aid, trade and debt relief.
<u>National 2014 Vision</u> As part of South Africa's celebration of 10 years of democracy in 2004, National Government formulated Vision 2014 to guide itself over the next 10 years.	<ul style="list-style-type: none"> • Reduce unemployment by half. • Provide the skills required by the economy. • Ensure that all South Africans are fully able to exercise their constitutional rights and enjoy the full dignity of freedom. • Compassionate government service to the people. • Massively reduce health risks. • Significantly reduce the number of serious and priority crimes. • Position South Africa strategically as an effective force in global relations.

National Policy/Framework	Principles/Directives
<p><u>National Spatial Development Perspective</u></p> <p>To guide government investment on national level in such a manner that the greatest measure of benefits could be obtained from such investment. This is done through an in-depth understanding of the national space economy.</p>	<ul style="list-style-type: none"> • Economic growth is a prerequisite for the achievement of poverty alleviation. • Government has a constitutional obligation to provide basic services to all citizens wherever they reside. • Beyond basic services, government spending on fixed investment should be focused on localities of economic growth and/or economic potential. • In localities with low demonstrated economic potential, government should, beyond the provision of basic services, concentrate primarily on human capital development. • Future settlement and economic development opportunities should be channelled into activity corridors and nodes.
<p><u>Breaking New Ground</u></p> <p>This policy is fundamentally about the need to move away from a housing-only approach to a more holistic development of human settlements, including the provision of social and economic infrastructure.</p>	<p>Sustainable Human Settlements comprise-</p> <ul style="list-style-type: none"> • Safe and secure environments. • Adequate access to economic opportunities. • A mix of safe and secure housing and tenure types. • Reliable and affordable basic services, educational, entertainment, health, welfare and police services within a Multi-purpose cluster concept. • Compact, mixed land use, diverse, life-enhancing environments with maximum possibilities for pedestrian movement and transit. • Low-income housing in close proximity to areas of opportunity. • Integrated, functional and environmentally sustainable human settlements, towns, and cities.
<p><u>Comprehensive Rural Development Programme, 2009 (CRDP)</u></p> <p>The strategic objective of the CRDP is to achieve social cohesion and development among rural communities.</p>	<ul style="list-style-type: none"> • Coordinated and integrated broad based agrarian transformation • An improved land reform programme • Strategic investments in economic and social infrastructure.

National Policy/Framework	Principles/Directives
<p><u>White Paper on Spatial Planning and Land Use Management, 2001</u></p> <p>To show practical ways in which South Africa may move to an approach of integrated planning for sustainable management of land resources.</p>	<ul style="list-style-type: none"> • Restructure spatially inefficient settlements. • Promote the sustainable use of the land resources in the country. • Channel resources to areas of greatest need and development potential, thereby redressing the inequitable historical treatment of marginalized areas. • Take into account the fiscal, institutional and administrative capacities of role players, the needs of communities and the environment. • Stimulate economic development opportunities in rural and urban areas. • Support an equitable protection of rights to and in land. • Apply the principles of sustainability, equality, efficiency, integration and fair and good governance to spatial planning and land use management. • Every municipality should have an indicative <i>plan</i> showing desired patterns of land use, directions of growth, urban edges, special development areas and conservation-worthy areas The <i>plan should be flexible</i> and able to change to reflect changing priorities of the municipality.

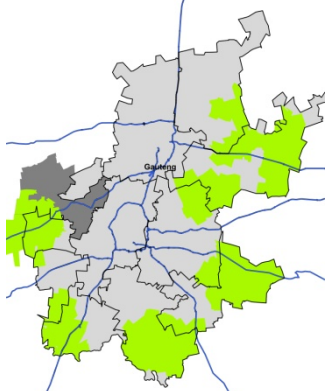
2.3 Provincial Policies and Frameworks

Provincial policies and frameworks have a more direct impact on local development. In the application of development frameworks or in considering development perspectives one should make a distinction between those aspects which lie within the control of the municipality and those that affect the planning environment in which case the municipality must recognise and adopt its approach and strategies accordingly.

Table 4: Principles and directives embedded in provincial policies and frameworks

Gauteng Policy/Framework	Principle/Directive
<p><u>Gauteng Spatial Development Perspective</u></p> <p>The Gauteng Province faces a complex set of challenges of (1) high, but unequal growth, (2) environmental degradation, (3) fragmentation and long travelling distances and (4) huge differences in quality of living, as well as (5) an institutional challenge of prioritising, focusing and coordinating the actions of the three spheres of government and the business community.</p>	<ul style="list-style-type: none"> Existing spatial concentrations of economic activity and areas showing potential for the expansion of economic activity should be prioritised for public sector fixed investment that supports economic activity. Promote socio-economic inclusion through strengthening overlaps in economic activity and poverty to address high levels of spatial fragmentation and exclusion. Stimulate emerging and new spatial overlaps of economic activity and poverty Develop a sustainable urban region through promoting equitable access to basic services, the protection of natural and cultural resources and an urban form that supports greater efficiencies in land use and service provision. The Gauteng Spatial Development Perspective draws the following conclusions on and makes the following recommendations for Mogale City: <ul style="list-style-type: none"> Mogale City is not amongst the top 10 contributors to the total provincial GVA or total employment in Gauteng Mogale City showed a low economic growth between 1996 and 2004. The Krugersdorp and Muldersdrift activity areas show significant links with the Gauteng core The Krugersdorp and Muldersdrift areas form part of a series of loose standing decentralised, stagnating activity areas that are scattered throughout the province. Kagiso has been identified as one of the top 11 concentrations of poverty in Gauteng Kagiso has been identified as an area with medium potential access to economic activity at a provincial scale. In the Krugersdorp, Muldersdrift and Kagiso areas government investment should focus on infrastructure, transport solutions and subsidies, information technology and education and skills development.
<p><u>Gauteng Growth and Development Strategy</u></p> <p>The Gauteng Growth and Development is a practical, action-oriented framework for integrated and sustainable growth and development in the province.</p>	<ul style="list-style-type: none"> The provision of social and economic infrastructure and services. Accelerated, labour absorbing economic growth. Sustainable socio-economic development. Enhanced government efficiency and cooperative governance. Deepening participatory democracy. Contributing to the social and economic development of the continent.

Gauteng Policy/Framework	Principle/Directive
<p><u>Gauteng Spatial Development Framework, 2000</u></p> <p>The Gauteng Spatial Development Framework is intended to guide decisions relating to the location and nature of physical development in Gauteng.</p> <p>Note: The Gauteng Spatial Development Framework is currently being revised.</p>	<ul style="list-style-type: none"> • Resource based economic development. • Contained urban growth (establishing an urban edge for the province). • Re-directing urban growth. • Rural development beyond the urban edge. • Mobility and accessibility. <p>The following aspects specifically relate to Mogale City:</p> <ul style="list-style-type: none"> • Kagiso/Azaadville has been earmarked as Areas of Consolidation. • Muldersdrift east of the R28 has been indicated as a Long Term Densification Area. • Magaliesburg has been earmarked as a rural town, while the SDF states that Tarlton and Hekpoort could also in due course develop into rural towns if they provide a rural service function. • The remainder of the area is indicated as either intensive rural or nature reserve areas.
<p><u>Gauteng Global City Region</u></p> <p>To build Gauteng as an integrated and globally competitive region, where the economic activities of different parts of the province complement each other in consolidating Gauteng as an economic centre of Africa and an international recognised global city-region.</p>	<ul style="list-style-type: none"> • Clear leadership. • A vision and strategy. • Effective institutional relations. • Strong economic clusters, with a particular view to building new growth sectors. • Good telecommunication and business linkages. • Spatial coalitions of partners working together. • A balanced approach to development, that actively incorporates and seeks to spread benefit to the poor.
<p><u>Integrated Report for the Development and Management of the Cradle of Humankind World Heritage Site</u></p>	<p>The Gauteng Provincial Government prepared the nomination proposal for the fossil hominid sites of Sterkfontein, Swartkrans, Kromdraai, and environs in 1998. On 2 December 1999, South Africa's proposed World Heritage Sites were accepted, and were inscribed on the List of World Heritage Sites by the World Heritage Committee.</p> <p><i>"It becomes incumbent on the Management Authority for the COH WHS to ensure that the near natural state of what was described in the proposal as the core area endures. This can be achieved by recommending appropriate development and land use controls. Improvements in the quality of the core area can be made by recommending appropriate mitigatory and control measures to be applied during the planning phase for developments."</i></p> <p>The Gauteng Provincial Government is currently in the process of developing an Environmental Management Framework for the Cradle of Humankind and its proposed buffer zone, which will further guide and control development in the area.</p>

Gauteng Policy/Framework	Principle/Directive
<p><u>Gauteng Agricultural Hubs</u></p>	<p>The Gauteng Department of Agriculture, Conservation and Environment has demarcated a number of agricultural hubs throughout the province. These hubs relate to the creation of centres of high quality agricultural activity, where niche market agricultural products such as vegetables, including indigenous vegetables, flowers, herbs and spices will be farmed.</p> <p>The south-western part of Mogale City, roughly to the south and west of the R24, forms part of one such a hub.</p> 

2.4 Key Considerations Emanating from the National and Provincial Planning Context

The above summary of the most important national and provincial legislation and policies that deal with spatial planning and development in South Africa collectively describes the new South African planning philosophy and approach. From the above, the following set of overarching guiding principles can be drawn which will inform the formulation of the Mogale City Spatial Development Framework.

- Land development must support and facilitate economic growth and development that will contribute to a reduction in unemployment and halve poverty.
- Government investment must focus on areas with economic growth potential.

- Land development must take place in an integrated manner, both spatially and institutionally.
- The use of existing resources and infrastructure must be optimised.
- Urban sprawl must be discouraged and more compact and efficient cities must be promoted. To achieve this, development must be channelled into nodes and corridors.
- Historically distorted development patterns must be corrected by means of physical and social integration and the redirecting of investment to areas of highest value and accessibility.
- The creation of socially and economically viable and sustainable human settlements must be ensured when dealing with housing development.
- Land development must support public transport infrastructure and services.
- Economically, socially and environmentally sustainable development must be encouraged.
- Sensitive natural and cultural heritage environments must be protected against irresponsible, inappropriate and unnecessary development.



From a Gauteng Perspective, the following are specific directives that apply to the Province and Mogale City:

- Economic development that will result in the absorption of unemployment and the strengthening of the Global City Region is the paramount development agenda of the province.
- Localities where there is an overlap between poverty and economic activity, such as Krugersdorp and Kagiso, must be strengthened and developed.
- The Gauteng Urban Edge, 2009 affects development trends in the province.
- The development of Agricultural Hubs in the various Gauteng districts.

A significant policy and legislative aspect of international, national and provincial importance that affects the development of Mogale City and its surrounds is the Cradle of Humankind World Heritage Site. The Site is protected by means of an international convention as well as local legislation, which restricts the manner in which this area can be developed.

3. District and Local Municipal Development Plans and Frameworks

The following aspects are recognised as being central to the development of a spatial framework for the municipal area. However, within the realm of a cyclical planning process and the interrelationships of planning instruments, one should recognise that the SDF will also inform the Integrated Development Plans, budgets, infrastructure investment plans and economic development plans of the municipality and other institutions of government.

3.1 Integrated Development Plans

The core elements of the Integrated Development Plans of the West Rand District Municipality and Mogale City are set out in the table below. These elements are –

- Vision.
- Key Performance Areas/Strategic Goals.
- Key Priority Areas.
- Community Needs.
- Strategic Spatial Projects.

According to the SWOT Analysis that was done as part of the Mogale City Integrated Development Plan, 2008/2009, Land Use Management (urban and rural development planning and human settlement planning) has been identified as one of the weaknesses in the municipality. Notwithstanding this, spatial planning and land use management do not feature under the strategic goals or the priority issues.

Nonetheless, the importance of spatial planning cannot be underestimated. The implementation of projects identified as part of the Integrated Development Plan require sound spatial development plans as a foundation and facilitating mechanism for coordinated, efficient and sustainable government and private sector investment and service delivery.

Table 5: Local Integrated Development Plans

West Rand District Municipality Integrated Development Plan, 2007/2012		Mogale City Integrated Development Plan, 2008/2009
Vision	"We shall aspire to build a safe and peaceful environment based on a sustainable social, economic and physical development. Thereby providing a better life for all our people, through an institution that exercises governance in a transparent and accountable manner".	"Quality service delivery for all in Mogale City".
Key Performance Areas/Strategic Goals	<ul style="list-style-type: none"> • Service Delivery and Infrastructure Development. • Facilitate Local Economic Development. • Municipal Financial Viability. • Municipal Transformation and Institutional Development. • Good Governance. 	<ul style="list-style-type: none"> • Provide sustainable services to the community. • Promote a sound environmental management system. • Provide sound governance for local communities. • Ensure sound governance practices within the Municipality.
Key Priority Areas	<ul style="list-style-type: none"> • Provision of housing and sustainable human settlements. • Facilitate job creation through Local Economic development and capital projects. • Fighting the spread of HIV/Aids, other health problems and improve social conditions. • Improve access to public safety and social crime prevention. • Improve and maintain municipal financial viability, good governance and institutional transformation. 	
Community Needs	<ul style="list-style-type: none"> • Provision of more land for housing settlement. • Provision of basic services of sanitation and water. • Provision of social services such as clinics and access to government services. • Provision of visible safety and security. 	<ul style="list-style-type: none"> • Housing (including Hostels upgrade and conversion). • Water and Sanitation (rural). • Economic development and job creation. • Roads and Street maintenance. • Electricity. • HIV/AIDS and Health Facilities. • Skills Development Projects. • Education Facilities. • Rural Cemeteries. • Public Safety. • Racism and farm evictions.

West Rand District Municipality Integrated Development Plan, 2007/2012		Mogale City Integrated Development Plan, 2008/2009
Strategic Spatial Projects	<ul style="list-style-type: none"> • Tourism Development in the Cradle of Humankind and Maropeng, including the Katlego Cultural Village Project. • Gauteng 20 Priority Township Programme (Kagiso and Munsieville). • Spatial Development Initiative (SDI) along the R28 route (<i>West Rand Transportation and Nodal Development Strategy</i>). • Leratong Hospital Intersection Nodal and Intermodal transport development. • Lanseria Airport Node. • N17 link road between Nasrec and Klipspruit Valley Road to Randfontein or Mogale City. • K29 road will link Rustenburg and Johannesburg through West Rand and it is seen as a potential corridor in the area. • Muldersdrift and Hekpoort Cemeteries. 	<ul style="list-style-type: none"> • Urban renewal of the CBD. • Magaliesburg Precinct Plan. • Muldersdrift Precinct Plan. • Kagiso CBD Renewal. • Munsieville Urban Renewal. • Urban Open Space Framework. • Leratong Node.

3.2 West Rand District Municipality SDF, 2008

The focus of the West Rand SDF proposals is based on a management approach of the growth and development of the district area. The growth management approach entails:

- Defining principles and objectives;
- Identifying and defining structuring elements and management approaches for each; and
- Developing policy and process directives related to growth management.

The objectives of the West Rand District Spatial Development Framework are as follows:

Objectives	Principles
Create Connectivity	<ul style="list-style-type: none"> • Access to opportunities • Efficient movement of goods and services • Decrease congestion and drive times
Promote Quality urban and rural environments	<ul style="list-style-type: none"> • Clean and safe environments • Well designed build environment • Maintained urban and rural areas
Ensure Viable and sustainable development and growth	<ul style="list-style-type: none"> • Cost effective service provision • Viable infrastructure development • Managing environmental resources • Managing available land resources
Ensure Coordination	<ul style="list-style-type: none"> • More efficient service delivery • Better planning and decision taking

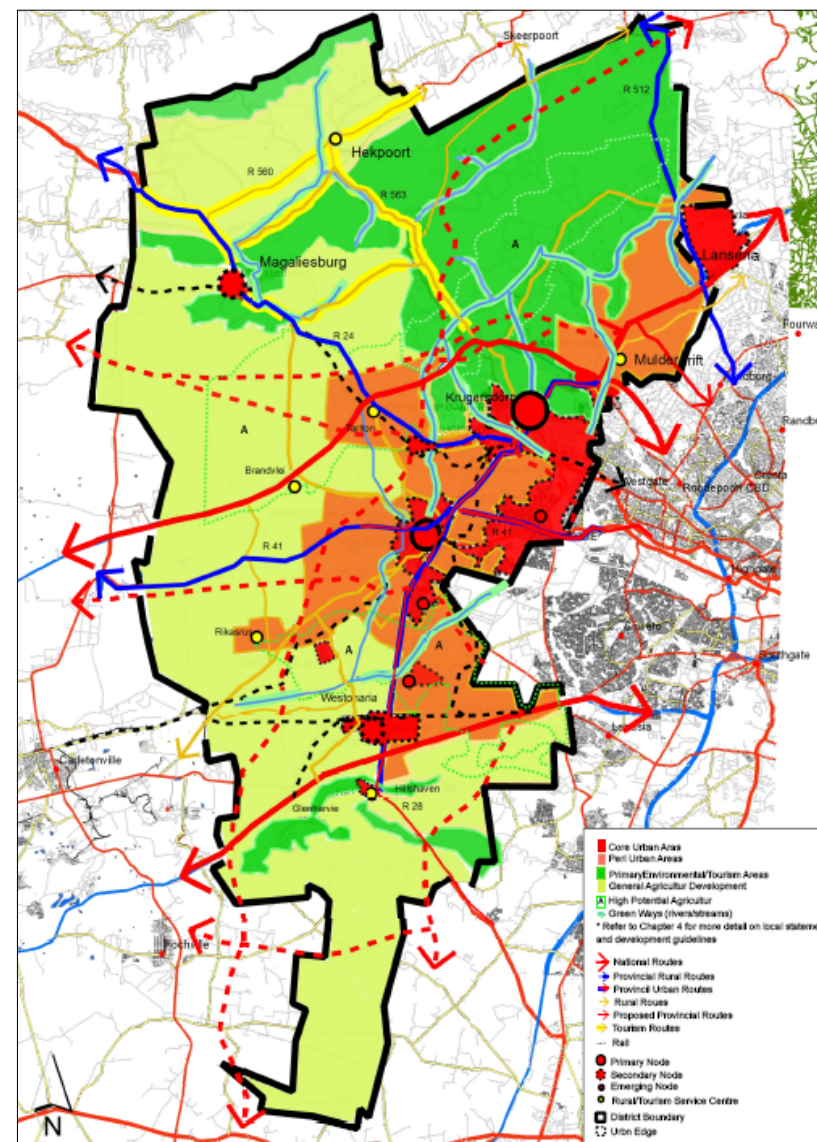


Figure 1: West Rand District Municipality SDF, 2008

The implementation of the West Rand District SDF, 2008 is based on the following strategies:

- Ensuring efficient movement and accessibility
- Promote efficient management of a network of centres of high order activity
- Open Space systems and networks
- Plan and deliver sustainable housing and settlements
- Semi rural and rural activities
- Levels of infrastructure and services
- Promoting a managed Urban Edge
- Ensuring coordination through relevant institutional mechanisms

3.3 West Rand District Municipality Integrated Transport Plan Update 2007

In terms of the West Rand District Municipality Integrated Transport Plan, 2007 the strategic directives for transport that have a spatial implication include *inter alia* the following:

- To establish a safe and comprehensive road and rail network within the WRDM region that will promote the economic development of the area, and enhance the accessibility of previously disadvantaged areas to essential facilities.
- To improve the transportation links with the Greater Johannesburg and the East Rand. Although this can be achieved to an extent through the upgrading of existing east-west routes the construction of the N17 is, however, of paramount importance to achieve the desired linking.
- To improve the transportation links between regional development clusters and nodal points along corridors with an efficient road system that will promote economic activity between the identified development clusters/nodal points.

The following network links that have an impact on the Mogale City SDF were proposed as part of the Strategic Public Transport Network:

- Primary North-South Linkages.
- R28 connecting Krugersdorp in the north to Randfontein and Westonaria in the south (This link ties in with the existing City of Johannesburg SPTN from Hendrik Potgieter Road at the Pinehaven Intersection in the north as well as in the south at the R551 linking into the Stretford Station area).
- Primary East-West Linkages.
- National Route N14.
- R24 (Rustenburg Road) becoming Luipaard Street in Krugersdorp area which becomes Ontdekkers Road in Roodepoort (City of Johannesburg).

3.4 West Rand District Municipality Tourism Development Strategy, 2005

The West Rand District Municipality Tourism Development Strategy provides overarching direction for the development of tourism in the West Rand District Municipality Area. To work towards the achievement of the long term vision to develop the West Rand as a premier tourist destination, it is important that the West Rand must focus on delivering on the following key objectives in a competitive and unique way. To improve its competitive edge, the region must:

- Be visitor focussed.
- Match products to markets.
- Strengthen and expand the product portfolio.
- Define and strengthen tourism spatial components and experience clusters.
- Develop a unique destination positioning.
- Customise experiences through packaging.
- Tailor the marketing message to chosen segments.
- Make it easy to get there and move around.
- Facilitate public sector investment in hard infrastructure.
- Enhance soft infrastructure provision.

3.5 Mogale City Spatial Development Framework, 2003

The current Mogale City Spatial Development Framework, 2003 forms the foundation for the 2010 revision of the Spatial Development Framework, and it is therefore important that an in-depth understanding of the current framework is achieved. Although the Mogale City Spatial Development Framework, 2010 will be a complete revision, it is still important to build on the current framework for the sake of achieving consistency and continuation as far as possible, as these qualities assist in building investor confidence and long term infrastructure investment planning.

According to the Mogale City SDF, 2003, "It is meant to provide strategic guidelines and principles in terms of which development initiatives or land use applications can be evaluated." Table 6 sets out key aspects of the Mogale City Spatial Development Framework, 2003.

The revision will need to take cognisance of the strategic issues and determine whether they have been adequately dealt with/have changed status in terms of their relative strategic importance/have ceased to be a strategic issue for some reason or another since the formulation of the previous SDF.

Table 6: key aspects of the Mogale City Spatial Development Framework, 2003

Development Principles	Structuring Elements	Strategic Issues
<ul style="list-style-type: none"> • Sustainability. • Efficiency. • Integration. 	<ul style="list-style-type: none"> • Rural areas. • Existing and proposed nodes. • Development corridors. • Open Space networks. • Urban Edge. 	<ul style="list-style-type: none"> • Leratong crossing. • Soweto interface. • Re-alignment of Hendrik Potgieter Road. • Proposed casino development. • Urban renewal (including Krugersdorp, Muldersdrift, Munsieville, Kagiso, and Magaliesburg CBDs as well as Chamdor, Factoria, Delperton and Boltonia industrial areas). • Urbanization boundary (Gauteng Urban Edge). • Cosmo city. • Formal housing and land acquisition (development of affordable housing, especially in the rural areas). • Mining land. • Cradle of Humankind World Heritage Site. • Urban integration. • Rural development. • Nodal development. • Public transportation.

3.6 Mogale City Environmental Management Framework

An Environmental Management Framework (EMF) is a framework of spatially represented information (in the form of maps) connected to a variety of parameters. The level of sensitivity of the environment determines these parameters, which provide a framework within which development should proceed in order for it to be environmentally sustainable. The main purpose of an EMF is to proactively identify areas of potential conflict between development proposals and critical and sensitive environments.

The objectives of the Mogale City EMF are –

- To inform future planning processes in Mogale City, such as the Spatial Development Framework.
- Identify sensitive environments (from a social, economic, agricultural, heritage, infrastructural and ecological perspective).
- Assist in identifying a holistic strategy and hierarchy for open space management and planning.
- Assist in identifying local authority environmental priority areas.
- Provide management guidelines for the sustainable management of development in Mogale City.

The main output of the document is a set of management guidelines for the main Importance Rating Categories, in the form of a GIS based decision support tool.

3.7 Local/Specialised Spatial Development Frameworks and Policies

The municipality has a number of local spatial development frameworks and policies that deal with specific issues or specific areas. These plans will all be taken into consideration when formulating the spatial development framework and include –

- The Master Plan for the Cradle of Humankind World Heritage Site, 2001.
- Muldersdrift Spatial Development Framework, 2009 (Draft)
- The Muldersdrift Spatial Development Strategy, 1997 and Muldersdrift Land Use Survey, 2007.
- Leratong Development Node Intermodal Facility and Urban Design Framework, 2007.
- Mogale City Local Municipality 2010 Strategic Framework Plan.

The purpose of the latter plan is to outline the approach that Mogale City will be taking in preparing itself for the 2010 Soccer World Cup. Mogale City is not one of the host cities for the SA 2010 Soccer World Cup. However, the city has taken a decision to prepare itself for the event, so that it can take advantage of the benefits that come with the event as well as to create a lasting legacy for future generations. The Strategies that form part of the 2010 Strategic Framework Plan include inter alia –

- Tourism Promotion and Development (Cradle of Humankind and Maropeng, Muldersdrift and Magaliesberg Mountains).
- Greening and Beautification.
- Sport Development.
- Public Viewing Sites (Fan Parks).

3.8 Implication for the SDF Arising from District and Local Directives for Spatial Planning and Development

Based on the strategic planning documents that exist for both the West Rand District Municipality and Mogale City, the following are considered to be key issues or directives that inform the revision of the Mogale City Spatial Development Framework, 2010 –

- Service delivery, economic development, environmental management and the development of sustainable human settlements are some of the key priorities of the municipalities.

- Tourism development in the Cradle of Humankind is considered to be one of the most important strategic projects. This includes defining and strengthening tourism clusters and improving accessibility to tourism areas and facilities. The natural areas have been identified as a prime opportunity zone in the district for tourism development.
- The development of the Leratong Node is a strategic project that must receive attention.
- Urban renewal of existing settlements and economic activity areas are important.
- The development and improvement of linkages with Johannesburg is important to link Mogale City with the Gauteng economic core. Internal linkages and linkages to the south, west and north are also important.
- The area to the east of the N14/R28, between Beyers Naudé Drive and Hendrik Potgieter Drive is considered to be a potential development zone.
- Settlement development must focus on the strengthening and sustainable expansion of existing settlements in nodal areas rather than the creation of new settlements.

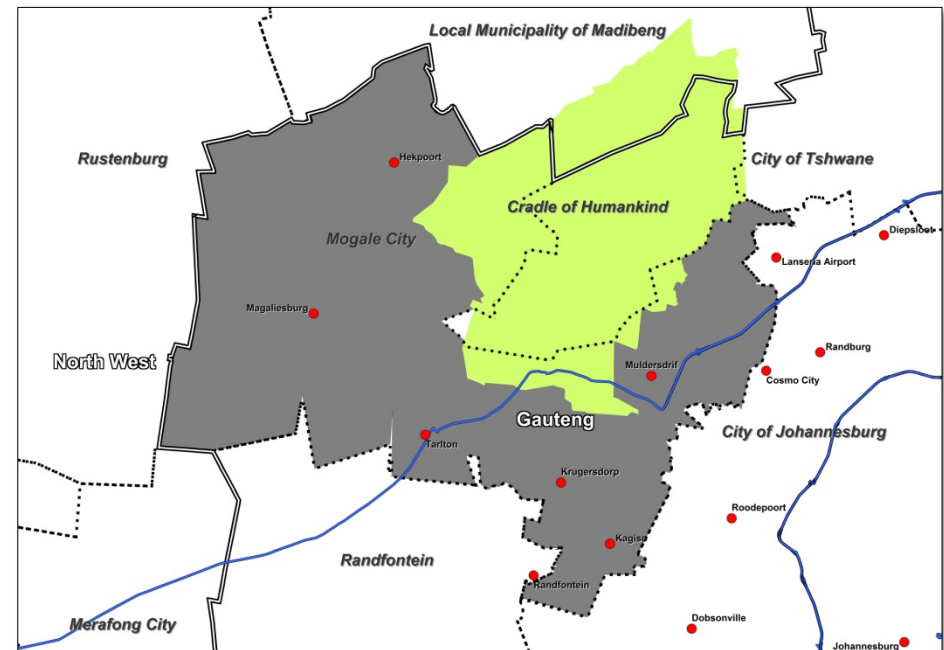
4. Spatial Links to Adjoining Municipalities

Mogale City is in the peculiar situation that it lies on the periphery of the Gauteng metropolitan core and borders onto North West Province in the west. It functions in a sense as a zone of transition between a strong urban core and extended rural area. One should accept that its location will create some development challenges and tensions on the one hand but on the other hand, it should provide unique opportunities for development that do not occur in the metropolitan core nor the rural areas.

The proposals made in the spatial development frameworks for those areas directly adjacent to Mogale City have an impact on future development in Mogale City and hence the proposals made in terms of the Mogale City Spatial Development Framework.

Mogale City is surrounded by the following metropolitan and local municipalities:

North	<ul style="list-style-type: none"> • City of Tshwane Metropolitan Municipality • West Rand District Management Area • Madibeng Local Municipality (North West Province)
East	<ul style="list-style-type: none"> • City of Johannesburg
South	<ul style="list-style-type: none"> • Randfontein Local Municipality • Merafong Local Municipality
West	<ul style="list-style-type: none"> • Rustenburg Local Municipality (North West Province)



Map 1: Mogale City and its neighbours

5. Summary: Key Issues Flowing from the Assessment of the Institutional Context and Directive for Spatial Planning

All the issues described in the previous section have either a direct impact on the planning process or should be considered when planning is done. However, the issues listed below are central and provides very clear and direct guidance to the broader spatial planning context.

5.1 Key Issues Arising from the National and Provincial Spheres of Government

The flowing issues must be regarded as central to the development of an SDF for Mogale City:

- Land development must support and facilitate economic growth and development that will contribute to a reduction in unemployment and halve poverty.
- Government investment must focus on areas with economic growth potential.
- Land development must take place in an integrated manner, both spatially and institutionally
- The use of existing resources and infrastructure must be optimised.
- Urban sprawl must be discouraged and more compact and efficient cities must be promoted. To achieve this, development must be channelled into nodes and corridors.
- Historically distorted development patterns must be corrected by means of physical and social integration and the redirecting of investment to areas of highest value and accessibility.
- The creation of socially and economically viable and sustainable human settlements must be ensured when dealing with housing development.
- Sensitive natural and cultural heritage environments must be protected against irresponsible, inappropriate and unnecessary development.

- Land development must support public transport infrastructure and services.
- Economically, socially and environmentally sustainable development must be encouraged.
- Economic development that will result in the absorption of unemployment and the strengthening of the Global City Region is the paramount development agenda of the province.
- Localities where there is an overlap between poverty and economic activity, such as Krugersdorp and Kagiso, must be strengthened and developed.
- The Gauteng Urban Edge, 2009 affects development trends in Mogale City.
- The Cradle of Humankind World Heritage Site and its proposed buffer zone must be taken into consideration in any development proposals made for the area.
- The development of provincial Agricultural Hubs, one of which is proposed for the south-western part of Mogale City.

5.2 Matters Pertaining to the District and Local Government Spheres

The following issues were identified at the local level of development and direct planning and development:

- Service delivery, economic development, environmental management and the development of sustainable human settlements are some of the key priorities of the municipalities.
- Tourism development in the Cradle of Humankind is considered to be one of the most important strategic projects. This includes defining and strengthening tourism clusters and improving accessibility to tourism areas and facilities. The natural areas have been identified as a prime opportunity zone in the district for tourism development.
- The development of the Leratong Node is another strategic project that must receive attention.
- Urban renewal of existing settlements and economic activity areas are important.

- The development and improvement of linkages with Johannesburg is important to link Mogale City with the Gauteng economic core. Internal linkages and linkages to the south, west and north are also important.
- The area to the east of the N14/R28, between Beyers Naudé Drive and Hendrik Potgieter Drive is considered to be a potential growth zone.
- Settlement development must focus on the strengthening and sustainable expansion of existing settlements in nodal areas rather than the creation of new settlements.

Of particular importance to the formulation of the Spatial Development Framework are the municipal development objectives (or strategic goals) as set out in the Mogale City Integrated Development Plan, 2008/2009, namely –

- Provide sustainable services to the community.
- Promote a sound environmental management system.
- Provide sound governance for local communities.
- Ensure sound governance practices within the Municipality.

The Municipal Area in Context

The history of Mogale city is diverse with the towns of Krugersdorp and Magaliesburg being the most prominent in the development of the region. The old Krugersdorp, situated 33km west of Johannesburg, like most towns in the region had its origins in the discovery of gold on the Witwatersrand. On 26 April 1887 the government of Transvaal decided to buy 428 ha of the farm Perdekraal in order to establish an administrative centre for the mines that were developing on the rest of the farm. The owner of the farm insisted on the name Krugersdorp in honour of the President of Transvaal, Paul Kruger. The first stands were sold on 31 October 1887 and two years after that the government donated 88 pound for the planting of trees along the streets. The completion of a rail line from Johannesburg to Krugersdorp in 1891 brought with it more development. In 1952 Krugersdorp became the first town in the world to produce uranium as a by-product of gold.

Magaliesburg is situated on the southern slopes of the Magaliesberg. The mountain, valley and town are named after Mohale or Magali, the chief of the old Po-tribe. The climate and relative high rainfall has made this area ideal for game farming and conservation.

Mogale City, in terms of its current composition and demarcation is the end product of the municipal transformation process in 2000.

1. The Spatial Context of Mogale City

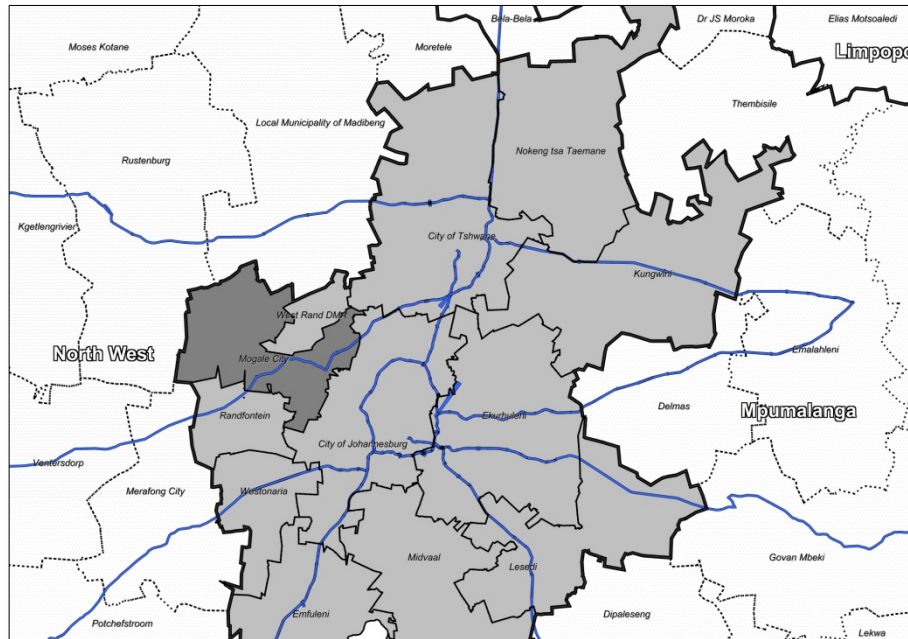
1.1 Regional Context

Mogale City lies directly west and south of the Johannesburg and Tshwane metropolitan areas respectively, and forms part of one of three district municipalities that make up the peripheral areas of Gauteng province. To the north, west and south it borders onto Madibeng Local Municipality, Rustenburg Local Municipality and Randfontein Local Municipality respectively. The West Rand District Management Area lies within the central-northern part of Mogale City, and this area comprises the bulk of the Cradle of Humankind World Heritage site.

Mogale City's strongest functional urban linkage is with the City of Johannesburg. Krugersdorp and the greater Kagiso area, which is Mogale City's primary urban complex, forms part of a band of development stretching from the Johannesburg Inner City westwards along the mining belt up to Krugersdorp. The Krugersdorp/Kagiso core therefore forms an integral part of the Gauteng conurbation. Development from Johannesburg's side is already extending up to the Johannesburg/Mogale City boundary for almost its entire length, and current development plans of the City of Johannesburg propose a number of major developments that will have a



significant impact on Mogale City. These include the Lanseria nodal development, the expansion of affordable housing areas around Cosmo City and residential densification in the areas between Lanseria and Cosmo City.



Map 2: Mogale City Regional Context

The strongest east-west movement linkages between Mogale City and Johannesburg are along the R512 (Malibongwe Road), Beyers Naudé Drive, Hendrik Potgieter Road, Voortrekker/Ontdekkers/Main Reef Road and Randfontein Road, as well as the east-west railway line. These roads are also all major public transport routes.

Mogale City is linked to the City of Tshwane via the R28/N14 highway, but there is no real spatial integration between these two areas, as the Tshwane urban areas are separated from Mogale City by natural open space areas. However, there are still very strong movement flows between the two areas, both from a commuter perspective as well as the flow of goods and services.

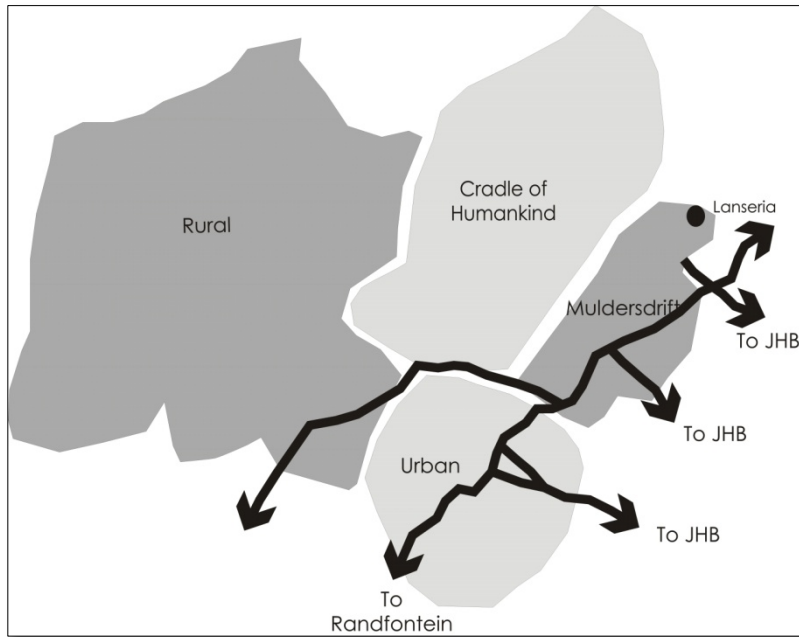
To the north, Mogale City and Madibeng have a strong agricultural and natural open space interface, with a continuous rural environment between these two local authorities. The Cradle of Humankind World Heritage Site, which spans both municipalities, also forms a strong linkage between the two municipalities. Similarly, the rural environment stretches into the Rustenburg Local Municipality in the west. The Magaliesberg and Witwatersberg, which span across Tshwane, Madibeng, Mogale City and Rustenburg Local Municipality, provide strong natural structuring and environmental linkages between these areas.

Randfontein town, which lies just south-west of Mogale City, has a strong functional relationship with Krugersdorp/Kagiso, but other than that there is no real integration between Mogale City and areas further south.

1.2 Internal Spatial Structure

The largest part of Mogale City is rural in nature, with a specific urban concentration in the south-eastern part of the municipality where the municipality interfaces with the Gauteng urban complex. The municipality also comprises the urban-rural transition zones typical of large urban areas. The spatial structure of Mogale City is made up of four major development/use zones, namely –

- The extensive rural environment
- The urban area
- Muldersdrift rural/urban transition zone and future development area
- The Cradle of Humankind World Heritage Site and Buffer Zone



The **rural environment** is characterised by the following prominent features: –

- The Magaliesberg and Witwatersberg ranges in the north-western part of Mogale City;
- Concentration of moderate to high potential agricultural land in the north-western and south-western part of Mogale City, the latter forming part of a Gauteng Agricultural Hub
- Nature conservation areas such as the Krugersdorp Game Reserve, Magaliesrivier Conservancy, Hartebeesfontein Conservancy and Lammermoor Conservancy.
- **Rural towns** in Mogale City are Tarlton, Magaliesburg, and Hekpoort, located in the western part of Mogale City. These are generally small settlements that are in essence no more than rural service centres providing a central place service to the surrounding rural and farming communities.

Urban concentration is found in the south-eastern part of Mogale City around Krugersdorp and Kagiso. These areas form part of a virtually continuous band of development from Johannesburg and have strong functional linkages with Johannesburg.

- The Krugersdorp CBD is the main business, social and administrative centre in Mogale City and fulfils a regional function;
- The areas around Krugersdorp are established middle to high income residential areas with the full range of urban amenities, services, and facilities;
- The areas to the south of Krugersdorp, namely Kagiso, Azaadville and Rietvallei (hereafter referred to as the Kagiso complex), are predominantly disadvantaged settlements with more limited access to services and facilities than the Krugersdorp areas;
- The Kagiso complex is physically separated from the Krugersdorp urban areas by an extensive mining belt that runs in a roughly east-west direction through the area. This makes future integration of these areas very difficult, if not impossible; and
- A number of industrial/commercial areas can be found throughout the urban area.

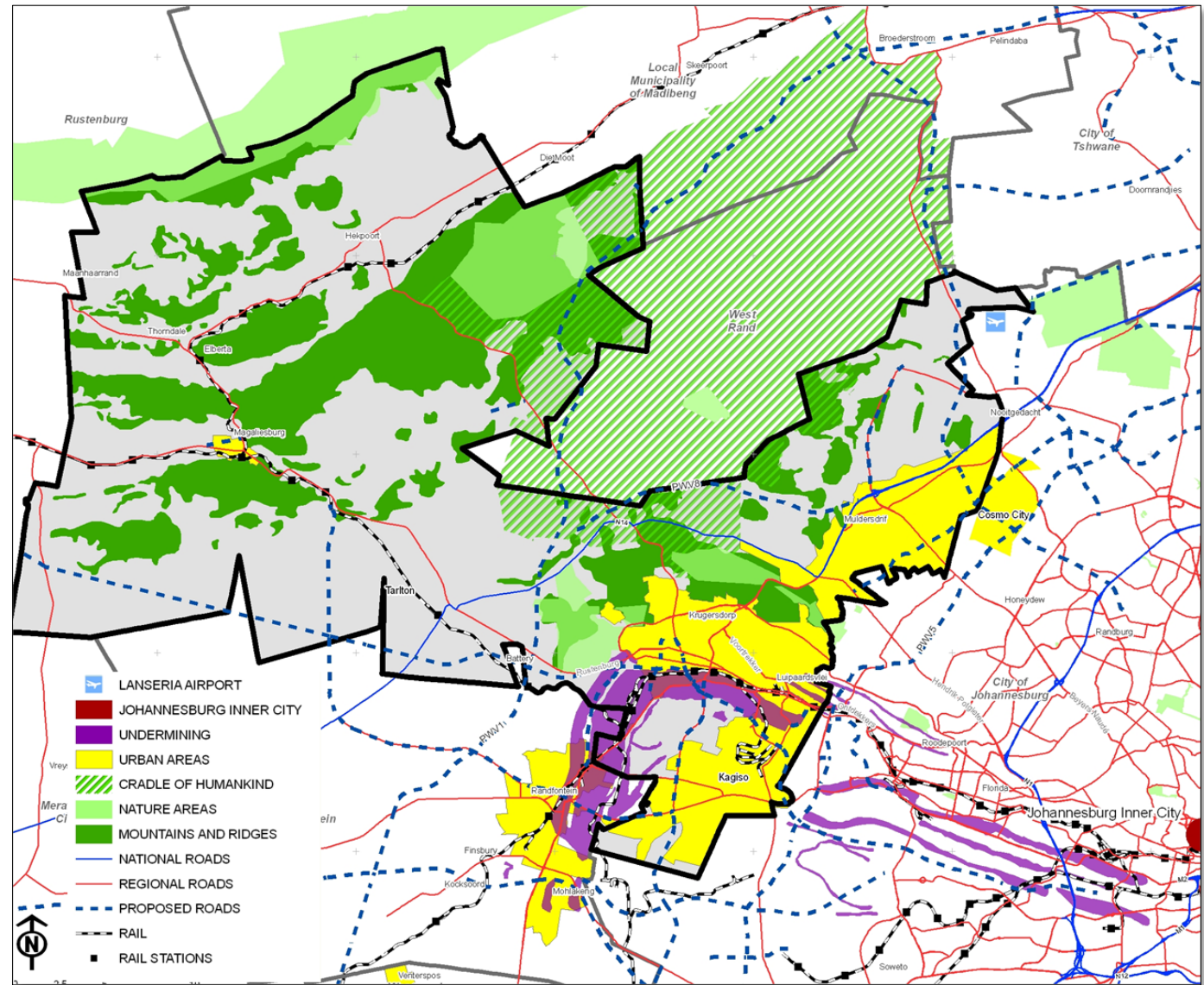
The **Muldersdrift** area lies to the north of Krugersdorp, on either side of the N14. To the east it is bounded by urban development in Johannesburg, while the Cradle of Humankind World Heritage site lies to the west thereof. While on the one hand this area lies in the path of urban development and as such shows the mixed-use typology of a typical urban-rural transition zone, parts of this area fall within areas earmarked for conservation or at least very limited development. The clash between pressure for urban expansion and the conservation requirements results in conflict between the various agencies responsible for planning and development in the area. The Muldersdrift area comprises two nodes, namely the so-called Pinehaven Node at the intersection of R28, N14 and Hendrik Potgieter Road and the so-called Drift Node along the R28 in the central part of the Muldersdrift area.

The largest part of the **Cradle of Humankind World Heritage Site** lies in the West Rand District Management Area to the north of Mogale City, but also extends into the western, central, and eastern part of Mogale City.

Major movement linkages are:

Table 7: Key road linkages

Between Krugersdorp and western Mogale City (Tarlton, Magaliesburg and Hekpoort)	<ul style="list-style-type: none"> • N14 • R24 • R563 • R560
Between Krugersdorp and Muldersdrift	<ul style="list-style-type: none"> • R28/N14
Between Krugersdorp and CoH	<ul style="list-style-type: none"> • R563
Between Muldersdrift and Lanseria and Cradle of Humankind	<ul style="list-style-type: none"> • R28 • R114 • R51
Between Krugersdorp and Kagiso/ Azaadville/Rietvallei	<ul style="list-style-type: none"> • R28 • R558 • M13
Krugersdorp internal linkages	<ul style="list-style-type: none"> • Robert Broom Drive (east-west) • Rustenburg Road/Commissioner Street/Coronation Road (east-west) • Voortrekker Road (east-west) • Randfontein Road (R41) (east-west) • R28 (north-south)



Map 3: Internal spatial structure

2. Physical Determinants of Development

A range of physical features have a strong impact on historical and also future development patterns. Each of these factors individually or in combination with other physical characteristics of the municipal area contributes to the existing development footprint.

2.1 Slope and Drainage

Topography and drainage is one of the very basic elements that determine the ability to develop specific areas for specific purposes. Municipal services such as sanitation and stormwater are directly link to the drainage patterns while the slope of the area determines where what can be developed. There are limits to the slope on which urban development can take place while very severe slopes might restrict crop farming or prescribe mining techniques. The slope and drainage patterns describe the physical appearance of the municipal area.

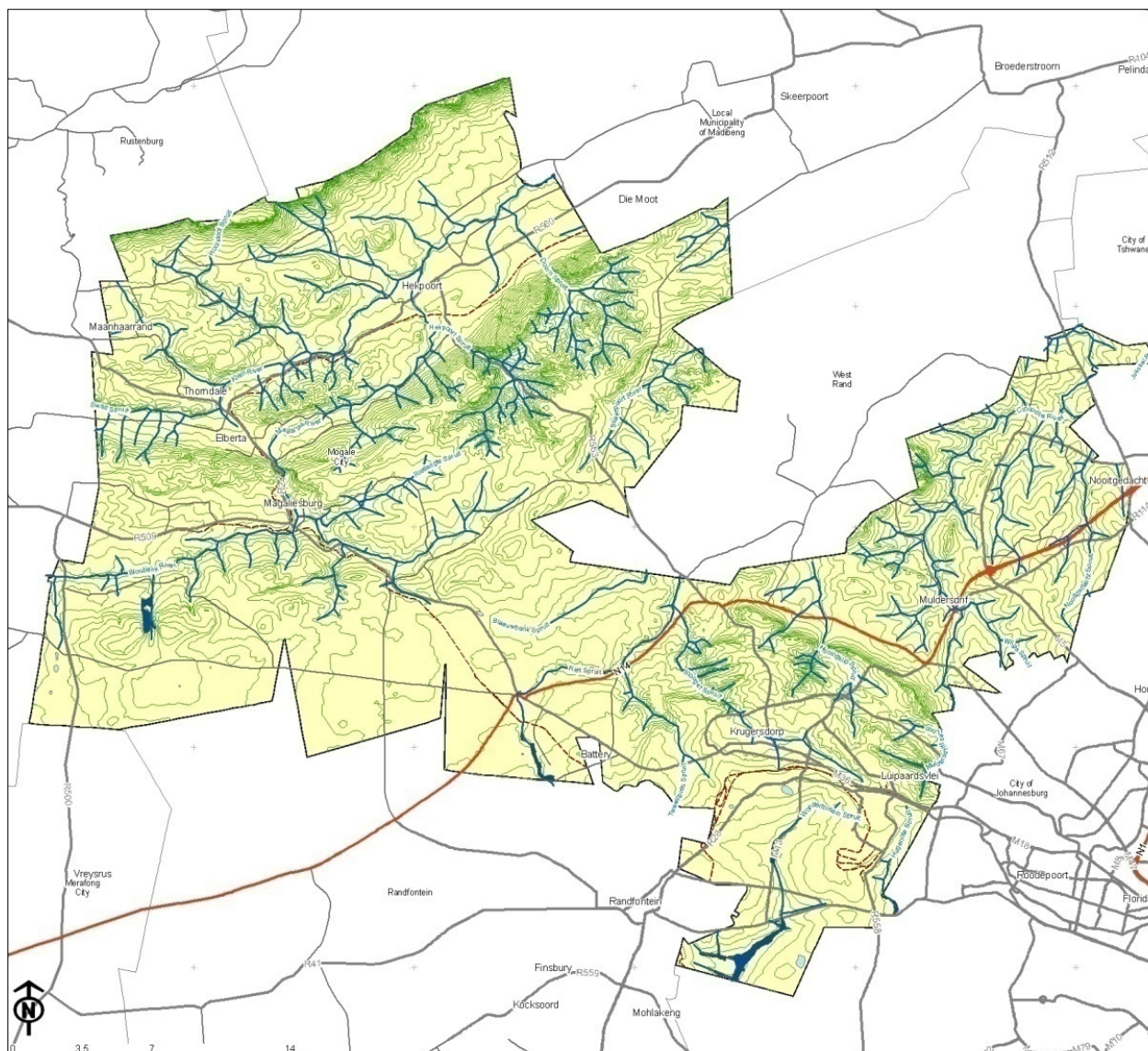
As indicated on the map, the Mogale City area has strong topographical features. The ridges in the western sector of the municipality are strongly articulated and have an impact on development and activities. It defines clear drainage basis surrounded by steep slopes. Linkages and movement through these mountain ranges constrain the flow of goods and services. However, the topographical features of the western sector create a niche environment for agricultural, recreational and conservation activities.

The relative mountainous areas of the east and west are separated by the band of relative flat land bisecting the municipal area. This area is underlain with dolomites (see geology below) and also represents some the best agricultural potential in the municipal area.

The ridges of the Witwatersberg immediately to the north of the Krugersdorp core had and still have a very direct impact on development. It restricts linkages between the developed south and the developing area to the north. The watershed that exists has ramifications for providing bulk services in the area.

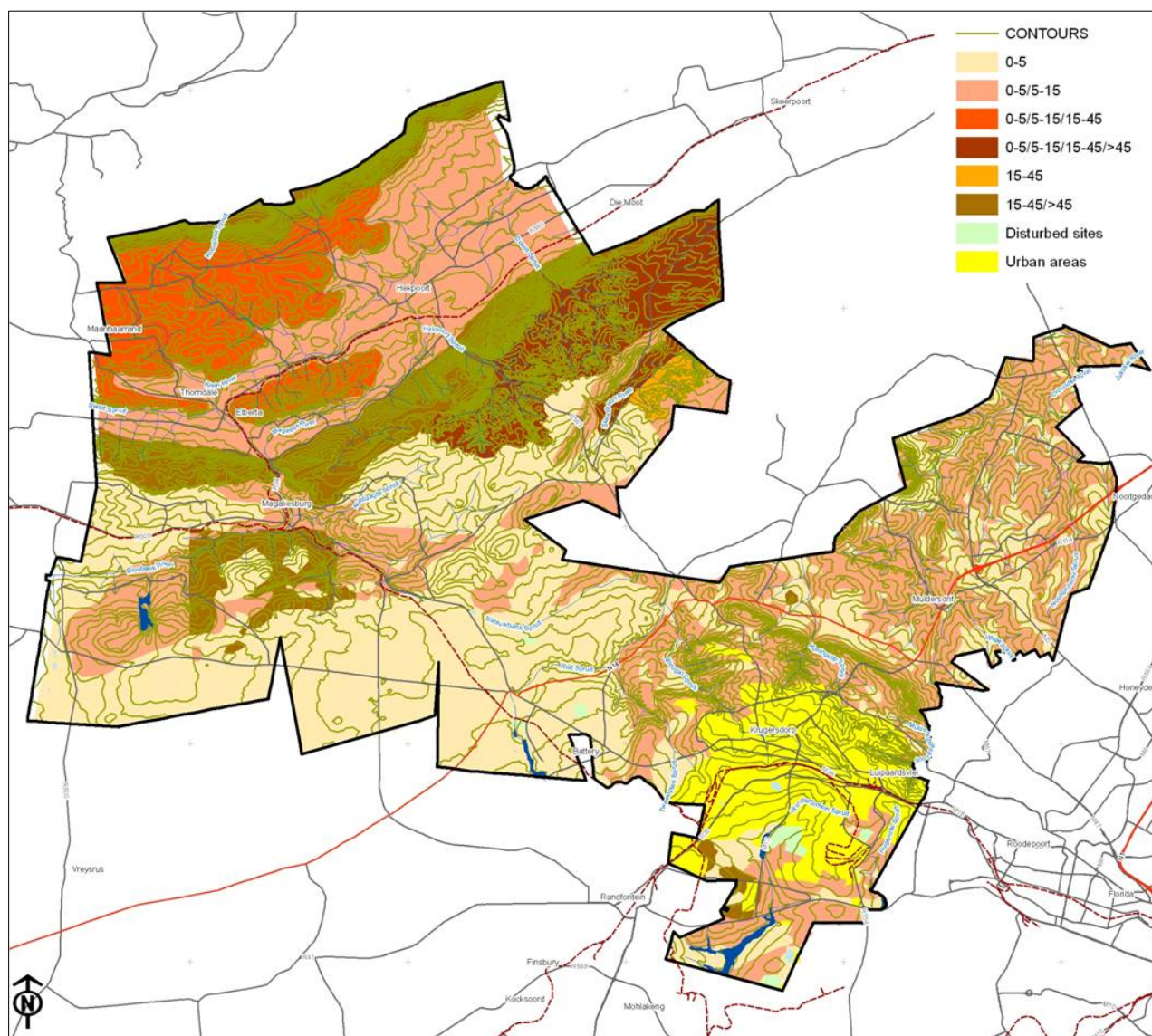
Slope is derived from the general topography of the municipal area. As will be confirmed in the rest of the analysis, topography plays a very important role in defining the development footprint. Slope is an important factor in the development of all functional areas except maybe grazing and conservation activities. Slope is an important factor but very localised at a municipal-wide scale. Each type of development responds differently to slope. In the case of urban development, too steep slopes not only exclude urban development but also serve as access barriers and in this sense might isolate specific areas of the municipality. However, it is clear that the existing development patterns have already discounted slope and drainage constraints in the development of the municipal area.





Map 4: Slope and drainage





Map 5: Slope analysis

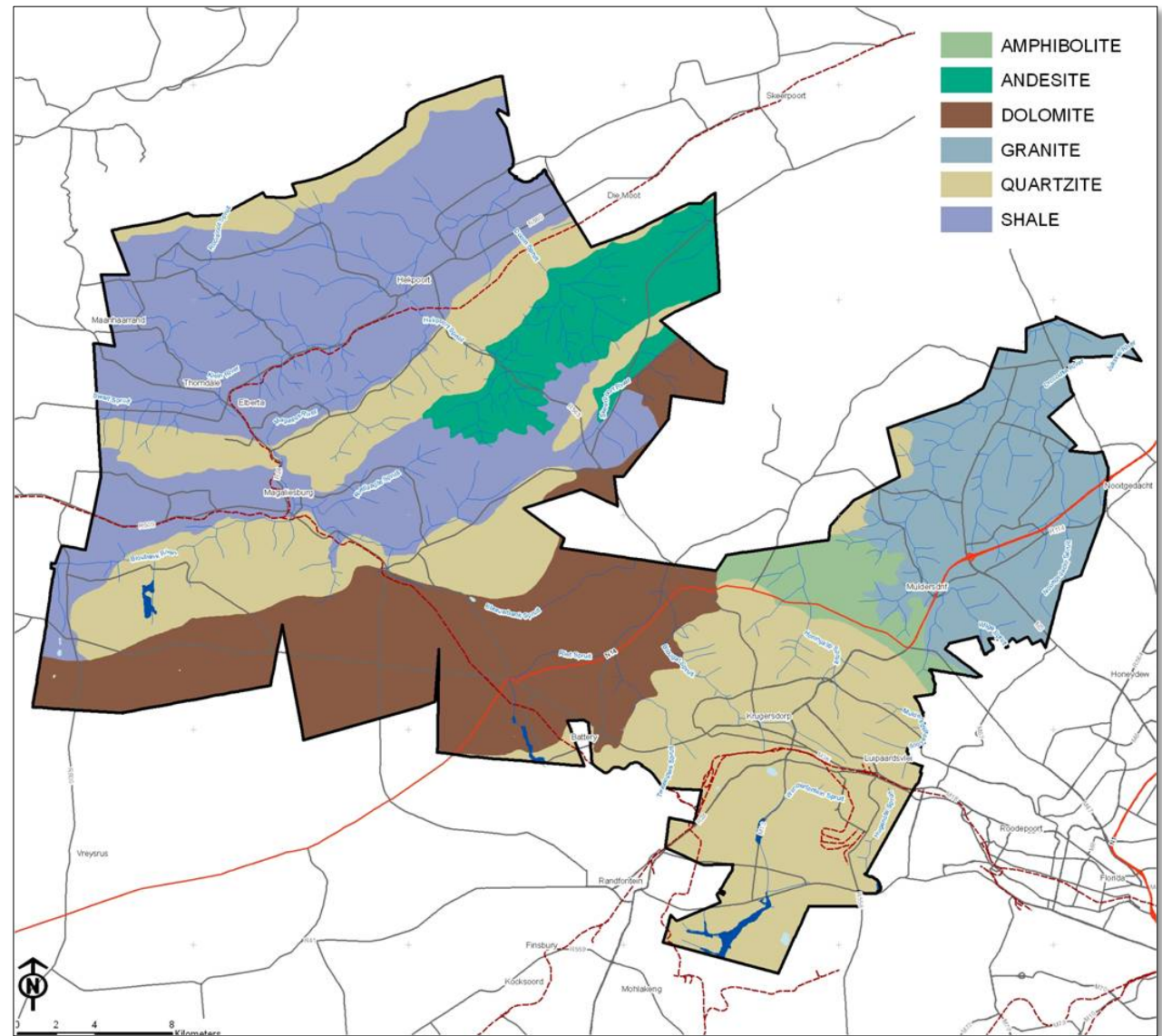


2.2 Geology

The geology of the area is fundamental in sustaining development over the long term. Geology determines not only soil conditions but have an impact on development cost and safety in an urban development context. It also directly determines agricultural potential in terms of soil potential and vegetation types.

The geology has an important impact on the built environment. The negative impact on urban development is a result of the consequences of the weathering of geological formations for the developing of buildings and top structures on land. These negative conditions can usually be mitigated at a cost. In this sense it might impact on decisions about location for the provision of services and infrastructure to poorer households in the area.

The key geological feature is the band of dolomite running through the area. It is however a low priority area for urban development and will not impact on development in general. The existing urban areas are on quartzite that is generally suitable for urban development. The granite in the Muldersdrift area is significant since it might be prone to collapsible soils which might add to the cost of building activities. It should, however, not be a major consideration in making proposals for future development.



Map 6: Geology

2.3 Soil Potential

Soil potential is important for cultivating land. The map below shows a general pattern of low potential on top of the ridges with increased potential in the lower lying areas. The highest potential is shown in the vicinity of Tarlton. Although Mogale city is designated in the Gauteng as an agricultural hub, the general potential for agricultural development remains low.

Taking soil potential one step further allows one to derive at land capability. The Agricultural Research Council land capability is expressed in terms of eight classes. Class I shows the highest potential. Potential decreases down to Class VIII which indicates only suitability for game farming. The first three classes denote a potential for land cultivation while Classes IV to VII reflects land suitable for grazing and Class VIII is only suitable for wildlife farming.

The best land (Class II) runs in band along the southern slopes of the Schurweberg - Krokodilberg range (the southernmost ridges in the northern part of the municipal area passing through the Hartebeeshoek region). However, Class III land in the south east is mostly compromised by existing urban development and it is only in the valley south of the Magaliesberg where there are any significant areas that can be used for agricultural purposes. The Tarlton area has a Class III land capability. The Muldersdrift area has a Class IV capability which makes it generally unsuitable for land cultivation. The rest of the area is of a very low potential, only suitable for light grazing and wildlife.

Table 8 shows the distribution of the land capability classes in the municipal area.

Table 8: Land capability table

Land capability class	Land use options								Land capability groups
	Wildlife	Forestry	Light Grazing	Moderate grazing	Intensive grazing	Poorly adapted cultivation	Moderate well adapted cultivation	Intensive, well adapted cultivation	
I									Arable land
II									
III									
IV									Grazing
V									
VI									
VII									
VIII									Wildlife



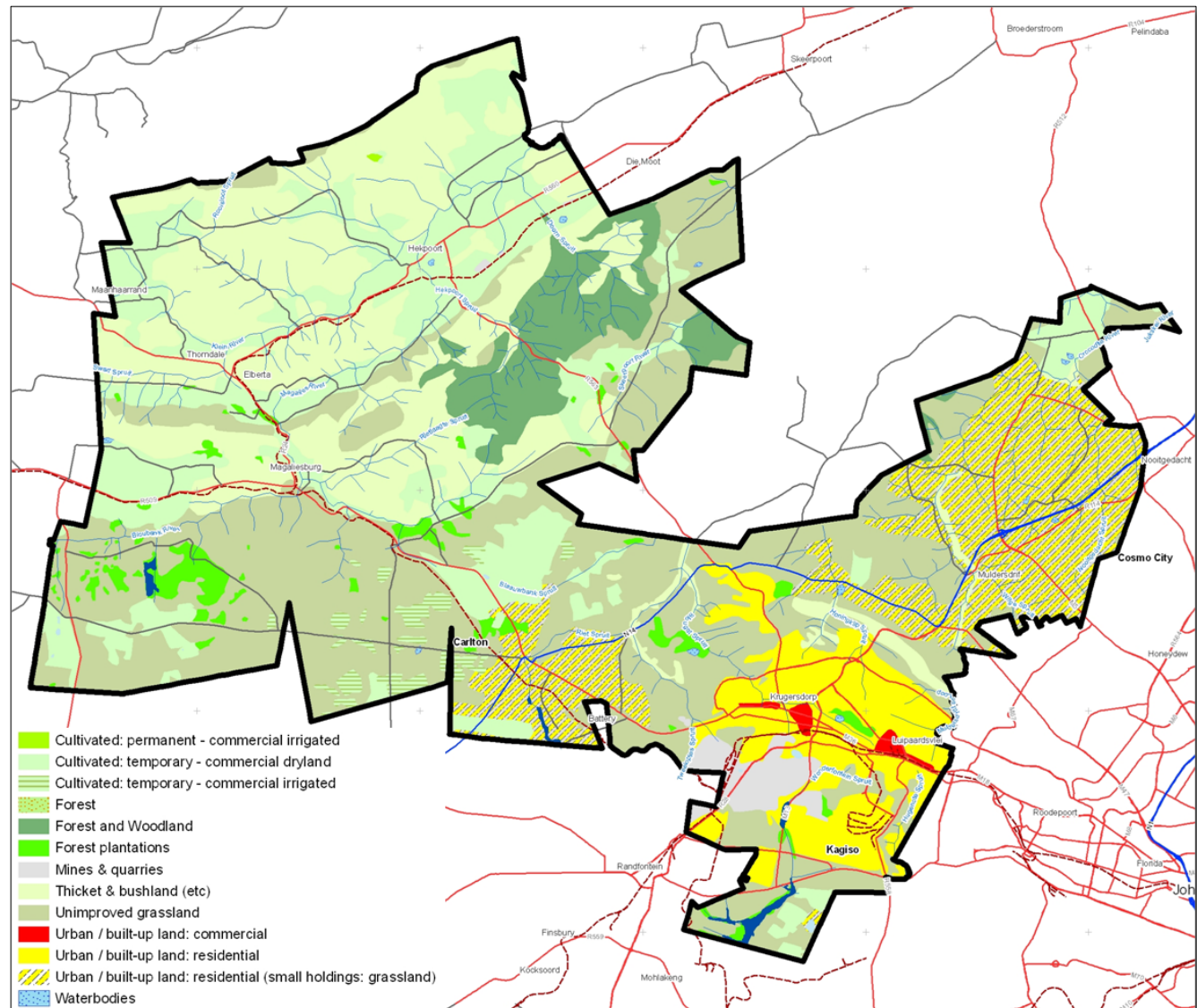


2.4 Land Use and Land Cover

Land cover is an extension of land uses. It introduces the extent of natural phenomena such as plant cover and noticeable geological features. Furthermore, by attaching qualitative aspects to land cover one gets an indication of areas of degradation of natural plant cover as well as the agricultural uses of land.

The map shows clear distinction between commercial farming areas, conservation, and settlement activities. Broad land use patterns are clearly defined and show a natural development path that should be recognised in planning. Secondly, the entrenched nature of the development and the association of development patterns with natural phenomena might indicate that a natural optimization process has developed over time. One should question the ability to radically change these patterns or to steer development in a different direction.

The extent to which the natural features have impact on the human spatial foot print is noticeable. The mixed nature of the Muldersdrift area is important as is the strong constraints mining places on the integration of the southernmost areas of the municipality with the growth pressures below the escarpment along the R28 and N14.



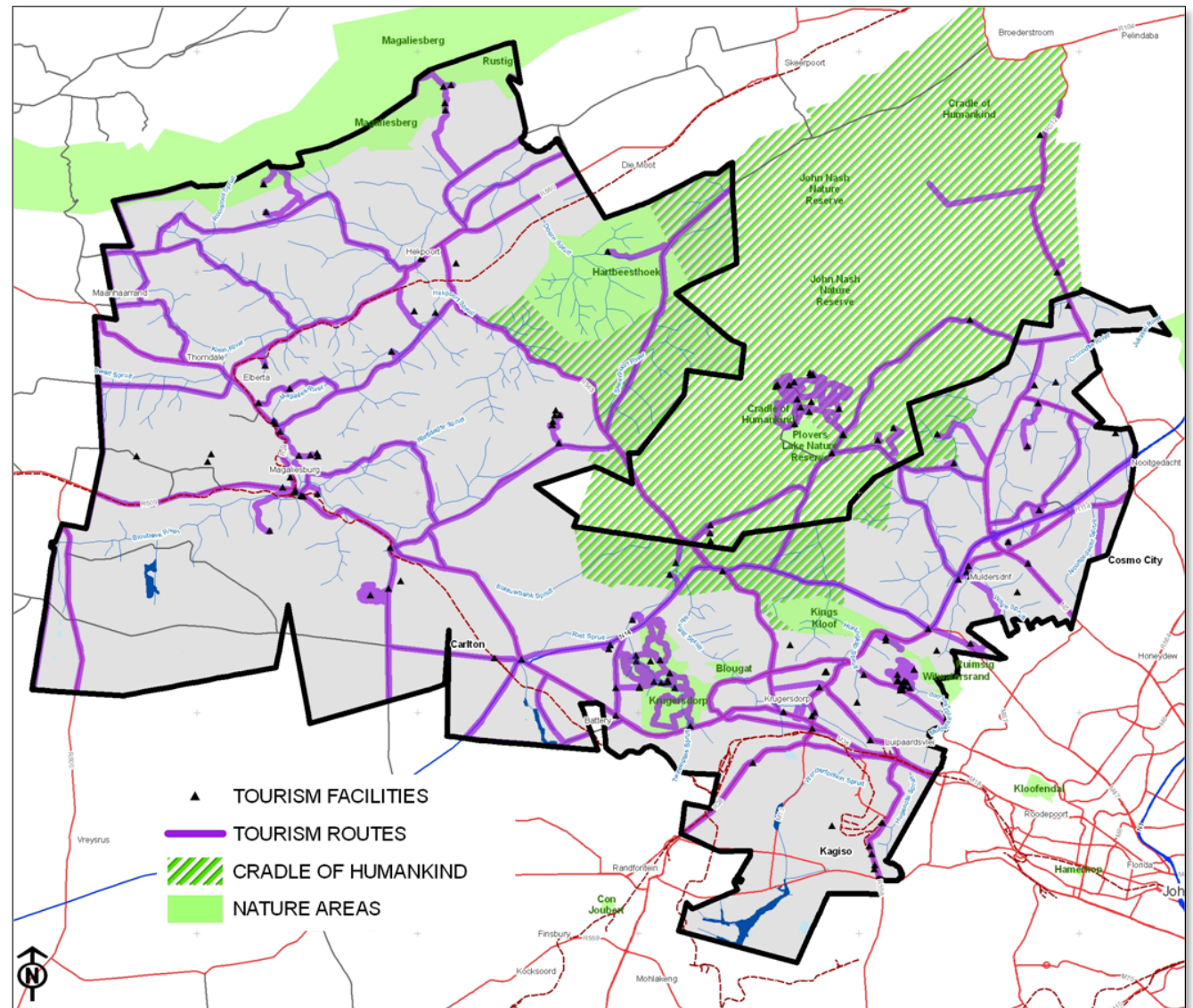
Map 9: Land uses and cover

3.2 Tourism

Eco-tourism is the next logical step in utilising protected areas and conservancies. Data on the extent of tourism and tourism related activities in the local economy was sourced through Tracks4Africa's maps. These maps are compiled based on GPS recordings made by tourists when travelling. It therefore reflects all the points of interests logged by tourists as well as the routes travelled. Map 11 shows these recorded points in the municipal area.

Tourism activities are focussed on very specific areas and are mostly linked to outdoor adventure and recreation. Some of the most notable areas are:

- The Protea Safari 4x4 playground (Opposite The Noord Heuwel Shopping Centre).
- The Paragliding launch area off the ridge to the south of the N14 – R28 crossing.
- Krugersdorp Golf and Squash Clubs.
- The Krugersdorp Nature Reserve with the Protea Safari Eco Trail and 4x4 routes.
- The Koi Empire Fishing Area in the Muldersdrift area.
- The Rhinoceros and Lion Park in the Cradle of Humankind area.
- The whole Magaliesburg area.
- The Magalies Mountain Bike Trail (Hekpoort).



Map 11: Tourism points and routes in WDM



4. The Spatial Footprint

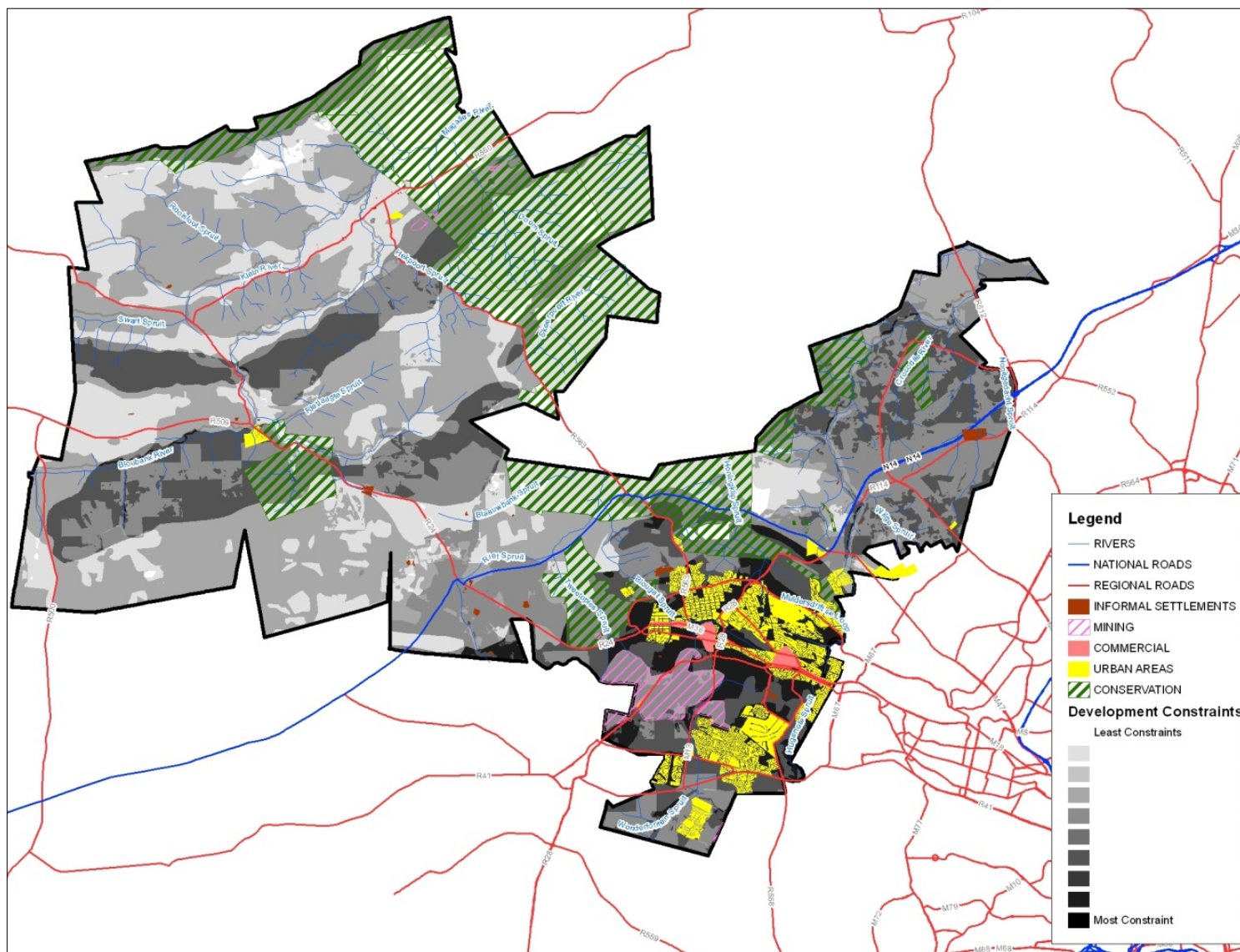
4.1 The Impact of Physical Factors on Development

The assessment of the physical determinants of development for the SDF used an overlay technique whereby a range of features from various datasets was assessed through the application of geographic information analysis. The aim was to build a composite map showing a land use suitability index that can guide development proposals in terms of physical opportunities and constraints.

The maps below show the composite development impact for each element based on all the factors assessed. It should be recognised that the areas of highest potential is not necessarily the preferred or optimal location for any particular use. This is determined by factors such as existing infrastructure, land ownership, institutional arrangements, and socio-economic variables. A strong spatial pattern emerges across all development zones which in the end complement one another but not without areas where there might be room for different dominant uses. The overall impact of topography and conservation priorities is evident across the board. On a more detailed scale these development areas define areas where particular developments can take place without large scale disturbances and conflicts with other uses. In the final analysis these maps indicate the development potential for each type of development and do not necessarily make pronouncements on the preferred use for any specific land parcel.

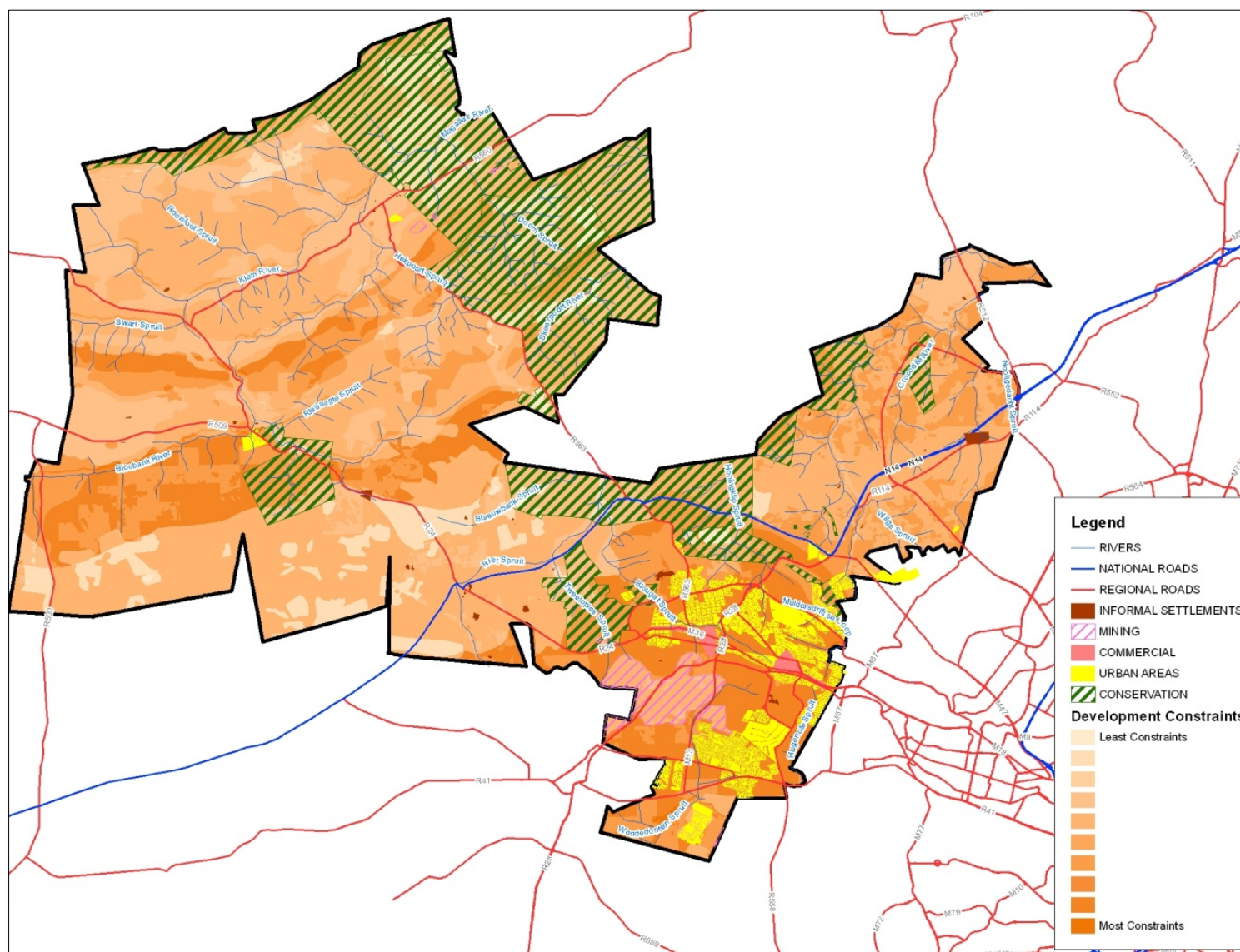
The next step was to recognise these constraints and develop a composite map of the municipal area that shows the ideal preferred dominant uses for the municipal area. In this process existing conservation areas and the mining belt was recognised and indicated as such on the map. Mogale City has a very well defined and established development footprint. There is also a very high correlation between the existing development patterns and the potential as was highlighted above.





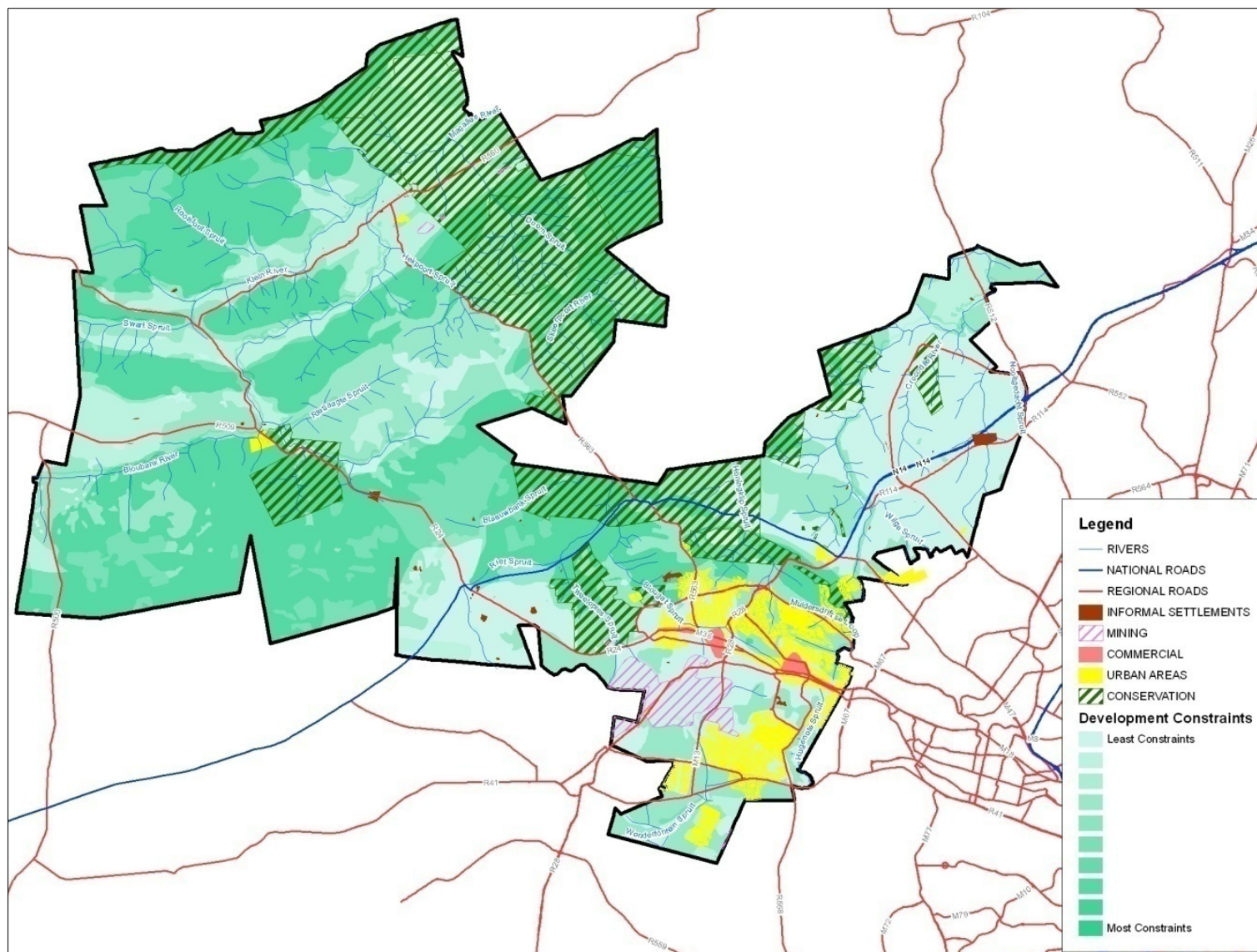
Map 12: Constraints on urban development





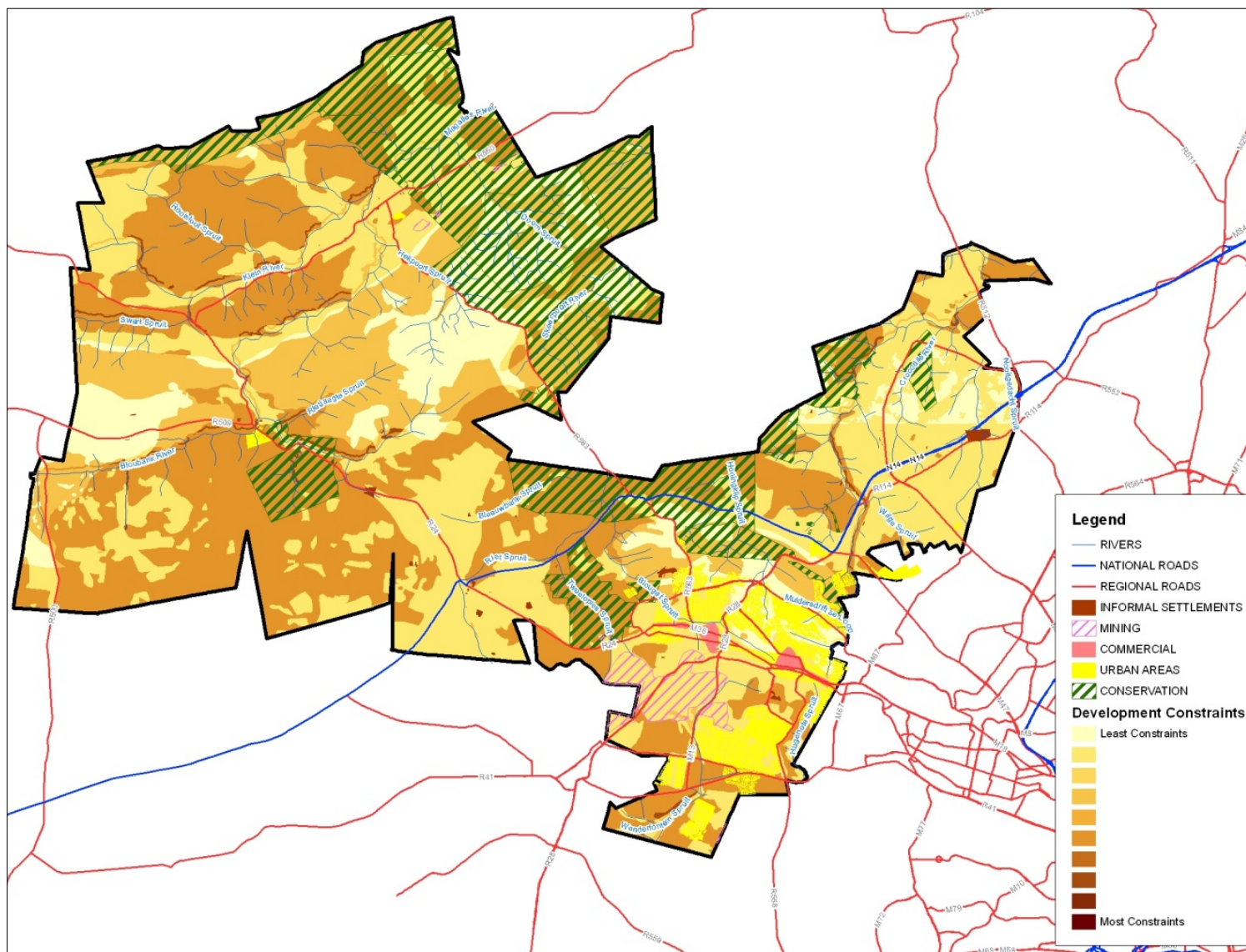
Map 13: Constraints on rural development



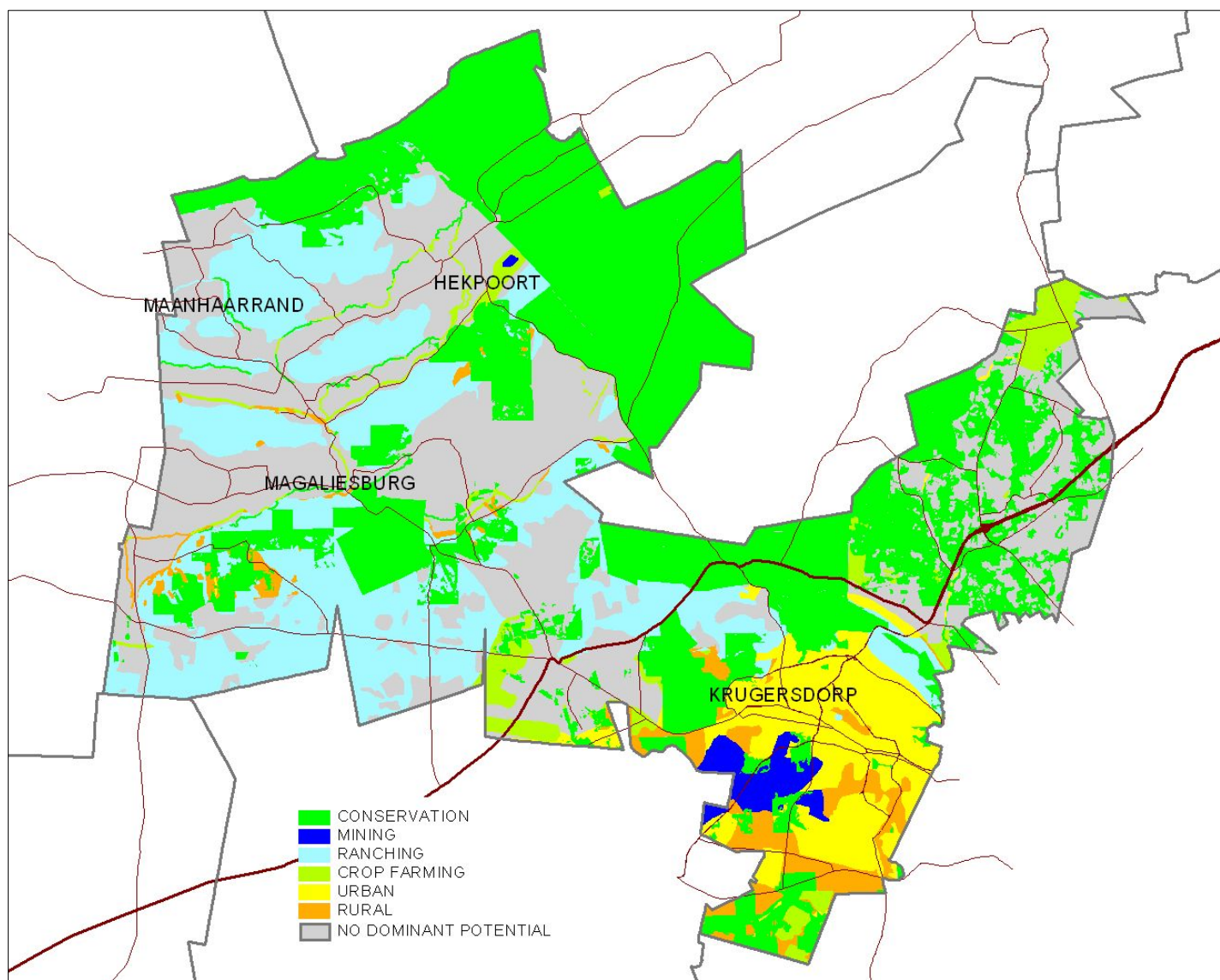


Map 15: Constraints on ranching activities





Map 16: Constraints on conservation activities



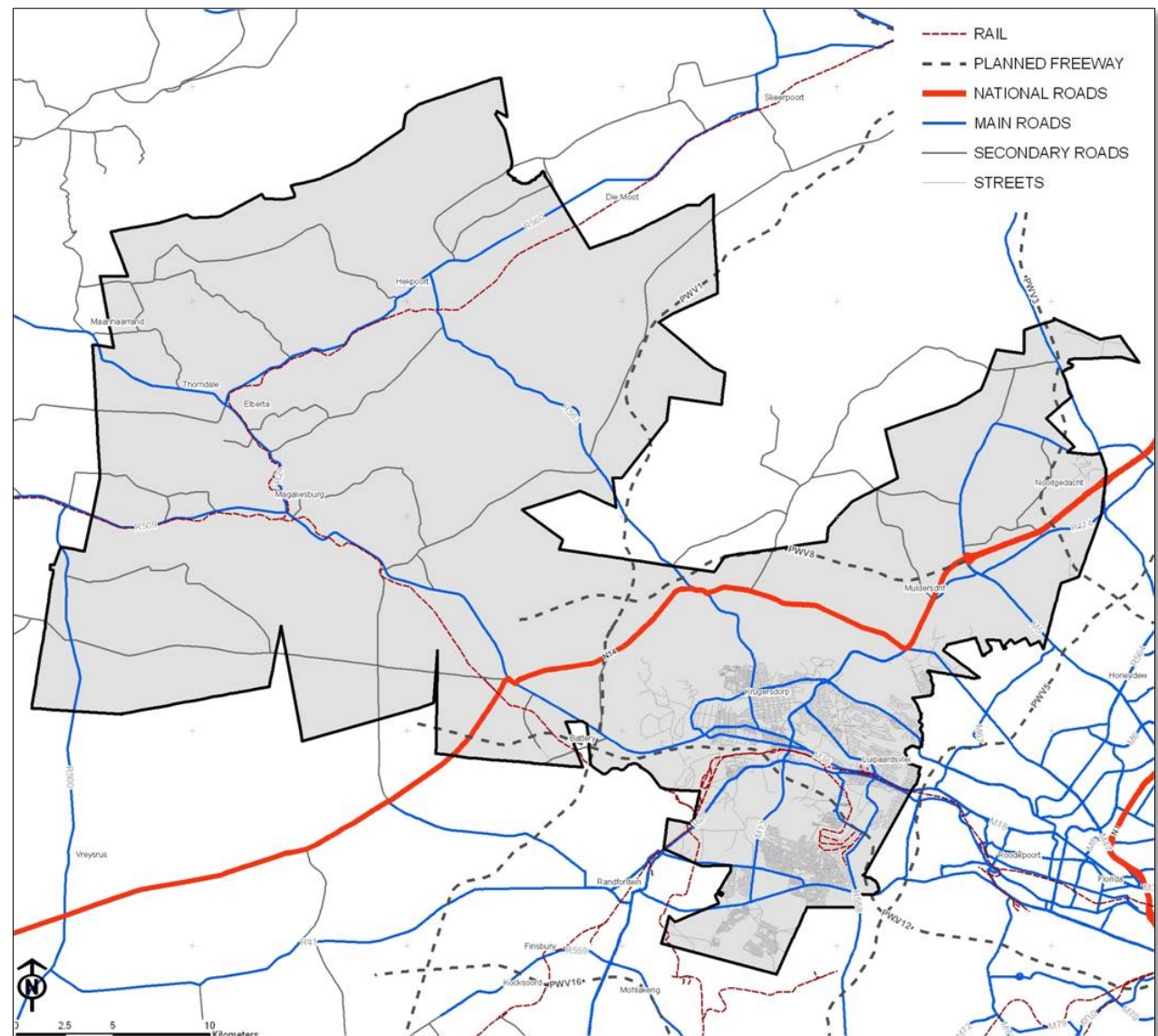
Map 17: Land use suitability preferences

4.2 Movement Networks

Development potential is strengthened or weakened by its accessibility and links with the broader development environment. Access, movement and functional linkages are described by:

- Road and rail links.
- The mode of transport utilised by households.
- The accessibility of major nodes.

The whole area is well covered by roads. The network typology is largely shaped by geographical factors with the development footprint contributing to increased network densities in the eastern sector with decreased densities towards the west. The interesting aspect highlighted on the next map is the fact that the major routes, such as those described in the table above did not have a marked impact on spatial development patterns. Historical patterns and the impact of development pressure from the Johannesburg Metropolitan core are much more pronounced.



Map 18: Roads and railway lines

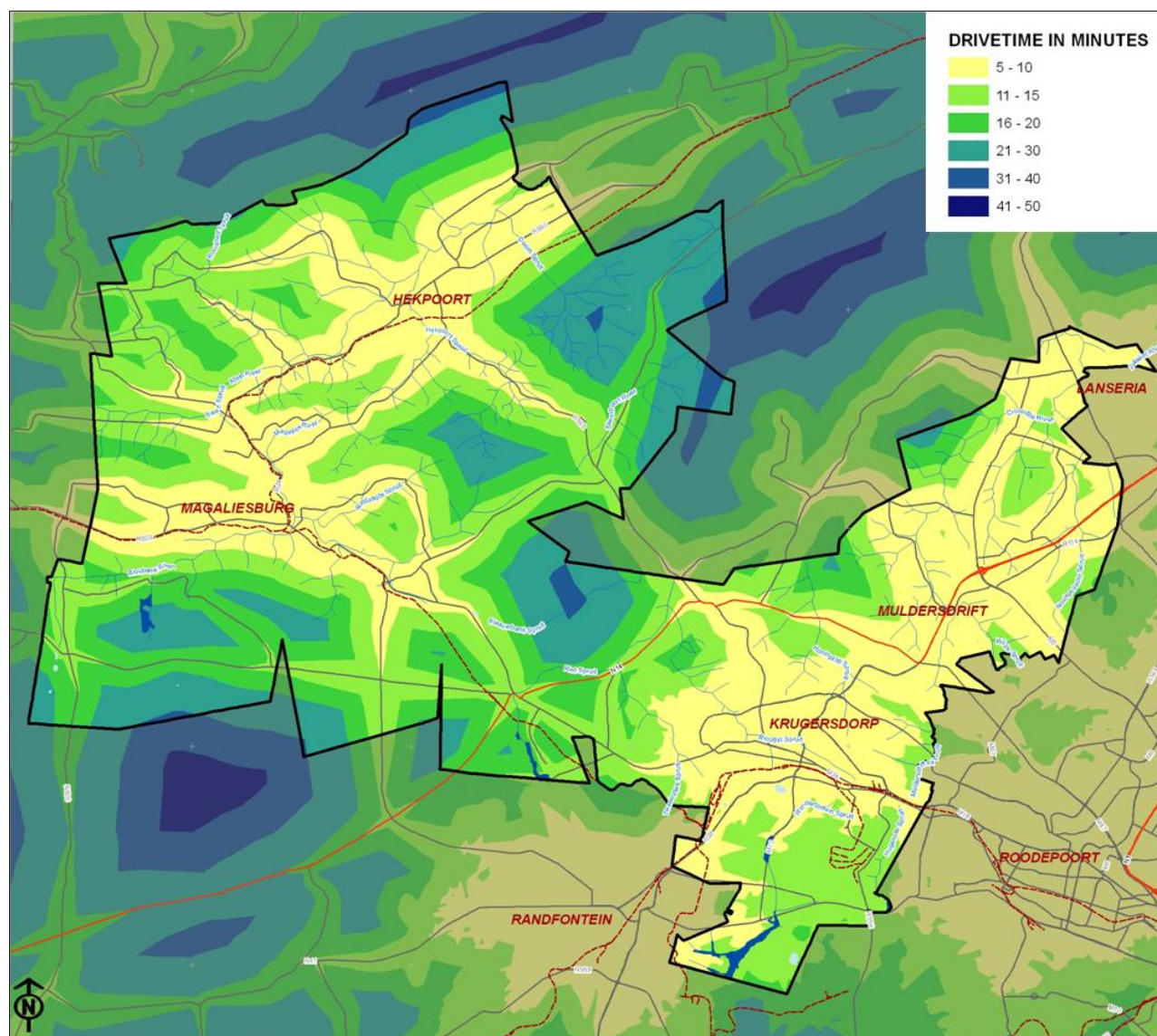
The following are the major inter-regional road linkages between Mogale City and its neighbours:

Table 9: Major road links

To Tshwane	To Madibeng	To Johannesburg	To Randfontein	To Rustenburg
<ul style="list-style-type: none"> R28/N14 	<ul style="list-style-type: none"> R512 R560 	<ul style="list-style-type: none"> R512 (Malibongwe Drive) Beyers Naudé Drive Hendrik Potgieter Drive Voortrekker/Ontdekkers Road Randfontein Road 	<ul style="list-style-type: none"> R28 Randfontein Road (R41) 	<ul style="list-style-type: none"> R24

Although the municipal boundary describes the administrative unit, the function and impact of the urban core of the municipality does not necessarily follow the same boundaries. The extent of accessibility is shown on Map 19. The map clearly illustrates the dual nature of development in the municipal area. The eastern sector is generally very accessible and forms a continuous surface of accessibility linking the Krugersdorp-Muldersdrift area with the high intensity development to the east of the municipal area. There are no indications of breakpoint in accessibility in this area.

The western sector also shows high accessibility to Magaliesburg and Hekpoort but with a clear break between the development in the eastern sector and the development in the westerns sector of the municipal area. Not only is accessibility shaped by the availability of routes but more importantly by the geographical constraints in terms of the mountains and ridges running through the area. An interesting point is the relative inaccessibility of the Tarlton area. This area shows higher population densities than the areas adjoining it. Activities are centred around intensive agricultural activities. Notwithstanding the fact that the N14 runs through it, it remains relatively isolated from development in the east and west of the municipal area.



Map 19: Travelling time and functional service area

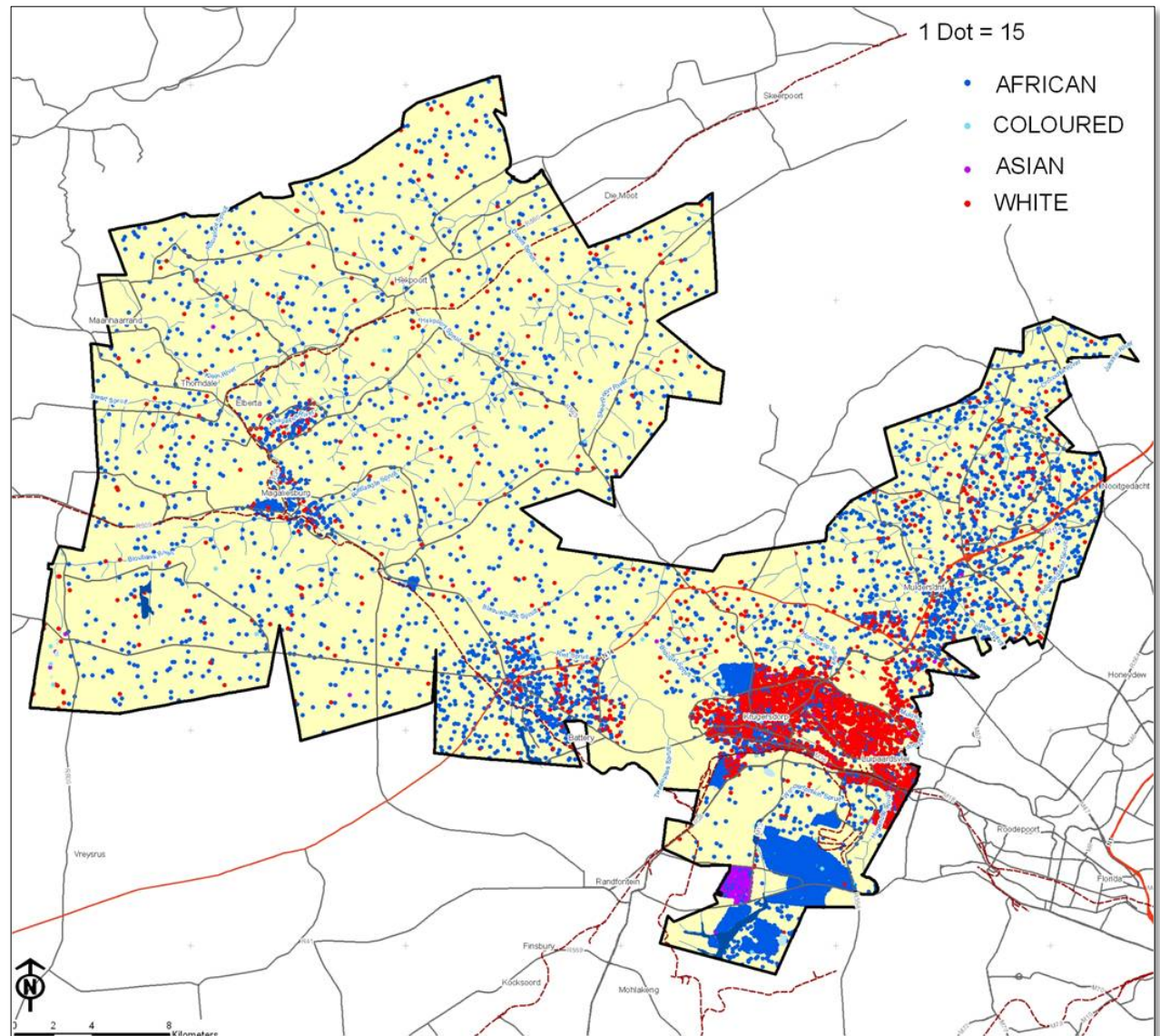
5. Demographic Imperatives

A range of socio-demographic factors impacts on spatial development. The following section gives a short overview of the most important aspects.

5.1 Population Density and Distribution

The following map shows the population distribution and densities in the municipal area. The impact of topography on population settlement is evident from Map 20.

The population of Mogale City is heavily concentrated to the east in and around the CBD. The largest part of the white population is concentrated north of the M36 while south of the M36 blacks and Asians are concentrated south, separated from the CBD by the mining areas. There are also concentrations of people around Magaliesburg and Tarlton. The increased densities around the N14-R28 crossing and in the Muldersdrift area are also evident.



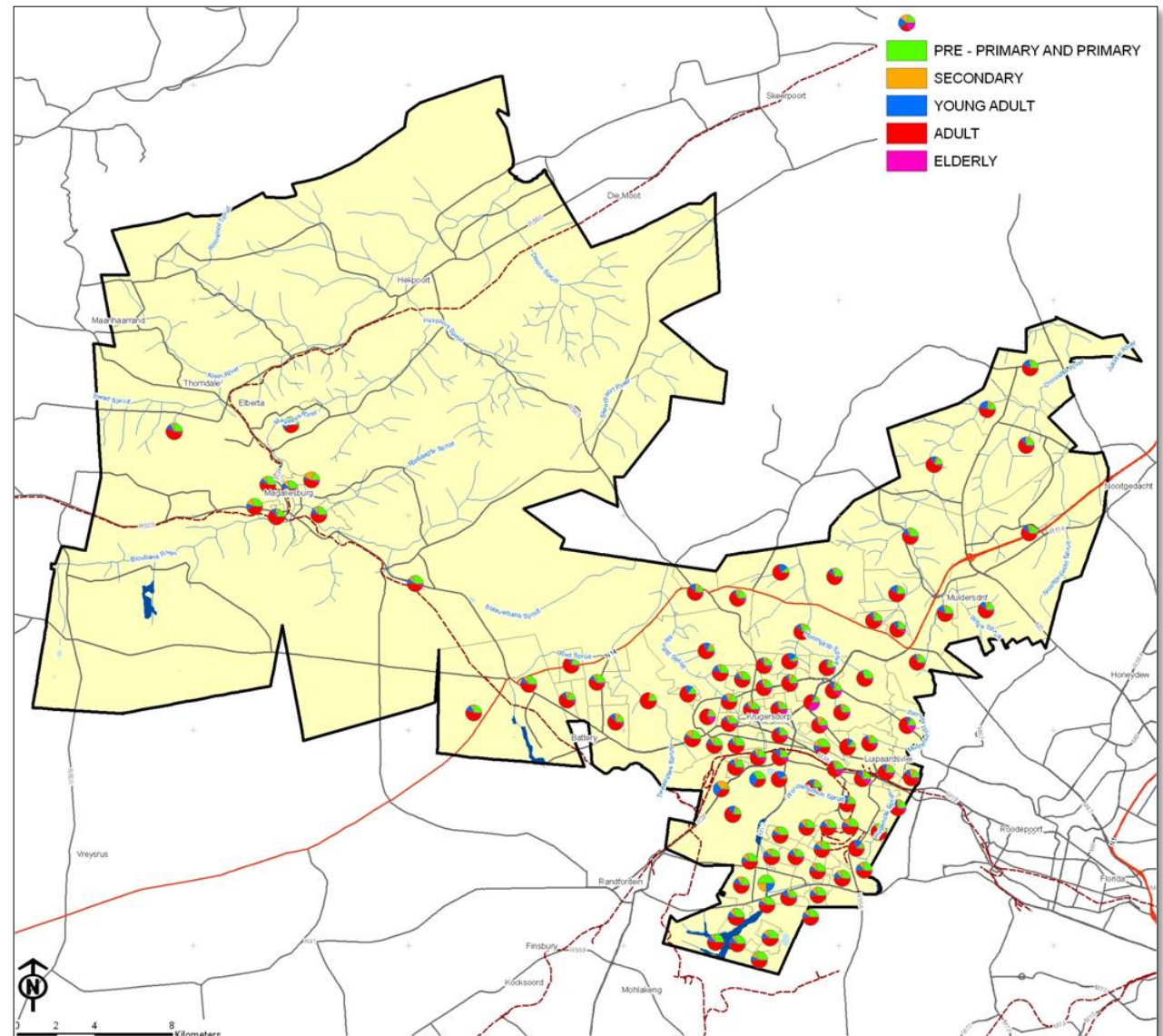
Map 20: Population distribution

5.2 Age Distribution

Map 21 describes the age distribution per census sub-place. The following is evident from the age distribution patterns:

- Age characteristics of the population are closely linked to population groups. There are proportionally more pre-primary and primary school aged children in the urban areas than in the rural areas. The highest proportion is in the south in the Kagiso area. This is confirmed by the population dynamics addressed later in the report.
- There is a general absence of young adults in the municipal area. The exception is the area around the industrial area to the south west of the CBD.
- There seems to be few elderly people in the municipal area.
- All areas show the majority in the economically active age group.

The key issue to consider from the age distribution of the people is the extent to which the life cycle needs of the different age groups can be met through the spatial planning process.



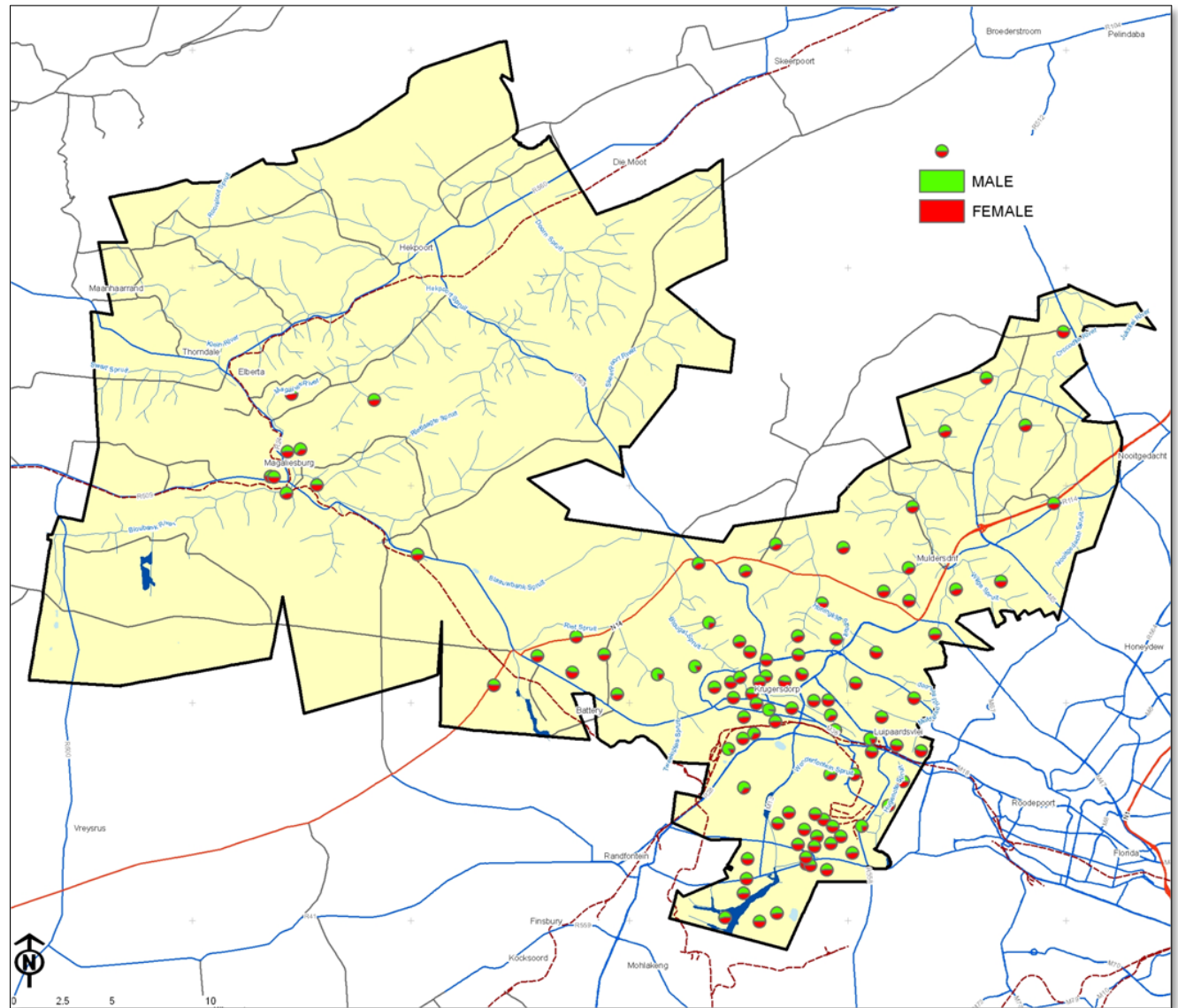
Map 21: Age distribution

5.3 Gender Distribution

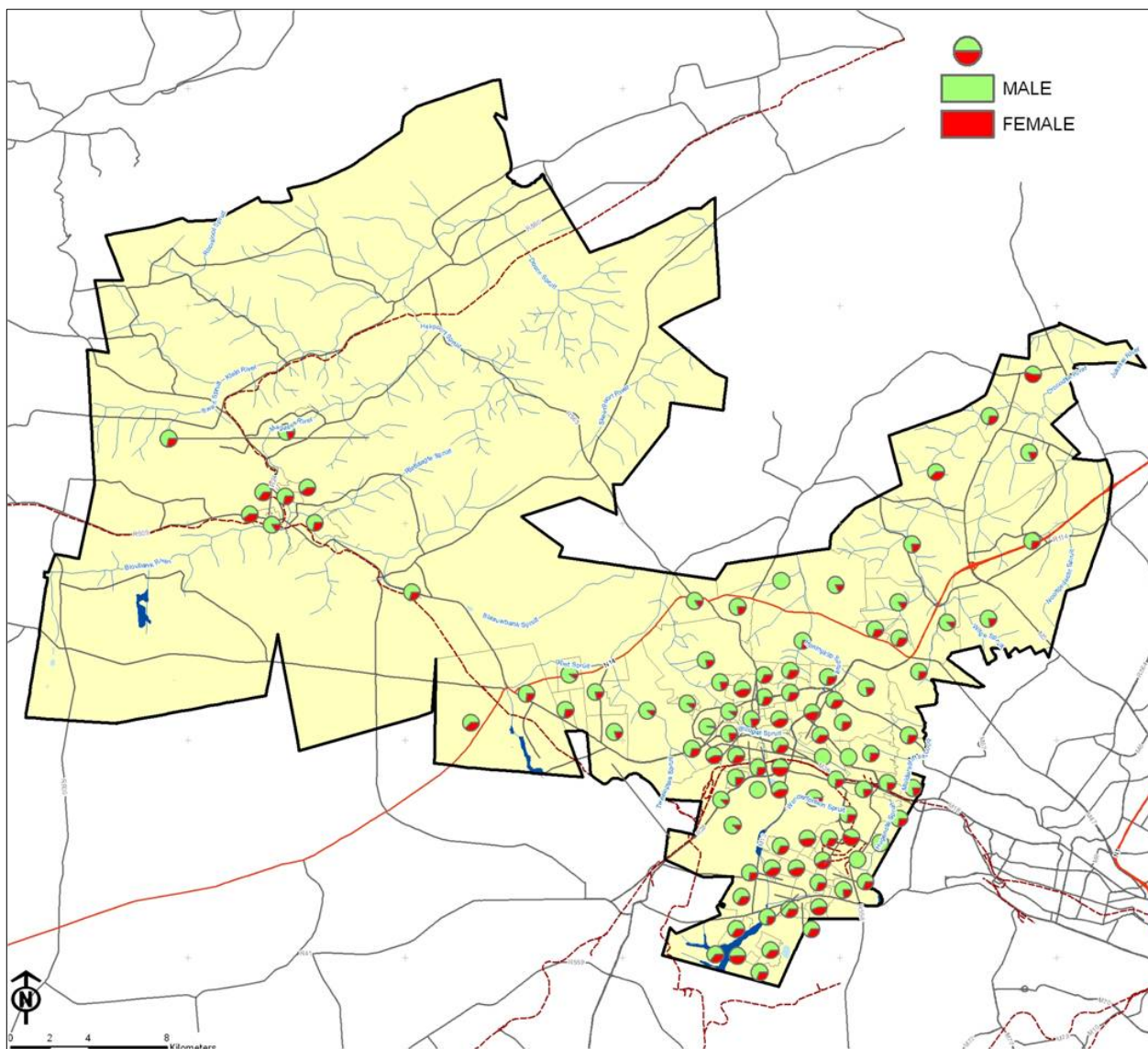
The gender of the heads of households is particularly revealing if it is viewed in conjunction with age distribution and the general male/female ratios in the area.

A surplus male persons in an area is usually a good indication of migrant labour. With the mining activities in the south of the municipal area one should have expected indications that there are more males than females. This is however not the case. There are some exceptions but it is rather in the Muldersdrift and Magaliesburg areas that this tendency is more noticeable. The same applies to the areas immediately to the west of the town.

Male headed households dominate across the municipal area. However, there are substantially more female headed households in the older urban areas and to the south in Kagiso. The extent of male headed households also tends to correlate with general gender distribution patterns. A female headed household has close links to socio-economic conditions. If this is linked to varying household sizes it might point a need for a range of housing types, not only to accommodate life cycle demands but also different demands in terms of family sizes.



Map 22: Gender distribution

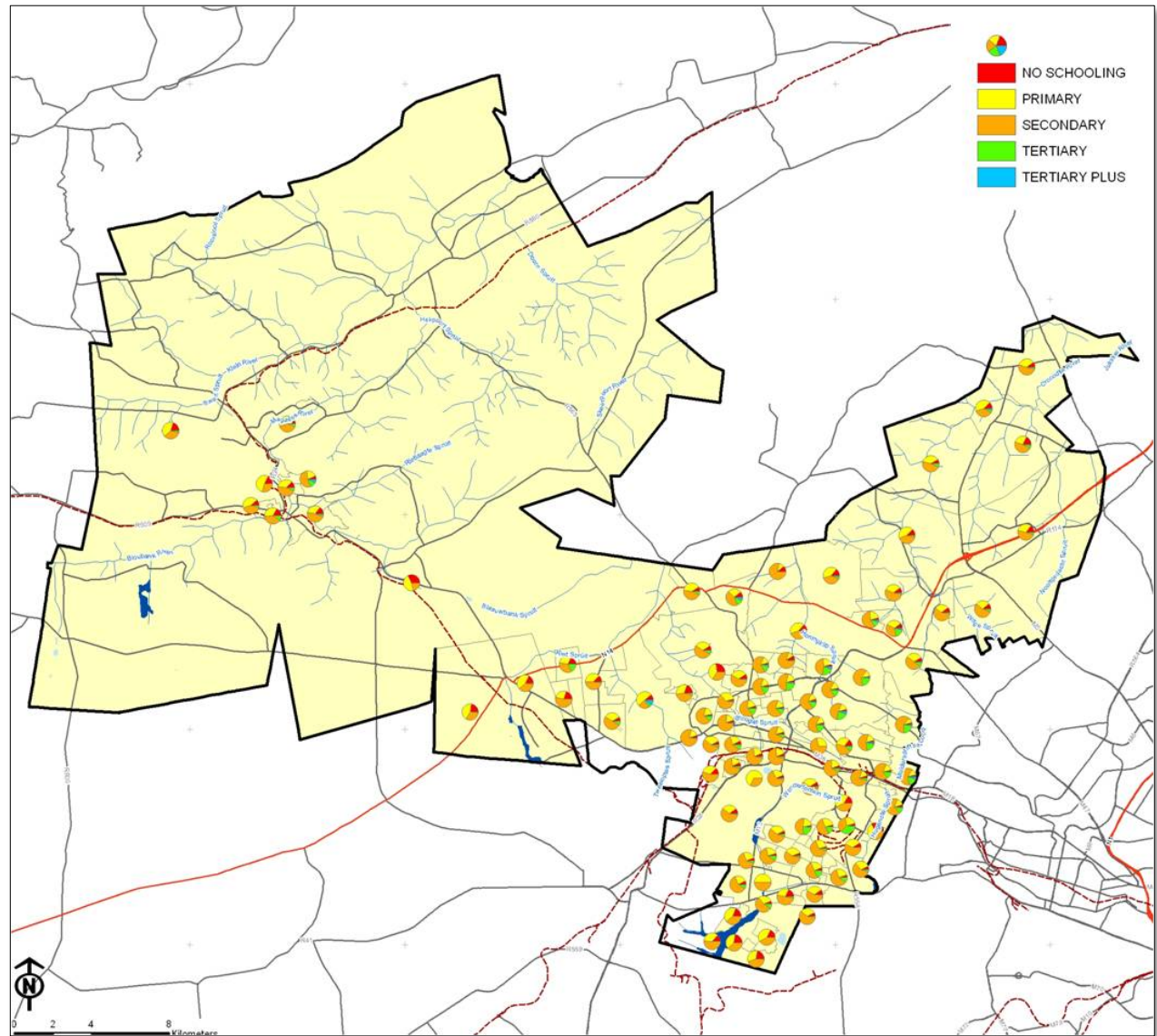


Map 23: Gender of the heads of households

5.4 Level of Education

The distribution of levels of education confirms the broad socio-economic patterns in the municipal area.

The area shows high levels of people with secondary education. There are very few areas indicating people with no schooling. Low schooling levels are prevalent in Kagiso, the rural areas and areas associated with agricultural holdings. These are the areas linked with higher demands for manual labour. The urban core also shows some people with tertiary educations. This is because of the nature of employment and the strong service orientation of the CBD and adjacent areas. .



Map 24: Level of education

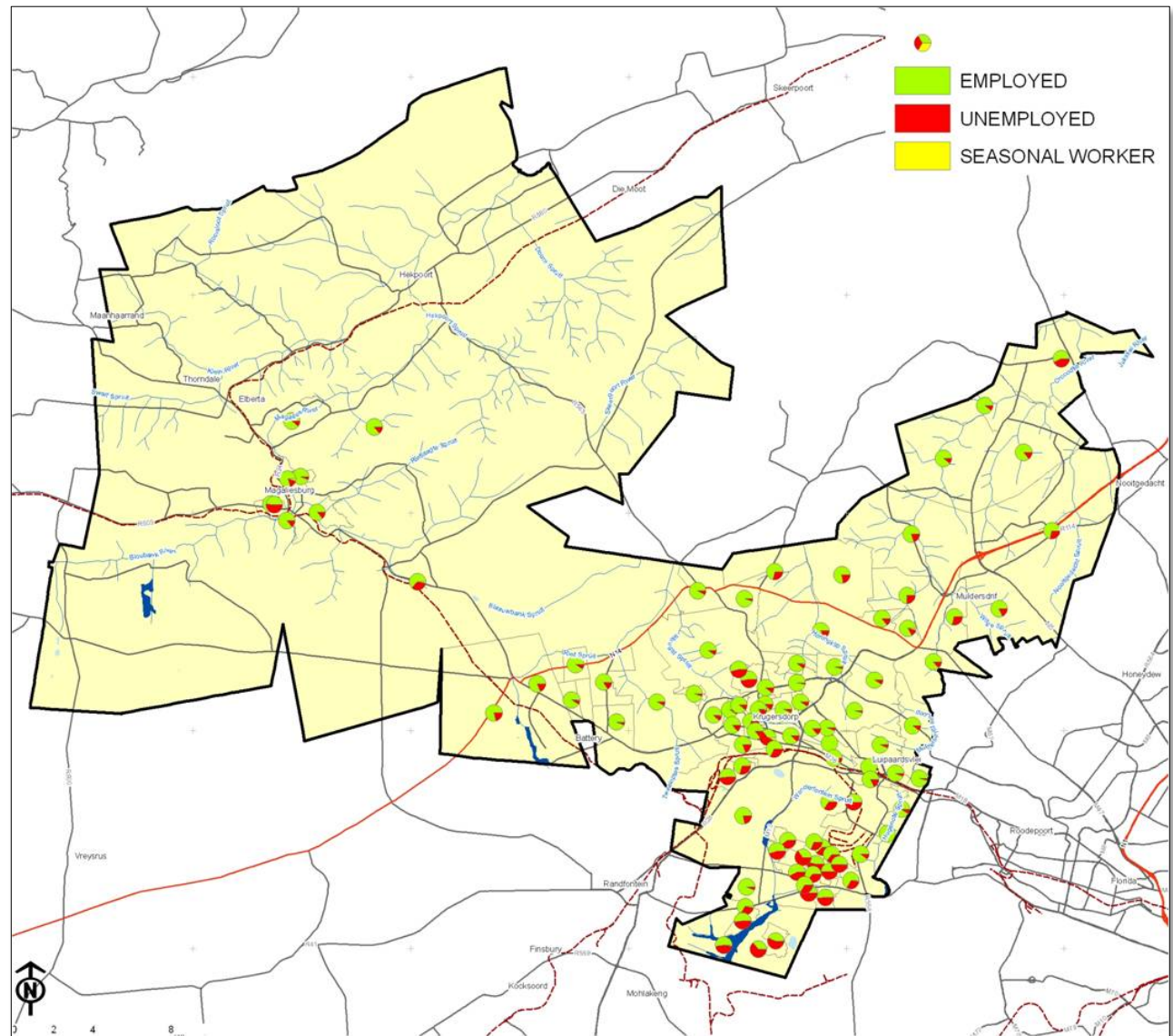
6. Socio-economic Imperatives

This section addresses the spatial distribution of employment and household income.

6.1 Employment

As can be expected, employment in the core urban areas is relatively high. This is also the case in the mining areas. Unemployment is clearly associated with poorer areas in Mogale City. However farming areas and the agricultural holding areas also have higher levels of unemployment. There are no large scale seasonal workers active in the municipal area.

Employment levels directly reflect on household income and thus also on the revenue base of the municipality. Higher levels of unemployment may eventually restrict the ability of the municipality to address issues of transformation and spatial integration simply due to a lack of resources.

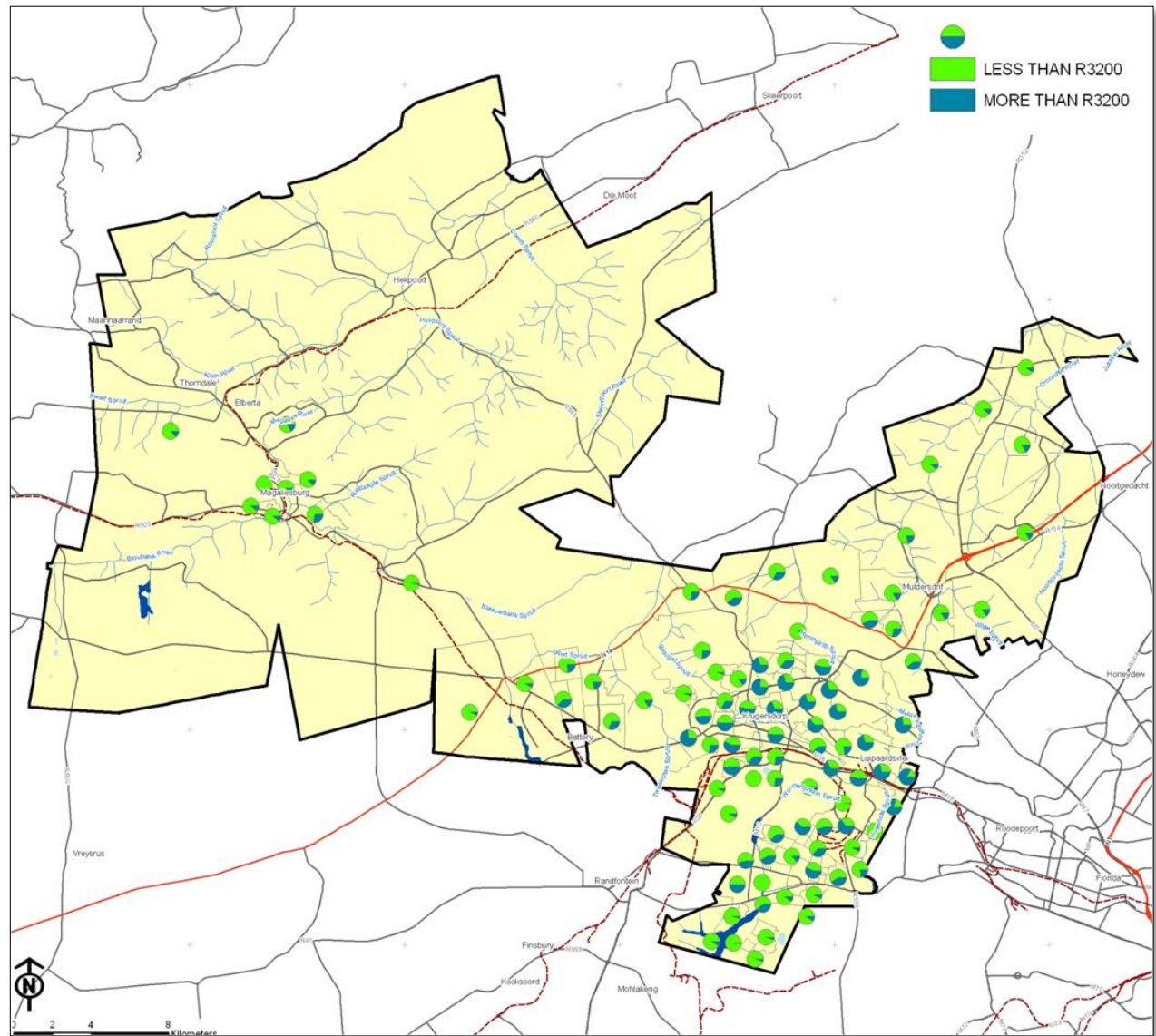


Map 25: Employment

6.2 Household Income

The map showing household income distribution is one of the most significant maps due to the extent of the poverty problems in the municipal area. R3200 per month is generally regarded as a good measure for poverty since it is more or less the cut off point for government assistance to poor households.

Keeping in mind the previous map, the areas that showed high levels of employment is also the areas where people earn less than R3200/month. There are very few areas, mostly to the north and east of the CBD that reports higher incomes. The implications of this profile are profound. It implies that the council has a limited resources base and thus a very limited ability to make a significant impact on development in general.



Map 26: Monthly household income

7. The Spatial Aspects of Housing

The distribution and density of households is usually a good indication of development activities and more importantly development potential. In developing an SDF one would use this as an indication of where to direct development and establish pressure points in development.

The largest number of household are clearly concentrated in the east and south of Mogale City in and around the CBD. There are a large number of households in the farming areas to the west, between 5000 and 7000 households, but as was indicated in the population density map, they are dispersed over a large area.

Table 10 shows the comparative distributions between settlement types at different geographical levels.

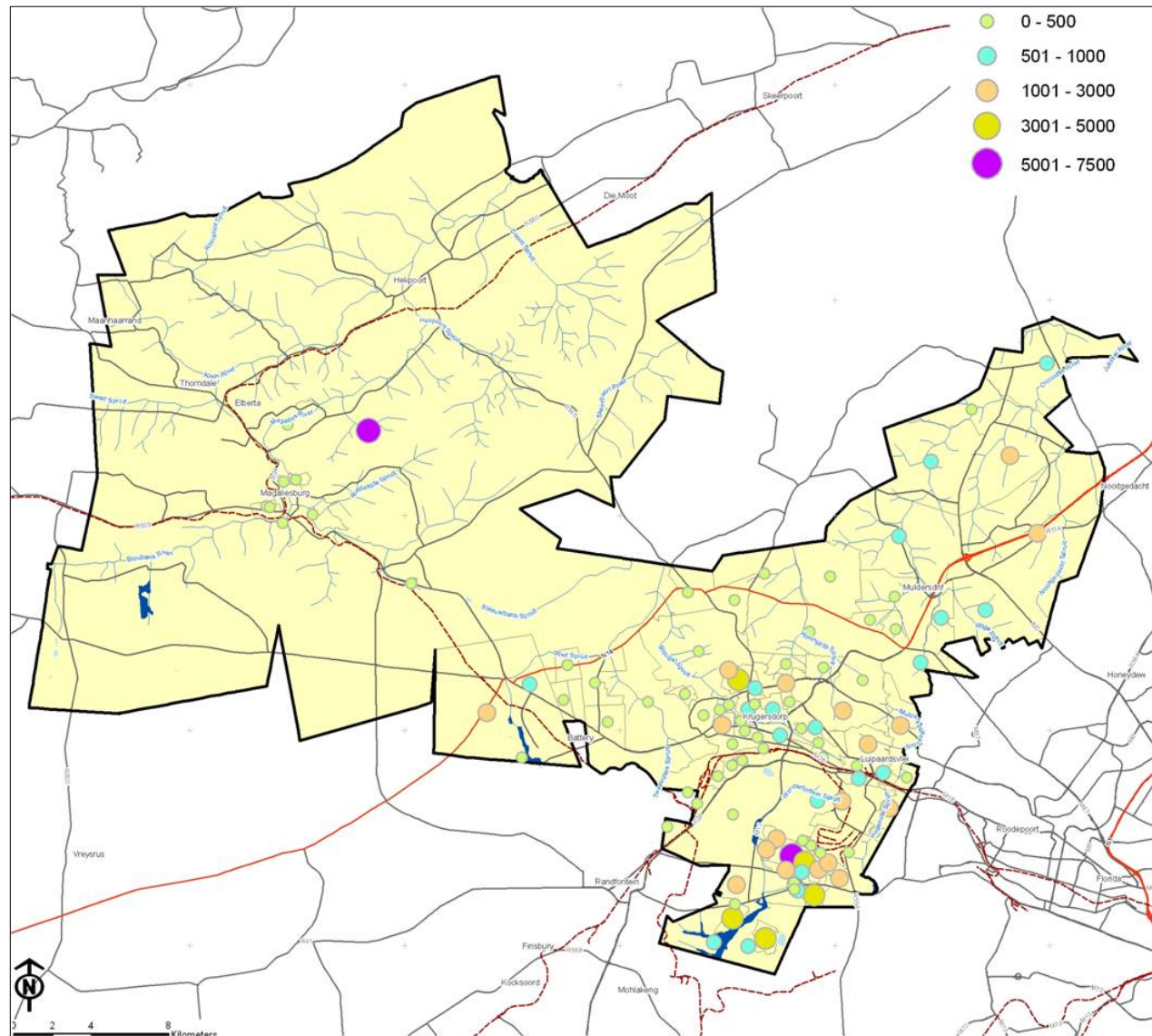


Table 10: Household distribution by settlement type

Settlement type	Mogal e City	%	West Rand	%	Gaute ng	%	South Africa	%
Urban-Urban	62 944	70.34	210 377	74.30	2 350 201	82.86%	6 244 573	53.05%
Urban- Informal	4 344	4.85	32 397	11.44	340 708	12.01%	1 113 526	9.46%
Urban - Small holdings	14 209	15.88	21 626	7.64	80 512	2.84%	137 534	1.17%
Tribal	0	0.00%	1 248	0.44	7 327	0.26%	3 392 702	28.82%
Farm	7 993	8.93%	17 494	6.18	57 588	2.03%	881 936	7.49%
Total	89 490	100.00	283 142	100.00	2 836 336	100.00	11 770 271	100.00

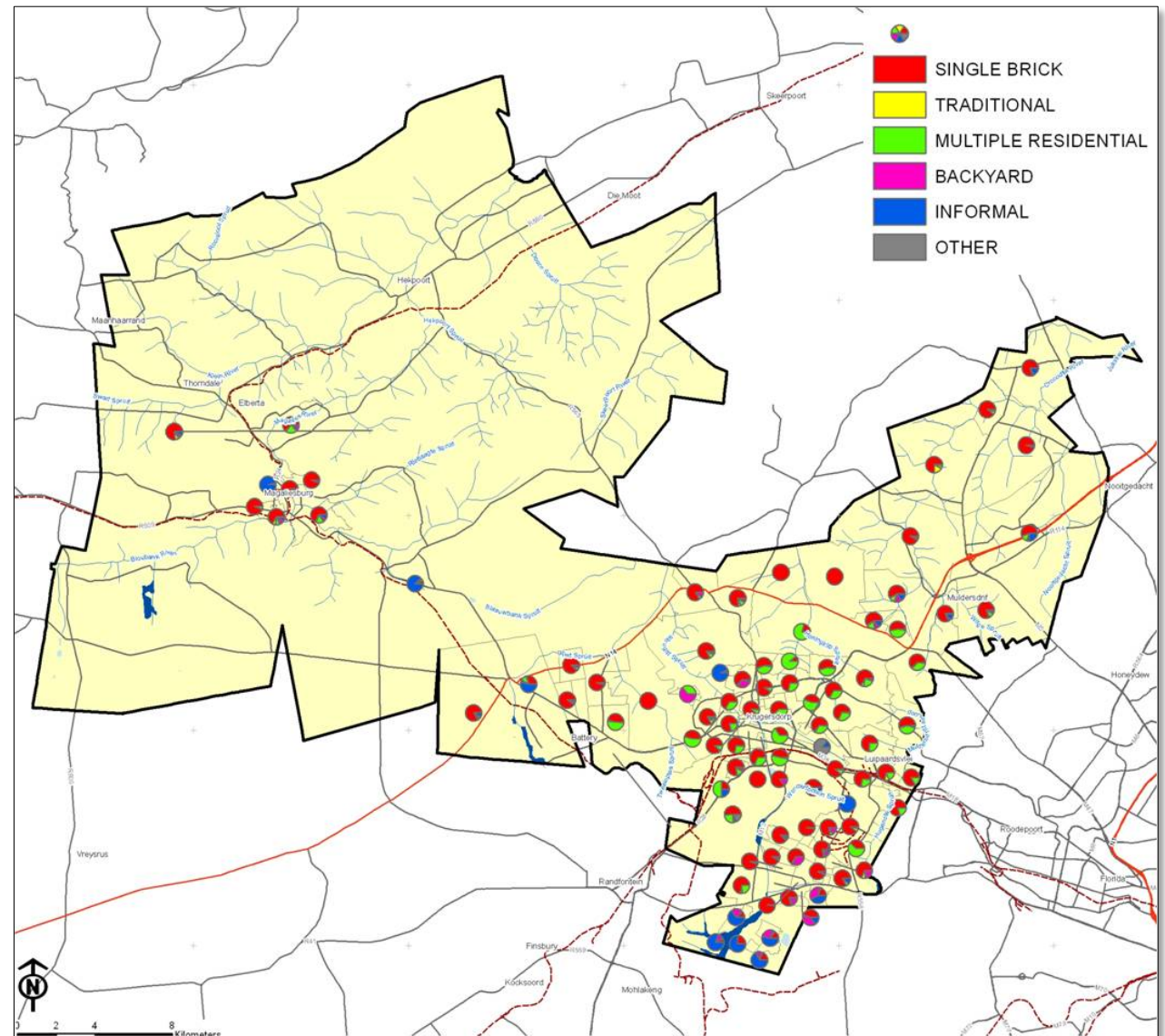
Source: Census 2001

Although the figures are dated, the distribution patterns remain relevant. Mogale City is less urbanised than the West Rand District Municipality's area as well as the total Gauteng. It is nevertheless substantially more urbanised than the rest of South Africa. Informal settlement is less prevalent than in the other areas but small holdings are a significant element of the municipal profile. Given the location of small holdings on the urban periphery, they are the areas that are usually under development pressure. However, due to the size of the land parcels they are relatively easy to develop but create problems in terms of creating mixed use zones that are very difficult to manage from a land use point of view. The farming component exceeds all the comparative averages and when linked with the small holding component it signifies that agriculture might have a significant role to play in the development of the municipal area. It is an element that is often underplayed in the light of the pressure and problems associated with urban development.

7.1 Dwelling Types

The majority of houses in the municipal area are good quality brick structures. There are also a few informal and multiple residential dwellings across the municipal area.

Multiple dwellings are most prevalent around the urban core and are clearly a growing phenomenon. Informal and backyard dwellings are mostly found in the lower income areas. Informal households are located in the far south and often associated with backyard shacks. Due to the nature of Mogale City it can be expected that there are few to none traditional dwellings in the municipality.

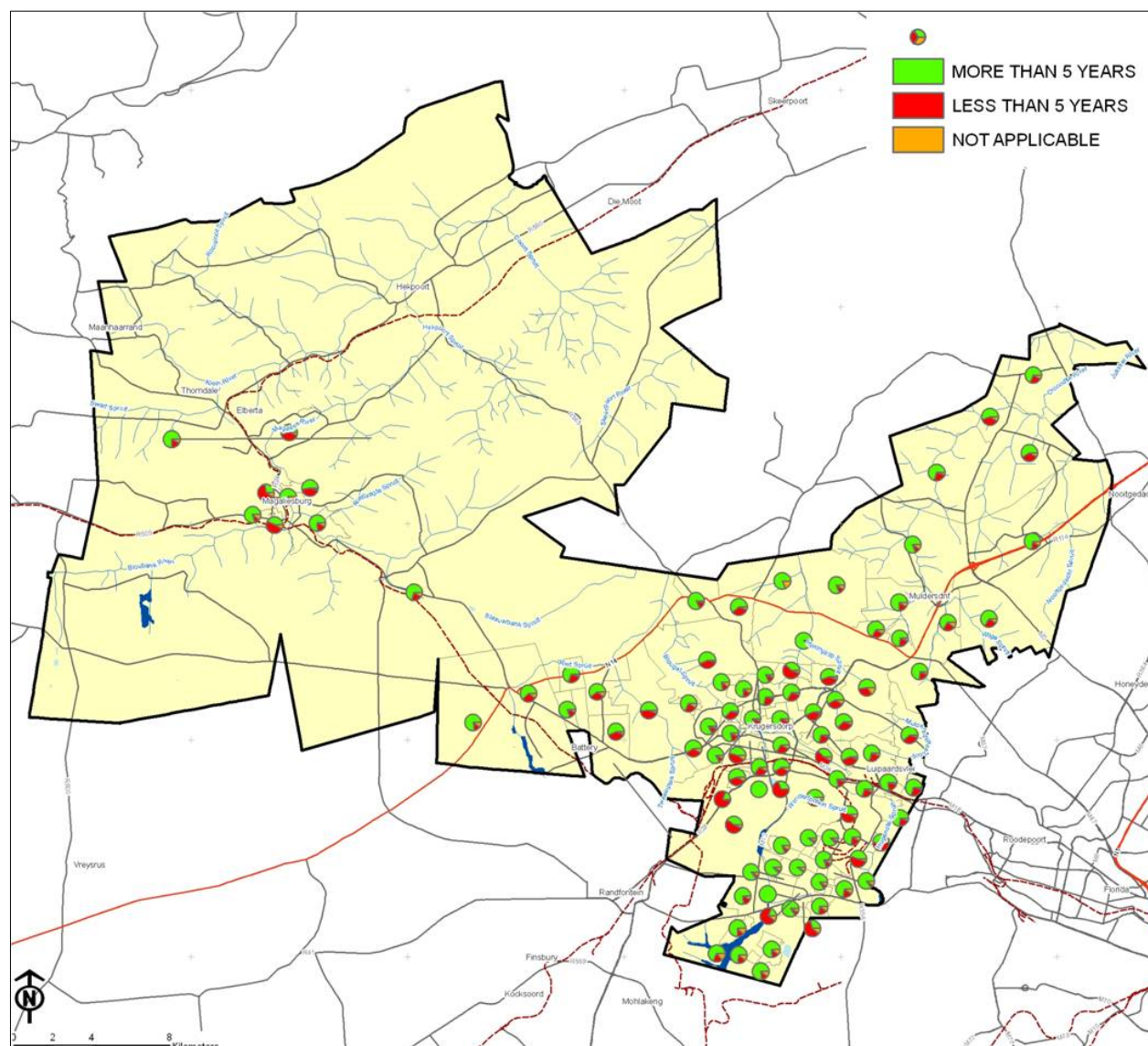


Map 28: Dwelling types

7.2 Period of Residence

The period of residence of households in the area highlights two very important issues.

1. The population in the urban core has large number of households for less than 5 years in the area. This is an indication of a growth dynamic in this area, which creates opportunities for development. The same applies for Magaliesburg, the Tarlton area and parts of Muldersdrift.
2. With some exceptions the households on the Kagiso area are much more stable.



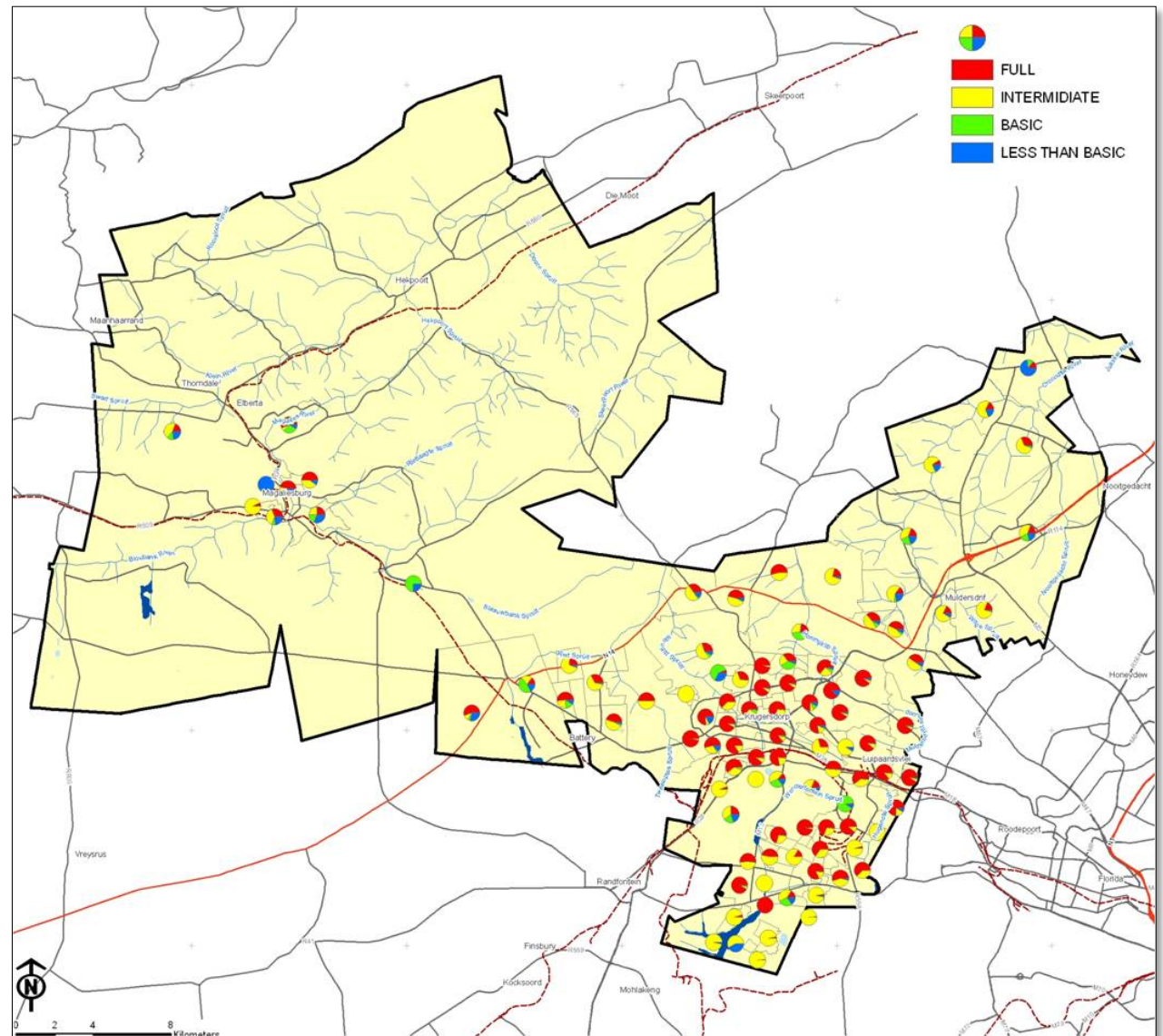
Map 29: Period of residence

8. Access to Services Infrastructure

Providing access to services to households is one of the major driving forces behind government's service delivery initiatives. In this sense the level of access to services is a performance measure. Access to infrastructure enhances opportunities for development; however, a lack of access to basic services is also a measure of deprivation.

8.1 Access to Water Services

The map shows that the municipal area is relatively well serviced with a lack of some basic water services in the Magaliesburg area, south of Kagiso and in certain areas of Muldersdrift. This may be associated with the extent of informal settlement in the area. In 2001 less than 7% of all households did not have access to basic water services.



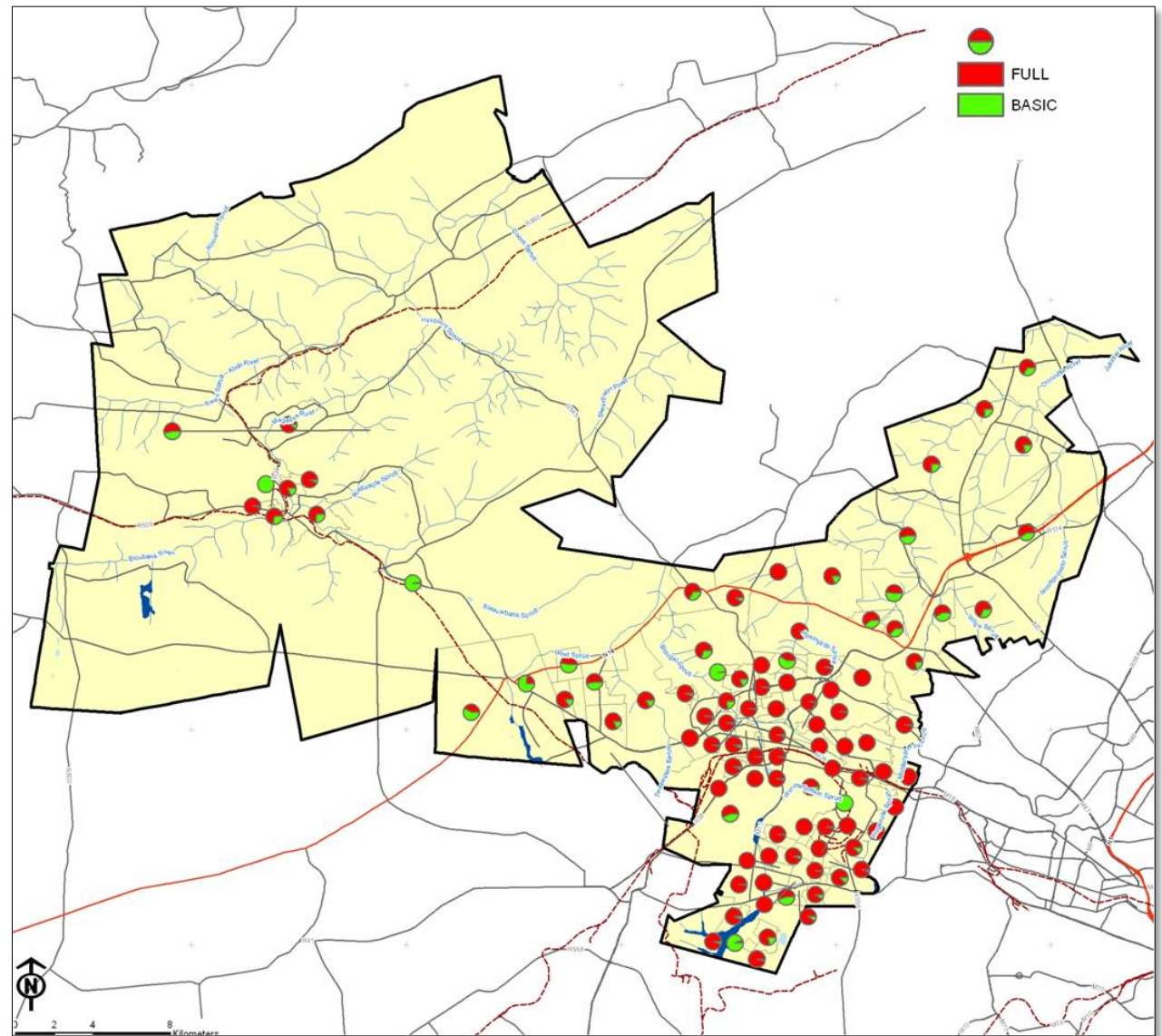
Map 30: Access to water services

All urban areas are well serviced. A lack of access to sanitation at acceptable levels also seems to be an issue on farms and agricultural holdings. The issue is noted but it does not have a significant impact on spatial planning at this level.



8.3 Electricity Services

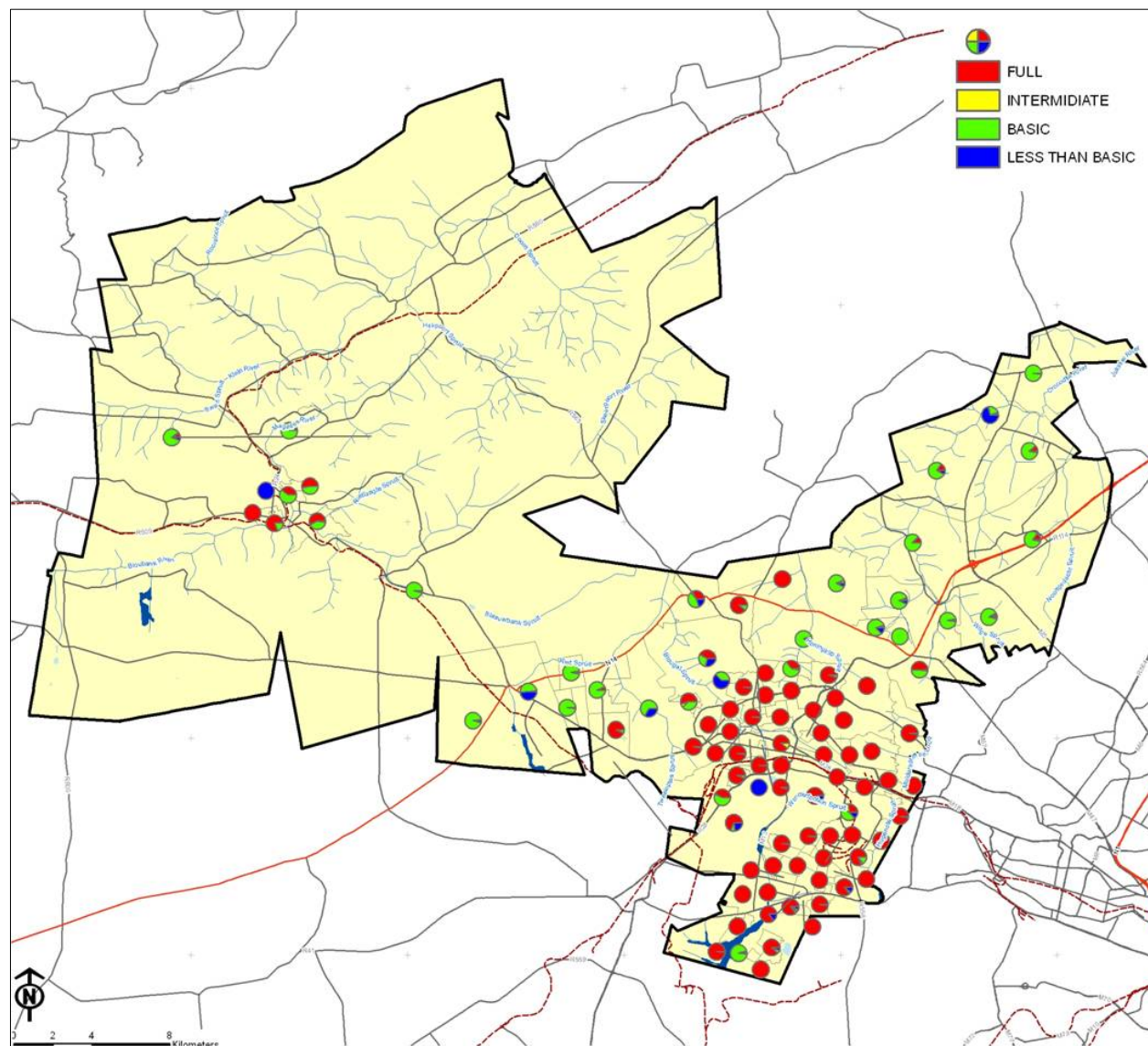
Both Eskom and the council provide electricity in the area. The council is generally responsible for electricity provision in the urban cores and some commercial farming areas.



Map 32: Electricity services

8.4 Access to Refuse Removal Services

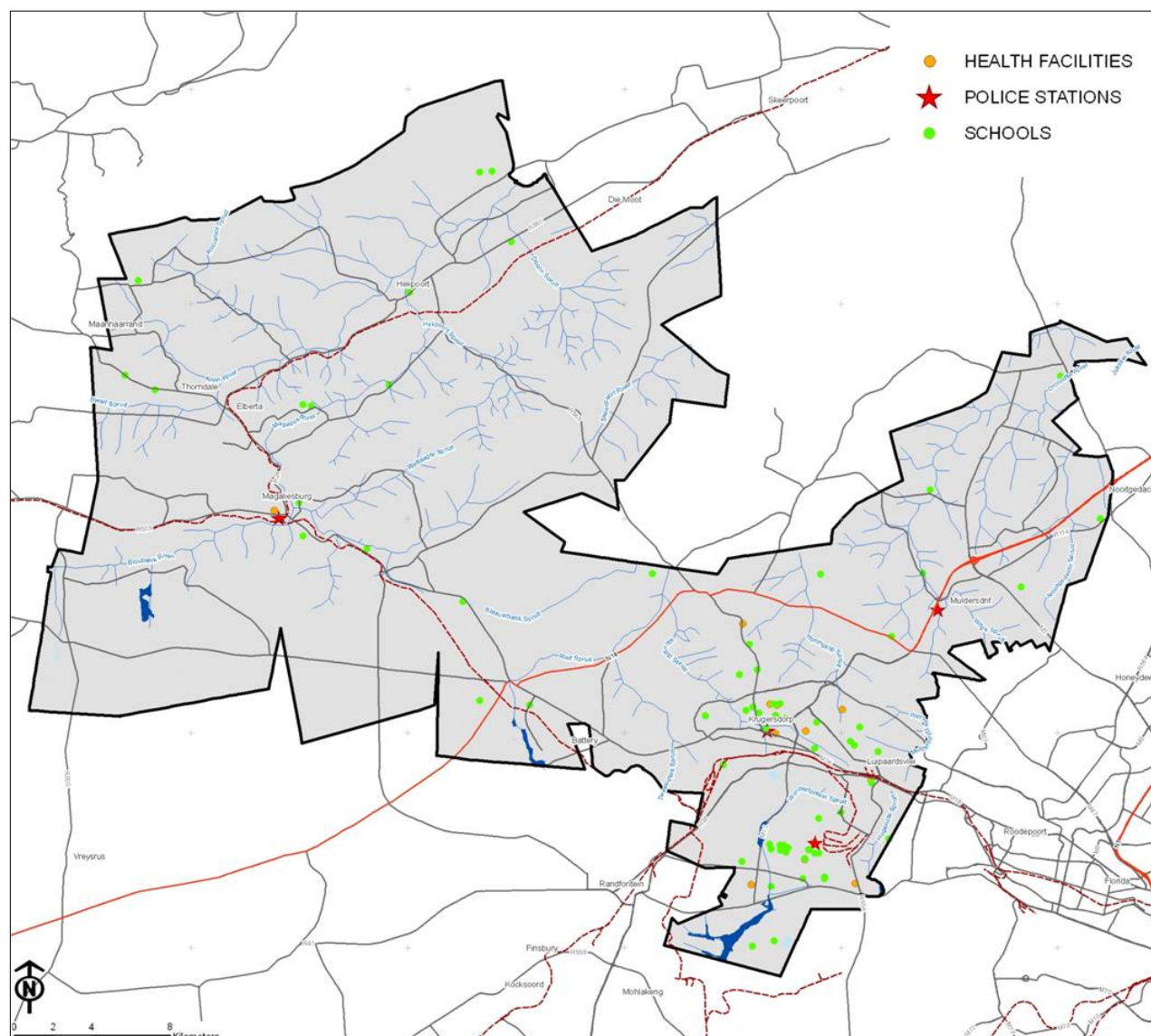
Only the formal areas in the urban centres have access to conventional refuse removal services. The lack of refuse services and a strategy to address this problem have a clear environmental impact but should not impede on the spatial planning process.



Map 33: Access to refuse services

9. Social Services

Access to social facilities plays an important role in local development. The spatial system in Mogale City is well established and has developed over many years. It is not possible to determine the nature of the needs for schools, clinic, etc. In this assessment the emphasis is on the quantitative aspects or specifically the access of communities to these services. Map 34 shows the general distribution of these facilities throughout the municipal area.

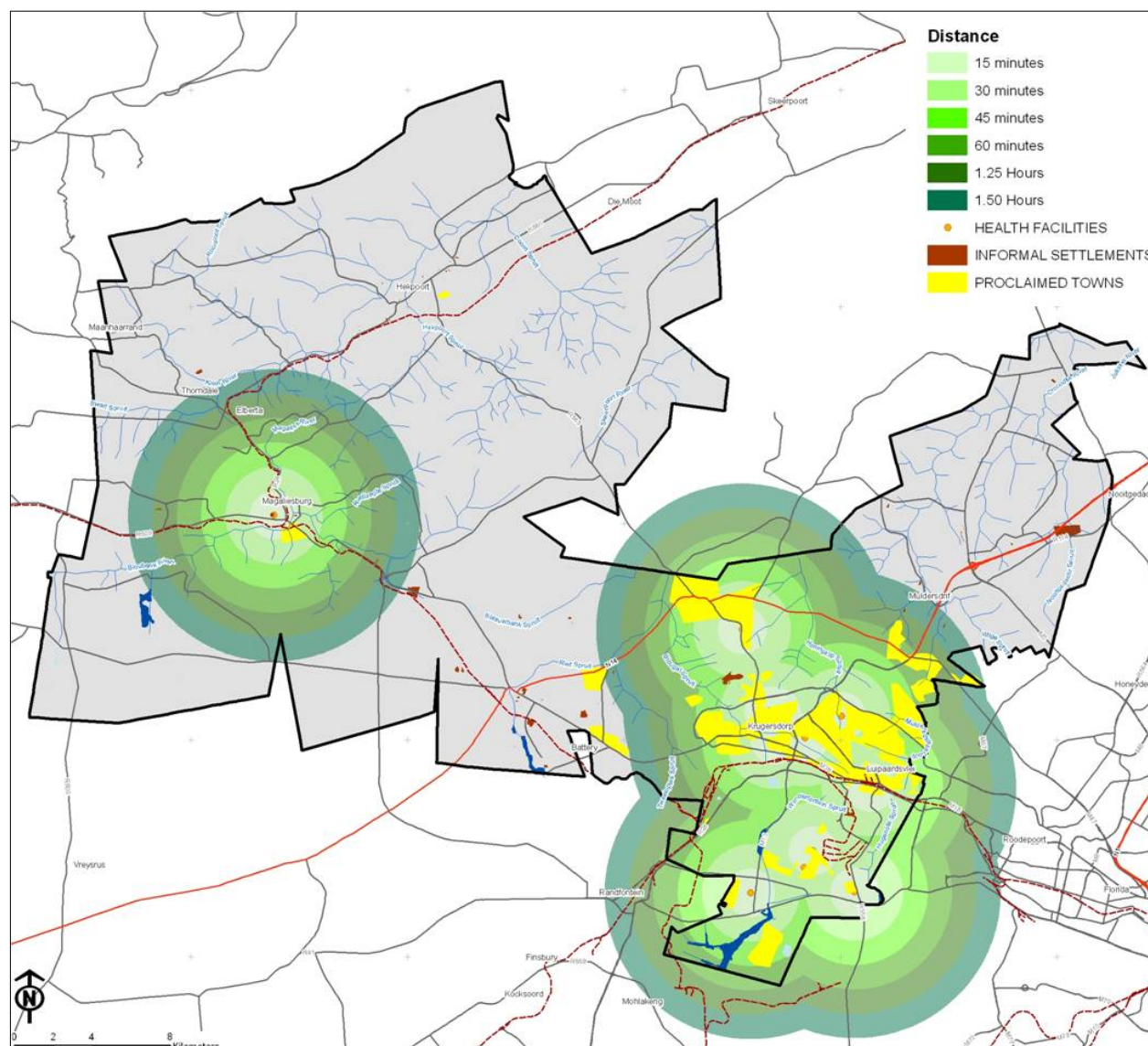


Map 34: Distribution of social facilities

Table 12: Walking distance to health facilities

Minutes	15	30	45	60	75	90	Total
Total Population	88 554	109 966	34 158	7 111	3 783	3 799	247 371
% of population	35.8	44.5	13.8	2.9	1.5	1.5	100.0

More than 94% of the population is within 45 minutes from health facilities. For routine requirements this should be acceptable.

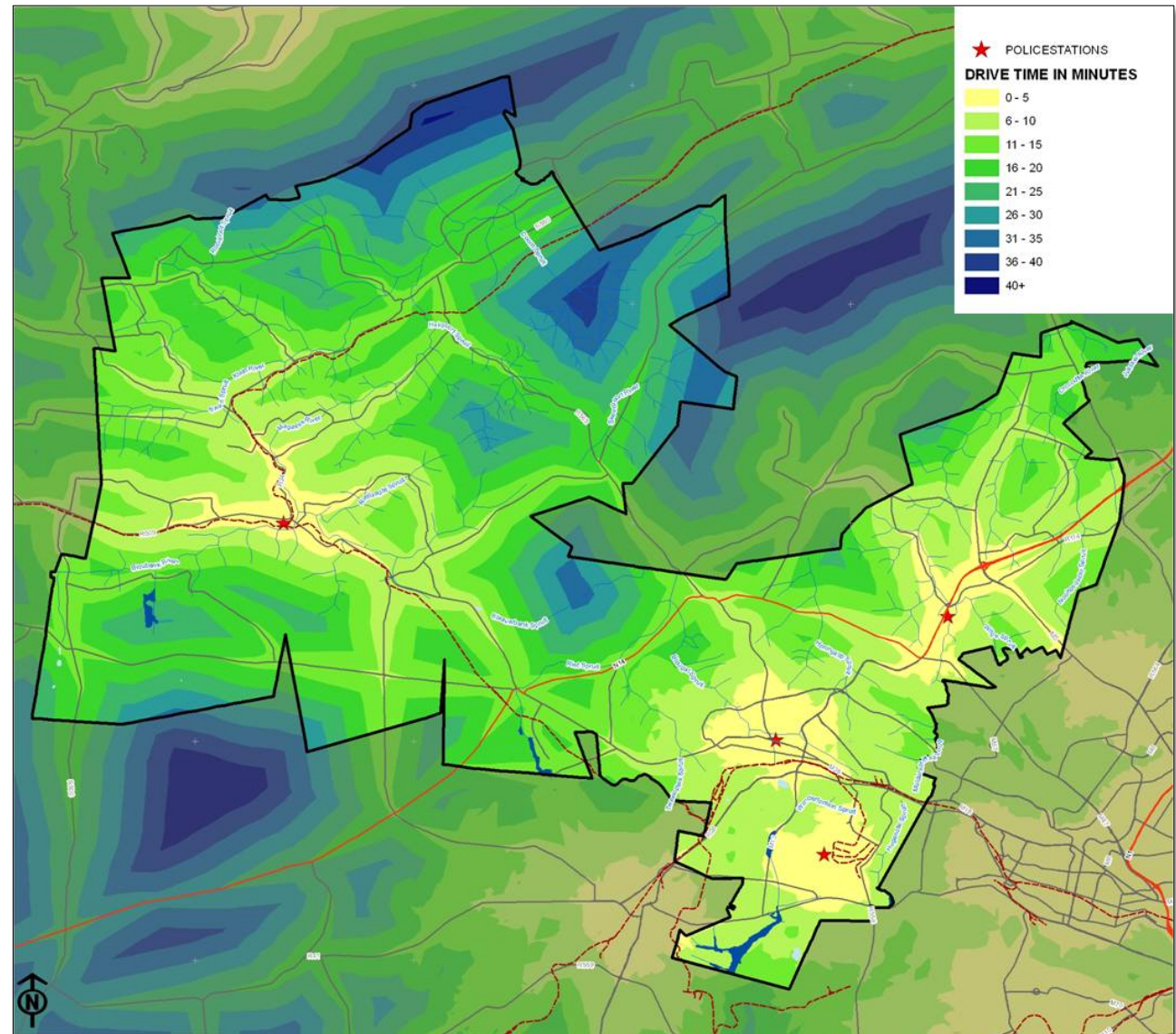


Map 36: Distance from health facilities

9.3 Access to Police Stations

The approach adopted with access to police stations is the opposite from the one used for education and health facilities. 5 minute interval isochrones from police stations were used to calculate the extent of access to these facilities.

The analysis in Table 13 shows that 90% of the population is within a 15 minute drive from a police station. The most inaccessible areas coincide with the areas with high conservation potential and thus also the most sparsely populated areas.



Map 37: Drive time from police stations

Table 13: Drive times from police stations – population within reach

Time (Minutes)	5	10	15	20	25	30	35	40	45	Total
Total	149 825	93271	29 387	9 846	3 943	1 955	945	427	10	289 609
%	51.7%	32.2%	10.1%	3.4%	1.4%	0.7%	0.3%	0.1%	0.0%	100.0%

10. Change and Growth

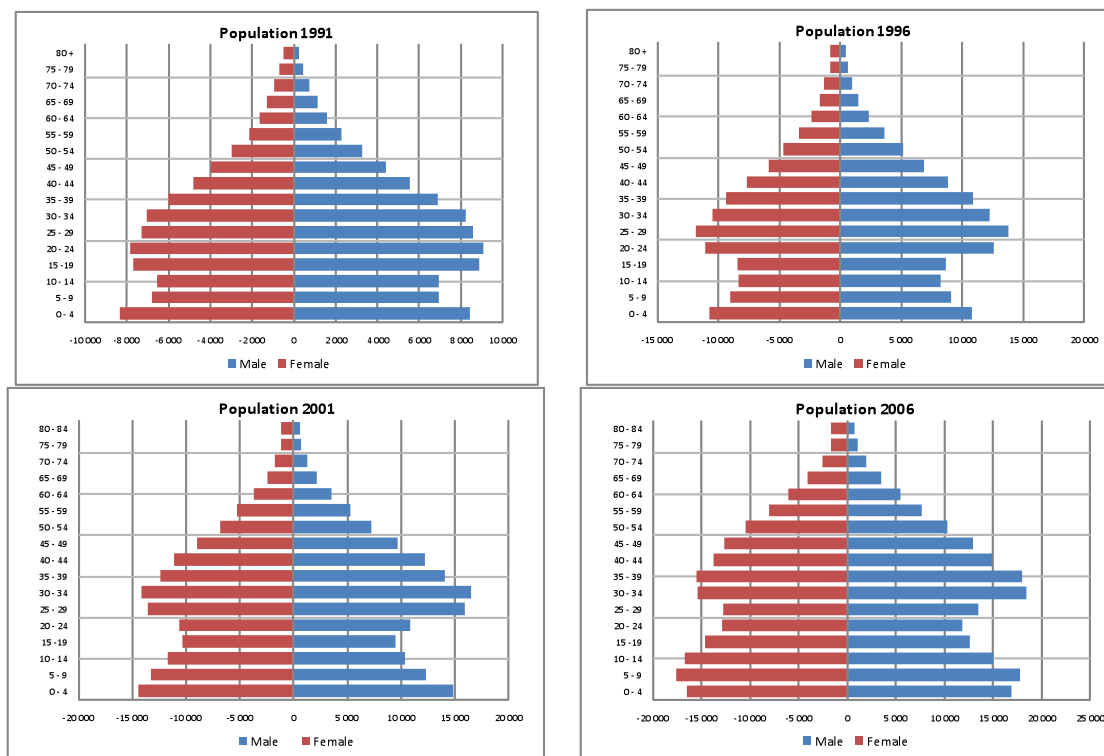
The following issues are considered as important drivers of growth and the demand for services.

1. Population structure and changes.
2. Household growth.
3. The structure of the local economy.
4. The drivers of the local economy.

10.1 Population Structure and Changes

Issues regarding gender and male female ratios were assessed earlier. The next set of graphs shows the age structure and composition of the municipal population from 2001 to 2006 developed by the DBSA.

Table 14 : Population changes



Mogale City's population structure shows a very peculiar structure. It shows that about 20 years ago there was a drastic decline in birth rates and the presence of young children in the municipal area. This continued for some time and the effect is still the evident as an absence of young adults in the municipal population. The current trends show that there is a more "normal" distribution developing but it will still take about 50 years for the middle age bulge to work through the system. The practical implication is that the population growth rate is decreasing and that household formation will grow at a lesser and declining rate for the medium to long term.

The following table shows the growth figure derived from this profile. The comparative figures from the 2007 Community Survey shows population growth between 2001 and 2007 to be 1.71% per annum with the corresponding figure for household growth to be 2.14%. This is lower than the figures quoted below.

Table 15: Population growth and changes

Key growth rates	1991	1996	2001	2006
Number of households	43 536	66 594	86 708	107 385
Household growth per annum		10.6%	6.0%	4.8%
Population	159 824	224 315	289 649	365 212
Population growth per annum		8.1%	5.8%	5.2%
Household size	3.67	3.37	3.34	3.40

10.2 Household Growth

Households are the basis for the demand for goods and services delivered by the councils. The following tables show the estimate household growth over the next decade based on the higher growth rates modelled by the DBSA.

Table 16: Total household growth per income category

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<R800pm	50 645	52 610	54 409	56 019	57 420	58 798	60 150	61 474	62 764	64 020
R800 - R1 500	18 398	19 112	19 765	20 350	20 859	21 360	21 851	22 332	22 801	23 257
R1 500 - R3 500	22 756	23 639	24 448	25 172	25 801	26 420	27 028	27 622	28 202	28 766
> R3 500	20 247	21 032	21 751	22 395	22 955	23 506	24 047	24 576	25 092	25 594
Total	112 046	116 393	120 374	123 937	127 035	130 084	133 076	136 003	138 859	141 637

The growth implies the following increments per annum.

Table 17: Household growth - increments per annum

Year	07-08	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13	13 - 14	14 - 15	15 - 16	16 - 17	Total
<R800pm	2 107	1 965	1 799	1 611	1 400	1 378	1 352	1 323	1 291	1 255	15482
R800 - R1 500	765	714	654	585	509	501	491	481	469	456	5 624
R1 500 - R3 500	947	883	808	724	629	619	608	595	580	564	6 957
> R3 500	842	786	719	644	560	551	541	529	516	502	6 189
Total	4 661	4 347	3 981	3 563	3 098	3 049	2 992	2 928	2 856	2 777	34252



The growth increments per income group are significant. The following should be noted:

1. About 82% of all growth is in poor households. It indicates greater demand on the councils' capacity to delivery services but also that services are delivered to households who cannot pay for it.
2. Growth in the high income segment is very small.

10.3 Economic Growth and Structure

The structure of the local economy is important since it guide future development and highlights areas of potential for development. The first element assessed is the sector composition of the economy and then the growth performance of each sector.

The table below shows that Mogale City is a strong contributor to agricultural production in the province. It is clearly not a mining based economy anymore and there is a shift toward the services sector.

The change rates in the different sectors of the economy are shown in the next table. It shows mining as generally a declining sector in all municipalities. Mogale City is however not a mining based economy any more. The strongest growth was in transport and the services sector in general although community and social services did not grow as services coming primarily from the private sector. The strong growth in wholesale and retail trade, linked to very strong growth in transportation might indicate that the municipal area is developing as a regional service centre.

Table 18: Contributions to provincial GVA by sector by municipality 2004 (%)

	Agriculture, hunting, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas and water supply	Construction	Wholesale and retail trade	Transport, storage and communication	Financial, insurance, real estate and business services	Community, social and personal services	Total
Metsweding DM	9.78	4.70	0.63	0.63	0.71	0.50	0.33	0.40	0.72	0.62
Kungwini	7.14	0.91	0.41	0.50	0.52	0.40	0.26	0.31	0.52	0.42
Nokeng tsa Taamane	2.64	3.79	0.22	0.13	0.19	0.10	0.07	0.10	0.19	0.20
West Rand DM	14.09	26.27	3.16	2.04	2.72	2.45	2.32	2.03	2.74	2.89
Mogale City	10.27	1.21	2.35	1.73	2.00	1.71	1.83	1.43	2.05	1.86
Randfontein	2.51	6.18	0.75	0.14	0.52	0.60	0.42	0.54	0.57	0.66
Westonaria	0.77	18.88	0.03	0.14	0.16	0.12	0.06	0.04	0.09	0.34
West Rand DMA	0.54	0.01	0.02	0.03	0.04	0.02	0.02	0.02	0.02	0.02
Sedibeng DM	17.54	0.49	7.82	9.87	4.30	3.19	2.68	2.46	4.34	4.10
Emfuleni	4.20	0.25	6.67	4.97	2.93	2.35	1.82	1.70	3.16	3.04
Midvaal	8.64	0.18	0.94	4.68	1.04	0.61	0.59	0.59	0.68	0.78
Lesedi	4.70	0.06	0.22	0.21	0.33	0.23	0.27	0.17	0.49	0.28
Ekurhuleni	19.20	22.43	31.22	18.37	22.99	19.79	23.94	16.73	15.95	20.91
Johannesburg	19.79	39.83	39.49	43.90	47.44	52.85	40.16	55.96	42.83	47.15
Tshwane	19.60	6.27	17.69	25.19	21.84	21.22	30.57	22.41	33.43	24.32
Gauteng	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: DBSA



Table 19: GVA growth per sector 1996 to 2004

	Agriculture, hunting, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas and water supply	Construction	Wholesale and retail trade	Transport, storage and communication	Financial, insurance, real estate and business services	Community, social and personal services	Total
West Rand DM	0.52%	- 3.70%	1.09%	- 1.85%	0.95%	3.14%	7.52%	3.30%	0.99%	- 0.41%
Mogale City	0.51%	- 3.78%	1.24%	- 1.00%	0.83%	3.00%	7.53%	2.77%	0.99%	2.21%
Randfontein	0.53%	- 3.68%	0.68%	- 2.67%	1.12%	3.39%	7.22%	2.87%	0.99%	0.98%
Westonaria	0.64%	- 3.63%	1.87%	- 3.64%	1.60%	3.99%	6.35%	1.94%	0.99%	- 2.84%
West Rand DMA	0.51%	- 3.22%	2.49%	0.04%	2.83%	5.25%	11.33%	5.85%	0.99%	3.62%
Gauteng	0.52%	- 2.46%	3.29%	0.40%	3.44%	5.82%	10.54%	7.41%	0.99%	4.50%
National Total	0.52%	1.05%	2.52%	- 0.16%	3.25%	5.03%	8.23%	5.54%	0.99%	3.25%

The basic/non-basic assessment shows that Mogale city is, in terms of the provincial economy a major player in the agricultural, manufacturing, construction, and community services sectors in the economy. The other municipalities and the district municipality as a whole are based in the primary sector. This make the district economy very vulnerable to changes in international commodity prices while Mogale City has a more diversified economy.

Table 20: Comparative Basic /Non-basic ratios (Provincial economy)³

	Agriculture, hunting; forestry and fishing	Mining and quarrying	Manufacturing	Electricity; gas and water supply	Construction	Wholesale and retail trade	Transport; storage and communication	Financial, insurance, real estate and business services	Community, social and personal services
Mogale City	4.08	0.40	1.00	0.73	1.15	0.95	0.82	0.72	1.00
Randfontein	2.42	2.93	0.99	0.61	0.97	0.90	0.75	0.63	0.95
Westonaria	0.99	16.53	0.19	0.38	0.66	0.37	0.27	0.19	0.29
West Rand DM	3.06	4.96	0.79	0.61	0.98	0.79	0.66	0.57	0.81

In terms of the national economy, Mogale City's profile shifts more towards the secondary and tertiary sectors. It well diversified and the profile strengthens the perception of a strong service centre, not only in the provincial economy, but in the national economy.

³ Basic/Non-Basic ratios are calculated in order to determine the drives of an economy. The ratio is expressed as the employment in a sector in the local economy divided by the total employment in the local economy. This is in turn divided by the same ratio for the district, provincial or national economy. A ratio greater than one implies that there is relatively more employment in this sector than in the corresponding economy it is compared to. It therefore generates more than what can locally be consumed and the sector is thus a net exporting sector. This implies that it generates income for the local economy. The opposite is then true for ratios smaller than one.

Table 21: Comparative Basic /Non-basic ratios (national economy)

	Agriculture, hunting; forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas and water supply	Construction	Wholesale and retail trade	Transport, storage and communication	Financial, insurance, real estate and business services	Community, social and personal services
Mogale City	0.96	0.34	1.10	0.71	1.21	1.05	1.04	1.10	0.94
Randfontein	0.57	2.50	1.09	0.60	1.02	1.01	0.95	0.96	0.89
Westonaria	0.23	14.11	0.21	0.37	0.69	0.41	0.34	0.29	0.27
West Rand DM	0.72	4.23	0.88	0.60	1.03	0.88	0.84	0.86	0.76

11. Major Planning and Development Initiatives

Mogale City does not function as an island, but forms part of a development region that spans across administrative boundaries and where planning and development initiatives in one area can have a significant impact (either positive or negative) on the development potential, trends and future of another area. For this reason it is important to take cognisance of the major development and planning initiatives currently underway both within Mogale City as well as along its boundaries with other local municipalities, as these could have a significant impact on the spatial development proposals for the area.

The planning and development initiatives can be divided into two major groups, namely those in the natural or rural environment, and those in the urban environment.

When looking at the natural or rural environment, there are two major initiatives that have an impact on spatial development proposals. The first is the Cradle of Humankind World Heritage Site Buffer Zone, and the second is the Gauteng Agricultural Hub.

The **Cradle of Humankind World Heritage Site Buffer Zone** is a new initiative from the Gauteng Provincial Government “intended to create a layer of additional environmental and land use protection to cushion the WHS against developments and activities”.⁴ The proposed new buffer zone around the Cradle covers almost the entire Mogale City save for the existing built-up areas, the area to the east of the R28 and some outlying areas in the western part of Mogale City. Currently, GDARD is still in the process of finalising the Environmental Management Framework for the Cradle of Humankind World Heritage Site and the buffer zone, with the result that there is currently no clarity on the type and intensity of land uses proposed for the buffer zone.

The **Gauteng Agricultural Hub** lies in the south-western part of Mogale City, roughly to the south and west of the R24, and forms part of one of six such hubs throughout the province. The focus of these hubs is on the creation of centres of high quality agricultural activity, where niche market agricultural products such as vegetables, including indigenous vegetables, flowers, herbs and spices, will be farmed. The areas that form part of the agricultural hub must be vigorously protected from land uses and developments that will diminish the agricultural potential and value of this area on the one hand, and on the other hand the spatial development framework must make provision for land uses that can support the agricultural activities in these areas.

A number of current planning and development initiatives have a significant impact on the direction of future **urban development** in Mogale City. Probably the most significant of these is the proposed development of a large regional node around the **Lanseria Airport** (also referred to as the Aerotropolis development), comprising mixed land uses, tourism related uses and

⁴ Source: Draft Status Quo Report: Environmental Management Framework and Management Plan for the Cradle of Humankind World Heritage Site and its proposed buffer zones, and the Muldersdrift area. 2008



high density residential development. The western half of the airport's influence sphere (from a development perspective) lies in Mogale City, and hence will have a definite impact on development in this area. It cannot be expected that the development energy created by the airport and the Aerotropolis initiative can be restricted to the Johannesburg side of the airport over the medium to long term. A specific development which is currently proposed for the Lanseria area is a mixed-use development known as Cradle City. This development straddles both Mogale City and the City of Johannesburg. The land uses proposed for the Mogale City portion of the development includes retail, commercial, offices, high density residential, low density residential development and tourism.⁵ This development however conflicts with the Cradle of Humankind World Heritage Site Buffer Zone and the interface between the two is an issue that needs to be discussed and resolved on provincial level.

Many urban development initiatives are located in the City of Johannesburg along Mogale City's eastern boundary and result in particular development pressure in the eastern part of Mogale City. These include –

- The proposed expansion of the Cosmo City residential complex, aimed at providing affordable housing in this area. These developments already extend up to Mogale City's boundary, and it can be expected that it will eventually start to spill over into Mogale City into the Muldersdrift area.
- In terms of local planning frameworks for the City of Johannesburg, high density residential development is proposed for the area around the intersection of the R512 and the R28, between the Cosmo City development and the Lanseria airport node.
- Krugersdorp forms the western anchor of the City of Johannesburg's East-West Development Corridor which runs midway through the City of Johannesburg between Ekurhuleni and Mogale City and which incorporates the traditional mining belt. The mining legacy of the area has also presented a number of environmental challenges and constraints, the most visible of these being the numerous mining dumps. The City

⁵ Source: SEF: Scoping and Environmental Impact Assessment for a Proposed Mixed-Use Development in Lanseria to be known as Cradle City

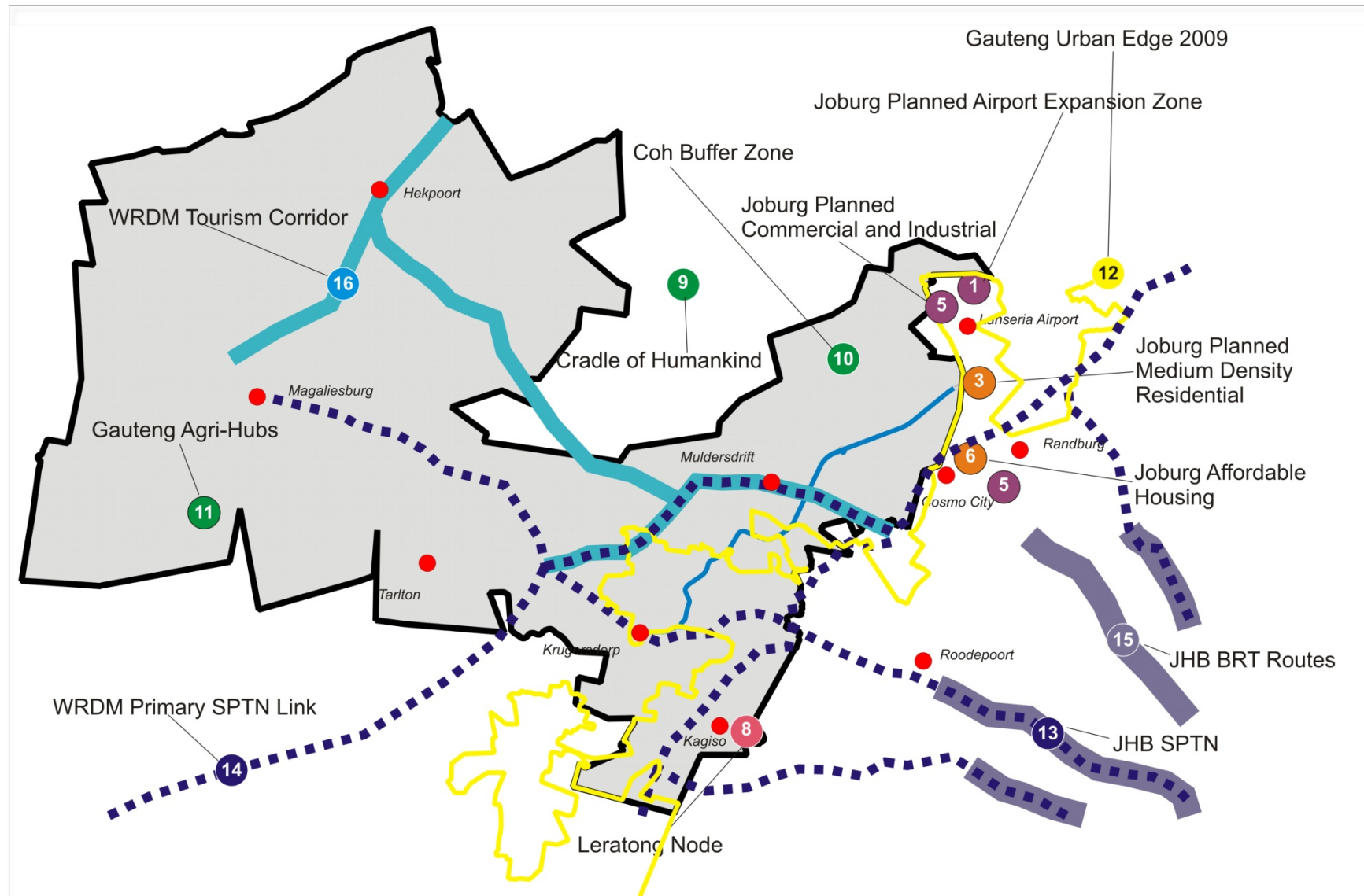
of Johannesburg recognises the East-West Development Corridor as an important area with great potential to promote *spatial integration* together with *social* and *economic growth*.

- Johannesburg's Strategic Public Transport Network includes the R512 (Malibongwe Drive), Beyers Naudé Drive, Ontdekkers Road and Randfontein Road up to the boundary of Mogale City. The Johannesburg BRT routes along the R512, Ontdekkers Road and Randfontein Road also run close to the boundary of Mogale City. The linkage of these public transport networks into Mogale City and the resulting impact on land uses are of importance for the spatial development framework.

Major planning and development initiatives of regional importance in Mogale City include-

- The proposed Leratong Node which is located on the intersection of Randfontein Road and Adcock Road at the Leratong Hospital and the proposed Leratong Intermodal Facility. The purpose of this initiative is to establish a development node that will be of strategic importance to the wider Kagiso community.
- The N14/R28 Development Corridor.
- The West Rand District Municipality's Strategic Public Transport Network which runs along the N14, R28, R24, Voortrekker Road and Randfontein Road (R41) in Mogale City.

Lastly, the urban edge as demarcated by the Gauteng Provincial Government has a significant impact on the development of Mogale City, as this edge restricts urban development. Currently in Mogale City the urban edge is aligned with existing urban areas and do not make provision for urban expansion. This is due to the provincial government's need to stimulate in-fill development and densification rather than horizontal urban expansion, which is in principle supported by the Mogale City administration. Conflict however exists between the development energy that exist because of certain strategic development generators such as the airport and the R28/N14 and the current alignment of the urban edge. A balanced, sustainable solution will therefore have to be found for the demarcation of the urban edge in Mogale City.



Map 38: Current planning and development initiatives

12. Development Trends and Pressures

The major pressure points for development are –

- Around **Krugersdorp**, which sees natural continuous urban expansion as this town grows. Because of the fact that Krugersdorp is the highest order urban centre in Mogale City comprising the higher order goods and services, as well as the fact that it has a strong functional linkage with Johannesburg, this area naturally attracts the bulk of development pressure in the municipality.
- The **Muldersdrift** area is an area that over the years has begun to experience more and more development pressure, especially as development in Johannesburg moved further outward. The Muldersdrift Spatial Development Strategy of 1997 identified various land use zones to on the one hand accommodate development pressure and on the other hand preserve the rural character of certain parts of this area. The Muldersdrift area is probably the area that will in future experience the greatest level of conflict between various planning and development agencies. On the one hand this area lies directly in the path of development while on the other hand it falls outside the 2007 Urban Edge demarcated by Gauteng Province. The area to the west of the N14 also falls inside the new proposed buffer zone which has been drawn around the Cradle of Humankind World Heritage Site.
- The area around **Lanseria Airport** on Mogale City's side is currently still considered to be rural in nature. However, the City of Johannesburg has demarcated this area as a major new industrial, mixed-use and residential node, and the provincial government is also looking at a major development initiative (named the Lanseria Aerotropolis) around the airport. The energy resulting from this initiative will create pressure for development on Mogale City's side.
- The Hekpoort, Magaliesburg and Tarlton areas experience very little development pressure as such. However, one of the aspects that do place pressure on these areas are the existence of informal settlements around these towns, which means that pressure begin to emerge for the formalisation of these informal settlements into formal

townships. A number of housing initiatives are already underway in these areas which in turn require the development of supporting social facilities.

A spatial representation of all recent development applications in Mogale City shows a clear concentration of developments around the following areas:

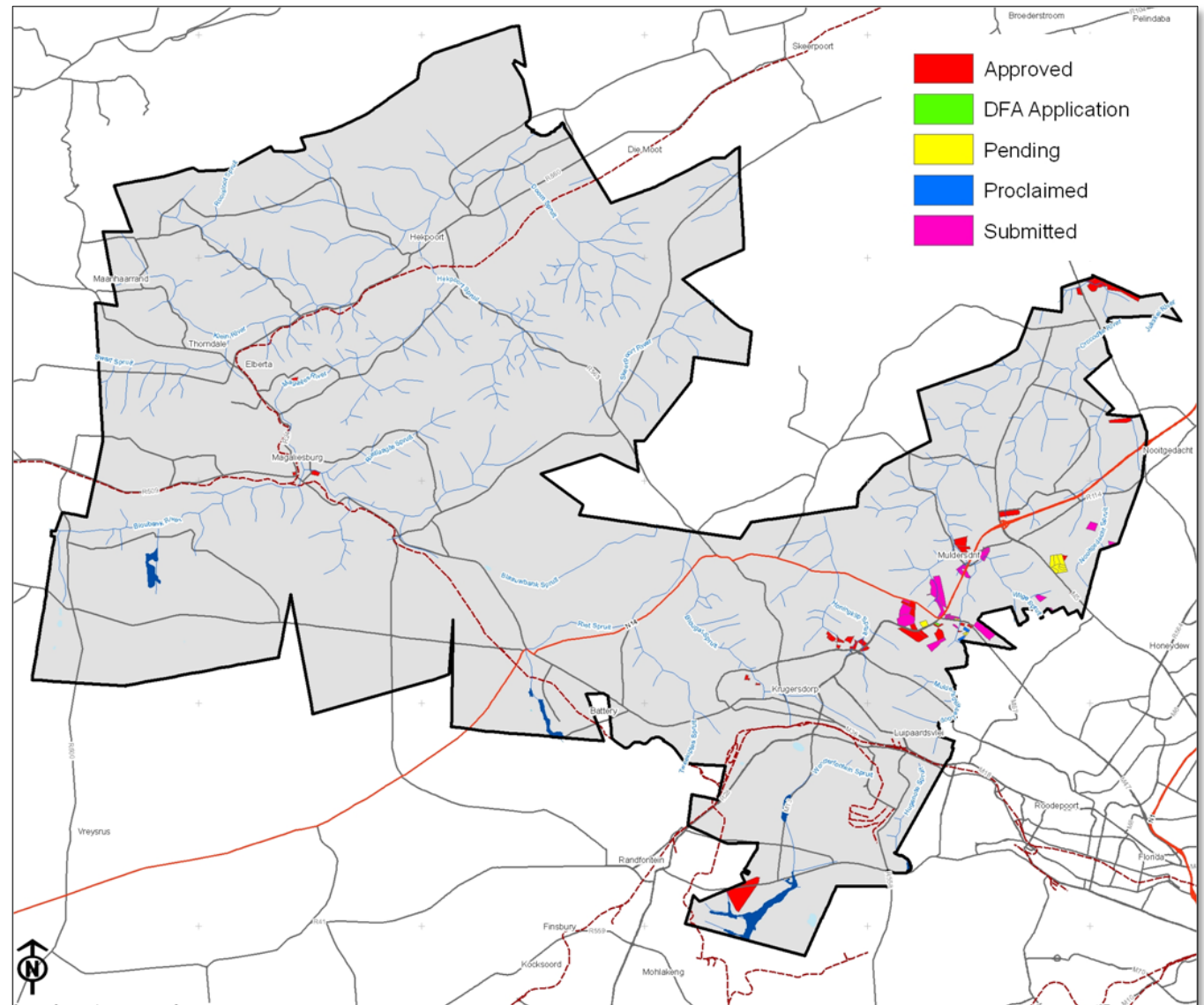
- In Muldersdrift around the Muldersdrift Node (the Drift).
- In the vicinity of the intersection of Hendrik Potgieter Road and the N14.
- In the vicinity of the intersection of Robert Broom Drive and the R28.

13. Constraints to Spatial Development

The following main constraints exist in Mogale City that has an impact on the spatial structure and the development potential of the municipality:

- The central part of Mogale City is characterised by a band of **dolomite** that runs roughly in a south-west/north-east direction through the municipality. These dolomite areas are the natural feature that gave rise to the cave formations that led to the creation of the Cradle of Humankind World Heritage Site.
- The **Gauteng Urban Edge, 2007** has been drawn conservatively around existing urban areas, and virtually no provision has been made for urban expansion.
- The **Cradle of Humankind** affects relatively small parts of Mogale City, and as such does not place a significant constraint on urban development and land use in Mogale City. However, the proposed new buffer zone around the Cradle of Humankind covers a large part of Mogale City, and therefore begins to place a constraint on the development potential of the area. As the Environmental Management Framework for this area has not yet been completed, there is no indication of the nature or intensity of land uses that will be permitted in the buffer zone and hence the exact impact on development potential is uncertain.

- **Natural elements** such as mountains, ridges, rivers and conservation areas are constraints to physical development in the sense that linkages between developments are often broken by the natural elements. However, the existence of the natural elements in the area are a positive spatial characteristic of the area, and ways must be found to accommodate and protect these while at the same time finding the most efficient and sustainable solution to urban development.
- The **mining belt** (including the radiation levels and environmental buffer zones) that runs through the south-eastern part of Mogale City poses a constraint for the functional integration of the urban areas on either side thereof. More particularly, because the areas to the south are predominantly disadvantaged areas and the areas to the north are the established urban areas of Krugersdorp, the mining belt poses a constraint to socio-economic urban integration
- The **availability of engineering services** in the Muldersdrift and Lanseria area will prevent any development in the short to medium term, depending on when major engineering infrastructure investment take place in this area.



Map 39: Development applications

14. Summary of Contextual Analysis: SWOT

Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> Urban areas in Mogale City form part of the Gauteng Global City Region. Pristine Natural Environment. An established Primary Node (Krugersdorp CBD). Regional accessibility from Tshwane and Johannesburg. Demand for development and expansion. High value agricultural land that forms part of a Gauteng Agricultural Hub. The availability of land to the east of the N14 in the Muldersdrift area to accommodate long term growth in Mogale City. Strong functional and economic linkages with the City of Johannesburg 	<ul style="list-style-type: none"> Poor physical and functional integration between greater Kagiso area and Krugersdorp. Poor quality of disadvantaged settlements. Mining land that provides a constraint to development. Dolomite. Lack of investment in public environment. Lack of housing opportunities in rural environment. Large poor and underserved population. 	<ul style="list-style-type: none"> Linkages with Johannesburg economic development. Johannesburg BRT infrastructure and routes. Cradle of Humankind tourism potential. N14 and Lanseria development opportunities. Rail network. Rural service centres (Magaliesburg, Tarlton and Hekpoort). Tourism opportunities in extensive rural environment. Development of a strong activity network. Creation of a benchmark development area in the Muldersdrift area based on Sustainable Human Settlements and New Urbanism. 	<ul style="list-style-type: none"> Cradle of Humankind Buffer Zone. Current delineation of the Gauteng Urban Edge. Decline of the Krugersdorp CBD. Undermined land and potential health hazards posed by mine dumps. Rural land invasion. Lack of investment in infrastructure. Backlogs in housing delivery. Displacement of rural population due to development pressure (in particular Muldersdrift area). Uncoordinated and unmanaged development in the Muldersdrift area.

Objectives and Strategies

1. Introduction

The previous chapter focused on achieving an in-depth understanding of the characteristics, functioning and dynamics of Mogale City as geographical space. The aim of this analysis was to fully comprehend the inherent development potential of the area, the opportunities that exist in the area as well as the constraints (both fixed and surmountable) that hamper development.

This understanding of the study area together with the development directives from the institutional analysis provide a clear indication of what needs to be done in Mogale City, and as such inform the objectives of the spatial development framework.

The objectives spell out **what** must be achieved, and can be divided into two categories. The first are those generic development objectives which form part of the national development agenda and are captured in legislation and national and provincial policy. The second category contains development objectives that pertain to Mogale City specifically and are derived from the local institutional framework and the analysis of the area.

The strategies in turn spell out **how** the objectives can or should be achieved and directly inform the development concept and spatial development proposals of the following chapter.

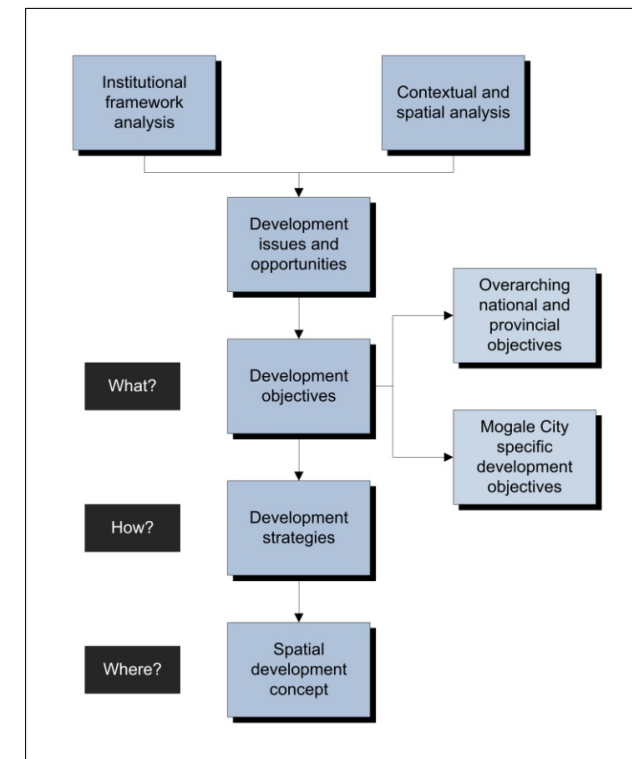


Figure 2: Objectives and Strategies

2. Overall Objectives

As shown in the chapter dealing with the Institutional Framework, there exist a multitude of principles, directives and guidelines for spatial planning and development at national and provincial level. In terms of the White Paper on Spatial Planning and Land Use Management, 2001, “*The overall aim of the principles and norms is to achieve planning outcomes that:*

- restructure spatially inefficient settlements;
- promote the sustainable use of the land resources in the country;
- channel resources to areas of greatest need and development potential, thereby redressing the inequitable historical treatment of marginalized areas;
- take into account the fiscal, institutional and administrative capacities of role players, the needs of communities and the environment;
- stimulate economic development opportunities in rural and urban areas; and
- support an equitable protection of rights to and in land.”

The various principles and directives can be translated into a set of **overarching development objectives** in accordance with the national agenda that form the overarching objectives of the spatial development framework, namely -.

- To promote sustainable development;
- To promote efficient development;
- To promote equitable development;
- To ensure integrated development, and
- To improve the quality and image of the physical environment.

Table 22: General development objectives

Objective	Description
Sustainability	The objective of sustainability requires the harmonious and mutually beneficial management and use of both natural and man-made resources. Other aspects that need to be considered in the sphere of sustainability are conservation, environmental health and degradation, economic sustainability and community satisfaction. Finding means of achieving balance between the conservation of the Cradle of Humankind and economic development is an important focus area of the SDF..
Efficiency	The objective of efficiency requires that optimal development levels and urban functionality must be achieved with the minimum expenditure of resources. The concept relates to both functional and operational aspects and includes issues such as urban growth management, optimal utilisation of strategic locations, usability, mobility, productivity, and accessibility.
Equity	The objective of equity addresses social justice and fair and equal access to opportunities, facilities or networks. Through planning, all residents irrespective of race, gender, ethnicity, faith or income should be dealt with in an equitable way. The objective of equity also refers to the manner in which planning will address the inequitable legacy inherited from the past.
Integration	The objective of integration requires that the separate and diverse elements involved in development planning and land use should be combined and coordinated into a more complete or harmonious whole. The objective of integration reflects the need to integrate systems, policies and approaches in land use planning and development. Firstly it requires that the planning process is integrated, and secondly look at spatial integration of different land uses, transportation, places of living with places of working and shopping and relaxing.
Liveability and image	Liveability and image include aspects such as convenience, safety, security and all other aspects related to one's experience of the physical environment, either as a resident or as a visitor. This aspect also directly relates to the marketability of the area from a qualitative perspective.



3. Specific Objectives Relating to Mogale City

The analysis of Mogale City's strategic institutional framework, most notably the Integrated Development Plan, showed the local authority's development objectives for the area. These objectives were further augmented by the results of the spatial analysis which indicated certain key aspects that need to be dealt with in Mogale City. Together, the outcome of this analysis informed the specific development objectives for Mogale City, namely –

- The integration of various areas in Mogale City to form a well functioning space economy;
- The development of sustainable human settlements and urban renewal of existing settlements;
- The promotion and facilitation of economic development;
- The sustainable management of the natural environmental assets and heritage;
- The promotion of tourism development;
- The promotion of sustainable rural development;
- The development and improvement of linkages with Johannesburg, Tshwane, Madibeng, the rest of Gauteng and the broader region, and
- Service delivery, specifically focusing on providing sufficient capacity in development priority areas.

4. Strategies to Achieve Objectives for Mogale City

In order to achieve the objectives, it is necessary to understand what the relevant strategies should be that will make the achievement of the set objectives possible. These strategies are based on best practice urban planning mechanisms and approaches.



Table 23: Development objectives and strategies

Development Objective	Strategy
The integration of various areas in Mogale City to form a well functioning space economy	<ul style="list-style-type: none"> Channel development into a system of nodes and corridors, in accordance with the principles of the National Spatial Development Perspective. Do not promote or support developments that are out of context with the desired development directions. Development must be localised in specific strategic areas where there can be a focused effort on the provision of engineering and social services, transportation and land use integration. Consolidate and grow existing settlements with potential rather than creating new development areas.
The development of sustainable human settlements	<ul style="list-style-type: none"> Move away from the current pattern of housing delivery towards an approach of integrated, inclusive and sustainable settlement creation (Breaking New Ground). Identify land for housing projects in close proximity to major centres, and with linkages to those centres
The promotion and facilitation of economic development.	<ul style="list-style-type: none"> Support and develop strategic locations that contain the right characteristics to enable sustainable economic development and which contribute to the overall spatial efficiency and sustainability. These include areas such as the CBD, Leratong Node, the area to the east of the N14/R28 and the N14/R28 Corridor.
The sustainable management of natural environmental assets and heritage.	<ul style="list-style-type: none"> Identify and isolate the valuable natural assets and exclude these from development proposals. Ensure that a continuous ecological and open space system is created in Mogale City Ensure the conservation and sustainable management of the Cradle of Humankind World Heritage Site.
The promotion of tourism development.	<ul style="list-style-type: none"> Identify tourism development opportunities in or within close proximity to the Cradle of Humankind. Ensure linkages to tourism development areas.
The promotion of sustainable rural development.	<ul style="list-style-type: none"> Identify and protect high potential agricultural land, in particular those areas that form part of the Gauteng Agricultural Hub Identify suitable locations for rural service centres and rural housing development Identify suitable locations and guidelines for the development of rural and resource based industries and other forms of appropriate rural employment opportunities.
The improvement of linkages with Johannesburg, Tshwane, Madibeng, the rest of Gauteng and the broader region	<ul style="list-style-type: none"> Develop a movement network in Mogale City that supports the spatial development focus areas and enables land use and transportation integration. Create a strategic movement network between Mogale City and other regional centres, focusing specifically on a regional public transport network
Service delivery, specifically focusing on providing sufficient capacity in development priority areas.	<ul style="list-style-type: none"> Ensure the provision of service infrastructure in accordance with spatial requirements (i.e. the integration of spatial planning and engineering services Master Planning) Identify the strategic areas of opportunity that should be the focus areas for capital investment in engineering services infrastructure, in terms of the National Spatial Development Perspective.

The Spatial Development Concept

1. Introduction

The spatial development concept provides strategic guidance for the spatial restructuring of the municipal area. Having determined what the objectives for spatial development in Mogale City are, the following phase is the formulation of those development proposals and strategies which are essential to achieve the objectives.

The spatial development concept therefore indicates the desired spatial distribution of various land uses and activities across Mogale City. It indicates where certain types of developments should or could take place, how these areas relate to other areas, and what development standards should apply.

2. Constructing the Spatial Development Concept

The spatial development concept is based on a system of interrelated and integrated spatial elements which together make up the desired spatial development form for the municipal area. These spatial elements are made up of nodes, networks, and surfaces.

The essence of development in this system is the movement of people, goods and services that produces the basic impetus for developing functional relationships between otherwise independent and unrelated elements. The movement of people, goods and services are channelled along specific routes that describe a **network of interaction**. Where networks intersect the opportunity for people, goods and services to interact develop and this gives rise to activity nodes. The intensity of interaction gives rise to the development of a **hierarchy of nodes** of different sizes depending on the level of interaction taking place in a node. This system of networks and nodes are tied together through **surfaces** that fill the areas between the nodes and networks.

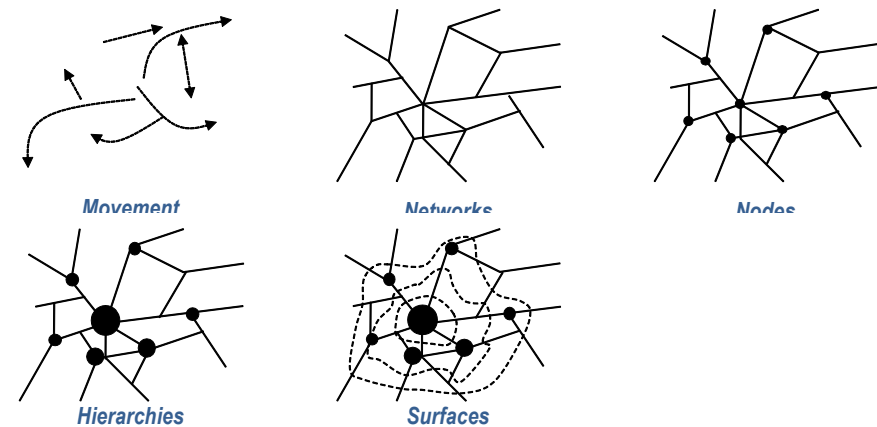


Figure 3 : The development concept



The spatial elements are dealt with according to a layering approach, where different elements build onto one another based on the reciprocal relationships between these elements, namely:

- The spatial development concept starts by identifying the **natural structuring elements** that exist in Mogale City and adjoining municipalities. These constitute pre-existing conditions in the municipal area which to a large extent dictate spatial form and development patterns because of the restrictions that these elements often place on development. The natural structuring elements include physical barriers such as mountains, ridges, and rivers or natural resources such as conservation areas.
- Secondly, the spatial development concept looks at the division between **urban and rural environments** through the application of an **urban development boundary**.
- The spatial development concept will subsequently address the **urban and rural environments** in terms of the nodes, networks and surfaces that apply to those environments.
- Finally, the spatial development concept looks at the **movement network** that exists that connects the different elements, and how this should be strengthened to enhance the interaction between the various elements.
- The spatial development finally concept also deals with certain non-spatial issues such as cultural heritage and city identity.

The spatial development concept follows a focused and strategic approach in identifying development opportunities. This means that, taking into consideration current growth dynamics, it is better to make a few key development proposals that will focus development energy to areas where agglomeration advantages can be achieved and a difference can be made in the spatial structure as opposed to identifying every possible development opportunity and never reaching critical mass with any of those.

It should be borne in mind that the Mogale City Spatial Development Framework remains a broad strategic planning framework due to the large geographic space that it covers. It cannot therefore make detail proposals for specific areas. For that purpose, local spatial development frameworks must be drafted.

3. Natural Structuring Elements

Natural open space consists of areas or physical elements that have valuable ecological characteristics and include -

- Mountains and ridges
- Rivers and dams
- Nature reserves and environmentally sensitive areas
- Wetlands
- Drainage lines
- Riparian zones

The protection and management of Mogale City's natural environment is important for the following reasons –

- The ecological integrity of the natural open space system is important in order to maintain natural ecological systems and processes.
- The proximity of the Cradle of Humankind World Heritage Site to Mogale City means that the management of the municipality's natural environment is of importance to protect the internationally significant cultural heritage found in the area.
- The protection of the natural visual quality of the area increases the attractiveness, liveability and investment potential of the area.
- The natural open space system plays an important role in the social, mental and physical well-being of residents.
- The natural environment forms the basis of tourism in Mogale City and it is therefore imperative that the natural environment is conserved to ensure the long-term sustainability of the tourism industry in Mogale City.

The table below sets out the natural structuring elements of municipal and regional importance.

Table 24: Natural structuring elements

Natural Structuring Element	Identification
Mountains and Ridges	Magaliesberg, Witwatersberg, Protea Ridge
Rivers, drainage lines, dams, wetlands and Riparian zones	Crocodile River, Jukskei River, Skeerpoort River, Magalies River, Klein River, Bloubank River, Wilge Spruit, Honingklip Spruit, Nooitgedacht Spruit, Muldersdrift Spruit, Rietspruit, Hekpoort Spruit, Doring Spruit, Rooisloot Spruit, Swart Spruit, Hugenote Spruit, Wonderfontein Spruit, Tweelopies Spruit, Blaauwbank Spruit
Nature reserves, conservancies and environmentally sensitive areas	Krugersdorp Nature Reserve, Hartbeesfontein Conservancy, Magaliesrivier Conservancy, Lammermoor Conservancy, Urban Wildlife Reserve, Blougat Reserve

The Mogale City Environmental Management Framework is the main tool the municipality has at its disposal to manage the natural environment in its area of jurisdiction, and as such all development proposals should be evaluated against this framework.

“The main purpose of an EMF is to proactively identify areas of potential conflict between development proposals and critical and sensitive environment. It assists in focussing EIAs and

other decision-supporting instruments on the most important issues by pro-actively ‘red-flagging’ areas of high environmental importance”⁶

The following generic principles should apply to the natural open space system:

- The natural open space system should be protected from intrusive, irresponsible and *ad hoc* developments that damage the ecological integrity as well as visual quality of these areas. These include urban development, mining activities and agriculture.
- A continuous open space system must be developed in Mogale City. This means that in certain areas where natural open space is currently affected by activities the municipality must intervene in order to ensure that ecological corridors can be created and are able to function appropriately.
- Focus should be placed on and resources allocated to those consolidated natural open space areas where long term ecological sustainability can be achieved.

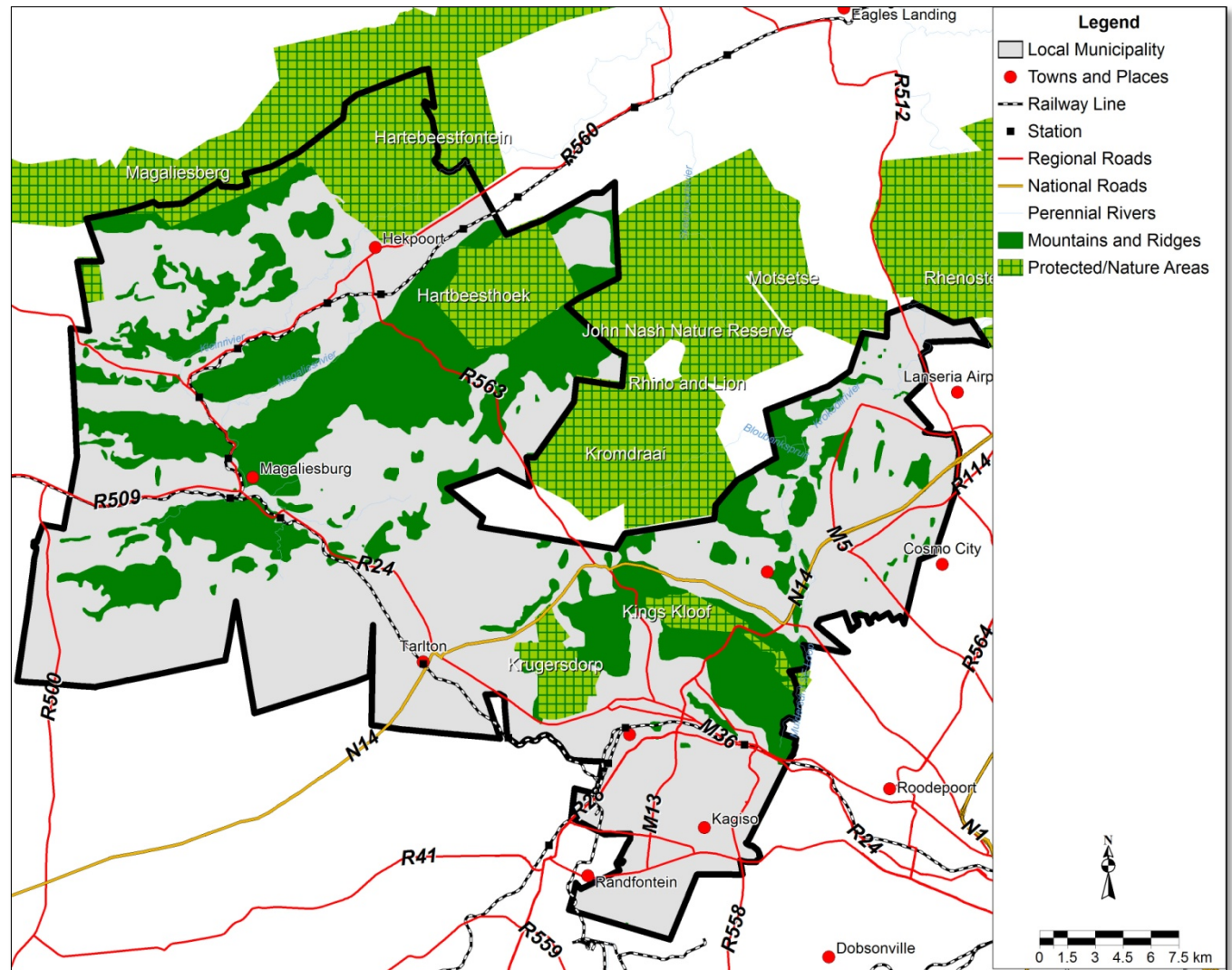
Although the Spatial Development Framework aims to make development proposals that respect the ecological integrity and environmental sustainability of the area, it has been necessary in certain instances to re-evaluate environmental potential against development potential in order to achieve the truly sustainable development of the area.⁷ Two specific areas that have been looked at in this regard are the following:

- The Cradle of Humankind World Heritage Buffer Zone on the western side of the N14, between Hendrik Potgieter Road and Malibongwe Drive has been evaluated in terms of the impact it has on the inherent development potential of the area, in particular the
 - The Lanseria Airport Node development

⁶ Source: Mogale City Environmental Management Framework, 2003

⁷ “Sustainable development” means the integration of social, economic and environmental factors into planning, implementation and decision making so as to ensure that development serves present and future generations. Source: National Environmental Management Act, 1998

- The development of a corridor along the N14 of approximately 600 metres wide on the western side of the N14
- The development of nodes around the intersection of the N14 and Hendrik Potgieter Road.
- The Muldersdrift area to the east of the N14 has been indicated as an urban development area, notwithstanding the presence of isolated pockets of environmentally sensitive land in this area. These pockets of land are not contributing to a larger ecological system (with the exception of watercourses that run through the area). Measured against the inherent development potential of this area, these pockets of land should be re-evaluated and reconsidered in terms of the triage principle of allocating resources to those areas where a difference can be made.



Map 40: Natural Structuring Elements

4. Growth Management

4.1 Introduction

In terms of the Development Facilitation Act, 1995's Chapter 1 General principles for land development, *"policy, administrative practice and laws should promote efficient and integrated land development in that they.... discourage the phenomenon of urban sprawl in urban areas and contribute to the development of more compact towns and cities"*.

South African urban areas are characterised by urban sprawl (i.e. urban areas that are spread out). *"This means that people have to spend a lot of time and money travelling long distances to work, shops, schools and social facilities. It also means that local authorities must spend large amounts on providing and maintaining excessive amounts of infrastructure"*.⁸

In order to deal with this undesirable development pattern, a key consideration of the spatial development framework must be growth management. One of the strategies typically employed in the South African context to deal with growth management is the demarcation of an urban growth boundary (or urban edge). There however exist a number of other supporting strategies that collectively form a package of interventions for growth management.

4.2 Understanding the Urban Edge

The urban edge can be defined as an institutional boundary within the municipality with the sole purpose of containing physical development and sprawl and re-directing growth towards a

more integrated, compact and efficient urban form. The urban edge clearly demarcates the boundary between urban and rural development.

Peripheral locations such a Mogale City are, due to their location on the edge of the larger urban complex, the recipients of continuous outward development pressures and are typically seen as the perpetrators of sprawl. The delineation of an urban edge for Mogale City is vital for achieving an efficient and sustainable municipality through -

- Containment of urban sprawl;
- Intensification of development;
- Integration of urban areas;
- Protection of valuable agricultural, natural and cultural resources;
- The optimum use of existing resources in established urban areas, such as bulk service infrastructure, roads and public facilities; and
- Reducing the need for commuting as well as commuting distances.

The delineation of the urban edge for the purpose of the Mogale City Spatial Development Framework takes a long term, strategic approach, looking at potential future pressure areas, provincial growth directions, population projections and strategic value of certain locations. The value of having a long term urban development boundary for the municipality is that –

- It enables long term, focused planning for infrastructure and service delivery;
- It provides certainty in the market; and
- It enables integrated, pro-active long term spatial planning that can direct and manage growth and development.

Having determined the edge from such a strategic perspective, the municipality should not entertain ad hoc, short term proposals for the amendment of the urban edge, unless a strategic change has taken place in the municipal and provincial context.

⁸ Manual on the Chapter 1 Principles of the Development Facilitation Act, 1995

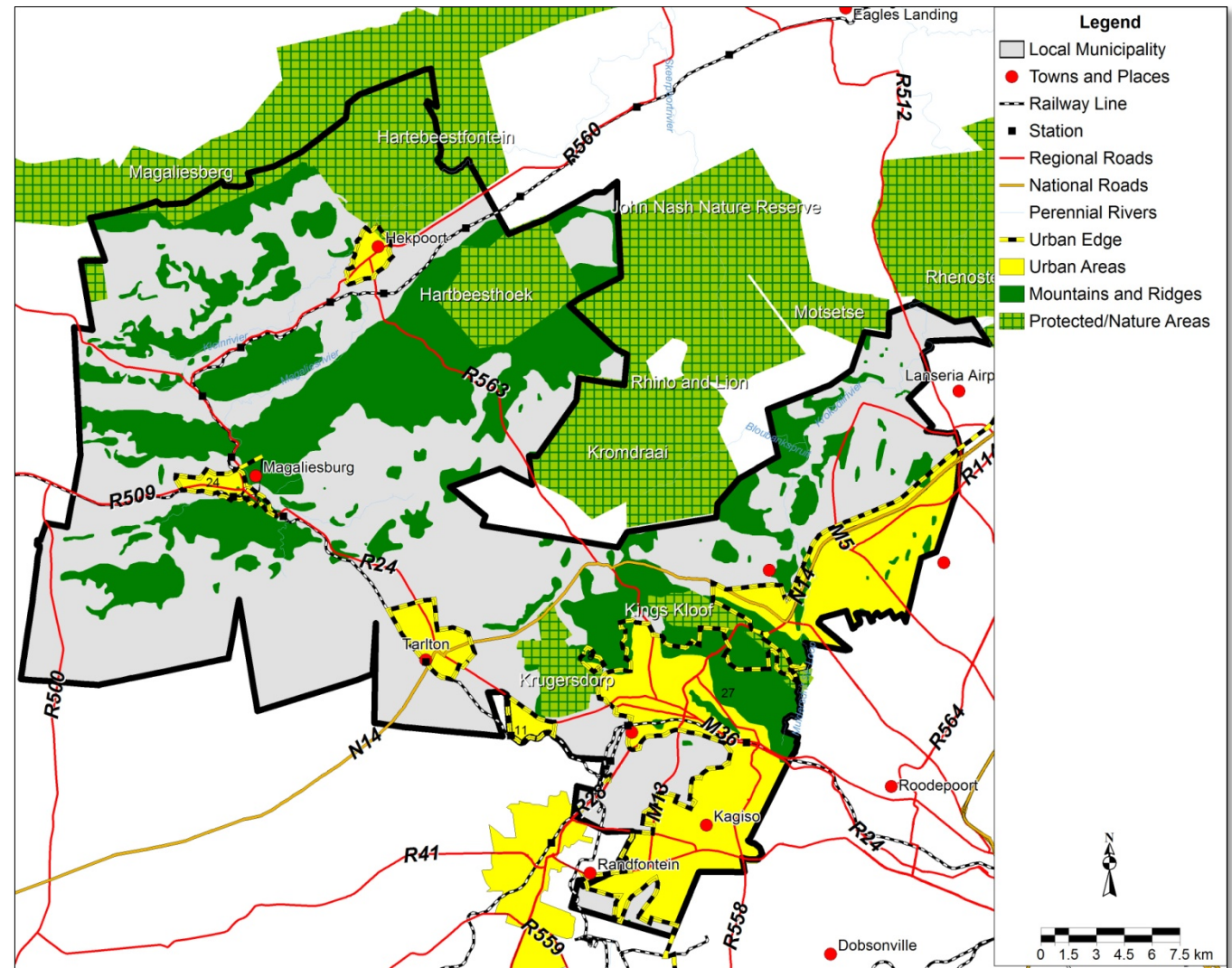


4.3 Boundaries of the Urban Edge

In terms of the Gauteng Spatial Development Framework, 2000, the provincial urban edge in Mogale City was identified as -

“... thence northwards along the boundary of Randfontein and Krugersdorp around the Krugersdorp Nature Reserve, and following the Krugersdorp Ridge to the N14, thence following the R28 in a northerly direction up to the R512 meeting the boundary of the WGSC and following it around Lanseria and the Diepsloot Nature Reserve ...”

During subsequent revisions of the urban edge by the Gauteng Provincial Government, the urban edge in the Muldersdrift area was however pushed back to the Johannesburg municipal boundary, and the area around Lanseria airport was demarcated as an island of urban development. The current provincial urban edge in Mogale City is drawn around existing urban environments and does not make provision for any urban expansion. One of the key tasks of this Spatial Development Framework is to investigate the feasibility of the current urban edge and to make recommendations regarding an amendment of this edge to accommodate development pressure in Mogale City and long term potential development needs in the province as a whole.



Map 41: Urban Edge

Future growth opportunities in the major urban area were investigated from a provincial and structural perspective as opposed to looking at individual pockets of development pressure.

In this regard, the area that presents the most meaningful opportunity for future development is the area to the east of the N14, between Hendrik Potgieter Road in the south and the R512 in the north. This section of the N14 is seen as one of the next major provincial development corridors, spurred on by the development proposals currently taking shape around Lanseria Airport. This amendment was discussed with the Gauteng Provincial Government and it was agreed that the urban edge as proposed in this SDF is an ideal long term development boundary for the province in general.

Other amendments to the urban edge include those around the rural towns of Hekpoort, Magaliesburg and Tarlton. Again, a long-term view was taken of future development potential and needs and the urban edges were demarcated accordingly (as opposed to drawing lines around existing built-up areas).

It should be noted that the urban edges around Hekpoort, Magaliesburg and Tarlton were demarcated from a strategic perspective. Detailed refinement of the urban edge should take place during more specific planning exercises for these areas.

4.4 Supporting Strategies for Growth Management

The urban edge is not an isolated management tool, but rather part of a package of urban growth management tools that all need to be employed equally vigorously by the local authority in order to achieve desired, sustainable and efficient urban growth management.

Internationally, a sustainable approach to growth management aptly called “**smart growth**” is seen as the most efficient way of developing urban areas. Smart Growth is a collection of urban development strategies aimed at reducing sprawl and promoting growth that is balanced and fiscally, environmentally and socially responsible. Smart Growth tries to promote growth and development in areas with optimal opportunity, and offers an antidote to the sprawl that has resulted from unlimited low-density development further and further away from the urban

centres. Rather than simply restricting development, smart growth is focussed on how and where new development should be accommodated.

The principles of smart growth are –

- New growth and development must be leveraged to improve existing areas of opportunity.
- Redevelopment of existing areas must be promoted rather than abandoning existing infrastructure and facilities only to rebuild it farther out.
- Development must be “town-centre”, transit and pedestrian oriented.
- Integrated, mixed-land uses must be promoted in strategic locations.

To support the successful implementation of the urban edge, the municipality must also focus on employing the following strategies:

- **Management Zones along the urban edge.** Well functioning urban environments are structured around zones of diminishing intensity as it moves away from areas of highest opportunity. Typically the fringe of urban areas are characterised by what is termed the urban-rural transition zone, comprising low density urban development, low intensity, extensive land uses and semi-rural activities such as nurseries. The urban edge should therefore not denote a clear divide between urban and rural, but rather include management zones along the edge that make provision for a gradual transition from an urban to a rural environment. The area directly inside the urban edge should look at lower urban intensities, while the areas directly outside the urban edge should make provision for semi-rural and rural residential activities.

In this regard the proposed Muldersdrift Spatial Development Framework should provide specific guidance with regard to various intensities of land uses, the nature of the corridor along the N14 and the transition of the urban environment into the Cradle of Humankind World Heritage Site Buffer Zone. Likewise, the Buffer Zone should make provision for transitional land uses along the N14 corridor.

- **Promoting Infill development** refers to the identification of vacant land parcels within the demarcated urban areas, amongst existing developments, and developing these parcels of land according to their optimal development potential.
- **Promoting Densification in and around strategic locations** is an important antidote to urban sprawl as it looks at providing high numbers of housing units in strategic,, highly accessible locations with high levels of access to economic and social opportunities. If the housing demand, or part thereof, can be satisfied through centrally located, high quality, higher density residential development then there will be less demand for low density residential developments on the periphery. The secret to success for stimulating a demand for higher density residential living is the quality of the urban environment in which these developments are located. These areas should therefore be focus areas for public investment in infrastructure, social services, streetscape and urban design, open spaces and general high quality, positive performing urban environments.
- **Managed expansion** refers to the gradual and incremental outward growth of a settlement (i.e. the so-called ripple effect), but within demarcated urban development boundaries (or urban edge), as opposed to leap frog developments that are not physically and functionally integrated with the main urban area. This approach is of particular importance for future urban development in the Muldersdrift area. Because of the size of the area, it will take a number of years for development to fill this area. What should not happen is a scattering of developments throughout the area which have no linkages with each other or the main urban activity areas. The Muldersdrift Spatial Development Framework should therefore indicate the phased development of the area through an incremental development approach. Leap frog development should not be permitted in the area.

5. Urban Areas

For the purpose of the Mogale City Spatial Development Framework, Urban Areas are defined as those areas that are characterised by large concentration of activity and built-up areas. The

typical activities found in urban areas include residential development, business and administrative functions, social services and infrastructure, industrial and commercial developments etc. The urban areas should comprise a range of services and facilities that are required to achieve a sustainable, efficient, convenient and liveable environment.

The following section deals specific with the urban environment and its main elements, namely –

- Future of mining land adjacent to urban areas
- Activity Network
- Densification Priority Areas
- Residential Settlements
- Urban Open Space System

5.1 Activity Network

The ‘activity network’ can be defined as the manner in which economic and mixed-use activity (as opposed to purely residential use) is arranged and connected in a particular area. This arrangement is mostly either nodal (concentration of activity at a particular point) or linear (concentration of activity along a linear element such as a street or a river) but can also take place in districts (such as an industrial area).

The activity network that have been identified as part of the spatial development concept are focussed on the following –

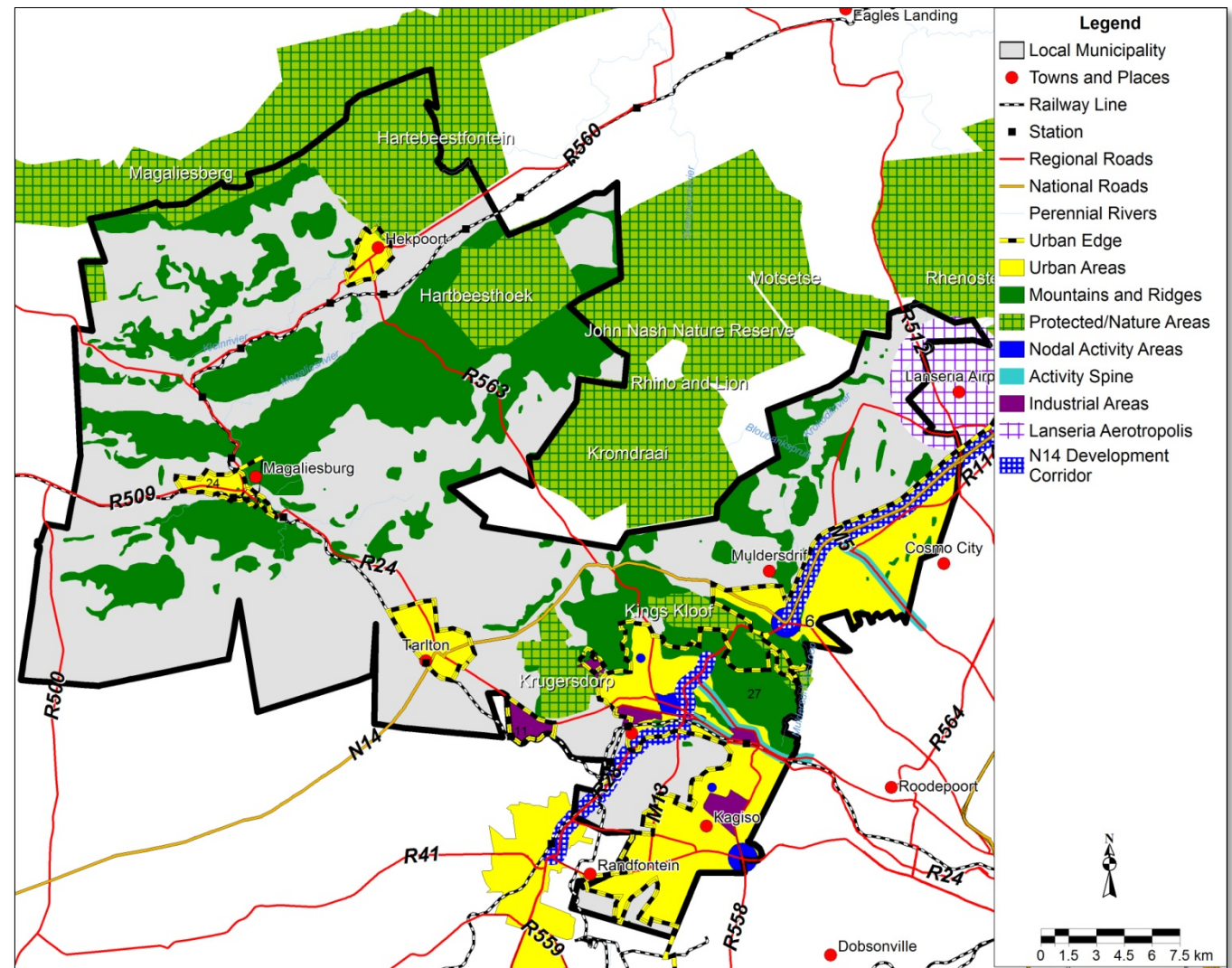
- Strengthening the Krugersdorp **Central Business District**.
- Creating a network of interlinked **activity nodes** that ensure an equitable distribution of services and facilities throughout Mogale City. One of the aspects that was identified in the previous spatial development framework is the fact that Mogale City lacks an effective and functionally defined hierarchy of nodes.



- Utilising the energy created by major movement infrastructure and public transport networks to create **activity spines**. These spines are especially focussed on linking up with activity areas to the east of Mogale City to ensure functional integration with the Johannesburg activity network.
- Utilising the development potential of the N14/R28 to create a **development corridor**.
- Creating opportunities for **specialised activity areas**.

5.2 Activity Nodes

Urban activity nodes are concentrations of economic and social activity located at accessible locations such as modal interchanges and the intersections of public transport routes. These nodes should be positive performing environments that are able to attract business and economic developments to these points. Well-functioning urban nodes are vibrant areas comprising shopping, work, social and cultural opportunities and public transport facilities in a high quality, safe public environment



Map 42: Urban Activity Network

From an urban efficiency and functionality perspective, the clustering of community, social and business facilities in nodes around points of highest accessibility is of vital importance, i.e. -

- By clustering facilities, a high quality node can be created that can serve as the heart of communities and promote social interaction.
- Multiple neighbourhoods can be served by social services in central points.
- The sharing of facilities between various services (e.g. buildings, logistics, parking etc.) can take place.
- Central clusters ensure enhanced accessibility and convenience for residents.

The Krugersdorp Central Business District (CBD) is the main business, social and administrative centre in Mogale City and fulfils a regional function. As with most CBD's of towns and cities around the country, this area has seen a gradual decline in the character, attractiveness and demand for business space over the last few decades. Suburban retail and office developments are in many instances now more preferable locations for businesses. The CBD however still remains the administrative centre of Mogale City and as such have an important function to play. Urban regeneration initiatives in many CBDs around the country and internationally have seen the successful reversal of urban decline, with these areas once again becoming desired destinations and locations. With this aim in mind Mogale City has appointed service providers to do an Urban Design Framework for the Krugersdorp CBD.



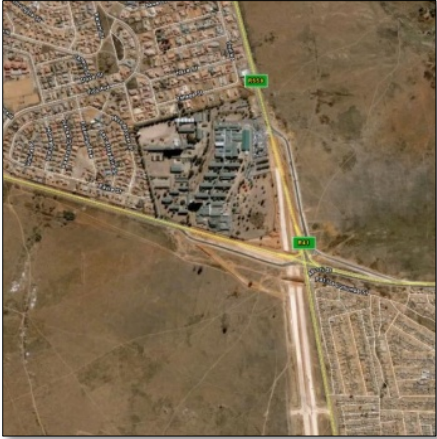
The following general principles apply to the development and management of nodes:

- In order to support the effective development of nodes in Mogale City, the development of urban non-residential land uses, such as business, retail, community facilities, and social services should be restricted to areas demarcated as nodes in the SDF.
- Nodes should typically be located at the main access points in urban areas, typically at the intersection of a major mobility route and the major collector route or around public transport facilities such as train stations and bus termini.
- These nodes should show a large degree of public investment in infrastructure, public domain and social services.

- Nodes must be characterised by mixed-use, high intensity activity and higher density residential development (maximum FSRs, coverage and height should not be restricted).
- The manner in which parking in the nodal areas are treated is of importance. Large parking lots adjacent to streets should not be promoted. Buildings should be placed as close to street boundaries as possible to facilitate pedestrian movement and to define and shape the public space.
- Extroverted as opposed to introverted development patterns and typologies must be promoted.
- Site layouts and building designs of individual developments must take cognisance of and support public transport and pedestrian movement.
- Urban design frameworks must be formulated for each of the nodes.

The following hierarchy of nodes can be found in or are proposed for the Mogale City Urban Areas:

Table 25: Hierarchy of Activity Nodes

Hierarchy of Node	Characteristics and Guidelines	
<p>Primary Node</p>	 <p>Krugersdorp CBD</p>	<ul style="list-style-type: none"> • Prime location for higher order office and retail development • A variety of goods, services and speciality products are offered • Higher density residential development should form an integral part of the environment. However, residential development in the CBD must comprise business development on ground floor. • Investment in the quality of the public environment and good urban management are key to retaining existing and attracting new high order business activities. • Public transport movement and infrastructure must be an integral part of the CBD.
<p>Secondary Nodes</p>	<div>  <p>Emerging Hendrik Potgieter Node</p>  <p>Emerging Leratong Node</p> </div>	<ul style="list-style-type: none"> • The secondary nodes serve specific sub-municipal regions • Secondary nodes should comprise mixed land uses, including higher density residential land uses • Where possible, the nodes should be structured around major public transport facilities <p>From a municipal investment perspective, the first priority is investment in the Hendrik Potgieter Road node and the Leratong node, as these are existing development initiatives where a certain degree of development energy already exists.</p>

Hierarchy of Node

Local Nodes



Kagiso Local Node



Munsieville Local Node

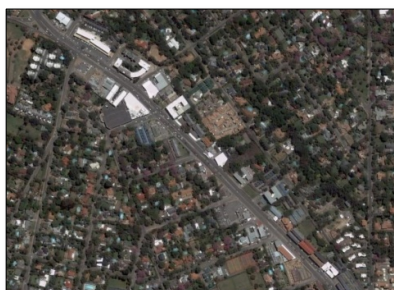
Characteristics and Guidelines

- The Local Development Nodes serve one or more neighbourhoods.
- Nature of land uses are focused on local business development and the provision of local community and social services.
- Higher density residential development should be provided around the nodes.
- A focus should be on the creation of small business opportunities for local entrepreneurs.
- Because these nodes are the focus centres in local neighbourhoods, they should also fulfil the function of centres of socialisation for the local population. As such, each node should be structured around a public open space such as a square or park.
- The nodes should be integrated with major public transport facilities, and should as far as possible be located in such a manner that it is within walkable distance from a large section of the local population.
- Main routes linking the nodes with the internal neighbourhood should have a strong pedestrian focus.

The locations of the Munsieville and Kagiso nodes as indicated on the spatial development framework map are only indicative. The most viable location for the development of new economic and social nodes can only be determined through a more detailed investigation such as a township regeneration strategy.

5.3 Activity Spines

The network of activity nodes is reinforced by a system of activity spines which connect with these nodes. Activity spines can be defined as concentrated urban development along movement routes which are typically also major public transport routes. Development can either take the form of continuous linear development or a series of nodes along the activity spine.



The criteria for identifying the activity spines in Mogale City were –

• The activity spines must be linked to major public transport routes in order to support public transport.	✓
• The activity spines must reinforce the strong urban linkages with the City of Johannesburg and must connect to that activity network.	✓
• The activity spines must have a functional relationship with the nodes in Mogale City, with the nodes typically acting as destinations on the activity spines.	✓
• The activity spines must be linked with the N14/R28 Corridor.	✓
• The activity spines must have a degree of demonstrated development potential, either in Mogale City or in neighbouring City of Johannesburg.	✓

Based on the above criteria, the following activity spines have been identified:

- Ontdekkers Road/Voortrekker Road
- Main Reef/R24/Coronation Road
- Beyers Naudé Drive

Although there are other high order roads (such as Randfontein Road and Hendrik Potgieter Road) that could in theory also qualify as activity spines, it is important to rather focus development energy to specific areas (see principle of focused and strategic development under “Constructing the Spatial Development Concept”).

The activity spines should be characterised by the following –

- High intensity, mixed land uses that are oriented towards the street space.
- High density residential development, either directly adjacent to the street or within a distance of 500m from the activity spines.
- The activity spines can be developed as continuous linear development areas or in the “beads-on-a-string” form. The nature of public transport and the length of the route should determine the development pattern. The longer the street and the less frequent stops are made by public transport, the more the development pattern should focus on the beads-on-a-string form. Shorter distances or where frequent stops are made by public transport are more conducive to continuous linear development.
- Activity spines should show a large degree of public investment in infrastructure and the public domain.
- Large parking lots adjacent to streets should not be permitted. Buildings should be placed as close to street boundaries as possible to facilitate pedestrian movement and to define and shape the public space. Land uses on the ground floor of buildings must have an extroverted public facade (e.g. shops, restaurants etc.)
- Site layouts and building designs of individual developments must take cognisance of and support public transport and pedestrian movement.

- Activity spines must achieve a balance between promoting access, creating pedestrian friendly environments, and accommodating mobility.

5.4 N14/R28 Development Corridor

5.4.1 Characteristics of a development corridor

A development corridor can be defined as “... a linear strip of land or area, connecting large activity nodes, traversing urban or inter-urban areas, surrounding a major transport facility or facilities providing an appropriate regional level of mobility and accessibility to adjacent areas, and containing a high concentration of population and mixed land uses” and “... accommodate major linear transport routes like heavy and light rail and/or freeways, large shopping concentrations etc., social, cultural and sporting facilities as well as a large amount of residential accommodation”.⁹

The typical elements of a development corridor are –

- Major movement infrastructure such as a railway line or highway acting as the spine of the corridor.
- Supporting movement infrastructure such as local access roads that will provide access for land uses situated adjacent to the main movement spine (typically the main movement line provides a high level of visibility to land uses while adjacent roads provide access to land uses).
- The main movement spine should preferably act as a conduit of public transport, with public transport facilities located along the corridor.

⁹ Andersen and Burnett in National Department of Transport: An Integrated Urban Corridor Assessment and Strategy Development Process

- Forces of attraction along the corridor, such as major destination points along the corridor, which creates the development impetus for eventual linear development along the corridor.
- High intensity land uses along the length of the corridor.

The West Rand District Municipality’s Spatial Development Framework, 2008 has identified the N14 as a linkage with “high level of development potential”. The N14/R28 development corridor between Lanseria Airport and Randfontein is seen as one of the province’s future development focus areas, given the current development impetus around the Lanseria Airport.

5.4.2 Morphology of the N14/R28 Development Corridor

The proposed N14/R28 development corridor currently contains the following elements that already begin to define the physical make-up of the corridor:

- The N14/R28 movement route, acting as the spine of the corridor.
- Lanseria Airport, Krugersdorp CBD and Randfontein as major destinations on the corridor, acting as forces of attraction.
- The Hendrik Potgieter Road, Beyers Naudé Drive, R512 (Malibongwe Drive), Randfontein Road and Ontdekkers Road/Voortrekker Road intersections on the N14/R28 which provide opportunities for the development of strong nodes (or beads) along the corridor.
- The R114 road between Beyers Naudé Drive and R512 (Malibongwe Drive) which provides local access to land uses along the corridor in the short term.

One of the aspects that need attention and a great deal of public (or private) sector investment to unlock the development potential of the corridor is the development of local access routes to provide access to land uses along the corridor. Direct access to land uses is not possible from the N14 or the section of the R28 which runs through Krugersdorp onto Randfontein.

Land uses along development corridors are associated with a mixture of land uses such as residential and higher order commercial, retail, offices, sport and recreational, public facilities

and manufacturing activities. In the case of the N14/R28 Development Corridor, it is envisaged that certain parts of the corridor will comprise certain land use characters, depending on the specific context of that part of the corridor.

The corridor also need not take the form of a continuous band of activity. At points of highest access along the central spine development will be more intense and of a higher order while at locations of lower access, lower intensity development or even part of a natural open space network may be found. Some preliminary proposals with regard to potential land use zones are-

- The section directly south of Lanseria Airport will have a more commercial, high-tech industrial nature linked to the airport, and also focusing strongly on job creation for the nearby Cosmo City and its future expansions.
- The section between Beyers Naudé Drive and Hendrik Potgieter Road should also focus on high-tech industries, but can also begin to include office, motor showrooms and other high order business activities
- The intersection of Hendrik Potgieter Road and the N14 could begin to play a regional recreational/entertainment function, building further on the existing Silverstar Casino.
- The section through Krugersdorp (i.e. to the south of Robert Broom Drive) will show the typical urban/sub-urban land-uses of retail, offices, residential and social facilities
- The section through the mining belt onto Randfontein will focus strongly on commercial and industrial type uses and, if the rehabilitation of the mining land permits it, residential.

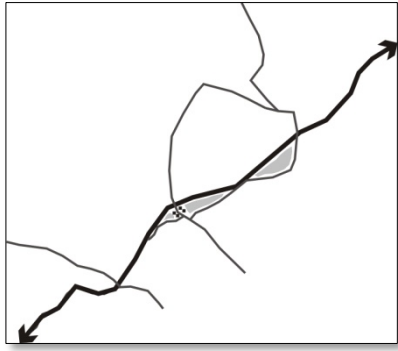
Note: The above land use proposals are merely indicative and do not at this point in time constitute potential land use rights in this area.



The ultimate aim is to create a high quality, well-functioning development corridor. Developments should submit to strict architectural and urban design controls to ensure a positive built environment is created. An urban design framework should be drafted which will guide development along the corridor.



One of the aspects that the urban design framework must incorporate into the design is the creation of visual corridors towards the Cradle of Humankind along the length of the N14 development corridor, but in particular at points where vistas currently exist due to topography.

5.4.3 Phasing of the N14/R28 Developing Corridor development

Because of the extent of the investment in road infrastructure that is required to support the development of the corridor, a phased development approach is proposed:

Phase 1	Development of the eastern part of the development corridor between Lanseria airport and Beyers Naudé Drive, along the R114.	
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Phase 2	Developing the node around the intersection of Hendrik Potgieter Road and the N14, with either private sector or public sector investment in road infrastructure to provide access to land immediately adjacent to the intersections.	
Phase 3	Developing road infrastructure along the western side of the N14 between Beyers Naudé Drive and the R512 and promoting development along this section of the corridor.	

Phase 4	Developing road infrastructure along the eastern and western side of the N14 between Hendrik Potgieter Road and Beyers Naudé Drive and promoting development along this section of the corridor.	
Phase 5	Developing supporting road infrastructure along the R28 through Krugersdorp and the mining belt where necessary and possible to provide access to high intensity land uses through the area.	

5.5 Lanseria Aerotropolis

The area around the Lanseria Airport, stretching up to the R512 intersection on the N14, has been earmarked as a major development focus area (also known as the Lanseria Aerotropolis). This forms part of a greater regional development focus around the airport.

"Major airports are key nodes for global production and enterprise systems offering them speed, agility, and accessibility. They are also powerful engines for local economic

development attracting aviation-linked businesses of all types to their environs. These include, among others, time-sensitive manufacturing and distribution; hotel, entertainment, retail, and exhibition complexes; and office buildings that house regional corporate headquarters and air-travel intensive professionals.

As aviation-oriented businesses cluster around these airports and along transportation corridors radiating from them, a new urban form is emerging — the Aerotropolis — stretching up to 20 miles (25 kilometres) outward from the airports. Similar in shape to the traditional metropolis made up of a central city core and its commuter-linked suburbs, the Aerotropolis consists of an airport city core and outlying corridors and clusters of aviation-linked businesses.

¹⁰

The Lanseria Aerotropolis development needs to support Lanseria Airport and its planned growth in terms of passenger and cargo traffic. Currently, the airport is located far from industrial, warehousing and commercial land uses. By locating these facilities close to the airport, the distances for freight transport to and from the airport will be greatly reduced.

Some of the potential land uses envisaged in this area includes tourism facilities such as hotels and visitors centres, warehousing, commercial uses (including small scale storage facilities) and industries related to aviation as well as a measure of high density residential development.

However, at this point in time the demarcation of the Lanseria Aerotropolis in the Mogale City Spatial Development Framework is merely conceptual in nature. Because of the fact that this area overlaps with the proposed buffer zone around the Cradle of Humankind World Heritage Site, more detailed investigations are required.

A Spatial Development and Urban Design Framework is required for this area in order to identify land use precincts and make more specific land use and development proposals. The formulation of the development framework should be a joint initiative between Gauteng Provincial Government, the City of Johannesburg, and Mogale City. Development and design

¹⁰ Source: <http://www.aerotropolis.com/aerotropolis.html>

proposals for this area should take cognisance of the environmentally sensitive land to the west thereof, and ensure that suitable interfaces and transition zones are created.

5.6 Specialised Activity Areas

Specialised activity zones are those areas that cater for a specific land use type that is not necessarily found in or considered desirable as part of mixed-use activity areas such as nodes and activity spines. Examples of specialised activity areas include industrial areas, educational campuses, larger institutional complexes, large sport and recreational complexes and any other economic or social activities that require large specialised areas.

In Mogale City, the following industrial areas exist:

- Chamdor
- Boltonia
- Factoria
- Delporton
- Fariaville

The existing industrial areas should be intensified before new expansion is permitted. In order to attract new development and encourage the renewal of existing development, the municipality should focus on urban renewal programmes in the existing industrial areas. Once these areas are fully and optimally developed, the industrial areas can expand if land is available.

The following new specialised industrial areas are proposed:

- The area around the Lanseria Airport as part of the Lanseria Aerotropolis development. The nature of the industrial development in this area should be determined by an Urban Development Framework for the Aerotropolis, but should not include noxious industries.
- High tech, clean-industrial development can take place along the proposed N14 Development Corridor.



The following guidelines apply to developments in the industrial areas:

- The focus should be on industrial land uses, warehouses and commercial uses such as transport depots.
- Small scale storage facilities that are typically found in the more rural areas should be located in the industrial areas.
- Supporting facilities, such as convenience shops, restaurants / canteens, support businesses (such as printers, stationers, day-care and banks), can be provided within the industrial area, provided that the scale of such a development is restricted to that of an ancillary use that does not and will not attract the general public.
- Offices shall be restricted to administrative offices belonging to or directly linked to the activities established in the area.

5.7 Densification

As set out in paragraph 4.4, one of the supporting strategies for growth management is “Promoting Densification in and around strategic locations “

Densification is not an end in itself, but a means to achieve more efficient utilisation of public transport, the creation of the necessary population thresholds to support community and business facilities and to prevent low-density outward expansion and development on land which is valuable from an ecological or agricultural perspective. The two most important rules that should apply to densification are the following:

- Higher density development should be focused around and within walking distance from major activity areas and transport services.
- Densities should decrease as the distance away from major activity areas increases. Higher densities in the wrong locations or which are removed from major activity areas and transport routes can be harmful to urban efficiency and sustainability.

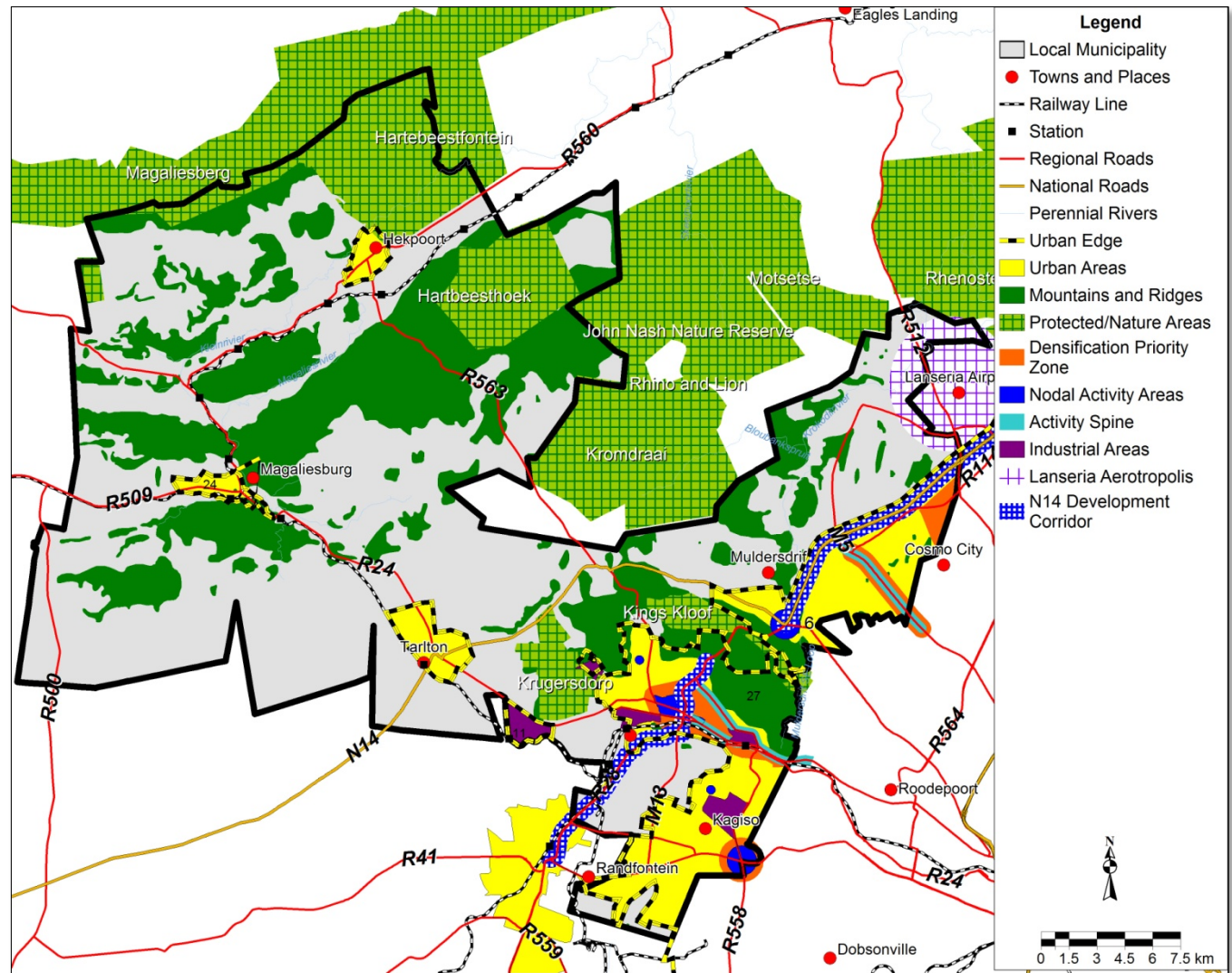
The following strategic densification priority zones have been identified-

- Around the Krugersdorp CBD.
- Along Voortrekker Road/Ontdekkers Road Activity Spine.
- Along Main Reed Road/R24/Coronation Road Activity Spine.
- Around the Leratong Node.
- Adjacent to the Beyers Naudé Drive Activity Spine.
- In the south-eastern quadrant of the intersection of R512 with the N14, up to the proposed PWV3. This area links up with high density proposals made in the adjacent City of Johannesburg as well as the Lanseria Aerotropolis.

These densification priority zones relate to the major activity areas as proposed by the Spatial Development Framework and is aimed at creating a synergy between economic activity and densification.











The following table sets out density guidelines for different parts of the urban areas. It should be noted that these densities are merely general guidelines and should not be rigidly employed. Deviations are possible depending on the design of a particular development and local conditions. Aspects that may influence the level of densification in a particular local context include –

- availability of infrastructure and services which can support higher density residential development.
- heritage aspects.
- socio-economic characteristics.
- topography.



Map 43: Priority Density Areas

Table 26: Density Guideline

	In densification priority zones	Within 600 metres from a node or activity spine	Adjacent to major public transport facilities such as railway stations	On the edges of the Urban Areas, directly adjacent to the rural environment	Internal residential neighbourhoods
Residential Typology	Medium-rise apartments	Duplex Residential and two storey walk-ups	Duplex Residential and Two to three storey walk-ups	Single residential developments	Single residential developments and townhouses
Typical Density	80 dwelling units per hectare and more	40 - 60 dwelling units per hectare	40 - 80 dwelling units per hectare	10 dwelling units per hectare and less	10 to 40 dwelling units per hectare (different densities will be applicable in different residential neighbourhoods based on the above-mentioned factors)
Examples					
					

5.8 Residential Settlements

Having looked at the major activity areas and the densification priority areas in the urban areas, it is also important to look at the residential settlement areas that lie between these activity areas, and the principles that should apply to the development of those areas.

Residential development, in particular residential development for lower income groups, must focus on social and economic integration and inclusion. Settlement development should form an integral part of the urban areas and no housing development initiatives must be identified outside of these areas.

All future settlement developments that take place in the municipal area shall adhere to the principles of the policy document Breaking New Ground: A Comprehensive Plan for the Development of Sustainable Human Settlement. These include principles such as:

- Residents should live in a safe and secure environment, and have adequate access to economic opportunities, a mix of safe and secure housing and tenure types, reliable and affordable basic services, educational, entertainment and cultural activities, health, welfare and police services.
- Ensure the development of compact, mixed land use, diverse, life-enhancing environments with maximum possibilities for pedestrian movement and transit via safe and efficient public transport in cases where motorised means of movement is imperative.
- Ensure that low-income housing is provided in close proximity to areas of opportunity.
- Integrate previously excluded groups into urban areas and the benefits it offers, and to ensure the development of more integrated, functional and environmentally sustainable human settlements, towns and cities. The latter includes densification.
- Encourage Social (Medium-Density) Housing.
- Multi-purpose cluster concept will be applied to incorporate the provision of primary municipal facilities, such as parks, playgrounds, sports fields, crèches, community halls, taxi ranks, satellite police stations, municipal clinics and informal trading facilities.

- Enhancing settlement design by including design professionals at planning and project design stages, and developing design guidelines.
- Social housing must be understood to accommodate a range of housing product designs to meet spatial and affordability requirements.

The residential settlement areas in Mogale City can roughly be divided into three areas, each requiring its own particular interventions over and above the standard principles as set out above. The table below indicates the three areas with the development strategies applicable to those areas.

The way in which the Muldersdrift area is treated is of specific importance, as this area will accommodate all long term growth in Mogale City. The table below provides an indication of the anticipated population growth (and resulting demand in housing units) over the next ten years (all income groups). The analysis shows that approximately 1800 ha will be required to provide in development needs. The Muldersdrift area is approximately 3800 ha in extent, which means that the area is more than sufficient to accommodate all growth for the long term.

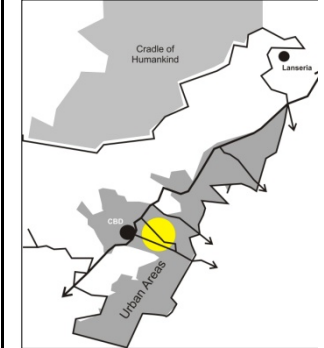
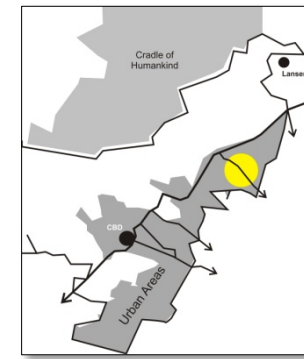
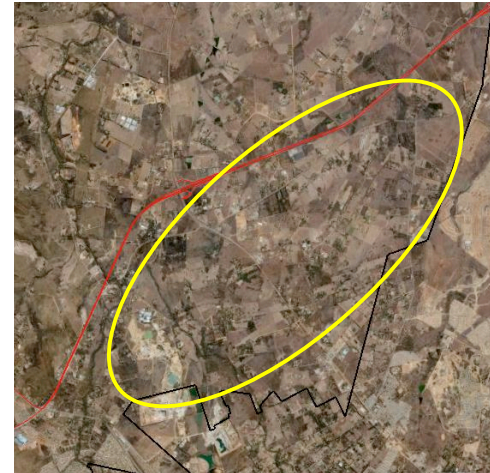
Table 27: Estimated land requirements

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Housing units required	4 661	4 347	3 981	3 563	3 098	3 049	2 992	2 928	2 865	2 777	34261
Residential (ha)	151	141	129	115	100	99	97	95	93	90	1107
Business (ha)	4	7	4	6	4	4	4	3	4	3	43
Public open space (ha)	12	11	9	13	8	8	8	11	6	7	93
Municipal facilities: (ha)	2	2	2	3	0	2	2	4	0	2	17
Community facilities: (ha)	19	22	24	19	17	18	14	15	16	17	180
Roads (ha)	41	39	37	35	29	28	27	29	26	26	316
Total area required (ha)	228	222	204	191	157	158	150	156	145	146	1756



Table 28: Core settlement areas

Residential Settlement Area	Strategy
<p>Muldersdrift development area future</p>	<p>The Muldersdrift area provides numerous opportunities for a flagship development area. By pro-actively planning and management development in this area, a sustainable and efficient urban environment as opposed to a haphazard collection of land uses can be created. The Muldersdrift Spatial Development Framework should address the following issues –</p> <ul style="list-style-type: none"> • Utilise the principles of Sustainable Human Settlements and New Urbanism and design an area that can be a model for sustainable human settlement development. • Integration of the settlement with the N14 corridor and Beyers Naudé Drive Activity Spine. • Appropriate residential densities depending on the urban morphology. • Integration with Johannesburg urban development patterns. • integration of affordable housing with the Cosmo City development in the area to the north of Beyers Naudé Drive. <p>One of the current land use policies that may have a negative impact on the future development of Muldersdrift is the policy on small scale storage facilities. It is recommended that this policy be reviewed and amended.</p>
<p>Krugersdorp</p>	<p>Krugersdorp is for all intents and purposes a fully developed area. Development options in this area are infill development and redevelopment/brownfields development. Appropriate redevelopment as far as residential densification is concerned is of importance.</p>



Residential Settlement Area

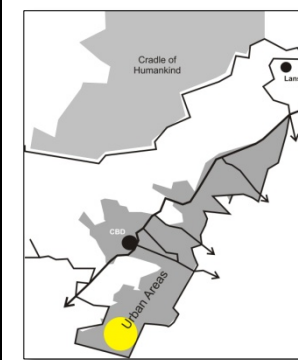
Strategy

Greater Kagiso/Rietvallei/Azaadville area

The greater Kagiso/Rietvallei/Azaadville area represents the largest concentration of disadvantaged settlements in Mogale City. These settlements have mostly been developed as dormitory towns and lack the full range of urban services and facilities. The physical barrier created by the mining land also means that these areas are physically and functionally separated from the Krugersdorp urban area.

Development and investment in this area should focus on creating sustainable human settlements.¹¹ The following interventions are proposed-

- An urban design framework and township regeneration strategy must be compiled which will provide direction for the development of the area.
- The creation of an activity network (including activity nodes, spines and streets) linked to public transport facilities where economic, business and social activities can be provided at the most accessible locations. The exact location of such nodes and activity spines/streets should be determined through a detailed township regeneration strategy for Kagiso, but it should be situated in locations that are highly accessible and preferably within walking distance from as large a section of the population as possible.
- Residential densification should take place around the activity network to create a proper mixed land use, integrated urban node.
- Infill housing developments must take place on vacant parcels that are suitable for development.
- The development of public open spaces such as parks, playgrounds and sports fields should be a major focus of capital investment in the Kagiso area. These facilities should be integrated with the activity node.
- Looking at possible integration of these areas with the Krugersdorp area across mining land, depending on the outcome of detailed feasibility studies on the rehabilitation of the mining land.
- The Leratong Node should be developed as a major economic development opportunity and high density housing area.



Residential Settlement Area

Strategy

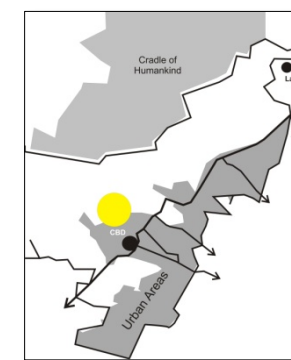
Munsieville

Munsieville is a disadvantaged settlement which lies to the west of Krugersdorp. Similar to the Kagiso area, this settlement also lacks the full range of urban services and facilities and the focus should also be on the creation of an attractive, convenient, safe and well-functioning sustainable human settlement. The urban qualities that should be achieved in Kagiso also apply to the Munsieville area.

The difference between Munsieville and Kagiso is that Munsieville presents more opportunities for integration with the Krugersdorp urban area, as it is not physically separated from Krugersdorp as is the case with Kagiso.

Large scale further outward growth of Munsieville is hampered by natural environment constraints as well as the urban edge. The focus should therefore be on infill development where vacant land parcels are still available and densification around the proposed Munsieville Node.

The future development of Munsieville must take place in accordance with an urban design framework for the area.

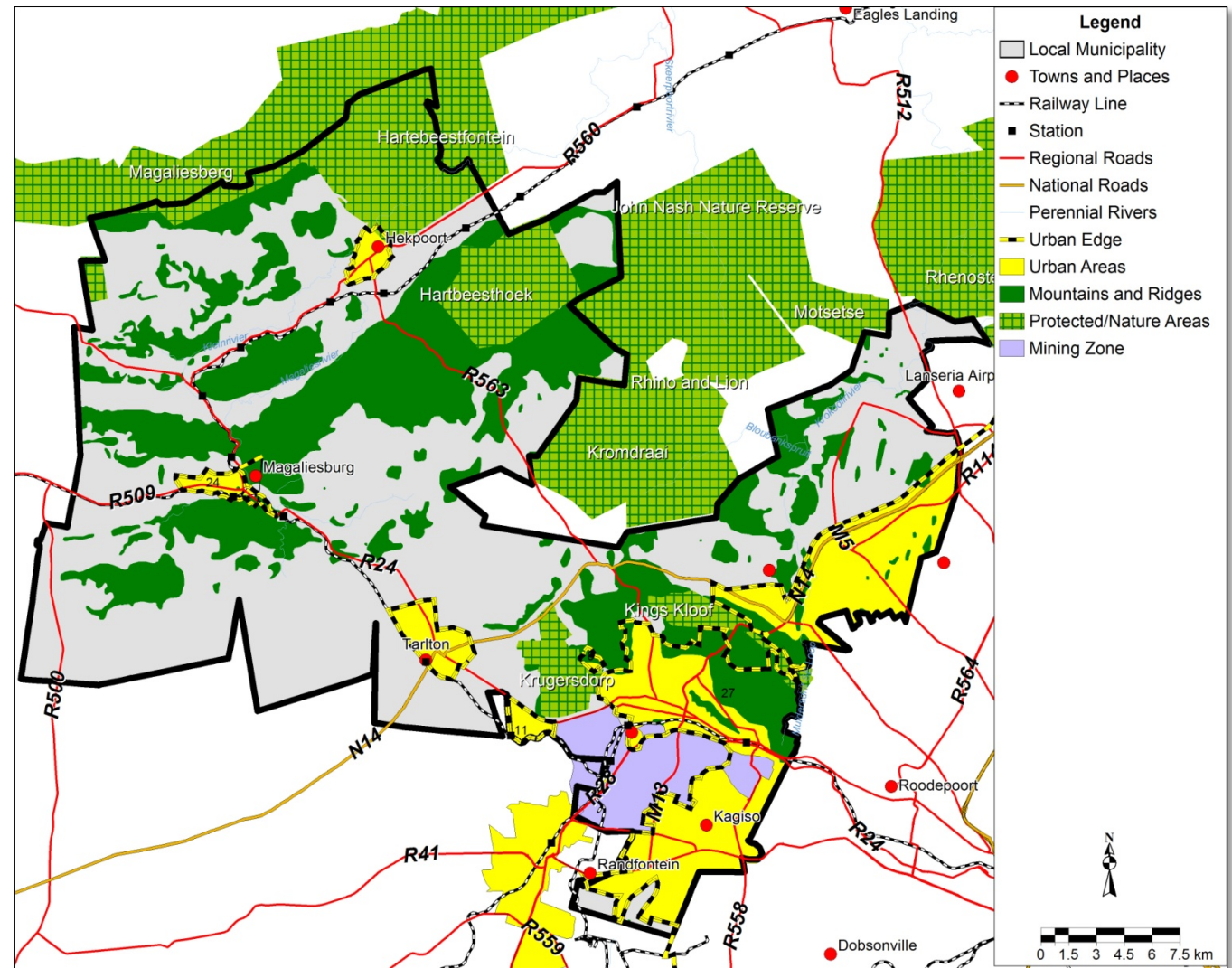


5.9 Future of Mining Land Adjacent to Urban Areas

The location of mining activities in an area is linked to the availability and location of natural resources. Where such resources are located adjacent to urban environments the mining activities pose a constraint to development and hence play a decisive role in the direction of urban growth.

Mining in Mogale City is a prominent spatial feature in the form of the east-west mining belt which extends from Johannesburg through to Krugersdorp along the so-called "Main Reef". Although the principle mining activities in Mogale City have closed down (with the exception of the reworking of a number of mine dumps) the physical legacy of the mining activities remains in the form of a broad band of land which –

- has potentially been sterilised for development through the radioactive properties of the mine dumps and silt dams and the undermining of the land;
- presents a physical barrier between Krugersdorp to the north and the greater Kagiso area to the south, preventing spatial integration between these areas; and
- has left visual scars on the urban landscape.



Map 44: Mining Area

With regard to the east-west mining corridor, no development proposals are currently made as future rehabilitation studies and actions on this land will indicate the development potential of the land. Should this area or parts thereof prove to be developable, the following principles should apply:

- This land should be utilised to achieve spatial and socio-economic integration between the different urban areas.
- An urban network must be established comprising activity spine linkages between the Krugersdorp CBD and Kagiso.
- Land which is not suitable for human habitation or economic activities must be converted into an open space system which can contribute to spatial integration between the various settlements.

A detailed investigation into the long term rehabilitation and development potential of the mining land must therefore be conducted. Based on the findings of this study, a local spatial development framework must be drafted for the area showing the local application of the principles as stated above.

Of concern is the visual and physical scars left on the environment by mines that have closed down. The rehabilitation of these mines is often not attended to after they have closed down since they no longer provide any source of revenue. Such a situation is unacceptable and rehabilitation must be enforced since mines are required to do so by law.

With regard to quarrying and mining activities in the Muldersdrift future development areas, long term mining permits should not be issued in the area where urban development is proposed, as mining activities sterilise pockets of land which in turn hampers gradual contiguous urban development and instead results in leap frog developments.

5.10 Urban Open Space System

The urban open space system is a network of both natural and man-made open spaces in the urban environment. The latter includes parks, hard open spaces such as town squares and active open spaces such as sports fields.

The development of a planned, interlinked open space network provides the urban environment with variety, legibility and visual relief. It also provides residents with an opportunity to enjoy open space, recreation and general amenity without having to travel great distances. It also provides for flood attenuation, stormwater management and urban agriculture opportunities.

An Urban Open Space Framework must be compiled for the Mogale City urban areas, as demarcated on the Spatial Development Framework. Typical elements of this framework will be –

- Parks
- Sports grounds
- Natural open spaces within the urban environment (such as wetlands, watercourses and ridges)
- Market gardens and allotments
- Town Squares
- Boulevards

The creation of high quality public environments with abundant public open spaces is of particular importance in the densification priority zones and the major activity nodes.

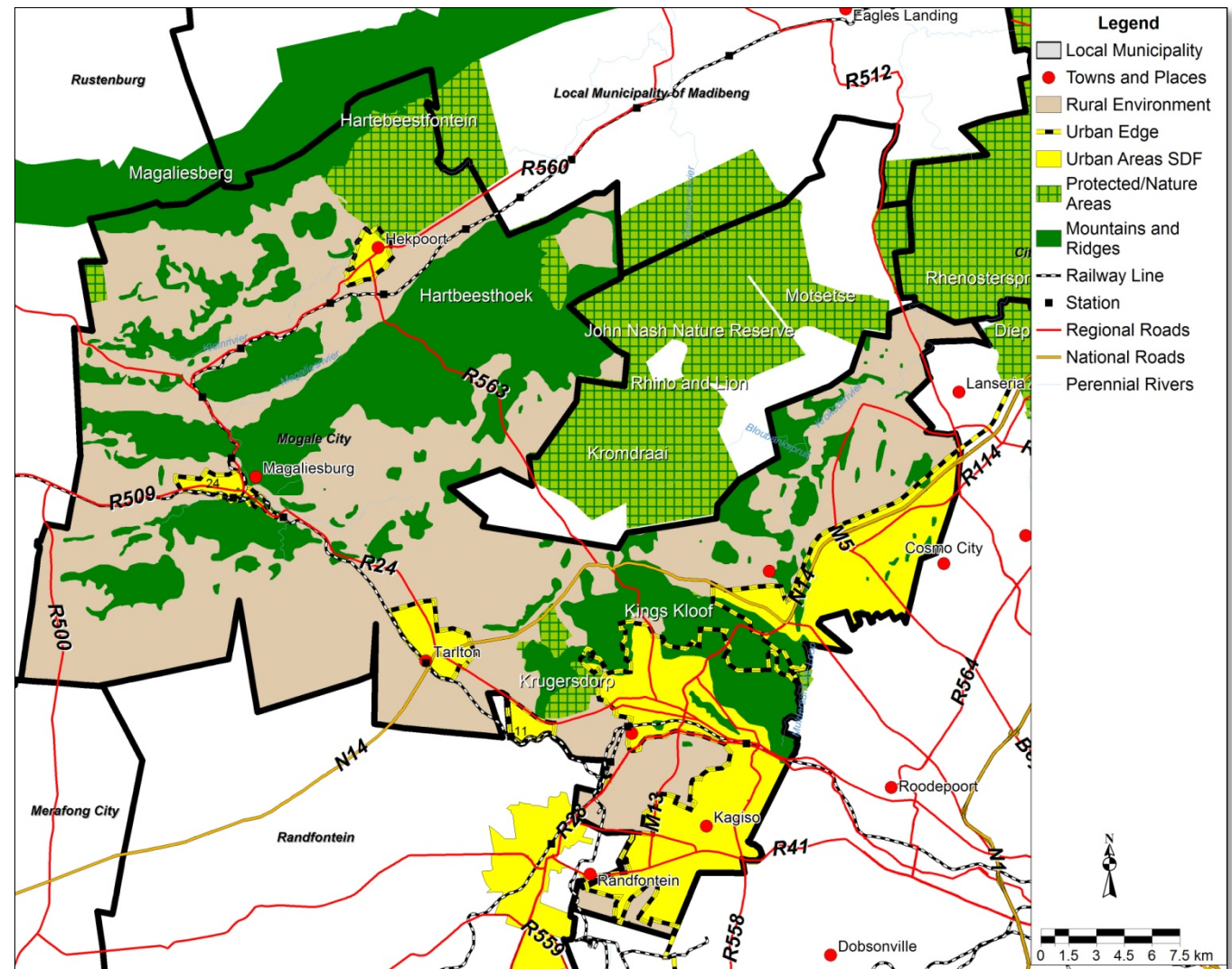
6. Rural Development

6.1 General Definition of the Rural Environment

Rural areas are defined as “the sparsely populated areas in which people farm or depend on natural resources, including the villages and small towns that are dispersed through these areas. In addition, they include the large settlements in the former homelands, created by the apartheid removals, which depend for their survival on migratory labour and remittances.”¹²

As shown in the contextual analysis, the largest part of Mogale City comprises a rural environment. The spatial development framework must therefore focus on how to enhance and support appropriate rural development in the area.

The rural environment in Mogale City is essentially made up of the following four elements:



Map 45: Rural Areas

- Agriculture and general rural areas;
- Natural open spaces and conservation areas;
- A small portion of the Cradle of Humankind World Heritage site which extends into Mogale City;
- Rural service centres, rural towns and villages; and
- Tourism

6.2 Criteria for Development in the Rural Environment

The rural environment should be protected from development that is not in line with the rural character of the area. The most important principle that applies is that development should be restricted and that the rural character should be maintained. These areas are typically removed from major nodes or activity areas with little chance of functional integration with the main urban economy, which means that any inappropriate development in these areas will contribute to an inefficient spatial form and functionality. Any uses that would normally occur in urban or suburban areas should not be approved outside the urban edge.

The following principles shall apply when evaluating applications for developments outside the urban edge:

- Uses should be rural in nature, or should require a rural setting in order to be functional or viable;
- The development should not require extensive service infrastructure;
- The development should not have any negative environmental impact;
- The development should not create possibilities for other developments to establish in the area;
- Uses that primarily service the local market;
- Uses which are resource based; and
- Uses which are located at a defined and approved service delivery centre.

Typical land uses that can be permitted in the rural environment include:

- Nature conservation/sensitive natural areas;
- Agricultural activities¹³;
- Tourism and related activities and facilities, provided that the nature, scale, development footprint and appearance of such tourism and related activities and facilities shall be appropriate for and sensitive to the rural character;
- Conference and training facilities, provided that the nature, scale and appearance of such conference and training facilities shall be appropriate for and sensitive to the rural character;
- Recreational facilities which are essentially rural in nature;
- Farm stalls and home industries;
- Rural housing, subject to detailed development frameworks for rural precincts;
- Resource based industries; and
- Any other uses that in the municipality's discretion fits in with the character of the area outside the urban edge, provided that such development adheres to the criteria set out above.

Subdivisions of farm portions for exclusive rural residential use or so-called rural/country estates should only be permitted around and contiguous to existing urban areas.¹⁴

Country estates which are not situated adjacent to urban areas should be considered with great caution, as it results in permanent residential development in areas that are not integrated with main activity areas. These estates are leap-frog developments that require the extension of services to areas where services should not be a priority and further result in greater commuting distances for the residents of these areas to places of work, education, social facilities and business opportunities. These estates could therefore in fact contribute to an inefficient spatial form and could be considered to be against the principle of integrated and sustainable development. Strict requirements must be laid down for the provision of engineering services to and within these estates to ensure that it does not lead to environmental problems. The ability to provide services according to the standards set by the municipality is a pre-requisite.

6.3 Principles for Sustainable Rural Development

The following principles must apply to the development of rural areas (all rural precincts):

- Local economic development in rural areas must focus on the creation of conditions that are conducive for the formation and maintenance of cooperatives and commonages;
- Housing must be provided for labourers in the rural areas (e.g. labourers involved in rural tourism, flower farms etc.);
- Agri-villages must be promoted throughout the rural areas as a sustainable manner in which to integrate local economic development and residential settlement development;
- Provision must be made for emergency site and service areas in all rural areas to accommodate rural population in need;
- As per the proposals of the Magaliesberg Spatial Development Framework, 2002, no subdivision of farm portions and smallholdings in the Tarlton area should be allowed in order to minimise the pressure on ground water;
- Illegal land uses on farm portions, such as industrial and commercial developments that have no direct relation to agriculture, should be eradicated and moved to the urban areas or the rural towns; and
- Mining activities in the rural environment may not be permitted within sensitive natural areas, high potential agricultural areas (Gauteng Agricultural Hub), near areas of high tourism potential or the Cradle of Humankind World Heritage Site and its Buffer Zone.

6.4 High Potential Agricultural Land

Historically agricultural land has not played a significant role in urban structuring. The Spatial Development Concept however designates high potential agricultural areas as an important structuring element in the long term growth of the municipality. This is based on the need for intensive agricultural production areas in close proximity to urban areas on account of cost

advantages due to proximity to the market, direct and indirect employment opportunities for city dwellers, stimulation of secondary business activities (e.g. marketing) and food security.

As indicated in the contextual analysis, the Gauteng Department of Agriculture, Conservation and Environment has demarcated a number of agricultural hubs throughout the province. These hubs relate to the creation of centres of high quality agricultural activity, where niche market agricultural products such as vegetables, including indigenous vegetables, flowers, herbs and spices, will be farmed. The south-western part of Mogale City, roughly to the south and west of the R24, forms part of one such a hub.

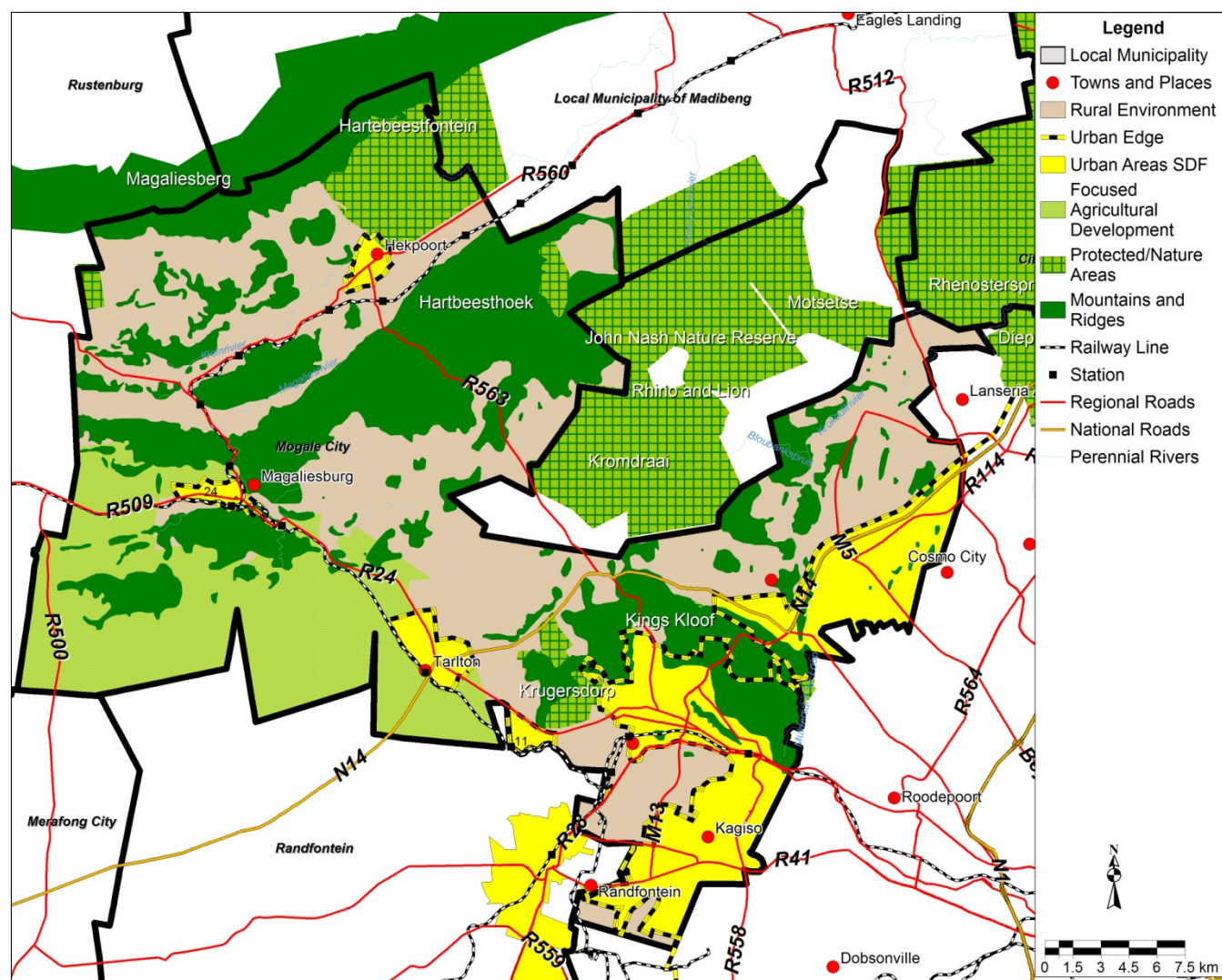
These areas should be reserved as prime agricultural land in Mogale City and be protected from any development or land uses that may have a negative impact on the agricultural potential of the area. The following activities may typically be permitted high potential agricultural areas:



Table 29: Activities permitted in the agricultural hub

Activity	Definition
Agriculture	The cultivation of land for crops or the breeding of animals or the operation of a game farm on an extensive basis on natural land
Agri-Industry and Agri-Processing	The processing of agricultural products on a farming unit or within a rural area owing to the nature, perishableness and fragility of such agricultural products (e.g. wineries, farm pack stores, etc.).
Agri-Village	A settlement within an agricultural area and where residence is restricted to bona fide farm workers and their dependents of the farms involved in the development.
Agri-Tourism	A type of tourism in which travellers travel to rural areas to experience the activities and lifestyles of people living and working in the agricultural sector

Attention should be given to the development of cooperatives, commonages and agri-villages in the agricultural areas. Development initiatives should therefore focus on making these areas conducive for this.

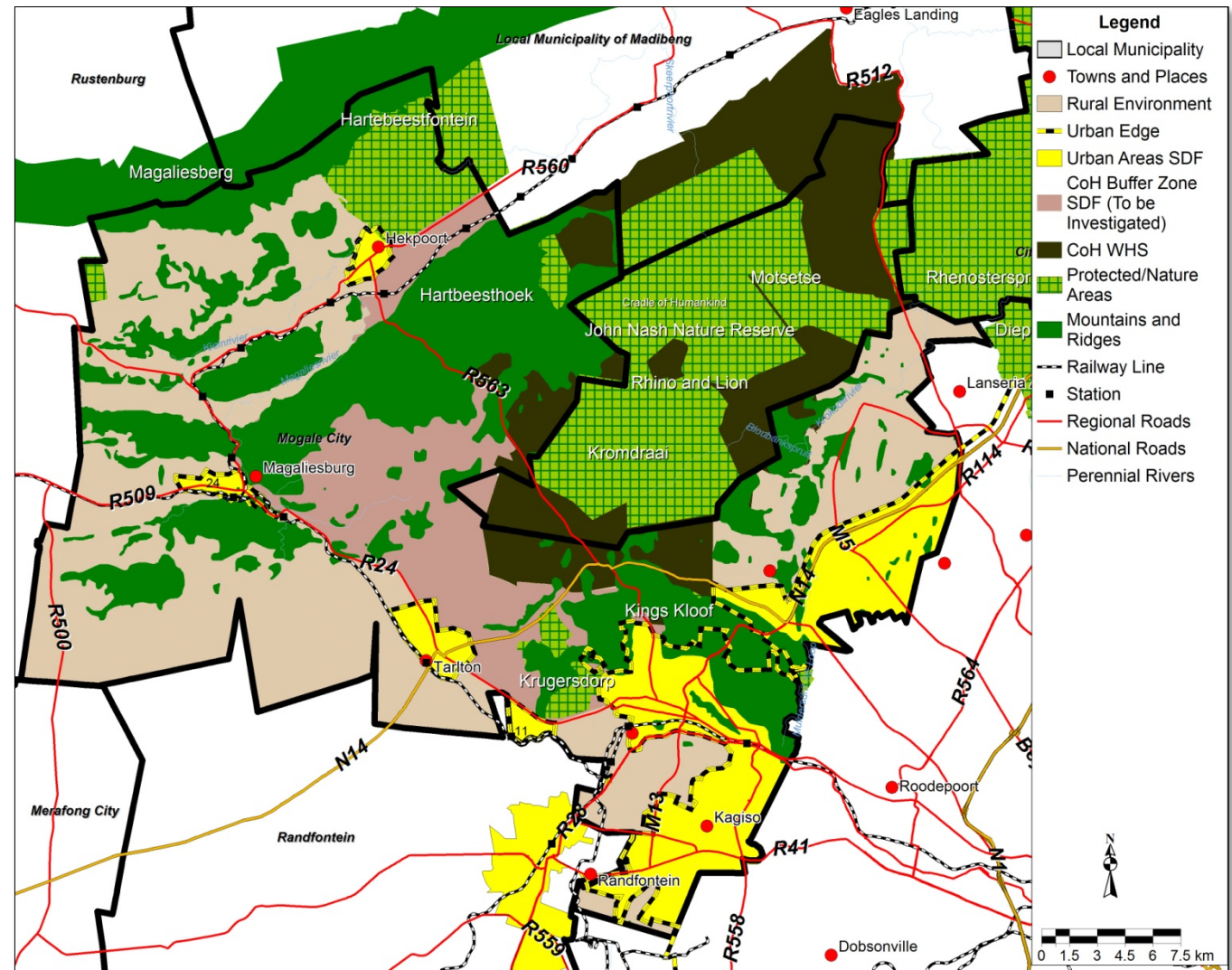


Map 46: Focused Agricultural Development

6.5 The Cradle of Humankind World Heritage Site Buffer Zone

The Cradle of Humankind World Heritage Site and its buffer zone, the latter covering a significantly large part of Mogale City, is a major provincial conservation initiative linked to the presence of pre-historic cultural heritage of international importance in the area. The Gauteng Provincial Government is currently in the process of drafting an Environmental Management Framework for the CoH WHS and its Buffer Zone, which will indicate the nature and intensity of land uses that can be accommodated in these areas from an environmental perspective.

In the western part of Mogale City, the buffer zone falls inside a rural environment where development must be restricted to rural activities as set out in paragraph 6.1 above. In the eastern part of Mogale City, the buffer zone however falls in the Muldersdrift urban-rural transition zone and conflict therefore exists between the buffer zone and development pressure. The Mogale City Local Municipality Economic Services Portfolio does therefore not accept the buffer zone as proposed by GDARD and submits that this matter will always be subject to negotiation based on the priorities of the Mogale City Local Municipality.



Map 47: Cradle of Humankind and Buffer

6.6 Muldersdrift Rural Transition Zone

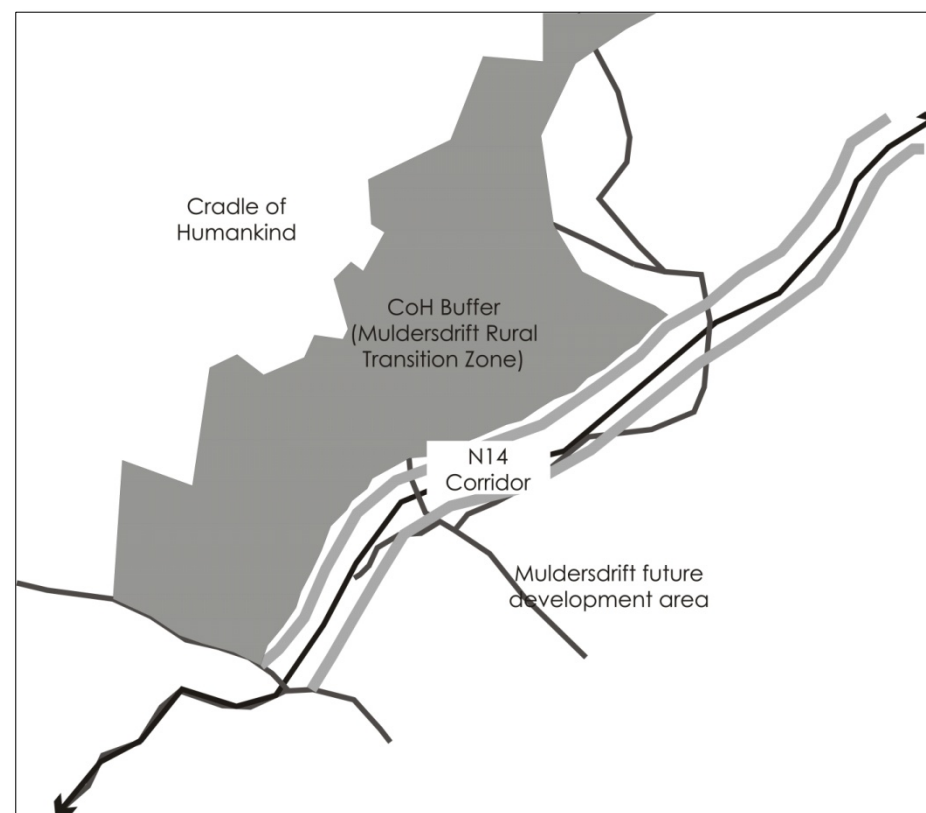
As urban development in the Muldersdrift area is restricted to the N14 development corridor and the area to the east of the N14, the western side of Muldersdrift should be seen as a rural transition zone which is essentially rural in character, but where a slightly higher concentration and mix of land uses can be accommodated than which is allowed in the rural environment. In terms of the West Rand District Municipality Spatial Development Framework, 2008, this area has been demarcated as a Peri-Urban Area. The following land uses could typically be accommodated in the buffer zone:

- Agriculture (no stock farming) and Agri-villages
- Rural Residential
- Country Estates
- Conference/Wedding Venues
- Tourism accommodation facilities such as lodges
- Small rural residential villages

All development must comply with the following development criteria:

- All development must be subject to an Environmental Management Plan.
- The ecological/development¹⁵ footprint must preferably be restricted to 2% of the property size, unless the Environmental Management Plan can prove that a larger footprint will not distract from the rural character of the area.
- Country Estates shall be developed in accordance with the cluster-and-space principle where it is required to create ecological corridors linked to adjacent ecological systems.

The size of rural villages must be restricted in accordance with housing policy.

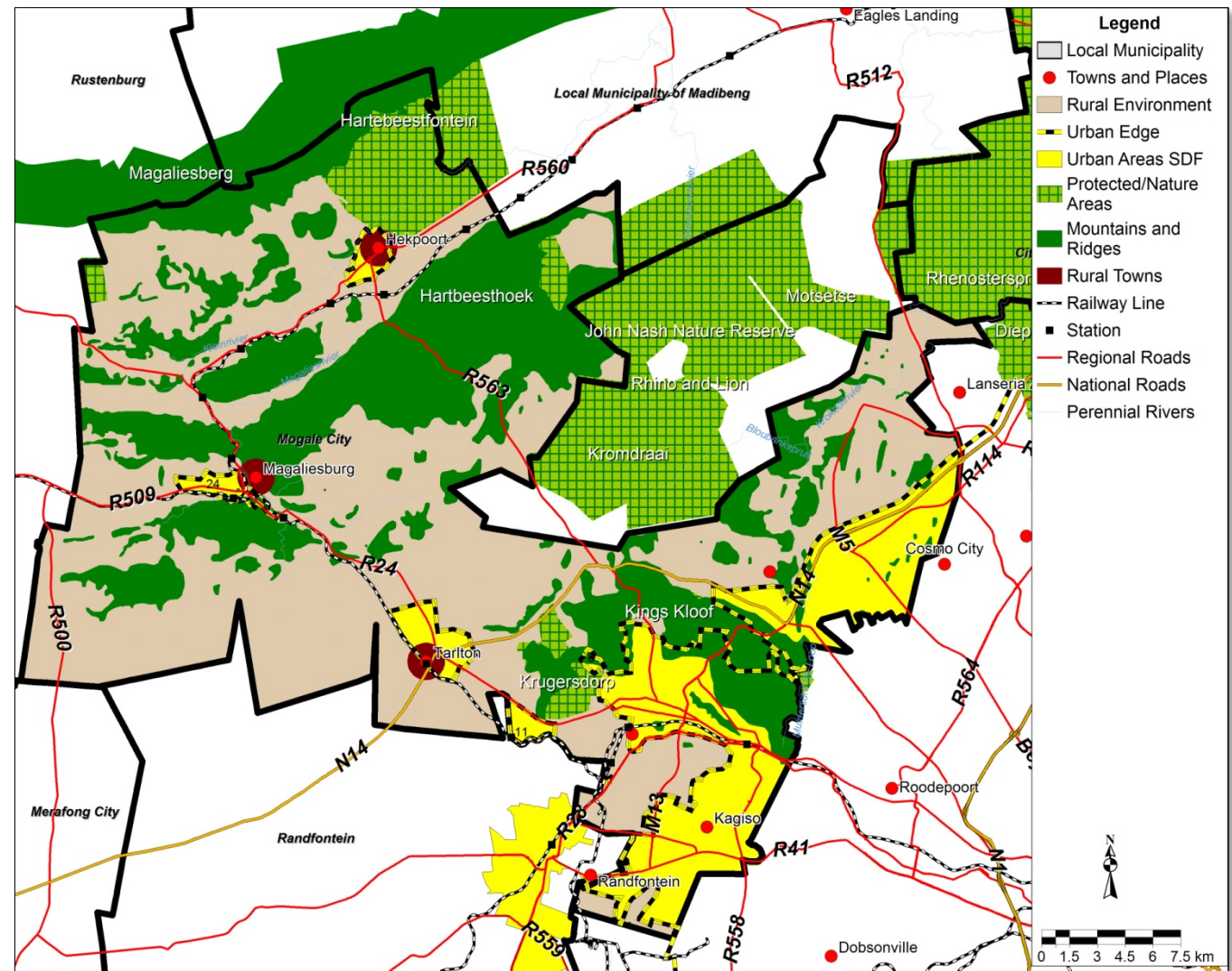


6.7 Rural Towns and Service Centres

Mogale City comprises three rural towns/service centres, namely Tarlton, Magaliesburg and Hekpoort, of which Magaliesburg is most developed. The main purpose of these rural service centres is to act as central places in the rural environment where basic day-to-day services are delivered to the rural communities. The types of services that could be found in these centres include municipal satellite offices, social support Services, small convenience retail, Tourism facilities and services and Transportation services




It is also possible for these towns to have unique characteristics or identities that make them attractive for certain types of development. Magaliesburg has for example long been known as a tourism destination, and many uses related to the tourism industry have developed in this area. The rural towns are also ideal locations for the formation of cooperatives and the establishment of commonages.

The following table provides a concise development strategy for each of the three rural service centres, based on their location, identity, and development potential.



Map 48: Rural Towns and Service Centre

Table 30: Development strategy for rural service centres

Tarlton	Magaliesburg	Hekpoort
		
<p>Currently, Tarlton presents very little development energy, and it is not even functioning as a rural service centre.</p> <p>Some of the inherent characteristics that could however play a role in its future development are-</p> <ul style="list-style-type: none"> • Relative proximity to the main urban centre • Situated at intersection of two main regional roads • Railway line • Forms part of the Gauteng Agricultural Hub <p>Any actions by government to provide social services and facilities for the surrounding area should be focused on the Tarlton area, around the intersection of the N14 and R24 in order to establish a consolidated rural service centre. A potential niche development focus for Tarlton is as an agricultural support centre, comprising agricultural industries, transportation services, warehouses etc. There is a need for a rural based activity centre that can support the agricultural sector and also provide a centre where the illegal industrial and commercial activities on farm portions can be located to. Due to its location, Tarlton can fulfil this function.</p>	<p>Magaliesburg is known as a tourism centre and that identity should be further developed and strengthened. It should also be developed as the primary rural town and should comprise all the basic social services such as clinics, libraries, police stations, primary schools, etc. Government investment in social infrastructure in the rural environment should initially focus on Magaliesburg</p>	<p>Hekpoort comprises very little activity, and also do not have a major function within the rural environment other than providing some day-to-day convenience services to the rural population.</p> <p>Hekpoort should be further developed as a rural service centre that provides a service to surrounding rural communities as well as a potential tourism centre.</p>

6.8 Rural Housing Development

There is a great need for rural housing development in Mogale City and the sustainable delivery of such housing is a priority. However, the danger of accommodating housing developments in rural environments without thorough consideration and long term planning is that islands of poverty can be created which have no potential for future economic development or adequate provision of social and community facilities.

One of the general principles for housing development contained in the Housing Act, 1997 is that **socially and economically viable communities must be created**.

To ensure that residents of these settlements are not just housed in any rural location that is devoid of services, facilities and economic opportunities, there are certain principles that should ideally inform the development of rural housing. These are –

- Rural housing should be developed as close as possible to existing rural service centres, or, more ideally, as close as possible to the Mogale City urban areas.
- Rural housing should focus on providing housing to people who are connected to the rural economy.
- Rural housing development should focus on particular locations in the rural environment where consolidated settlements can be developed. By focusing housing developments in particular locations in the rural environment, it will become possible to develop more sustainable settlements that comprise a range of basic social services and facilities, rather than having small scattered housing settlements across the rural environment where it is not financially feasible to provide services and facilities to each of those settlements.

The three primary focus areas for rural housing development should be the areas directly around and adjacent to Tarlton, Magaliesburg and Hekpoort (preferably within walking distance from these centres).

Other forms of rural housing that should be promoted throughout the rural environment include agri-villages (see paragraph 6.4 for definition) and housing for labourers working in the rural environment in the agriculture and tourism sectors.

Provision should also be made for emergency site and service areas throughout the rural environment. These locations should be identified in more detailed development frameworks for the rural environment.

6.9 Rural Tourism

Linked to the presence of the Cradle of Humankind World Heritage Site, as well as the high quality natural environments in the western and north-western part of Mogale City around the Magaliesberg and Witwatersberg, one of Mogale City's niche development areas is rural or nature based tourism.

The following tourism sectors are active in Mogale City -

- Heritage Tourism
- Eco-tourism
- Outdoor Recreation
- Agricultural tourism

Two very important principles, which the tourism development areas must adhere to, are (i) **quality** and (ii) **accessibility**. **Quality** refers to aspects such as environmental management, availability of essential engineering services infrastructure, land use management, development control and architectural standards. **Accessibility** refers to the availability of and quality of movement infrastructure such as roads and rail as well as the availability of transport services in the area.

From an accessibility, service delivery and identity-building point of view, it is more preferable to cluster tourism facilities along and around certain routes and nodes. For this purpose, a rural



tourism route has been identified which should be the focus area for the development of tourism related infrastructure. The tourism route will follow along the following roads:

- R28;
- R563;
- R24 (north of Tarlton up to the R560) with Magaliesburg as tourism node; and
- R560, with the Hekpoort town as potential tourism node.

The intersections of these routes are considered to be the main gateways into the rural tourism area, and as such should be afforded specific attention insofar as directional signage, environmental quality and the quality of any potential developments are concerned.

Typical tourism facilities and services that may be permitted in the tourism focus areas include-

- Guest Houses and lodges
- Cultural Villages
- Environmental education centres
- Conference centres and training facilities
- Restaurants, tea gardens
- Wellness centre/spa
- Infrastructure that serves the tourism facilities
- Housing for workers in the tourism industries.

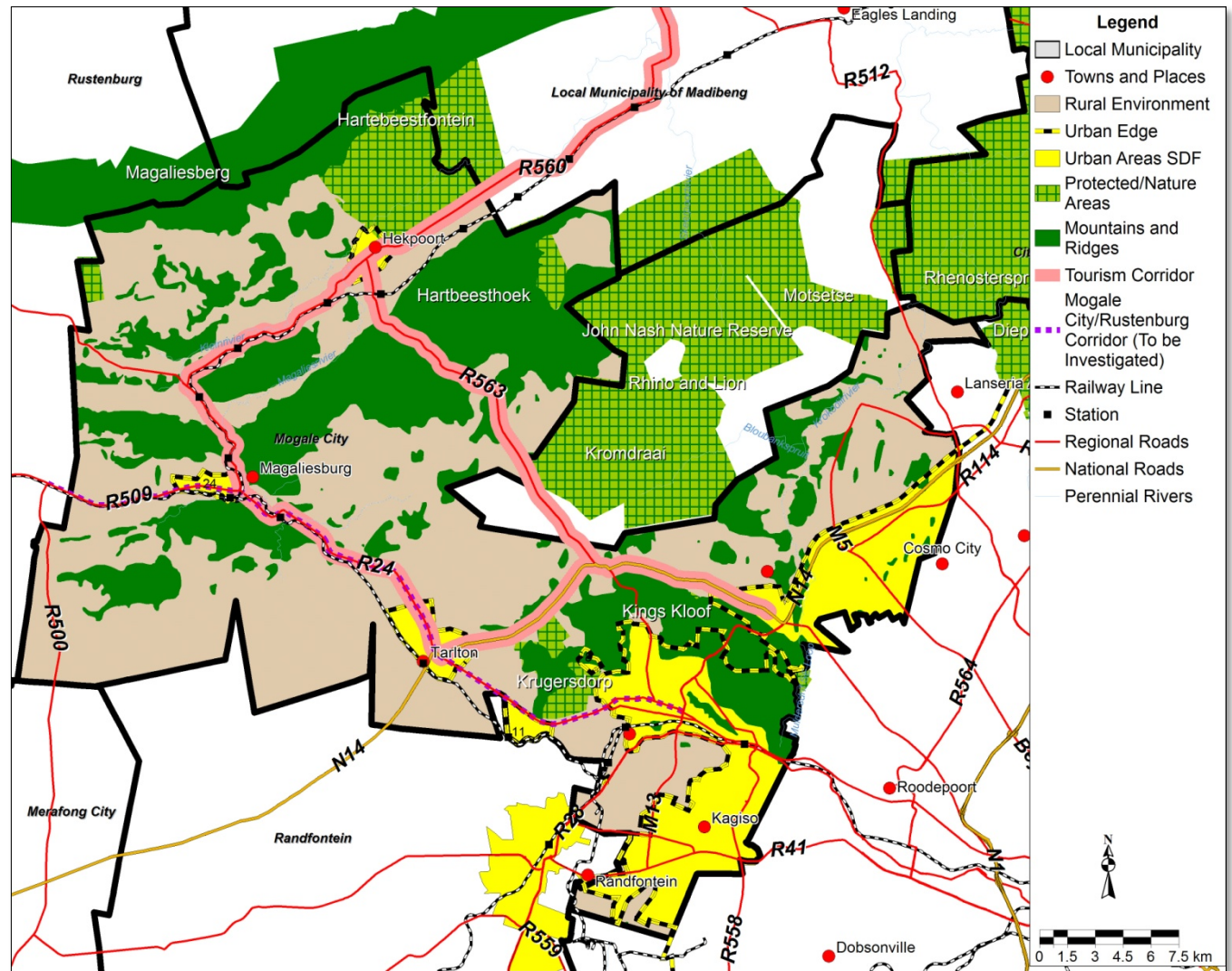
In evaluating applications and building plans for tourism related developments in the rural environment, care should be taken to ensure that the nature, scale and appearance of the development is appropriate for and sensitive to the rural character of the area.

6.10 Mogale City/Rustenburg Corridor

The Mogale City/Rustenburg is a new joint initiative between the Gauteng Economic Development Agency (GEDA) and Mogale City that will look at the potential to develop an

economic corridor between Mogale City and Rustenburg. This corridor will mainly follow the R24 and R509.

This initiative is still in conceptual stages and will require more detailed investigations and studies.



Map 49: Tourism Corridors and Mogale City/Rustenburg Corridor

7. The Movement System

7.1 Inter-regional Movement

As shown in the spatial analysis, the east-west movement system between Johannesburg and Mogale City is well developed, with a number of major roads connecting these two municipalities and their respective activity areas.

Connections to the north, south and east are not that well developed, but a number of major roads are planned for the area that will enhance connectivity with neighbouring municipalities. These are –

- The proposed N17
- Proposed PWV 1
- Proposed PWV 8
- Proposed PWV3

7.2 Intra-municipal Movement

All the various spatial elements in Mogale City must be well inter-connected by means of a good and efficient movement, including public transport, system. The movement system within the existing urban areas is generally well developed.

The most important proposal as far as investment in movement infrastructure is concerned, is the development of parallel access routes for the length of the N14/R28 development corridor, where necessary. A roads master plan must be done to look at the future alignment of these access routes.

The Spatial Development Framework for the proposed Muldersdrift urban area will indicate the required road network for this area.

No other major proposals for road infrastructure are made.

The rail system has the potential of becoming the basis of public transport throughout Mogale City. Long distance commuting between Johannesburg and Krugersdorp and Krugersdorp and Magaliesburg should be focussed on rail, with a supporting vehicular feeder and distribution system for effective diverse cross-city movement.

7.3 Public Transport Network

The development of a regional public transport network between Mogale City and the City of Johannesburg is critical for the convenient and efficient flow of people, goods and services between these two areas and the stimulation of economic development in Mogale City itself.

The City of Johannesburg's planned BRT networks extend nearly up to the boundary of Mogale City along Main Reef Road, Ontdekkers Road and Beyers Naudé Drive. These systems need to be extended into Mogale City as part of the same network and same operating system (i.e. single ticket system irrespective of municipal boundaries).

8. Cultural Heritage

Although cultural heritage is not necessarily always spatial in nature, or are not necessarily always of the same scale as other components of the spatial development concept, it is necessary to address it as part of the spatial development proposals as it forms an important part of the spatial environment and development proposals can have a harmful impact on the area's cultural heritage.



South African National Heritage Legislation makes provision for the protection of all natural and man-made heritage objects and intangible heritage. This includes rare phenomena like interesting rock formations, mountains, vistas, trees, bio-spheres, buildings, ruins, roads, animal or man-made tracks, fields, drifts, dams and furrows, graves, artwork, marked or unmarked places of worship or other religious or cultural uses etc. It also includes intangible heritage like folklore, folk art, folk dances, traditions, written and aural history, place names etc.

In general South African National Heritage Legislation stipulates that anything older than 60 years is regarded as of potential heritage value and may therefore not be destroyed or altered without written permission by the South African National Heritage Council. And even younger objects that the general public and/or the South African National Heritage Council may regard as of heritage value can be declared as Heritage Site/Objects with the same protection.

The following principles shall apply to developments with a possible impact on cultural heritage:

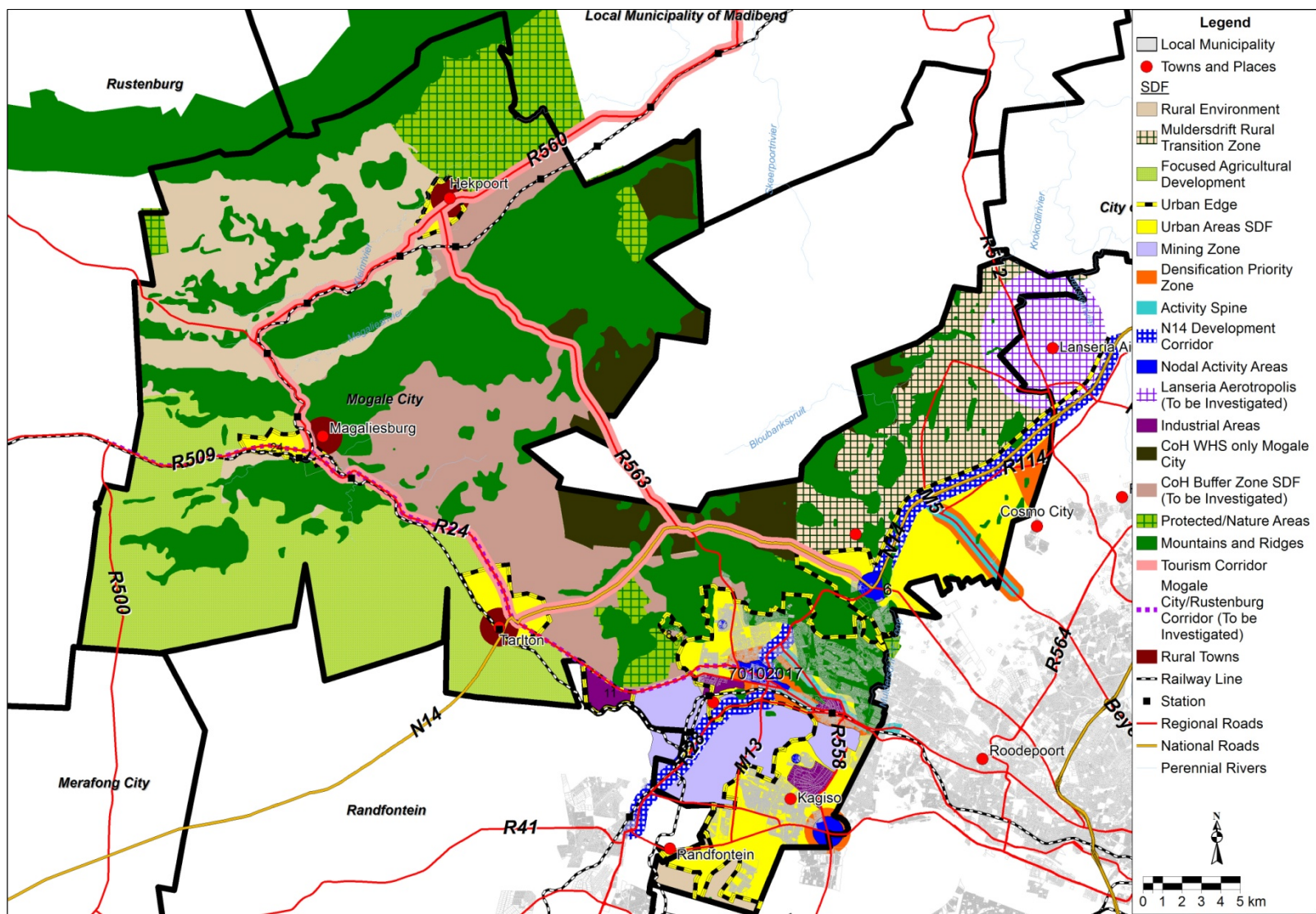
- All new developments should consider heritage resources as part of the environmental impact assessment process.
- All developments that affect existing structures older than 60 years or those that have been afforded protected status must adhere to the provisions of the relevant legislation.
- All gateways should be maintained as significant features. Signage along routes in the vicinity of gateways must be avoided.
- Major landmarks should be conserved.
- Historical sites such as forts, battlefields, cemeteries etc. should be well maintained.

9. City Image and Public Spaces

City image and the quality of public spaces relate to the convenience, safety, security and enjoyment related to residents' and visitors' experience of Mogale City. To achieve a positive city image with positive performing urban environment, the local authority must focus on urban management together with land use management.

The following are aspects that need attention:

- Entrances into Mogale City's urban areas should be celebrated through signage, monuments or other prominent features.
- Strategic sites which provide settings for landmarks should be identified and utilised. Buildings located at these positions should have landmark qualities.
- Important views and vistas should not be obstructed by development.
- Public urban spaces should be well designed in terms of their function and the role they play within the urban structure and community life.
- Any development should make a positive contribution to the public environment, whether it is an urban or rural setting.
- The placement of outdoor advertisements should be managed and coordinated.
- Main roads should be developed as important public space elements and treated as such with the planting of trees, maintenance of sidewalks and the provision of well designed, coordinated street furniture such as dustbins, bollards, benches, bus shelters etc.



Map 50: Mogale City SDF

Implementation

To give effect to the objectives and strategies set out in this spatial development framework, certain key interventions will be required to achieve the municipality's objectives. These are divided into two categories, namely:

- Further studies, plans and policies; and
- Catalytic projects and capital investment.

1. Further Studies, Plans and Policies

The following detailed studies, plans and policies are required to deal with specific development challenges and opportunities in more detail:

- The proposed Muldersdrift Spatial Development Framework should provide specific guidance with regard to-
 - The nature and intensity of land uses;
 - The nature of development along the N14/R28 corridor and the transition of the urban environment into the buffer zone;
 - The linkages with urban development in Johannesburg; and
 - The phased development of the area through an incremental development approach to prevent leap frog development in the area.

- An Urban Open Space Framework must be compiled for the Mogale City urban areas.
- A detailed investigation into the long-term rehabilitation and development potential of the mining land between Krugersdorp and Kagiso must be conducted. Based on the findings of this study, a local spatial development framework must be drafted for the area showing the application of the principles as stated in the section dealing with mining land in the Mogale City Spatial Development Framework.
- A township regeneration strategy must be formulated for Mogale City, and must inter alia determine the most viable locations for nodal development in Kagiso and Munsieville.
- Urban design frameworks must be formulated for each of the activity nodes and activity spines.
- The extent to which low income housing is expected to grow will put severe constraints on the municipality's financial sustainability. The ability to maintain service extension through infrastructure investment while maintaining a healthy financial position over the long term will become more difficult. In order to support the objectives of the SDF, the development of a complementary infrastructure investment framework for the municipality is strongly recommended.

Map 51 indicates the specific areas of the SDF that will be addressed by these studies, plans and policies.

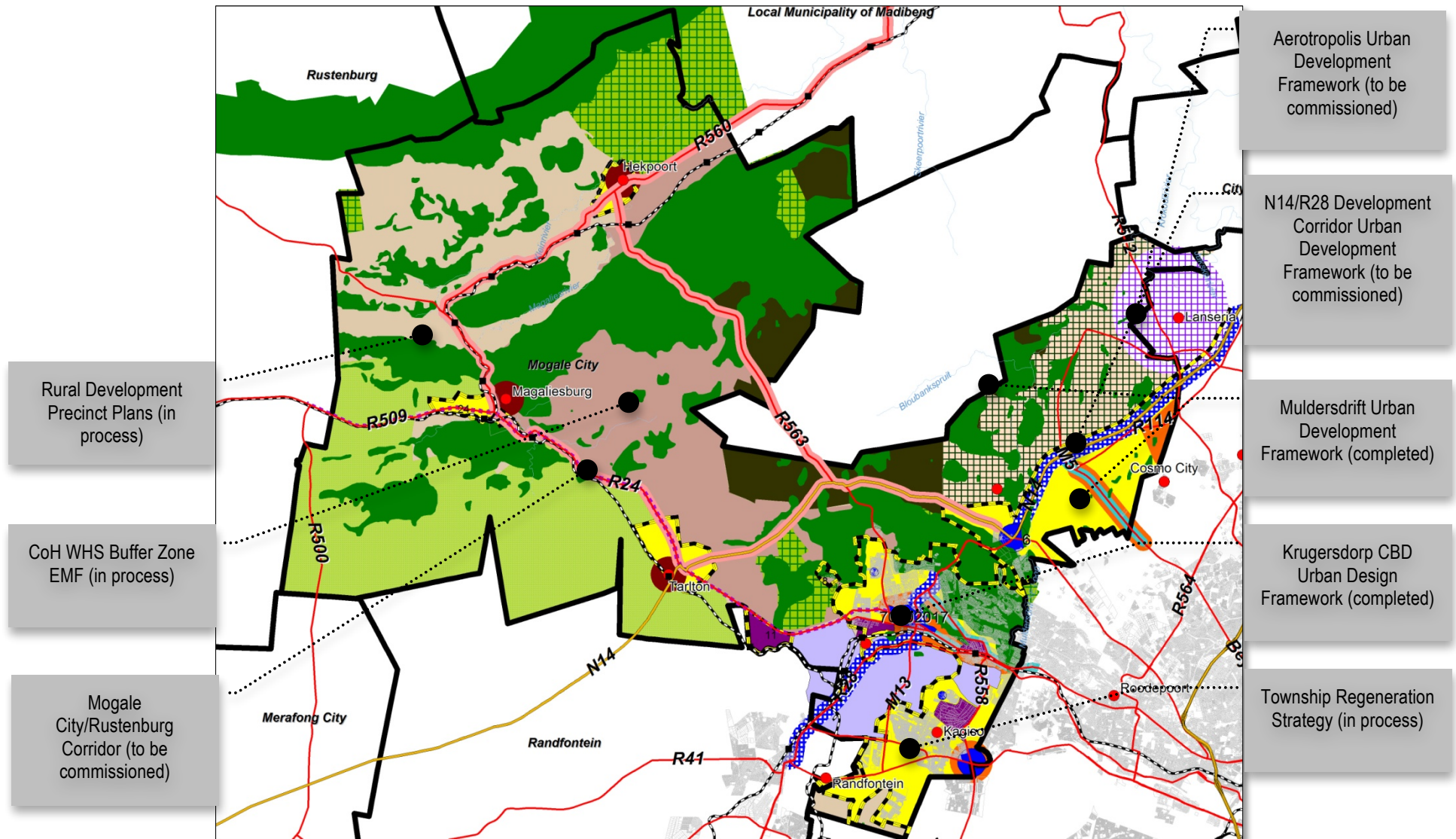


2. Catalytic Projects and Capital Investment

The following catalytic projects and capital investment focus areas are seen as key priorities for the implementation of the development and spatial restructuring proposals of the SDF.

- Investment in Kagiso to improve the quality of this area. This will include –
 - the creation of high quality urban activity nodes and activity streets that are able to accommodate a range of services and facilities;
 - investment in parks and recreation facilities;
 - investment in public transport facilities and services; and
 - investment in the general quality of the public environment.
- Investment in the identified activity spines in the form of-
 - social housing;
 - public transport facilities;
 - upgrading of the physical and public environment; and
 - upgrading and maintenance of infrastructure and engineering services.
- Investment in the improvement of the Krugersdorp CBD public environment.
- The development of Magaliesburg as the first order rural centre and a major tourism hub. This will entail –
 - investment in the quality of the public environment;
 - investment in social and community facilities – especially the creation of a community cluster; and
 - investment in rural housing development adjacent to the town.
- The development of Tarlton as an agriculture support node for the Gauteng Agricultural Hub. This will entail-
 - the establishment of agri-processing plants;

- support for small scale, high intensity vegetable farming; and
 - the development of rural housing.
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- The development of Leratong Node as a Secondary Node of regional importance.
 - Investment in engineering services and road infrastructure to support the development of the Muldersdrift area.
 - The construction of access roads parallel to the N14 to facilitate the development of the N14 Development Corridor.



Map 51: SDF and Further Studies, Plans and Policies