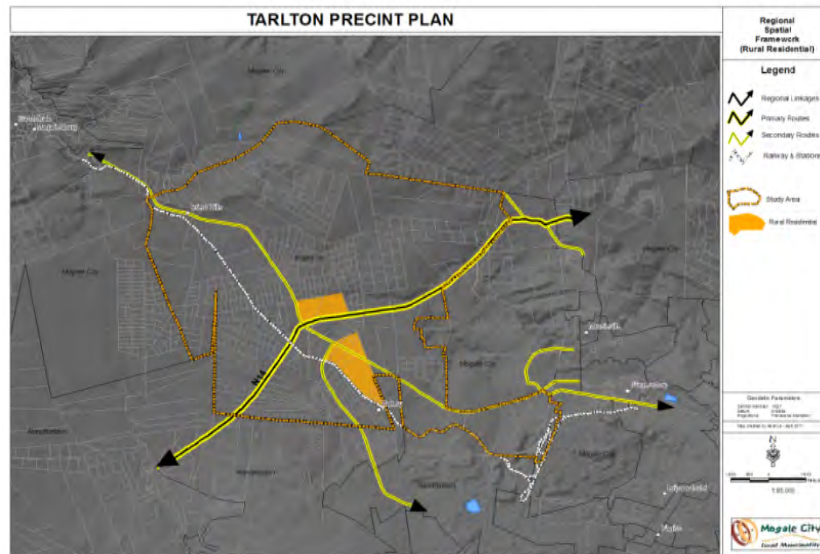


8. DEVELOPMENT PRINCIPLES AND STATEMENTS

8.1 Rural Residential (Small holding areas)



Name	Rural Residential		
Maximum Storeys	Up to 2 storeys		
Mix of Uses:	Residential, home offices, conference facilities, hospitality uses		
	Employment	Public	Housing
	5% to 10%	5% to 10%	70% to 90%

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.

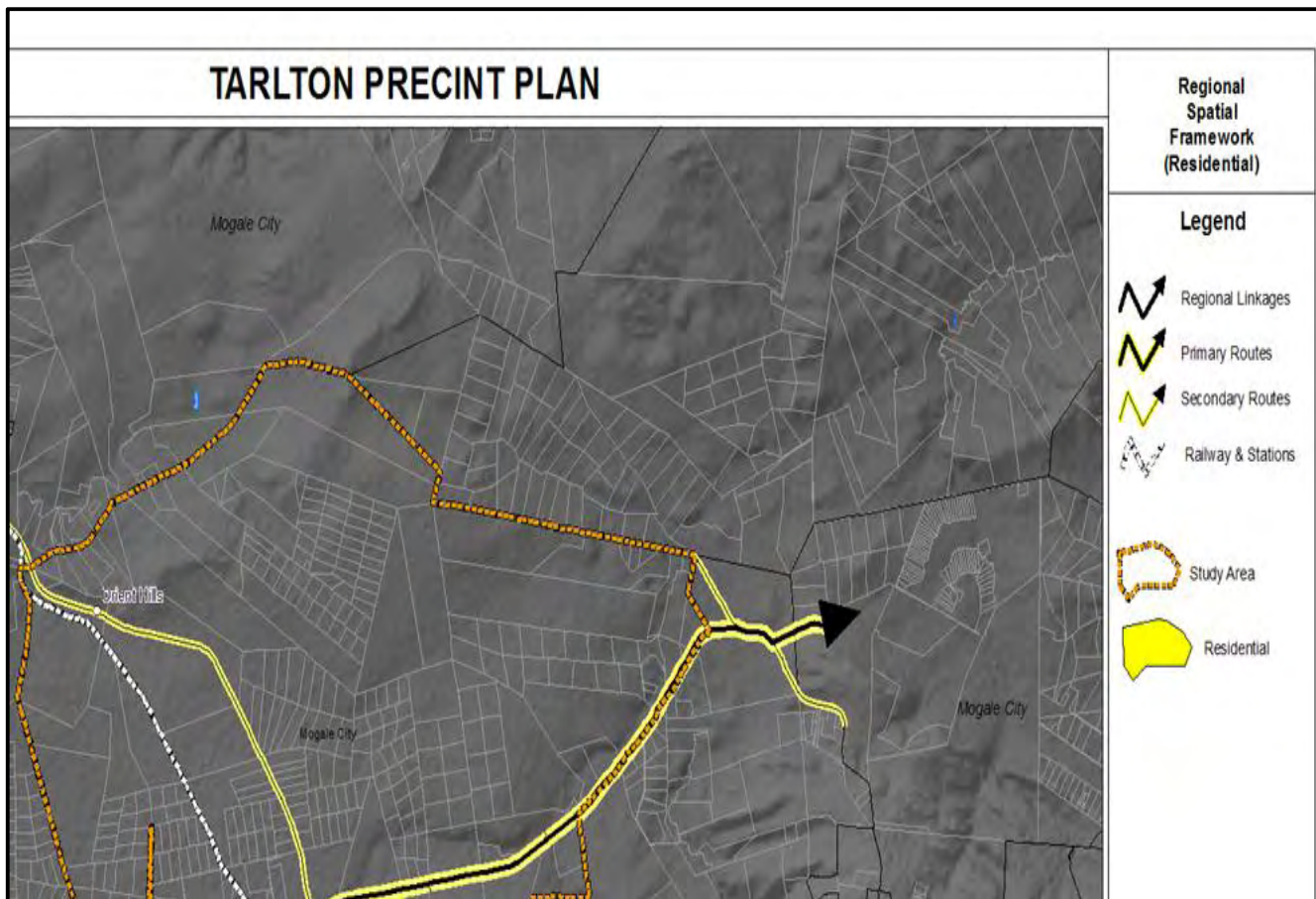
These areas are under pressure from development and some transitional activities e.g. engineering works, nurseries, etc. do occur. Some surfaced roads are provided but roads are predominantly gravel. Storm water management is critical. The table below depicts the development management issues to be addressed:

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

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

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.



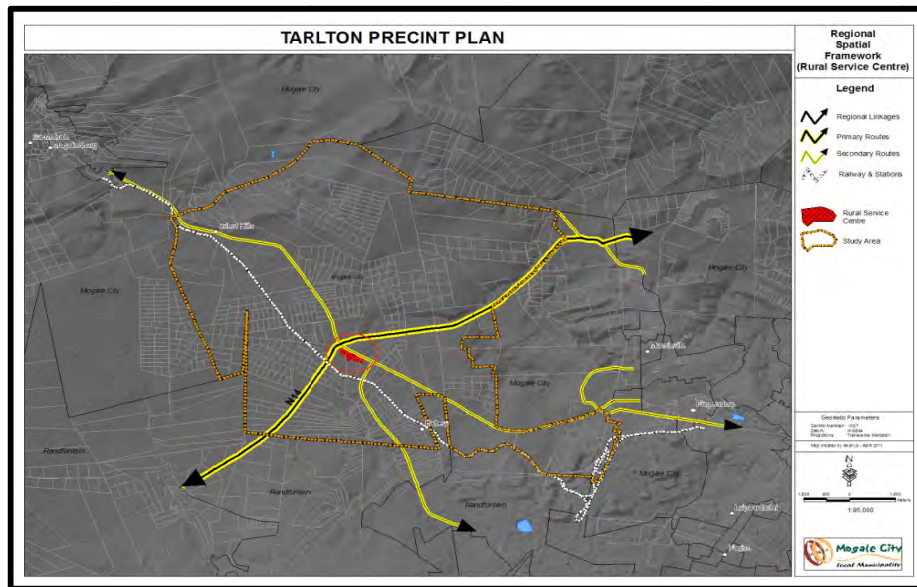
Management Elements	Service Delivery Issues and Descriptions	Required Actions
Infrastructure	<ul style="list-style-type: none"> • Ensure basic infrastructure to agreed level (RDP standards) • 	<ul style="list-style-type: none"> • Condition of the existing infrastructure
Waste Management	<ul style="list-style-type: 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

8.4 Business areas

In support of the community of Tarlton, 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.



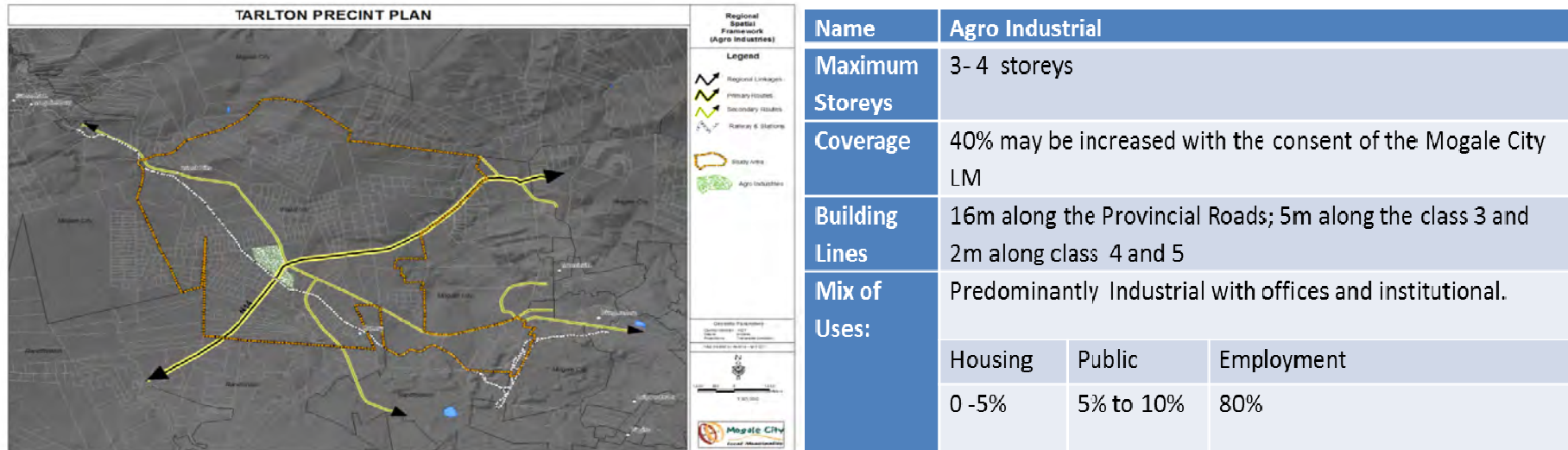
Name	Business -Commercial (service centre)		
Maximum Storeys	2- 3 storeys		
Coverage	80% may be increased with the consent of the Mogale City LM		
Building Lines	16m along the N14/ R24 and the Provincial Roads; 5m along the class 3 and 2m along class 4 and 5		
Mix of Uses:	Predominantly industrial and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

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

Management Elements	Service Delivery Issues and descriptions	Required actions
		<ul style="list-style-type: none"> • Alien tree cutting • 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 •

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.



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

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.

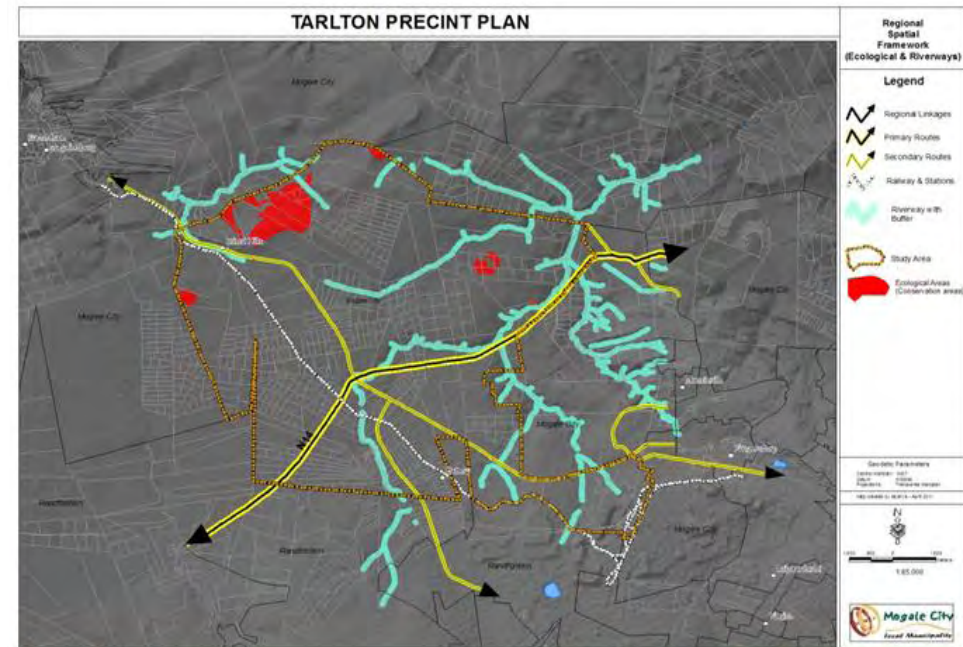
The South African water Act of 1998, provides for the balances between the protection of aquatic ecosystem and development to ensure that water resources are afforded a level of protection that will support a sustainable level of development for the future.

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



Open Space System	Applicable Buffer Zone
Ridges	200m
Rivers and tributaries	50m
Quarry	750m

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:

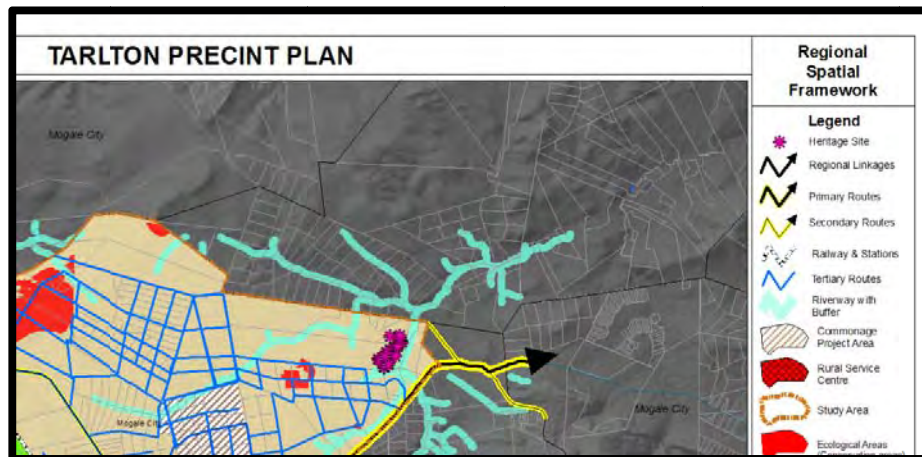
Management Elements	Service/Maintenance Elements
River systems & Tributaries	Hyacinth removal
	Litter removal and debris cleaning
	Dead fish clean up
	Capture and relocation of aquatic life
	Alien trees cutting
	Weeds and reeds control
	Pollution control
	River trails grass cutting
	Fire breaks creation

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

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%

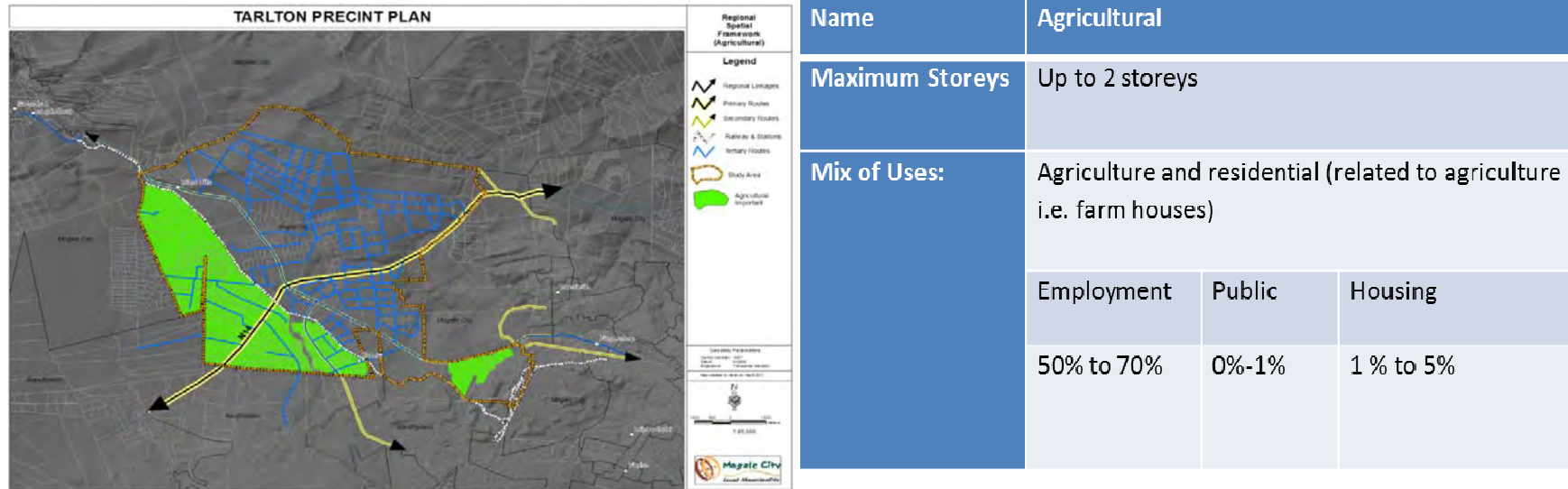
Management Elements	Issues and descriptions	Service/Maintenance Elements
Infrastructure	<ul style="list-style-type: none"> Ensure adequate infrastructure capacities and bulk availability Monitor new developments and infrastructure needs 	<ul style="list-style-type: none"> Bulk capacities Reticulation capacities Condition of the existing infrastructure
Waste	<ul style="list-style-type: none"> Waste bins need to be provided 	<ul style="list-style-type: none"> 240 liter wheeled bins and 85 liter bins

Management Elements	Issues and descriptions	Service/Maintenance Elements
Management	<p>throughout the area</p> <ul style="list-style-type: none"> Litter is to a large degree dealt with on site 	<ul style="list-style-type: none"> 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
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 	<ul style="list-style-type: none"> Ensure adequate and visible policing Promote community policing through Community Policing Forums

Management Elements	Issues and descriptions	Service/Maintenance Elements
	Police Services in terms of visible policing	
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

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.



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:

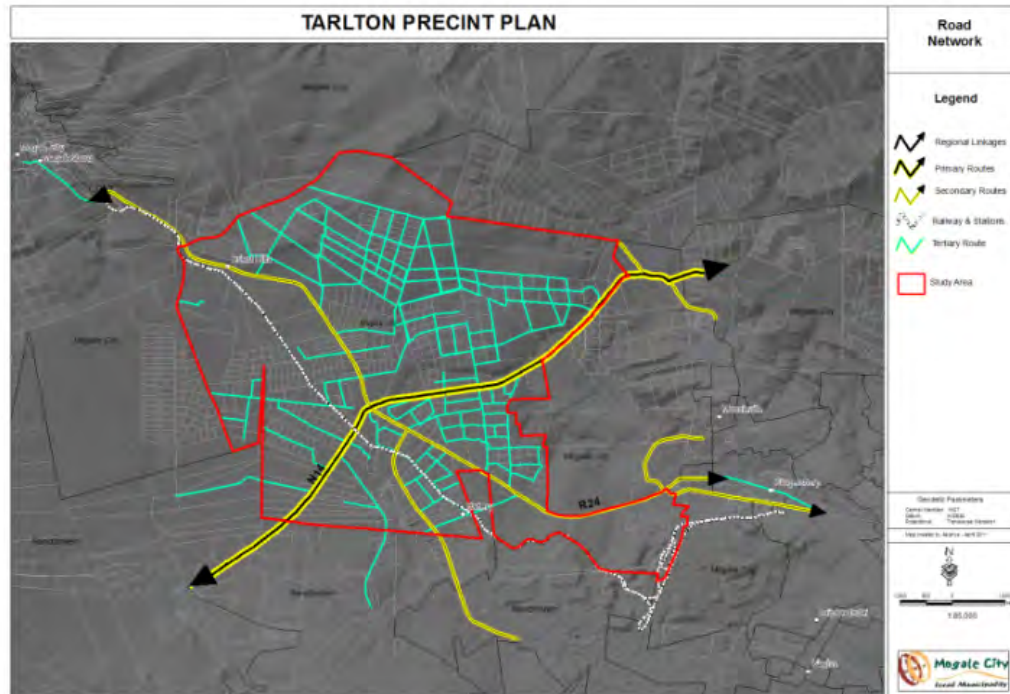
- Concerns about the strength of local communities
- Concerns about local agricultural economies
- Concerns about the provision of open space and other rural amenities.

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. The network is to give a 'Grid' like pattern road network.



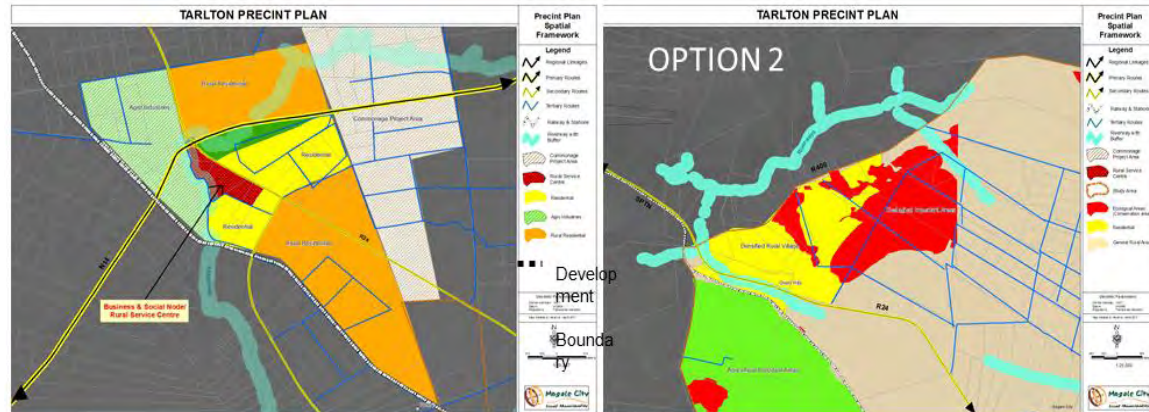
The table below depicts the typical road classification related to the R24 and the N14.

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		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.

8.10 Urban Residential areas (Rural setup)

It could be argued that residential development is in direct contrast to the notion of protecting Tarlton 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 Tarlton’s population grows. The widely dispersed communities like it is now in Tarlton will exacerbate the situation. Mogale City will have to curtail the proliferation of informal settlements in the Tarlton area and in the immediate vicinity. To assure a prosperous future, we must save our farmland and protect our green infrastructure.



Name	Medium Density Residential		
Maximum Storeys	3-5 storeys		
Mix of Uses:	Predominantly residential, retail at the road intersections, community facility and social facilities		
	Employment	Public	Housing
	5% to 10%	10% to 20%	20% to 60%
Predominant Use	Residential (40-60 du/ha)		