



1. INTRODUCTION

The Mogale City Local Municipality is located on the western side of the Gauteng Province. The Municipality is characterised by strong urban areas in the core of the municipal area and rural areas to the far west, north and southwest.

The focus of this Precinct Plan is to identify priority areas for development in the Tarlton area with respect to housing development, places of employment and ancillary uses that will make this area a sustainable human settlements and economic area that will create jobs. The Precinct Plan should also take cognisance of the new national and provincial policies, particularly the rural development policies as the focus is on rural development.

1.1 Background

The Mogale City Local Municipality has experience a proliferation of informal settlements in the past years. These informal settlements are as a result of urbanisation and to a large extent from farm evictions. The erstwhile Gauteng Housing Department adopted a new approach towards the implementation of housing programmes, in line with the new policy directives put forward by the erstwhile National Housing Minister and reiterated and supported these directives is the National Department of Rural Development and Land Reform, by publishing the Rural Development Strategy and subsequently the Comprehensive Rural Development Strategy. The Comprehensive Rural Development Strategy aims to address the following among others:

- **Improved infrastructure and services provision** - Integrated infrastructure planning and implementation that will positively impact on the lives of the communities and reduction on the infrastructure backlogs in rural areas.
- **Economic growth rate**– Economic development by diversifying the economy. Addressing the second economy
- **Limited resources** – Optimal usage of available resources to impact positively on lives of the people.
- **Prioritisation of Projects** - Focus spending to meet the National and Provincial goals objectives
- **Protect Biodiversity** – Promote sustainable developments
- **Protect Cultural heritage** – Promote and enhance different cultures
- **Comprehensive settlement planning** - Create sustainable neighbourhoods.
- **Land reform** – Address security of tenure.

1.2 National and Provincial Policy Directives

The new planning paradigm enshrined in new legislation enacted since 1994, put emphasis on the restructuring and sustainable development of urban and rural areas. In planning for the Tarlton area, it was necessary to reflect on needs to be met though the

realisation of legislated and stated development principles. In addition, the need existed to focus on achieving the desired outcomes at national, provincial and municipal levels.

Figure 5 indicates a general legislative and policy framework within which spatial planning, municipal, regional and local-wide, ought to take place. This Precinct Plan for Magaliesburg should be seen in the broader context of development in the northern side of Mogale City and indeed the western side the Gauteng Province. This Precinct Plan should fulfill a specific function in the planning and development of Mogale City Local Municipality as a whole.

As part of the Mogale City's spatial planning package, the Precinct Plan for Tarlton should reflect the municipal's response to the principles, policies and strategies as chartered by national, provincial and the City government to better the lives of communities, and at the same time, promote economic and social growth, development and environmental sustainability.

Various regulations and directives that guide the precinct plan in terms of what it should be and what it should accomplish give the Precinct Plan Magaliesburg both form and responsibility. Its legitimacy, on the other hand, it derives from being part of the Municipal's IDP process.

In terms of this study, there are a number of acts and policies from National and Provincial Government stretching across a range of sectors that provide directives or guidelines for the spatial and functional restructuring of the country's cities.

In summary, the key objectives that are pursued in the existing and proposed legal and policy framework are to:

- Strengthen Eco-Tourism & Agri-Cooperation herein
- Potential for emerging residential market close to tourist destinations and well positioned to access the North west Province's economic opportunities
- Improve the quality of housing, social facilities and public infrastructure;
- Encourage economic development at strategic areas and increase their efficiency and productivity
- Rejuvenate and upgrade the urban environment and protect against urban decay and blight
- Integrate urban areas and overcome apartheid-induced segregation;
- Integrate land use and transport planning and ensure integration between public transport modes;
- Density settlements and minimise urban sprawl and the adverse effects of transport and land development on the environment in all land development and redevelopment actions/interventions.

Within the urban planning environment, two acts are particularly important when addressing the issue of compaction and densification, namely the Development Facilitation Act, 1995 and the Gauteng Planning and Development Act, 2003.

The **Development Facilitation Act, 1995** stipulates that *“policy, administrative practice and laws should promote efficient and integrated development in that they ... discourage the phenomenon of urban sprawl in urban areas and contribute to the development of more compact towns and cities”*.

The **Gauteng Spatial Development Framework** identified five (5) critical factors for development in the province namely:

- Contained urban growth;
- Resource based economic development (resulting in the identification of the economic core);
- Re-direction of urban growth (stabilise/limit growth in economically non-viable areas, achieve growth on the land within the economic growth sphere);
- Protection of rural areas and enhancement of tourism and agricultural related activities and;
- Increased access and mobility
- Magaliesberg 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.

Gauteng Agricultural Hubs and Maize Triangle: The Gauteng Department of Agriculture, Conservation and Environment has demarcated a number of agricultural hubs throughout the province. These hubs relates 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.

The **Gauteng Planning and Development Act, 2003** provides a number of principles to promote spatial restructuring and development. Key amongst these is that the Province shall encourage development and land use *which “... promotes the more compact development of urban areas and the limitation of urban sprawl and the protection of agricultural resources” and development that “results in the use and development of land that optimises the use of existing resources such as engineering services and social facilities... ”*.

The **National Strategy for Sustainable Development (NSSD)** provides strategies to promote sustainable development in land development areas. The NSSD sets the following principles for development:

- People Centered Development;
- A Sense of Place;
- Cultural Diversity, Self Improvement and Enterprise;
- Holistic Approach to Planning and Development;
- Alignment of Global, National and Local linkages;

- Sustainable use of Natural Resources;
- Improved Access to Opportunities;
- Democratic, Efficient Governance and;
- Biodiversity Preservation

The **National Environmental Management Act, 1998 (NEMA)** provides principles for decision-making when dealing with development issues directly affecting the environment. The NEMA sets the following principles for development:

- Socially, environmentally and economically sustainable development
- All factors to be considered in permitting “Greenfield” and “Brownfield” developments to avoid “harmful” activities
- Ensuring that all inhabitants have access to the available environmental resources
- Ensuring that proper Integrated Environmental Management (IEM) procedures are followed

The **National Environmental Management: Protected Areas Act, 2003** provides principles for the protection and conservation of ecologically viable areas representative of South Africa’s biological diversity. The objectives of the Act that are relevant to the development of the Magaliesburg are:

- To promote sustainable utilisation of protected areas for the benefit of people

The **Extension of Security of Tenure Act, 1997 (ESTA)** provides security of tenure to vulnerable occupants of land outside of urban areas. The Act therefore contains provisions aimed at creating and supporting long-term security for the vulnerable occupants and, at the same time, to protect them from unfair eviction. The Act also contains provisions whereby the relationship between landowners and vulnerable occupants are regulated. In terms of the Act ‘occupiers’ are:

- persons who, with consent, currently reside on land which belongs to another; or
- persons who, on 4 February 1997, resided on land without consent because such consent had lawfully been withdrawn before this date and provided the person had remained in such occupation; or
- persons who currently reside on land without consent, but who on 4 February 1997 or any time thereafter had consent.
- However, if the monthly income of the occupier exceeds a certain amount then the person can no longer qualify as an ‘occupier’. Squatters are not included in the definition because they, per definition, occupy land without permission. Note further that consent by an owner for someone to reside on land is, in terms of this Act, binding on his successors in law.

1.3 West Rand District Municipality and Mogale City Local Municipality Policy Directives

The **West Rand District Municipality Spatial Development Framework, 2010** provides principles that guide decisions on planning, transport and infrastructure investment and these are:

- Inclusive growth and development
- Quality designed developments and environments
- Clean and safe environments
- Viable infrastructure and service provision
- Adaptability; of settlements within the West Rand District area

Similarly, the **Mogale City Spatial Development Framework, 2010** advocates the following:

- 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.

The following key vision components and strategies underpin the approach adopted by these National, Provincial and Local governments:

Table 1: Policy Directives:

POLICY DIRECTIVE	ACTIONS TO BE TAKEN
Densification	This refers to compacting the urban form. The policy directives can be supported by Land Use Management Systems, developmental provision and the charging for services.
Resource management	The directives promote the optimum usage of resources, including natural, human, technological and fiscal resources.

POLICY DIRECTIVE	ACTIONS TO BE TAKEN
Environmental management	This directive promotes the efficient, sustainable growth within the context of limited resources. This principle deals with issues of conservation, as well as clean production.
Sustainable economic development	This directive emphasis the need for economic growth within the context of limited resources. This principle deals with issues of conservation, as well as clean production.
Residential development perspectives	<p>This perspective deals with three areas requiring specific attention. These are:</p> <ul style="list-style-type: none"> • <i>Displacement areas</i> – these are lagging greatly in economic growth. They are areas requiring containment and the provision of basic services. While contained, they should be supported with small scale informal development. • <i>Low density areas close to employment nodes</i> – these areas need to be densified. A proposal is made for progressive charging of services by frontage, in order to create a disincentive for low densities. • <i>New residential development</i> – located land by investigating taxation of vacant land within the urban edge.
Urban and Rural rehabilitation perspective	This perspective deals with the legacy of unsustainable dormitory townships. It promotes the creation of a property market in these areas by defining rights and development opportunities. It also promotes the ‘crowding-in’ of commercial development at strategic nodes in these areas. It also addresses the development of sustainable rural areas with own economies
Poverty alleviation perspective	This perspective identified key interventions in poverty alleviation, consisting of well-managed welfare intervention, labour absorbing public works – including labour intensive processes in housing delivery, targeted LED strategies, provision of basic services to communities and disaster management strategies that reduce the impact of shocks. It also addresses the creation of food security safety nets.

Table: 1: Policy Directive

The actions listed above should be instituted through mechanisms such as the Tarlton Planning Framework that will be prepared for Targeted Development Zones in Tarlton.

The detailed Tarlton’s Planning Framework should provide an interface between the broad Mogale City Spatial Development Framework put forward in terms of the municipality’s IDP and the detailed layout plan prepared for township establishment. The Planning Frameworks should therefore assess the project areas within regional and local context and should put forward integrated plans for the delivery of housing and ancillary services and jobs creation economic growth to enable the development of viable communities in these areas.

1.2 Methodology and Structure of the Document

The structure and components of the precinct plan was determined through the outlining of the key issues that need to be addressed. These issues were identified through the problem statement and the rationale for the development of this precinct plan. The following diagram depicts the methodology followed in the compilation of this precinct plan. Although the precinct plan makes proposals at a detailed level, these proposals need to be interpreted as informative and guiding for the establishment and development of the future state. Detailed investigations still need to be done at the application site specific level.



Figure 1: Methodology

2. STUDY AREA

Figure 2 reflects the study area for Tarlton. It is important to note that for the purposes of this study it was decided to rather use a soft boundary approach than to be very rigid in terms of the exact extent of the study area. The reason for this is the fact that part of the scope of this study would be to give strategic direction and assess the influence the development will have on the surrounding area and visa versa. It is therefore important to take a broader perspective and not only focus on a very tight boundary linked to the existing urban activities within the settlement.

The Tarlton Project is an integrated project initiated by the Mogale City's Rural Development. The Tarlton development area is represented broadly by the different rural land uses including residential typologies and agricultural development. There are isolated other uses such as race tracks.



Figure 2: Study Area

3. SITUATIONAL ANALYSIS

3.1 Regional Context

3.1.1 Location

Figure 3 illustrates the regional context of Tarlton which is located to the north-west of Krugersdorp town along the R24 provincial road.

The Tarlton development is in ward 30 situated in on the western periphery of Mogale City Municipality. It surrounded by predominantly rural residential areas, which some are used as bed and Breakfast businesses and agricultural areas. Although Tarlton is seen to be a rural area, informal settlements developing around the area put pressure for urban development infrastructure such as housing and civil infrastructure.

The external urban development pressure is experience from adjoining areas of Magaliesberg and Muldersdrift. The proliferation of informal settlements is also proof of development pressure around the area. The trend of these informal settlements is that they develop along the main road of the R24 running from north to south linking

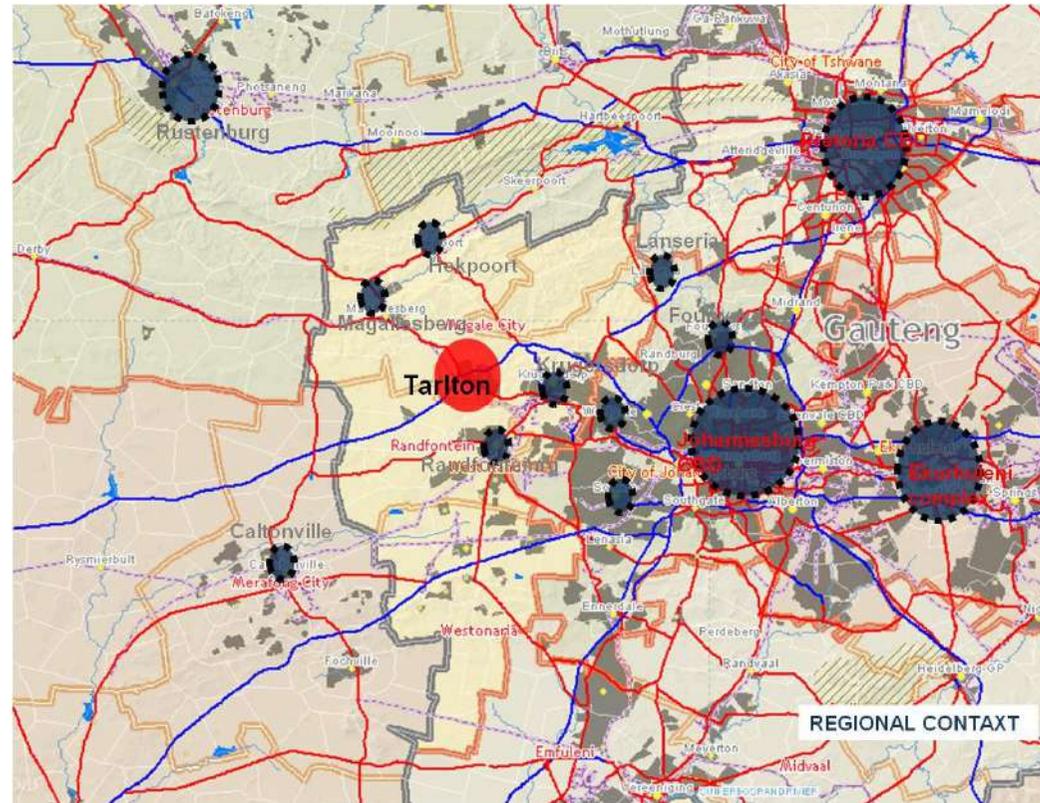


Figure 3: Regional Location

the area with Krugersdorp and Magaliesberg, and along the R28 running from east to west.

3.1.2 Mogale City Spatial Planning

Figure 3 reflects the Mogale City Spatial Development Framework which includes Tarlton. The SDF of Mogale City identified the study area and the areas west of Tarlton as '**Extensive Agricultural and Tourism Zone**' and the areas to the west as '**Intensive Agriculture and Conservation Zone**' with Tarlton as the rural services centre.

3.1.3 Urban Development Boundary

Tarlton is outside the Gauteng Provincial Urban Development Boundary and the Mogale City's development boundary implying that Tarlton cannot expand at this stage. However, with the existing informal settlements in the area a new approach will in accommodating rural settlements will have to be employed.

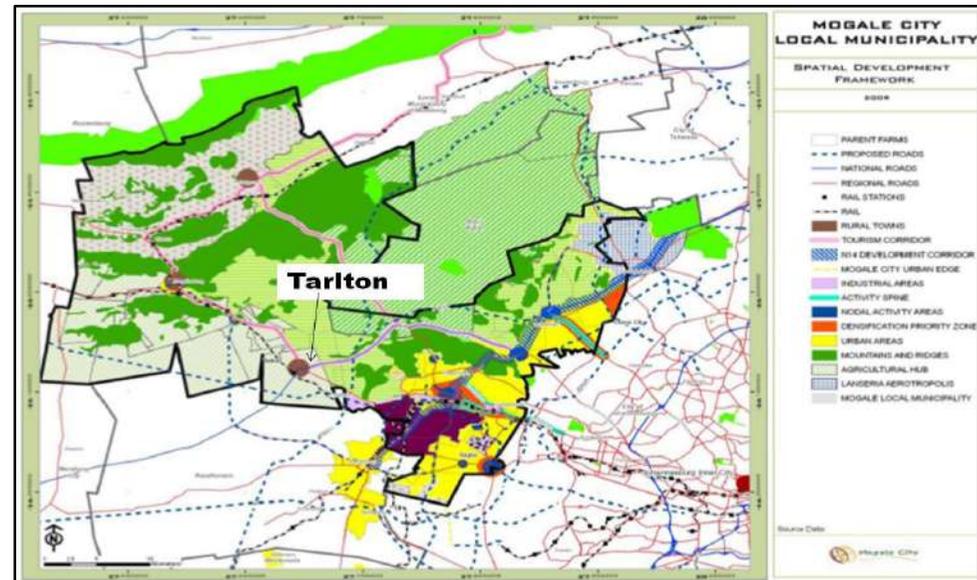


Figure 4: Mogale City SDF_ 2010

3.1.4 Regional Economy

The New Growth Path document requires a government-wide response to address key issues of joblessness and inequality. The key outcomes sought are related to the restructuring of the economy to ensure that:

- There is improved performance of the economy in terms of labour absorption
- Improved rate of growth
- Improved composition of the economy to ensure growth

Government is also expected to prioritise its own efforts and resources to ensure that employment creation and equity is supported. There needs to be strategies to encourage business investment in new areas, and there is an expectation that business and labour should work together with government to address the inefficiencies and constraints in the economy, and to create new decent work opportunities.

The five specific job drivers that we are expected to respond to are:

Infrastructure

- High public investment in infrastructure
- Public investment in infrastructure should be backed with skills development
- Stronger local procure of inputs and the use of labour based production methods where appropriate.
- Infrastructure provision should be targeted to support broad based growth and rising competitiveness.

Priority economic sectors

- Agriculture and agro processing
- Mining (focus on beneficiation)
- Manufacturing (based on IPAP2 as approved by National Government)
- Tourism
- Other services

Seize potential of new economies

- Green Economy
- Knowledge economy

Invest in social capital and public services

- Includes not for profit institutions that provide goods and services such as Coops, NGO's and Stokvels

Spatial development

- Rural development programmes to improve livelihoods
- Rural investment must stimulate employment in other sectors

The major immediate centre of economy is Krugersdorp, Muldersdrift and Magaliesberg node which are located on the south eastern side, eastern side and on the northern of Tarlton respectively. The Other major centre of economy is the Rustenburg to the west.

The largest single node of economic activity in the vicinity of Tarlton is the Johannesburg CBD to the east and the Pretoria CBD the north.

It is evident that virtually all the major centres of economic activity are located to the south, north and east of Tarlton. Mogale City on the other hand, does not have significant job opportunities for the new community of Tarlton. To the west of the study area there is no major centres of economic activity and most activities in this area relate to the farming activities currently on the agricultural holdings and farm portions in these areas. This includes, amongst others tourism related activities, rose farming, small scale home industries etc. The area has isolated high intensity agricultural activities.

With the mixture of residential typologies and income levels in Tarlton, it is important to acknowledge the potential and importance of domestic, piece work and informal employment to the future residents of Tarlton within the development area itself and the surrounding medium and high income housing.

3.1.5 Economic Characteristics

Although the existing and potential economy of the study area follows the broad Gauteng economic structure, certain main characteristic features of the study area should be highlighted, namely:

- Agriculture activities play a relatively important role.
- Manufacturing activities play unimportant economic scene in the study area.

i) Agriculture and Rural Areas

The study area is characterised by tracks of dolomite which are known for the retention of underground water, hence there relatively large tracts of agricultural land exist in the study area, agriculture as an economic activity is not significant employer in the local economy.



The area that represents one of the most significant tourism precincts in Gauteng Province is the Cradle of Human Kind situated to the north east of the study area.

Apart from the hard core agricultural activities, there exist agro- industrial activities as a secondary sector. These agro- industries include the agro-packaging and processing plants.

ii) Mining

There are no mining sector activities in the study area.

iii) Manufacturing

There are no industrial activities in the study area. However, it could be deduced that the community in the informal settlement do work in the manufacturing industry in the rest of the West Rand District. Manufacturing still remains the largest single economic activity in the West Rand. This is relevant for its future economic performance for the following reasons:

- Industrial activities are an important element of the study area's economic base, even if its outside the study area.
- Manufacturing is the economic sector with one of the highest employment and income multiplier effects.

iv) Electricity, Gas and Water

This economic activity does not generate many employment opportunities. The sector should also not be regarded as a potential future job creator.

v) Building and Construction

The building and construction sector's role in the study area's economy could be of significance in the short term. This is related to the envisaged installation of services and construction of house that are envisaged to address the informal settlements in the study area. New construction activities could take place in other areas in the vicinity, notably in the Muldersdrift area, Magaliesberg and Krugersdorp.

vi) Trade, Wholesale and Accommodation

The main centres where these trade and wholesale activities are being accommodated are:

- Magaliesberg.
- Krugersdorp.
- Johannesburg CBD.
- Pretoria CBD.

Due to the main attraction of the Magalies river and the Cradle of Human Kind World Heritage site, the area has developed the accommodation facilities, which provides job opportunities in the hospitality industry.



vii) Transport, Storage and Communication

This sector includes activities related to providing passenger or freight transport by rail, road or water, cargo handling and storage, and includes post and telecommunication services. The most prominent areas/activities include:

- Lanseria Airport (international status)
- Grand Central Airport (domestic airport)

viii) Financing, Business and Real Estate Services

This sector typical activities include banking, insurance and pension funding, real estate activities, renting of equipment, computer and related activities, research and development, legal and other professional services, marketing and advertising, etc. This sector requires high skills, of which the majority of the community of Tarlton will not poses in the short term, as such this sector will not have any significant contribution to the local economy.

ix) Government and Services

Government and personal services will contribute towards the total economy of the study area. This could be realised when the development of the land earmarked for this purpose is developed.

x) Offices

The Krugersdorp Business District (CBD) can be regarded as the most prominent office node close to the study area. Other office developments include the Randburg CBD, and wide spread and limited office facilities in Magaliesberg.

xi) Conclusion

From the economic analysis, it can be concluded that the economic base of the study area comprises a concentration of the following economic activities:

- Agriculture
- Manufacturing, albeit outside the study area
- Trade, wholesale and accommodation
- Transport, storage and communication albeit outside the study area

These activities represent higher order, capital orientated economic activities based on high skills levels in the region. Although the traditional manufacturing activities do not fall into this description, the industrial activities in the study area are “clean and hi-technology” and include types such as medicinal equipment, electronic components and pharmaceutical products.

3.2 Local Context

3.2.1 Population and Community

Although the population and community statistics are available through the census 2001, the development of informal settlements and the influx of people in search of employment opportunities the dynamics of the area have since changed drastically. In trying to realistically plan for the area, a number of extrapolations has been made. These included the projection of the 2001 population and the adding of the population from the informal settlements. The **table** below depicts what could be arguable the community profile of ward 30.

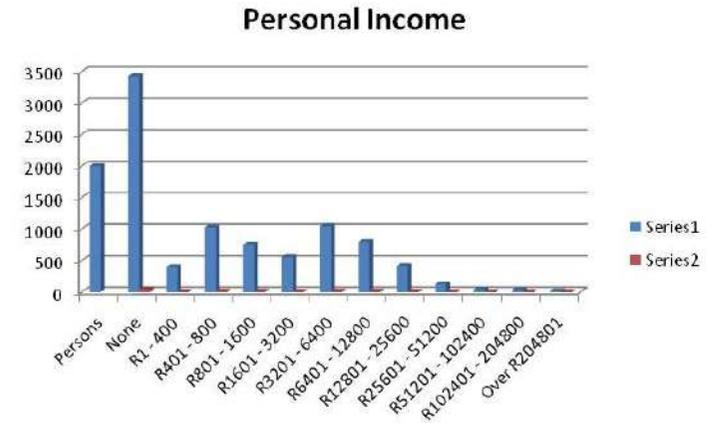
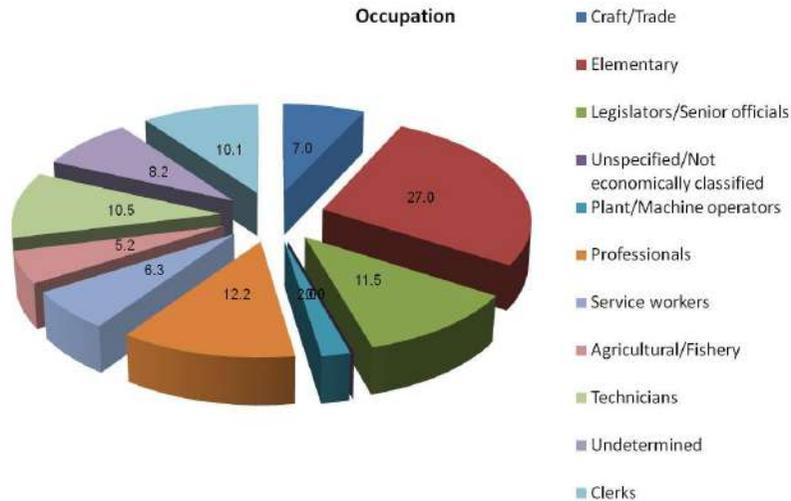
Persons	1996	2001	2006	2011
African	2486	3040	4560	10700
Coloured	69	51	26	15
Indian	2	17	85	128
White	3919	5535	7546	8526
Total population	6515	8643	12217	19369

Table: 2: Estimated Population

Data Source: Statistics South Africa: Census 2001(Extrapolated)

It is estimated that the study area has a population of about 19369.

The chart below shows that the majority of people in the study area have occupation in the elementary section.

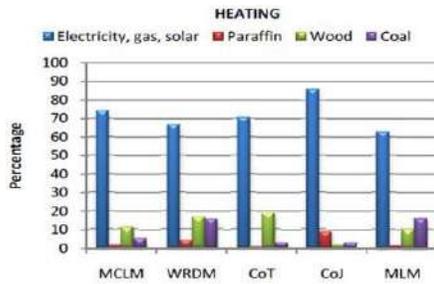


Data Source: Statistics South Africa: Census 2001

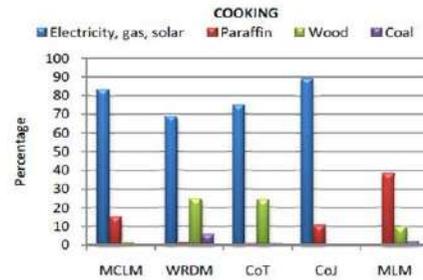
Data Source: Statistics South Africa: Census

The chart above shows that the majority of people in the study area have no income. This is particularly important in the planning and development of Tarlton in that “public investment” is very important. Given the current economic policy of government, The New Growth Path emphasises the economic growth that create jobs in various ways.

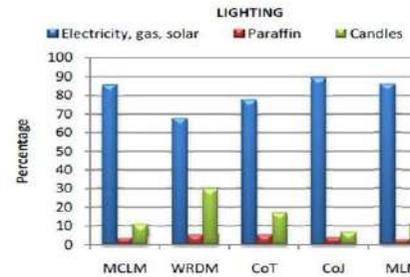
The chart below depicts that the majority of people in Mogale City LM rely on electricity for cooking, lighting and heating with a small number relying on paraffin. In Tarlton the informal settlements do not have access to electricity and as such rely on Paraffin and other sources.



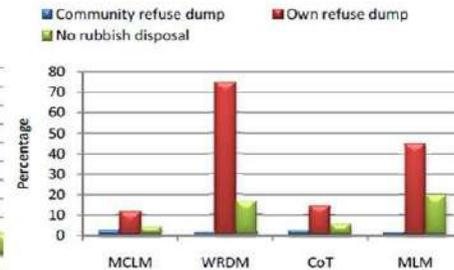
Source: StatsSA Community Survey (2007)



Source: StatsSA Community Survey (2007)



Source: StatsSA Community Survey (2007)



Source: StatsSA Community Survey (2007)

Movement, Spatial Structure and Land Use

The watercourses that traverse the study area and the environmentally sensitive areas are part of the layout of Tarlton. **Figure 5** below shows the social facilities and **Figure 6** shows land cover in the Tarlton area.

Movement:

Tarlton’s structuring elements include the R24 providing the north- south and R28 providing the east- west linkage. There is very limited internal movement. The area is characterised by Right of way servitudes (some of these are not formalised). The table below depicts the major movement lines in Tarlton.

Link	Key Area
R24	Providing the east west link between Krugersdorp through Tarlton and Magaliesberg to Rustenburg
N14	Providing the north south link between Tshwane areas to the north and Ventersdorp to the south
R40	Providing the north south link connecting Marupeng to the north and the R24 leading to Krugersdorp and Magaliesburg
Proposed PWV 1	Regional link providing the North South Link
Railway Line	Providing a north south linkage between Rustenburg and Krugersdorp

Table: 3: Major Movement Lines in Tarlton

Figure 5 shows the movement network depicting also proposed roads linkages.

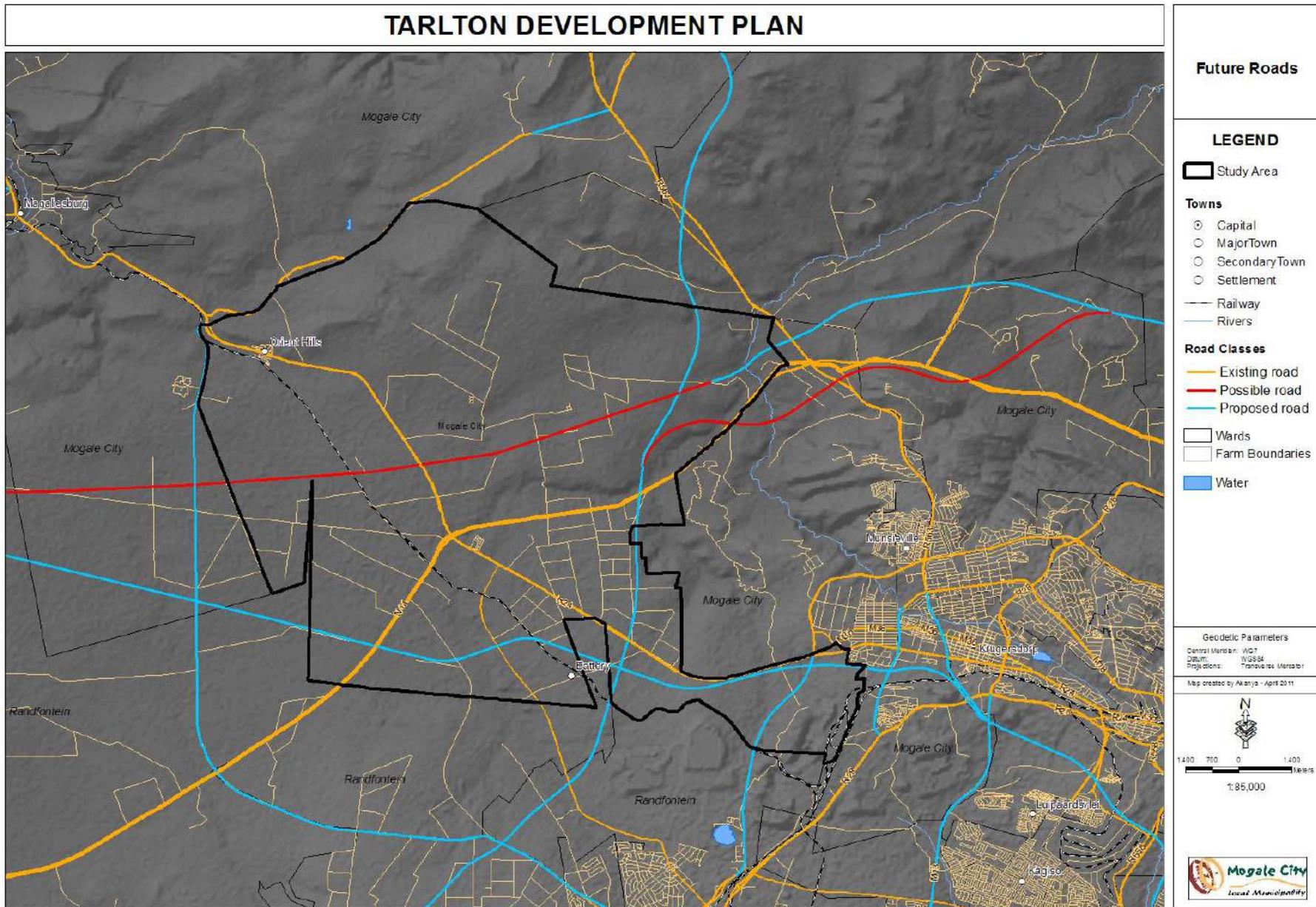


Figure 5: Current Movement Lines

Social Facilities:

There is a precinct of social facilities located at close proximity to each other in the study area. These facilities cater for both the rural community and for the informal settlement in the areas.

Education:

One school Unity Primary school, located along the R24, the link road to Magaliesberg and Krugersdorp

Health Facilities:

Tarlton Clinic is only one health facility in the study area. The people rely of health facilities in Magaliesberg and in Krugersdorp.

Recreation Facilities:

The Tarlton race track is regarded is one of the most important recreation facilities in the study area. However the race track caters for the more affluent communities as the sport is expensive to maintain. The rural communities together with the communities in the informal settlements ca not afford such facilities.

The Dr Nelson Mandela community Centre is the only community centre located in the study area. There is the Thomsana theatre and concert hall located along the R24. There is a community swimming pool located around the Gliding Club which is located in study area. The gliding club caters for the community outside the study area.

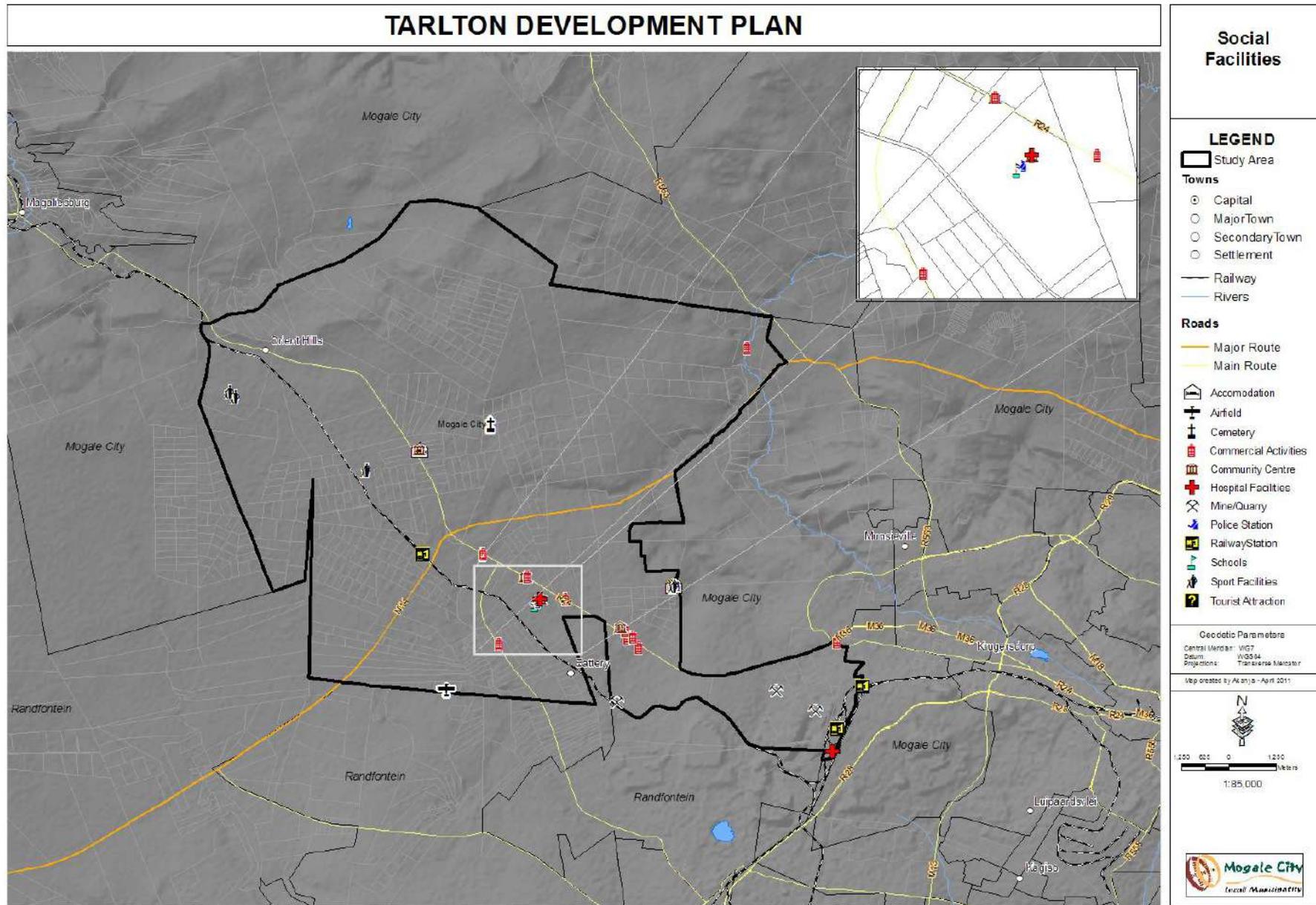


Figure 6: Social facilities in Tarlton

Accommodation Facilities:

The study area and its surrounding areas such as Magaliesberg are renowned for their hospitality businesses. Tarlton boost a number of these facilities which the majority are located along the Magalies River and close to the Cradle of Human Kind World Heritage Site.

Housing and settlements:

Tarlton is a characterized by rural residential areas. The informal settlements are scattered throughout the study area, with different development intensities and intensities.

Table: 4: Informal settlements in Tarlton

Name of settlement	Ownership	Number of Units	Type of Services				
			Water	Sanitation	Energy	Roads	Refuse Removal
Smokedown	Private	425	Tankers	VIP toilets	Coal or Paraffin	Informal	Communal
Orient Hills	Private	750	Tankers	VIP toilets	Coal or Paraffin	Informal	Communal
Matshelapata	Private	1200	Communal Standpipes	Communal VIP toilets	Coal or Paraffin	Informal	Communal
Seroba	Private	670		Pit latrines	Coal or Paraffin	Informal	Communal
Norman 1 and 2	Private	725		Pit latrines	Coal or Paraffin	Informal	Communal
Dairy	Private	166		Pit latrines	Coal or Paraffin	Informal	Communal
Thabong Community Trust	Department of Rural Development and Land Reform	75	Stand pipe on site	Enviro loos	Coal or Paraffin	Informal	Communal

There are three distinct clusters of informal settlements in the study area. These areas are divided into seven informal settlements names. The table below depicts the profile of these informal settlements:

From the table below, it is evident that these informal settlements are growing. It is important to note that in addressing the informal settlement in the area. Due to its proximity to Krugersdorp and the farm evictions, Tarlton's informal settlements are growing.

No	SETTLEMENTS	2009		2010	
		NO OF INFORMAL STRUCTURES	NO OF OCCUPANTS	NO OF INFORMAL STRUCTURES	NO OF OCCUPANTS
1	Tarlton	4011	10 553	4056	10743

Table: 5: Informal settlements comparison n Tarlton_2009 to 2010

3.2.3 Robustness

In the Tarlton Precinct, the majority of the land parcels are used for agricultural purposes. However the to the north of the R24 is still underutilised. This land to the north of the R24 is located at close proximity to the Cradle of Human Kind WHS and should benefit from the tourism related opportunities associated with this site. Three types of areas were identified where interventions require different levels of negotiations.

The first: The agricultural potential areas that are currently devoid of any use, i.e. the areas to the south eastern side of the R24 is occupied by informal settlements. Should be utilised for agricultural purposes

The second: The open spaces along the river system and ridges. These areas should be protected and could be used as recreational and passive open spaces.

The third: The only area suitable for housing development to the north west of need to be carefully considered in the medium to long term **for high density rural** development. The lack of engineering infrastructure to support any urban like development in Tarlton and the proposed Malony's eye development in close proximity will maximise the engineering infrastructure and social facilities that will come with that development.

3.2.4 Variety of Built Form

Variety in a place like Tarlton can offers experiential choices, if planned carefully and correctly. It can be measured by (i) the variety of spaces ranging from rural and urban like spaces (ii) the variety of people within these spaces (iii) the different interpretations or meanings that people relate to a place.

This particular analysis is of built form variety. Contrasted are:

- **Non-thematic buildings** – these are buildings of unique design or appearance. They stand out from the ordinary buildings. They tend to be public building offering services to all. Non-thematic buildings in the Tarlton study area are very few and far apart from each other. This could be attributed to the rural nature and the low densities in the study area. The tourism related buildings, the police station, racing track, local schools are examples in the area.
- **Thematic buildings** – these are buildings of recurring design themes. They tend to be of a single design and mass produced. Thematic buildings often render a monotonous visual landscape unless personalisation is encouraged and undertaken by their owners/occupants. Examples of thematic buildings in the study area are the informal settlements located along the R24.

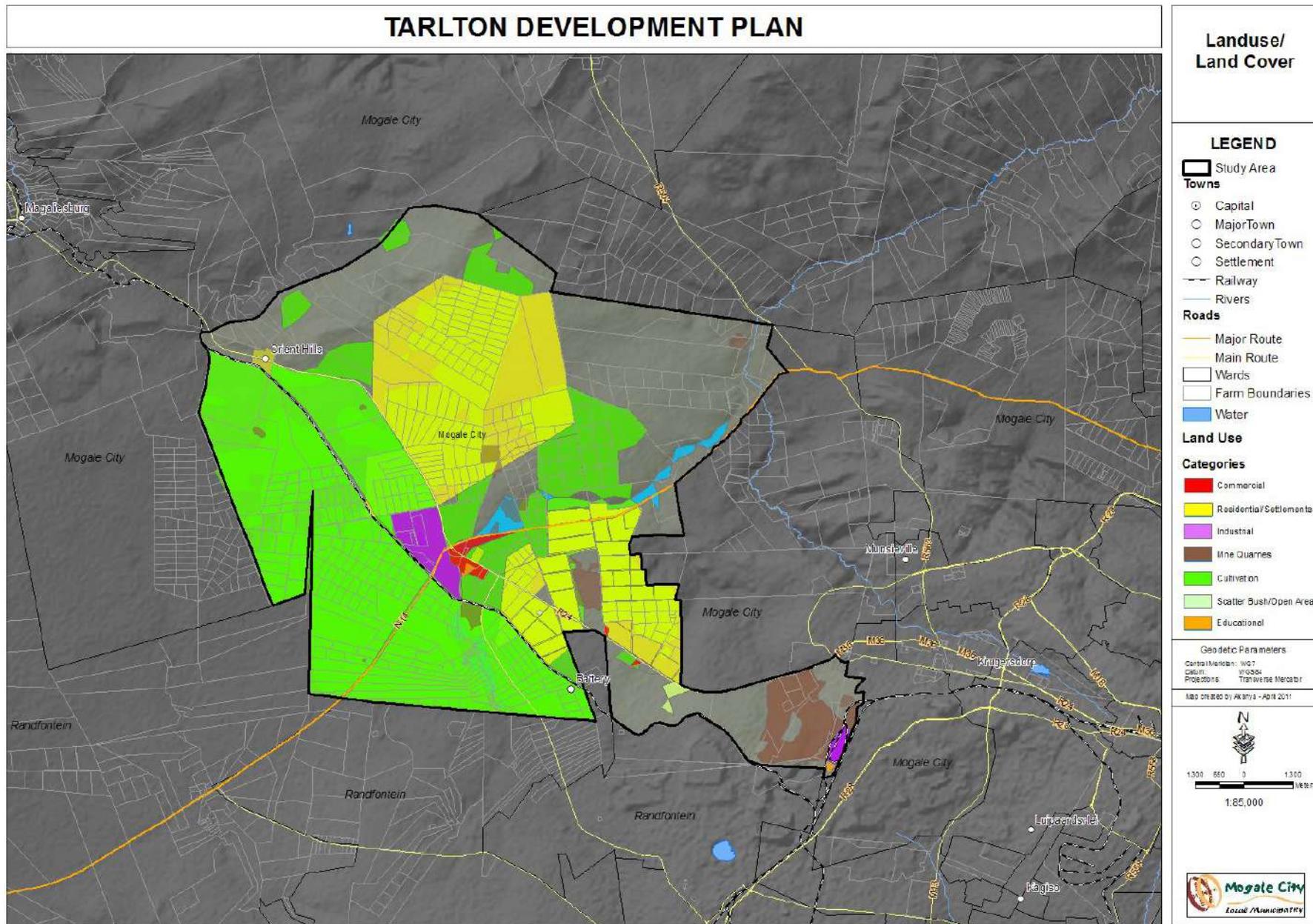


Figure 7: Land Use in Tarlton

3.2 Engineering Services

In any development, engineering infrastructure plays an important role in the development, particularly the influence of rural development within the South African context. Access to bulk infrastructure, such as water, electricity, sanitation and roads, determines the location, direction and intensity of development in a particular desired development area. Infrastructure is used as one of the important criterion to evaluate the possibility and readiness of a particular proposed development area.

Any proposed land development area should not be addressed in isolation with regards to infrastructure, but should be addressed in the broader developmental context. The non-availability of engineering services in the Tarlton area will have dire consequences in the short to medium term, depending on when major engineering infrastructure investment take place in this area. **Figure 6** shows the available civil infrastructure.

3.3.1 Water:

Water provision in the study area is via the boreholes. With the informal settlements in the area and pressure to formalise these informal settlements, major investment will have to be made in providing bulk water supply. There is no direct Rand water pipeline supplying the areas. No water treatment or storage facilities in the area. The nearest bulk water facilities are located to the north and passes Tarlton through Hekpport and Magaliesberg node. This water pipe line does not have capacity to feed the envisaged development in Tarlton.

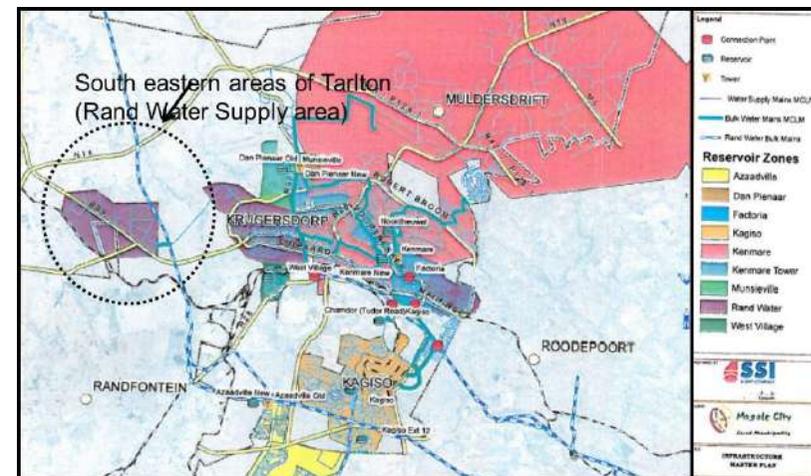


Figure 8: Water Supply in Tarlton (Infrastructure master Plan_ 2010)

3.3.2 Sewer:

The minimum acceptable basic level of sanitation is set out in the Water Services Act of 1998. This Act inter alia direct that each house hold should have a basic sanitation facility that adheres and promotes the appropriate health and hygiene behaviours. Due to the rural nature of the Tarlton area, the sanitation is mostly on site treatment ranging from package plants to conservancy tanks. Considering the associated pollution threats associated with the package plants and conservancy sewer tank system, and the soils condition in Tarlton, proper gravitational sewer is the preferred option from the environmental point of view.

There is no gravitational system in the Tarlton.

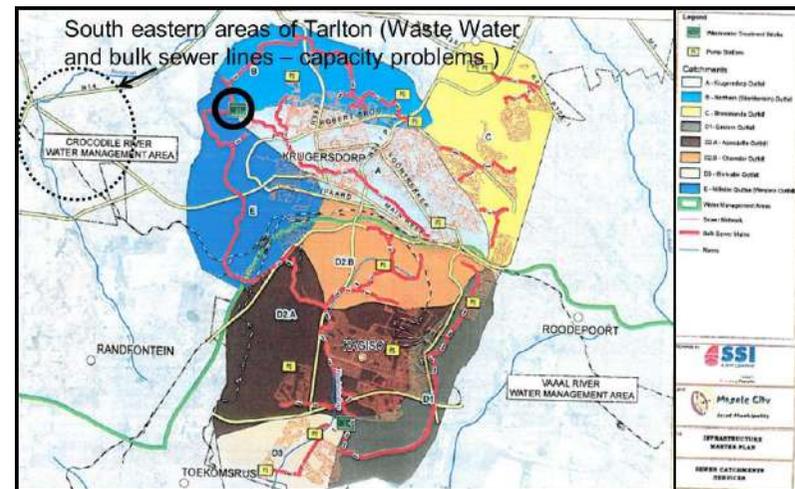


Figure 9: Sanitation in Tarlton (Infrastructure master Plan_ 2010)

3.3.3 Electricity:

The supply authority in the Tarlton area is Eskom. Mogale City is responsible to supply public lighting. There are two high voltage stations in the study area and a number of medium voltage stations throughout the study area. There is a gas pipeline running across the study area. The location of this pipeline is not determined. Detailed planning will have to consider this pipeline.

3.3.4 Solid Waste:

There is no formal refuse removal in the Tarlton, The informal settlements do receive refuse removal through skips that are collected or cleans every week. The formal rural areas use private solid waste methods. However, due to the fact that there is no proper waste management policies in Mogale City, improper practices occur. These practices result in the pollution of underground fresh water systems, underground water and subsequently disrupt the ecosystems and eventually affect people's lives. There is no recorded recycling or composting areas.

3.3.5 Roads and Stormwater:

Tarlton is well located within the existing and planned national and provincial road network. However, the internal road network is not well defined with the majority of the roads in the rural areas being gravel roads. This could be attributed to the rural nature of the areas. It is characterized by right of ways (RoW) servitudes giving access to the individual properties.

The Tarlton area is traversed by water courses making the area prone to runoff. During rainy seasons the surface water causes substantial volume of grit on the gravel roads that will quickly silt up and reduce the effluent of underground water.

The internal roads can be classified into two, namely the gravel roads and surfaced (tarred roads). The rural gravel roads do not have storm water management facilities.

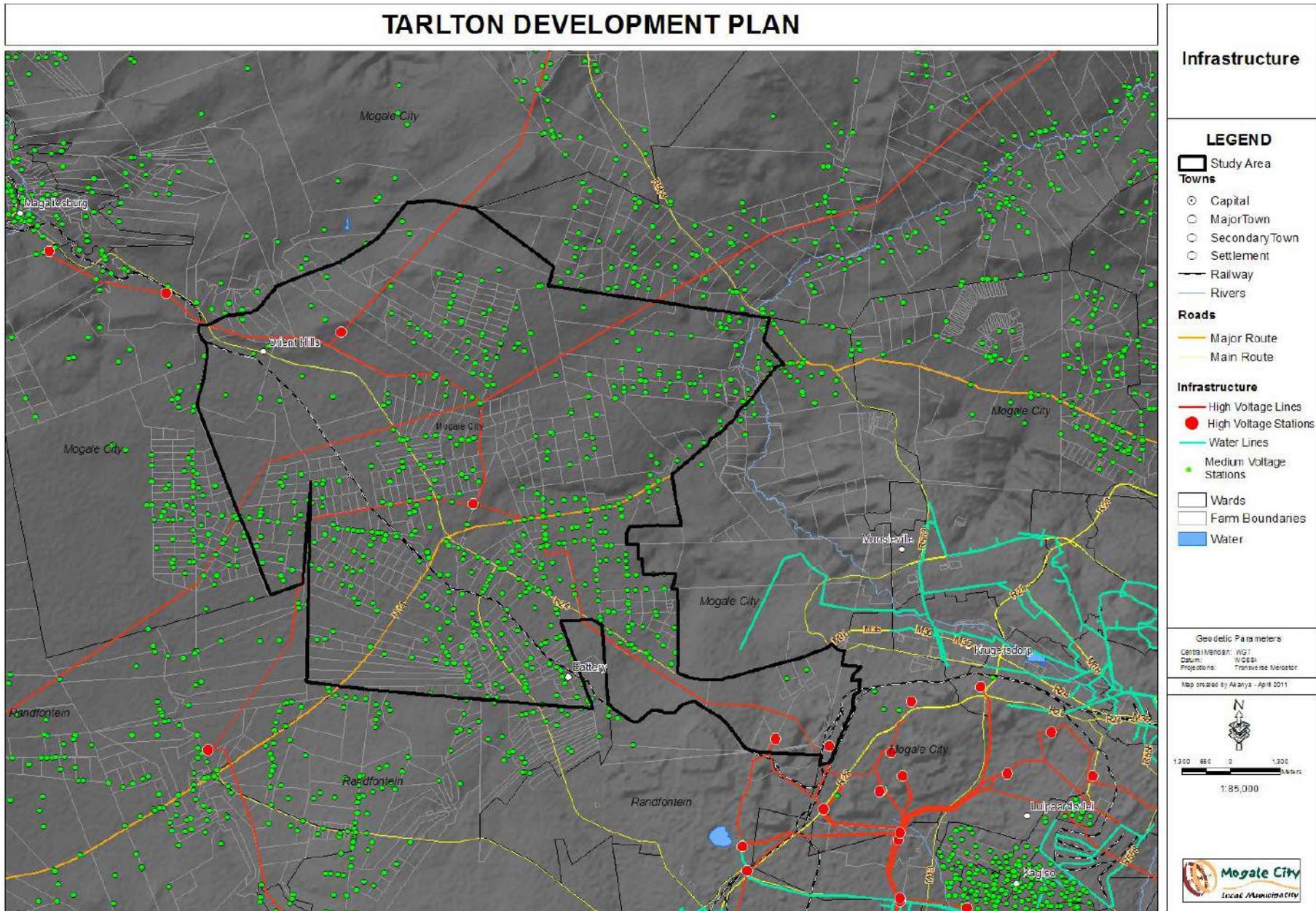


Figure 10: Infrastructure in Tarlton

3.3 Environment

Tarlton, like many areas to the west of Mogale City has high quality environmental areas. Tarlton is an important area with regards to the environment and particularly agriculture. Due to its rural nature, the state of Tarlton environment area can be said to be of high quality agriculture. It is therefore important to balance the development pressure for residential development with that of preserve and protecting the environmental and agricultural areas in this area. This could be addressed by balancing the development and environmentally sustainable practices.

There are a host of environmental issues that puts pressure on any development.

3.4.1 Agricultural Potential and Crops:

The study area has generally very high agricultural potential. It is thus very important to note that the high agricultural potential can contribute to the much needed employment and food security in the area. **Figure 11** shows the agricultural potential of the study area. **Figure 11** also shows that to the south are very well cultivated with isolated area to the west that are medium cultivated, with the lowest areas to the north. It is also noted that the areas to the west are subdivided to rural residential/ small holdings that are less than 5 hectares.

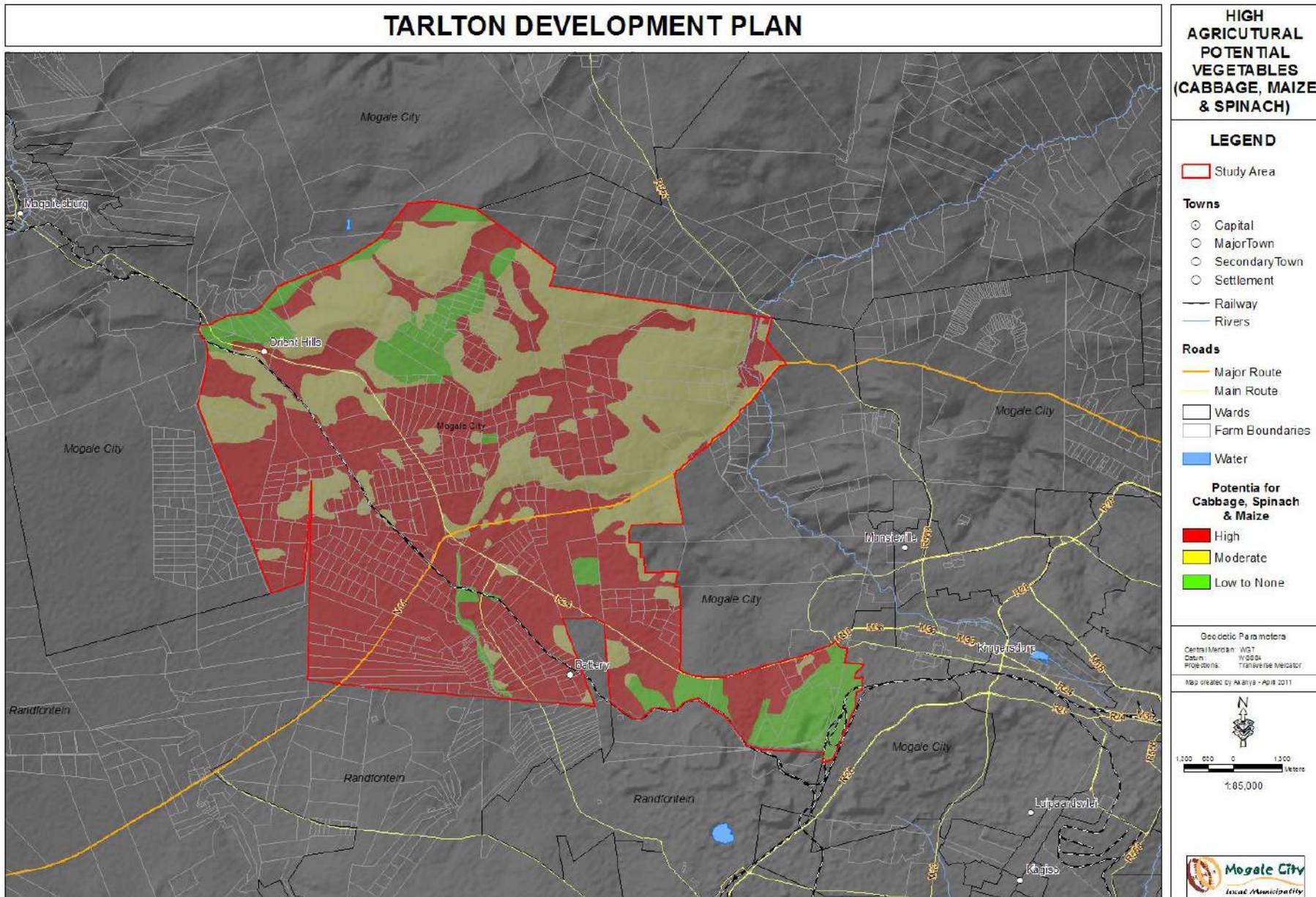


Figure 11: Agricultural High Potential per crop

3.4.2 Geotechnical Conditions:

More details studies are required for any site specific development. The **Figure 12** shows that the study area is mostly not suitable for urban development. There are isolated areas to the northwest that are suitable for development and the areas to the west and south are not suitable for urban development. This finding presents a challenge in that the areas those informal settlements are located to the east of the study area are on land unsuitable for housing development.

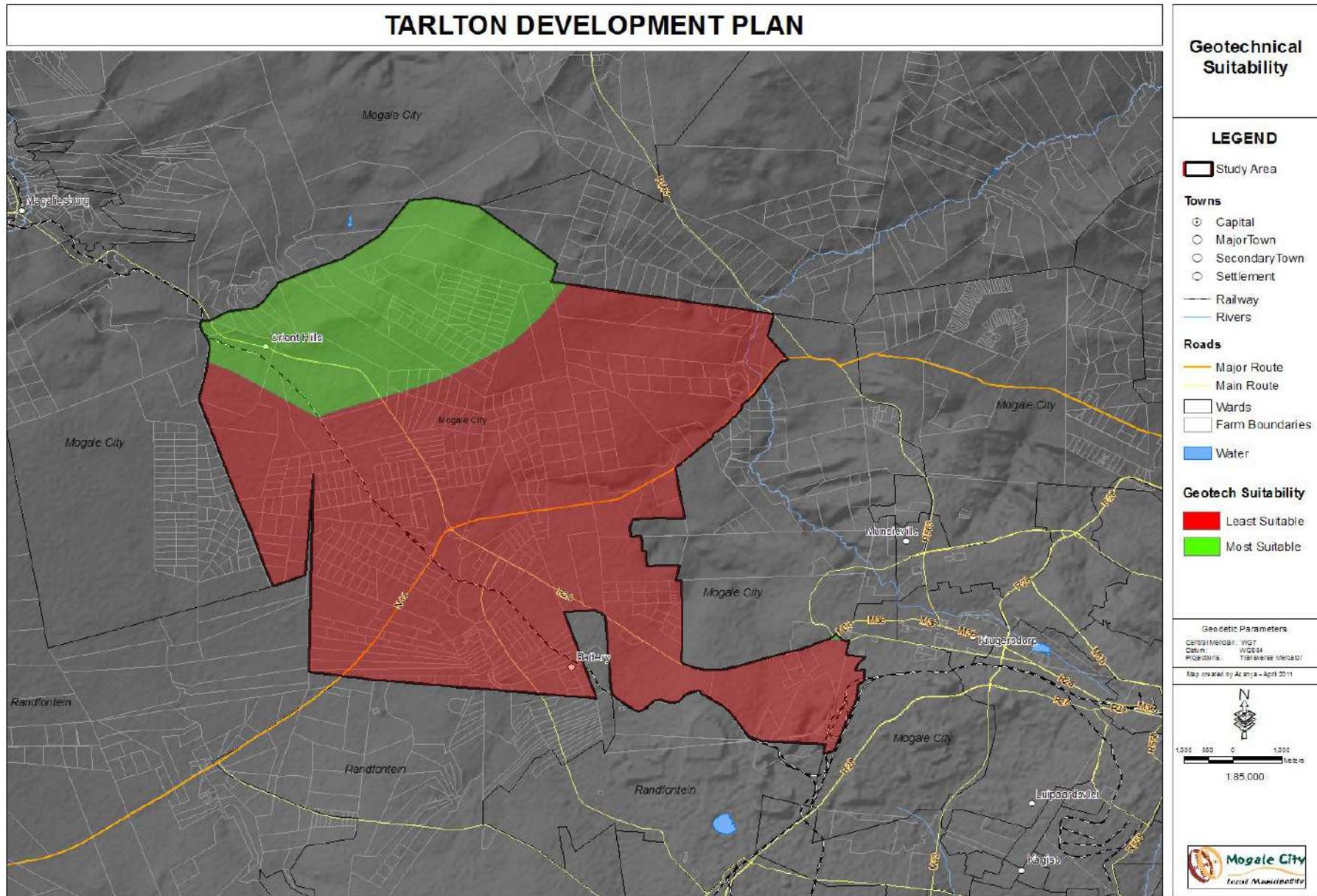


Figure 12: Geotechnical Suitability

3.4.3 Ecological Conditions:

Figure 13 shows that there are very little high ecologically important areas in the study area. The area is characterised by medium ecologically important areas. There are a number of non-perennial rivers across the study area. The most important ecological area is the Magalies River situated on the northern side of the study area.

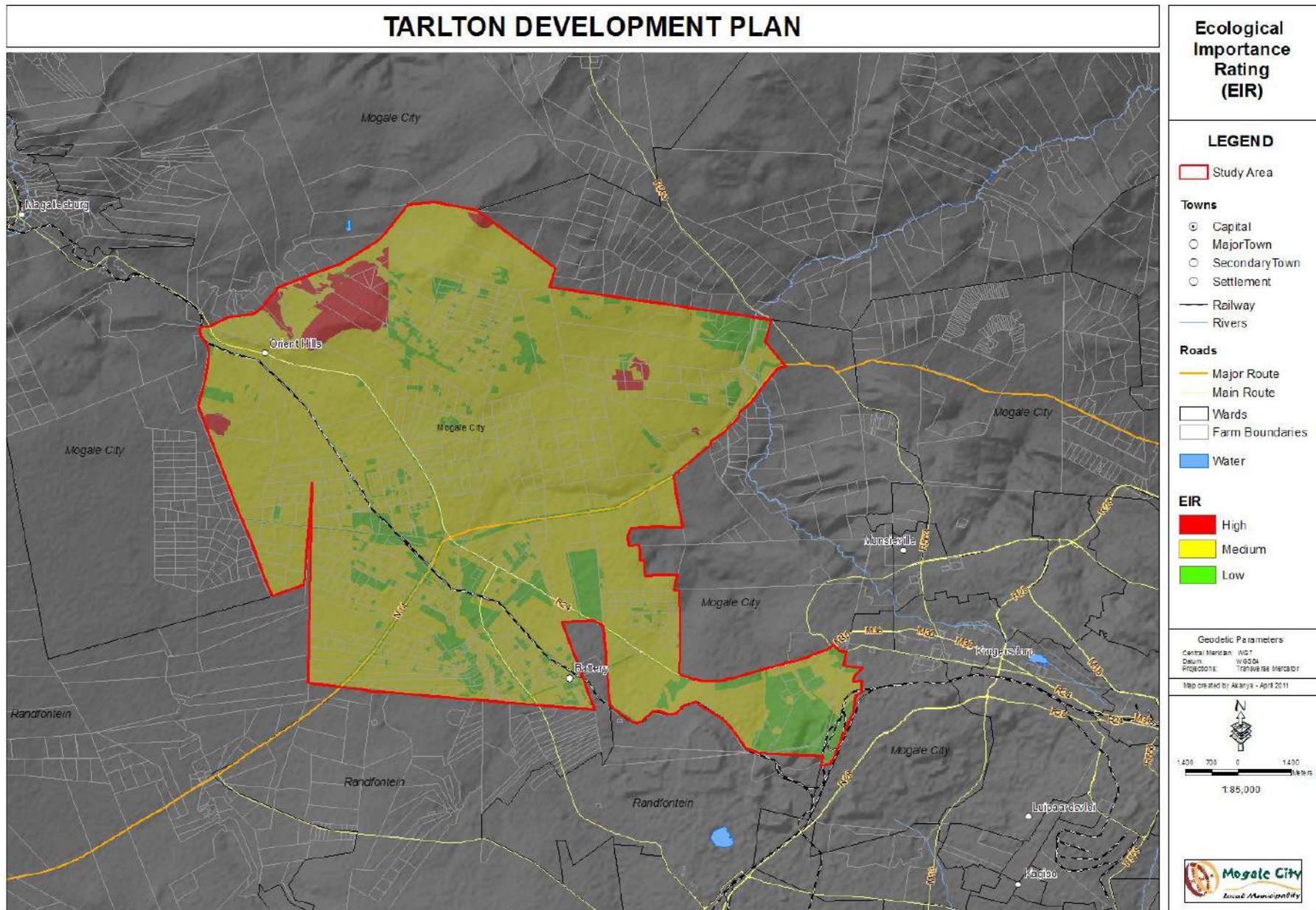


Figure 13: Ecological Importance Rating

3.4.4 Ridges and Sensitive Area:

The study area is affected by limited ridges and sensitive areas. **Figure 14** shows that there are isolated ridges along the R28 and on the northern side of the study areas. There is distinct water shed on the northern side running from south-west to north east. This is particularly important as the gravitational sewer works is located on the Magaliesberg side, cutting the areas away from the sewer treatment works.

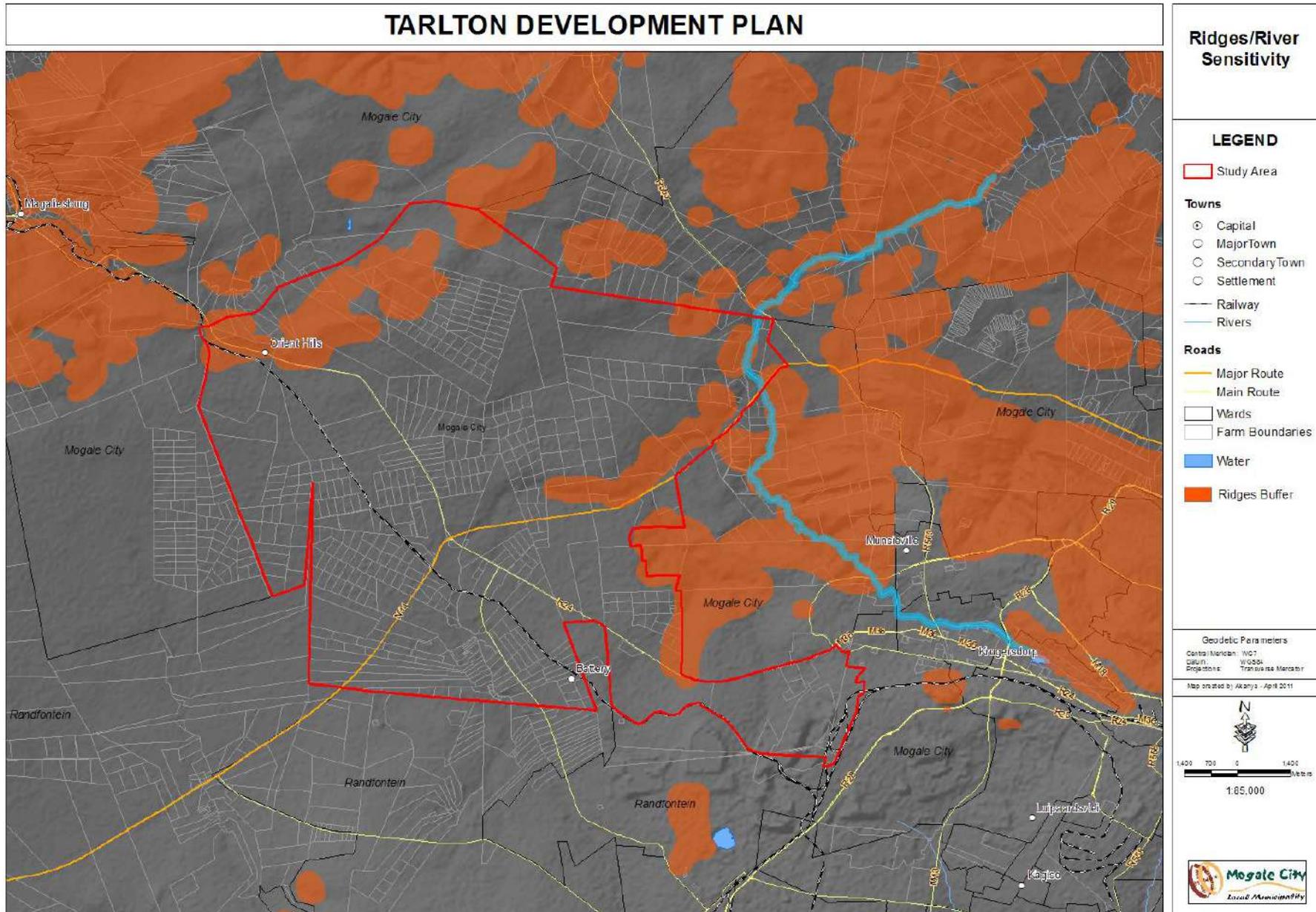


Figure 14: Ridges and sensitive Areas

4 SYNTHESIS

The information gathered and analysed through the previous section, points out that Tarlton as a rural centre has a number of challenges to be addressed. These are:

- The proliferation of informal settlements that are dispersed.
- Location of these informal settlement on desirable location in terms of geological conditions
- Lack of bulk infrastructure to support the already existing communities
- The socio- economic conditions that are not favourable for any major industrialisation and economic development
- The environmental consideration that shows that the majority of the study area is a sensitive area. Development and or change in land use must consider these environmental considerations.
- The high agricultural potential of the area, the current agricultural usage of the land and
- The geotechnical unstable conditions suggest that very limited development should take place. Any development should be to enhance the current character of the area.

Figure 15 shows the development constraints in the Tarlton area.

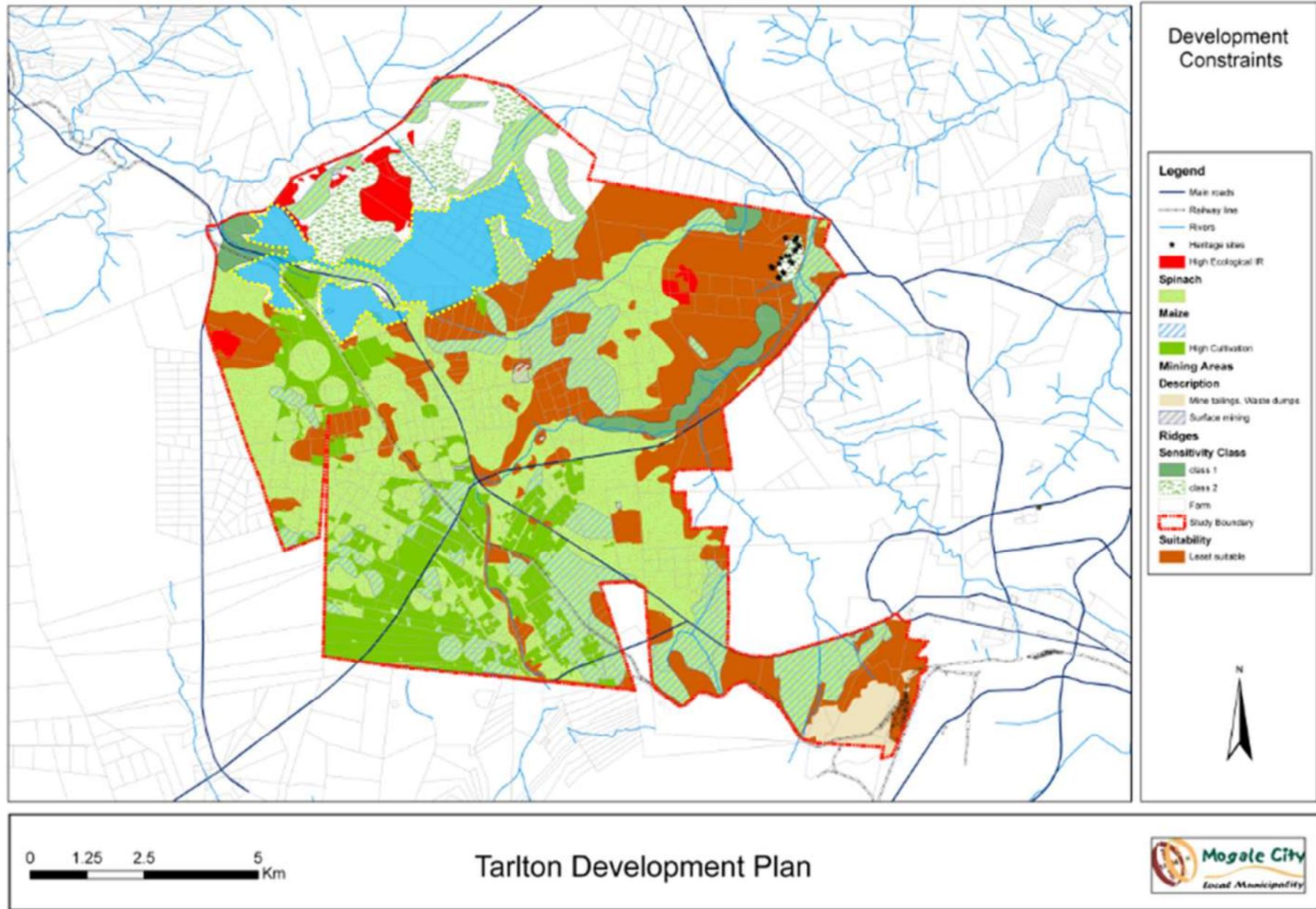


Figure 15: Development Constraints

STRENGTHS	WEAKNESSES
Strong agricultural economic base (agricultural hub)	High unemployment levels and low income levels
Existing social infrastructure	Insufficient water, sanitation and electricity infrastructure.
Strong technical and political leaderships provided	
OPPORTUNITIES	THREATS
Commonage land availability	Proliferation of Informal settlements
Close proximity to the Malony's eye Development, Krugersdorp and Magaliesburg	Low skills/education levels of population
Comprehensive Rural Development Programme	Lack of civil infrastructure
Close proximity to the Cradle of Human Kind WHS (Tourism related industries)	Farm Eviction

Table: 6: SWOT ANALYSIS

5. DEVELOPMENT OBJECTIVES AND STRATEGIES

Based on the analysis in the previous sections, it is clear that Tarlton has reached a development stage where conflict in land use will occur. The conflict exerted by the need for housing development and the high potential for agricultural development is eminent. The Tarlton Precinct Plan will have to harness the relevant economic development at strategic areas based on all resources available, natural, agricultural products. The economic growth in the area will avertedly be provided by agriculture and tourism related activities, these will in turn provide employment for appropriately skilled people and the resources to train and empower people to participate. It is anticipated that the strong agricultural economy, income levels will increase and people will be in a better position to support and develop themselves.

The development of people and communities will not only depend on economic growth but also on harnessing the creative potential of communities to be more entrepreneurial. Mogale City LM and the department of Rural Development and Land Reform will have to support this by ensuring that there is a supporting environment of adequate and appropriate infrastructure and services provision. Transportation will be one of the key mechanisms to ensure that goods and people can be transported and that communities have access to opportunities and amenities.

The intensification of growth and development should be at strategic areas, where the aforementioned conflict will be managed in such a way that sustainability is ensured, open spaces and high agricultural areas are protected and conserved and infrastructure investment and maintenance is efficient and viable.

Mogale City LM and the department of Rural Development and Land Reform would have to strengthen its partnerships with the private sector, especially the agricultural community, and communities to ensure that growth is optimised and partnerships create the appropriate level of beneficiation.

It is also important that Mogale City and the department of Rural Development and Land Reform do not view Tarlton as transition areas but rather as important Service centre that will support the major town of Krugersdorp and Magaliesburg. The areas are planned and managed in partnership with communities and business. A basic and well functioning transportation network services the areas and ensures that communities can access local opportunities and amenities but also those of the close by more developed urban areas of Gauteng.

It has been acknowledged that agricultural production can not only provide needed consumer products but also employment for rural based communities. These opportunities together with the relevant tourism potential are enhanced and a concerted effort ensures

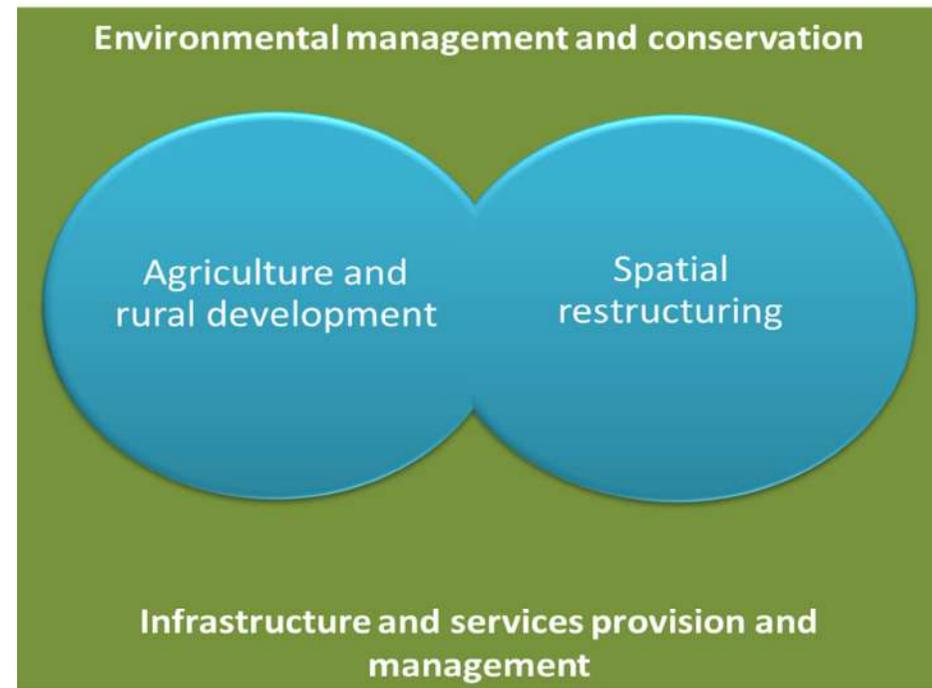
that rural communities and towns are developed appropriately, basic level of infrastructure is provided. Low density and fragmented settlements are contained and the rural areas developed in partnership with local communities, agricultural and tourism forums. Rural areas together with eco related businesses and tourism will ensure that rural are important again and that rural areas and well managed and conserved open spaces take up their rightful role in the development of Tarlton.

The Objectives are identified predominantly to deliver on the issues identified in the **SWOT** analysis. The Objectives are not necessarily linked to a specific goal and will in some instances result in the achievement of a number of the goals. The substance of these Objectives will strongly be influenced by the strategies contained in the national, provincial and local policies. The Objectives that is relevant to the development of Tarlton:

- To strengthen eco-tourism & agricultural development;
- To provide and improve the quality of housing, social facilities and public infrastructure;
- To encourage economic development linked to agriculture;
- To integrate land use and movement in order to ensure integration between different spaces;
- To consolidate settlements and minimize urban sprawl and the adverse effects of land development on the environment

These Objectives are driven by the following strategies:

- Agricultural and rural development and
- Spatial restructuring of Tarlton.



6. DEVELOPMENT CONCEPT

Deciding on a specific structure of development of Tarlton will have to take the above into account and get to a position where elements of urban and rural development are acknowledged. However, spatial structuring components that are common, although different in application, between all two functional area types are:

- Movement
- Concentration of activities
- Housing and settlements
- Open spaces
- Levels of infrastructure and services provision

This section is a conceptual and illustrative discussion of the possible implications of the mentioned spatial structuring components on the spatial development of Tarlton. **Figure 16** and **Figure 17** show the planning options 1 and 2 concepts respectively.

Movement

Movement is one of the key structuring elements that influence the spatial and economic development of Tarlton. It is essential to ensure that goods and people are transported and that linkages are create between the different activity areas. The intention is to create a network that will service the area and link it to the rest of the region. With the rural character of Tarlton and the agricultural potential it poses, it will also mean that the function and type of transport mode will differ from the urban areas.

Some of the key issues to take into account include:

- Transportation exchange points need to be created to serve the rural and link to the urban areas
- Transport exchange points could be a catalyst for more intense economic development
- Transport exchange points should be accessible to the widest possible range of users
- Tourism strategies are dependent on good transportation infrastructure

Concentration of Activities

There is a wide range of definitions for places where activity concentrate e.g. nodal points, urban centres, central places etc. For the purpose of this report, it was decided that the definitions will relate to the area around the intersection of R24 and the N14 with its specific rural service centre functions for option 1 and the intersection of R400 and R24 for option 2.

Some of the key issues to take into account include:

- The intensification of activities should be concentrated strategically and on the preferred location determined by the movement network.
- They are points of highest order in terms of the provision of services and facilities and will differ in scale from urban like land uses to rural areas

Housing and Settlements

Settlements are a building block for sustainable communities. The design of friendly settlement patterns with pedestrian friendly and mix of uses with many activities are a sign of sustainable settlements. They are fundamental building blocks for happy homes and sustainable regions. Because they operate at a scale where people can interact, sustainable settlements offer vitality and diverse opportunity as part of resident's everyday lives. It is also important to acknowledge that density and settlement function will differ between the rural and more urban areas.

Some of the key issues to take into account include:

- To promote a broad range of housing types and densities in a rural area
- Promote the agricultural commonage model to augment income and food security
- Is there a mix of uses available to support daily life: employment, recreation, retail etc.
- Settlements should be connected to regional transportation networks, land uses and open spaces
- There must be interconnected network of streets and open spaces
- The level of service provision should relate to the locality and development context of the settlement

Open space network

An integral component of the development of Tarlton should be a well-defined open space network that seeks to conserve and enhance existing and future physical and natural resources. Tarlton must pose an inter-connected and managed network of open

space which supports interactions between social, economic and ecological activities, sustaining and enhancing both ecological processes and human settlements. These open spaces should perform an ecological, social and institutional function and contribute to the preservation of Tarlton's heritage. Where densities are increase within the area, the need to preserve open spaces is increasingly important. In many instances this will require the rehabilitation of degraded vacant or developed land.

Some of the key issues to take into account include:

- The quality of underground water sources and water courses
- Protection and enhancement readily identifiable scenic, historic and cultural resources
- Maintain critical natural resource based industries e.g. tourism and agriculture
- Preserve open space for the protection and enhancement of air quality

Levels of infrastructure and services provision

Infrastructure investment is an important structuring element that will influence the development patterns in Tarlton. The provision of infrastructure especially bulk infrastructure is crucial for the development of Tarlton. The following issues should therefore be taken into account:

- Bulk infrastructure capacity should be developed to ensure efficient and sustainable communities
- Development of land in close proximity to existing or planned infrastructure should be given first priority.
- A balance should be struck between investment in new infrastructure and the maintenance and refurbishment of existing infrastructure
- New infrastructure should be provided in areas which are linked, or can be linked, directly to the movement network and can be provided with social services
- Medium- to high-density residential development should be promoted to make for optimal use of infrastructure.
- Customer education, by means of information dissemination, pro-active involvement, and education with regard to the benefits of good practice, should ensure that service users understand the operation of and limitations to the service systems.

DEVELOPMENT CONCEPT (Option 1)

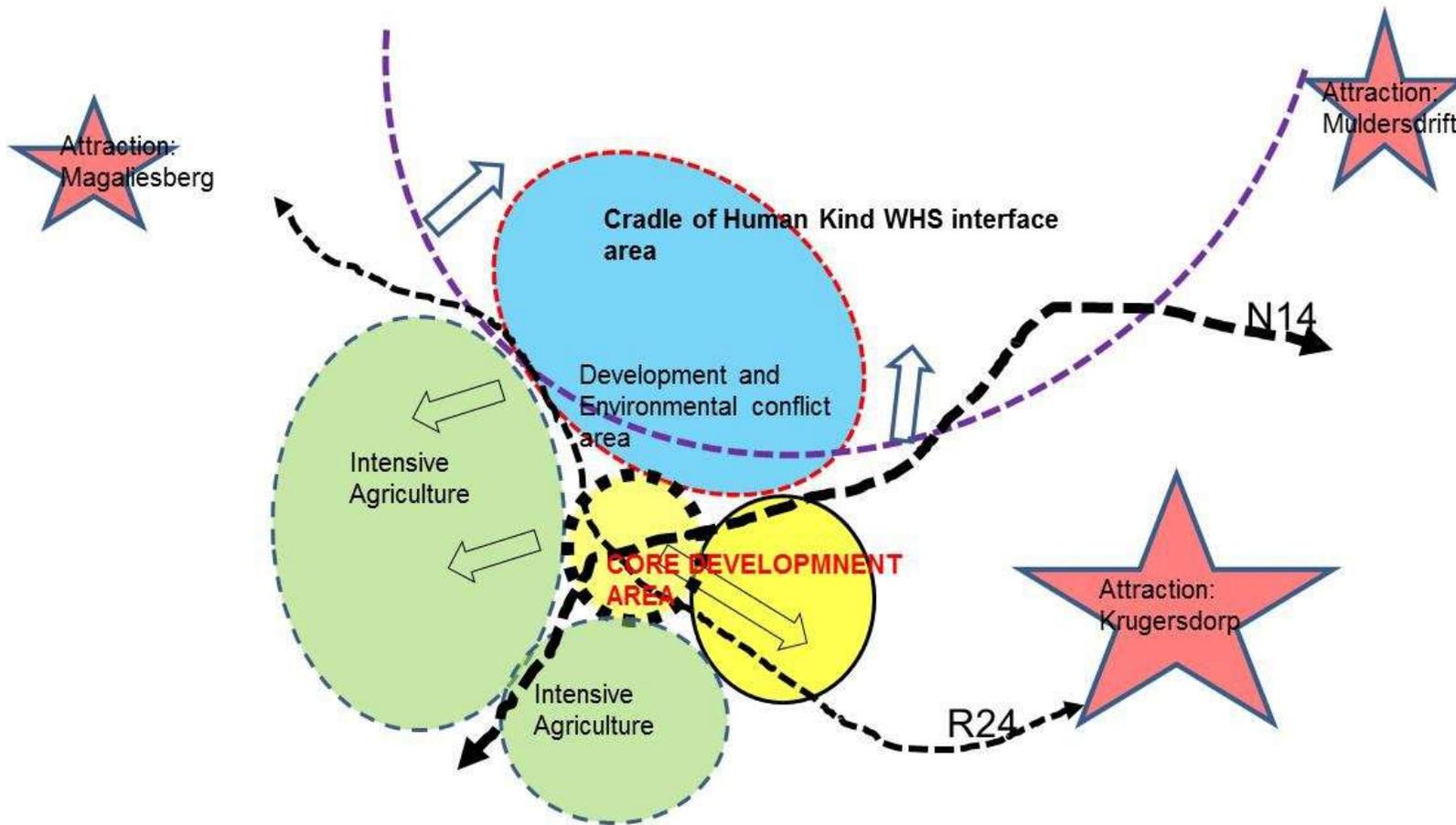


Figure 16: Development Concept (option 1)

DEVELOPMENT CONCEPT (Option 2)

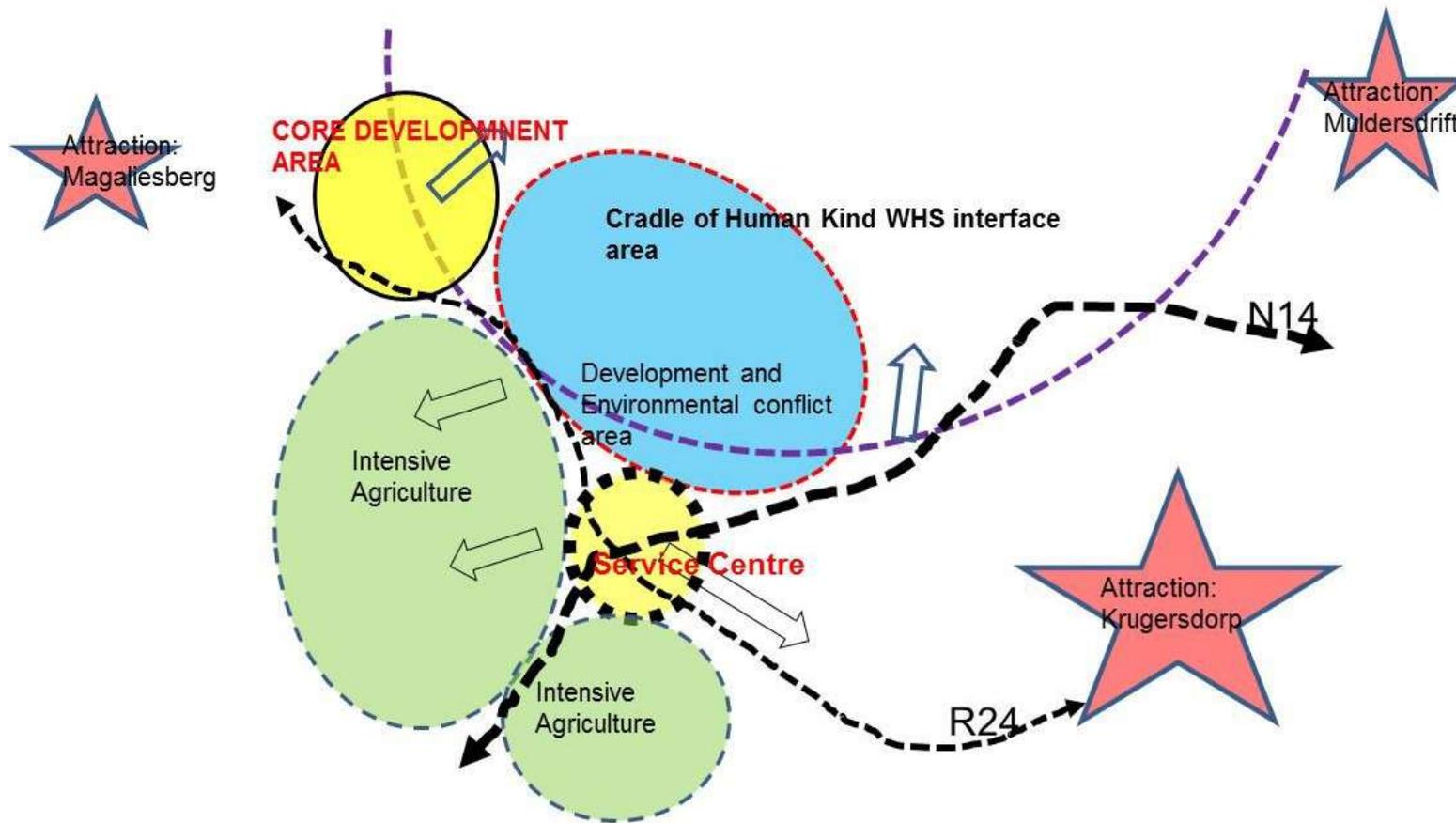


Figure 17: Development Concept (option 2)

7. DEVELOPMENT FRAMEWORK

Tarlton should be seen as a small scale rural service centre. It is not a significant focal point in which rural life revolves, and which socio-economic services such as trade, transport, communications, agricultural inputs, finance, administration, education and health are provided. There are a series of service centres offering varying ranges and complexities of the services in the Mogale city including the Magaliesberg service centre which also facilitate the economic development of the Mogale City Local Municipality. Tarlton is an agricultural hub providing extensive agriculture.

The Mogale City SDF identified development zones and areas for urbanization. Urban influence increases with proximity of the land to populated areas and with the size of the population. Tarlton, due to its proximity to Krugersdorp, has over the years experienced this phenomenon. Areas within the regions may be subject to low, medium, or high degrees of urban influence. The urban influence of Krugersdorp on Tarlton has significant implication of the pressure for residential development.

The development pressure exerted in Tarlton through the development and informal settlements has shown an ever-growing interest in the area as an integrated service centre. The governments drive towards the development of rural areas also calls for integrated planning in rural areas, particularly in areas that are at close proximity to job opportunities. The development of Tarlton has to take into consideration the following:

- the mutual relationships between developments i.e. legislative, policy directives that take place on different administrative levels of a society: national, regional and local;
- the connection between developments in different sectors that exists in these different administrative levels;
- the interrelationships between the social, economic and physical aspects of one and the same development process.

The major concern in Tarlton is the apparent need for the future urban settlement patterns and for their services apparatus in a rural setup.

The planning of these settlements cum services centres are of great importance for the future development of the Tarlton rural service centre. What need to be considered in the balance of development in Tarlton is the following:

- In Tarlton the authorities annually spend money on servicing and improving the infrastructure by building roads, water tankers, draining effluent etc. The future development of Tarlton is largely influenced by the extent and the nature of the provision of services. But importantly is the **suitability of land for residential development**.

- Not only their quality and quantity, but also the spatial distribution of the socio-economic services is important for the living conditions and development potential of Tarlton. This distribution provides the physical framework within which the future development must take place and where a new socio-economic structure must come into being.
- One of the challenges in planning for Tarlton is that of enlargement of scale. It is becoming more and more obvious that services catering for Tarlton's residents will and can only operate at their optimum when they provide for a certain maximum number of persons. This maximum number of persons (threshold) has a tendency to increase.
- Enlargement of scale results in the disappearance of many small service centres, or a decline in their function. Tarlton has very high risks for residential development due to the unfavorable soil conditions and lack of bulk and reticulation engineering infrastructure. The scattered proportions of settlements in a rural setup requiring urban amenities provides for development conflict in Tarlton.
- To balance the provision of services and socio- economic development and the retaining of high levels of agricultural character, these communities will have to be consolidated and a **single** development area established in a **suitable** area.

Therefore, in planning the future physical structure of Tarlton, it is essential that a certain line of thought be followed as to the most desirable future socio-economic structure of Tarlton, and of its relationship to the rest of Mogale City and indeed the region. There are a number of basic factors which always have to be taken into account in planning a future service apparatus.

From this premise and the status quo analysis, it is self-evident that consolidation of all informal settlements in the Tarlton study area will have to be done and a suitable location be identified to address the issues mentioned above and to obtain the coherent Plan for Tarlton.

Of constantly vital importance in the planned development of Tarlton as a rural Service Centre, is to accommodate the current residents and to provide for the socio-economic and infrastructural requirements in an affordable and sustainable manner.

Given the current situation and the desired development vs. the enabling conditions to cater and address the desired development, it is clear that there are two options:

Option 1: Formalize the current informal settlements within the current foot prints, taking the largest settlement as the core area i.e. intersection of R24 and the N14. This option affords the current core Tarlton informal settlements an opportunity to

be at close proximity to the major town of Krugersdorp. The other major concern is the geological conditions that are not suitable for development. The area is underlain by dolomite and has no bulk infrastructure. **Figure 18 and 19** shows the detailed core area and the regional development framework respectively.

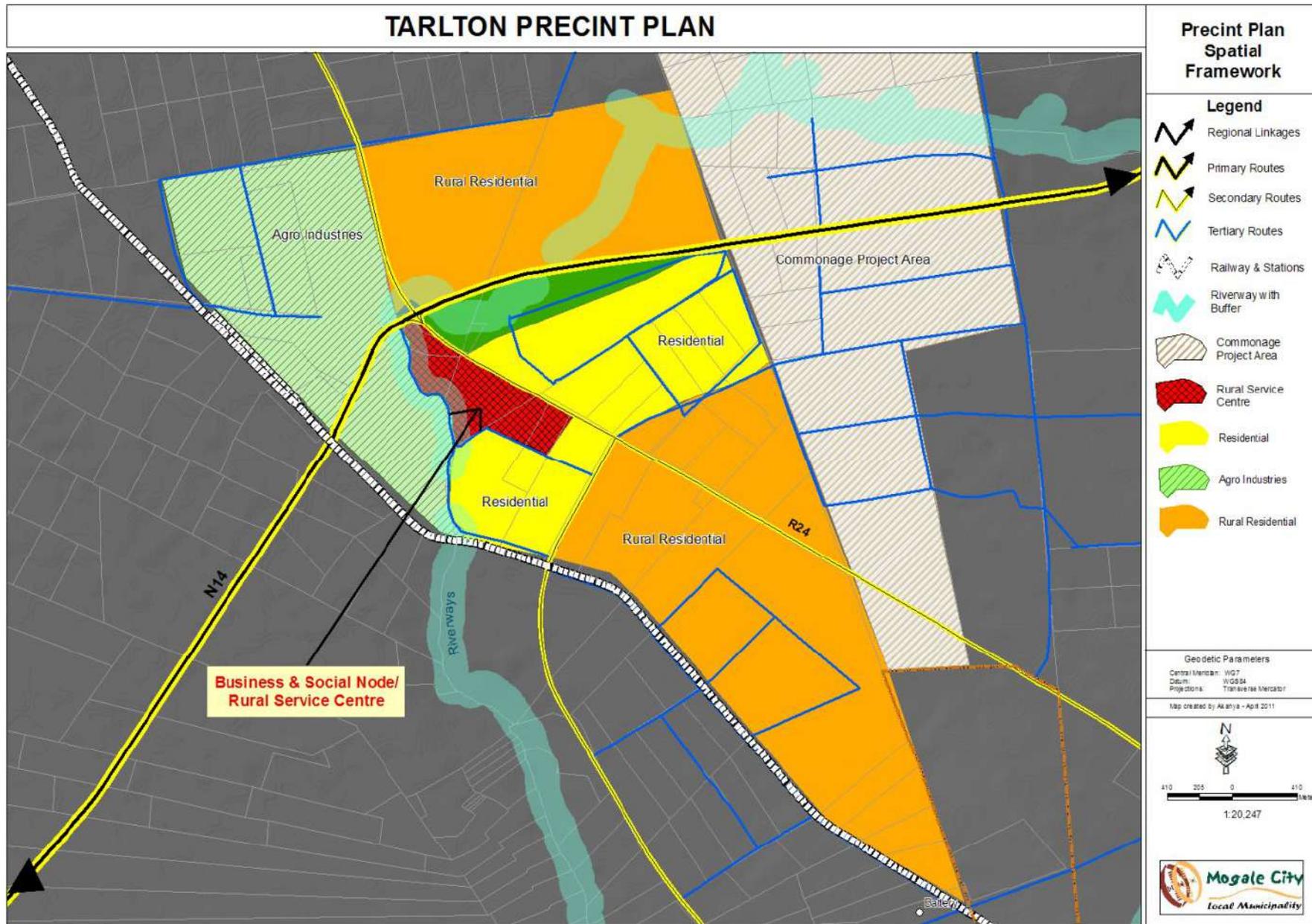


Figure 18: Detailed Core Area (Option 1)
 TARLTON PRECINCT PLAN_ MOGALE CITY_2011

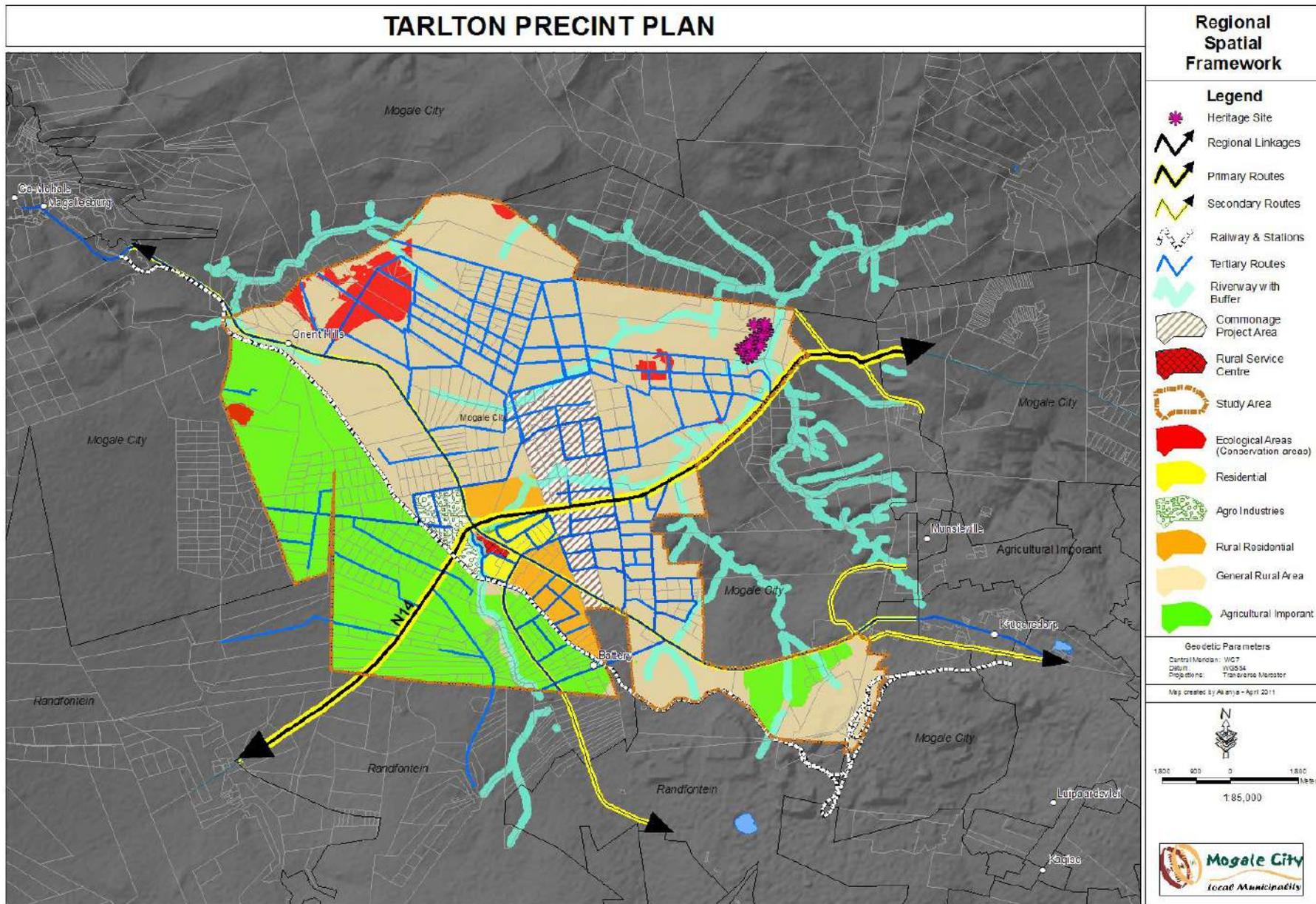
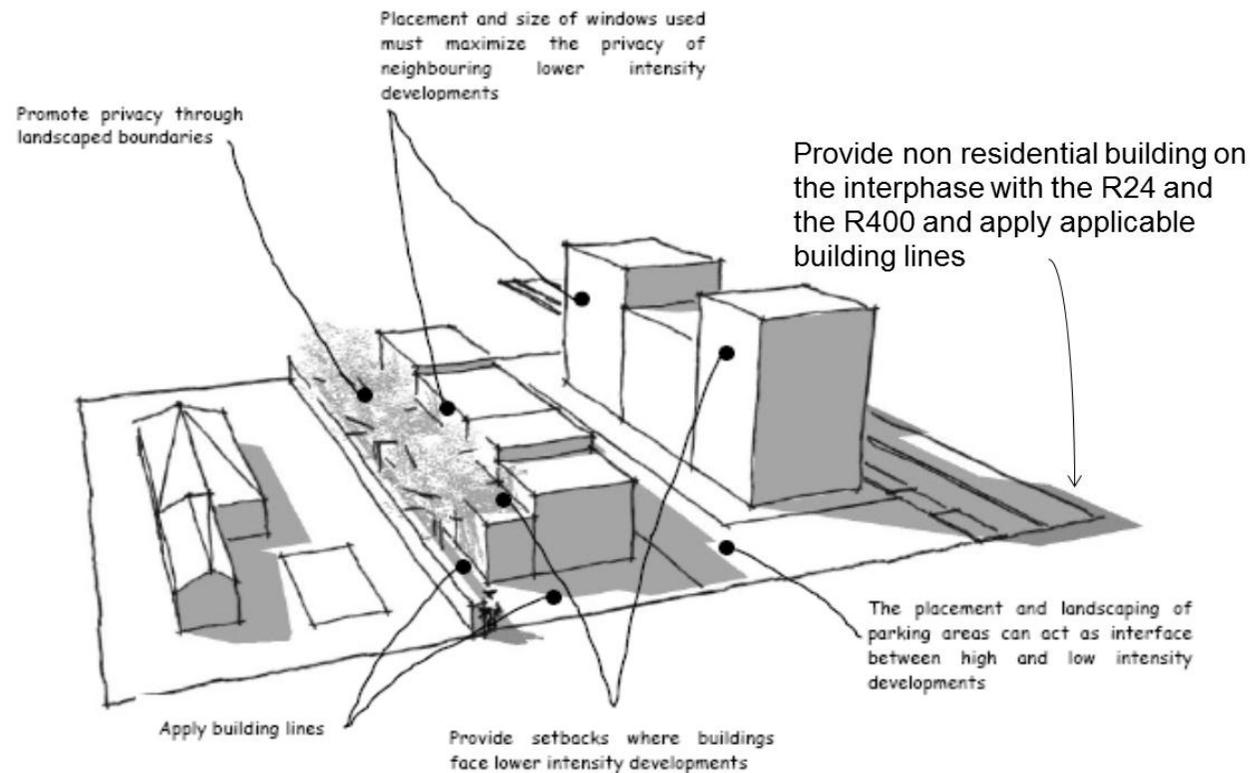


Figure 19: Regional Framework (option1)

Option 2: The relocation of the current informal settlements to a geologically stable and low agriculture potential area. This land is situated on the north western side of Tarlton, north of the R24. This option will afford the development of the area close to Magaliesberg Node and the proposed Maloney's Eye Development, a private initiative that will yield approximately 2230 dwelling units, 9 ha of business sites, 4 ha for a hotel, 20 ha for schools, 7 ha of industrial development and 3 ha for a community facility. This development, which is estimated at R800 million, will not only provide sustainable job opportunities, but will also aid the provision of infrastructure to adjacent settlements and act as a catalyst for the development of Magaliesberg and surrounds whilst strengthening the Tourism Character of the area. The challenge about this option is the relocation strategy of the major informal settlements to the desired location. This option also removes the community away from the Major Town of Krugersdorp. **Figure 20 and 21** shows the detailed core area and the regional development framework respectively. The sketch below depicts the design principles to be applied on **option 2**.



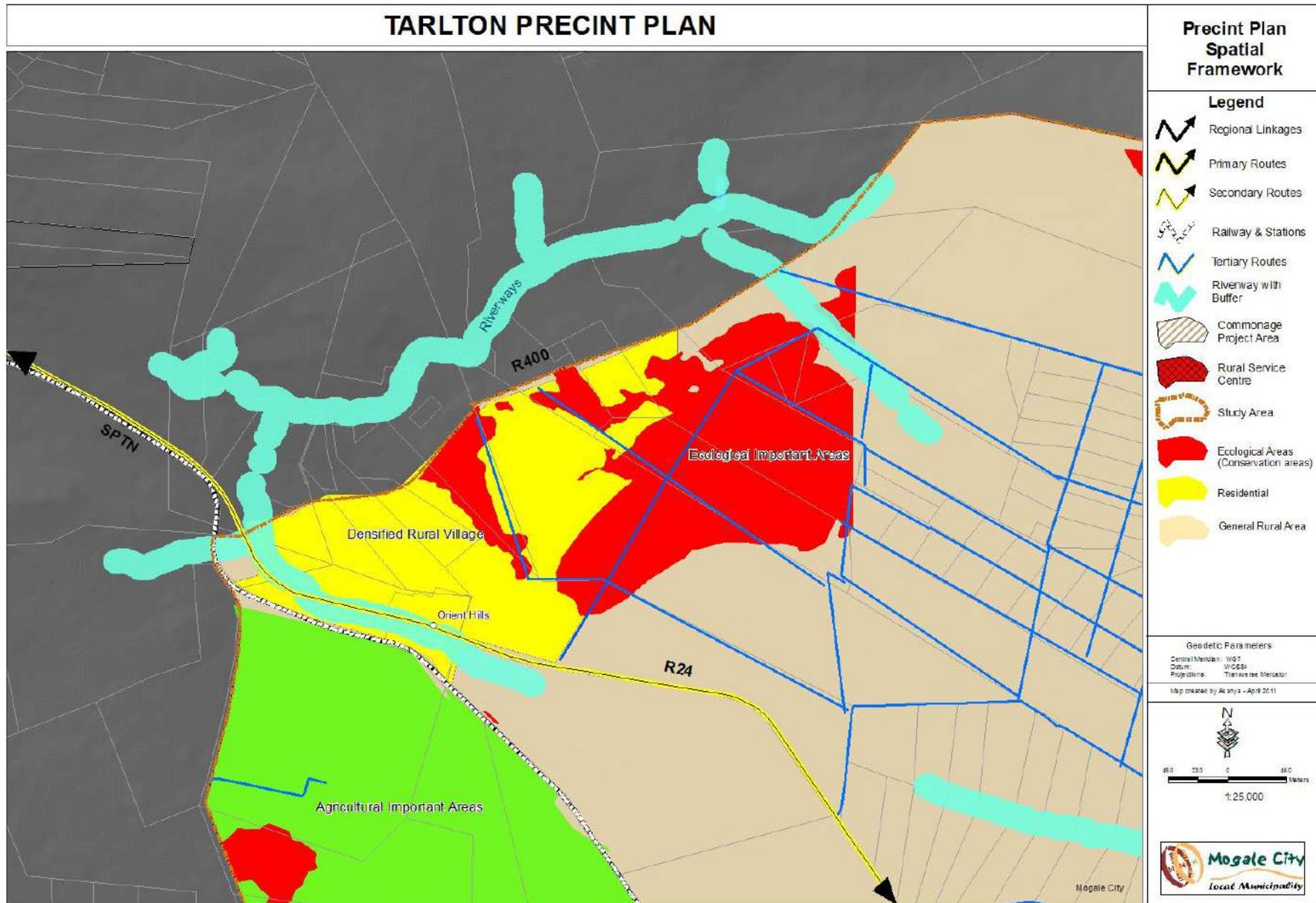


Figure 20: Detailed Core area (option2)

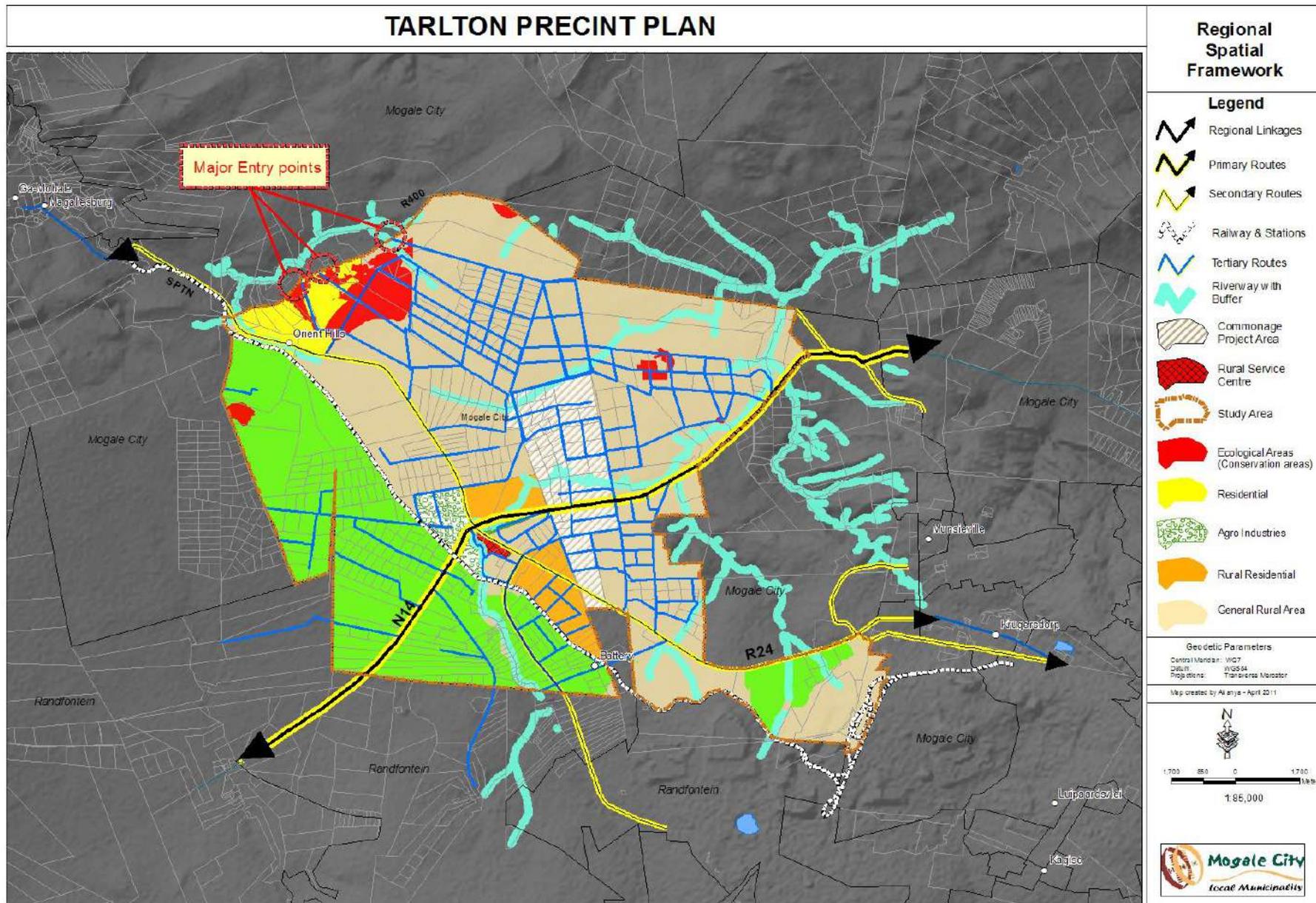


Figure 21: Regional Framework (Option2)

8. DEVELOPMENT PRINCIPLES AND STATEMENTS

8.1 Rural Residential (Small holding areas)



Figure 22: Development Controls: Rural Residential

The areas to the eastern part of Tarlton could be referred to as rural residential. Rural residential development refers to land in a rural setting, used and developed for dwellings that are not primarily associated with agriculture. Some agriculture may take place on the land. In order to retain the rural character of the area, the subdivisions should be limited to **2ha** per site. Rural residential by their nature are neighborhoods, and development principles also apply to these rural residential neighborhoods.

These principles include:

- Subdivision layouts that allow easy movement through and between neighbourhoods.

- A strong sense of place emphasising existing cultural heritage values, attractive built form and landscape character.
- Environmentally friendly development that includes energy efficient lots, water conservation, storm water management, waste management and management of wildfire hazard.
- Protection and enhancement of native habitat.

The rural residential areas should be discouraged in the cultivated areas on the western and southern side of the Tarlton study area. The location of the rural residential areas to the east should formulate a wedge between the highly urban area of Krugersdorp to the east and the rural areas of Tarlton to the west.

These areas are under pressure from development and some transitional activities e.g. engineering works, nurseries, etc. do occur. Some surfaced roads are provided but roads are predominantly gravel. Storm water management is critical. The table below depicts the development management issues to be addressed:

Management Elements	Issues and descriptions	Service/Maintenance Elements
Infrastructure	<ul style="list-style-type: none"> • Ensure adequate infrastructure capacities and bulk availability • Monitor new developments and infrastructure needs 	<ul style="list-style-type: none"> • Bulk capacities • Reticulation capacities • Condition of the existing infrastructure
Waste Management	<ul style="list-style-type: none"> • Waste bins need to be provided throughout the area • Litter is to a large degree dealt with on site 	<ul style="list-style-type: none"> • 240 liter wheeled bins and 85 liter bins • Cleansing • Collection of waste and illegal dumping • Frequent routine collection
Transportation and mobility	<ul style="list-style-type: none"> • Traffic and mobility management is to a large degree managed in public street reserves. This includes the management of mobility and accessibility • Public transport facilities should be provided and managed by the Mogale City LM • Ensure a pedestrian friendly environment • Regular maintenance and repairs of traffic signals and signs as well as road markings 	<ul style="list-style-type: none"> • Storm water management is critical as these areas are within high dolomite areas • Road Signs, Names and Markings where relevant • Traffic signals • Shoulders and Gutters • Level 1 maintenance • Ripping and reshaping • Dust control

Management Elements	Issues and descriptions	Service/Maintenance Elements
Lighting	<ul style="list-style-type: none"> Lighting ought to be provided at strategic points e.g. on sidewalks and at public transport facilities by Mogale City LM 	<ul style="list-style-type: none"> Streets lights
Public space	<ul style="list-style-type: none"> There are normally no formal public open spaces 	<ul style="list-style-type: none"> Grass cutting
Community facilities	<ul style="list-style-type: none"> Very few social amenities are part of the area. Thresholds need to be adhered to in providing these facilities 	<ul style="list-style-type: none"> Public services building maintenance Ensure viable operational levels Ensure safe and inviting environments
Safety	<ul style="list-style-type: none"> Although private property owners provide safety services, Mogale City LM also has a role to play together with the South African Police Services in terms of visible policing 	<ul style="list-style-type: none"> Ensure adequate and visible policing Promote community policing through Community Policing Forums
Development	<ul style="list-style-type: none"> Contraventions of the scheme and by-law interventions occur Redevelopment is normally in terms of private and public initiative Policies need to address the way in which development occur through detail design guidelines Manage outdoor advertising to prevent visual pollution along the R24 and N14 	<ul style="list-style-type: none"> Enforce policies and by-laws

Table: 7: Urban Management Issues_ Rural Residential

8.2 Undeveloped and vacant land

There are large tracks of undeveloped land in Tarlton. The management of these areas should focus is on prevention of land invasion, litter, illegal activities and safety and security.



Management Elements	Issues and descriptions	Service/Maintenance Elements
Infrastructure	<ul style="list-style-type: none"> • Ensure adequate infrastructure capacities and bulk availability • Monitor new developments and infrastructure needs • Existing infrastructure might reach a stage where replacement is needed 	<ul style="list-style-type: none"> • Bulk capacities • Reticulation capacities • Condition of the infrastructure
Waste Management	<ul style="list-style-type: none"> • A partnership approach is needed to deal with litter and waste management 	<ul style="list-style-type: none"> • Frequent routine collection at hot spot areas
Safety	<ul style="list-style-type: none"> • Although private property owners provide safety services, the Mogale City also has a role to play together with the South African Police Services in terms of visible policing 	<ul style="list-style-type: none"> • Ensure adequate and visible policing • Promote community policing • Undeveloped areas in close proximity to community should not be overgrown and unsafe
Development	<ul style="list-style-type: none"> • Contraventions of the scheme and by-law interventions occur • Manage outdoor advertising to prevent visual pollution 	<ul style="list-style-type: none"> • Enforce policies and by-laws

Table: 8: Urban Management Issues_ Vacant and Undeveloped land

8.3 Informal Settlements

Although the proliferation of informal settlements is discouraged in the Tarlton area, the existing informal settlements need to be provided with basic services for humanitarian purposes. The table below depicts the management elements needed to achieve this.



Management Elements	Service Delivery Issues and Descriptions	Required Actions
Infrastructure	<ul style="list-style-type: none"> • Ensure basic infrastructure to agreed level (RDP standards) • 	<ul style="list-style-type: none"> • Condition of the existing infrastructure
Waste Management	<ul style="list-style-type: none"> • Waste bins need to be provided at strategic areas where collection would be easy- preferably lockable to prevent scavenging • Litter is to a large degree dealt with on communal site • Vehicular access is generally a problem • Collection on Roads, alleys, verges vacant land, kerb inlets 	<ul style="list-style-type: none"> • Provide skips • Cleansing • Collection of waste and illegal dumping • Frequent routine collection
Transportation and mobility	<ul style="list-style-type: none"> • Regular maintenance of main routes 	<ul style="list-style-type: none"> • Storm water management • Grading of Roads
Lighting	<ul style="list-style-type: none"> • Flood Lighting ought to be provided • Illegal connection 	<ul style="list-style-type: none"> • Produce at strategic points
Public space	<ul style="list-style-type: none"> • There are normally no formal public open spaces in informal settlements 	<ul style="list-style-type: none"> • Grass cutting at strategic points
Community facilities	<ul style="list-style-type: none"> • Very few social amenities are part of the area and are normally also temporary in nature 	<ul style="list-style-type: none"> • Provide mobile facilities • Ensure viable operational levels • Ensure safe and inviting environments
Safety	<ul style="list-style-type: none"> • Crime Hot spots identified 	<ul style="list-style-type: none"> • Ensure adequate and visible policing • Promote community policing
Development	<ul style="list-style-type: none"> • Contraventions of the scheme and by-law interventions occur to a large degree 	<ul style="list-style-type: none"> • Enforce policies and by-laws

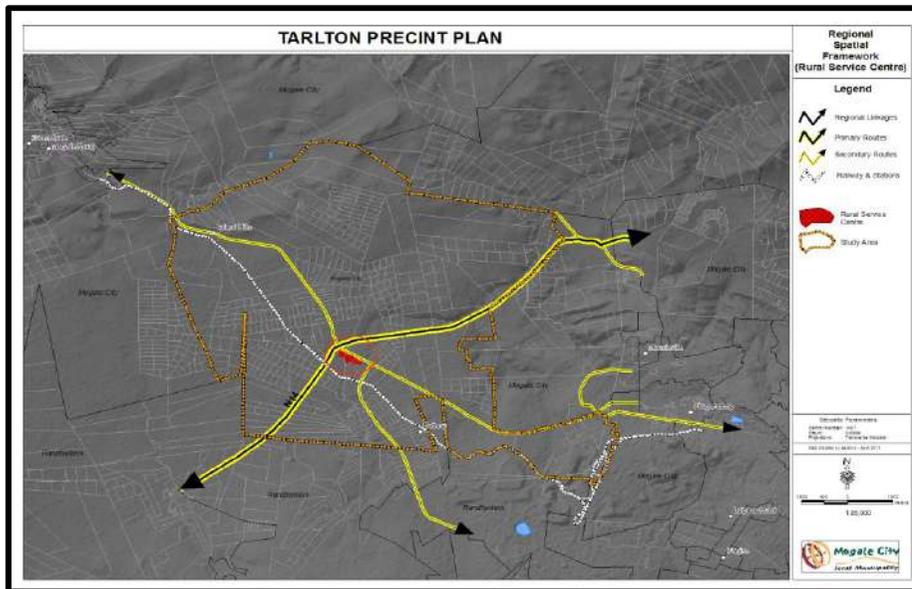
Management Elements	Service Delivery Issues and Descriptions	Required Actions
	<ul style="list-style-type: none"> • Policies need to address the way in which development occur through detail design guidelines • Manage outdoor advertising to prevent visual pollution 	<ul style="list-style-type: none"> • Capacitate communities on bylaws

Table: 9: Urban Management issues_ Informal settlements

8.4 Business areas

In support of the community of Tarltan, the Agricultural activities around the area and consistent with the rural development strategies, a core service centre area has been demarcated along the R24/ N14 intersection toward the south west, toward Krugersdorp and to the south of R24.

The upkeep and management of these areas is typically the responsibility of the private owner. In these areas there are clear distinctions between areas of municipal and private responsibilities.



Name	Business -Commercial (service centre)		
Maximum Storeys	2- 3 storeys		
Coverage	80% may be increased with the consent of the Mogale City LM		
Building Lines	16m along the N14/ R24 and the Provincial Roads; 5m along the class 3 and 2m along class 4 and 5		
Mix of Uses:	Predominantly industrial and commercial and some retail		
	Housing	Public	Employment
	0-5%	5-10%	Up to 80%

Figure 23: Development Control (business areas)

Management Elements	Service Delivery Issues and descriptions	Required actions
Infrastructure	<ul style="list-style-type: none"> • Ensure adequate infrastructure capacities and bulk availability • Monitor new developments and infrastructure needs 	<ul style="list-style-type: none"> • Bulk capacities • Reticulation capacities • Condition of the infrastructure
Waste Management	<ul style="list-style-type: none"> • Waste management and litter is to a large degree dealt with on site • Litter and waste management along provincial Road servitudes is the responsibility of relevant provincial department • There might be an opportunity for recycling on site 	<ul style="list-style-type: none"> • 240 liter wheeled bin and 85 liter bins • Collection of waste and illegal dumping • Frequent routine collection
Transportation and mobility	<ul style="list-style-type: none"> • Relevant provincial department plays an important role to ensure traffic movement along provincial Roads • Traffic management is to a large degree managed on site especially with large parking areas • Public transport facilities should be provided and managed between provincial departments, Mogale City and private property owners 	<ul style="list-style-type: none"> • Sidewalks if there are major arterials abutting the development • Kerbing • Storm water management • Traffic signals • Medians • Shoulders and Gutters
Lighting	<ul style="list-style-type: none"> • Dealt with predominantly on site • Lighting ought to be provided on public Roads and at public transport facilities by relevant City or provincial department 	<ul style="list-style-type: none"> • Streetlights on major arterial Roads
Public space	<ul style="list-style-type: none"> • Landscaped areas are provided as part of individual developments • A public open space network is to be protected and managed by City e.g. floodplains 	<ul style="list-style-type: none"> • Grass cutting along provincial Roads and external municipal Roads • Litter removal • Dead fish clean up • Alien tree cutting

Management Elements	Service Delivery Issues and descriptions	Required actions
		<ul style="list-style-type: none"> • Weeds and reeds control • Pollution control • Debris and illegal litter control • River trails grass cutting • Fire breaks creation • Community based clean up campaigns
Community facilities	<ul style="list-style-type: none"> • Social amenities are normally not provided 	<ul style="list-style-type: none"> • Public services building maintenance • Ensure viable operational levels • Ensure safe and inviting environments
Safety	<ul style="list-style-type: none"> • Safety is provided and managed on site by private property owners 	
Development	<ul style="list-style-type: none"> • Limited contraventions of the scheme but by-law interventions might occur • Redevelopment is normally in terms of private initiative • Policies addresses land uses allowed and design guidelines 	<ul style="list-style-type: none"> • Enforce policies and by-laws •

Table: 10: Urban management Issues: Business areas

8.5 Agro Industrial Area

Agro processing area is located at the intersection of the R24 and the N14. Like the business area, the agro industrial area can start with a handful of facilities which can mainly operate at domestic/cottage level.

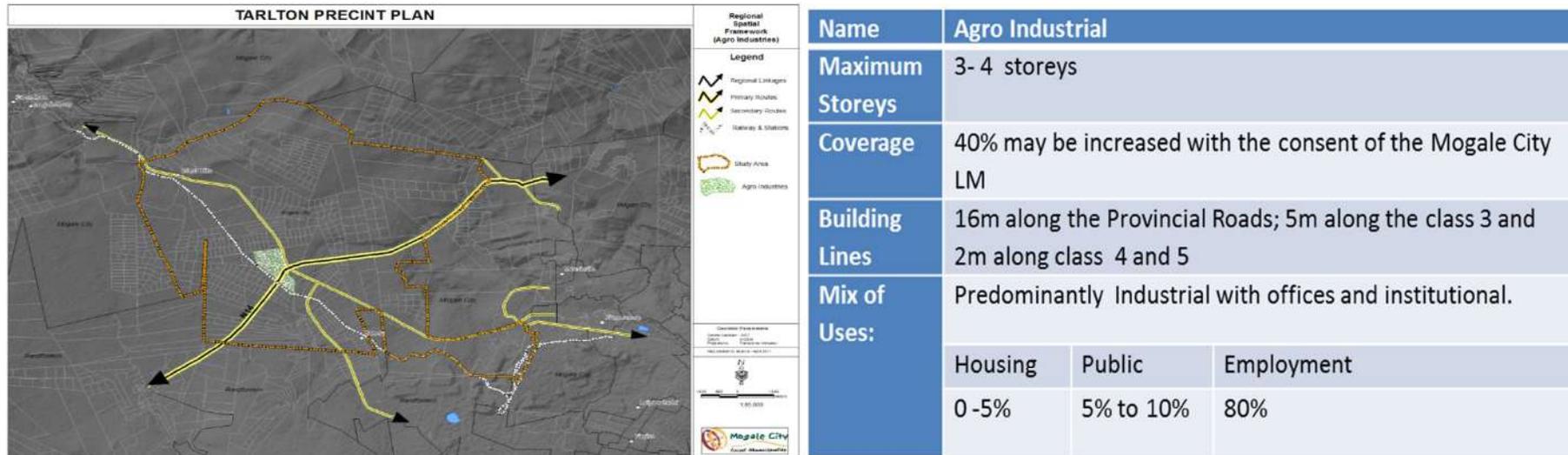


Figure 24: Development Control (Agro Industrial Areas)

Management Elements	Service Delivery Issues and descriptions	Required actions
Infrastructure	<ul style="list-style-type: none"> Ensure adequate infrastructure capacities and bulk availability especially Electricity 	<ul style="list-style-type: none"> Bulk capacities Reticulation capacities Condition of the infrastructure
Waste	<ul style="list-style-type: none"> Waste management and litter is to a large degree dealt with 	<ul style="list-style-type: none"> Collection of waste and

Management Elements	Service Delivery Issues and descriptions	Required actions
Management	on site • There might be an opportunity for recycling on site	illegal dumping • Frequent routine collection
Transportation and mobility	• Relevant provincial department plays an important role to ensure traffic movement along provincial Roads- the railway line is an added advantage • Traffic management is to a large degree managed at a regional level- linkages with the Rustenburg Corridor are important. • Public transport facilities should be provided and managed between provincial departments, Mogale City and private property owners	• Sidewalks if there are major arterials abutting the development • Kerbing • Storm water management • Traffic signals • Medians • Shoulders and Gutters
Lighting	• Dealt with predominantly on site • Lighting ought to be provided on public Roads and at public transport facilities by relevant City or provincial department	• Streetlights on major arterial Roads
Public space	• Landscaped areas are provided as part of individual developments • A public open space network is to be protected and managed by City e.g. floodplains	• Grass cutting along provincial Roads and external municipal Roads • Litter removal • Dead fish clean up • Alien tree cutting • Weeds and reeds control • Management Pollution control • Debris and illegal litter control • River trails grass cutting

Management Elements	Service Delivery Issues and descriptions	Required actions
		<ul style="list-style-type: none"> • Fire breaks creation • Community based clean up campaigns
Safety	<ul style="list-style-type: none"> • Safety is provided and managed on site by private property owners 	
Development	<ul style="list-style-type: none"> • Limited contraventions of the scheme but by-law interventions might occur • Redevelopment is normally in terms of private initiative • Policies addresses land uses allowed and design guidelines 	<ul style="list-style-type: none"> • Enforce policies and by-laws

Table: 11: Urban Management issues_ Agro Industrial areas

8.6 Conservation areas and Water Courses

The NWA has been acknowledged as one of the most far-reaching and pro-active water acts in the world (Palmer et al., 2000). It is based upon the twin pillars of sustainability and equity. This is in line with Agenda 21 and South Africa’s Constitution, and identifies water for basic human needs, and for the environment, as a right of law.

The South African water Act of 1998, provides for the balances between the protection of aquatic ecosystem and development to ensure that water resources are afforded a level of protection that will support a sustainable level of development for the future.

Tarlton is traversed by non-perennial river systems and a series of underground water resources. The Informal settlements in the area tend to develop along these river systems creating an environment prone for flooding during rainy seasons. Many times in the past in South Africa, unexpected floods have struck along settlements built around river systems. These floods generally occur with associated disease outbreaks such as cholera.

It is a challenge for decision-makers due to numerous conflicting land and water interests in Tarlton and surrounds, namely:

- (i) protecting the capital against flooding,
- (ii) small-scale agriculture,
- (iii) environment protection.
- (iv) Protection of underground water resources

The Informal settlements located around the N14 and the R24 present a challenge in that there is a desired transformation of agricultural land to urban land use such as housing and ancillary uses. These developments are placing pressure on storm water infrastructure which in turn has a profound influence on hydrology and flood risk. Hence the application of the buffers around these rivers to restrict the impact is very critical. The alteration of the landscape in the

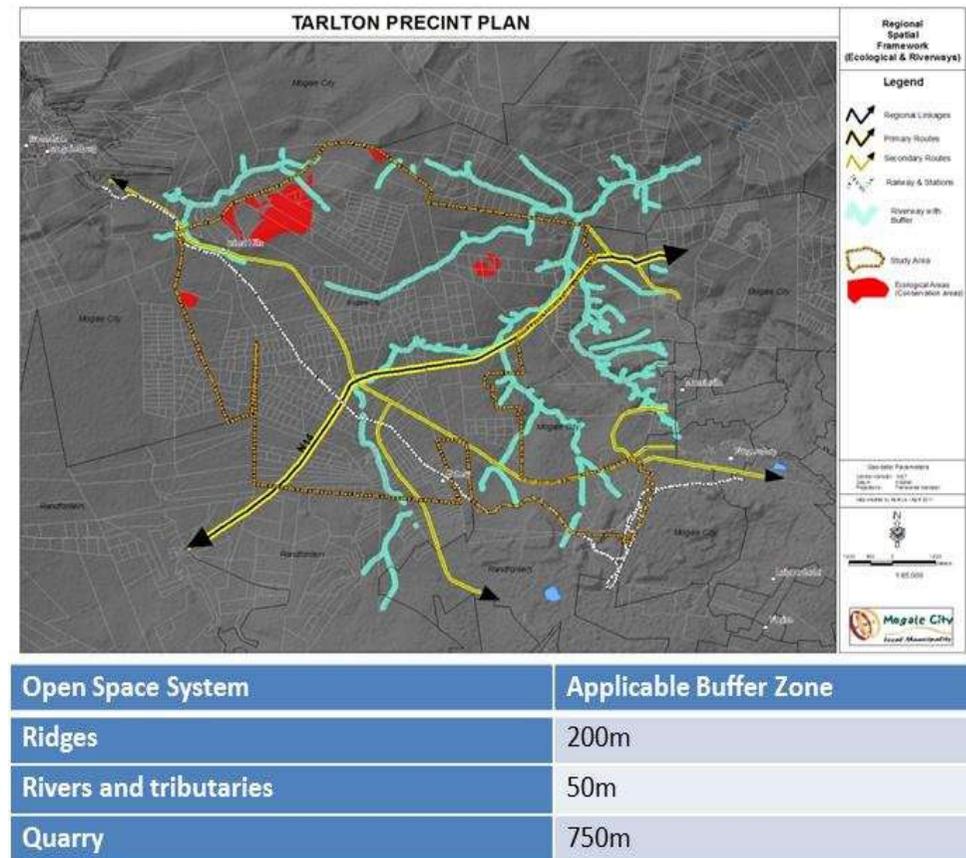


Figure 25: Development Control (Conservation area and Water Courses)

area, due to urban like land uses, will also affect the catchment areas of water resources and the pollution risk of these water resources will be higher.

Ridges: Although there are very few ridges in the study area, there are eminent steeper which are susceptible to erosion. Development o these ridges should be discouraged. Activities such as agriculture should be limited. Applicable buffers should be applied to manage development around these ridges. Development on ridges should be restricted.

Wetland: Very few wetlands occur in the Tarlton study area. Wetland in the nature houses high sensitive habits and their role in filtering water resources makes them a highly sensitive environments. Applicable buffers around the wetlands should be applied to prevent the impact of development.

The management of these areas should be done in terms of the following table:

Management Elements	Service/Maintenance Elements
River systems & Tributaries	Hyacinth removal
	Litter removal and debris cleaning
	Dead fish clean up
	Capture and relocation of aquatic life
	Alien trees cutting
	Weeds and reeds control
	Pollution control
	River trails grass cutting
	Fire breaks creation

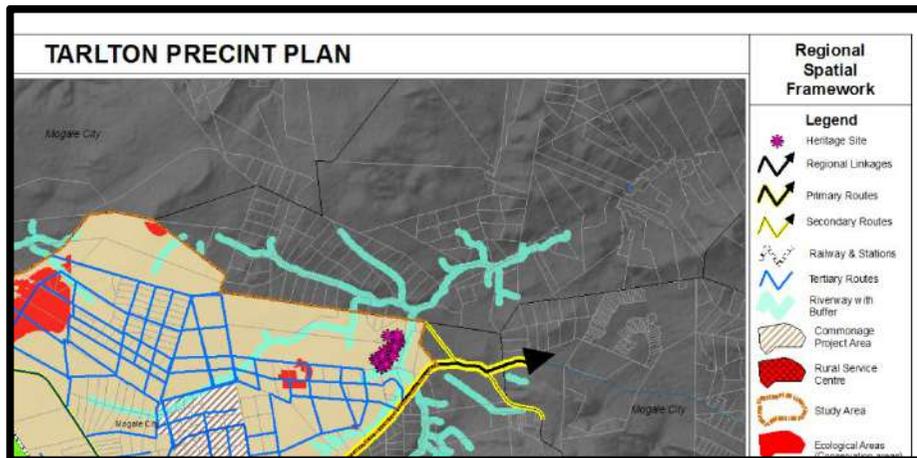
Management Elements	Service/Maintenance Elements
	Community based “Clean-Up Campaigns”
Nature Reserves	Rehabilitation of degraded areas
	Stabilization of walking trails
	Erosion control
	Invader plant removal and control
	Perimeter fence patrol
	Trail cutting
	Fire-breaks creation
Green Corridors	Litter removal;
	Firebreaks;
	Alien plant Control
	Grass cutting (Trails);
	Patrols

Table: 12: Urban Management issues _ Conservation and water courses

It is proposed that any development adjacent to the open space system should be requirement to observe a buffer zone for developments in close proximity to these open space system. The 1:100 year and the 1:50 year flood-line should be respected at all times.

8.7 General Rural Management

The General agricultural areas are located on the north western side of the N14, north of the R24. Like the agricultural areas in Tarlton, the General Rural areas, has a central role in ecosystem management initiatives. The interrelationship with the Cradle of Human Kind gives it a role of a buffer zone.



Name	General Rural		
Maximum Storeys	Up to 2 storeys		
Mix of Uses:	Residential, home offices, conference facilities, hospitality uses		
	Employment	Public	Housing
	50% to 70%	0% to 5%	5% to 10%

Figure 26: Development Control (General Rural area)

Management Elements	Issues and descriptions	Service/Maintenance Elements
Infrastructure	<ul style="list-style-type: none"> • Ensure adequate infrastructure capacities and bulk availability • Monitor new developments and infrastructure needs 	<ul style="list-style-type: none"> • Bulk capacities • Reticulation capacities • Condition of the existing infrastructure
Waste Management	<ul style="list-style-type: none"> • Waste bins need to be provided throughout the area • Litter is to a large degree dealt with on site 	<ul style="list-style-type: none"> • 240 liter wheeled bins and 85 liter bins • Cleansing • Collection of waste and illegal dumping • Frequent routine collection
Transportation and mobility	<ul style="list-style-type: none"> • Traffic and mobility management is to a large degree managed in public street reserves. This includes the management of mobility and accessibility • Public transport facilities should be provided and managed by the Mogale City LM • Ensure a pedestrian friendly environment • Regular maintenance and repairs of traffic signals and signs as well as road markings 	<ul style="list-style-type: none"> • Storm water management is critical as these areas are within high dolomite areas • Road Signs, Names and Markings where relevant • Traffic signals • Shoulders and Gutters • Level 1 maintenance • Ripping and reshaping • Dust control
Lighting	<ul style="list-style-type: none"> • Lighting ought to be provided at strategic points e.g. on sidewalks and at public transport facilities by Mogale City LM 	<ul style="list-style-type: none"> • Streets lights
Public space	<ul style="list-style-type: none"> • There are normally no formal public open spaces 	<ul style="list-style-type: none"> • Grass cutting

Management Elements	Issues and descriptions	Service/Maintenance Elements
Community facilities	<ul style="list-style-type: none"> • Very few social amenities are part of the area. Thresholds need to be adhered to in providing these facilities 	<ul style="list-style-type: none"> • Public services building maintenance • Ensure viable operational levels • Ensure safe and inviting environments
Safety	<ul style="list-style-type: none"> • Although private property owners provide safety services, Mogale City LM also has a role to play together with the South African Police Services in terms of visible policing 	<ul style="list-style-type: none"> • Ensure adequate and visible policing • Promote community policing through Community Policing Forums
Development	<ul style="list-style-type: none"> • Contraventions of the scheme and by-law interventions occur • Redevelopment is normally in terms of private and public initiative • Policies need to address the way in which development occur through detail design guidelines • Manage outdoor advertising to prevent visual pollution along the R24 and N14 	<ul style="list-style-type: none"> • Enforce policies and by-laws

Table: 13: General Rural Management

8.8 Agricultural Areas

Agriculture plays an important role in achieving the above priorities. Beneficiation of the potential agricultural development in Tarlton will also depend and rely on the value chain created to take advantage of this economic sector.

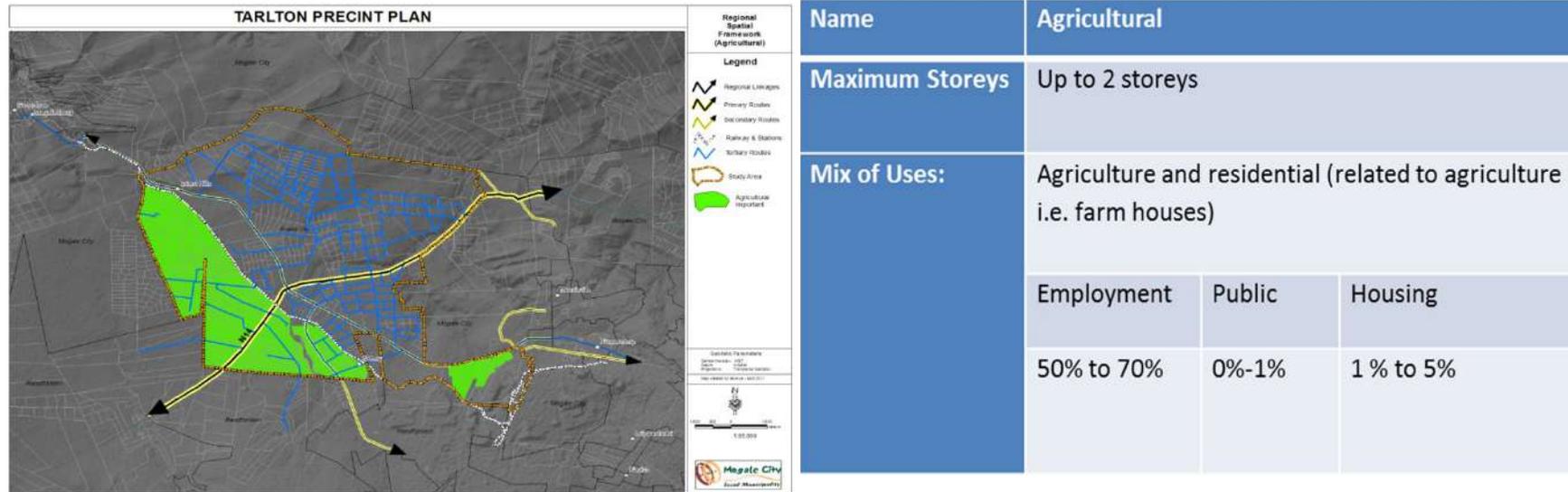


Figure 27: Development Control (Agricultural Areas)

Tarlton is one of agricultural potential areas in Gauteng with a well-established farmland preservation program i.e. Gauteng Agricultural Hubs. In addition, The *Agricultural Protection Programme* should focus at provides the focus and funding necessary to protect large, contiguous tracts of land and other strategic areas from sprawl development and to enhance natural resource, agricultural and environmental protection through cooperative efforts among state and local governments and land trusts. The Tarlton Precinct Plan has identified these areas where focused efforts to preserve large, contiguous blocks of parcels and strategic areas that contain multiple resources of value such as prime farmland. Through this program, the state partners with local government and land owners (public and private nonprofit) to purchase land from willing landowners.

The agricultural protection programme’s aim are:

- to establish greenbelts of farms around the core rural service centre of Tarlton and other rural communities in order to preserve their cultural heritage and sense of place,
- to preserve critical habitat for native plant and other species,
- to support natural resource economies such as farming, tourism and outdoor recreation, and
- to protect the wetlands, and greenways to buffer the river systems and its tributaries from pollution run-off.

Tarlton study area is located with the agricultural hub of the Gauteng Province with significant agricultural activity. Investment in agricultural development is key to stimulate the economy as a whole. As found by Bezemer and Headly (2008), “all cross-country studies which attempt to gauge the sectoral source of aggregate growth in least developed countries find that agricultural gains have the strongest linkages of all sectors to growth in other sectors and to aggregate growth.” Although the latter may not be relevant for a country of South Africa’s development status. The strong linkages and multiplier effect of the sector remains significant. Primary agricultural activity, as well as related secondary activities such as agri-processing should be considered as one of the key agricultural drivers in the area.

The agricultural areas in Tarlton have a central role in ecosystem management initiatives because of its extensive use of land and water, and its important habitat amenities. Regional initiatives to manage aquatic ecosystems, with potentially wide-reaching land use implications.

The major thread to the agricultural areas is indeed the change in land use that is influenced by several economic, demographic, technological, and policy dynamics. According to land rent theory, allocation among competing uses on a fixed land base is determined by the associated land value, which varies according to land quality and location. Land is allocated to the use with the highest return. As relative value change over time, land use would shift between uses. New Technology has also affected land use and regional land-use shifts, especially in cropland. The rapid adoption of new technology, improved crop varieties, improved insect and disease control, and other changes have boosted agricultural productivity so that more production can be obtained from the same cropland base. Agricultural productivity has more than doubled over the past 50 years.

However, the value of the agricultural land in Tarlton is different. It should not be seen as the value for producing agricultural crops only, but also the value of creating a rural environment and open space system to the region.

Other reasons to preserve farmland include:

- Concerns about the strength of local communities
- Concerns about local agricultural economies
- Concerns about the provision of open space and other rural amenities.

As a result, farmland protection legislation needs to be strictly observed and managed. Measures to be managed include:

- Agricultural zoning i.e. precinct plan etc.
- Preferential treatment of farmland for tax purposes e.g. rebates etc.
- Transfer of development rights (purchase of agricultural land by government for agricultural purposes)
- Purchase of development rights or easements e.g. Commonages etc.

8.9 Transport and Movement

The movement lines in Tarlton are not well defined. There are a number of Right of way servitudes. The growth plan for Tarlton is that the major movement lines are around the N14 and the R24 located within the core of Tarlton. The secondary movement lines will follow the existing informal road network within the area. **Figure 28** shows the proposed road network that gives and form a 'Grid' like pattern road network.

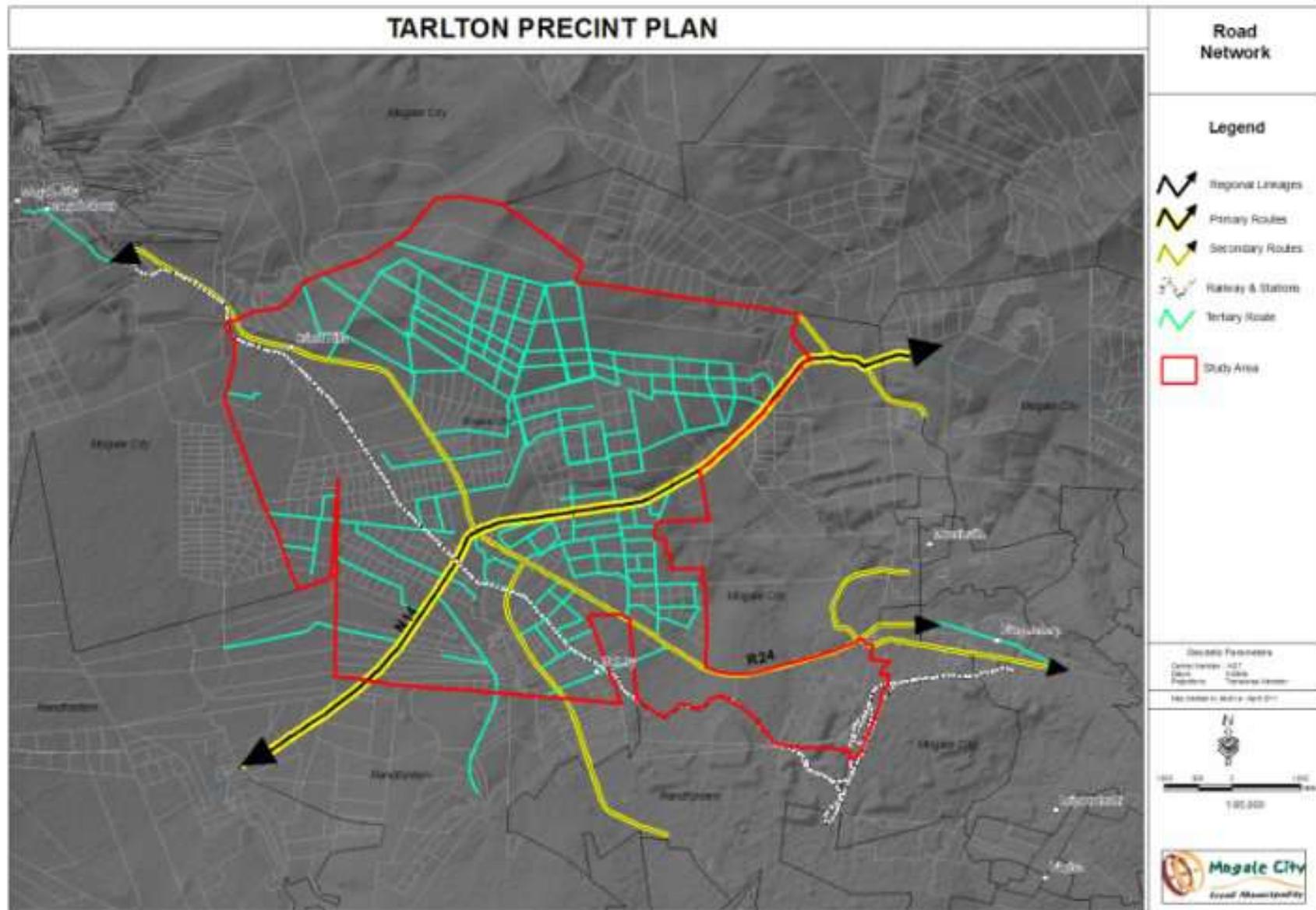


Figure 28: Proposed Road Network

The table below depicts the typical road classification related to the R24 and the N14.

Road Hierarchy	Streets in Precinct	Description of Road Class
Class 1: Freeway	N14	Primary function is mobility. Designed for safer high-speed operation of motor vehicles through the elimination of at-grade intersections . This is accomplished by preventing access to and from adjacent properties and eliminating all cross traffic through the use of grade separations and interchanges Such highways are usually divided with at least two lanes in each direction.
Class 2: Arterial	R24, R400,	Primary arterial routes providing vehicular mobility with limited off-street access. These roads are generally the ring roads around districts providing external circulation but can also traverse the district itself.
Class 3: Distributor	Still to be determined	Minor arterial road / collector road serving as internal vehicular circulation road within the study area. These roads have a greater balance between mobility and access. The roads serve the internal circulation of the districts as well as the relatively few trips wishing to travel through the precinct, as opposed to travelling around the district on the Class 3 Arterial Routes.
Class 4: Collector	Still to be determined	Residential collector / access roads serving properties within the district. These roads are mainly utilised as access routes with little mobility. pedestrian movement is key in these roads
Class 5: Local Streets	All other lower order roads in the area	These roads have direct accesses to all property and link developed clusters, such as a residential area, to the Class 4, collector roads.

Table: 14: Road Classification in Tarlton

8.10 Urban Residential areas (Rural setup)

It could be argued that residential development is in direct contrast to the notion of protecting Tarltan as a rural and agricultural hub, however, the development of rural villages is a necessary land use within a rural setup. Labour requirements and the service of such labour for agriculture fields are also necessary. Saving farmland and open space is an investment in rural communities, rural economies and our important natural resources.

How we harmonise these two seemingly conflicting land uses, is critically important. The use of the development boundary and the prerequisites for urban like development such as the availability of infrastructure should be enforced. The dwindling natural resources should be among the most important issues to address by the Mogale City in the short to long term. The competition for land, especially productive agricultural land, will only intensify as Tarltan's population grows. The widely dispersed communities like it is now in Tarltan will exacerbate the situation. Mogale City will have to curtail the proliferation of informal settlements in the Tarltan area and in the immediate vicinity. To assure a prosperous future, we must save our farmland and protect our green infrastructure.

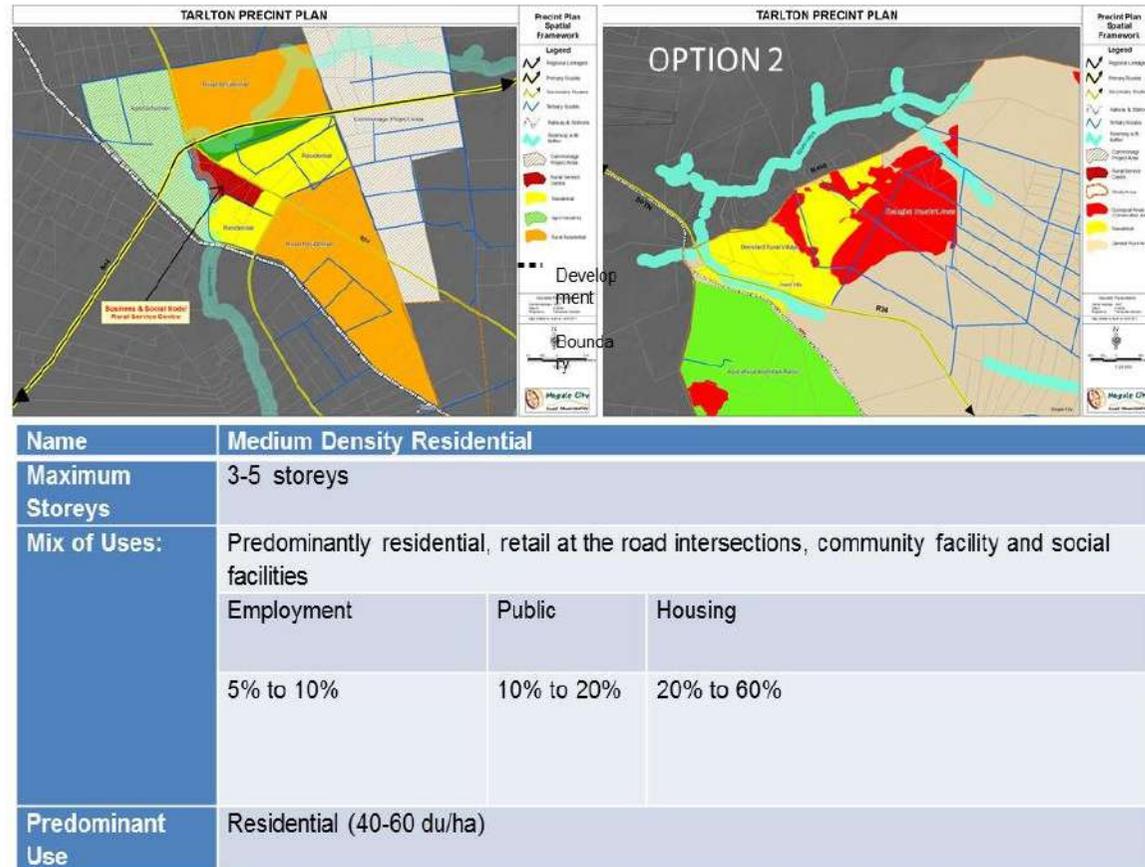


Figure 29: Development Control (Urban Residential Areas)

9. IMPLEMENTATION

9.1 Land Use

This section deals with yield of different land uses to support sustainable neighborhood development in Tarlton. It is primarily based on the additional residential development proposed the required land uses.

Amenities: Land use conflicts between agricultural activities and the amenity expectations of rural residential dwellers should be minimised. Significant impacts to primary production or to the environmental or cultural values of a rural area should be avoided. Finite and valuable natural resources present on the land should not be lost. The local environment and landscape should have the capacity to absorb this more intensive use and development without significant or irreversible harm to its values or to the new use and development. Demand for costly or inefficient community services or infrastructure should **not** be generated. Although there are already amenities in Tarlton, the location of future amenities should be along the movement lines of the R24 and N14 for easy access.

The table below depicts the amenities needed to sustain the community of Tarlton. The calculations are based on the new development. The cost implications are based on the current pricing schedule (2010/2011) determined from tenders around the country. These figures do not take into consideration the escalations and the inflation rate. Details costing should be done at project implementation level.

Figure 30 shows the land yield per land use. From the table below it is evident that

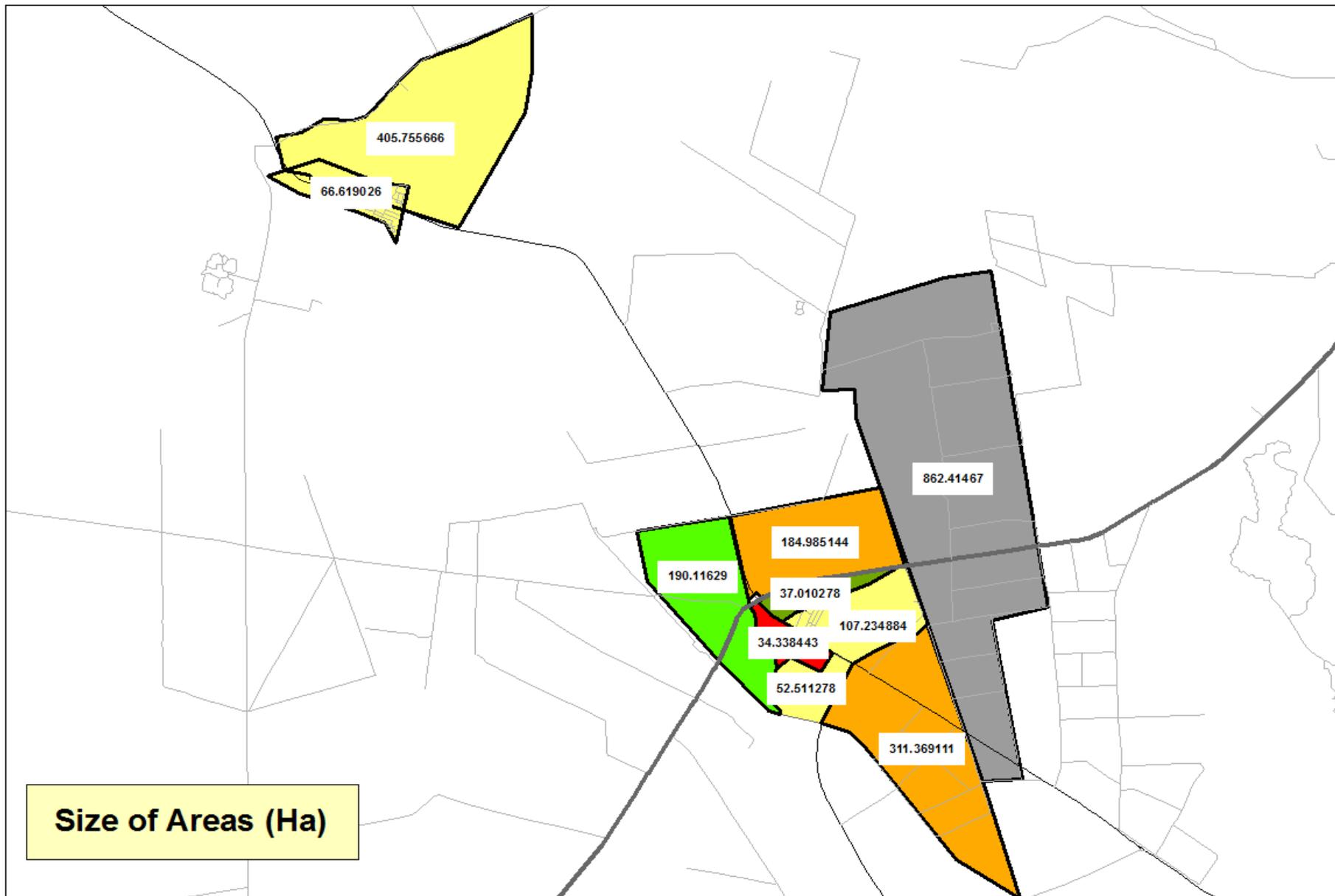


Figure 30: Land Use Yield

OPTION 1							
Zone	Land Use	Number needed	Density/Coverage/ minimum size	Yield (gross units)	Projected population (3 persons per unit)	Cost per facility	Total required
Residential	Total	159					
	<i>Housing @ 60%</i>	95.4	50- 70 du/ha	5724	17172		
	Primary School	4	1.4 ha			R 50 000 000	R 214 650 000
	Secondary School	1	4.6 ha			R 60 000 000	R 60 000 000
	Chreche	3	130 sqm			R 1 500 000	R 5 151 600
	Clinic	2	5000 sqm			R 5 000 000	R 10 000 000
	Hospital	0				R -	R -
	Places of worship	4	150 sqm			R 1 500 000	R 6 000 000
	Community halls	1	5000 sqm			R 12 000 000	R 12 000 000
	Library	1	130sqm			R 4 000 000	R 4 000 000
	Post office	1	500sqm			R 1 500 000	R 1 500 000
	Police station	1	1ha			R 34 000 000	R 23 353 920
	Emergency services	1	1.2 ha			R 7 000 000	R 7 000 000
	Cemetery	provide at regional level				R 21 000 000	R -
	Municipal Pay points	1	100 sqm			R -	R -
	Roads		31.8	20%			

Table: 15: Option 1_ Land use budget

OPTION 2							
Zone	Land Use	Number needed	Density/Coverage/ minimum size	Yield (gross units)	Projected population (3 persons per unit)	Cost per facility	Total required
Residential	Total	404					
	Housing @ 60%	242.4	50- 70 du/ha	14544	43632		
	Primary School	10	1.4 ha			R 50 000 000	R 500 000 000
	Secondary School	4	4.6 ha			R 60 000 000	R 240 000 000
	Chreche	8	130 sqm			R 1 500 000	R 12 000 000
	Clinic	5	5000 sqm			R 5 000 000	R 25 000 000
	Hospital	0				R -	R -
	Places of worship	12	150 sqm			R 1 500 000	R 18 000 000
	Community halls	4	5000 sqm			R 12 000 000	R 48 000 000
	Library	1	130sqm			R 4 000 000	R 4 000 000
	Post office	3	500sqm			R 1 500 000	R 4 500 000
	Police station	1	1ha			R 34 000 000	R 34 000 000
	Emergency services	1	1.2 ha			R 7 000 000	R 7 000 000
	Cemetery	provide at regional level				R 21 000 000	R -
	Municipal Paypoints	1	100 sqm			R -	R -
	Roads	80.8	20%				

Table: 16: Option 2 Land Use Budget

Note: The number of facilities could be reduced on the bases that the actual sizes are increased

9.2 Civil Infrastructure

Provision of social and physical infrastructure in rural areas is one of the government's priorities. The development of Tarlton with urban type of land uses necessitates the provision of urban like infrastructure and services normally expected for residential areas. If those services are not provided for in the outset, the expectations and future requirements of residents can lead to high costs of providing rudimentary services on temporary bases. A proposal for the Tarlton service centre development must be efficiently serviced by social and physical infrastructure at an acceptable and sustainable levels and standards.

The table below depicts the civil infrastructure needed to sustain the community of Tarlton. The calculations are based on the new development. The cost implications are based on the current pricing schedule (2010/2011) determined from tenders around the country. These figures do not take into consideration the escalations and the inflation rate. Details costing should be done at project implementation level.

9.3 The World Heritage Site

The Cradle of Human Kind World Heritage Site is located within the municipal boundaries of Mogale City Local Municipality. Located at close proximity to the major cities and towns such as Johannesburg, Pretoria, Krugersdorp and Rustenburg, makes it difficult to manage development in and around the site. In an effort to protect and manage the COH WHS, the COH WHS Management Authority (MA), Provincial Department of Agriculture and Rural Development (GDARD), West Rand District Municipality (WRDM), and Mogale City Local Municipality (MCLM) commissioned the development of an Environmental Management Framework (EMF), including a Strategic Environmental Management Plan (SEMP). The aim of this EMF and SEMP is to provide guidelines regarding development and certain types of land use and activities in the COH WHS.

One of the major development management tools used in the EMF is the delineation of a buffer zone around the COH WHS. *In an international expert meeting on World Heritage and Buffer Zones Davos, Switzerland 11 – 14 March 2008*, it was clear that more questions than answers were provided in the determination and criteria to be used to delineate buffer zones around WHS. However, it was conceded that:

- Buffer zones around World heritage sites have always been a difficult subject to agree upon by planning authorities and the community residing around these areas.
- The buffer zone should not be seen as an area on its own or even an area that is aligned to the world heritage site only, but should be seen as an area of **concern** and should be read as part of the urban/ rural texture as illustrated in **Figure 31** adapted from the UNESCO resolution *In an international expert meeting on World Heritage and Buffer Zones Davos, Switzerland 11 – 14 March 2008*.

The National Environmental Management: Protected Areas Act (Act No. 57 of 2003) makes provision for the relevant development authorities to make use of the Environmental Management Frameworks (EMF) for the determination of buffer zones around WHS and indeed other significant sites. Furthermore, it stipulates that the EMF should provision for the development of guidelines for the management of the areas within and around the buffer zones.

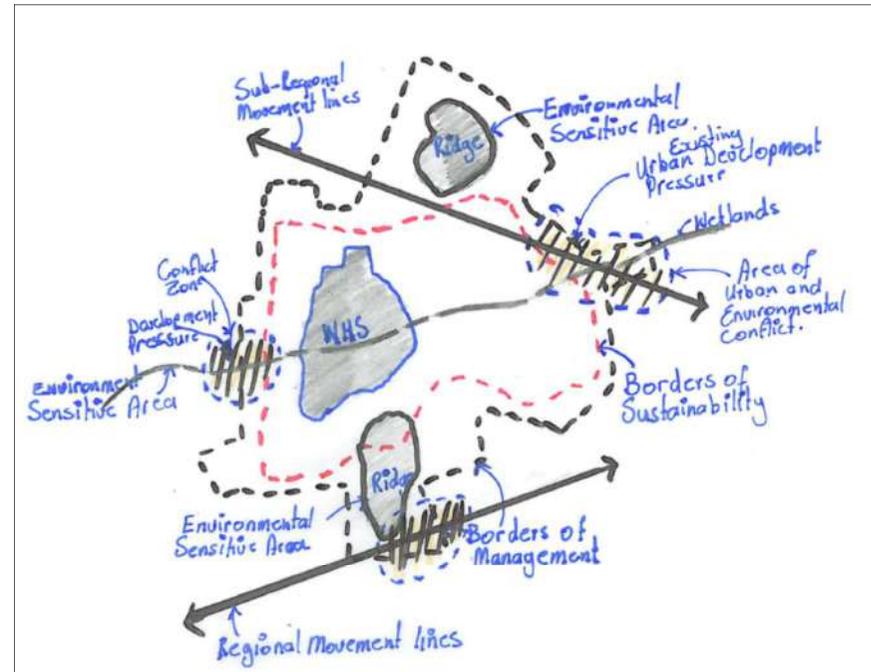


Figure 31: Concept for the Buffer zone around WHS (UNESCO)

One of the major challenges in the Mogale City in the delineation of the buffer zone around the COH WHS is the existing development fabric. The Tarlton area, just like other rural service centres around the COH WHS is characterized by rural and agricultural activities. Its close proximity to the major cities like Johannesburg, Pretoria, Rustenburg and Krugersdorp makes Tarlton attractive to urbanization. Since 2003 people settled around Tarlton, forming informal settlements.

9.4 Development boundary.

The *Development Boundary* is set to discourage urban sprawl. Tarleton has to have a designated growth boundary within which urban like development would take place. This policy does not entirely curtailed development outside the boundary, but it should be recognized as the separating mechanism between the rural and urban uses geographically. In Tarleton, the urban land used will cluster around the R24 and the N14. The experienced rapid population

increases in Tarleton are discouraged outside the designated growth areas.

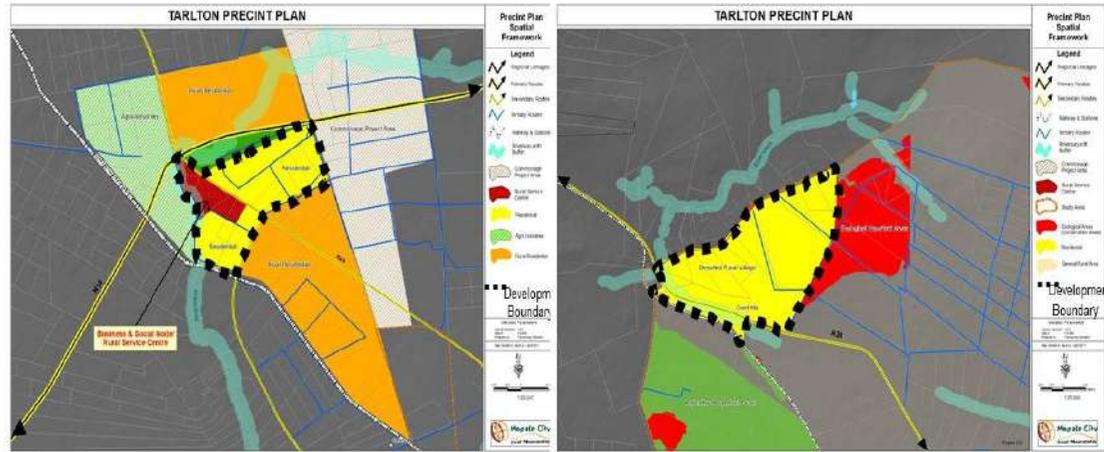


Figure 32: Urban Development Boundary

9.5 Agriculture Value Chains

The value chain concept is proposed as a more integrated approach towards agricultural development. By using this approach, a range of areas can be identified where the municipality and various other stakeholders can be involved. Two levels of value chain are relevant for this approach, i.e. the firm / producer value chain and the sector value chain. In the context of this report, the firm value chain describes the activities of the individual farmer or farming cooperative.

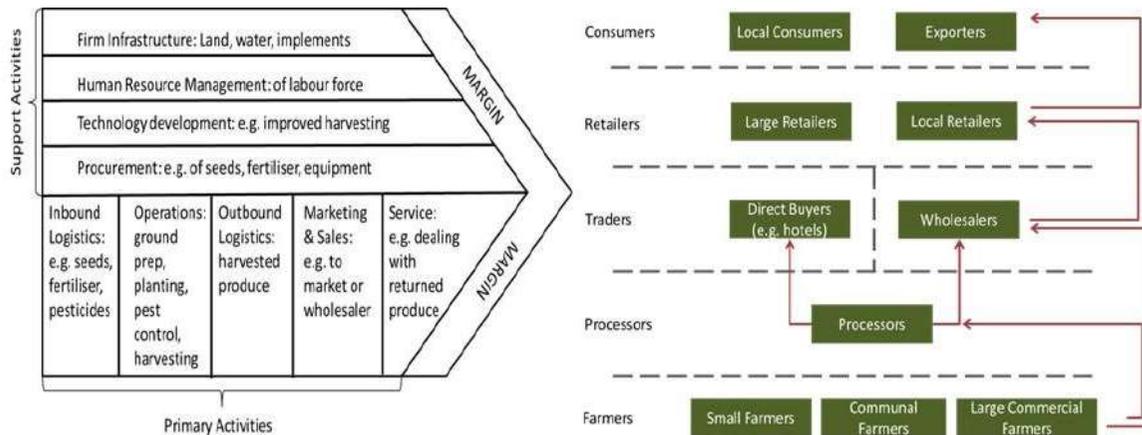


Figure 33: Agricultural Value Chains

Applying this generic principle to a farming business, would typically entail the activities illustrated sketch above.

The overall sector value chain could be described generically, but would differ for every specific product, e.g. fresh produce such as vegetables that would go, unprocessed, directly to the market vs. products such as bulbs that are packed and exported. The proposed interventions will be discussed according to the main components of each of these generic value chains.

Support to Farming Activities:

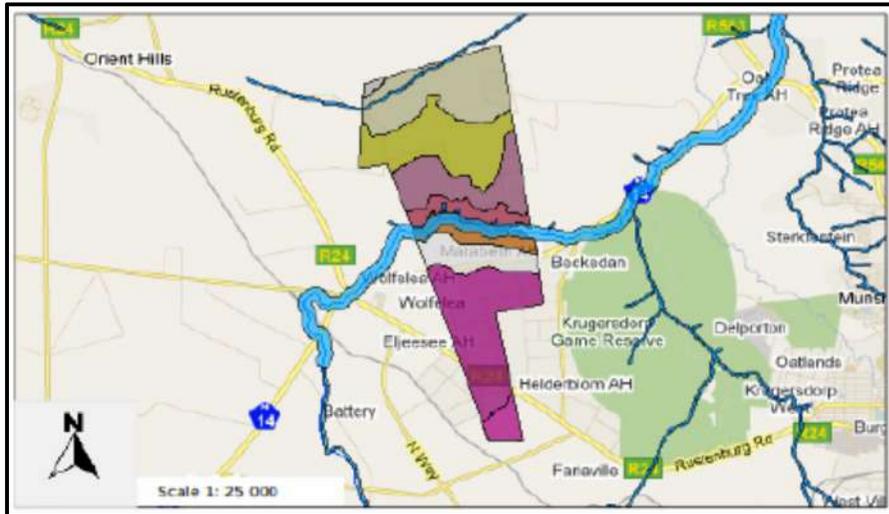
Value Chain Component	Description / Support Required
Land:	<p>Land is the main infrastructure need for farming. In addition to availability, the suitability of land for a specific product needs to be investigated. As shown in the general agricultural importance rating of land in Tarlton area, showing clear areas throughout the study area diminishing towards the north west of the study area.</p> <p>In terms of specific crop suitability, the land with the highest suitability for cabbage, spinach and maize are located in the southern portions of the study area.</p> <p>The Municipality has already identified and procured a 259ha portion of land for communal agriculture – the Vlakdrift Agricultural Commonage Project just to the north of the R24, across the N14. A detailed feasibility study and implementation plan for this initiative has been completed. Part of the property (Portion 16 which is on 10 ha) has been developed into Cemetery. The rest of the property remains fallow. The recommendations for the practices in Vlakdrift commonage is intensive agricultural production based on horticultural vegetables and poultry production. This can be complemented by grain cropping, tree plant nurseries, agricultural ware housing, produce storage and processing. In the long term, small scale dairy units could also be developed. It is proposed that horticultural crops in Vlakdrift farm include lettuce, carrots, green beans, green pepper and tomatoes as well as leaf vegetables mainly</p>

		spinach and cabbages which have a ready market locally and in Pretoria and Johannesburg.
Value Chain Component		Description / Support Required
Farm Infrastructure		<p>Water:</p> <p>Water availability is a key consideration in the establishment of agricultural activities, especially in the South African Context. For the Vlakdrift Agricultural Commonage Project, it has been found there is a need for the boreholes to be augmented to address the inadequate water provision for irrigation agriculture.</p> <p>In terms of establishing more productive agriculture in the area, the water aspect will have to be given the same priority as land provision, whether water is provided newly developed infrastructure or alternative measures such as rainwater harvesting.</p> <p>Equipment and other infrastructure:</p> <p>The following infrastructure will have to be developed over the next five years:</p> <ul style="list-style-type: none"> a) An irrigation system for 36 ha; b) Two (2) broiler production units with a capacity of at least 25,000 birds per unit; c) Small dairy unit for 100 cows Homestead Boundary fence; d) Three boreholes; e) One homestead; f) Boundary fence; and g) Farm cement dam.
Procurement		Both technology development and procurement are areas where a structured intervention in agriculture in the area could yield results. Organising both commonage farmers and smaller commercial farmers in the area to bargain collectively for special deals from e.g. suppliers of raw materials, feeds or fertilisers could result in cost savings.
Technology		The same applies to technology development, or obtaining improved technology input. In the case of

Development	technology development, specific support programmes offered by the state could also be accessed.
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Table: 17: Support to farming Activities

The Sketch depicts the location of the Vlakdrift commonage.



Understanding Product Value Chains

In addition to support to the farms / commonage as ‘firms’, it would be important to also map the specific product value chains, in order to identify the exact point of intervention / support. E.g. the maize value chain may require an intervention in terms of establishing cooperation for sales of product, while the weak link in the beef value chain may be transport to market.

It is therefore recommended that in addition to aspects such as land identification and water resource management, a better understanding be developed through studies of the key agricultural product value chains in the area to better focus support and interventions.

9.6 Economic

The future of the economy in Tarlton is dependent on many factors that drive the wider economy in South Africa and demands innovation, new skills and a supportive business environment. Indeed, structural convergence between rural and urban area of Krugersdorp, and in particular the emergence of settlements dominance of the area means at regional level it no longer makes sense to talk of a single, distinct rural economy.

The relationships between the Krugersdorp in Mogale City and the other regional centres like Johannesburg, Pretoria and Rustenburg, Tarlton and indeed other rural hinterlands are now recognised as a highly interdependent economic system. Mogale City municipal area can be regarded as one of the high-performing towns in Gauteng in terms of agriculture and tourism, both contribute to, and benefit from, the prosperity of these regional centres.

However, Tarlton has a sparse development of residential areas that are more remote from each other and characterised by low-growth and low-wage economies.

Economic ambitions

- increased provision of affordable housing within broader plans that help sustain the scale and vitality of villages and market towns
- provision of employment space that allows rural businesses to start up and grow
- effective delivery of skills and workforce development to rural communities
- maintaining Tarlton as a leader in agriculture and food sector, supported by leading research centres of excellence and knowledge exchange in fields such as bio-fuels, non-food crops and agricultural engineering
- improved connectivity and transport services between Tarlton and regional centres to increase connections to the knowledge base centres of excellence, hubs and markets
- timely provision and take-up of next-generation broadband services, to enable rural businesses to reach new customers and suppliers
- successful development, management and conservation of environmental assets to deliver tourism, biodiversity and healthy living objectives
- improved pathways to employment and access to high-quality services for those experiencing deprivation in rural.

Priority 1: Equipping people with the confidence, skills and choices for employment and entrepreneurship

Unemployment rate is high throughout Tarlton and for many people access to rewarding employment remains difficult. Basic skills, and enhanced progression routes to higher skills levels are essential, along with raising aspirations and self-confidence, to increase the likelihood of getting into work, education or training.

The population in the informal settlements and farm workers systematically experience greater barriers than others. Reducing these barriers will require targeted programmes, effective multi-agency working and ensuring an offer shaped around individual circumstances.

Some people including single parents, worklessness or low-paid, part-time work is a major determinant of severe and persistent poverty. Targeted support to reduce barriers to rewarding work for farm workers and the informal settlement dwellers will make a valuable contribution to the government's goal of reducing poverty, as well as making additional talent available in the labour market.

Priority 2: Tackling barriers to employment in the poorest of communities

Frequently, communities where a high proportion of people are not in work also experience other forms of disadvantage, such as crime, anti-social behavior, poor educational outcomes, access to public services and transport.

Lack of access to health care have a major impact on productivity, employment and educational performance. A concerted focus on tackling persistent lack of access to health care, and adding to the quality and length of life of local people will have a major impact on the economic outcomes at community and regional level.

Lack of access to transport can also be a significant barrier to employment, particularly amongst young people. In tracking and addressing these barriers in a concerted focus on the poorest of communities will have a profound effect on narrowing the gaps in employment and wider outcomes, contributing not only to improved life chances for individuals, but also to stronger communities and improved regional economic performance.

Priority 3: Increasing economic demand

Entrepreneurship or diversity of enterprise should be encouraged in Tarlton. The lack of support to local entrepreneurs limit, wealth generation and reduces resilience in the face of economic shocks. Tarlton needs comprehensive packages of support and investment to encourage start-up and growth of indigenous enterprises that will support agriculture and tourism, including social enterprises. Public-sector location, employment practices and procurement can stimulate Tarlton's second economy activities.

Enterprise is about more than just new businesses and jobs. It's about enterprising behaviour. Therefore, there needs to be more emphasis on increasing community capital. This includes supporting communities to take on second economic activities as a base for local enterprises, or supporting local people to set up social enterprises to address local issues, for example, start a village shop or start recycling facilities.

Priority 4: Employers valuing a flexible, diverse and healthy workforce

Globalisation and migration patterns since 1994 have created a more culturally diverse workforce in South Africa. It is more important than ever before to promote the full economic participation of all sections of the potential workforce and to use the talents of all.

Farmers and people in the hospitality business, like any other business, will increase profitability through responding positively to changes in the labour market. These employers also help to remove barriers to participation for groups who are under-represented in employment. To benefit from the full range of talent in the population, employers may need support in engaging with the potential available and in providing appropriate training or even re-skilling. There are many benefits of a flexible and diverse workforce, including motivation, enriched creativity and access to new markets.

There is also a growing recognition that businesses that invest to create healthier jobs and working environments benefit greatly from a more productive workforce. Collaboration between the National Department of Rural Development and Land Reform, National Department of Labour, various employers and business support organisations to improve the health of the workforce will deliver major long-term benefits to individuals, businesses and economic growth.

Priority 5: A vibrant, skilled and resourced NGO

NGO's often have a good understanding of need at individual and community level, and the ability to deliver services in a tailored and sensitive way. The cultural sector and the NGO sector voluntary and community organisations and social enterprises can play important roles in helping to empower people and communities to tackle local issues and have major economic impact in their own right. Additional support for community capacity-building and local leadership will help to ensure that interventions are most effectively targeted and shaped in response to need.

The opportunity for engagement in volunteering and cultural activities offers people pathways towards employment as skills are enhanced, confidence is gained and, importantly, as they have access to new social networks and opportunities. Government policies envisage an enhanced role for the NGO. To help ensure that NGO can fulfil this contribution, appropriate support is needed to enhance their capacity.

10. RECOMMENDATIONS

The development and management of Tarlton is centred on the developmental needs of the people living in Tarlton. The “Evidence Based Planning” approach has directed the Tarlton Precinct Plan to two developmental Options i.e.:

Option 1: Option 1 is the in-situ upgrading of the existing major informal settlement and the relocation of the smaller informal settlements to this area. The rationale for this option was the location of the already identified Rural Service Centre by a number of policy documents including the Mogale City SDF 2011. Furthermore it is located to Krugersdorp a major economic area. The challenges to this option are the unsuitable soils condition, the high ecological and agricultural potential of the portion. The non-availability of engineering services also makes this portion non desirable for residential development.

Option 2: Option two is also to a smaller extent an in-situ upgrading intervention. However, this area will have the major informal settlements located at the intersection of R24 and N14 relocating at this portion. The challenge with this option is the availability of engineering services and the portion is further way from Krugersdorp the major economic area. However, the newly approved Molony’s Eye land development area is at close proximity. This option can benefit from Malony’s Eye development in the short term for engineering services and for social infrastructure. What is more important from a human settlement point of view in this case, is that the land is suitable for residential development.

Therefore, given the two option above and the desirability and suitability of development, it is recommended that:

- A. All the informal settlements in the Tarlton Precinct Plan study area be relocated to the **OPTION 2** area
- B. The area demarcated should have a **Development Boundary** around it to prevent further expansion of the area
- C. A **Capital Investment Plan** be developed with clear **Programmes** to service this area
- D. The above mentioned Capital Investment Plan and programmes be part of the **Mogale City Integrated Development Plan (IDP)** and **Budgeting Process**.