

2024

# PRECINCT PLAN

Muldersdrift Precinct  
Mogale City Local Municipality



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# 1 EXECUTIVE SUMMARY

## 1.1 INTRODUCTION

The Muldersdrift Precinct Plan provides a comprehensive framework for guiding future development and spatial transformation within the Muldersdrift area of Mogale City Local Municipality. This strategic document outlines measures to achieve balanced urban growth while promoting sustainability in environmental, social, and economic terms. As an urban-rural transition zone, Muldersdrift has a fragmented urban form with competing land uses ranging from high-income residential estates to informal settlements, commercial developments, and rural agricultural holdings.

The area's proximity to the City of Johannesburg's fast-growing northern suburbs, including Cosmo City and Ruimsig, exerts significant developmental pressure on Muldersdrift. This plan aims to address current land use inefficiencies by proposing an organised spatial framework that promotes inclusivity, sustainability, and economic development. The Plan also recognizes Muldersdrift's unique environmental features, notably its adjacency to the UNESCO-recognised Cradle of Humankind World Heritage Site (CoH WHS) and the Magaliesberg Biosphere Reserve, which require careful environmental protection amidst rapid urbanization pressures.

## 1.2 VISION AND OBJECTIVES

The vision for the Muldersdrift Precinct is to create a functional, socially integrated precinct focused on capitalizing on strategic growth nodes such as the Lanseria Smart City and the

N14 Development Corridor, while balancing development with the protection of sensitive environmental areas.

Key objectives of the plan include:

- **Economic Growth and Job Creation:** Leveraging major economic development opportunities, especially in proximity to Lanseria, to foster local employment and attract investment in commercial, industrial, and tourism sectors.
- **Functional Urban Structure:** Addressing current land-use dysfunctions by guiding rapid settlement growth into a structured urban form that offers equitable access to services and supports sustainable transport systems.
- **Inclusive Housing Development:** Providing a range of housing typologies and densities to meet diverse socio-economic needs, with an emphasis on accessibility and environmental carrying capacity.
- **Environmental Protection:** Balancing the demands of rapid urbanisation with the need to protect critical environmental areas, including biodiversity hotspots, ridges, and rivers.

Through these objectives, the Muldersdrift Precinct Plan seeks to direct development in a manner that supports both short-term needs for housing and infrastructure and long-term environmental sustainability.

## 1.3 SPATIAL DEVELOPMENT CONCEPT

The spatial structure of the Muldersdrift Precinct Plan is based on key organising elements, including development corridors, mixed-use spines, nodes, and housing typologies. These

elements are designed to ensure a balanced distribution of land uses, support public transport, and provide a framework for both high-density urban development and the protection of natural assets.

### 1.3.1 DEVELOPMENT CORRIDORS

The N14 highway serves as the primary development corridor in the precinct. The corridor's function is to link Muldersdrift with surrounding municipalities and key economic hubs, such as Lanseria and Johannesburg. The N14 is identified as a high-intensity development corridor, with commercial, industrial, and residential uses clustered along its length. The N14's dual function as both a transport artery and a development spine supports its designation as a catalyst for future growth, especially with the inclusion of the Greater Lanseria Master Plan.

### 1.3.2 MIXED-USE ACTIVITY SPINES AND NODES

The spatial concept introduces mixed-use activity spines along key roads such as Beyers Naude Drive, Hendrik Potgieter Road, and the R114. These spines will feature a mix of commercial, residential, and light industrial activities, providing critical support for local economies and creating walkable, integrated urban environments.

Two major development nodes are proposed at strategic intersections:

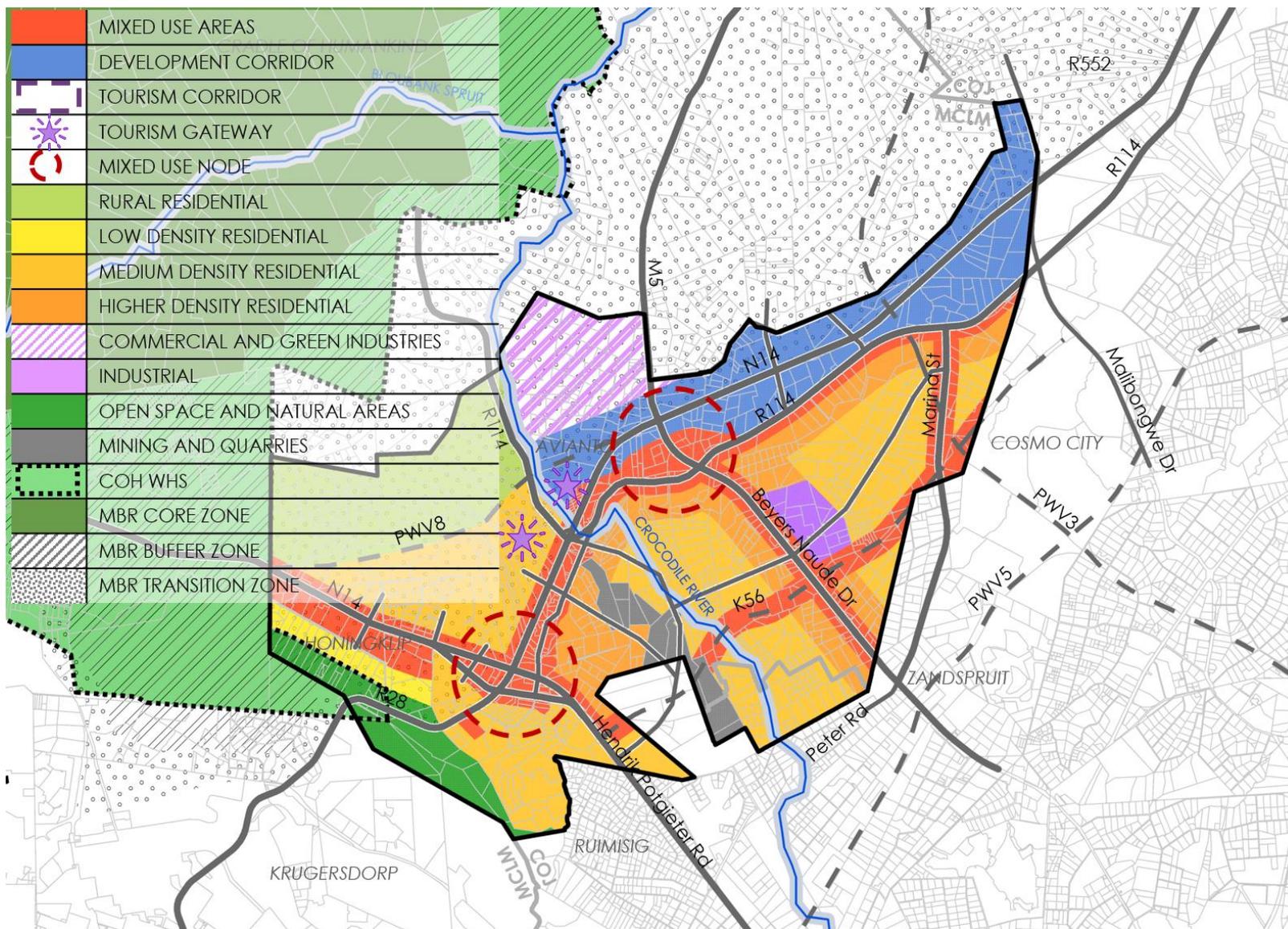
- **Cradlestone Mall Node:** A well-developed commercial hub at the intersection of the N14 and Hendrik Potgieter Road, this node is envisioned to serve as the core of the precinct's retail and entertainment offerings.

- **Beyers Naude Drive Node:** Located along the R114, this node will incorporate mixed-use and higher-density residential development to support growth around the Lanseria Smart City and adjacent economic activities.

### 1.3.3 RESIDENTIAL TYPOLOGIES

Residential development is a key component of the precinct plan. The proposed density hierarchy aligns higher densities with areas of greatest accessibility, particularly along transport corridors and activity spines. For example:

- **High-Density Residential Development:** Targeted in nodes and along mixed-use spines, with densities exceeding 120 dwelling units per hectare to support walkability and public transport.
- **Medium-Density Residential Development:** Planned for areas adjacent to key transport routes and activity spines, with densities ranging from 60-120 units per hectare.
- **Low-Density Residential Development:** Reserved for rural and environmentally sensitive areas, particularly adjacent to the Magaliesberg Biosphere and the Cradle of Humankind, where densities will be kept below 20 units per hectare to preserve natural assets.



## 1.4 MAJOR DEVELOPMENT PROJECTS

Several large-scale development projects are set to transform the Muldersdrift precinct, with the most significant being the Lanseria Smart City initiative. The Smart City project, supported by the Presidency and the Gauteng Provincial Government, seeks to establish a high-tech, green, mixed-use city that will drive regional economic growth and provide over 300,000 new residential units. The Greater Lanseria Master Plan proposes a variety of land uses, including industrial, commercial, and logistics hubs, as well as residential and green industries, positioning Muldersdrift as a key node in the national economy.

Other significant projects include:

- **Nooitgedacht Mega City:** This large-scale housing development will provide a mix of affordable and middle-income housing, along with community facilities and retail spaces.
- **Avianto Extension and Greengate Development:** These mixed-use projects will add to the housing stock and create new commercial opportunities, particularly around the Hendrik Potgieter and N14 corridors.

Together, these projects will reshape the precinct, creating a more compact, connected, and economically vibrant urban environment.

## 1.5 ENVIRONMENTAL CONSIDERATIONS

Muldersdrift is characterized by its rich natural heritage, including the Crocodile River, the Magaliesberg Biosphere, and proximity to the Cradle of Humankind World Heritage Site.

The precinct plan emphasizes the protection of these natural assets through careful spatial planning and the establishment of development guidelines for environmentally sensitive areas (ESAs) and Critical Biodiversity Areas (CBAs).

Environmental protection strategies include:

- **Buffer Zones:** Establishing buffer zones around sensitive areas like ridges, rivers, and biosphere reserves to mitigate the impacts of urban development.
- **Sustainable Land Use Practices:** Promoting green industries and sustainable building practices, particularly in areas adjacent to protected environments.
- **Tourism Development:** Capitalizing on the precinct's natural and cultural heritage by enhancing tourism corridors and developing eco-friendly tourism facilities.

## 1.6 TRANSPORT AND INFRASTRUCTURE

The Muldersdrift Precinct relies heavily on road-based transport, with significant mobility provided by the N14, R114, and Hendrik Potgieter Road. The plan outlines several key upgrades and infrastructure projects designed to improve access, reduce congestion, and support future development.

### 1.6.1 ROAD NETWORK

The road network is essential to the development of the precinct, with the N14 acting as the primary spine connecting Muldersdrift to Johannesburg, Tshwane, and Lanseria. Planned improvements include the Pinehaven Interchange, which will

address congestion issues and improve access to the Cradlestone Mall Node.

The development of new major arterials and collector roads, such as Metro Boulevard and K56, will provide additional capacity and support the growing residential and commercial areas. The plan also emphasizes the importance of improving pedestrian and non-motorized transport (NMT) infrastructure, particularly in areas with low vehicle ownership.

### 1.6.2 INFRASTRUCTURE SERVICES

Water and sanitation services in Muldersdrift are currently under strain, with several informal settlements and rural areas lacking adequate access to bulk infrastructure. The plan proposes significant upgrades, including new water reservoirs and expanded sewage treatment facilities to accommodate the projected population growth. Notably, the plan highlights the importance of securing funding for infrastructure upgrades, particularly in areas earmarked for high-density development.

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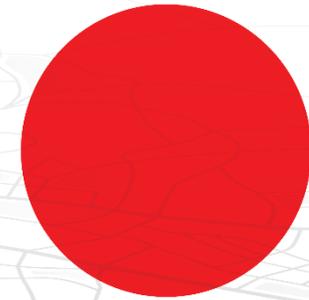
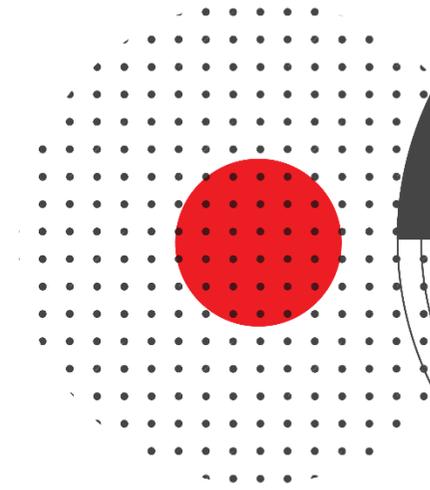
SDZ

Special Development Zone

CBD	Central Business District
IUDF	Integrated Urban Development Framework
SDF	Spatial Development Framework
CBA	Critical Biodiversity Area
ESA	Environmentally Sensitive Area
GAUTRANS	Gauteng Department of Roads and Transport
SANRAL	South African National Roads Agency SOC Ltd
PHSHDA	Priority Human Settlements and Housing Development Areas
GLMP	Greater Lanseria Master Plan
DBSA	Development Bank of Southern Africa
FAR	Floor Area Ratio
RDP	Reconstruction and Development Programme
FLISP	Finance Linked Individual Subsid Program
MCLM	Mogale City Local Municipality
GDHS	Gauteng Department of Human Settlements
HDA	Housing Development Agency
EIA	Environmental Impact Assessment
WWTW	Waste Water Treatment Works
MSDF	Municipal Spatial Development Framework
CoJ	City of Johannesburg
BNG	Breaking New Ground
SHRA	Social Housing Regulatory Authority
NUSP	National Upgrading Support Programme
LUMS	Land Use Management

# Introduction

Muldersdrift precinct plan



# 1 INTRODUCTION

## 1.1 THE PRECINCT PLAN

The Precinct Plan for Muldersdrift aims to guide decision-making and development within the Precinct in order to promote sustainability and achieve environmental, social, and economic objectives through the promotion of appropriate land uses at specific locations, informing how buildings, spaces, activities and transport evolve, as well as the identification of short, medium- and long-term interventions needed to achieve this. The Precinct Plan has been developed to provide a new desired development pattern altering existing settlement dysfunctionalities.

The Muldersdrift Precinct Plan:

- *is a planning tool that sets out a vision for the future development trajectory for the area.*
- *establishes a planning and management framework to guide development and land-use change.*
- *provides strategies and detailed actions for how the plan can be achieved through the implementation of the Precinct Plan over time.*
- *informs interventions by both the public and private sectors in order to facilitate economic growth and development through social, spatial, and economic development.*

The Muldersdrift Precinct is a typical urban-rural transition zone with many competing land uses and a fragmented

urban form. High income residential neighbourhoods co-exist with informal settlements; commercial development encroach on environmentally and culturally significant areas such as the UNESCO recognised Cradle of Humankind World Heritage Site (CoH WHS) and the Magaliesberg Biosphere Reserve (MBR). The Precinct Plan thus takes cognisance of the need to provide a functional structure where a balance can be found between inclusive growth and environmental protection.

## 1.2 MULDRSDRIFT PRECINCT

The Muldersdrift Precinct is situated in the eastern extent of Mogale City Local Municipality, flanking the north western boundary of the City of Johannesburg in the region of Cosmo City/ Randburg/ Ruimsig. These areas exert significant development pressure on the Muldersdrift area, which in essence functions as the urban-rural fringe of Johannesburg.

To the north-west it is linked to the City of Tshwane via the N14 which is increasingly taking on the character of a development corridor, specifically with the locality of Lanseria Airport on the boundaries of the municipalities of Johannesburg, Tshwane, and Mogale City.

It is within 5km of the Krugersdorp CBD to the south. the Muldersdrift Precinct has taken over the role of the CBD as the major growth point within the municipal area. It is home to major developments such as the Cradlestone Mall, Avianto Estate, Misty Hills Conference Centre and the Greengate Business Park.

The Precinct is bordered to the west by the CoH WHS and the MBR which forms an edge to development further west.

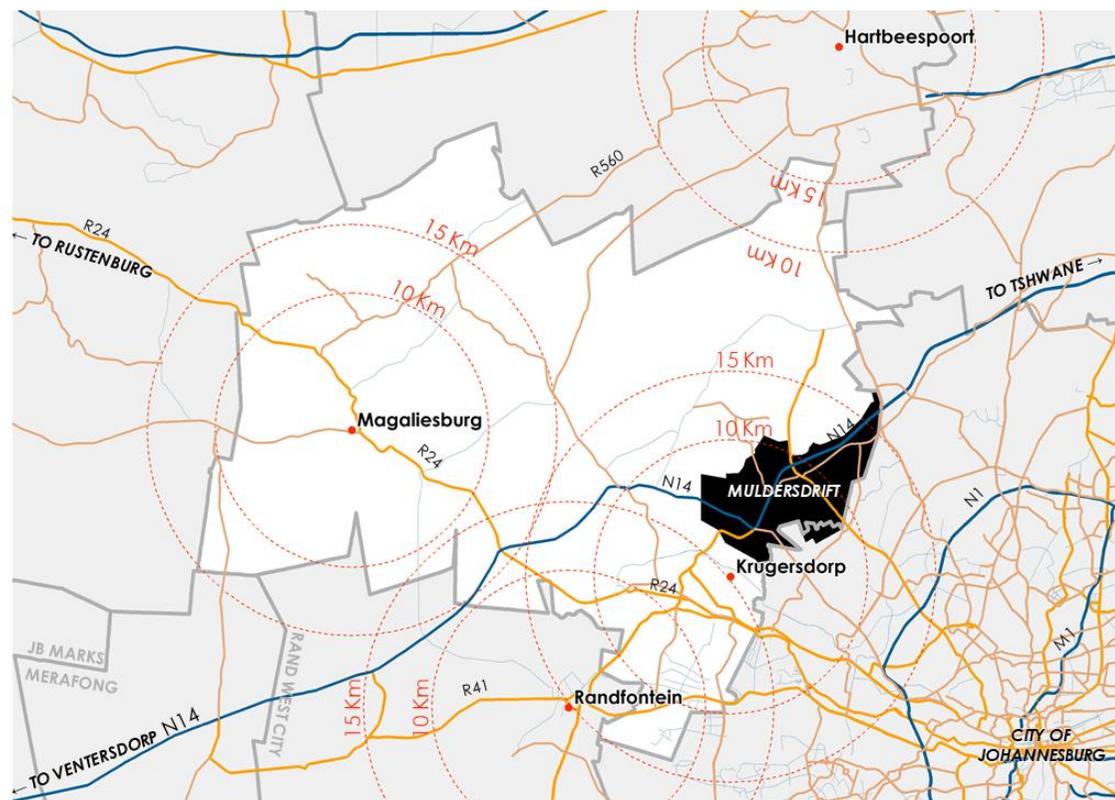


Figure 1: LOCATIONAL CONTEXT

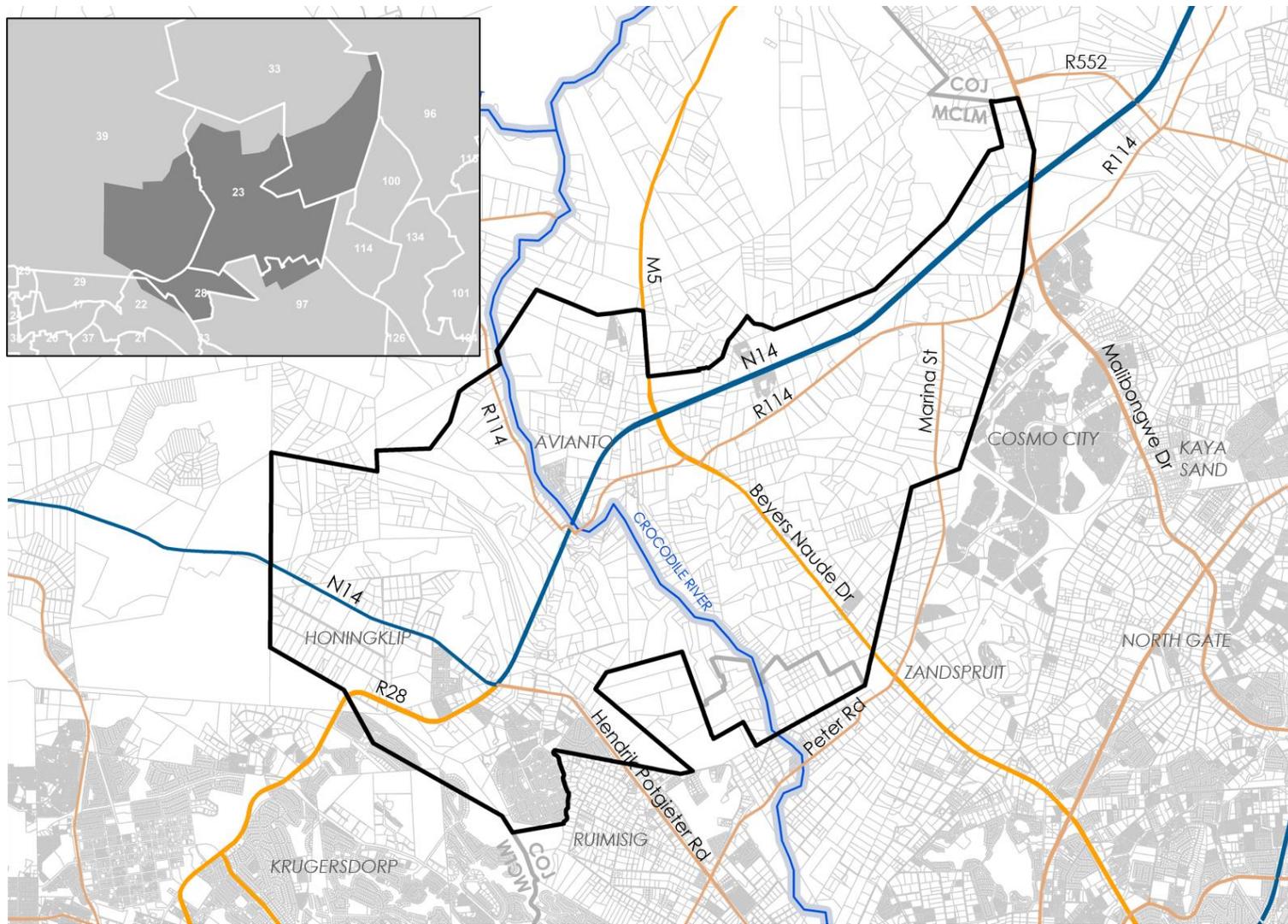


Figure 2: MULDERSDRIFT PRECINCT



**DRIFT COUNTRY INN  
(MULDERSDRIFT HOTEL)**



**PROPOSED SHOPPING CENTRE  
DEVELOPMENT ALONG THE R144**



**PROPOSED INDUSTRIAL NODE  
(GREENGATE) ALONG BEYERS  
NAUDE DR**



**PROPOSED MIXED USE,  
RECREATIONAL, HOTEL AND  
RESIDENTIAL AREA**



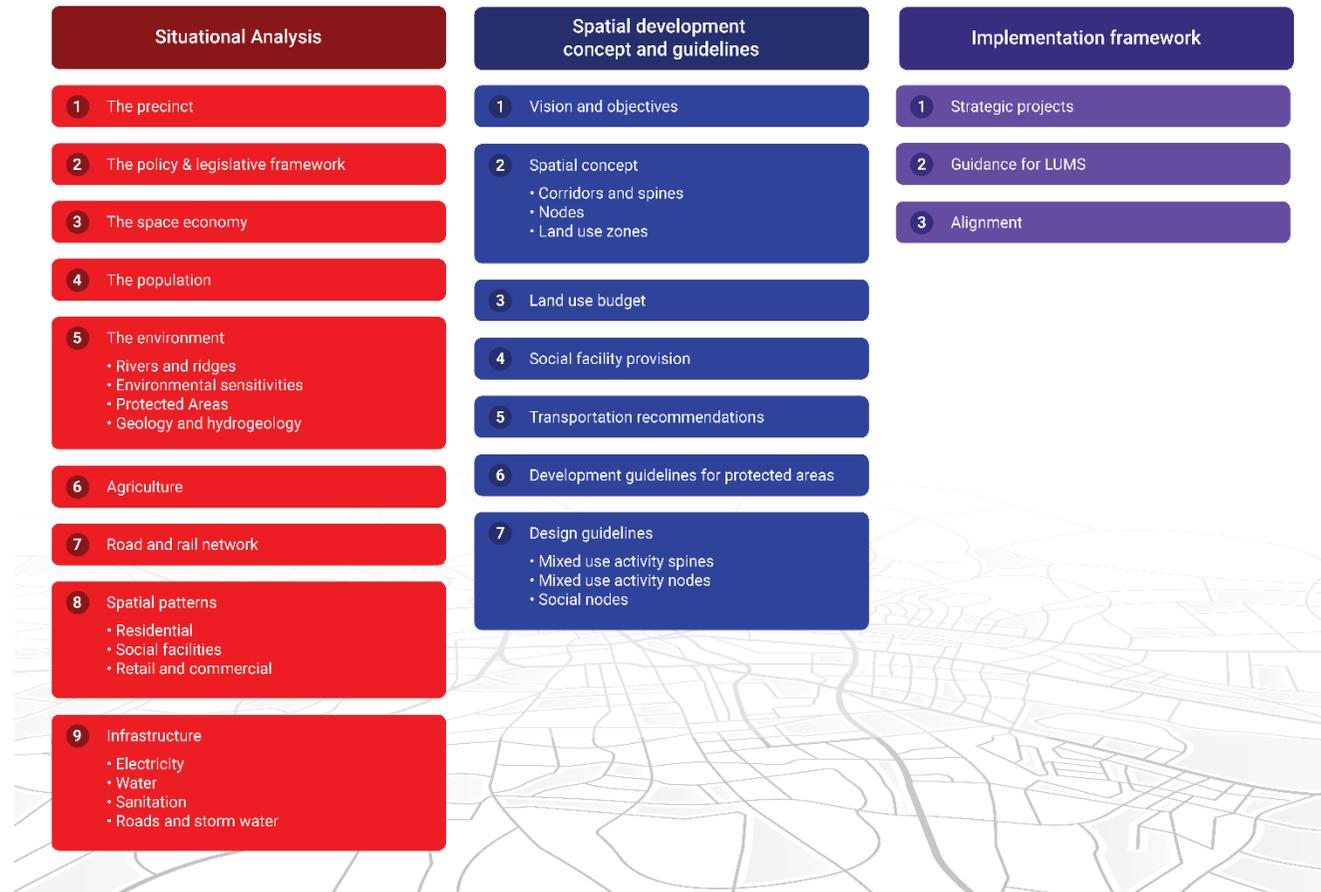
**AVIANTO**



**ITHEMBALETHU**

### 1.3 BACKGROUND ON THE PROCESS

The process followed consisted of a status quo analysis and synthesis, the development of a spatial concept, and the drafting of an implementation framework.



## 1.4 STAKEHOLDER PARTICIPATION

Stakeholders participation forms an important part of the process. The Coronavirus Pandemic emerged in the midst of the project in March 2020 and presented special challenges for the Stakeholder Participation in light of the phased lockdowns, crowd size restrictions and social distancing.

Accordingly, the Stakeholder Participation Plan which was launched in October 2020 was specially designed to factor for the circumstances of COVID-19 to optimise the engagement process and its outputs as much as possible.

The Stakeholder Participation Plan was comprised of 8 components.



Figure 3: COMPONENTS OF STAKEHOLDERS PARTICIPATION PLAN

Each component represents a particular form of media, with an associated platform, as part of a broad-spectrum approach to the Stakeholder Participation Plan. A wide variety of components were designed to take advantage of both analogue and digital

platforms, in an attempt to optimise the reach and output of the Stakeholder Participation Plan.

### 1.4.1 MUNICIPAL PUBLIC NOTICE

A summary of the project, client and team contact information and an invitation to submit comments on the Draft Report was compiled in the form of a Municipal Public Notice which was published on the Municipality website. Importantly, the notice also included an active hyperlink to the Stakeholder Participation website.



Figure 4: MUNICIPAL PUBLIC NOTICE

### 1.4.2 MUNICIPALITY MEDIA POST

A summary of the project and an invitation to submit comments on the Draft Report was packaged as a media article for the Municipality's Website.

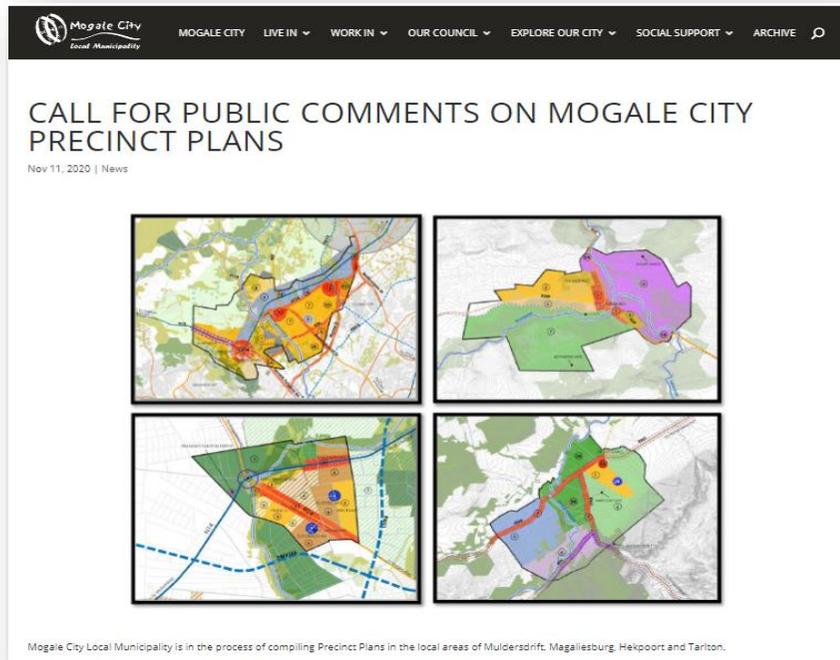


Figure 5: MUNICIPALITY MEDIA POST

### 1.4.3 LOCAL NEWSPAPER

Details of the project and an invitation to submit comments was packaged as a notice in the local community newspaper, the Krugersdorp News issue for the week ending Friday, 16 October 2020.



Figure 6: LOCAL NEWSPAPER ADVERTISEMENT

#### 1.4.4 PUBLIC DOCUMENT

Hard copies of the Draft Report were set up in document stations that were set up at the Municipal Office and respective Ward Offices of the Precinct Plan local areas, together with hard copy comment forms and a comments submission box.



Figure 7: MUNICIPAL DOCUMENT STATION

#### 1.4.5 WHATSAPP ADVERT

Details of the project and an invitation to submit comments was packaged as a digital poster advert designed for sharing via WhatsApp. The poster advert was specifically formatted as a PDF document which allowed the advert to be titled with the name of the project, as well as to include a hyperlinked web address to the Stakeholder Participation website.



Figure 8: DIGITAL POSTER ADVERT

### 1.4.6 SOCIAL MEDIA

The WhatsApp Poster Advert was steered towards the social media platforms of key stakeholder groups and organisations in the area and shared with the municipality for them to share on their official social media platforms.

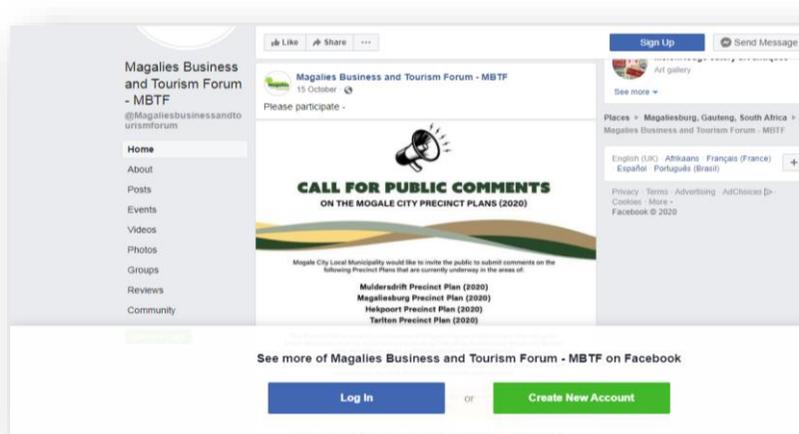


Figure 9: WHATSAPP POSTER ADVERT

### 1.4.7 FOCUS GROUP MEETINGS

A series of intensive small group Focus Group Meetings were scheduled with Key Stakeholders and Community Organisations.

The Key Stakeholders and Community Organisations were strategically identified through intensive research and investigation as well as support and guidance from the Speakers Office and Ward Councillors.



Figure 10: FOCUS GROUP MEETINGS

### 1.4.8 PROJECT WEBPAGE

A special project website was created to assist with Stakeholder Engagement on the Precinct Plans by giving interested and affected stakeholders an opportunity to have a say and help guide the future of the Precinct local areas.

[www.bit.ly/mogale](http://www.bit.ly/mogale)

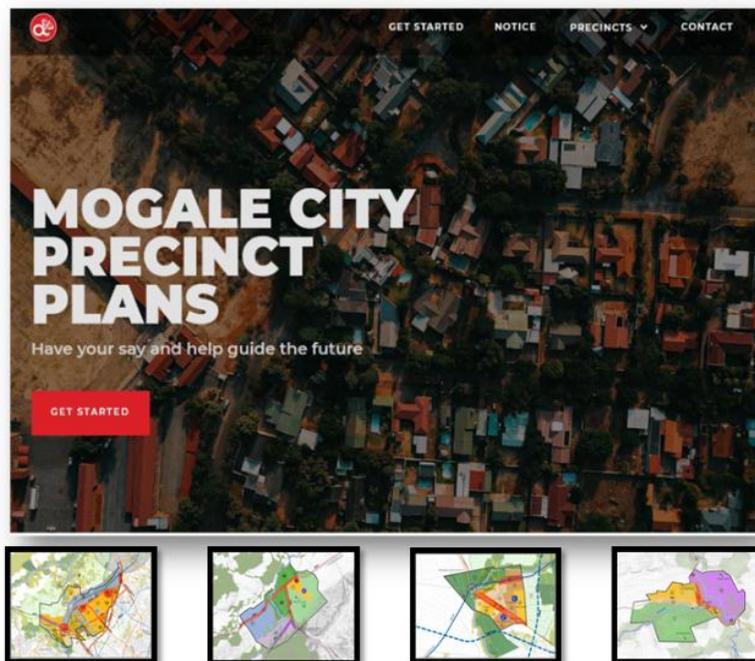


Figure 11: PROJECT WEBSITE

Through the project website the public was able to:

- Download the full Draft Reports of the Precinct Plan
- Find summaries of the development concepts and proposals for the Precinct
- Submit comments using a Form and/or Interactive Map interface

Using this website you can:



Download the Draft Report for a Precinct Plan



View a summary of the development concepts for the Precinct



Submit your comments using a Form and/or Interactive Map

Figure 12: WEBSITE DIRECTIONS

For those stakeholders seeking greater detail, the full Draft Reports could be directly downloaded from the website in a PDF format.

To assist stakeholders with easy access to the key information, summaries of the development concepts for each Precinct Plan were also provided on the website in content packages that included the Vision, Objectives and Key Concepts linked to a map overview that could also be directly downloaded in a JPEG format.

The Interactive Map platform was designed for those stakeholders that would be able to spatially orientate their comments in and around the Precinct.

Comments submitted via the Interactive Map platform could be categorised by the user as either a Strength, Weakness, Opportunity or Threat (SWOT).

Once the comment marker was classified and placed on the map, the user was prompted to complete a comment form that was linked to the map marker.

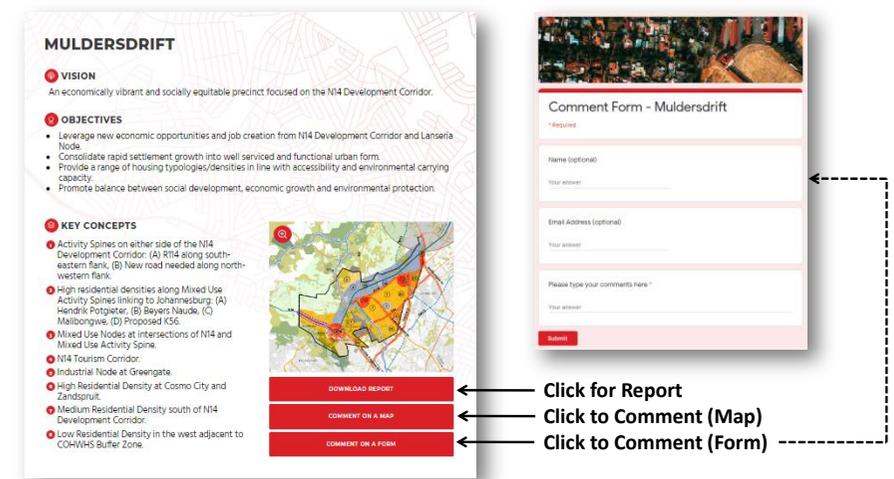
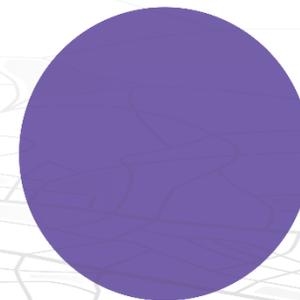
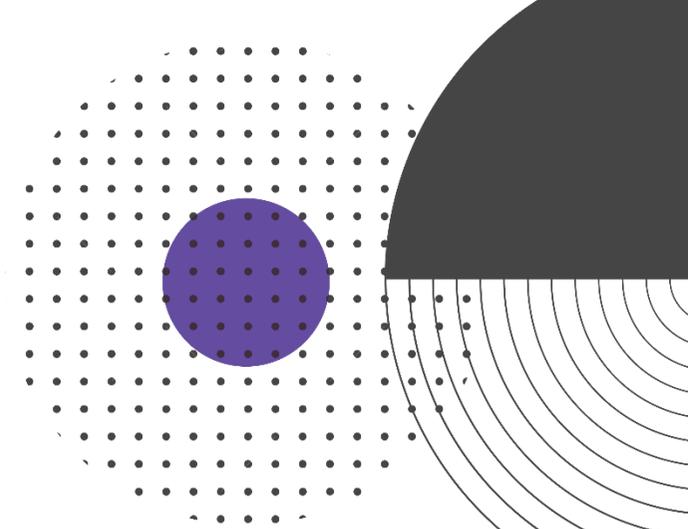


Figure 13: INTERACTIVE MAP PLATFORM

# Policy and legislative framework

Muldersdrift precinct plan



## 2 POLICY AND LEGISLATIVE FRAMEWORK

### 2.1 SPATIAL POLICY FRAMEWORK

In terms of national spatial policy, the Spatial Planning and Land Use Management Act 16 of 2013 and the Integrated Urban Development Framework (IUDF), 2016 provide the principles to be applied in the development of a Precinct Plan.

On a Municipal level, the West Rand District Municipality SDF, 2020 and the Mogale City Local Municipality SDF, 2019 are relevant.

### 2.2 MUNICIPAL PLANNING

#### 2.2.1 WEST RAND DISTRICT MUNICIPALITY

##### SDF, 2020

The *West Rand District Spatial Development Framework, 2020* identifies three secondary nodes in the Muldersdrift Precinct:

- The future Lanseria-Nooitgedacht-Cosmo City node towards the north at the intersection between route Malibongwe Drive and the N14 freeway which is earmarked to become a future metropolitan activity node comprising more than 33 000 residential units.
- Muldersdrift in the central part of the N14 corridor in the vicinity of the Beyers Naude Drive intersection.

- Silver Star-Cradle Mall node at the intersection between route Hendrik Potgieter Drive and N14.

#### 2.2.2 MOGALE CITY LM SDF, 2019

In terms of the *Mogale City Spatial Development Framework, 2019*, the Muldersdrift Precinct is affected as follows:

- The bulk of the Precinct is indicated as a Mixed-Use Development Zone.
- A portion of the north-eastern section is indicated as being located within the Lanseria Influence Zone and Lanseria itself is designated as a Special Development Zone.
- Secondary nodes are proposed as the intersection of the N14 and Hendrik Potgieter Road at the Cradlestone Mall and Silverstone Casino and at the intersection of the N14, the R114 and Drift Boulevard at the so-called Drift node or the 'old' Muldersdrift centre.
- The north-south leg of the N14 is designated as a Development Corridor and the east-west leg of the N14 (R28) as a Tourism Corridor.
- The western area of the Precinct is designated as a Rural Development Zone and further west is a Tourism Area.

With regards to the N14 corridor, it states that:

- The section directly south of Lanseria Airport: more commercial, high-tech industrial nature linked to the airport, focusing strongly on job creation for the nearby Cosmo City and its future expansions.

- The section between Beyers Naudé Drive and Hendrik Potgieter Road: high-tech industries, but can also begin to include office, motor showrooms and other high order business activities.

The Urban Edge follows the boundary of the Rural Development Zone.

### 2.2.3 CITY OF JOHANNESBURG MM SDF

The City of Johannesburg SDF proposes the following:

- Cosmo City and Zandspruit as Deprivation areas with development proposed densities of a minimum of 60 du/ha
- The Urban Nodal Areas (Randburg) with a minimum density of 80du/ha
- The remainder of the area is designated as a consolidation zone with a density of 20 – 50du/ha.
- An industrial area is located along Beyers Naude Drive and along Malibongwe Drive.

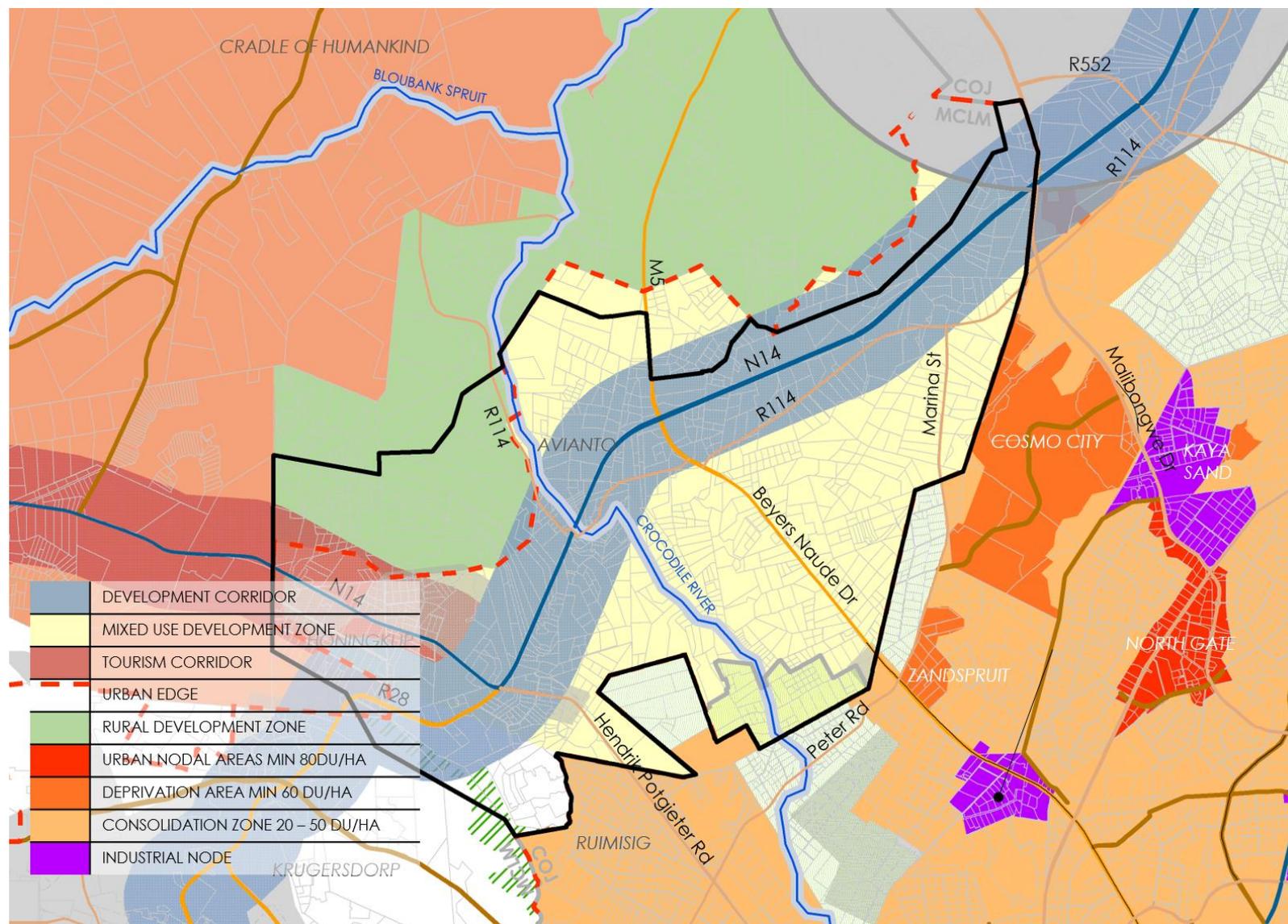


Figure 14: MCLM and CoJMM SDF IMPLICATIONS FOR PRECINCT

## 2.3 SPATIAL PLANNING AND LAND USE MANAGEMENT ACT 16 OF 2013

### AIM

- 1 To provide a framework for spatial planning and land use management in the Republic.
- 2 To provide a framework for policies, principles, norms and standards for spatial development planning and land use management

### Principles

#### Good administration

- 1 All spheres of government must ensure an integrated approach to land use and land development
- 2 All government departments must provide their sector inputs during the preparation of spatial development frameworks
- 3 Include transparent processes of public participation that afford all parties the opportunity to provide inputs on matters affecting them
- 4 Policies, legislation and procedures must be clearly set, in order to inform and empower members of the public

#### Spatial sustainability

- 1 Promote land development that is within fiscal, institutional and administrative means
- 2 Protect prime and unique agricultural land
- 3 Consistent application of environmental management instruments
- 4 Effective and equitable functioning of land markets
- 5 Consider current and future costs for the provision of infrastructure and social services
- 6 Promote land development in locations that are sustainable and limit sprawl
- 7 Create viable communities

#### Efficiency

- 1 Optimise use of existing resources and infrastructure
- 2 Minimise negative financial, social, economic or environmental impacts
- 3 Efficient and streamlined procedures

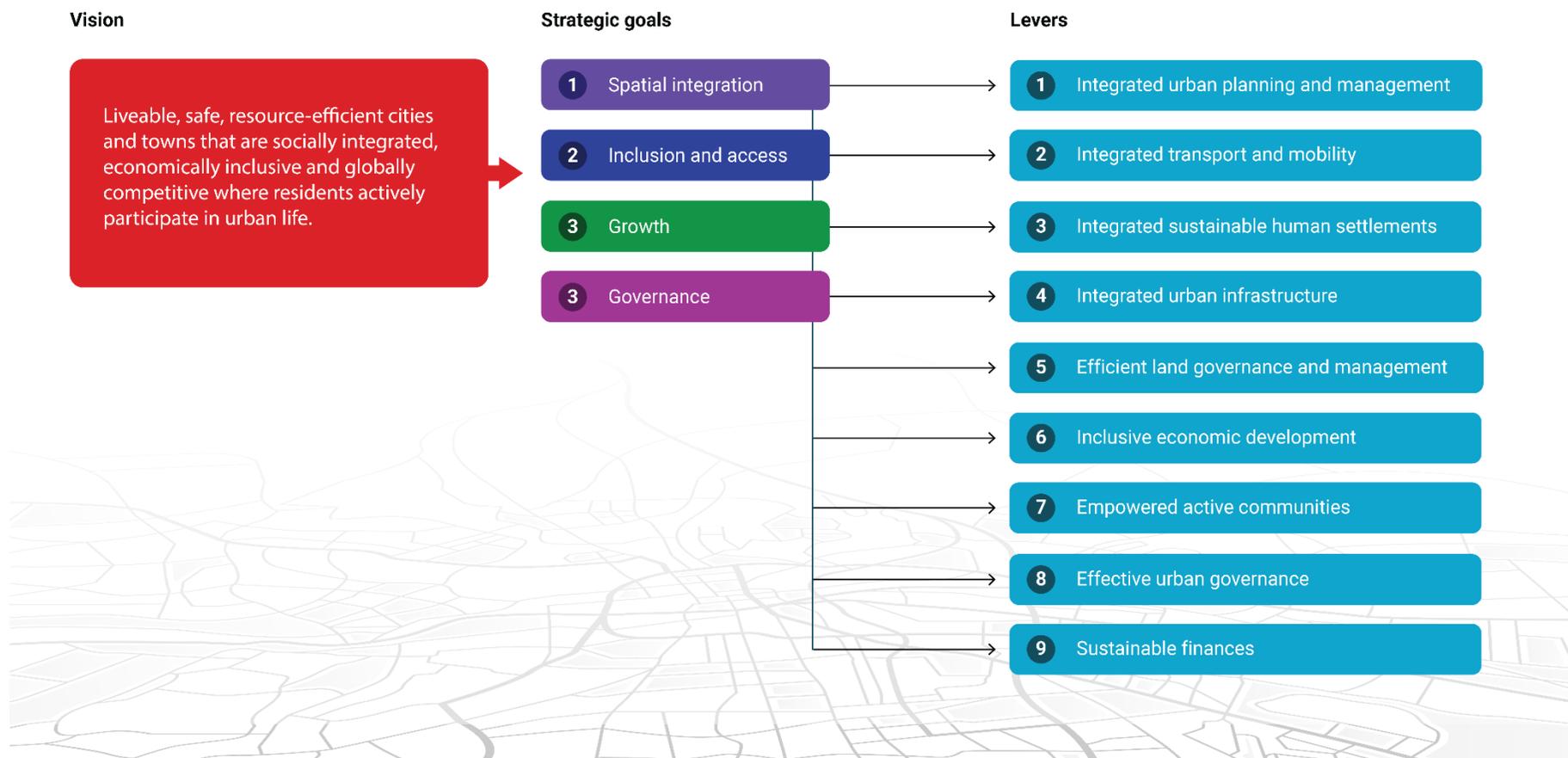
#### Spatial justice

- 1 Redress past spatial imbalances through improved access to and use of land
  - 2 Include informal settlements and areas characterised by widespread poverty and deprivation
  - 3 Redress access to land by disadvantaged communities and persons
- Link to LUMS**
- 4
    - Include provisions that are flexible and appropriate for the management of disadvantaged areas and informal settlements
    - Include provisions that accommodate access to secure tenure and the incremental upgrading of informal areas

#### Spatial resilience

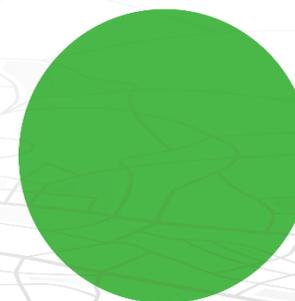
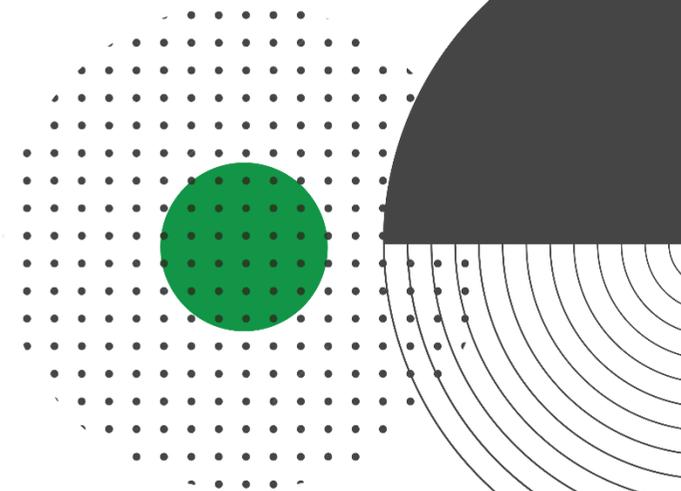
- 1 Flexibility in spatial plans to ensure sustainable livelihoods in communities most likely to suffer the impacts of economic and environmental shocks

## 2.4 INTEGRATED URBAN DEVELOPMENT FRAMEWORK (IUDF), 2016



# The state of the precinct

Muldersdrift precinct plan



## 3 THE ECONOMY AND THE RESIDENTS

### 3.1 INTRODUCTION

This section provides a summary of the prominent characteristics of the local economic features and the socio-economic characteristics of the households.

### 3.2 MACRO-ECONOMIC PROFILE<sup>1</sup>

The following are the salient points emanating from the socio-economic and market study undertaken for the Precinct:

- The local economy experienced a positive economic growth with a 0.28% increase from 2017 to 2018 and a 0.27% increase from 2018 to 2019.
- Economic sectors that performed well in 2019 include Wholesale and retail trade with 3.64% growth, Transport, storage and communication with 4.35% growth, Finance, insurance, real estate and business service with 4.98% growth and General Government and Community, social and personal services with 1.45%.
- Economic sectors that have shown economic decline include: Agriculture (-7.25%), Mining and quarrying (-9.47%), Manufacturing (-1.84%) and Electricity, gas and water with a decline of 4.82% in 2019.

- The Finance, insurance, real estate and business services sector makes the largest contribution of 43.45%, followed by Manufacturing contributing 22.61%. Wholesale and retail trade, catering and accommodation contributes 8.89% to the economy followed by the General Government and Community, social and personal services sector, making a contribution of 8.41%.

### 3.3 SPACE ECONOMY

An analysis of the spatial distribution of economic activity within the Muldersdrift area indicates the following:

- Agriculture, forestry and fishing is concentrated towards the eastern side of the Precinct.
- Business Services, Personal and Community Services, and Retail and Wholesale is concentrated around the N14/ Hendrik Potgieter intersection.
- Catering and accommodation is spread equally throughout the Precinct.

<sup>1</sup> Source: CSIR, Data provided by Quantec on Local Municipal disseminate to mesozone level with Dasymetric map, 2020

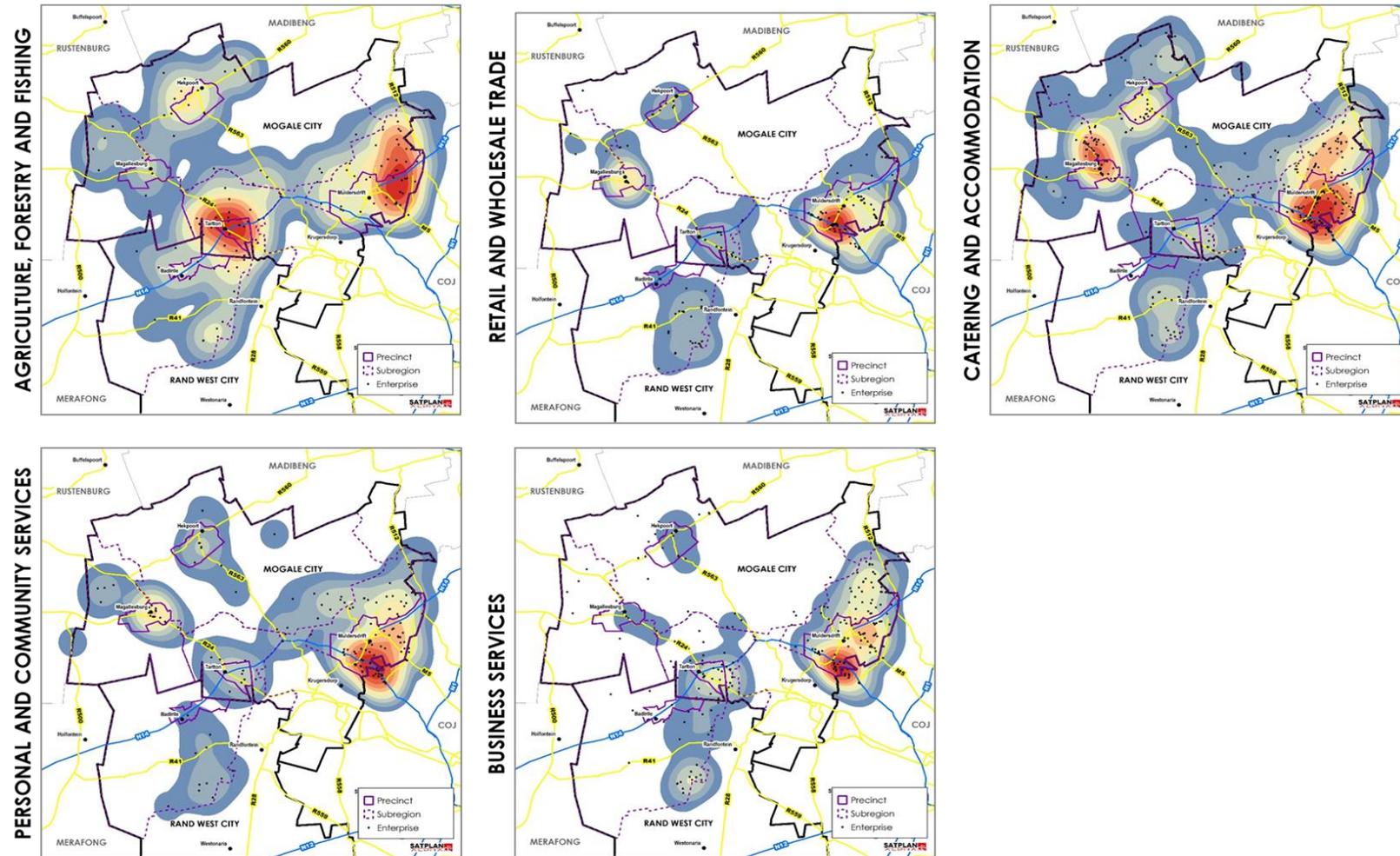


Figure 15: SPACE ECONOMY

### 3.4 HOUSEHOLDS AND POPULATION

According to the socio-economic study undertaken for the Precinct, the population is characterised by the following characteristics:

- The majority of the Precinct (38.65%) fall within the low-income band.
- There is a relatively high percentage in the Precinct (13.85%) that earn no income.
- The largest portion of the population for the Precinct (32.62%) has some secondary education.
- The second largest portion of the population for the Precinct (28.52%) completed matric. In addition, a fairly large portion of the Precinct's population (22.89%) completed a higher degree.
- In the Precinct 50.95% of the population aged between 5 – 24 are attending ordinary school.
- The Precinct has an employment rate of 66.76%, with an unemployment rate of 11.91%.
- The largest portion of the population within the Precinct (40.98%) is skilled, with 28.83% in the Precinct classified as low-skilled.

The spatial pattern of poverty indicators show the contrast between formal and informal settlements and the between 'rural' and 'urban' areas.

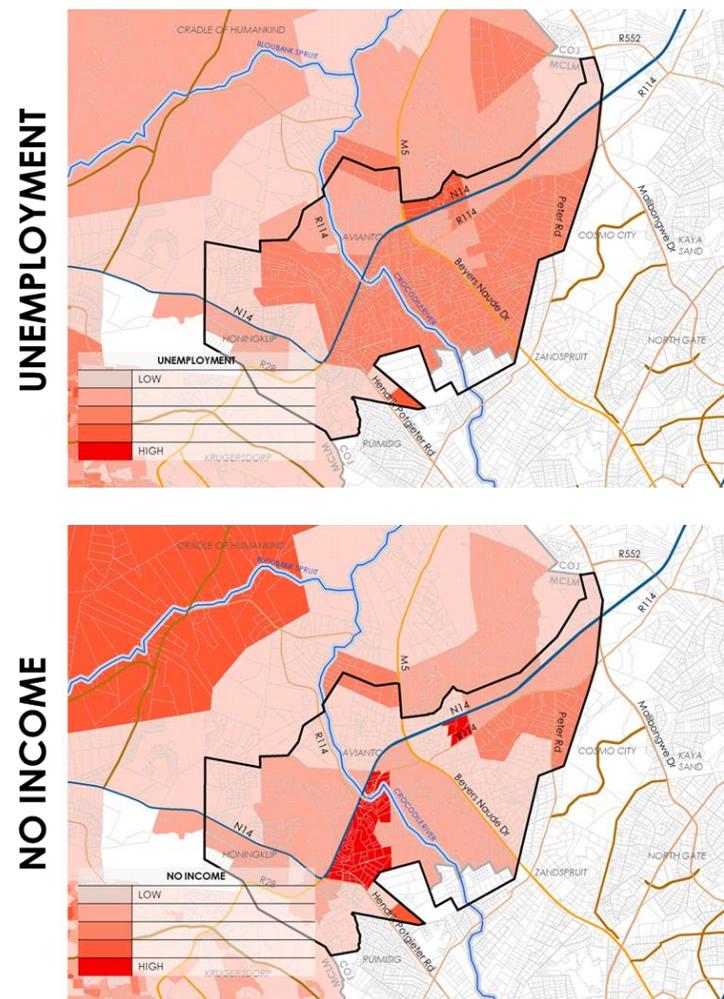


Figure 16: POVERTY INDICATORS



## 4.2 ENVIRONMENTALLY SENSITIVE AREAS

Critical Biodiversity Areas (CBA) and Environmentally sensitive Areas (ESA) are concentrated along the Crocodile River axis in the central part of the Precinct, with increasing and substantial coverage in the north and north west towards the CoH WHS.

Land status data for the area indicates that Muldersdrift Precinct status is classified as endangered.

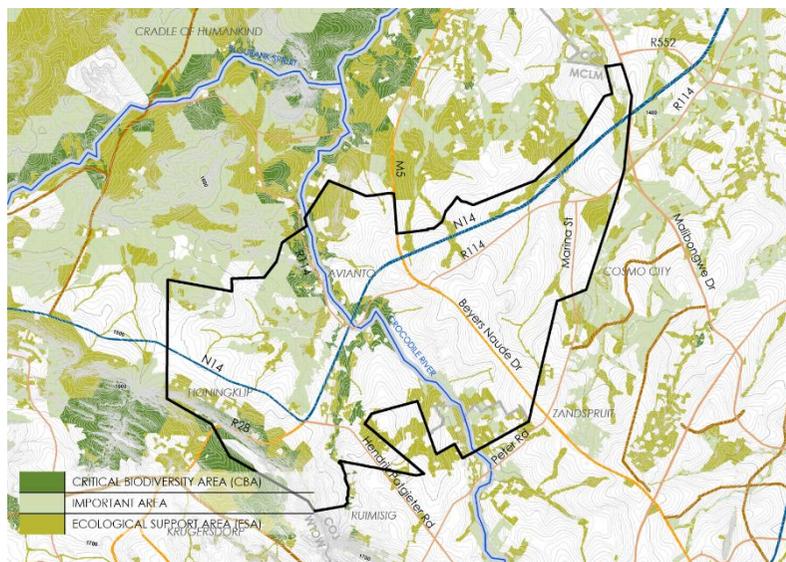


Figure 18: ENVIRONMENTAL SENSITIVITIES

## 4.3 PROTECTED AREAS

The Muldersdrift Precinct contains no protected areas but is located in close proximity to the Cradle of Humankind World Heritage Site (CoH WHS) to the north and north west. A portion of the Muldersdrift Precinct north of the N14 is located within the Magaliesberg Biosphere Reserve. The Magaliesberg Biosphere was proclaimed an international Biosphere Reserve by UNESCO on 9 June 2015, having been recognised for its exceptional natural, cultural, and human characteristics.

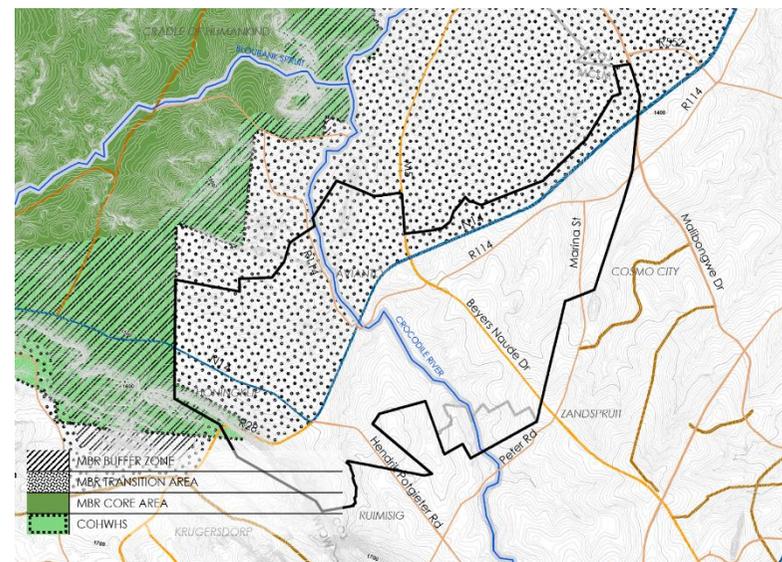


Figure 19: PROTECTED AREAS

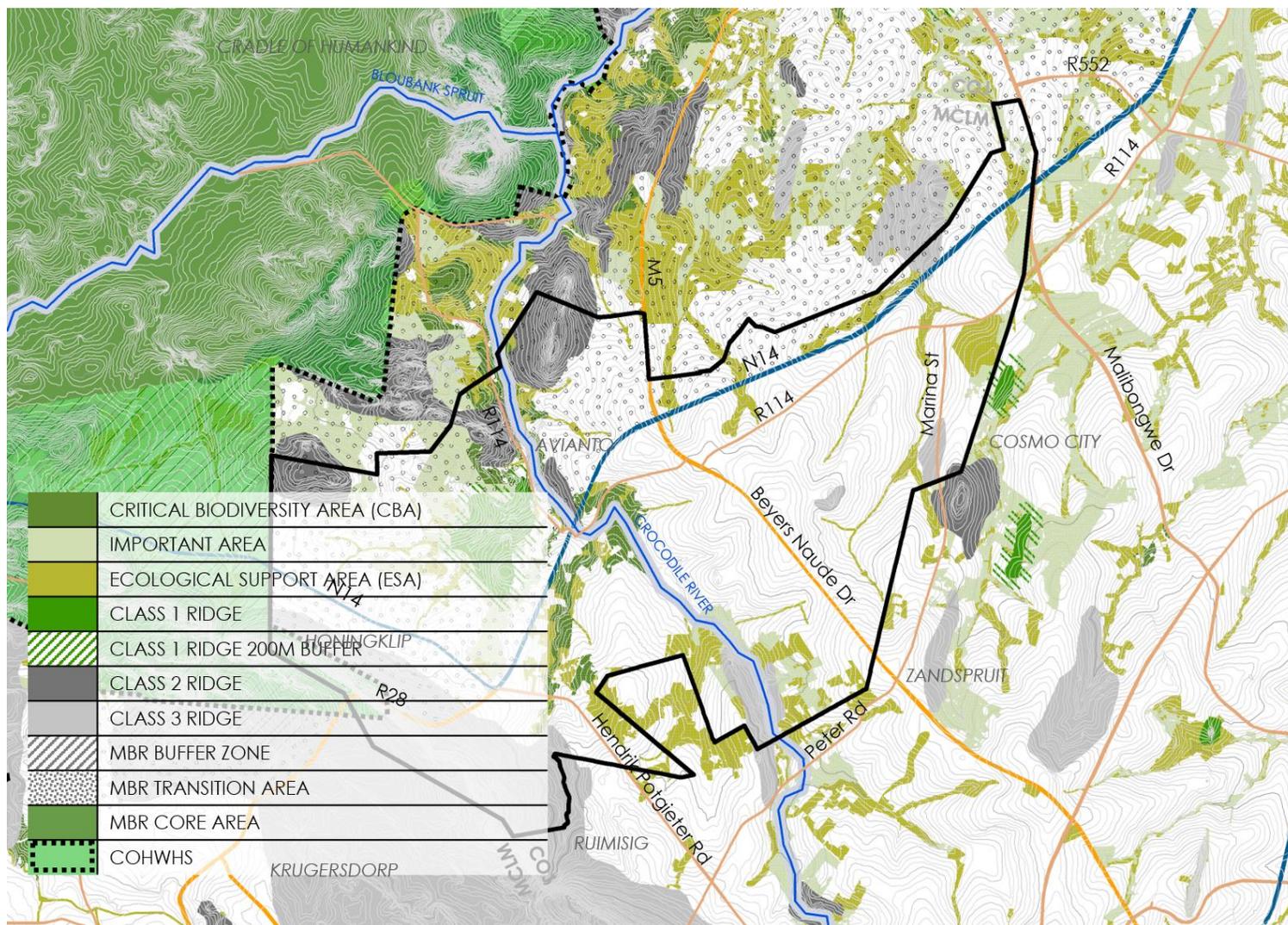


Figure 20: ENVIRONMENTAL CONDITIONS

## 5 TRANSPORT NETWORK

The Muldersdrift Precinct relies exclusively on road transport, but due to low vehicle ownership in some areas within the Precinct, some communities rely largely on walking and public transport.

### 5.1 ROAD NETWORK

#### 5.1.1 NATIONAL ROADS

National route N14 between the City of Tshwane (east) and the provinces of North West and Northern Cape (west) form an axis through the Precinct, but the route follows provincial road P158-1 under the jurisdiction of the Gauteng Provincial Department of Roads and Transport (Gautrans). Further to the west, N14 follows P126-1 (K72 and then K5) to Tarlton and then P28-1 to North West Province (Ventersdorp).

SANRAL has confirmed that no planning has been done regarding the westward extension of N14, west of the point where the existing road becomes K13 (provincial road P38-1). Nevertheless, within the Precinct, the N14 can be classified as a Class 1 Principal arterial with the function to carry long distance traffic.

#### 5.1.2 PROVINCIAL ROADS

Large parts of the Precinct are located outside urban areas and can be described as low-density rural living and therefore provincial roads form the backbone of the road network within the Precinct. Provincial roads in the Precinct are:

##### 5.1.2.1 N14 (P158-1):

Freeway link to Tshwane and the Gauteng freeway network, as well as Lanseria International Airport (R512 / P103-2 / K20), Cosmo City and Diepsloot in the east and Krugersdorp and North West Province to the west.

The north-south stretch of the N14 has been designated as a Development Corridor and the east-west stretch as a Tourism Corridor.

##### 5.1.2.2 PWV8:

The route of PWV8 originally published in the provincial gazette runs through the core area of the Cradle of Humankind World Heritage Site (COHWHS) and could not be authorised from an environmental point of view. An alternative route for PWV8 is under investigation and indications are that the existing freeway will be extended to join K72 (P126-1) west of K13 and the Cradlestone Mall area, from where it will be an expressway, i.e., a high order road with full control of access, but not designed to full freeway standards.

The exact design standards of the road are not expected to have any impact on the development of the core area of the Precinct and will not restrict the development potential of the Precinct, compared to the capacity of a road built to full freeway standards.

The alternative route of PWV8 has not been finalised and it is shown only in concept on the precinct development plan. PWV8 is expected to form a barrier between the Cradle of Humankind World Heritage Site

and the Muldersdrift Precinct, thereby protecting the Cradle against the impacts of urban expansion.

#### 5.1.2.3 P38-1 (K13):

Dual carriageway road between P158-1 and Mogale City CBD. A new interchange at the intersection of K13 and K72 at the north-western corner of the Cradlestone Mall is expected to be implemented in the near future.

Although some at-grade accesses with a low geometric standard exist along this road between P158-1 and K72, it is important that the existing function of the road as a Class 1 Principal arterial should be respected and that no new at-grade intersections should be allowed. Existing accesses should, where possible, be upgraded to accommodate the expected high future traffic demand.

#### 5.1.2.4 OTHER

There are three important linkages to the City of Johannesburg:

- **P126-1 (K72 / M47 / Hendrik Potgieter Road):** East-west route from N1 (east) to the Protea Ridge area (N14) (west) (proposed interchange at K13 / K72). Hendrik Potgieter Drive links to Ruimsig and Roodepoort.
- **D374 (K31 / M5 / Beyers Naudé Drive):** North-south arterial with access interchange on N14. Beyers Naude Drive passes Zandspruit and connects to Laser Park and Honey Dew.

- **P103-1 (R512 / K29 / Malibongwe Drive):** Links N1 (south) with Lanseria area, including interchange on N14. Malibongwe Drive runs next to Cosmo City and links to Strydom Park and Randburg

All these routes are freight routes and carry large amounts of traffic. Development is naturally attracted to these routes, leading to an increase in the traffic which creates significant pedestrian-vehicular traffic.

- **D1416 (Marina Street):** Northern extension of Peter Road, south of R114.
- **D1496:** R114 west of K13 (Muldersdrift) and access route to the CoHWHS.
- **P39-1 (R114 / K52):** Arterial road south-east of N14.
- **D2572:** Existing gravel provincial road between P126-1 and P39-1 (R114) in the quadrant behind (north-east) of Cradlestone Mall. This road provides a route through the large quarries in this area.
- **D2527 (Elandsdrift Road):** North of R114 with bridge across N14.

#### 5.1.2.5 PLANNED ROUTES

- **PWV3:** Planned provincial freeway from N1 (south) to N4 (north) with interchanges at K56 and K33 (Lanseria area).
- **K56:** Planned provincial arterial from K72 (south-west) to Tembisa area (east).

#### 5.1.3 MUNICIPAL ROADS

New township developments and the established residential areas of Pinehaven, Homeshaven,

Featherbrooke and Ruimsig Country Estate have formal municipal road networks, but many informal settlements are without proper road networks.

## 5.2 ROAD HIERARCHY

A functional road hierarchy provides structure to the Muldersdrift Precinct and is tabulated below.

*Table 1: ROAD HIERARCHY*

CLASSIFICATION	DESCRIPTION
Class 1 Principal arterial	N14 (P158-1) Planned PWV8 Planned PWV3
Class 2 Major arterials	K13 (P39-1 / N14) K29 K31 K76 Planned K56 K52
Class 3 Minor arterials	Metro Boulevard (planned) D1496 (access to Cradle) D2572 D2527 Additional proposed routes shown on the Gauteng provincial strategic major road network (2010)
Class 4 Collector roads	Several roads crossing the N14 (P158-1) are existing and potential future collector roads in the areas adjacent to the freeway where the freeway creates a barrier between communities on opposite sides of the road

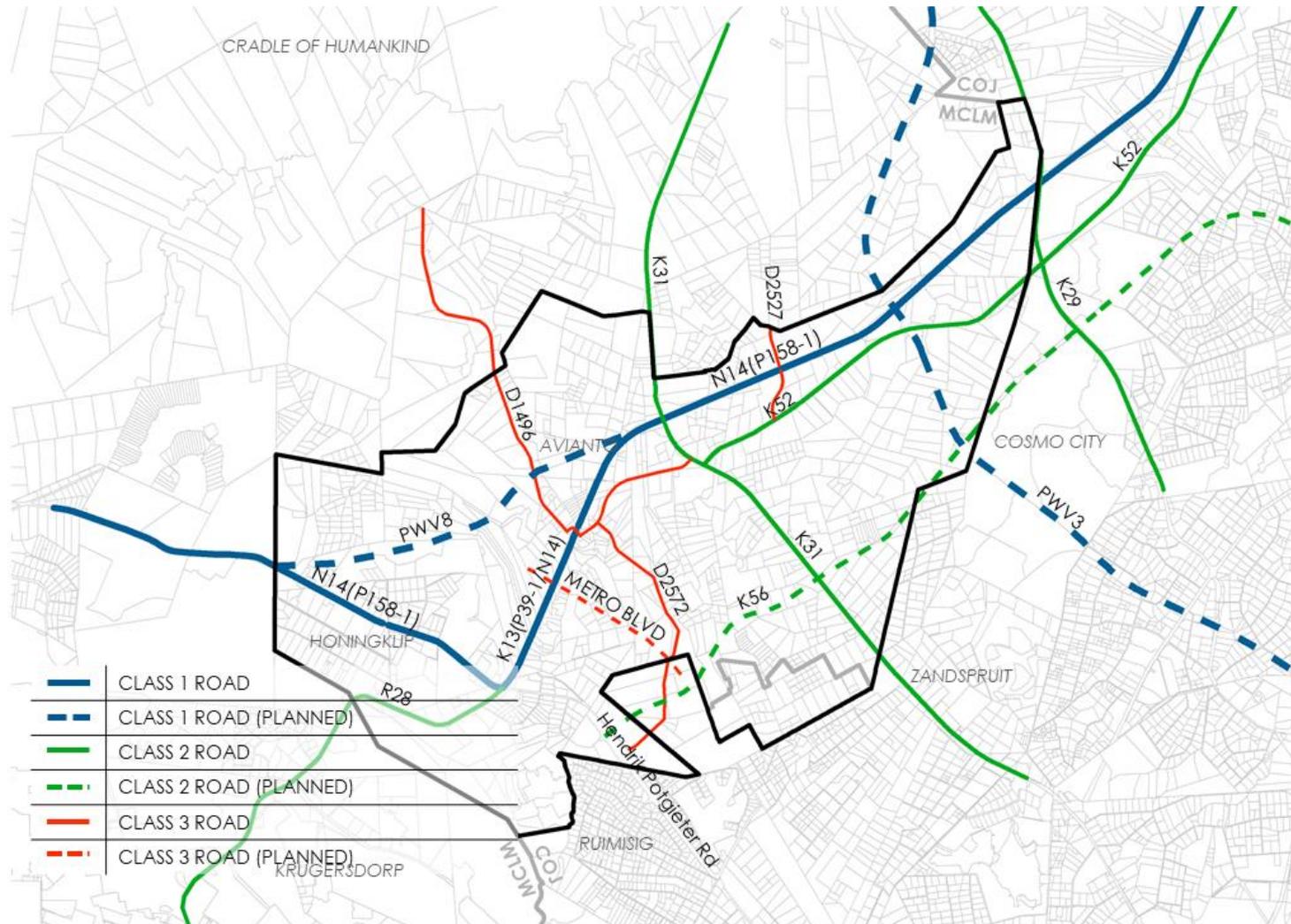


Figure 21: ROAD HIERARCHY

## 6 SPATIAL STRUCTURE

There is no clear land use pattern in the Muldersdrift Precinct and most uses are ad hoc and to a certain extent in conflict with each other.

### 6.1 RESIDENTIAL PATTERNS

Residential development in the Precinct differs in character. The bulk of the Precinct is still agricultural in nature.

Security estates/ enclosed residential complexes dominate the N14/ Hendrik Potgieter intersection and is growing at a rapid rate around the Cradlestone Mall as well as in the northern parts of the Precinct. 340ha of the Precinct is already used for this type of development. It links in function and typology more to the adjacent area of Ruimsig in Johannesburg than to the surrounding character of the Precinct and is a manifestation of the development pressure from Johannesburg.

Some of the properties along Hendrik Potgieter and the southern portion of the N14 are still agricultural holdings. These comprise 240ha of the Precinct. The agricultural holdings are changing from agricultural residential to commercial and more intense residential use.

There are 24 informal settlements within and directly surrounding the Precinct, more than in the rest of Mogale City combined. The settlements range in size from less than 20 to more than a 1 000 units. The extent of informal

settlements is reflected in the high number of residential units that are classified as rented (according to the socio-economic study undertaken for the Precinct Plan): 37%.

Informal settlements are distributed throughout the Precinct with some clustering around main roads. Most of the settlements have to be relocated because they are located within the CoH WHS or are too isolated and small to functionally form part of the urban structure. There is a dire need not only to provide housing but also to create a functional urban form, where informal settlements can be integrated in the urban structure.

There are three large mixed use residential projects in process in the Precinct:

- Nooitgedacht megacity, adjacent to Cosmo City
- Avianto, an extension of the current Avianto development
- Greengate/ The Village at the N14/ Hendrik Potgieter intersection

These projects will be discussed in more detail in Section 7.

The portion of the Precinct adjacent to the N14 has been identified as a Priority Human Settlements and Housing Development Area.

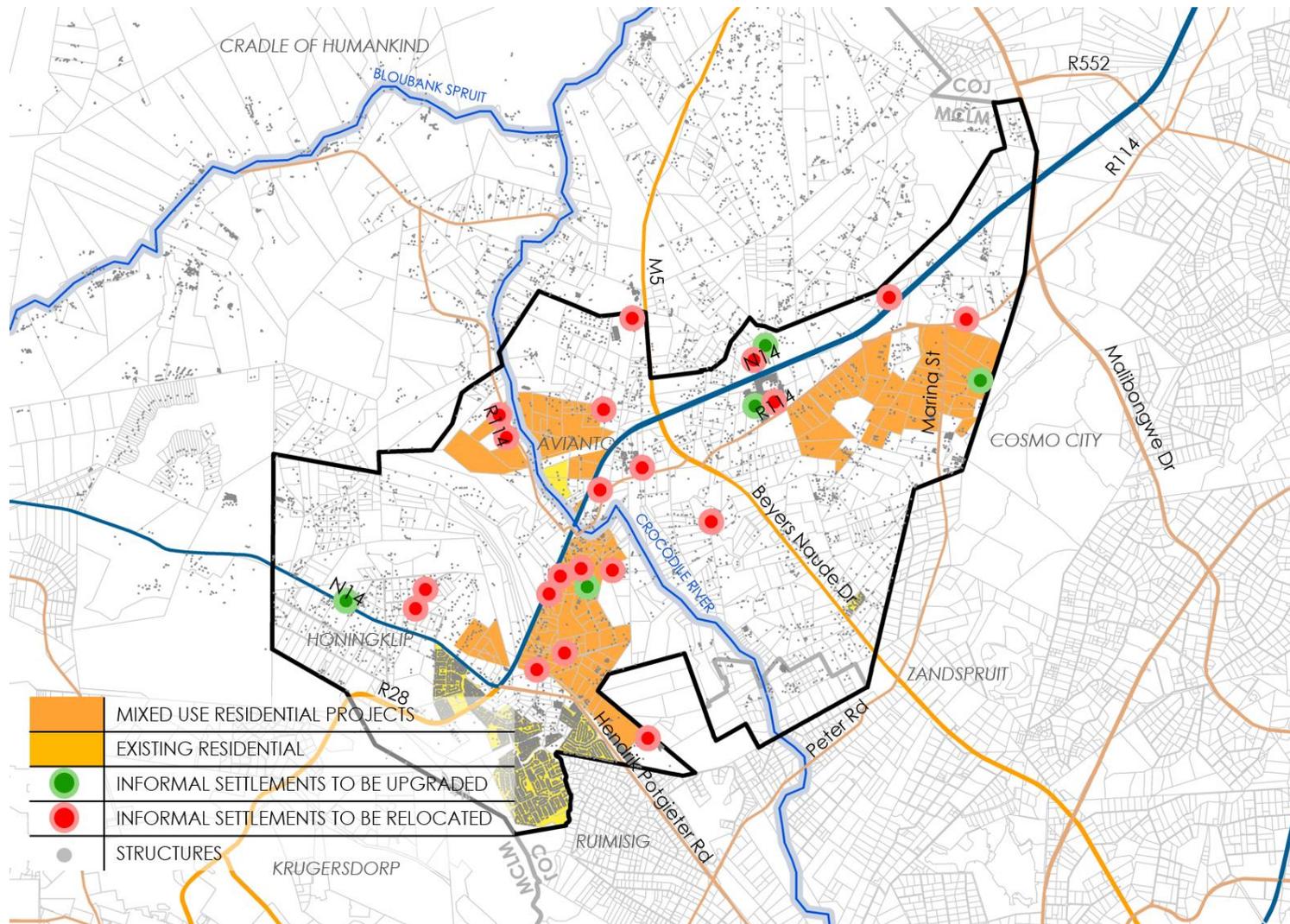


Figure 22: RESIDENTIAL PATTERNS

## 6.2 HOUSING AFFORDABILITY RANGES

Housing affordability ranges for both rental and bonded housing inform the level of affordability between the various income groups within the market area, based on the annual household income figures and population features. Housing affordability is distributed across all income groups.

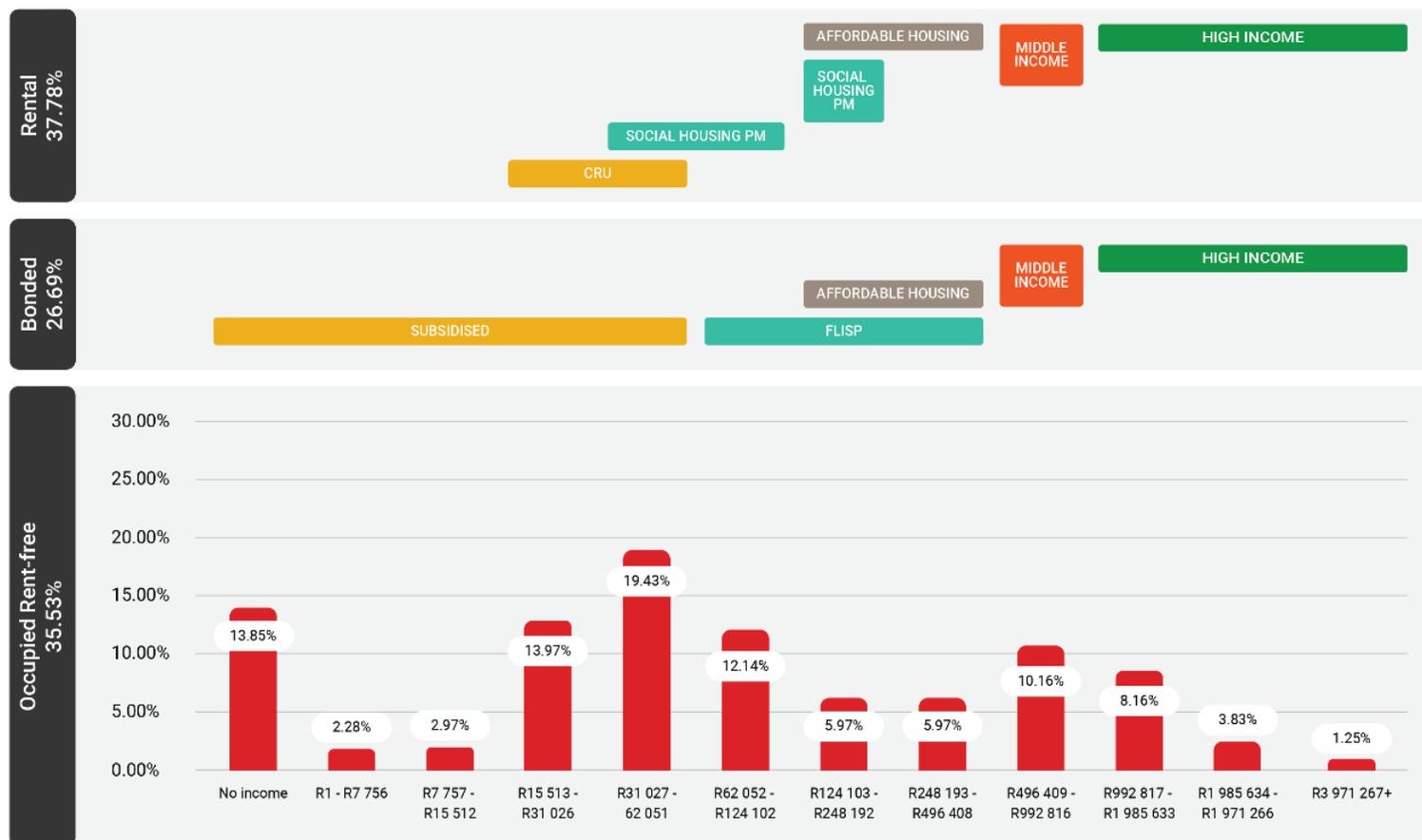


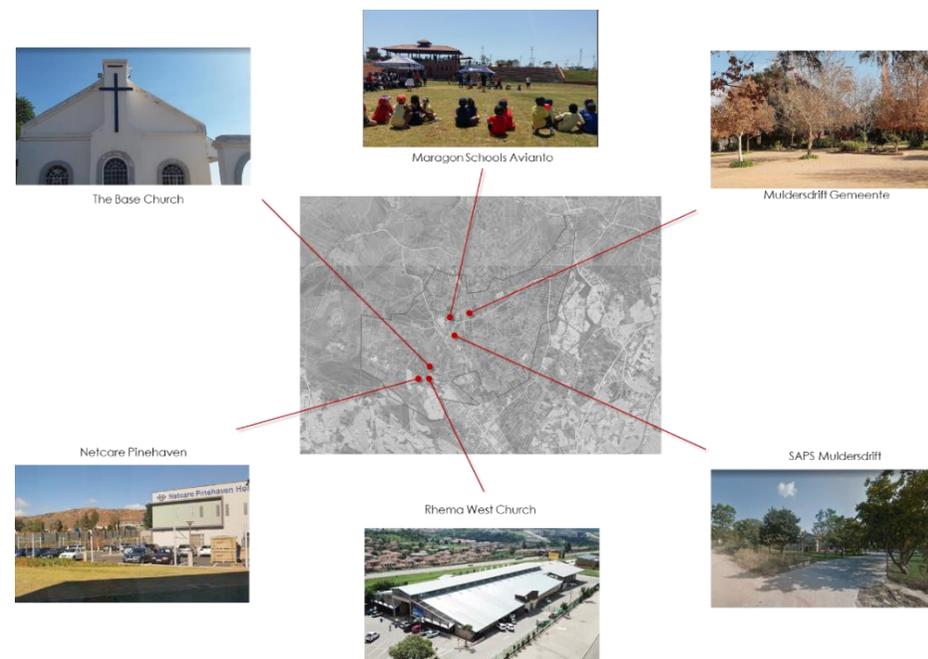
Figure 23: HOUSING AFFORDABILITY RANGES

## 6.3 SOCIAL FACILITIES

The rural nature and low population thresholds in the Muldersdrift Precinct result in a limited number of social facilities. Facilities are sparse and widely distributed. Residents have to travel long distances to access facilities, some facilities only being available in Krugersdorp and Johannesburg. Vehicle ownership is a prerequisite to reaching social facilities, yet many residents are reliant on public transport, which is almost non-existent, or have to walk long distances.

The shortage of social facilities will increase with the development of lifestyle estates and the conversion of agricultural holdings into residential complexes. These developments are of such a nature and scale that each does not warrant the provision social facilities when considered on their own, but their cumulative impact necessitates the provision of a wide array of social facilities. In some instances, facilities are privatised.

It is up to the municipality to determine the potential yield for an area, calculate the cumulative number of social facilities that will be needed and to identify an ideal locality. The aim would be to cluster social facilities together in an accessible node.



## 6.4 RETAIL AND COMMERCIAL

Muldersdrift is regarded as the emerging economic hub of Mogale City and the retail offering serves a region much wider than the Precinct.

Retail, commercial, and industrial activities are distributed throughout the Precinct but focused on the main roads. Business activities are varied with retail, personal services, entertainment facilities, commercial enterprises such as warehousing and agriculture-related activities such as nurseries.

Retail development is specifically focused on the N14/Hendrik Potgieter intersection with the Cradlestone Mall creating the centre of the node. There is a concentration of particularly commercial development at the intersection of Beyers Naude Drive, the R114 and the N14. Smaller retail and commercial clusters are located:

- along the R114 between the intersection with Beyers Naude Drive and its intersection with the N14 – mostly accommodation establishments, restaurants, and shops.
- along Beyers Naude Drive on the eastern border of the Precinct – mostly commercial enterprises such as warehousing and light industrial.
- along the western section of the N14, where many of the land uses on the agricultural holdings are practised without the necessary land use rights – diverse land uses such as nurseries and earth-moving equipment.

The importance of visibility and accessibility on the locational choices of businesses are clear.

There are some mines and quarries in the southern portion of the Precinct. According to municipal officials these are keeping the area hostage with leases of up to 30 years that are sterilising the land and necessitate buffer strips that impinge on the development of adjacent private land.

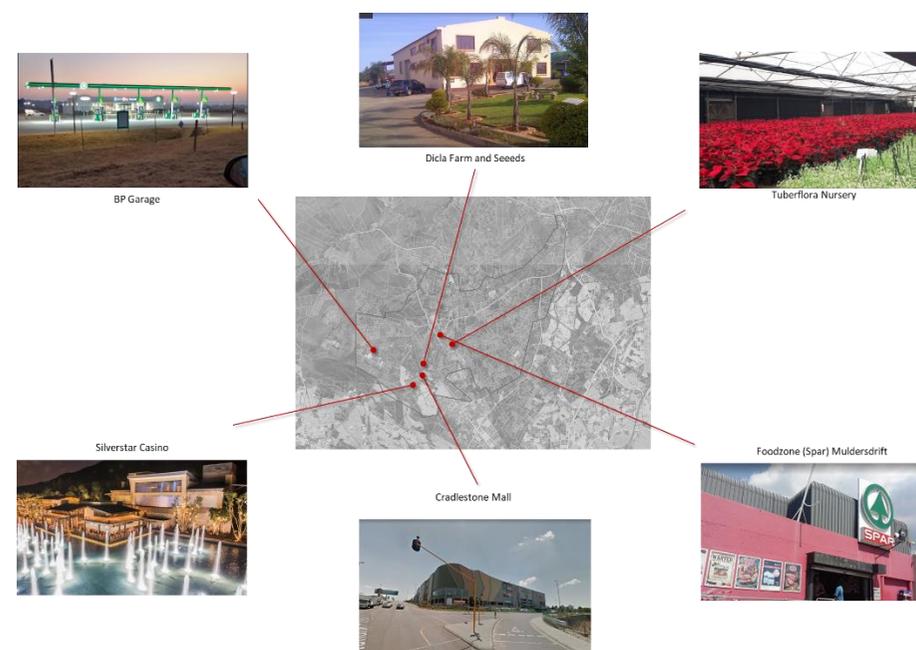


Figure 24: COMMERCIAL AND RETAIL FACILITIES

## 6.5 TOURISM

The Muldersdrift Precinct has high tourism product value, with a number of well-established wedding venues, short stay accommodation, spas, restaurants, art galleries and outdoor adventure facilities. Its locality adjacent to the CoH WHS, the MBR and the N14 Tourism Corridor adds to its tourism potential. It is popular for day and weekend tourism with residents in Gauteng.

Tourism facilities are distributed over the entire Precinct. The only concentration can be identified along the R114 to the north of the N14. This is one of the main routes to the Cradle of Humankind.

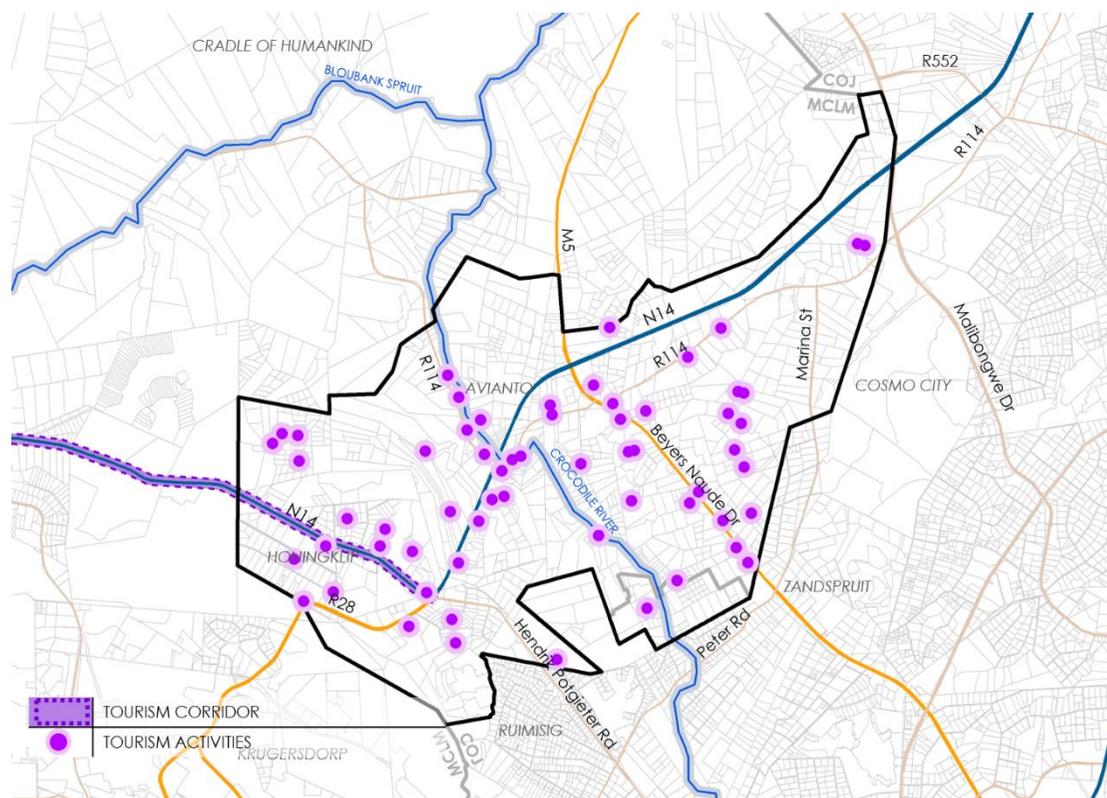


Figure 25: TOURISM ELEMENTS

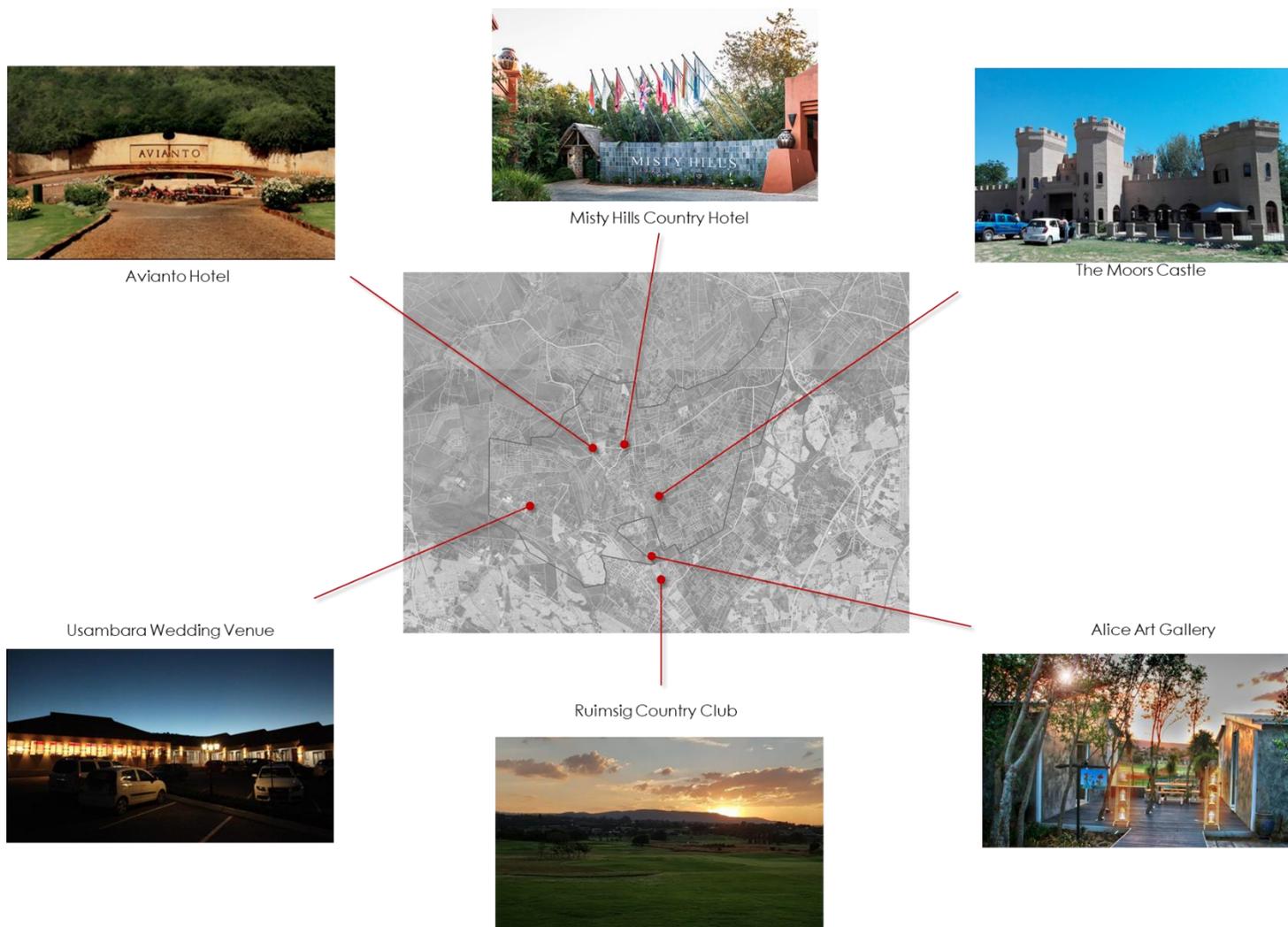


Figure 26: TOURISM FACILITIES

## 7 LARGE DEVELOPMENT PROJECTS

There are four significant proposed projects within the Precinct that are of such a scale and nature that they have the potential to completely change the function and character of the Precinct. These are:

- The Lanseria Smart City – Master Plan in process
- The Nooitgedacht Mega City – land assembly and township establishment in process
- The extension of the Avianto development – township establishment in process
- Greengate/ the Village development – township establishment in process

### 7.1 LANSERIA SMART CITY

The Lanseria Smart City is a national initiative that will have a significant impact on the future development of the Muldersdrift Precinct. It involves to the Presidency, the Office of the Gauteng Premier and the municipalities of Mogale City, City of Johannesburg and City of Tshwane, together with the adjacent municipality of Madibeng in North West Province. It was recognised by the president during SONA 2020 and 2021.

The 'Lanseria Smart City' initiative is described as follows: a post-apartheid, publicly-led plan that enables the private sector and communities to build an urban economy as a basis for a truly integrated city, socially, economically and culturally.

As a regional initiative, the Lanseria Smart City is a high-impact, compact, complex, mixed-use urban development designed to deliver urban prospect to a marginalised periphery.

With regards to infrastructure, the DBSA seeking innovative funding and investment into regional bulk infrastructure, thereby taking this burden off local authorities and understanding infrastructural delivery as a cooperative investment across municipal boundaries. This is an attempt to address one of the primary reasons hampering development in the region: a lack of bulk infrastructure, notably sanitation.

The Greater Lanseria Master Plan (GLMP) was circulated for comments during December 2020. In effect, the GLMP is a regional master plan (encompassing a study area loosely defined as a 25-minute drive from Lanseria International Airport in all directions) that provides a meaningful, balanced, and well-integrated hinterland to the Smart City that is to be birthed at its core. The entire Muldersdrift Precinct falls within the 25-minute drive area.

It proposes mixed land uses for the Precinct, with a focus on green industries and commercial development:

- mixed use: ±1 00 000m<sup>2</sup>
- commercial/ warehouse: ±4 000 000m<sup>2</sup>
- business/ institutional: ±6 00 000 m<sup>2</sup>
- industrial: ±7 000 000m<sup>2</sup>
- freight and logistics: ±700 000 m<sup>2</sup>
- residential: ± 319 910 units; ± 863 757 people



Figure 27: IMAGES OF THE PROPOSED LANSERIA SMART CITY

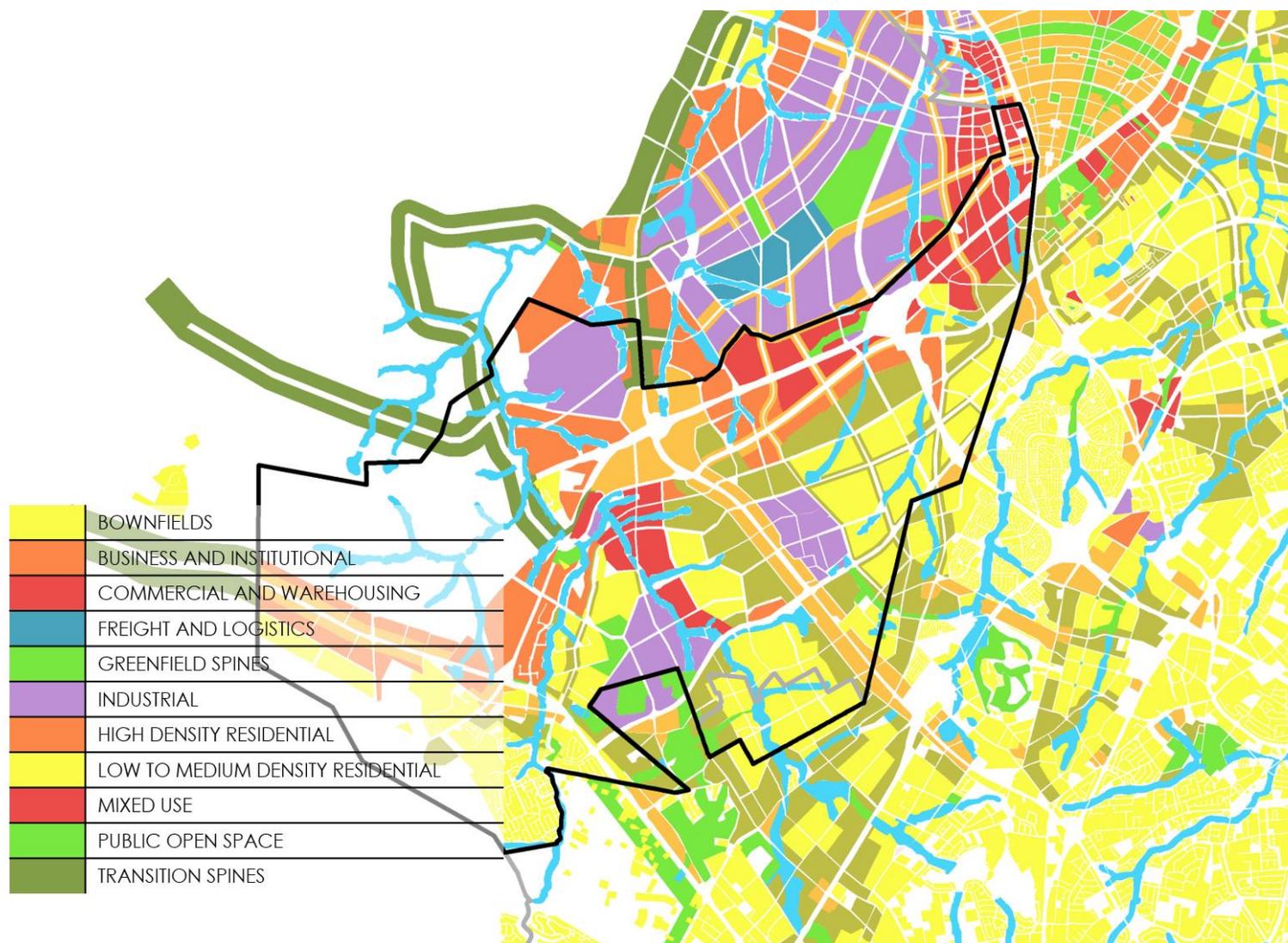


Figure 28: GREATER LANSERIA MASTERPLAN LAND USE

The GLMP makes the following land use proposals for the Muldersdrift Precinct Plan:

Table 2: LAND USE BUDGET

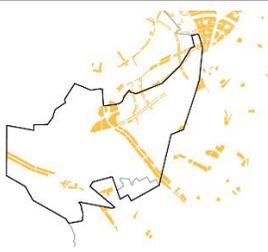
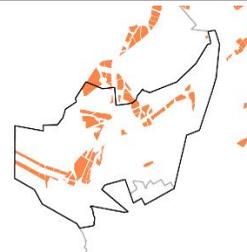
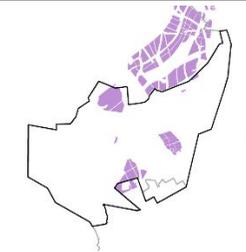
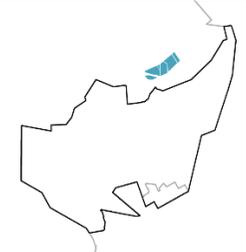
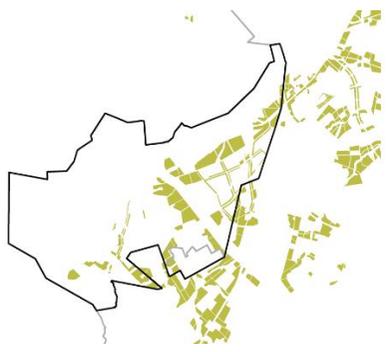
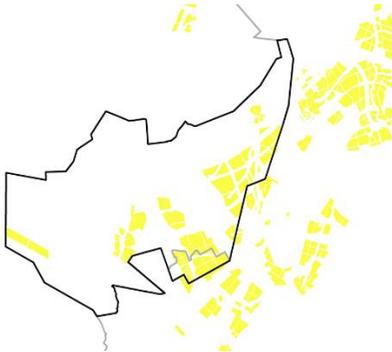
MIXED USE			COMMERCIAL/ WAREHOUSE			BUSINESS/ INSTITUTIONAL			INDUSTRIAL			FREIGHT AND LOGISTICS		
dev area	FAR	floor area	dev area	FAR	floor area	dev area	FAR	floor area	dev area	FAR	floor area	dev area	FAR	floor area
ha	ratio	m <sup>2</sup>	ha	ratio	m <sup>2</sup>	ha	ratio	m <sup>2</sup>	ha	ratio	m <sup>2</sup>	ha	ratio	m <sup>2</sup>
776	0.8	6 208 800	580	0.65	3 770 195	1 116	0.55	6 138 836	1 281	0.55	7 046 039	114	0.6	683 802
														
Distributed along major routes, specifically Hendrik Potgieter/ N14 (western leg) and Beyers Naude.			Around the N14 (northern leg) and to the north of the existing quarries			Distributed along N14 northern and western legs, at the Hendrik Potgieter Street/ N14 intersection, at the Beyers Naude Drive/ N14 intersection			Located centrally on the northern border of the Precinct, along Beyers Naude Drive and centrally at the southern boundary			Outside the Precinct, to the north.		

Table 3: RESIDENTIAL YIELD AND OPEN SPACE

HIGH DENSITY RESIDENTIAL			MEDIUM DENSITY RESIDENTIAL			PARKS/ PUBLIC SPACE
Dev area (ha)	Net density (du/ha)	units	Dev area (ha)	Net density (du/ha)	units	Dev area (ha)
1 487	130	193 323	545	85	46 367	2 545
						
To the east and south of the N14 along main streets			To the east and south of the N14			
Total residential: 239 690 dwelling units						

The implications for the Precinct Plan is:

- a focus on mixed land uses along Beyers Naude Drive, Hendrik Potgieter Street and the western leg of the N14.
- Commercial, business, industrial uses along the N14 (northern leg) and to the north-west of the N14
- Residential development to the south-east of the N14 with higher densities adjacent to the main streets.

## 7.2 TOWNSHIP ESTABLISHMENT

Three large residential/ mixed-use development projects within the Precinct: Nooitgedacht Mega City, Avianto, and Greengate/ the Village. Together these cover an area of 1 000ha and are estimated to provide around 25 000 residential units. The proposed layouts of these projects were taken into account with the development of the concept for the Precinct.

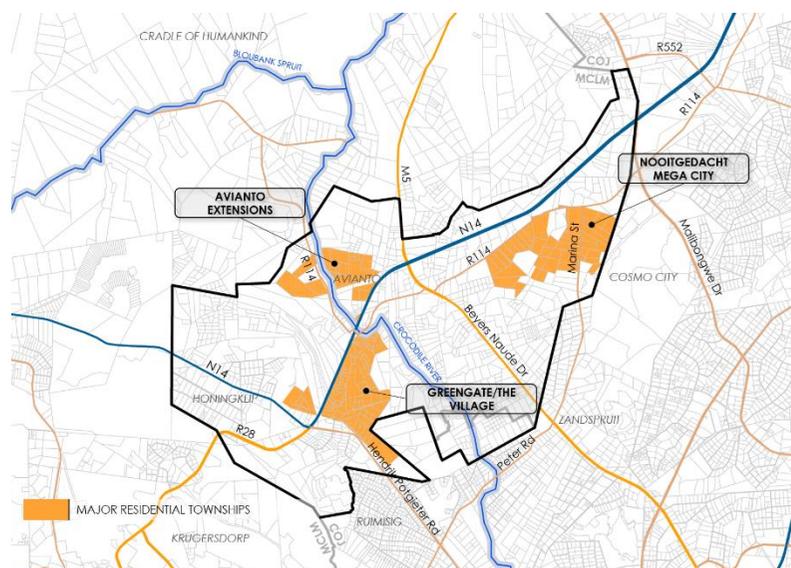


Figure 29: LARGE DEVELOPMENT PROJECTS

### 7.2.1 NOOITGEDACHT MEGA CITY

The proposed Nooitgedacht Mega City is located in the north-eastern part of the Precinct. It is a 'Breaking New Ground' project. Provision will be made for:

- RDP (fully subsidised housing units)

- Social / Community Rental Housing
- FLISP/GAP Housing

A sustainable Human Settlements approach will be adopted which will make provision for all the supportive land uses such as:

- Retail
- Education
- Open space
- Community facilities
- Health

It will be 381ha in extent and will consist of the following portions of land:

- Nooitgedacht township (Refentse – Mogale Ext 16): a greenfields development. It consists of portions of the farm Nooitgedacht 534JQ that make up 67ha: Ptn 89, 206 and 307 are owned by MCLM and Ptn 90 is owned by GDHS. The proposed layout will yield 3 700 units.
- Crane Valley Country Life Estate – 163ha: approved township with low density (5du/ha) to be increased to 80du/ha
- SA Land – 119ha: EIA in process. Densities of 100du/ha. It is projected that approximately 5 000 dwelling units can be provided.
- Umnotho for Empowerment – 32ha: approved township (Mogale Ext 28) on portion 63 a portion of the farm Nooitgedacht 534JQ

Additional parcels of land are being identified for inclusion in the Mega City.

On 28 October 2020, the Municipal Council resolved:

- That a request be made to the Gauteng Department of Human Settlement for support and approval.
- The Housing Development Agency be requested to conduct feasibility studies and valuation of the proposed properties.
- That upon valuations, HDA to assist with acquisition of the properties.
- That an alternative sanitation solution be sought from the market.

It is estimated that between 10 000 and 15 000 dwelling units can potentially be developed.

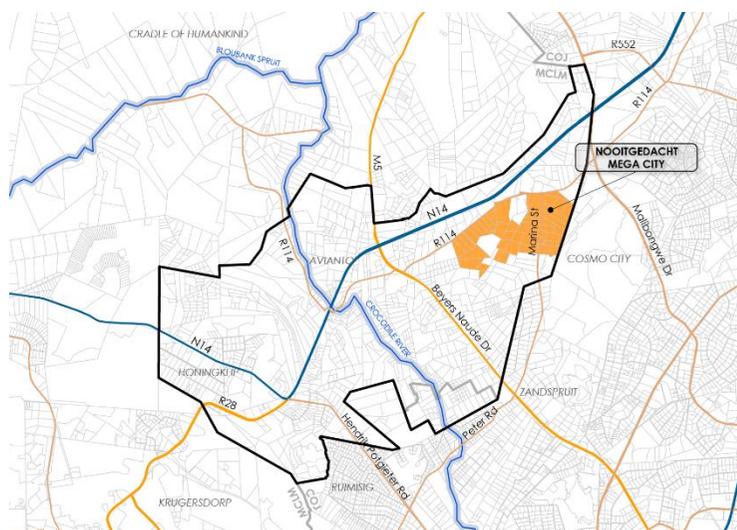


Figure 30: NOOITGEDACHT MEGACITY

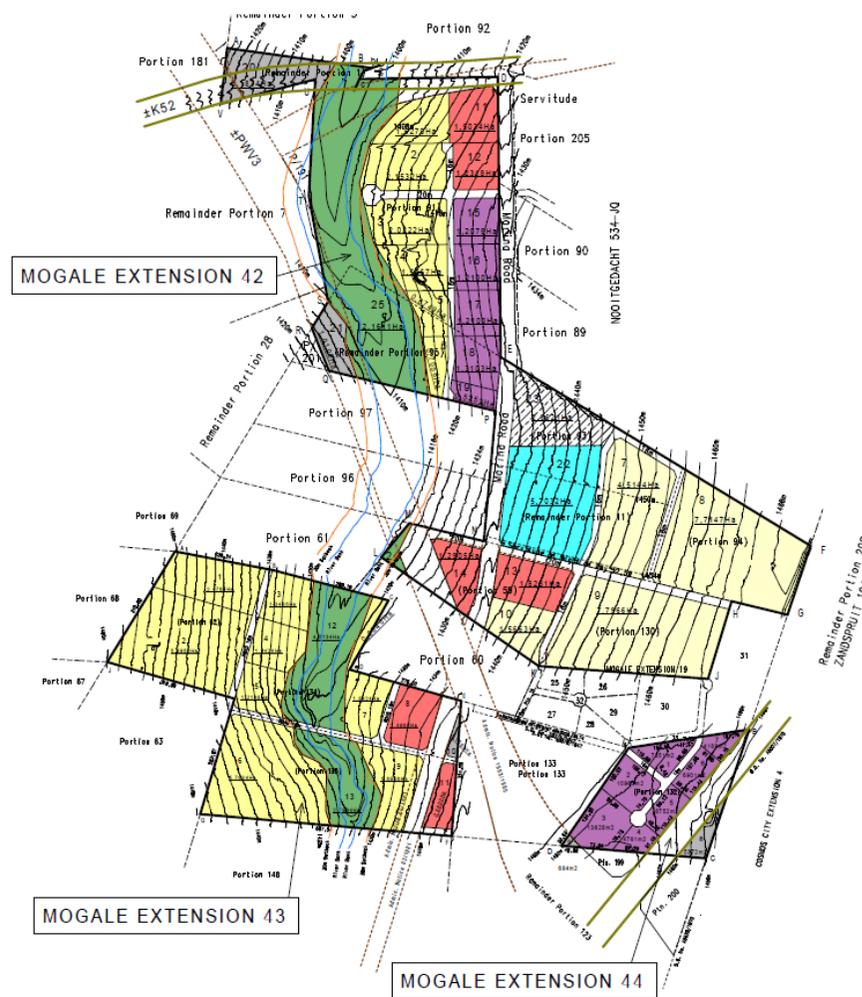


Figure 31: MOGALE CITY EXT 42, 43 AND 44



### 7.2.3 GREENGATE/ THE VILLAGE DEVELOPMENT

The Greengate / The Village development is a major development on the north eastern and south western corners of the N14 and Hendrik Potgieter Rd intersection. The development consists of at least 12 additional townships divided into three zones: Zone A consisting mostly of business erven with some Residential 3 erven. Zone B consist mostly of Residential 3 erven with two areas earmarked for Business 1. Zone C consists of Industrial, Commercial, Storage and Warehouse and some Residential 3 erven. The combine residential yield is expected to approximately 14 700 units.

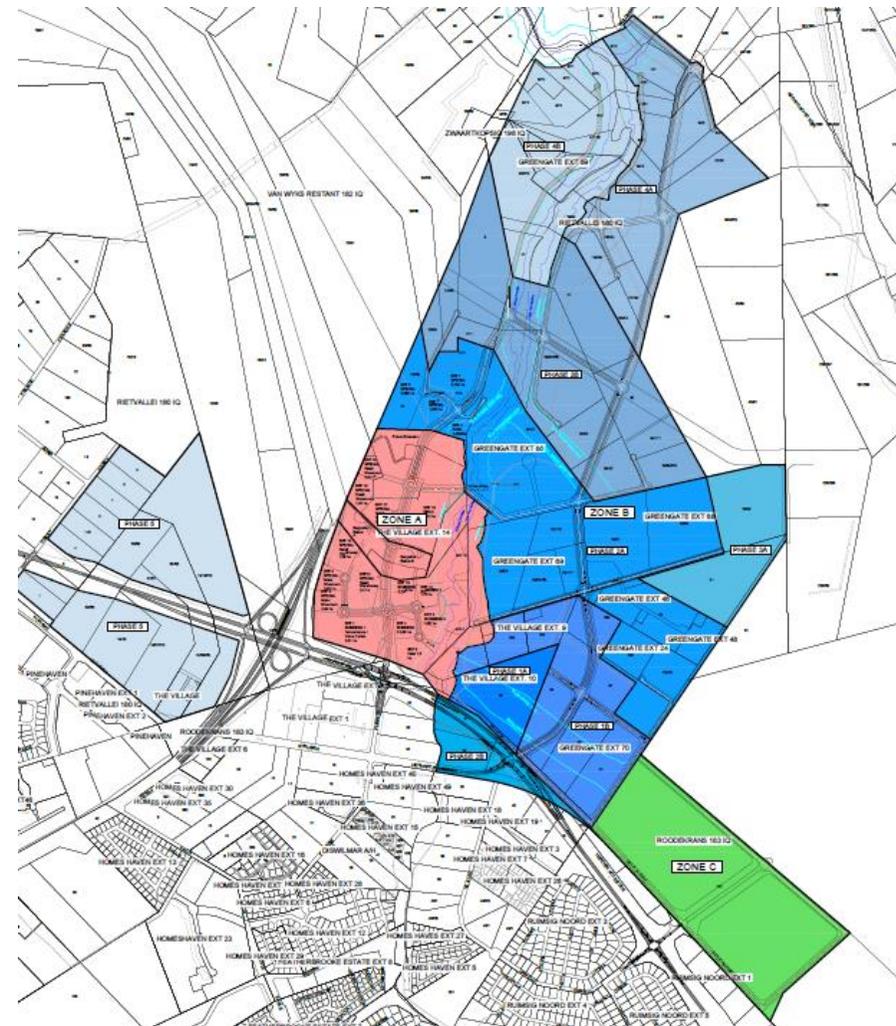
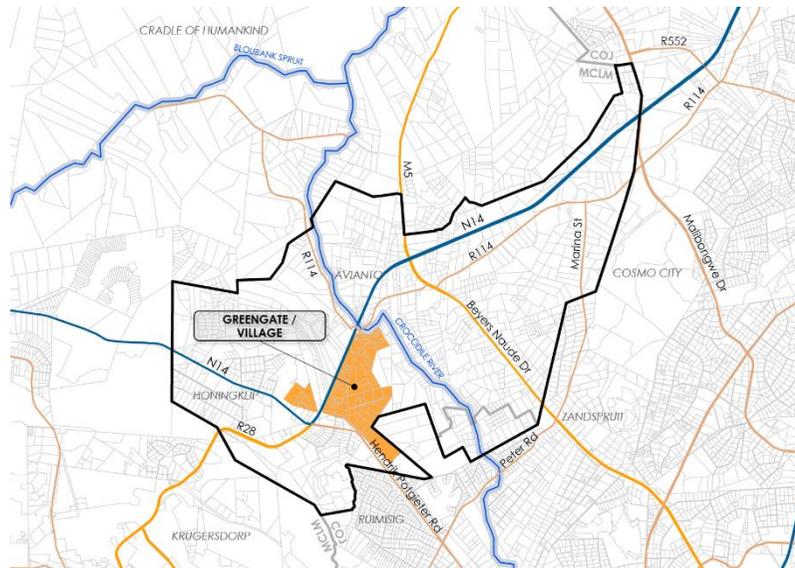


Figure 33: GREENGATE/ THE VILLAGE DEVELOPMENT

## 8 INFRASTRUCTURE

### 8.1 ELECTRICITY

This Precinct falls within the Mogale City municipal area but is not included in the Mogale City's electricity licence area and is supplied by Eskom from Sandpit substation. Mogale City Local Municipality does not have any electrical infrastructure in the area. Eskom strategic planning does make provision for a new Muldersdrift substation to be build.

The Sandpit substation details are as follows:

- Installed transformers: 1 x 40 MVA, 2 x 10MVA and 1 x 5MVA.
- Substation voltage: 88/11kV
- Existing maximum Notified Demand: 25 MVA
- Spare capacity: 10MVA

The new bulk infrastructure planned for the Muldersdrift area is to build 2 x new 88kV lines and establish a new 2 x 20MVA 88/11kV substation.

### 8.2 WATER INFRASTRUCTURE

#### 8.2.1 BULK WATER SUPPLY

##### 8.2.1.1 BULK CONNECTIONS AND SUPPLY AREAS

Bulk water is supplied into the Precinct via four connection points located along the southern and western boundaries of the Precinct:

- Johannesburg Water Connection - Muldersdrift Road

- Johannesburg Water Connection - Hendrik Potgieter Road
- Munsieville Reservoir Connection – N14 (Tarlton Road)
- Rangeview Reservoir Connection

#### **Johannesburg Water Connection - Muldersdrift Road**

Supplies the major portion of the Muldersdrift Precinct, covering the area to the east of the Crocodile River as well as to the north of the N4 freeway.

The connection is currently utilized to maximum capacity, with low pressures frequently experienced in the area to the north of the N4 freeway during periods of high demand.

A reservoir is to be provided for storage and peak demand balancing and to cater for future commercial and residential development towards Lanseria.

#### **Johannesburg Water Connection - Hendrik Potgieter Road**

Supplies water to the area to the east of the Crocodile River and south of the N4 freeway and R28 (Paardekraal Drive), to development at Featherbrooke Estate, Cradlestone Mall, and surrounding areas.

### **Munsieville Reservoir Connection – N14 to Tarlton**

Supplies water to the area to the north of the R28 (Paardekraal Drive) and along both sides of the Tarlton Road, to development at Pinehaven, Diswilmar AH, Steynsvlei AH, Heuningklip AH.

The connection has adequate capacity for the supply area. Low pressures are though experienced in the higher lying area adjacent to Paardekraal Drive.

### **Rangeview Reservoir Connection - Hendrik Potgieter Road**

Functions supplementary to the Munsieville connection, supplying the same areas to the south and east of Paardekraal Drive as well as Ruimsig North.

#### **8.2.1.2 PLANNED BULK WATER UPGRADING**

The following upgrades are planned:

- Muldersdrift Reservoir (Nooitgedacht) - Construction of 20Ml water reservoir (Total Value R50m)
- Muldersdrift Reservoir (Pinehaven) - Construction of 20Ml water reservoir (Total Value R50m)
- Munsieville Reservoir and Tower - Upgrading of Munsieville water reservoir and tower (Total Value R21m)
- Kromdraai Water Pipeline - Construction of 5 km x 160mm diameter water pipeline (Total Value R12m)

Other planned pipelines:

- WCWDM Project - Refurbishment and replacing of PRVs.
- Installation of bulk Zonal and Check Meters.
- Refurbishment of the Telemetry system (Total Value R20m)

## **8.2.2 WATER RETICULATION NETWORKS**

All proclaimed townships are reticulated to provide house connections to individual properties. Water losses experienced within the networks are 39 %.

### **8.2.2.1 PLANNED OPERATION AND MAINTENANCE**

- Annual Operation and Maintenance Budget: R408m (142% actual expenditure)
- The total staff capacity consists of 73 positions (21 are vacant)
- Annual Water Tanker Deliveries equals 35 000 kl: R 36m (274% actual expenditure)

### **8.2.2.2 CHALLENGES**

- Insufficient funding for pipeline replacements
- Increasing water losses
- Limited infrastructure in rural areas to accommodate informal settlements and proposed housing developments.

## 8.3 SEWER INFRASTRUCTURE

### 8.3.1 BULK SANITATION

#### 8.3.1.1 TREATMENT

##### **Driefontein WWTW**

Sewage effluent generated within the Precinct is collected and treated at the Driefontein WWTW. The facility is owned and operated by Johannesburg Water. The facility also serves the northern suburbs of Roodepoort and Rietfontein. The Works was expanded in 2013 with 25MI/d to a capacity of 55MI/d. It has adequate capacity for present development in its catchment area. The Works can in future be expanded by a further 25MI/d to 80 MI/d.

##### **Lindley WWTW**

A new Works to be located in the vicinity of Lanseria Airport is being planned for future development in the area. It will have a capacity of 40MI/d.

#### 8.3.1.2 OUTFALL SEWERS

##### **Driefontein Outfall Sewer**

Johannesburg Water owns and operates a bulk outfall sewer that commences in Roodepoort, follows the general alignment of the Crocodile River and terminates at the Inlet Works of the Driefontein WWTW.

### **Muldersdrift Outfall Sewers**

Effluent from development within the Muldersdrift Precinct is collected by a number of Outfall Sewers. The outfall sewers all link up to the Driefontein Outfall Sewer. These outfall sewers are:

- Featherbrooke Outfall Sewer
- Pinehaven Outfall Sewer
- Greengate Outfall Sewer
- Rietfontein village Outfall Sewer
- Ethembaletu Outfall Sewer

#### 8.3.1.3 PLANNED UPGRADE

The Pinehaven bulk outfall sewer is to be upgraded from Pinehaven to the Driefontein WWTW ( $\pm$  10 km - 200mm to 450mm diameter sewer) (Construction 2021 /2022).

### 8.3.2 SEWER RETICULATION NETWORKS

Sewer reticulation networks in general have adequate capacity but require regular maintenance that includes high pressure cleaning of pipes to clear and reduce blockages as well as sealing of manholes to prevent stormwater ingress.

#### **Planned Operation and Maintenance**

- Ethembaletu - Gravity Line (200NDx2.3km) - Rising main (200NDx1.9km)
- Rietfontein Village - Gravity Line (200NDx2km - Rising main (200ND/300NDx2km)
- FeatherBrooke Outfall - Gravity Line (315NDx1.1km)

- Pinehaven Outfall - Gravity Line (200NDx1.0km)  
- Rising main (200NDx1.0km)
- Annual Operation and Maintenance Budget: R39,5m (168% actual expenditure)
- The total staff capacity consists of 56 positions (6 are vacant)
- Chemical Toilets: R11m (138% actual expenditure)

### Challenges

- Insufficient funding for infrastructure maintenance and upgrades
- Limited infrastructure in rural areas to accommodate informal settlements and proposed housing developments.

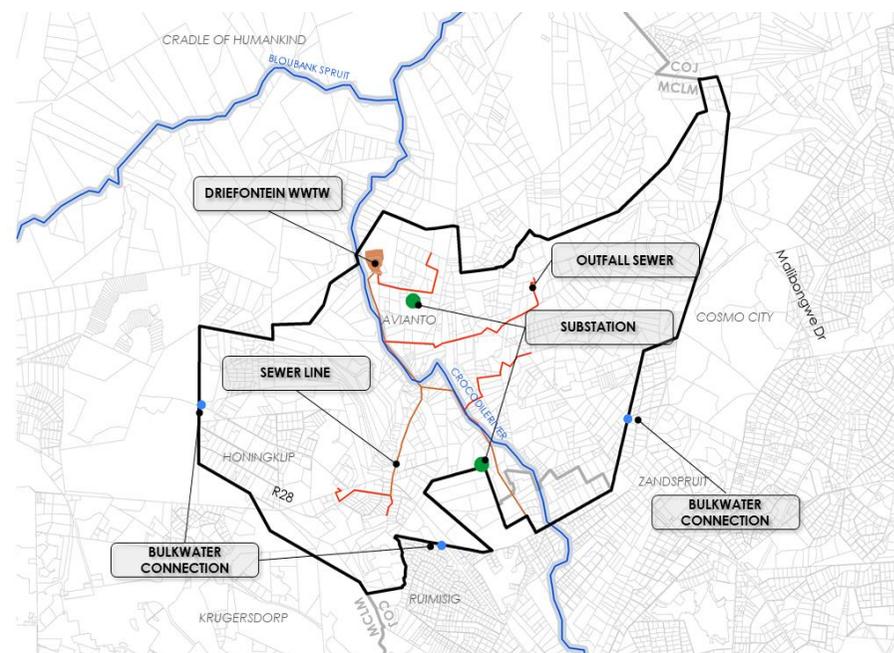


Figure 34: ENGINEERING INFRASTRUCTURE

## 9 SYNTHESIS

The Muldersdrift Precinct is located on the rural-urban periphery of the Cities of Mogale and Johannesburg. It is starting to buckle under the pressure of development. Development pressure has taken the form of:

- Enclosed residential complexes moving in from the east from areas such as Ruimsig.
- Dispersed informal settlements, most of which have to be relocated, as they are either too small or remotely located to become a functional part of the settlement form, or they are located in environmentally sensitive and protected areas such as the CoH WHS.
- Commercial activities that are attracted by the visibility, regional accessibility and mobility offered by the N14.

The manifestation of development pressure has been an ad hoc settlement pattern with incompatible land uses, pockets of high income and low-income houses and an environment exclusively dependent on private transport. Engineering services, the road network, public transport, and social facility provision has lagged behind.

A concerted effort has to be made to create a settlement structure that can form the backbone for future development, which is functional, inclusive, sustainable, and efficient. The role of the municipality is key in steering private sector investment to specific localities and promoting suitable development typologies.

Muldersdrift Precinct will change dramatically over the medium to long term with the development of the Lanseria Smart City, which promotes the development of the entire Precinct into a compact mixed-use development with a focus on green industries. Although the prime focus area of the Smart City falls in Johannesburg, the proposed development in the precinct is approximately 1 million m<sup>2</sup> of commercial, industrial, and other non-residential uses and almost 900 000 additional units. There are also several large development projects that are in the pipeline: including the Nooitgedacht Mega City, and the Greengate and Avianto developments. These have short to medium timeframes. The municipality should harness the energy generated by these developments and ensure that it is not overrun by events, but rather that it guides development in such a manner that the larger overarching goals and objectives of the municipal plans are achieved. There is also a need to balance the long-term planning vision of a smart city with the short term need for housing and jobs.

The largest assets in terms of natural environment, palaeontology, and scenic landscapes in Gauteng, form a significant part of the Precinct: the CoH WHS and the MBR. This brings a uniqueness to the Precinct that should firstly be protected, but also be incorporated into the rest of the Precinct visually and functionally for its potential for job creation.

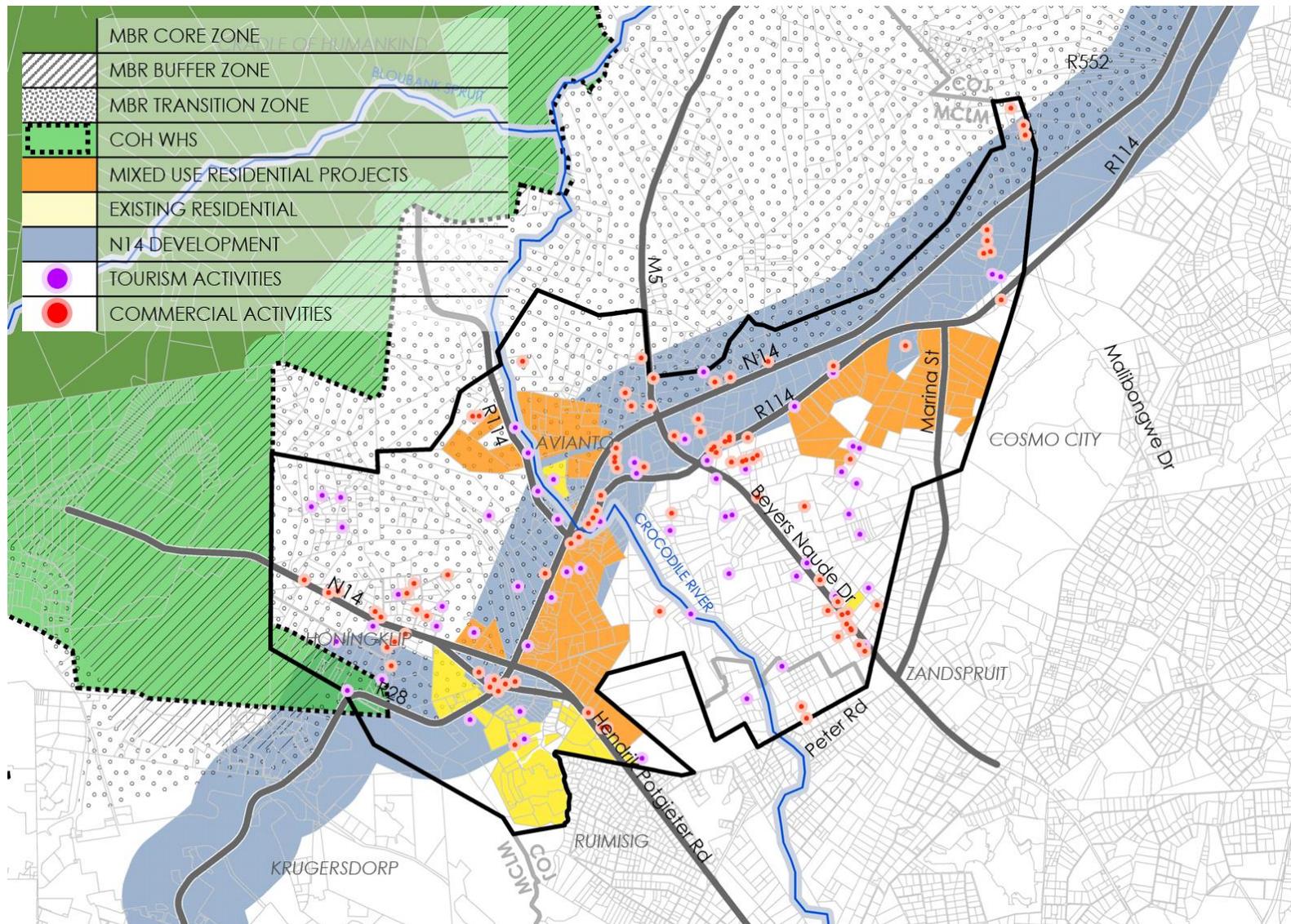
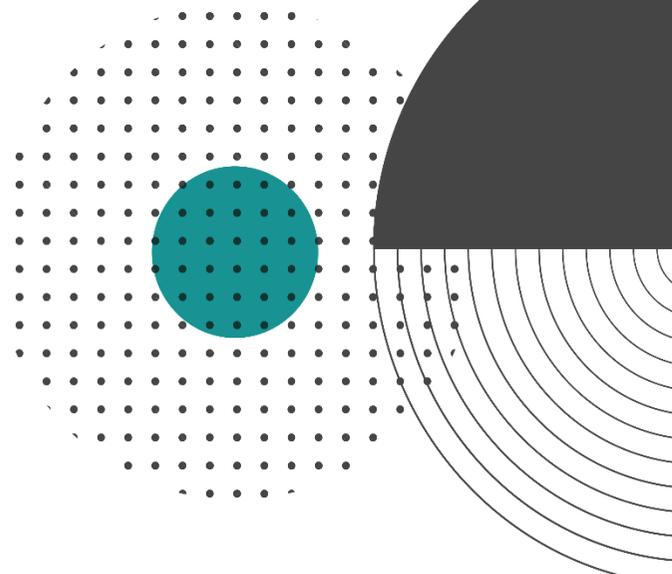


Figure 35: SYNTHESIS



# Spatial development concept

Muldersdrift precinct plan



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## 10 VISION AND OBJECTIVES

### 10.1 VISION

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A functional and socially integrated Precinct focused on the Lanseria Smart City, the N14 development corridor and the CoH WHS.

### 10.2 OBJECTIVES

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- To extract the maximum benefit from the Lanseria Smart City and the N14 Development Corridor to generate economic growth and job creation.
- To structure rapid settlement growth into a functional urban form that provides equitable access to services and facilities and supports public transport.
- To provide for a range of housing typologies and densities in line with levels of accessibility and environmental carrying capacity.
- To balance the divergent demands of urban development pressure, environmental protection, poverty and unemployment, and housing need.

## 11 SPATIAL DEVELOPMENT CONCEPT

The spatial development concept explains the logic behind the proposals for the future development of the Precinct. The structuring elements consist of corridors and spines, nodes, and land use zones.

### 11.1 DEVELOPMENT CORRIDOR

The most important structuring element of the Precinct is the N14. It is identified as a development corridor in the MCLM SDF, 2019. The SDF defines the typical elements of a development corridor as:

- **Major movement infrastructure** such as a highway acting as the spine of the corridor.
- **Supporting movement infrastructure** such as local access roads that will provide access for land uses situated adjacent to the main movement spine (typically the main movement line provides a high level of visibility to land uses while adjacent roads provide access to land uses).
- The main movement spine should preferably act as a conduit of **public transport**, with public transport facilities located along the corridor.
- **Forces of attraction** along the corridor, such as major destination points along the corridor, which creates the development impetus for eventual linear development along the corridor.
- **High intensity land uses** along the length of the corridor.

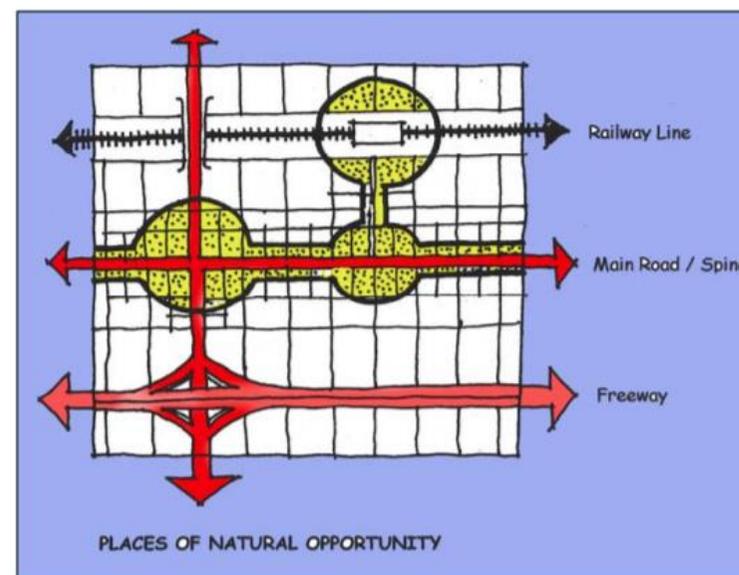
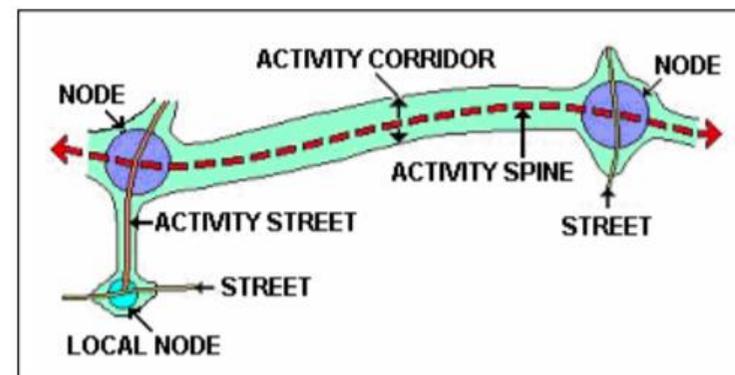


Figure 36: DEVELOPMENT CORRIDOR CONCEPT

Based on the definition of a development corridor in the SDF, the N14 serves as the major movement

infrastructure of the corridor and provides high levels of visibility to adjacent properties. It starts in the northern edge of the Precinct where it links to Lanseria (force of attraction). It terminates in the south at the R114. At this point the proposed PWV8 cuts away from the N14 alignment. The PWV8 will take over the mobility function from the current N14 and become the major movement infrastructure, and the area of the N14 not affected will be treated as an expressway.

The width of the corridor is determined by the supporting movement infrastructure.

The supporting movement infrastructure to the south-east of the N14 is provided by the R114. It is currently only constructed up to the Drift Node but there are proposals for it to be extended via Furrow Road up to Hendrik Potgieter Road.

To the north-west of Beyers Naude Drive, Sunset Drive provides the supporting movement infrastructure. It is however not well connected to the rest of the road network and a link should be investigated specifically between the R114 and Beyers Naude Drive.

The width of the Corridor to the north-west is determined by Sunset Boulevard (which is also the boundary of the Precinct) and the width of the corridor as proposed in the MSDF, 2019, approximately 500m.

The character of the corridor will differ along its length. According to the MSDF, 2019:

- The section directly south of Lanseria Airport will have a more commercial, high-tech industrial nature linked to the airport, and also focusing strongly on job creation for the nearby Cosmo City and its future expansions.
- The section between Beyers Naude Drive and Hendrik Potgieter Road should also focus on high-tech industries, but can begin to include offices, motor showrooms and other high order business activities.
- The intersection of Hendrik Potgieter Road and the N14 could begin to play a regional recreational/entertainment function, building further on the existing Silverstar Casino.

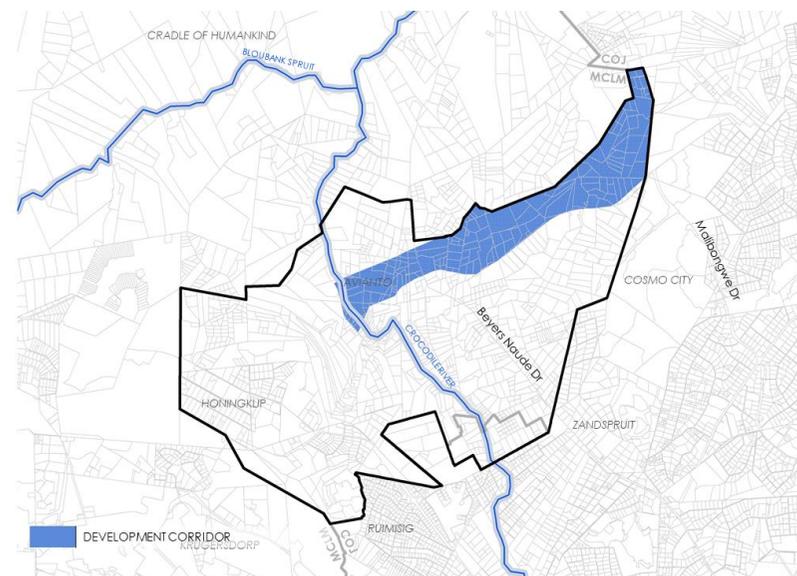


Figure 37: DEVELOPMENT CORRIDOR

## 11.2 MIXED USE ACTIVITY SPINES

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The Precinct will be structured through the use of mixed-use activity spines. Activity spines are accessibility routes lined with mixed uses and high-density residential development. Existing and proposed roads are used to create a loose grid of activity spines. The character of the mixed-use spines differs depending on the function of the street and its context. Although spines are retail, commercial or residential dominated, they all contain a balanced mix of activities.

The R114 is already functioning as an activity spine and fulfil an important role as supporting accessibility route for the N14. It is proposed that this route becomes an activity spine from its northern intersection with Malibongwe Drive via Furrow Road to Hendrik Potgieter Road in the south. It will have the character of a **retail mixed use spine**.

The three important linkages to Johannesburg: Malibongwe Drive, Beyers Naude Drive and Hendrik Potgieter Road form important connectors that are surrounded by mixed land uses, thereby already exhibiting the characteristics of activity spines. The character of these spines will be **commercial mixed use**.

Marina Street, which becomes Peter Road in the south, is a main north south connector: it links the R114 through Beyers Naude to Hendrik Potgieter Road. The proposed K56 has the potential to develop as an activity spine in future as it links the three main routes to Johannesburg: Malibongwe Drive, Beyers Naude Drive and Hendrik

Potgieter Road. Given their current and proposed characteristics Marina Drive and the proposed K56 are proposed as **residential mixed-use activity spines**.

Mixed-use activity spines form the backbone of the public transport system and should accommodate high order public transport facilities which can link to adjacent high-priority public transport routes in the City of Johannesburg.

### 11.3 MIXED USE ACTIVITY NODES

Nodes consist of the highest concentration and intensity of mixed uses and the highest residential densities. Although, the Muldersdrift Precinct is in essence structured around corridors and spines, two significant nodes have developed around important intersections on the N14:

- The Cradlestone Mall node which is the most prominent and developed node at the intersection of the N14 and Hendrik Potgieter Road.
- The Beyers Naude Drive node which stretches along the R114 to the Crocodile River in the south, it incorporates the Drift Node through linear development along the R114.

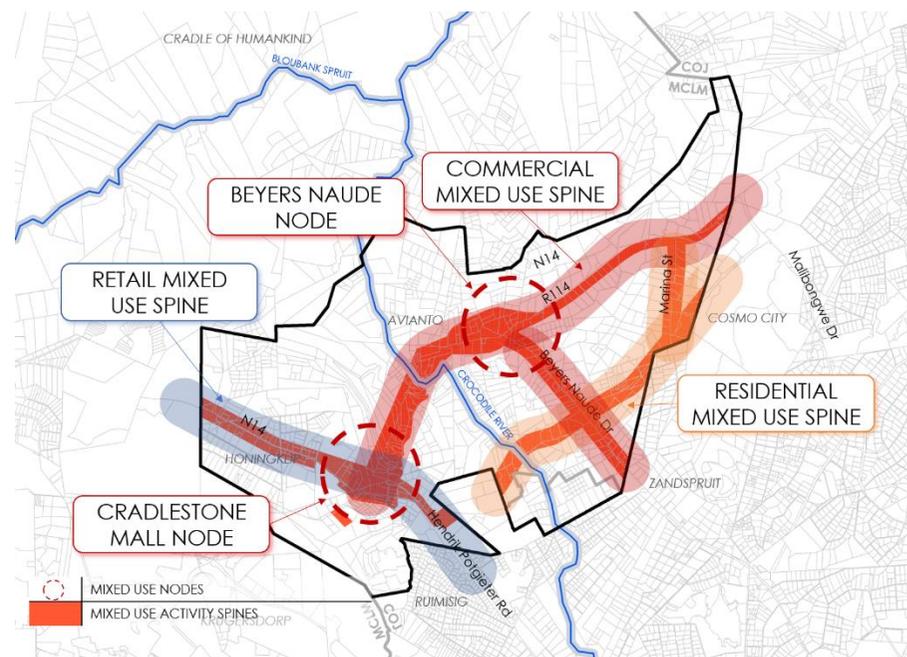


Figure 38: MIXED USE ACTIVITY SPINES AND NODES

## 11.4 RESIDENTIAL TYPOLOGIES AND DENSITIES

Residential development is proposed to the south-east of the N14 and the west of the Crocodile River.

Residential categories consist of low, medium, and high. Residential development is also foreseen in the mixed-use spines and nodes.

In order to align transport and land use, supporting sustainable public transport and creating walkable zones, the principle of highest accessibility – highest density was followed.

Residential development in the Precinct should in general be high to accommodate the need for housing, both within Mogale City and within the City of Johannesburg, whilst protecting the CoH WHS and the MBR. The GLMP proposes net densities of 85 du/ha for medium density and 130du/ha for high density. The CoJ propose net densities of between 20 – 50du/ha for consolidation zones, a minimum density of 80du/ha in urban nodal areas and a minimum of 60du/ha in deprivation areas.

Based on these guidelines, the following densities are proposed:

- Within the mixed nodes and the mixed-use corridors, the proposed net density is 120+ du/ha. This will allow for densification of points of highest access and the introduction of a viable public transport network.
- Adjacent to the City of Johannesburg, specifically adjacent to Marina Street between the N14 and Beyers Naude Road, the proposed density is 60 – 120

du/ha. This will be aligned with the densities in Cosmos City and the proposed densities in Zandspruit.

- The remainder of the Precinct south and east of the N14 is earmarked for a density of 20 - 60du/ha. This accommodates current development as well as higher density development.
- A small strip between the N14 Activity Spine and the Protea Ridge CoH WHS on the south-western portion of the site is earmarked for low densities of less than 20 du/ha.

All residential to the north and west of the proposed PWV8 should be rural, i.e., not smaller than 1ha in extent. The PWV8 forms a buffer between the higher intensity development in the direction of Johannesburg and the protected areas of the CoH WHS and the MBR towards the west and north of the Precinct.

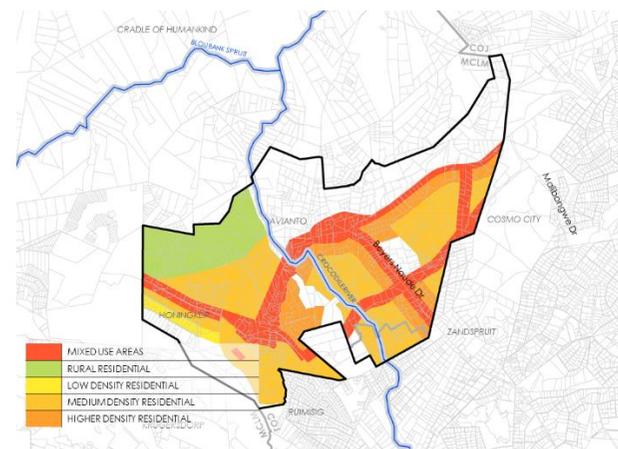


Figure 39: RESIDENTIAL DENSITIES

## 11.5 TOURISM CORRIDORS AND GATEWAYS

The western leg of N14 is designated as a Tourism Corridor in the MCLM SDF, 2019. It links up with a network of tourism corridors that connect Magaliesburg, Hekpoort, Hartebeestpoort Dam, the CoH WHS and the MBR. Within the Precinct, this portion of the N14 does not have the character of a tourism corridor, but rather that of a mixed-use spine. Its visual treatment as a tourism corridor is important.

The R114 gives access to the CoH WHS and several of the tourism facilities in the area. It also connects to the node, colloquially known as the Drift Node or the old Muldersdrift Node directly to the east of the N14. The heat map for land uses, indicates that there is already a clustering of tourist facilities at this node and along the R114 as it enters the Cradle. The R114 from the Drift Node across the N14 to the north-western edge of the Precinct, must be treated as a tourism corridor and included in the municipal-wide tourism network.

A tourism gateway should be developed at the N14, R114 and Crocodile River intersect.

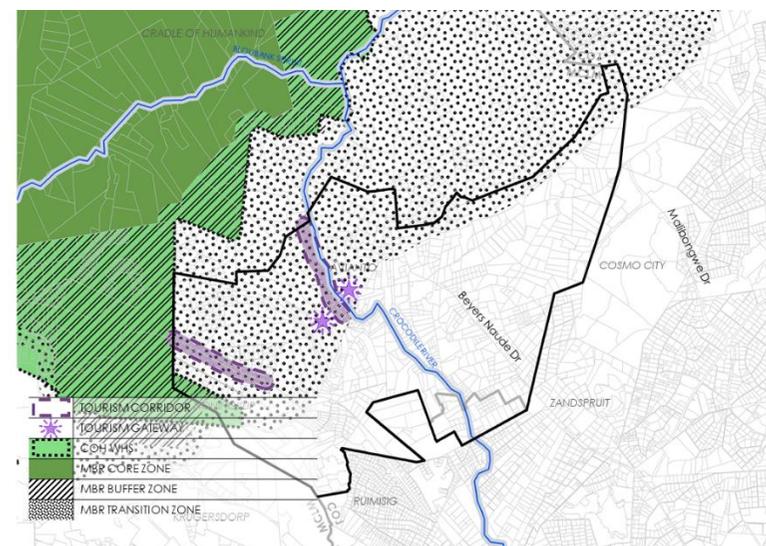


Figure 40: TOURISM CORRIDOR AND SPINE

## 11.6 OTHER

Other development zones are:

- **COMMERCIAL AND GREEN INDUSTRIES:** These zones are aligned with the GLMP.

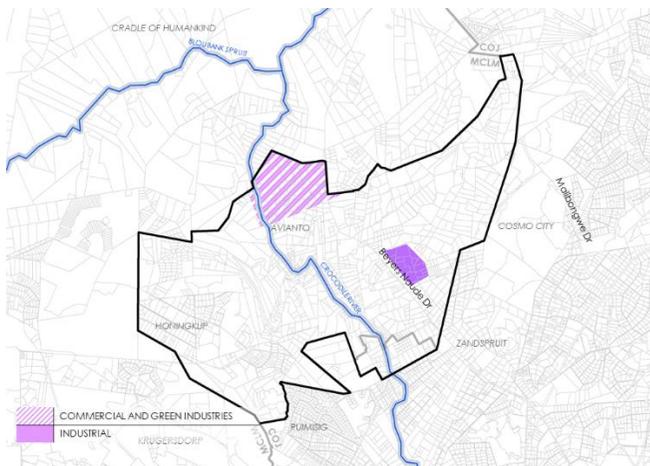


Figure 41: COMMERCIAL AND GREEN INDUSTRIES

- **OPEN SPACE AND NATURAL AREAS:** open space and natural areas are defined by Protea Ridge and the various wetlands and their buffer zones.

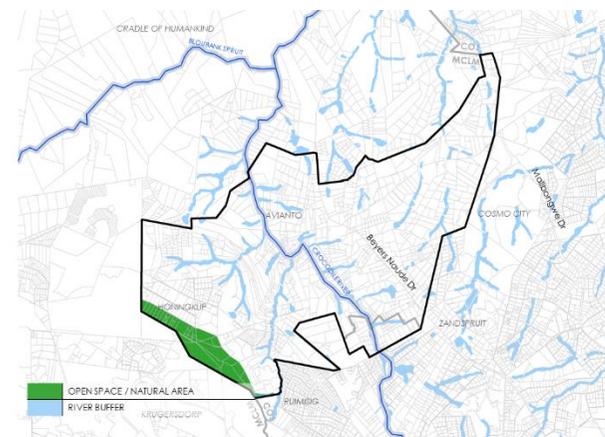


Figure 42: OPEN SPACE AND NATURAL AREAS

- **MINING AND QUARRIES:** mining and quarries will remain for the foreseeable future and will sterilise land development. Their expansion should be curtailed to their existing footprint.

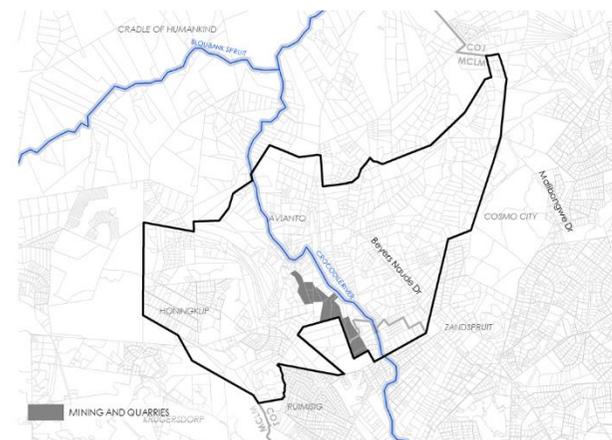


Figure 43: MINING AND QUARRIES

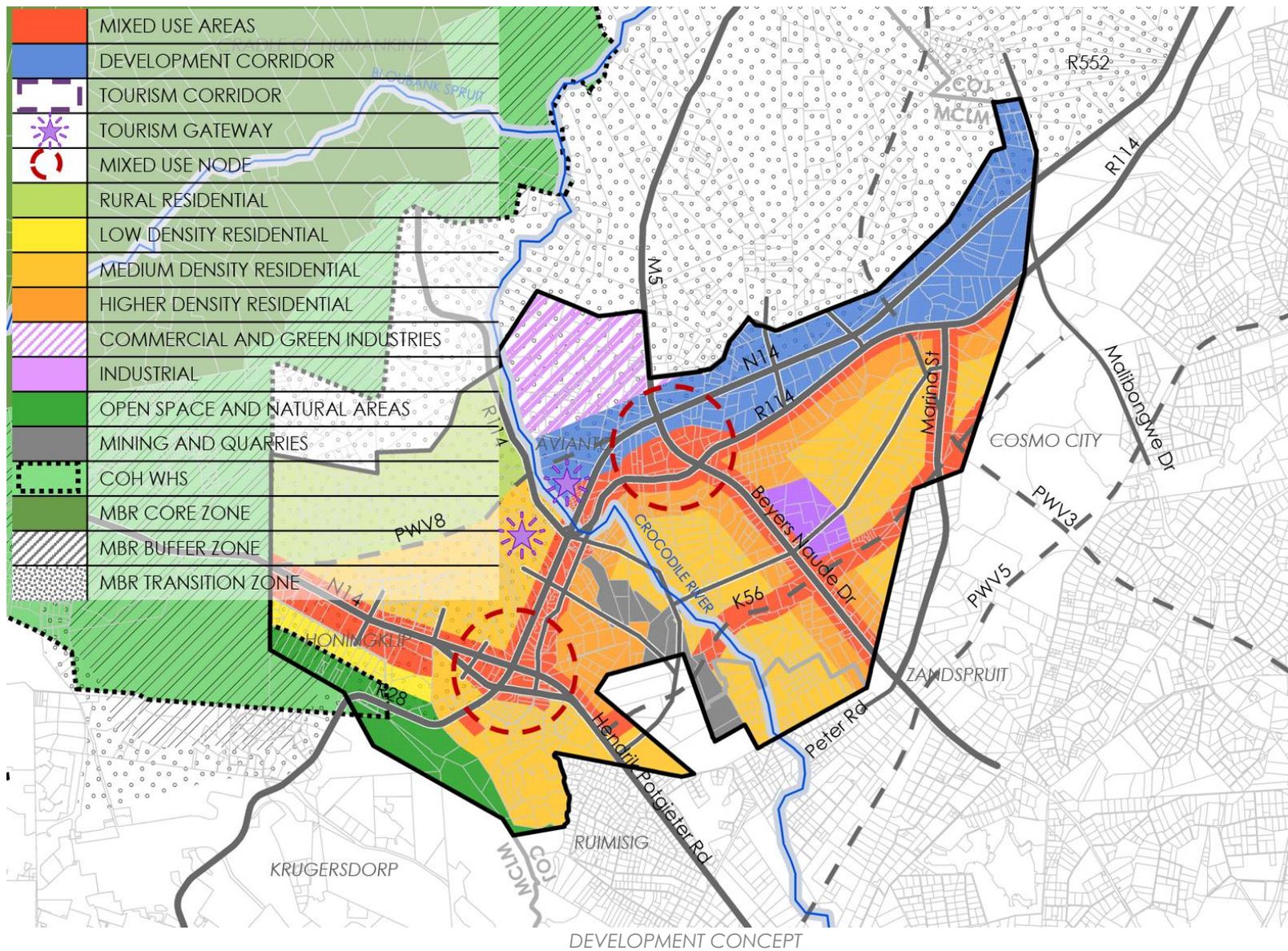


Figure 44:

## 11.7 PROPOSED ROAD IMPROVEMENTS

### 11.7.1 PINEHAVEN INTERCHANGE

Pinehaven interchange (K13 / K72) is a priority project of Gautrans. The interchange will relieve congestion, improve road safety, and increase traffic capacity to support development in the area.

The planning of the interchange requires the closure of the existing Hendrik Potgieter Road and it is recommended that provision should also be made for ramps to and from the south (Krugersdorp) to the existing road, over and above the normal interchange ramps.

### 11.7.2 MUNICIPAL MAJOR ROADS

The most important route that would be a catalyst for development in the Muldersdrift Precinct is the proposed Metro Boulevard, particularly a high-capacity grade-separated junction at K13 (P39-1).

An improved network of roads in the immediate vicinity of Muldersdrift is proposed to replace the existing sub-standard road layout. In particular, the severe lack of stacking distance (throat length) between K13 and the intersections on the local road network creates a bottleneck in the road network.

Other municipal roads are discussed for each of the development nodes or corridors.

## GREENGATE NODE

The road network for the Greengate node includes the following:

- K13 (P39-1) to provide regional access. The existing road has inadequate access to the Greengate node.
- K72 and Pinehaven interchange for east-west mobility.
- R114 (K52) as major arterial from the areas to the north. Intersections should be provided according to provincial standards to serve the development areas along this corridor.
- Metro Boulevard with grade-separated access on K13 as east-west spine (Class 3 minor collector road).
- Extension of Furrow Road as access from the south (K72) to the strip of land east of K13. Furrow Road has an intersection on K72.
- Proposed Class 3 road between K72 and D2572. This new road forms a north-south spine through the area and its alignment must be determined in consultation with affected landowners.
- D2572 as additional route to K13.
- K56 as new access to and from K72, particularly the section immediately north of K72. K56 is an important strategic link to provide access to Mogale City from the north-east.

## **PWV8 EXPRESSWAY**

It is unlikely that the route of PWV8 between P158-1 (N14 north) and P126-1 (N14 west) would be published in the provincial gazette in the near future, but it is reassuring that Gautrans is giving attention to this important route.

There are several access opportunities to the triangular area bounded by P126-1 (south), K13 / P39-1 (east) and PWV8 (north-west), including the following:

- From D1496 (R114) west of K13. The road should be amended as tourism route similar to other roads in the CoHWHS.
- Metro Boulevard grade-separated junction at K13.
- At least three (3) road links to K72 (P126-1) west of K13 namely, Pinehaven Hospital access road, Francis Road and Steyn Road.

## **CRADLE OF HUMANKIND WORLD HERITAGE SITE (CoHWHS)**

It is proposed to develop D1496 as a tourism route, similar to other sections of the road network in the CoHWHS, inter alia, to support its use as by cyclists.

PWV8 is expected to create a barrier between the N14 development corridor (south) and the CoHWHS (north).

The reinstatement of access to properties along P126-1 (PWV8 expressway) should be planned in

collaboration with Gautrans, once the proposed route for PWV8 (expressway), as well as the interchange positions has been determined. No additional entrances to the CoHWHS are anticipated and no additional roads are proposed north of PWV8.

At the request of the City of Mogale, it is recommended to construct an entrance to the CoHWHS on D1496 (R114) immediately west of K13 at Muldersdrift and to develop the road as a tourism route suitable for cyclists, similar to other roads in the CoHWHS.

## **LANSERIA GROWTH NODE**

All opportunities to cross the N14 freeway (P158-1) should be developed to integrate areas north and south of the freeway respectively.

### **11.7.3 PUBLIC TRANSPORT**

Roads in the Muldersdrift precinct are well served by minibus taxi services. It is recommended that attention should be given to the provision of public transport facilities and paved pedestrian access to public transport facilities.

### **11.7.4 NON-MOTORISED TRANSPORT (NMT)**

Two elements of NMT require specific attention in the Muldersdrift precinct, namely:

- Pedestrians: Pedestrians were observed along roads throughout the precinct. Paved pedestrian walkways must be provided and all facilities must comply with SANS 10400, Part S:

Universal access for persons with disabilities and special needs.

- Cyclists: The CoHWHS is a popular area for cyclists and they should be considered in the design of facilities.

### 11.7.5 SUMMARY

The Muldersdrift precinct is well served by a network of existing arterial roads and additional planned principal (Class 1), major (Class 2) and minor (Class 3) arterial roads.

A new interchange at Pinehaven to replace the congested intersection of P126-1 and K13 (P39-1) will remove a serious bottleneck in the road network in the Muldersdrift precinct.

It is proposed that land development in the precinct be supported by the following:

- Proposed road network in the Greengate node, particularly Metro Boulevard with a grade-separated junction on K13
- Access opportunities to the area bounded by K13 (east), P126-1 (south) and PWV8 (north-west)
- Access from the arterial road network to potential development areas throughout the Muldersdrift precinct
- Options to cross N14 (P158-1) and to obtain access from R114 (K52)
- K56 as a strategically important arterial road link to areas towards the north-east.

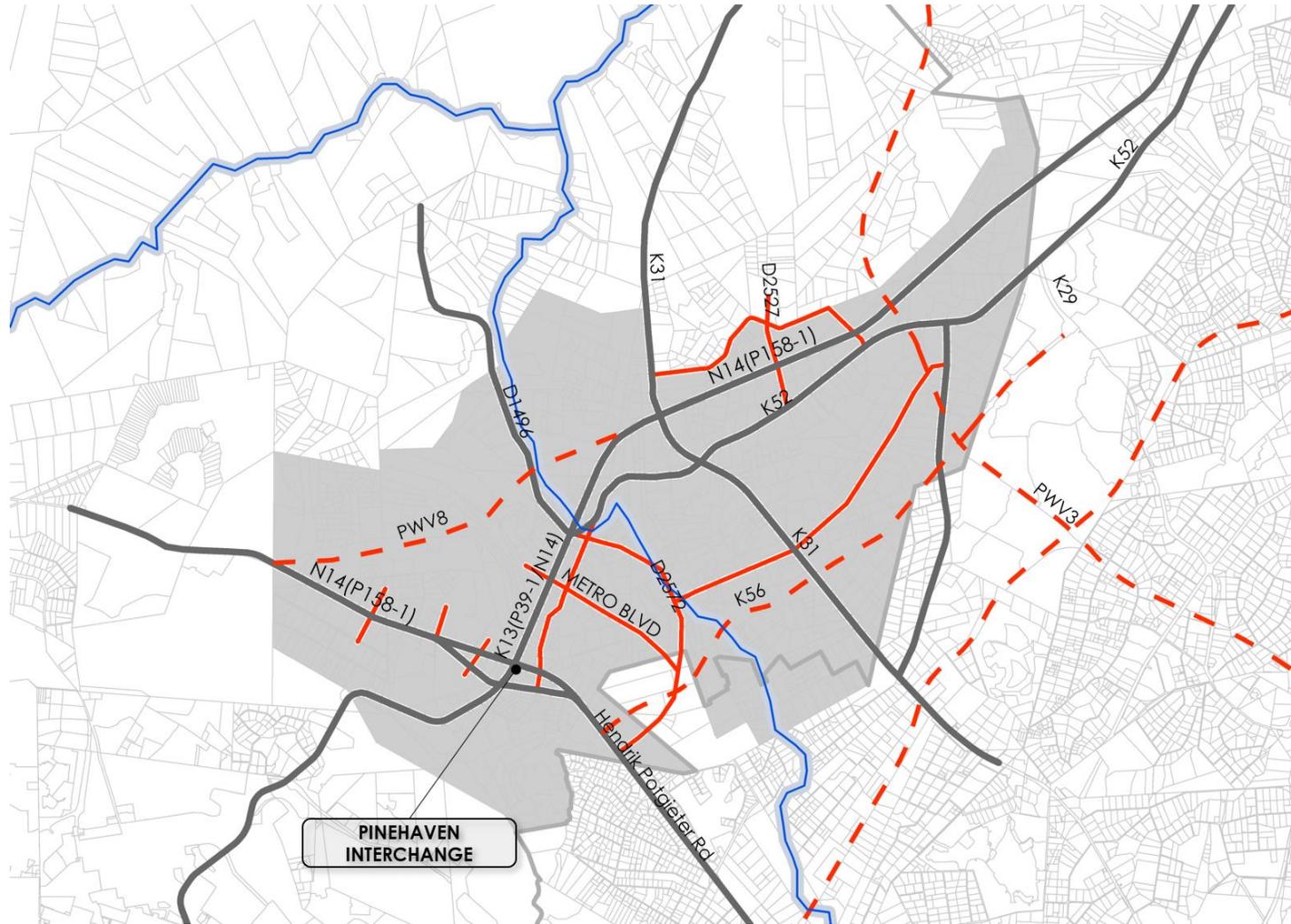
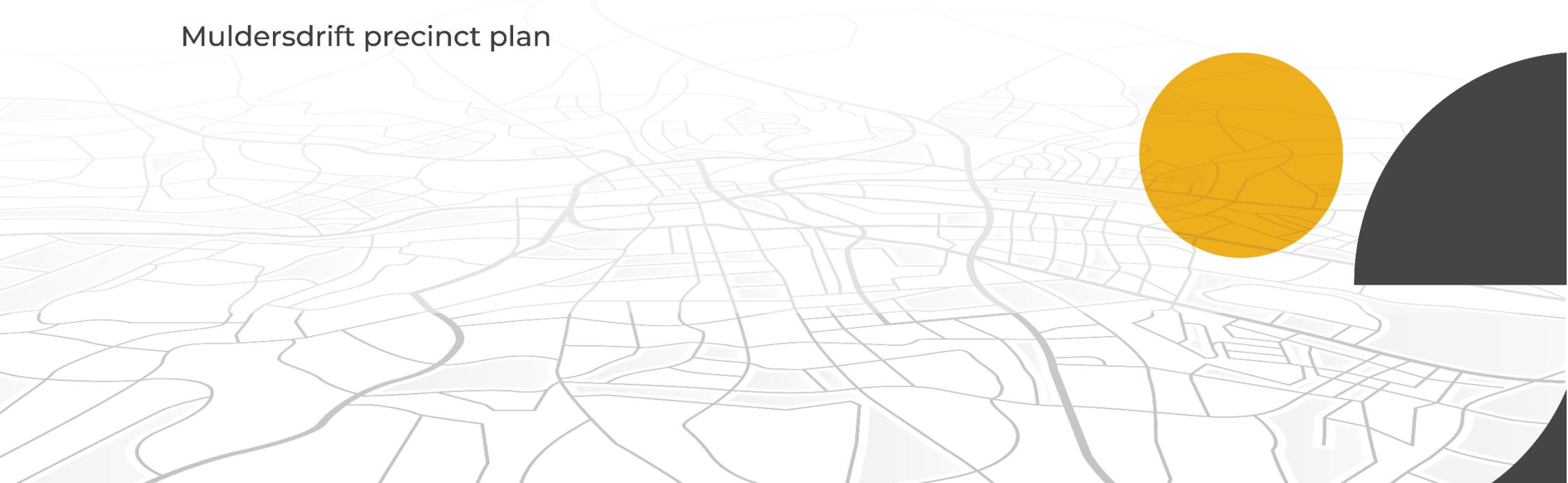
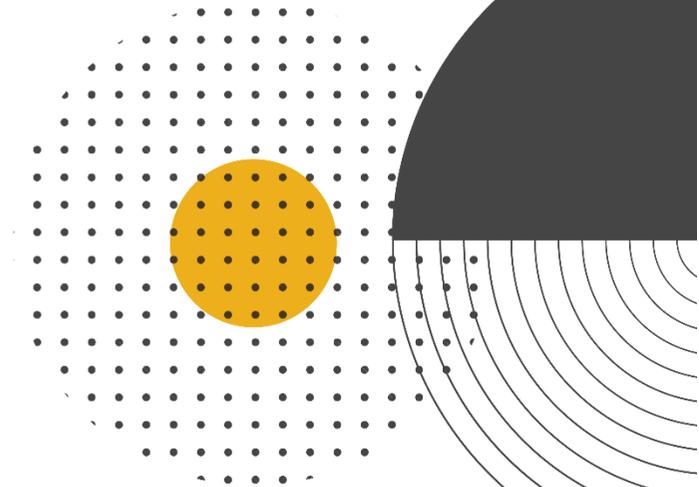


Figure 45: PROPOSED TRANSPORT NETWORK

# Development and design guidelines

Muldersdrift precinct plan



## 12 LAND USE BUDGET AND SOCIAL FACILITY PROVISION

This Section deals with guidelines to provide clarity to both the public and the private sector as to what development should take place and the spatial and visual characteristics of such development.

It addresses the land use budget and social facility provision, development guidelines for protected areas, design guidelines for strategic structuring elements.

The aim is to, on the one hand, determine the breakdown of different uses and ensure a balanced development and, on the other hand, to give an indication of social facilities that should be provided.

A summary of the existing and proposed land uses is contained in Table 4.

A third of the Precinct is dedicated to medium density residential. Around 10% of the Precinct is set aside for high density and rural residential, respectively.

Due to the extent of the Precinct and its relative undeveloped nature, a large number of dwelling units can be provided: approximately 144 832 dwelling units. This is aligned with the number of dwelling units that is envisaged in the GLMP, 2020.

Commercial, retail, and industrial uses and other non-residential uses make up almost 40% of the Precinct. 5% of the Precinct is reserved exclusively as environmental areas.

The land use budget indicates a mix of land uses that balance residential and employment. It also reflects the diversity of residential typologies and densities that have been applied.

Table 4: LAND USE BUDGET

PROPOSED LAND USE	HA	% OF TOTAL AREA	POTENTIAL NR OF DWELLING UNITS
Rural Residential	450.6	10.3	451
Low Density Residential	73.4	1.7	734
Medium Density Residential	1350.3	32.1	54 012
High Density Residential	463.7	10.6	41 737
Mixed Use	586	12.6	70 320
Development Corridor	743	17	-
Commercial	69.2	1.6	-
Green Industry	293.7	6.7	-
Excavations	115.3	2.6	-
Environmental Area	203.4	4.7	-
<b>TOTAL</b>	<b>4 348.66</b>	<b>100</b>	<b>167 254</b>

The number of facilities necessary per population is based on the standards contained in the *CSIR Guidelines for the Provision of Social Facilities in South African Settlements*. These are only guidelines and should be considered together with walking distances and the provision of facilities in surrounding areas.

Table 5: SOCIAL FACILITY PROVISION FOR SUB-PRECINCT 1

SOCIAL FACILITY	FACILITY PROVISION STANDARD	NUMBER OF FACILITIES NEEDED
<b>EDUCATIONAL</b>		
Primary school	7 000	62
Secondary school	12 500	35
Early childhood development centre	2 400 – 3 000	145 to 181
<b>HEALTH</b>		
Clinic (Primary Health Clinic)	24 000 – 70 000	6 to 18
<b>COMMUNITY FACILITIES</b>		
Community halls (medium size)	10 000 -15 000	29 to 44
Community Performing Arts Centre	50 000	9
Library	20 000 - 70 000	6 to 22
Post Office/Social Grant Paypoint	10 000 - 20 000	22 to 44
<b>SAFETY</b>		
Fire Station	60 000 - 100 000	4 to 7
Police Station	60 000 - 100 000	4 to 7

SOCIAL FACILITY	FACILITY PROVISION STANDARD	NUMBER OF FACILITIES NEEDED
<b>RECREATION</b>		
Open space	0.56 ha per 1 000	243.5 ha
Community park (Grassed surface - 2 football fields equivalent)	15 000	29
Local/Neighbourhood Park	3 000 - 15 000	29 to 145
Sports Complex (grouping of fields and or sports complexes)	60 000	7
Athletics/Cricket stadium	60 000	7
Combi-court surface (x 2)	15 000	29
Combi-court surface (x 4)	60 000	7

## 12.1 SUB-PRECINCTS

The Precinct has been divided into sub-precincts in order to provide a more fine-grained understanding of development yield and social facility provision. The sub-precincts are defined by major routes and have similar characteristics.

These sub-precincts are described, their land uses quantified and the type and number of social facilities needed are determined in the following section. The land use proposals of the Development Concept for the Muldersdrift Precinct, as contained in this document, are compared to the Lanseria Smart City proposal as well as other large development projects.

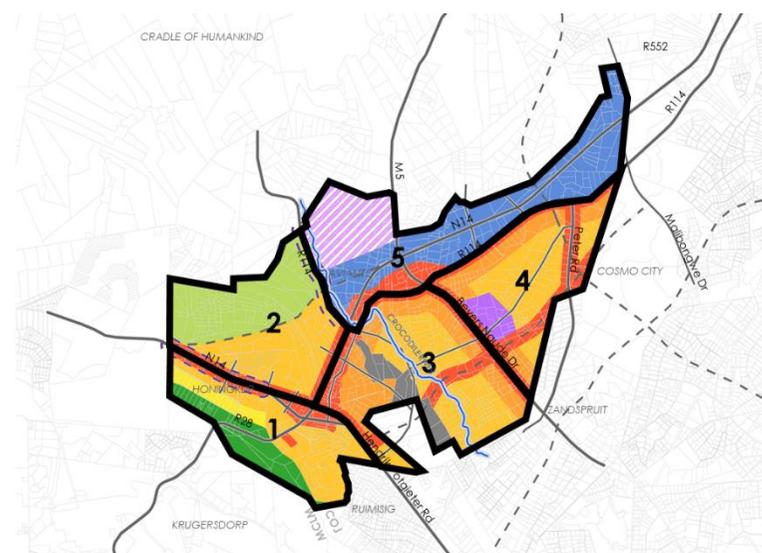


Figure 46: SUB-PRECINCTS

### 12.1.1 SUB-PRECINCT 1

Sub Precinct 1 is located in the south western portion of the Precinct. Its northern boundary is Hendrik Potgieter Street and the N14.

It consists of multiple residential estates such as Featherbrooke and Pinehaven Estates, and large social and commercial development such as Netcare Pinehaven Hospital and Silverstar Casino.

The proposed land uses in the sub precinct are:

- Open space and natural areas in the area of the Class 3 ridge and the CoH WHS in the south western portion
- Low density residential between the ridge and mixed-use spine, acting as a buffer
- Medium density residential in the existing residential areas and its surrounds
- Mixed use area along Hendrik Potgieter Road

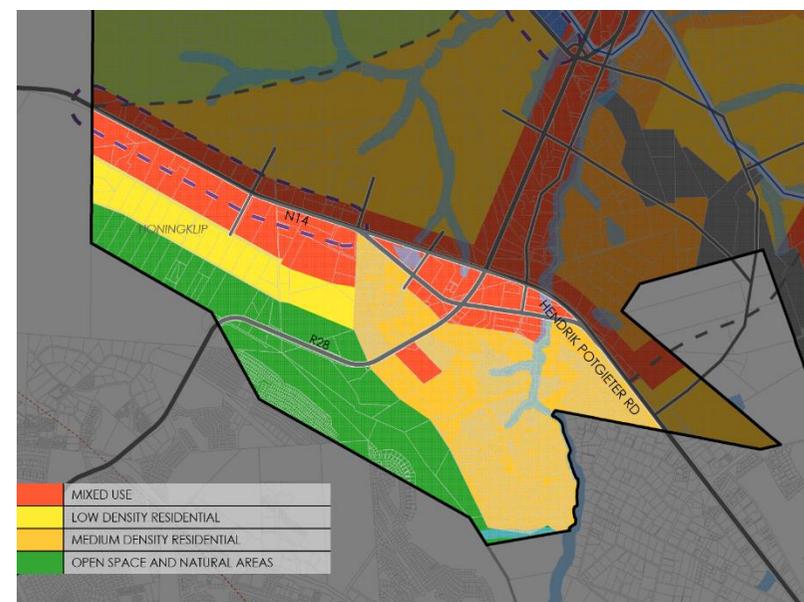


Figure 47: SUB-PRECINCT 1

Table 6: LAND USE BUDGET FOR SUB-PRECINCT 1

PROPOSED LAND USE	HA	% OF TOTAL AREA	POTENTIAL NR OF DWELLING UNITS
Rural Residential	0	0	0
Low Density Residential	73.4	11.2	734
Medium Density Residential	308.9	47	12 355
High Density Residential	0	0	0
Mixed Use	71.6	10.9	7 160
Development Corridor	0	0	-
Industrial	0	0	-
Green Industry	0	0	-
Excavations	0	0	-
Environmental Area	203.4	30.9	-
<b>TOTAL</b>	<b>657.3</b>	<b>100</b>	<b>20 250</b>

Table 7: SOCIAL FACILITY PROVISION FOR SUB-PRECINCT 1

SOCIAL FACILITY	FACILITY PROVISION STANDARD	NUMBER OF FACILITIES NEEDED
<b>EDUCATIONAL</b>		
Primary school	7 000	8
Secondary school	12 500	4
Early childhood development centre	2 400 – 3 000	17 to 22
<b>HEALTH</b>		

SOCIAL FACILITY	FACILITY PROVISION STANDARD	NUMBER OF FACILITIES NEEDED
Clinic (Primary Health Clinic)	24 000 – 70 000	1 to 2
<b>COMMUNITY FACILITIES</b>		
Community halls (medium size)	10 000 -15 000	3 to 5
Community Performing Arts Centre	50 000	1
Library	20 000 - 70 000	1 to 3
Post Office/Social Grant Paypoint	10 000 - 20 000	2 to 5
<b>SAFETY</b>		
Fire Station	60 000 - 100 000	1
Police Station	60 000 - 100 000	1
<b>RECREATION</b>		
Open space	0.56 ha per 1 000	29.5 ha
Community park (Grassed surface - 2 football fields equivalent)	15 000	4
Local/Neighbourhood Park	3 000 - 15 000	4 to 18
Sports Complex (grouping of fields and or sports complexes)	60 000	1
Athletics/Cricket stadium	60 000	1
Combi-court surface (x 2)	15 000	4
Combi-court surface (x 4)	60 000	1

### 12.1.2 SUB-PRECINCT 2

Sub Precinct 2 is located in the north western portion of the Precinct, north of Hendrik Potgieter Road, west of the N14 and south west of the M5. The sub precinct mostly consist of low-density residential areas with some agriculture. The proposed PWV8 runs through this sub precinct.

The proposed land uses in the sub precinct are:

- Rural residential zone north of the proposed PWV8
- Medium density residential south of the PWV8
- Mixed use area along Hendrik Potgieter Road in the south and along the N14 to the east

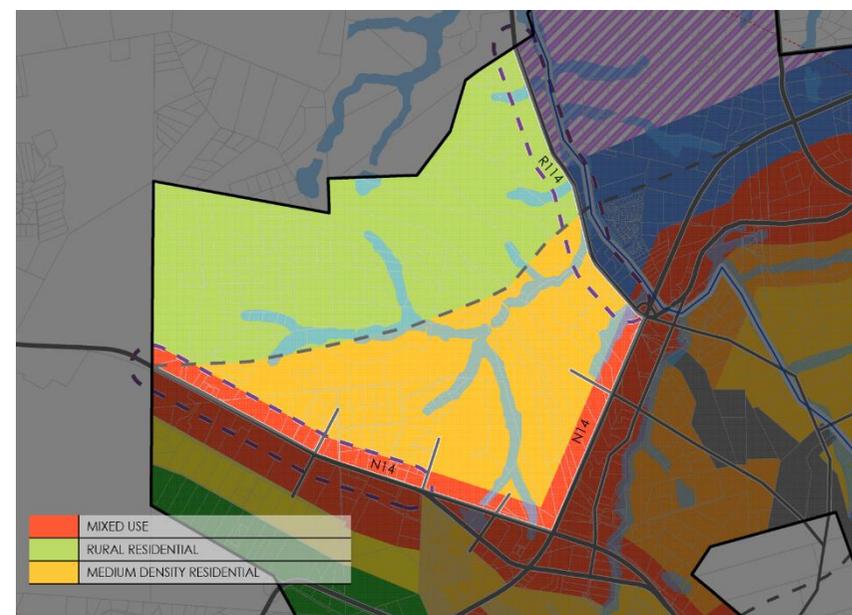


Figure 48: SUB-PRECINCT 2

Table 8: LAND USE BUDGET FOR SUB-PRECINCT 2

PROPOSED LAND USE	HA	% OF TOTAL AREA	POTENTIAL NR OF DWELLING UNITS
Rural Residential	450.6	52.6	451
Low Density Residential	0	0	0
Medium Density Residential	345.5	40.4	13 822
High Density Residential	0	0	0
Mixed Use	59.8	7	5 976
Development Corridor	0	0	-
Industrial	0	0	-
Green Industry	0	0	-
Excavations	0	0	-
Environmental Area	0	0	-
<b>TOTAL</b>	<b>856</b>	<b>100</b>	<b>20 248</b>

Table 9: SOCIAL FACILITY PROVISION FOR SUB-PRECINCT 2

SOCIAL FACILITY	FACILITY PROVISION STANDARD	NUMBER OF FACILITIES NEEDED
<b>EDUCATIONAL</b>		
Primary school	7 000	8
Secondary school	12 500	4
Early childhood development centre	2 400 – 3 000	17 to 22
<b>HEALTH</b>		
Clinic (Primary Health Clinic)	24 000 – 70 000	1 to 2

SOCIAL FACILITY	FACILITY PROVISION STANDARD	NUMBER OF FACILITIES NEEDED
<b>COMMUNITY FACILITIES</b>		
Community halls (medium size)	10 000 - 15 000	3 to 5
Community Performing Arts Centre	50 000	1
Library	20 000 - 70 000	1 to 3
Post Office/Social Grant Paypoint	10 000 - 20 000	2 to 5
<b>SAFETY</b>		
Fire Station	60 000 - 100 000	1
Police Station	60 000 - 100 000	1
<b>RECREATION</b>		
Open space	0.56 ha per 1 000	29.5 ha
Community park (Grassed surface - 2 football fields equivalent)	15 000	4
Local/Neighbourhood Park	3 000 - 15 000	3 to 18
Sports Complex (grouping of fields and or sports complexes)	60 000	1
Athletics/Cricket stadium	60 000	1
Combi-court surface (x 2)	15 000	4
Combi-court surface (x 4)	60 000	1

### 12.1.3 SUB-PRECINCT 3

Sub Precinct 3 is located in the southern portion of the Precinct, with Hendrik Potgieter Road to the south, the N14 to the west, Beyers Naude Drive to the north east and CoJ to the east. Currently the sub-precinct consists of mines, quarries and low density residential. The proposed K56 road runs through this sub precinct. This area is especially prone to development pressures from the east (CoJ).

The proposed land uses in the sub precinct are:

- Medium density residential in the eastern portion
- Higher density residential south of the existing mines and quarries and along the mixed-use areas
- Mixed use areas along Hendrik Potgieter Road in the south, along the N14 in the north, along Beyers Naude Drive in the north east and along the proposed K56

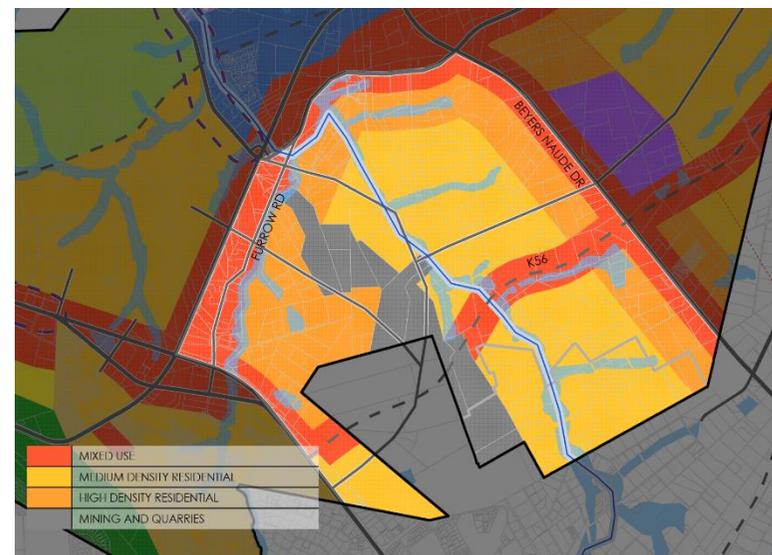


Figure 49: SUB-PRECINCT 3

Table 10: LAND USE BUDGET FOR SUB-PRECINCT 3

PROPOSED LAND USE	HA	% OF TOTAL AREA	POTENTIAL NR OF DWELLING UNITS
Rural Residential	0	0	0
Low Density Residential	0	0	0
Medium Density Residential	443.2	43.7	17 729
High Density Residential	292	28.8	20 441
Mixed Use	163.2	16.1	16 320
Development Corridor	0	0	-
Industrial	0	0	-
Green Industry	0	0	-
Excavations	115.3	11.4	-
Environmental Area	0	0	-
<b>TOTAL</b>	<b>1013.8</b>	<b>100</b>	<b>54 490</b>

Table 11: SOCIAL FACILITY PROVISION FOR SUB-PRECINCT 3

SOCIAL FACILITY	FACILITY PROVISION STANDARD	NUMBER OF FACILITIES NEEDED
<b>EDUCATIONAL</b>		
Primary school	7 000	20
Secondary school	12 500	11
Early childhood development centre	2 400 – 3 000	47 to 59

SOCIAL FACILITY	FACILITY PROVISION STANDARD	NUMBER OF FACILITIES NEEDED
<b>HEALTH</b>		
Clinic (Primary Health Clinic)	24 000 – 70 000	2 to 6
<b>COMMUNITY FACILITIES</b>		
Community halls (medium size)	10 000 -15 000	9 to 14
Community Performing Arts Centre	50 000	3
Library	20 000 - 70 000	2 to 7
Post Office/Social Grant Paypoint	10 000 - 20 000	7 to 14
<b>SAFETY</b>		
Fire Station	60 000 - 100 000	1 to 2
Police Station	60 000 - 100 000	1 to 2
<b>RECREATION</b>		
Open space	0.56 ha per 1 000	79.3 ha
Community park (Grassed surface - 2 football fields equivalent)	15 000	7
Local/Neighbourhood Park	3 000 - 15 000	9 to 47
Sports Complex (grouping of fields and or sports complexes)	60 000	2
Athletics/Cricket stadium	60 000	2
Combi-court surface (x 2)	15 000	9
Combi-court surface (x 4)	60 000	2

#### 12.1.4 SUB-PRECINCT 4

Sub Precinct 4 is located in the eastern portion of the Precinct with Beyers Naude Drive to the south, the R114 to the north and CoJ to the east. A portion of the proposed K56 also runs through the area. Current land uses include Greengate Industrial area and low-density residential areas. As with sub precinct 3, this area is prone to development pressures from the east.

The proposed land uses in the sub precinct are:

- Industrial uses on a portion of Beyers Naude Drive
- Medium density residential in the central area
- Higher density residential areas along the mixed-use areas
- Mixed use areas along portions of Beyers Naude Drive, the R114, the proposed K56 and Marina Street

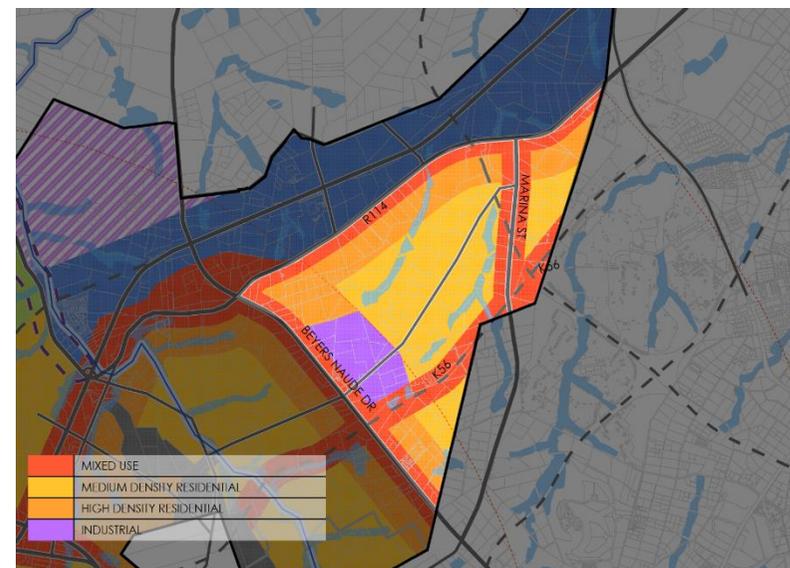


Figure 50: SUB-PRECINCT 3

Table 12: LAND USE BUDGET FOR SUB-PRECINCT 4

PROPOSED LAND USE	HA	% OF TOTAL AREA	POTENTIAL NR OF DWELLING UNITS
Rural Residential	0	0	0
Low Density Residential	0	0	0
Medium Density Residential	306	41.8	12 240
High Density Residential	171.7	23.4	12 020
Mixed Use	186	25.4	18 596
Development Corridor	0	0	-
Industrial	69.2	9.4	-
Green Industry	0	0	-
Excavations	0	0	-
Environmental Area	0	0	-
<b>TOTAL</b>	<b>732.9</b>	<b>100</b>	<b>42 856</b>

Table 13: SOCIAL FACILITY PROVISION FOR SUB-PRECINCT 4

SOCIAL FACILITY	FACILITY PROVISION STANDARD	NUMBER OF FACILITIES NEEDED
<b>EDUCATIONAL</b>		
Primary school	7 000	16
Secondary school	12 500	9
Early childhood development centre	2 400 – 3 000	37 to 46
<b>HEALTH</b>		

SOCIAL FACILITY	FACILITY PROVISION STANDARD	NUMBER OF FACILITIES NEEDED
Clinic (Primary Health Clinic)	24 000 – 70 000	2 to 5
<b>COMMUNITY FACILITIES</b>		
Community halls (medium size)	10 000 -15 000	7 to 11
Community Performing Arts Centre	50 000	2
Library	20 000 - 70 000	1 to 6
Post Office/Social Grant Paypoint	10 000 - 20 000	5 to 11
<b>SAFETY</b>		
Fire Station	60 000 - 100 000	1 to 2
Police Station	60 000 - 100 000	1 to 2
<b>RECREATION</b>		
Open space	0.56 ha per 1 000	62.4 ha
Community park (Grassed surface - 2 football fields equivalent)	15 000	7
Local/Neighbourhood Park	3 000 - 15 000	7 to 37
Sports Complex (grouping of fields and or sports complexes)	60 000	2
Athletics/Cricket stadium	60 000	2
Combi-court surface (x 2)	15 000	7
Combi-court surface (x 4)	60 000	2

### 12.1.5 SUB-PRECINCT 5

Sub Precinct 5 is located in the northern portion of the Precinct, north of the R114 and east of the M5. Areas between the N14 and the R114 mostly contain formal and informal residential and commercial uses.

A portion of the proposed PWV8 runs through the area.

The proposed land uses in the sub precinct area:

- The N14 development corridor
- Mixed use area along the R114 in the south and around the R114/ N14 intersection
- A Green Industry area in the northern section

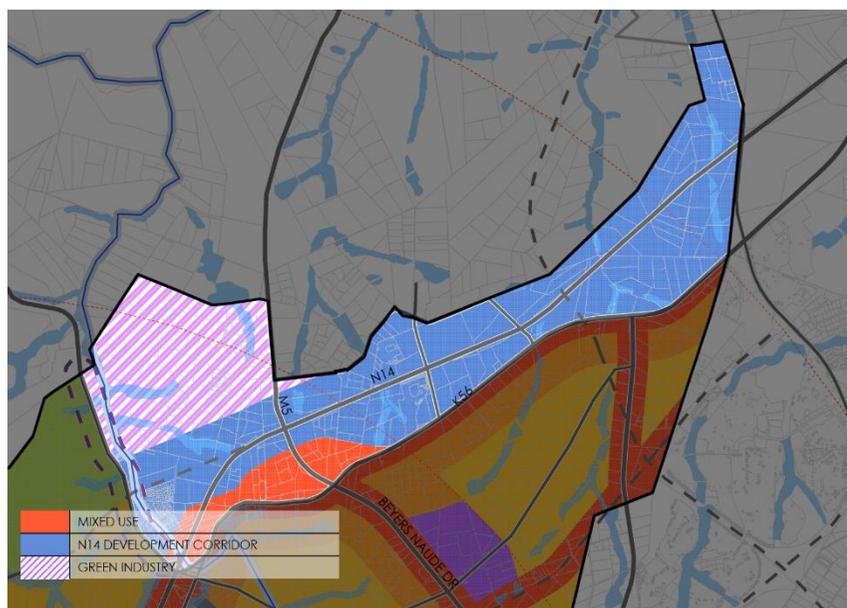


Figure 51: SUB-PRECINCT 5

Table 14: LAND USE BUDGET FOR SUB PRECINCT 5

PROPOSED LAND USE	HA	% OF TOTAL AREA	POTENTIAL NR OF DWELLING UNITS
Rural Residential	0	0	0
Low Density Residential	0	0	0
Medium Density Residential	0	0	0
High Density Residential	0	0	0
Mixed Use	69.9	6.3	6 988
Development Corridor	743	67.1	-
Industrial	0	0	-
Green Industry	293.7	26.5	-
Excavations	0	0	-
Environmental Area	0	0	-
<b>TOTAL</b>	<b>1 106.6</b>	<b>100</b>	<b>6 988</b>

SOCIAL FACILITY	FACILITY PROVISION STANDARD	NUMBER OF FACILITIES NEEDED
Clinic (Primary Health Clinic)	24 000 – 70 000	1
<b>COMMUNITY FACILITIES</b>		
Community halls (medium size)	10 000 -15 000	1 to 2
Community Performing Arts Centre	50 000	0
Library	20 000 - 70 000	1

Table 15: SOCIAL FACILITY PROVISION FOR SUB-PRECINCT 5

SOCIAL FACILITY	FACILITY PROVISION STANDARD	NUMBER OF FACILITIES NEEDED
<b>EDUCATIONAL</b>		
Primary school	7 000	3
Secondary school	12 500	2
Early childhood development centre	2 400 – 3 000	6 to 8
<b>HEALTH</b>		

## 13 DEVELOPMENT GUIDELINES FOR PROTECTED AREAS

### 13.1 DEVELOPMENT GUIDELINES FOR THE MAGALIESBERG BIOSPHERE RESERVE<sup>2</sup>

Within the Precinct, the area to the west of the N14 falls within the MBR Transition Zone and a small portion to the south-west of the Precinct falls within the MBR Buffer Zone.

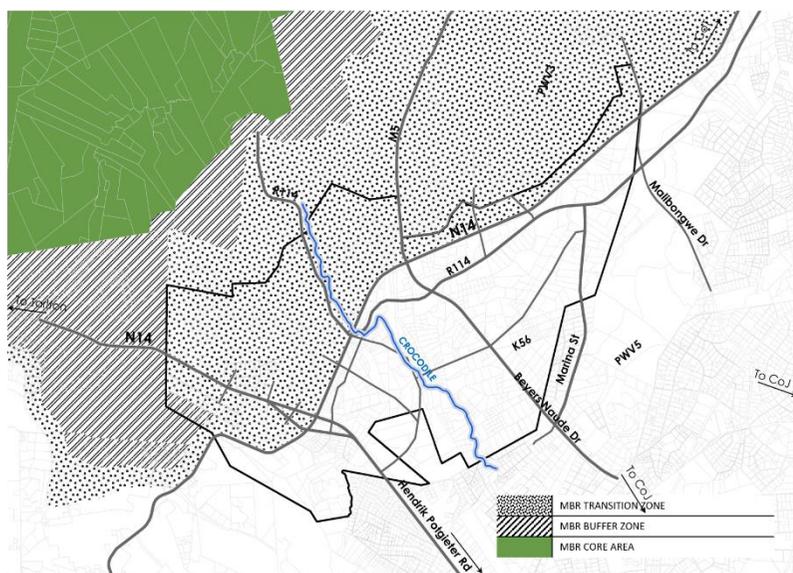


Figure 52: MAGALIESBERG BIOSPHERE RESERVE

Buffer zones are areas which usually surround or adjoin the core areas and are used for cooperative activities compatible with sound ecological practices, including environmental education, recreation, ecotourism, and applied and basic research. Buffer zones are predominantly natural or near natural areas and ecologically sensitive areas with clearly defined boundaries and formal administrative status.

**LAND USE:** Activities involve conservation and maintenance of ecosystems, nature-based recreation, eco-tourism, primary dwellings, new developments, and small resorts coupled to conservation areas that are compliant with the Environmental Impact Assessment regulations.

Transition Areas are flexible transition areas or areas of co-operation, which may contain a variety of agricultural activities and settlements, and other uses and in which local communities.

**LAND USE:** The land use within the Transition Zone allows for game ranching, cattle grazing, pastures, eco-tourism developments, higher level tourism developments, cultivated lands, irrigation, orchards, agro-industries, human settlements, support services and infrastructure, mining, and industrial development.

<sup>2</sup> Magaliesberg Biosphere Management Plan, dated November 2011 drafted in support of Registration/ Listing application with UNESCO

## 13.2 CRADLE OF HUMANKIND WORLD HERITAGE SITE

The Draft Environmental Management Framework and Management Plan for the CoHWS, its proposed buffer zone and the Muldersdrift Area (Volume 3) July 2011, proposes the development and land use guidelines for the different environmental management zones within the CoH WHS: the Primary Zone, Secondary Zone 1 and Secondary Zone 2.

A small portion of the south-western part of the Precinct falls within the CoH WHS. In the Precinct concept, this area is designated as open space/ natural area. However, land use that are listed as desirable for the CoH WHS EMF will be allowed. See Annexure for the definitions contained in the EMF as these differ from those contained in the MCLM LUS. The definitions contained in the CoH WHS EMF should be used rather than the definitions in the LUS.

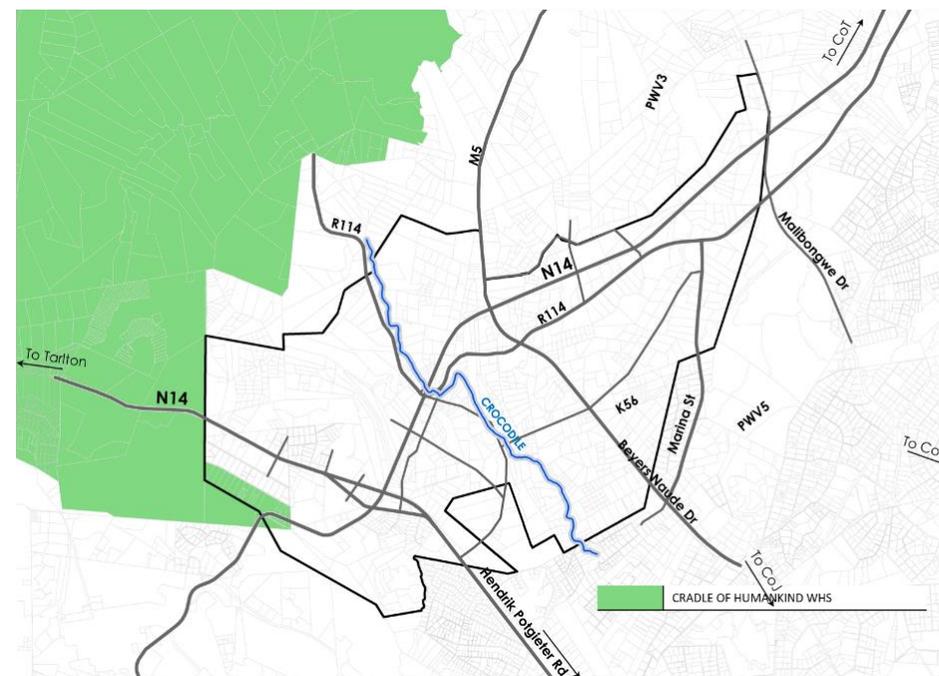


Figure 53: CoH WHS<sup>3</sup>

<sup>3</sup> The area to the west of the Precinct contains the bulk of the CoH WHS Primary Zone. Although this does not form part of the Precinct it should be

taken into account when making development proposals on the boundary of the Precinct.

## Desirable development and associated infrastructure

- Additional dwelling unit
- Agricultural buildings
- Bed and breakfast
- Boutique hotel/ lodge
- Commercial kennel
- Dwelling house
- Extensive agriculture
- Farm shop
- Farm labourer structures
- Guest house
- Guided scientific tours
- Home occupation (enterprise)
- Infrastructure: Associated infrastructure
- Low impact camping site
- Nature and heritage trails, mountain biking and horse trails
- Plant nursery
- Resort
- Restaurant
- Servant quarters
- Tourism incentive accommodation

## Undesirable development and associated infrastructure

- Advertising on site
- Agricultural industry or expansion of existing operations
- Aircraft landing strips or expansion of existing strips
- Business premises or expansion of existing facilities

- Camping
- Commercial antennae
- Conference facility in excess than that provided for in EMF land use definitions or expansion of existing facilities
- Helistops or expansion
- High density residential development or expansion of existing facilities
- Holiday accommodation
- Industrial activity
- Infrastructure: Bulk engineering infrastructure facilities or transmission lines
- Intensive agriculture or expansion
- Lifestyle estates or expansion of existing estates
- Mining and quarries
- Motorised outdoor recreation
- Place of instruction
- Place of worship
- Retirement village
- Roadside advertising
- Service (filling) stations or expansion
- Service trade
- Subdivision of farm portions or land

## 14 URBAN DESIGN GUIDELINES

### 14.1 INTRODUCTION

The aim of urban design guidelines is to enhance the quality of new development and the public environment.

The following design guidelines are addressed:

- Development adjacent to the N14
- Mixed-use activity spines and nodes
- Tourism gateway and corridor
- Commercial development
- Residential density

### 14.2 DEVELOPMENT ADJACENT TO THE N14

The experiential quality of the N14 corridor depends on the interface between the N14 and adjacent development. The advantage of the N14 is not only its mobility function but also its high visibility. Developments should exploit this.

It is necessary to create a unique and coherent character for the corridor through building design, landscaping and signage.

The following guidelines are applicable for private developers:

- Buildings should not 'turn their backs' to the N14 with blank walls.

- The façade of buildings adjacent to the N14 must be articulated with elements that provide visual interest such as windows, recesses and extensions, horizontal articulation (defined base, middle and top), vertical articulation (offsets or bays), offsets or breaks in roof elevation, a variety of material.

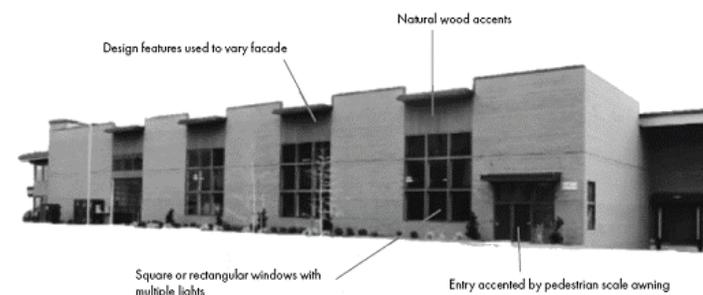


Figure 54: ARTICULATED BUILDING FACADE<sup>4</sup>

- No blank perimeter walls will be allowed adjacent to the N14. At least 60% of the perimeter wall must be transparent.
- Parking should be located to the side of the building. If parking is placed between the building and the erf boundary along the N14, it must be limited, and the area must be extensively landscaped.
- The space between the building and the erf boundary along the N14 must be landscaped with indigenous plants.

<sup>4</sup>[http://qcode.us/codes/hillsboro/view.php?topic=12-12\\_66-12\\_66\\_840&frames=on](http://qcode.us/codes/hillsboro/view.php?topic=12-12_66-12_66_840&frames=on)

- Advertising must fit with the look and feel of the corridor.

The following guidelines are applicable for the public sector:

- A look and feel for the corridor should be developed that guides structures, signage, and advertising.
- A landscaping catalogue containing a list of plants species to be used should be developed.

### 14.3 MIXED USE ACTIVITY SPINES AND NODES

Mixed use activity spines refer to streets that are abutted by a balanced mix of high intensity and density developments focused on public and non-motorised transport. The character, specific land use make-up and density of development of activity spines varies depending on the context.

As a general principle, development in the activity spines and nodes should be compact rather than space extensive (e.g., a gym rather than a sports stadium); multi-functional rather than mono-functional (e.g., residential and retail rather than a shopping mall); pedestrian oriented rather than vehicle oriented (e.g., a restaurant rather than a motor fitment centre).

For the Muldersdrift Precinct the following activity spines have been identified.

- Mixed use -retail
  - the R114
  - Furrow Road
- Mixed use - commercial
  - Malibongwe Drive
  - Beyers Naude Drive
- Mixed use - residential
  - Hendrik Potgieter Drive
  - Marina Street
  - The proposed K56

Proposed land use on properties abutting these streets are:

- Mixed use retail
  - Retail
  - Personal services
  - Entertainment
  - Restaurants
  - Social facilities
  - Light industries
  - High and medium density residential
- Mixed use commercial
  - Commercial
  - Light industrial
  - Warehousing
  - Retail
  - High and medium density residential
- Mixed use residential
  - High and medium density residential
  - Social facilities
  - Small scale retail
  - Small personal services
  - Small restaurants

Mixed use nodes are proposed at:

- The Cradlestone Mall
- The Beyers Naude/ Drift Node

Proposed land uses within activity nodes include:

- Retail
- Personal services
- Entertainment
- Restaurants
- Social facilities
- Light industries

- High and medium density residential

The following guidelines are applicable to any new development within mixed use spines and nodes:

- The placing of buildings should define the street through the imposition of a built-to line.
- Building height can range between three and eight storeys depending on the context, privacy and overshadowing considerations.
- The building should front onto the street with the entrance and windows facing the street.
- The front of the building should be articulated with elements that provide visual interest, such as, windows, recesses and extensions, horizontal articulation (defined base, middle and top), vertical articulation (offsets or bays), offsets or breaks in roof elevation, a variety of material.
- The space in front of the building should be treated as a public space, i.e., accessible to the general public. These public spaces should be developed as landscaped squares with street furniture, such as seating areas, adequate lighting, and facilities for informal trading.
- No fence should be placed on the street boundary.
- Pedestrian facilities should be provided between the different developments.
- Provision should be made for public transport.
- Loading facilities, waste bins, service areas and other utilities should be provided at the back of the building.

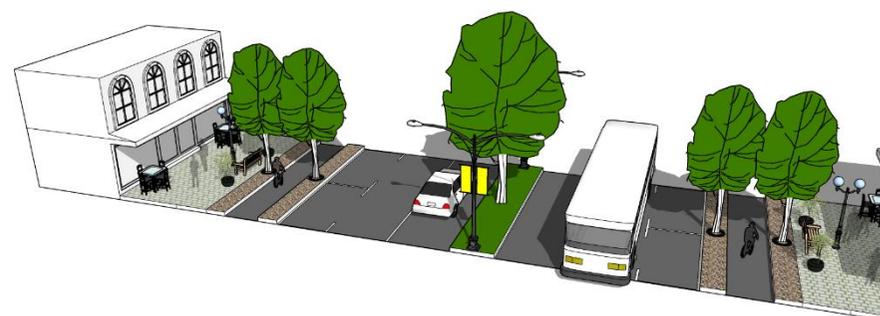
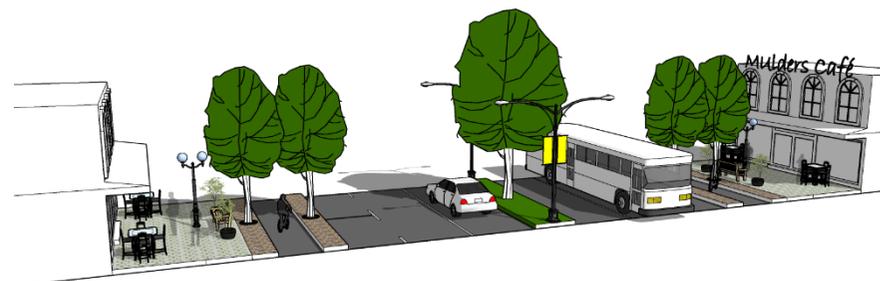




Figure 55: IMAGES OF MIXED-USE ACTIVITY SPINE<sup>5</sup>

<sup>5</sup> Malop Street Green Spine Part of the Malop to Myers revitalisation project

<https://s-ga.com/2019/09/30/stromberg-garrigan-associates-streetscape-rendering-unveiled-for-the-city-of-virginia-beach-resort-area-strategic-plan-update/>  
<https://civiltechinc.com/urbandesign>



Figure 56: IMAGES OF MIXED-USE ACTIVITY NODES<sup>6</sup>

<sup>6</sup> Malop Street Green Spine Part of the Malop to Myers revitalisation project

<https://s-ga.com/2019/09/30/stromberg-garrigan-associates-streetscape-rendering-unveiled-for-the-city-of-virginia-beach-resort-area-strategic-plan-update/>  
<https://civiltechinc.com/urbandesign>

## 14.4 DESIGN GUIDELINES FOR TOURISM CORRIDOR AND GATEWAY

The MSDF, 2019 designates a number of routes as Tourism Corridors. Within the Precinct, Tourism Corridors are on portions of the N14 and the R114. These connect to the CoH WHS and pass through the Magaliesberg Biosphere Region. Both corridors have a strong linkage function.

The Tourism Corridors are not visually or functionally uniform and their character change significantly along their length, with some sections being amenable to tourism and others creating a negative atmosphere for touristic experiences:

- Surrounding land uses vary from commercial developments, to restaurants, to agriculture.
- The surrounding natural landscape ranges from veld to dramatic mountains, rivers, and lush landscapes, to barren landscapes with invasive plant species.
- Although all Tourism Corridors are provincial roads, the road design allows for fast moving traffic in some places and in others, the road surface is narrow.

It is not necessary nor is it necessarily desirable to create a uniform character, function, and experience along all the Corridors. It is however necessary to create some cohesion and integration between the disparate parts.

In order to fully exploit the tourism product in the wider Mogale City, the following should be considered with

regards to NEW DEVELOPMENT, where visible from the road:

- **Compatible and incompatible land uses:** a variety of land uses are compatible with the tourism corridors. In addition to tourism facilities such as hotels and museums, restaurants, shops, plant nurseries, agriculture and residential development can also be allowed. Land uses that have a negative visual impact such as the selling and renting of earth-moving equipment, warehouses and storage, and industrial activities, are not compatible. The determining factors should be function: does the land use support tourism or is it linked to tourism? Is the land use neutral to tourism? Will the land use have a negative impact on surrounding existing or future tourism activities?
- **Visual impact:** what is the visual impact of the development on the corridor? The tourism offering in Mogale City is mostly rural and its strength is to provide a natural sanctuary in close proximity to densely built-up urban areas. The visual impact of surrounding land uses should be evaluated with this in mind. A key factor is the interface between the private and the public realm:
  - Extensive indigenous landscaping should be used
  - No large blank walls should be allowed
  - No large parking areas between the building and the street should be allowed

- Signage should be in keeping with the character of the tourism and rural nature of the corridor

In order to fully exploit the tourism product in the wider Mogale City, the following should be considered with regards to the ROAD RESERVE:

- The Tourism Corridor should be divided into different zones to reflect the different character and places along its length, i.e., Muldersdrift, the CoH WHS, the MBR.
- A 'look and feel' guidance should be developed for the Tourism Corridors to develop a sense of place. This should be overarching but should allow for variation to accommodate the different zones within the Corridors. The 'look and feel' should provide guidelines for signage and landscaping. However, as stated in the Draft Environmental Management Framework and Management Plan for the COHWHS, *'the sense of place experience is substantially influenced by the visual picture made up of natural and cultural landscape forms and shapes. Visitors and tourists should be able to identify the area and its unique qualities almost by sight and experience rather than guidance supported only by road signage'*.
- Gateways have to be defined at entrances to the Tourism Corridor, entrances to the different zones and entrances to important tourism facilities. These gateways should be in line with the 'look and feel' as referred to above. Local

artists should preferably be used in the development of gateway elements.



Figure 57: TOURISM CORRIDOR AND GATEWAY

The western leg of the N14 is designated as a Tourism Corridor in the MSDF, 2019. Its character is however that of an activity spine with a range of mixed uses, some incompatible with tourism. It is proposed that tourism related activities are supported, but that focus should be on the visual character of the corridor and not necessarily its function.

the N14 already has a stretch of street trees. These should be extended along its entire length.



Figure 58: EXAMPLE OF TREE LANE ALONG THE N14



Figure 59: TREE PLANTING ALONG A MAJOR ROUTE<sup>7</sup>

The R114 is an important entrance into the CoH WHS and already contains a number of tourism facilities. The road traverses an area of natural beauty. Only land uses that are compatible with a tourism corridor should be allowed. These facilities should blend into the natural environment.

Tourism gateways can be considered on the R114 to the west of the N14. These should be developed with landmark elements in the form of public art. The landmark element should reflect the uniqueness of the Magaliesberg Biosphere Reserve and the CoH WHS.

There are already examples of landmark elements, specifically around the CoH WHS. New landmarks should build on this.

<sup>7</sup> <https://pxhere.com/en/photo/1332724>



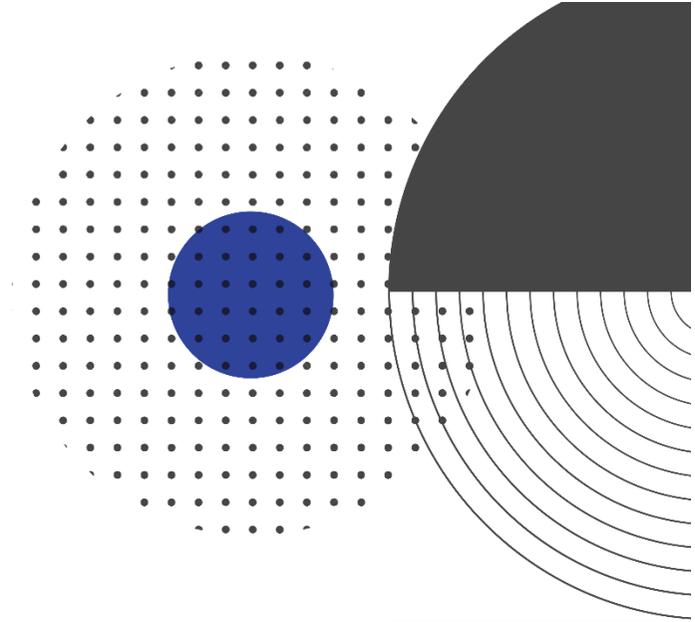
Figure 60: EXAMPLE OF LANDMARK ELEMENTS<sup>8</sup>

<sup>8</sup> <https://za.pinterest.com/codaworx/public-art/>



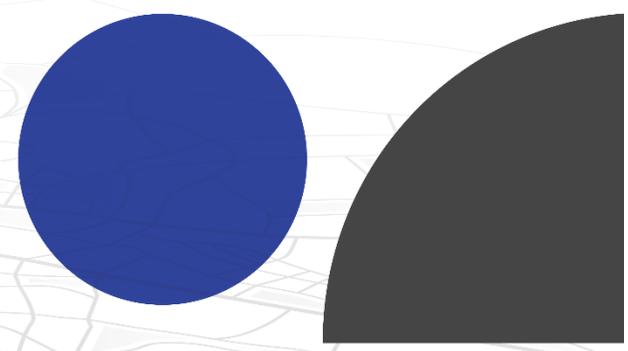
Figure 61: LANDMARK ELEMENTS WITHIN THE CoH WHS<sup>9</sup>

<sup>9</sup> <https://bicyclesouth.co.za/listings/cradle-of-humankind/>



# Implementation Framework

Muldersdrift precinct plan



## 15 STRATEGIC PROJECTS

This Section contains Strategic Projects based on the situational analysis and development concept. These projects/ interventions seek to leverage specific development opportunities, investment projects and market demands associated with the precinct.

### 15.1 DESCRIPTION OF STRATEGIES AND PROJECTS

#### 15.1.1 STRATEGY 1: ALIGNMENT WITH LARGE URBAN PROJECTS

There are a number of large urban projects within the Precinct, such as the Lanseria Smart City Initiative, the Nooitgedacht mega city, the Avianto development, the Greengate/ Village development, and the upgrading of informal settlements.

There must be alignment between these plans and initiatives to ensure integrated development, to prevent wasteful expenditure and to avoid conflict in development.

Although all effort has been made to align these actions, implementation of plans is ongoing, and fluid and alignment is there for an ongoing process.

- PROJECT 1: ALIGNMENT WITH GREATER LANSERIA MASTER PLAN

- A committee needs to be set up in order to ensure alignment of land use designation, infrastructure, road network and land use applications
- PROJECT 2: ALIGNMENT WITH NOOITGEDACHT MEGA CITY
  - This project includes the drafting of a detailed Urban Design Framework that should at least address land uses, typologies and densities, movement networks, public space networks, development guidelines street sections, landscaping and infrastructure
  - The UDF should be adopted as a statutory plan, in order to be enforced
  - Set up a structure to ensure the implementation of the UDF
- PROJECT 3: ALIGNMENT WITH AVIANTO AND GREENGATE/THE VILLAGE DEVELOPMENT
  - Enter into negotiation with landowners/developers to ensure that development is in line with the proposals and guidelines contained in this Precinct Plan

- PROJECT 4: ALIGNMENT WITH INFORMAL SETTLEMENT UPGRADING PROGRAMME
  - Review the current data on the status of the settlements and their categories
  - Upgrade the informal settlements, if applicable
  - Ensure that the UISP is integrated into the Precinct Plan Proposals



Figure 62: STRATEGY 1

### 15.1.2 STRATEGY 2: DEVELOP GUIDELINES FOR MIXED-USE SPINES AND NODES TO SUPPORT ECONOMIC AND SOCIAL DEVELOPMENT

Several mixed-use spines and nodes have been identified. These will be the focus for future retail, commercial and high-density residential development. To ensure the creation of a high-

quality functional space an urban design framework is necessary.

- PROJECT 1: DRAFT AN URBAN DESIGN FRAMEWORK FOR THE N14 DEVELOPMENT CORRIDOR
  - This project includes the drafting of a detailed Urban Design Framework that should at least address land uses, typologies and densities, movement networks, public space networks, development guidelines street sections, landscaping and development incentives
- PROJECT 2: DRAFT AN URBAN DESIGN FRAMEWORK FOR THE R114 MIXED-USE SPINE AND NODE
  - Drafting of a detailed Urban Design Framework that should at least address land uses, typologies and densities, movement networks, public space networks, development guidelines street sections, landscaping and development incentives
- PROJECT 3: DRAFT AN URBAN DESIGN FRAMEWORK FOR THE BEYERS NAUDE DRIVE MIXED USE SPINE
  - Drafting of a detailed Urban Design Framework that should at least address land uses, typologies and densities, movement networks, public space

networks, development guidelines street sections, landscaping and development incentives

- PROJECT 4: DRAFT AN URBAN DESIGN FRAMEWORK FOR THE CRADLESTONE MALL MIXED US NODE
  - Drafting of a detailed Urban Design Framework that should at least address land uses, typologies and densities, movement networks, public space networks, development guidelines street sections, landscaping and development incentives

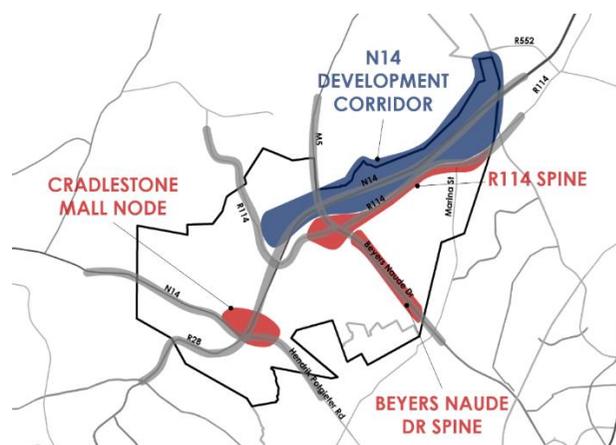


Figure 63: STRATEGY 2

### 15.1.3

#### STRATEGY 3: SUPPORT TOURISM DEVELOPMENT

Tourism plays a significant role within the Precinct. This role should be enhanced through functional and aesthetic elements.

- PROJECT 1: DEVELOP TOURISM GATEWAY AT R114
  - This project includes the identification of a suitable location for the gateway as well as the appointment of consultants to design and construct the gateway
- PROJECT 2: DEVELOP TOURISM AND PROTECTED AREAS OVERLAY ZONE
  - This project includes the identification of geographical areas to be included into the overlay zone
  - Appoint consultants to develop development and design guidelines for the area in the overlay zone
  - Develop land use application and approval processes
  - Incorporate the overlay zone in the LUS
  - Apply before mentioned guidelines to the road reserves and abutting properties
- PROJECT 3: DRAFT AN URBAN DESIGN FRAMEWORK FOR THE N14 TOURISM CORRIDOR

- Drafting of a detailed Urban Design Framework that should at least address land uses, typologies and densities, movement networks, public space networks, development guidelines street sections, landscaping and development incentives
- Address illegal land uses along the N14

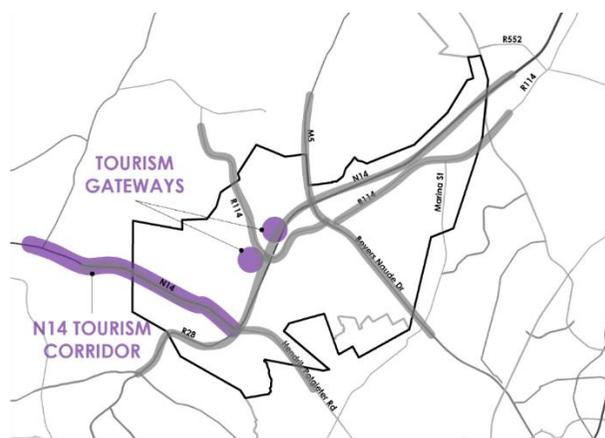


Figure 64: STRATEGY 3

15.1.4 STRATEGY 4: ENSURE THE DEVELOPMENT OF SUFFICIENT SOCIAL FACILITIES CLUSTERED IN ACCESSIBLE LOCALITIES

There are currently insufficient social facilities within the precinct. A situation that will only worsen with future development. This should be addressed holistically to prevent ad hoc

development as new townships are developed and underdevelopment.

- PROJECT 1: PLAN FOR THE DEVELOPMENT OF SUFFICIENT SOCIAL FACILITIES
- Undertake a study to determine the status quo of social facilities in the area
- Undertake an additional study to determine the need for social facilities in the area, based on projected population trends
- Determine the ideal locations and acquire the properties for the social facilities, and if possible, align them with private developer proposals

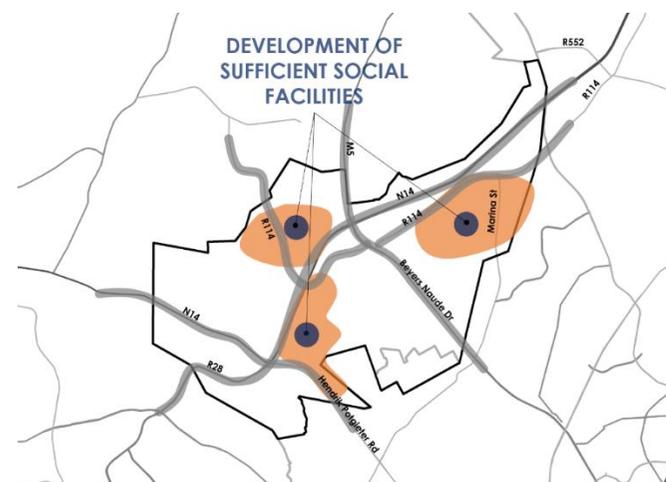


Figure 65: STRATEGY 4

### 15.1.5 STRATEGY 5: DEVELOP THE ROAD NETWORK TO ALLOW FOR URBAN DEVELOPMENT

The road network does not currently support urban development and there is no clarity on the development of major provincial roads. These need to be addressed in order to facilitate functional development of the Precinct

- PROJECT 1: SET UP A COMMITTEE TO ADDRESS THE TRANSPORTATION ISSUES
  - This project includes the construction of the Pinehaven interchange
  - The determination of the PWV8 realignment and interchange locations
  - The construction of a gateway along the D1496 (R114) west of the K13 in Muldersdrift – this gateway should specifically cater for cyclists
  - Alignment of the proposed Metro Blvd, and its intersection with the K13
  - The road network within the Greengate development should be finalised with the consultation of landowners. Specific attention should be given to intersections and road extensions
  - The K72 should provide access to adjoining areas at the following

positions – Pinehaven access road, Francis Road and Steyn Road

- Viable options to cross the N14 should be explored in order to integrate the areas north and south of the freeway

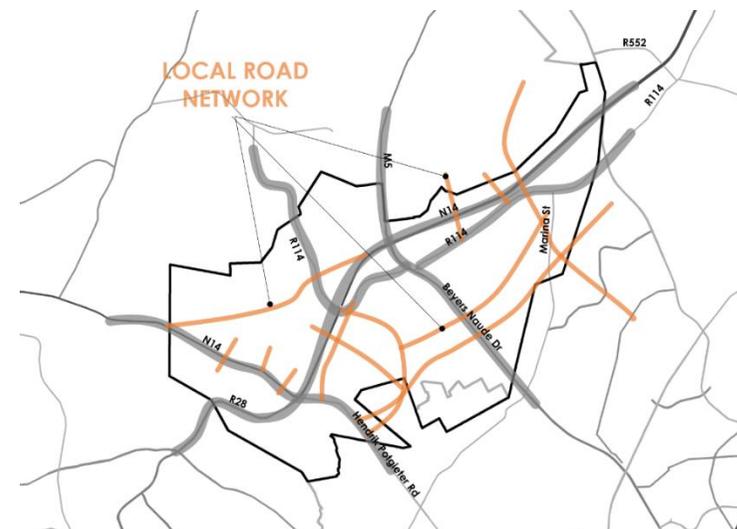


Figure 66: STRATEGY 5

## 16 IMPLEMENTATION PLAN

This section contains the project implementation of the Precinct Plan. The implementation is organised as follows:

- Strategy and motivation
- Projects
- Actions

For each ACTION the following elements are discussed:

- Timeframe (shorth, medium and long)
- Responsible agent i.e. agency responsible for driving the implementation of the project
- Potential sources of funding, i.e. funding agency. This list is not finite and other sources of funding such as donations should be sourced. Of concern is the shifting of budgets to accommodate the funds necessary to deal with the Covid-19 epidemic
- Stakeholders: relevant public and private role-players that are directly involved in the action or should be consulted in the process.
- Prioritisation indication the urgency of implementation, albeit a short-, medium- or long-term project:
  - Red = high priority
  - Orange = medium priority
  - Green = low priority

The following should be noted:

- Facilities and building costs are estimates, based on industry and development standards, for the construction of new buildings and facilities;

therefore, it should be finalised by professional consultants such as engineers, architects, and quantity surveyors.

- Planning and construction costs for residential areas and some social facilities were derived from the 2018/19 Housing Subsidy and Grant Levels of the National Human Settlements Programmes. Costs are based on a typical erf size of 250m<sup>2</sup>, with a 40m<sup>2</sup> building with A Grade Services.
- Primary and Secondary School construction costs are derived from the Guidelines Relating to Planning for Public School Infrastructure, published by the Department of Basic Education, 2012.
- Property value is estimated by the average value of recently transferred properties in the area, as well as the current municipal valuation roll.

STRATEGY 1: ALIGNMENT WITH LARGE URBAN PROJECTS

MOTIVATION:

There are a number of large urban projects within the Precinct, such as the Lanseria Smart City Initiative, the Nooitgedacht mega city, the Avianto development, the Greengate/ Village development, and the upgrading of informal settlements.

There must be alignment between these plans and initiatives to ensure integrated development, to prevent wasteful expenditure and to avoid conflict in development.

Although all effort has been made to align these actions, implementation of plans are ongoing, and fluid and alignment is therefor an ongoing process.

PROJECT 1: ALIGNMENT WITH GREATER LANSERIA MASTER PLAN

ACTIONS	SHORT TERM	MEDIUM TERM	LONG TERM	RESPONSIBLE AGENT	POTENTIAL SOURCES OF FUNDING	ESTIMATED COST	STAKEHOLDERS
Set up a committee to engage in alignment with regards to: <ul style="list-style-type: none"> <li>▪ land use zone designation</li> <li>▪ infrastructure</li> <li>▪ road network</li> <li>▪ land use applications</li> </ul>	X	X	X	MCLM Development Planning	N/A	N/A	<ul style="list-style-type: none"> <li>▪ MCLM Development Planning</li> <li>▪ MCLM Roads and Transport Services</li> <li>▪ MCLM Utilities Services</li> <li>▪ WRDM Transport and Roads</li> <li>▪ WRDM Re-Industrialization</li> <li>▪ Ward Councillor</li> <li>▪ Gauteng Provincial Government</li> </ul> <p>Relevant departments      National</p>

PROJECT 2: ALIGNMENT WITH NOOITGEDACHT MEGA CITY							
ACTIONS	SHORT TERM	MEDIUM TERM	LONG TERM	RESPONSIBLE AGENT	POTENTIAL SOURCES OF FUNDING	ESTIMATED COST	STAKEHOLDERS
Draft detailed Urban Design Framework for the Mega City and its functional area. The UDF should address at least: <ul style="list-style-type: none"> <li>▪ Land use and activities both formal and informal.</li> <li>▪ Residential typologies and densities.</li> <li>▪ Motorised, public transport and non-motorised transport networks: movement and termini.</li> <li>▪ Public space network including hard and soft spaces.</li> <li>▪ Development parameters and building massing and public private interface.</li> <li>▪ Street sections.</li> <li>▪ Streetscaping, landscaping and signage.</li> <li>▪ Infrastructure.</li> </ul>	X			MCLM Development Planning	GP DoHS	R600 000	<ul style="list-style-type: none"> <li>▪ MCLM Development Planning</li> <li>▪ MCLM Human Settlement and Real Estate Administration</li> <li>▪ MCLM Roads and Transport Services</li> <li>▪ WRDM Regional Development Planning and Environmental Management</li> <li>▪ WRDM Transport and Roads</li> <li>▪ Ward Councillor</li> <li>▪ Private landowners</li> <li>▪ GP DoHS</li> <li>▪ NDoHS</li> <li>▪ HDA</li> </ul>
Ensure that the UDF becomes a statutory plan	X			MCLM Development Planning	N/A	N/A	Relevant departments
Set up a structure to ensure that implementation is in line with the proposals contained in the Precinct Plan and the UDF	X	X	X	MCLM Development Planning	N/A	N/A	National

PROJECT 3: ALIGNMENT WITH AVIANTO AND GREENGATE/ THE VILLAGE DEVELOPMENT							
ACTIONS	SHORT TERM	MEDIUM TERM	LONG TERM	RESPONSIBLE AGENT	POTENTIAL SOURCES OF FUNDING	ESTIMATED COST	STAKEHOLDERS
Enter into negotiations with landowners/ developers to ensure that development is in line with the proposals and guidelines contained in this Precinct plan	X	X		MCLM Development Planning	N/A	N/A	<ul style="list-style-type: none"> <li>▪ MCLM Development Planning</li> <li>▪ Private land owners/ developers</li> <li>▪ Ward councillor</li> </ul>
PROJECT 4: ALIGNMENT WITH INFORMAL SETTLEMENT UPGRADING PROGRAMME							
ACTIONS	SHORT TERM	MEDIUM TERM	LONG TERM	RESPONSIBLE AGENT	POTENTIAL SOURCES OF FUNDING	ESTIMATED COST	STAKEHOLDERS
Review current data on status of informal settlements	X			MCLM Human Settlement and Real Estate Administration	HDA	R500 000	<ul style="list-style-type: none"> <li>▪ MCLM Development Planning</li> <li>▪ MCLM Human Settlement and Real Estate Administration</li> <li>▪ WRDM Human Settlement</li> </ul>
Upgrade UISP	X			MCLM Human Settlement and Real Estate Administration	HDA	R500 000	<ul style="list-style-type: none"> <li>▪ HDA</li> <li>▪ Ward Councillor</li> <li>▪ GP DoHS</li> </ul>
Integrate UISP with Precinct Plan proposals and private land development	X	X	X	MCLM Development Planning	N/A	N/A	<ul style="list-style-type: none"> <li>▪ NDoHS</li> <li>▪ Informal settlement residents</li> <li>▪ Private landowners</li> </ul>

**STRATEGY 2: DEVELOP GUIDELINES FOR MIXED-USE SPINES AND NODES TO SUPPORT ECONOMIC AND SOCIAL DEVELOPMENT**

**MOTIVATION:**

Several mixed use spines and nodes have been identified. These will be the focus for future retail, commercial and high-density residential development. To ensure the creation of a high-quality functional space an urban design framework is necessary.

**PROJECT 1: DRAFT AN URBAN DESIGN FRAMEWORK FOR THE N14 DEVELOPMENT CORRIDOR**

ACTIONS	SHORT TERM	MEDIUM TERM	LONG TERM	RESPONSIBLE AGENT	POTENTIAL SOURCES OF FUNDING	ESTIMATED COST	STAKEHOLDERS
Draft an UDF for the N14 Development Corridor. The UDF should address at least: <ul style="list-style-type: none"> <li>▪ Land use and activities both formal and informal.</li> <li>▪ Residential typologies and densities.</li> <li>▪ Agricultural land</li> <li>▪ Motorised, public transport and non-motorised transport networks: movement and termini.</li> <li>▪ Public space network including hard and soft spaces.</li> <li>▪ Development parameters and building massing and public private interface.</li> <li>▪ Street sections.</li> <li>▪ Streetscaping, landscaping and signage.</li> <li>▪ Development incentives</li> </ul>	X			MCLM Development Planning	MCLM Development Planning	R300 000	<ul style="list-style-type: none"> <li>▪ MCLM Development Planning</li> <li>▪ MCLM Human Settlement and Real Estate Administration</li> <li>▪ MCLM Roads and Transport Services</li> <li>▪ WRDM Regional Development Planning and Environmental Management</li> <li>▪ WRDM Transport and Roads</li> <li>▪ WRDM Economic Development</li> <li>▪ Ward Councillor</li> <li>▪ Private landowners</li> <li>▪ GP DoHS</li> </ul> <p>Relevant departments                      National</p>

PROJECT 2: DRAFT AN URBAN DESIGN FRAMEWORK FOR THE R114 MIXED-USE SPINE AND NODE							
ACTIONS	SHORT TERM	MEDIUM TERM	LONG TERM	RESPONSIBLE AGENT	POTENTIAL SOURCES OF FUNDING	ESTIMATED COST	STAKEHOLDERS
<p>Draft an UDF for the R114 mixed-use spine and node. The UDF should address at least:</p> <ul style="list-style-type: none"> <li>▪ Land use and activities both formal and informal.</li> <li>▪ Residential typologies and densities.</li> <li>▪ Agricultural land</li> <li>▪ Motorised, public transport and non-motorised transport networks: movement and termini.</li> <li>▪ Public space network including hard and soft spaces.</li> <li>▪ Development parameters and building massing and public private interface.</li> <li>▪ Street sections.</li> <li>▪ Streetscaping, landscaping and signage.</li> <li>▪ Development incentives</li> </ul>	X			MCLM Development Planning	MCLM Development Planning	R500 000	<ul style="list-style-type: none"> <li>▪ MCLM Development Planning</li> <li>▪ MCLM Human Settlement and Real Estate Administration</li> <li>▪ MCLM Roads and Transport Services</li> <li>▪ WRDM Regional Development Planning and Environmental Management</li> <li>▪ WRDM Transport and Roads</li> <li>▪ WRDM Economic Development</li> <li>▪ Ward Councillor</li> <li>▪ Private landowners</li> <li>▪ GP DoHS</li> </ul> <p>Relevant departments                      National</p>

PROJECT 3: DRAFT AN URBAN DESIGN FRAMEWORK FOR THE BEYERS NAUDE DRIVE MIXED USE SPINE							
ACTIONS	SHORT TERM	MEDIUM TERM	LONG TERM	RESPONSIBLE AGENT	POTENTIAL SOURCES OF FUNDING	ESTIMATED COST	STAKEHOLDERS
<p>Draft an UDF for the Beyers Naude Drive mixed-use spine. The UDF should address at least:</p> <ul style="list-style-type: none"> <li>▪ Land use and activities both formal and informal.</li> <li>▪ Residential typologies and densities.</li> <li>▪ Agricultural land</li> <li>▪ Motorised, public transport and non-motorised transport networks: movement and termini.</li> <li>▪ Public space network including hard and soft spaces.</li> <li>▪ Development parameters and building massing and public private interface.</li> <li>▪ Street sections.</li> <li>▪ Streetscaping, landscaping and signage.</li> <li>▪ Development incentives</li> </ul>	X			MCLM Development Planning	MCLM Development Planning	R250 000	<ul style="list-style-type: none"> <li>▪ MCLM Development Planning</li> <li>▪ MCLM Human Settlement and Real Estate Administration</li> <li>▪ MCLM Roads and Transport Services</li> <li>▪ WRDM Regional Development Planning and Environmental Management</li> <li>▪ WRDM Transport and Roads</li> <li>▪ WRDM Economic Development</li> <li>▪ Ward Councillor</li> <li>▪ Private landowners</li> <li>▪ GP DoHS</li> </ul> <p>Relevant departments                      National</p>

PROJECT 4: DRAFT AN URBAN DESIGN FRAMEWORK FOR THE CRADLESTONE MALL MIXED USE NODE							
ACTIONS	SHORT TERM	MEDIUM TERM	LONG TERM	RESPONSIBLE AGENT	POTENTIAL SOURCES OF FUNDING	ESTIMATED COST	STAKEHOLDERS
Draft an UDF for the Cradlestone mall Mixed use Node. The UDF should address at least: <ul style="list-style-type: none"> <li>▪ Land use and activities both formal and informal.</li> <li>▪ Residential typologies and densities.</li> <li>▪ Agricultural land</li> <li>▪ Motorised, public transport and non-motorised transport networks: movement and termini.</li> <li>▪ Public space network including hard and soft spaces.</li> <li>▪ Development parameters and building massing and public private interface.</li> <li>▪ Street sections.</li> <li>▪ Streetscaping, landscaping and signage.</li> <li>▪ Development incentives</li> </ul>	X			MCLM Development Planning	MCLM Development Planning	R250 000	<ul style="list-style-type: none"> <li>▪ MCLM Development Planning</li> <li>▪ MCLM Human Settlement and Real Estate Administration</li> <li>▪ MCLM Roads and Transport Services</li> <li>▪ WRDM Regional Development Planning and Environmental Management</li> <li>▪ WRDM Transport and Roads</li> <li>▪ WRDM Economic Development</li> <li>▪ Ward Councillor</li> <li>▪ Private landowners</li> <li>▪ GP DoHS</li> </ul> <p>Relevant departments                      National departments</p>

## STRATEGY 3: SUPPORT TOURISM DEVELOPMENT

## MOTIVATION:

Tourism plays a significant role within the Precinct. This role should be enhanced through functional and aesthetic elements.

## PROJECT 1: DEVELOP TOURISM GATEWAYS AT R114

ACTIONS	SHORT TERM	MEDIUM TERM	LONG TERM	RESPONSIBLE AGENT	POTENTIAL SOURCES OF FUNDING	ESTIMATED COST	STAKEHOLDERS
Identify the locality of the gateway		X	X	MCLM Tourism	N/A	N/A	<ul style="list-style-type: none"> <li>▪ MCLM Development Planning</li> <li>▪ MCLM Tourism</li> <li>▪ MCLM Sports, Arts, Culture and Recreation</li> <li>▪ MCLM Parks Management and Nature Conservation</li> <li>▪ WRDM Regional Development Planning and Environmental Management</li> <li>▪ Gautrans</li> <li>▪ MBR NPO</li> <li>▪ Local artists</li> <li>▪ GP DoSACR</li> </ul>
Appoint consultants to design the gateway based on clear guidelines		X	X	MCLM Tourism	GP DoSACR	R1 000 000	
Construct the gateway			X	MCLM Tourism	GP DoSACR	R1 000 000	

PROJECT 2: DEVELOP TOURISM AND PROTECTED AREAS OVERLAY ZONE							
ACTIONS	SHORT TERM	MEDIUM TERM	LONG TERM	RESPONSIBLE AGENT	POTENTIAL SOURCES OF FUNDING	ESTIMATED COST	STAKEHOLDERS
Identify the geographic areas to be included in the overlay zone		X		MCLM Development Planning	N/A	N/A	<ul style="list-style-type: none"> <li>▪ MCLM Development Planning</li> <li>▪ MCLM Tourism</li> <li>▪ MCLM Sports, Arts, Culture and Recreation</li> <li>▪ MCLM Parks Management and Nature Conservation</li> <li>▪ MCLM Environmental Management</li> <li>▪ WRDM Regional Development Planning and Environmental Management</li> <li>▪ MBR NPO</li> <li>▪ CoH WHS MA</li> <li>▪ MACH</li> </ul>
Appoint consultants to draft development guidelines, parameters, and controls		X		MCLM Development Planning	MCLM Development Planning	R250 000	
Develop land use application and approval processes		X		MCLM Development Planning	N/A	N/A	
Incorporate in LUS		X		MCLM Development Planning	MCLM Development Planning	R1000per/page	
Apply guidelines to the development of the road reserve and abutting properties along the southern part of the R563 and the R96		X	X	MCLM Development Planning	N/A	N/A	

PROJECT 3: DRAFT AN URBAN DESIGN FRAMEWORK FOR THE N14 TOURISM CORRIDOR							
ACTIONS	SHORT TERM	MEDIUM TERM	LONG TERM	RESPONSIBLE AGENT	POTENTIAL SOURCES OF FUNDING	ESTIMATED COST	STAKEHOLDERS
Draft an UDF for the N14 Tourism Corridor. The UDF should address at least: <ul style="list-style-type: none"> <li>▪ Land use and activities both formal and informal.</li> <li>▪ Residential typologies and densities.</li> <li>▪ Agricultural land</li> <li>▪ Motorised, public transport and non-motorised transport networks: movement and termini.</li> <li>▪ Public space network including hard and soft spaces.</li> <li>▪ Development parameters and building massing and public private interface.</li> <li>▪ Street sections.</li> <li>▪ Streetscaping, landscaping and signage.</li> <li>▪ Development incentives</li> </ul>	X			MCLM Development Planning	MCLM Development Planning	R300 000	<ul style="list-style-type: none"> <li>▪ MCLM Development Planning</li> <li>▪ MCLM Human Settlement and Real Estate Administration</li> <li>▪ MCLM Roads and Transport Services</li> <li>▪ WRDM Regional Development Planning and Environmental Management</li> <li>▪ WRDM Transport and Roads</li> <li>▪ WRDM Economic Development</li> <li>▪ Ward Councillor</li> <li>▪ Private landowners</li> <li>▪ GP DoHS</li> </ul>
Address illegal land uses along the N14	X			MCLM Development Planning	N/A	N/A	Relevant departments National

**STRATEGY 4: ENSURE THE DEVELOPMENT OF SUFFICIENT SOCIAL FACILITIES CLUSTERED IN ACCESSIBLE LOCALITIES**

**MOTIVATION:**

*There is currently insufficient social facilities within the precinct. A situation that will only worsen with future development. This should be addressed holistically to prevent ad hoc development as new townships are developed and underdevelopment.*

**PROJECT 1: PLAN FOR THE DEVELOPMENT OF SUFFICIENT SOCIAL FACILITIES**

ACTIONS	SHORT TERM	MEDIUM TERM	LONG TERM	RESPONSIBLE AGENT	POTENTIAL SOURCES OF FUNDING	ESTIMATED COST	STAKEHOLDERS
Undertake a survey of current social facility, quantity, quality and utilisation	X			MCLM Development Planning	GDoSD	R800 000	<ul style="list-style-type: none"> <li>▪ MCLM Development Planning</li> <li>▪ MCLM Sports, Arts, Culture and Recreation</li> <li>▪ MCLM Parks Management and Nature Conservation</li> <li>▪ WRDM Regional Development Planning and Environmental Management</li> <li>▪ GP DoSACR</li> </ul>
Determine the need for new facilities based on the projected future development as contained in this Precinct Plan	X			MCLM Development Planning	GDoSD		
Determine the number and type of social facilities that should be provided per functional area as well as the land required	X			MCLM Development Planning	GDoSD		
Identify the ideal locality and math with development proposals from private developers	X	X	X	MCLM Development Planning	GDoSD		
Acquire land, in identified localities, either during township establishment, either through 'donation' of land or contribution	X	X	X	MCLM Development Planning	Relevant department	TBD	
Ensure development of social facilities by relevant department	X	X	X	MCLM Development Planning	Relevant department	TBD	

**STRATEGY 5: DEVELOP THE ROAD NETWORK TO ALLOW FOR URBAN DEVELOPMENT**

**MOTIVATION:**

The road network does not currently support urban development and there is no clarity on the development of major provincial roads. These need to be addressed in order to facilitate functional development of the Precinct

**PROJECT 1: SET UP A COMMITTEE TO ADDRESS THE TRANSPORTATION ISSUES**

ACTIONS	SHORT TERM	MEDIUM TERM	LONG TERM	RESPONSIBLE AGENT	POTENTIAL SOURCES OF FUNDING	ESTIMATED COST	STAKEHOLDERS
Construction of the Pinehaven interchange	X			Gautrans	Gautrans	TBD	<ul style="list-style-type: none"> <li>▪ MCLM Development Planning</li> <li>▪ MCLM Roads and Transport Services</li> <li>▪ WRDM Transport and Roads</li> <li>▪ Gautrans</li> <li>▪ Landowners</li> </ul>
Determination of the route of PWV8 and interchange positions.	X			Gautrans	Gautrans	TBD	
A gateway should be constructed on D1496 (R114) west of K13 at Muldersdrift and the road should be developed similar to other roads in the COHWHS, particularly from a cyclist point of view		X		Gautrans	Gautrans	TBD	
The alignment of Metro Boulevard and its intersection on K13 with a grade-separation at K13 and suitable connecting roads	X			Gautrans	Gautrans	TBD	
The road network in the Greengate area must be finalised in consultation with landowners, including: <ul style="list-style-type: none"> <li>▪ Access to Muldersdrift on K13</li> <li>▪ Furrow Road extension</li> <li>▪ New north-south connection from K72 / Hendrik Potgieter Road to D2572</li> <li>▪ Possible extension of D2572 with left-in-left-out access on K13 (southbound).</li> </ul>	X			Gautrans	Gautrans	TBD	
K72 should provide access to the adjoining areas at the following positions: <ul style="list-style-type: none"> <li>▪ Pinehaven access road, including access to Pinehaven Hospital. It</li> </ul>			X	Gautrans	Gautrans	TBD	

<p>must also serve the area in the north-western quadrant of the Pinehaven interchange (K13 / K72)</p> <ul style="list-style-type: none"> <li>▪ Francis Road</li> <li>▪ Steyn Road.</li> </ul>							
<p>All options to cross the N14 (P158-1) freeway should be developed to integrate areas north and south of the freeway respectively.</p>			X	Gautrans	Gautrans	TBD	

## 17 LINKAGE TO THE LUMS

### 17.1 LUMS CLAUSES

The following Clauses contained in the Mogale City Local Municipality Land Use Scheme, 2019 – Final Draft are applicable to the Precinct.

*SECTION 1: LAND DEVELOPMENT RIGHTS*

*PART IV: DEVELOPMENT RULES AND OVERLAY ZONES*

**Overlay Zone:** means a category of zoning that applies to land or a land unit or parcel in addition to the base zoning and that:

- Stipulates additional development parameters or use rights, and
- May include provisions and development parameters relating to:
  - Primary and/or consent uses
  - Base zoning
  - Subdivision or sub-divisional areas
  - Development incentives
  - Density limitations
  - Urban form or urban renewal or other related planning parameters
  - Heritage and/or environmental protection
  - Management of the urban development boundary, and
  - Any other purpose as set out in this Land Use Scheme.

It is proposed that an overlay zone be developed for the CoH WHS, the MBR and Tourism Corridors and Gateways for the entire Mogale City Local Municipal area.

*SECTION 2: MANAGEMENT OF LAND DEVELOPMENT RIGHTS*

*PART V: LAND DEVELOPMENT REQUIREMENTS*

*32. GENERAL APPEARANCE AND CONVENIENCE*

*32.1 The Municipality may, if in its opinion any proposed building in any use zone in respect of which building plans have been submitted to it for approval will disfigure the environment or may for any reason whatsoever be detrimental to the amenity of the area, require the person who submitted such building plans, to furnish such further information, plans, models or other sufficient indication of the proposed building as it may, in its discretion, deem necessary, before considering such building plans in terms of the provisions of its building Bylaws.*

It is proposed that for this Precinct, especially, for the tourism corridor and the mixed-use spines and nodes, additional criteria relating to the physical appearance and aesthetics for the buildings and landscaping for new development be considered. Some of these are contained in the design guidelines in the Precinct Plan.

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**SECTION 3: PROMOTION OF LAND DEVELOPMENT****43. SPECIAL DEVELOPMENT ZONES**

**Special Development Zone:** means a clearly defined geographical area that the Mogale City Local Municipal Council has delineated for focused planning and development intervention and investment. A Special Development Zone will have a specific urban management focus that can include environment, transportation, urban renewal, housing and economic development related foci. Such Special Development Zones can be added to, amended or removed in terms of Mogale City Local Council resolution and official publication. An SDZ will be indicated by an Annexure, Schedule or Overlay Zone.

It is proposed that the entire precinct be declared a Special Development Zone to accommodate and support the Lanseria Smart City initiative.

## 17.2 LAND USE ZONES

The following land use zones as contained in the Mogale City Local Municipality Land Use Scheme, 2019 – Final Draft are applicable to the respective development categories in the Precinct Development Concept.

Table 16: MCLM LUS LAND USE ZONES

	DEVELOPMENT CORRIDOR	MIXED USE ACTIVITY SPINE	MIXED USE NODE	SOCIAL NODE	TOURISM CORRIDOR	RURAL RESIDENTIAL	LOW DENSITY RESIDENTIAL	MEDIUM DENSITY RESIDENTIAL	HIGH DENSITY RESIDENTIAL	COMMERCIAL	GREEN INDUSTRIES	OPEN SPACE AND NATURAL AREA
RESIDENTIAL 1 1 dwelling unit per erf (100m <sup>2</sup> - 4 000m <sup>2</sup> )	NO	NO	NO	NO	YES	NO	YES	YES	NO	NO	NO	NO
RESIDENTIAL 2 20 up to 40 dwelling units per ha	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO
RESIDENTIAL 3 41 to 60 dwelling units per ha	NO	YES	YES	YES	NO	NO	NO	YES	NO	NO	NO	NO
RESIDENTIAL 4 61 dwellings per ha and higher	NO	YES	YES	YES	NO	NO	NO	NO	YES	NO	NO	NO
RESIDENTIAL 5	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO
AGRICULTURAL RESIDENTIAL	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO

	DEVELOPMENT CORRIDOR	MIXED USE ACTIVITY SPINE	MIXED USE NODE	SOCIAL NODE	TOURISM CORRIDOR	RURAL RESIDENTIAL	LOW DENSITY RESIDENTIAL	MEDIUM DENSITY RESIDENTIAL	HIGH DENSITY RESIDENTIAL	COMMERCIAL	GREEN INDUSTRIES	OPEN SPACE AND NATURAL AREA
One dwelling unit per agricultural holding												
BUSINESS 1 Dwelling unit- 40 units / ha	NO	YES	YES	NO	YES	NO	NO	NO	NO	YES	NO	NO
BUSINESS 2 Dwelling unit- 40 units / ha	NO	YES	NO	YES	YES	NO	YES	YES	YES	NO	NO	NO
BUSINESS 3	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO
BUSINESS 4	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO
BUSINESS 5	NO	NO	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO
EDUCATIONAL	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO
COMMERCIAL	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO
COMMUNITY FACILITY	NO	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO
INSTITUTIONAL	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO
INDUSTRIAL 1	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO
INDUSTRIAL 2	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
AGRICULTURE	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	YES	NO
PUBLIC OPEN SPACE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

	DEVELOPMENT CORRIDOR	MIXED USE ACTIVITY SPINE	MIXED USE NODE	SOCIAL NODE	TOURISM CORRIDOR	RURAL RESIDENTIAL	LOW DENSITY RESIDENTIAL	MEDIUM DENSITY RESIDENTIAL	HIGH DENSITY RESIDENTIAL	COMMERCIAL	GREEN INDUSTRIES	OPEN SPACE AND NATURAL AREA
PRIVATE OPEN SPACE	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	YES

## 18 ALIGNMENT

### 18.1 INTRODUCTION

This Section contains the alignment of the Precinct development proposals with:

- municipal SDFs
- SDFs of surrounding municipalities
- large strategic projects and sector alignment

### 18.2 MUNICIPAL SDF

The Precinct Plan is aligned with the MCLM MSDF, 2019, in principle. With the revision of the SDF, the following should be taken into account:

- Proposals for the Lanseria Smart City
- The extent of the N14 Development Corridor to terminate at Hendrik Potgieter Street or the R114
- Reconsideration of the urban edge: to extend to the proposed PWV8
- Expansion of public housing projects to include the Nooitgedacht Mega City

### 18.3 SDFs OF SURROUNDING MUNICIPALITIES

The Muldersdrift Precinct Plan abuts the City of Johannesburg MM. It is aligned with the CoJ MM SDF. The Precinct Plan does not materially impact on the CoJ SDF.

### 18.4 LARGE / STRATEGIC PROJECTS AND SECTOR ALIGNMENT

There are four large strategic projects that will have a significant impact on the future of the Precinct.

#### 18.4.1 THE NOOITGEDACHT MEGA CITY

The land parcels contained in the proposed Nooitgedacht Mega City have been considered in the Precinct Plan. The Precinct Plan provides guidelines on the mix of land uses, residential densities, and external linkages.

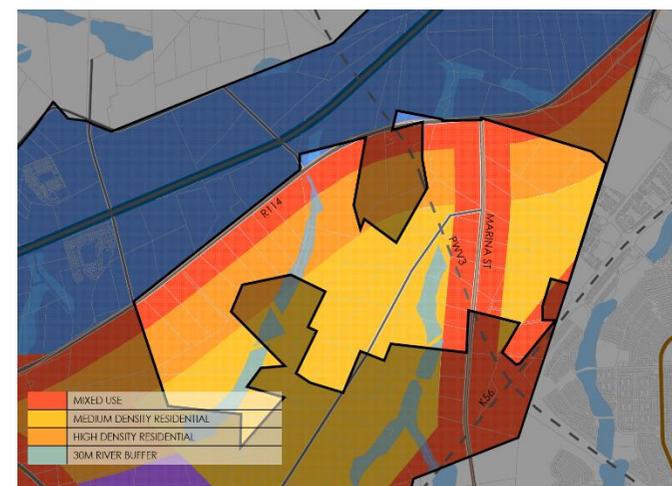


Figure 67: NOOITGEDACHT MEGA CITY

#### 18.4.2 AVIANTO EXTENSION

The land parcels contained in the Avianto Extension have been considered in the Precinct

Plan and the proposals are mostly aligned with those contained in the Precinct Plan. However, the existing Avianto Estate and a portion of its expansion fall within the Development Corridor. This deviation from the Precinct Plan proposals is condoned due to the existing development and the low impact that it will have on the future development of the Corridor.

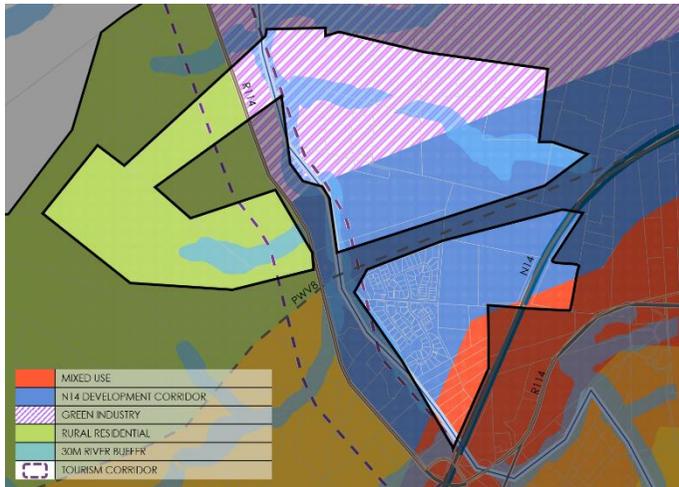


Figure 68: AVIANTO ESTATE

### 18.4.3 GREENGATE/ THE VILLAGE

The Precinct Plan is aligned to the proposed Greengate/ the Village development.

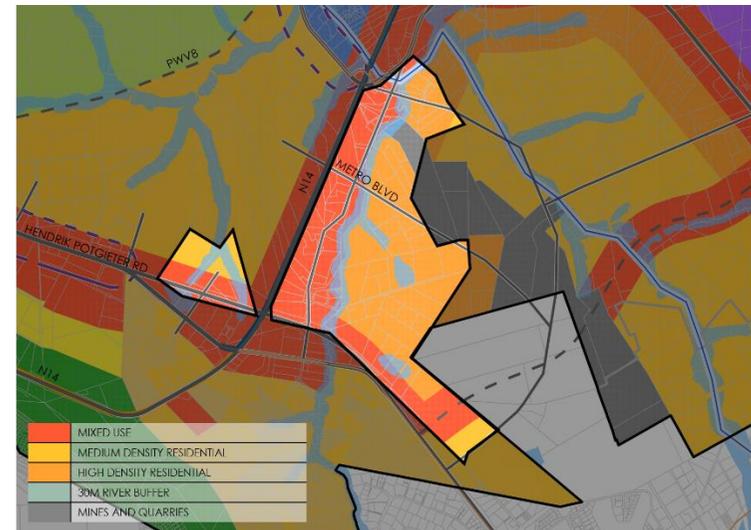


Figure 69: GREENGATE/ THE VILLAGE DEVELOPMENT

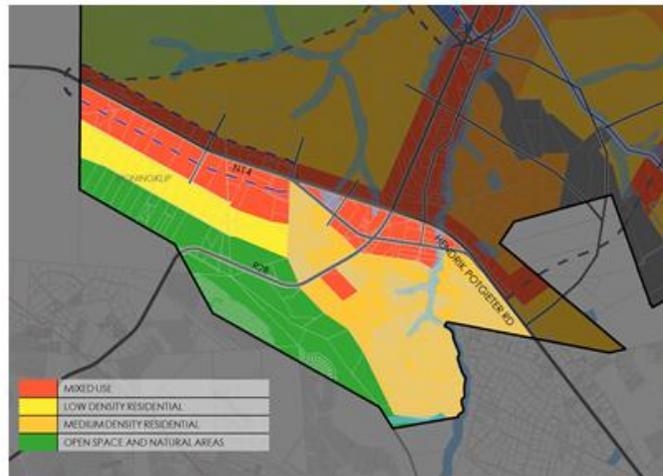
## 18.5 ALIGNMENT WITH GREATER LANSERIA MASTER PLAN

Although the focus of the Precinct Plan and the Greater Lanseria Master Plan (GLMP) differs, every effort has been made to align the Precinct Plan with the GLMP. The GLMP was circulated for comments during December 2020. Amendment to the GLMP will have to be incorporated in the Precinct Plan. It is thus suggested that the final approval of the Precinct Plan should take place once it becomes clear which amendments need to be made to the GLMP, to ensure alignment.

Land use descriptions between the plans differ, as do the level of detail. Below is a comparison of the land use categories for each sub-precinct.

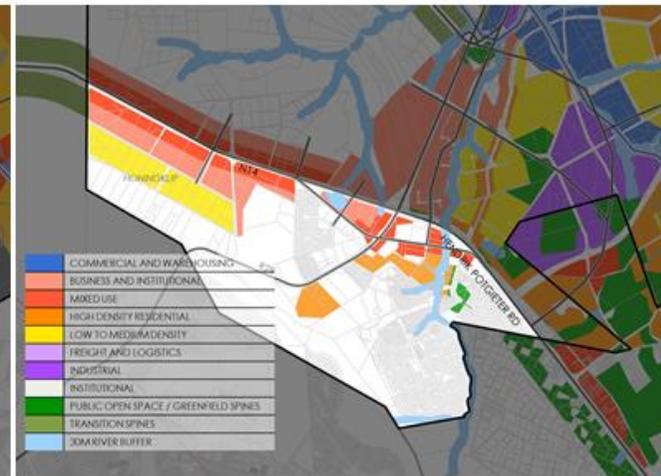


# SUB PRECINCT 1



**PRECINCT PLAN**

- Mixed Use
- Low Density Residential
- Medium Density Residential
- Open Space and Natural Areas

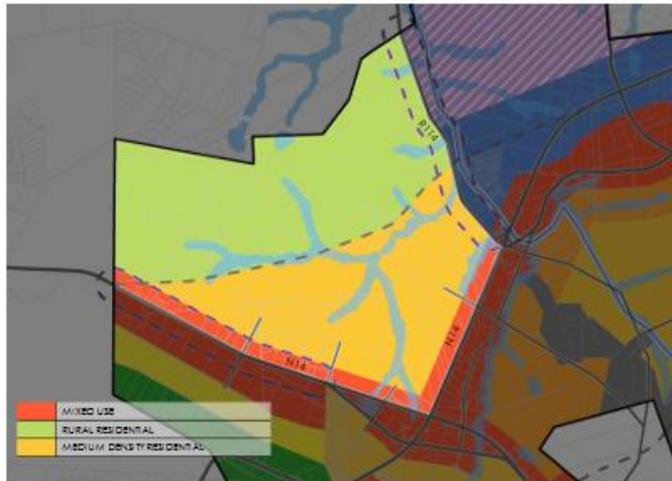


**GRMP**

- Mixed Use
- Business and Institutional
- Low to Medium Density
- High Density Residential
- N/A



# SUB PRECINCT 2



**PRECINCT PLAN**

- Mixed Use
- Medium Density Residential
- Rural Density

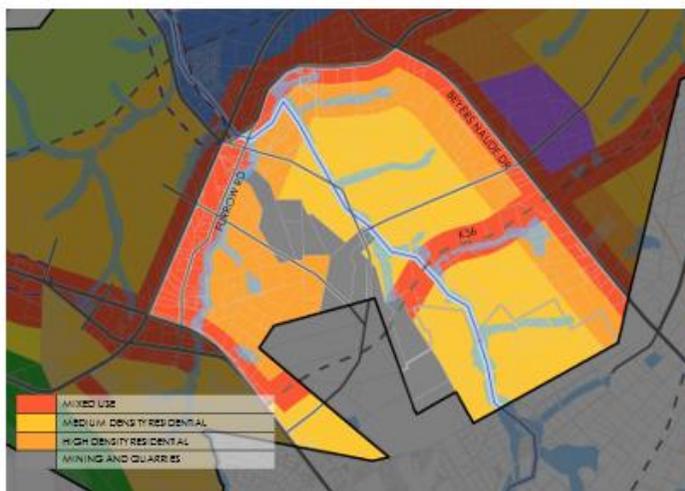


**GRMP**

- Mixed Use
- Business and Institutional
- N/A
- N/A

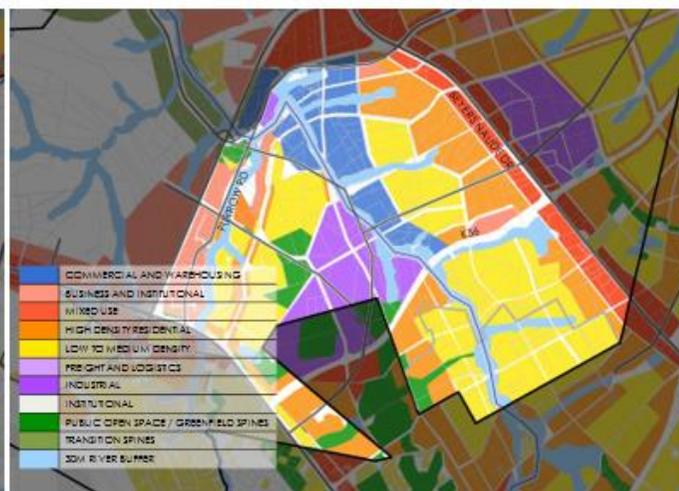


# SUB PRECINCT 3



**PRECINCT PLAN**

- Mixed Use
- High Density Residential
- Medium Density Residential
- Mining and Quarries

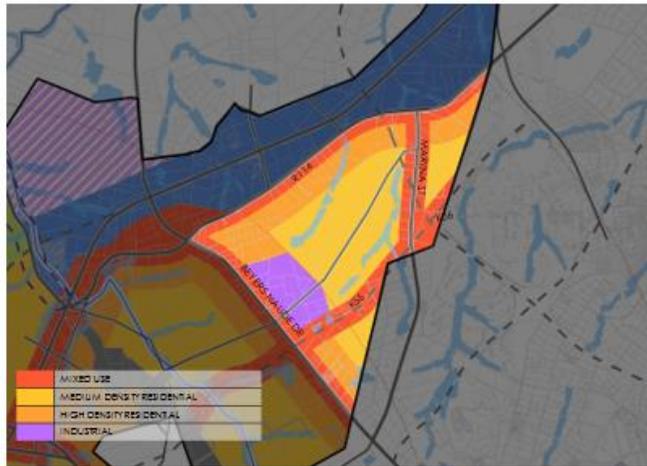


**GRLMP**

- Mixed Use
- Business and Institutional
- Commercial and Warehousing
- High Density Residential
- Low to Medium Density
- Commercial and Warehousing
- Low to Medium Density Residential
- Industrial
- Public Open Space



# SUB PRECINCT 4



**PRECINCT PLAN**

- Mixed Use
- High Density Residential
- Medium Density Residential
- Industrial

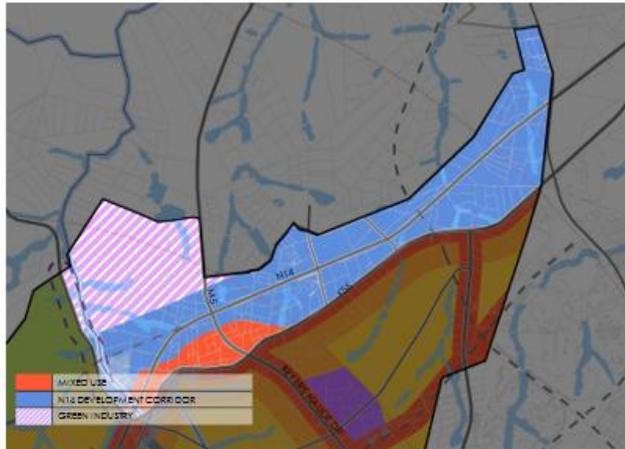


**GRLMP**

- Mixed Use
- Business and Institutional
- High Density Residential
- Low to Medium Density
- Industrial



# SUB PRECINCT 5



**PRECINCT PLAN**

- Mixed Use

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- N14 Development Corridor

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- Green Industry



**GRMP**

- Mixed Use
- Business and Institutional

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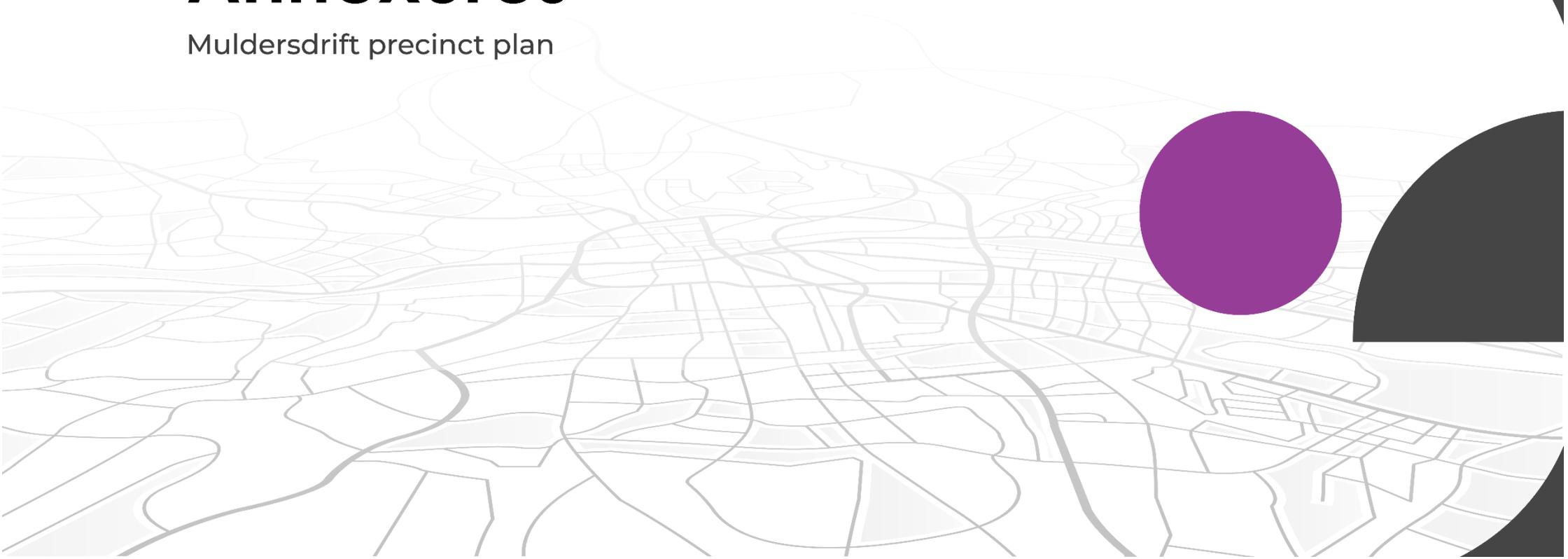
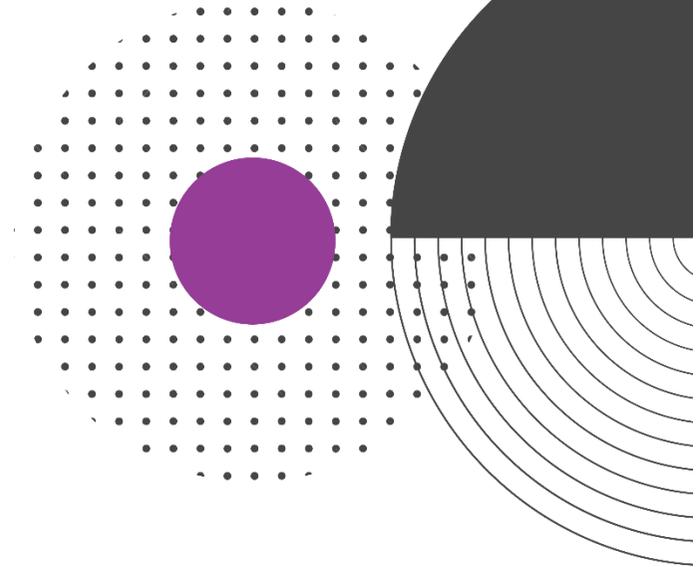
- Mixed Use
- Business and Institutional
- High Density Residential

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- Industrial
- Business and Institutional

# Annexures

Muldersdrift precinct plan



## CoH WHS EMF LAND USE DEFINITIONS AND GUIDELINES

The definitions contained in the CoH WHS EMF differ somewhat from that in the LUMS and are supplementary to those in the LUMS in the sense that additional definitions are provided, and quantitative and qualitative criteria are included. It is ideal to develop an overlay zone to accommodate these definitions and guidelines. The definitions (adapted for the purpose of the Precinct Plan) that differ significantly from the MCLM LUMS are as follows:

- **“additional dwelling unit”** means dwelling unit that may be erected on an existing subdivided farm portion or agricultural holding where a permitted dwelling house has first been erected and no additional dwelling unit or structures exceeding this provision has been erected to date. The additional dwelling unit shall remain on the same cadastral unit as the dwelling house. Only a single additional dwelling unit is permitted on an existing subdivided farm portion or agricultural holding regardless of the size of the portion or holding. An additional dwelling unit including a parking structure, may not exceed 250m<sup>2</sup> coverage and the development footprint may not exceed 500m<sup>2</sup> per unit. The additional unit must be a single storey construction and must preferably be placed adjacent to the dwelling house to limit the visual impact of the proposed development to the original farmstead precinct.
- **“advertising on site”** means the placing of physical advertising signs and hoardings. This includes the attachment of banners and posters to existing infrastructure, walls or fences for advertising purposes. This excludes on site facility signs approved by the Local Authority.
- **“agricultural buildings”** means any permanent structures such as required for the parking and general storage of farm vehicles,

implements and produce directly related to the farming activities on site. Any activity or structure that exceeds merely the storage of the above such as packaging, sorting or commercial activity is excluded from the above provision.

- **“aircraft landing strips”** means any site prepared for use by the owner/user of an aeroplane to land or take off.
- **“associated infrastructure”** means the minimum infrastructure required to service a particular development which is aimed at best environmental practice and limited impact on the environment. The provision of sustainable methods such as grey water use, solar energy, ecological stormwater management etc. should be promoted.

In areas underlain by dolomitic conditions, the provision of on-site wastewater (sewage) treatment and stormwater runoff requires particular attention. Soak away “French drains” and septic tanks are not acceptable systems. Properly constructed and maintained conservancy tanks with sufficient capacity is the only acceptable option at present. Stormwater management should be aimed at the prevention of ponding of water.

In instances where access is required to properties beyond the existing surfaced road system, careful consideration should be taken of the visual and physical impact of surfaced (tarred) roads in the COH WHS. Alternative options ranging from well maintained and sited gravel surfaces to limited provision of cobbled or cement sections in areas that require high maintenance or vehicle traction problems should be considered in preference to surfaced (tarred) roads. Access pathways to individual units on a property should also be carefully designed and constructed with a width and length limited by visual and functional considerations in line with an approach aimed at minimum disturbance.

- **“bulk engineering infrastructure”** means the provision of large-scale engineering services and facilities not aimed at providing a direct link or service only to an individual property or erf. This includes facilities such as wastewater treatment works, water purification plants, electrical substations and associated powerlines as well as link services excluding reticulation.
- **“business premises”** means a building or property from which business is conducted and includes a shop, office, financial institution and building for similar uses, but does not include a place of assembly, place of entertainment, institution, service station, motor repair garage, industry, industrial hive, noxious trade, risk activity, restaurant, adult entertainment business or bottle store.
- **“camping site”** means a property or part thereof in which tents and caravans are utilised for accommodation for temporary visitors, and includes ablution, cooking and other facilities for the use of such visitors and must comply with the following requirements: 1 site per property, maximum of 20 tents or 20 caravans at a density of 1 tent/ caravan/ 10 ha of property size with central ablution facilities including cooking/ washing. Each tent sleeps maximum 4 people.
- **“commercial antenna”** means a facility incorporating a high mast, for the transmission and/or receiving of electromagnetic waves, and includes a television station, a radio station, and a cellular communication tower.
- **“commercial kennel”** means kennel services for dogs, cats, and similar animals, and includes commercial breeding, boarding kennels, pet motels and dog training centres.
- **“conference facility”** means a place of assembly without overnight accommodation, which also supplies meals, which normally is an additional activity to a primary function such as a boutique hotel, guesthouse or restaurant and where the building restrictions will be those of the primary function, except that additional parking may be required.
- **“dwelling house”** means a permanent homestead for occupation by the owner of the property either full time or part time consisting of a single building or consolidated units (rooms) (single storey) without any separate outbuildings or structures except for a structure providing for the parking of vehicles not exclusively used for farming purposes. Outdoor entertainment areas such as a swimming pool and braai area as well as all soft and hard landscaping areas must form a single consolidated unit with a limited and well-defined footprint. A dwelling house including a parking structure may not exceed 500m<sup>2</sup> coverage and the development footprint may not exceed 1 000m<sup>2</sup> per dwelling house.
- **“extensive agriculture”** means agriculture that involves the use of the natural vegetation without any attempt to increase its yield above that of the original condition, and/or the cultivation of up to 20ha of land for crops or pastures. This refers primarily to the grazing of livestock and game on natural veld but does allow for a limited amount of crop or pasture production. Included is the use of facilities such as dips, spray races, and holding kraals.
- **“farm labourer structures”** means any permanent structures for the bona fide occupation of farm labourers employed on the same farm portion including provision for soft and hard landscaping which must form a single unit with a limited and well-defined development footprint if not contained within the dwelling house footprint. Each structure should not exceed 60m<sup>2</sup> within a footprint of 100m<sup>2</sup>.
- **“farmstall”** means a building, located on a farm, which does not exceed 100m<sup>2</sup> in floor space, including storage facilities, where a farmer sells products produced and processed on this farm to the general public.
- **“farm shop”** means a building, located on a farm, which does not exceed 100m<sup>2</sup> in floor space, including storage facilities, where the farmer sells goods, whether to his employees or to the general public.

- **“fossil research”** means all activities undertaken by an authorized scientist to excavate a site for fossil evidence or related scientific information within the boundary of the declared COH WHS and buffer zone. Such excavation activity must be authorised by at least SAHRA and the CoH WHS Management Authority.
- **“guest house”** means an additional dwelling unit (250m<sup>2</sup>) which is used for the purpose of letting individual rooms for residential accommodation, with or without meals, provided that:
  - the property is retained in a form which can easily be re-used by a family as an additional dwelling unit; and
  - all amenities and provision of meals shall be for the sole benefit of bona fide lodgers.
- **“guided scientific tours”** means any formal tours undertaken by a suitably qualified and registered tour guide to any heritage site or fossil excavation site with the written permission of the landowner and relevant authorities.
- **“helistops”** means any site prepared for use by the owner/user of a helicopter to land or take off excluding sites required for use by emergency personnel.
- **“high density residential development”** means residential development of single privately owned stands and units with associated services in densities associated with urban development.
- **“holiday accommodation”** means a harmoniously designed and built holiday development used for holiday or recreational purposes, whether in private or public ownership, which:
  - consists of a single enterprise in which accommodation is supplied by means of short-term rental or time sharing only;
  - may include the provision of a camping site, mobile home park and dwelling units;
    - may also include a restaurant and indoor and outdoor recreation facilities; and
    - may include a boutique hotel and lodge.
- **“hotel/ boutique hotel/ lodge”** means property used as a temporary residence for transient guests, where lodging and meals are provided, and may include associated conference and entertainment facilities that are subservient and ancillary to the dominant use of the property as a hotel/lodge, as well as premises which are licensed to sell liquor for consumption on the property, but does not include an off-sales facility. The facility is limited to a single hotel, boutique hotel/ lodge or consolidated units on a property with a maximum of 10 units per property at a density of 1 unit per 10ha of property size, each unit/ suite should not exceed 120m<sup>2</sup> and is limited to sleep a maximum of 3 people. In addition, conference and entertainment facilities in scale can be provided at a rate of 10m<sup>2</sup> floor space/unit up to a maximum of 100m<sup>2</sup>. The primary structure including provision for conference/ entertainment should be a single storey development with a maximum building footprint of 700m<sup>2</sup>.
- **“intensive agriculture”** means a farming system involving high yields of crop or livestock products by means of replacing or enhancing the natural agricultural resource base. Included are operations involving irrigation of crops or pastures by means of centre pivot irrigation systems including as example such activities as chicken batteries, egg packaging facilities and woodlands, etc.
- **“lifestyle estates”** means land containing residences usually developed in relation to significant open space, the latter which may (or may not) include other lower intensity uses such as recreation, golf courses or polo fields.
- **“low impact camping site”** means a property or part thereof in which tents are utilised for accommodation for visitors, and includes ablution, cooking and other facilities for the use of such visitors. These camping facilities must however be exclusively in support of low impact tourism activities such as horse riding, hiking and mountain biking and must comply with the following requirements: 1 site per property, maximum of 20 tents at a

density of 1 tent/10ha of property size with central ablution facilities including cooking/washing. Each tent sleeps maximum 2 people.

- **“mining and quarries”** has the meaning assigned to it in the Mineral and Petroleum Resources Development Act, 2002.
- **“nature and heritage trails, mountain biking and horse trails”** means any formal trails used on a permanent basis for the conducting of any of the above non-motorised outdoor activities both on a commercial or non-commercial basis. The design and construction of these trails should be done in accordance with best management principles and facilities should make provision for public amenities normally associated with trail use.
- **“plant nursery”** means a property which is used for the sale of plants, gardening products and gardening equipment and excludes the commercial planting of trees or plants for horticultural purposes and excludes and coffee shop or restaurant facility.
- **“resort”** means facilities for overnight tourism accommodation which sleeps more than 15 people, a maximum of 10 units per property at a density of 1 unit per 10ha of property size, each unit/suite should not exceed 120m<sup>2</sup> and is limited to sleep a maximum of 4 people. The resort should be a single storey development or consolidate units with a maximum building footprint of 700m<sup>2</sup>. In addition, conference and entertainment facilities in scale can be provided at a rate of 15m<sup>2</sup> floor space/unit up to a maximum of 150m<sup>2</sup>.
- **“restaurant”** means a commercial establishment where meals and liquid refreshments are prepared and/ or served to paying customers for consumption on the property and may include licensed provision of alcoholic beverages for consumption on the property. The size is limited to a maximum of 100 patrons.
- **“roadside advertising”** means the placing of physical advertising signs and hoardings within the road reserve of any road. This

includes the attachment of banners and posters to existing infrastructure, walls and fences for advertising purposes. This excludes on-site facility signs approved by the Local Authority.

- **“servant quarters”** means any permanent structure for the bona fide occupation by domestic workers employed on the same farm portion including provision for soft and hard landscaping which must form a single unit with a limited and well-defined footprint if not contained within the dwelling house footprint. This single building unit may not exceed 60m<sup>2</sup> and should be located within the footprint of the dwelling house or additional dwelling unit.
- **“service trade”** means an enterprise which is:
  - primarily involved in the rendering of a service for the local community such as the repair of household appliances or the supply of household services;
  - not likely to be a source of disturbance to surrounding properties;
  - employs at most 10 people;
  - not liable, in the event of fire, to cause excessive combustion, give rise to poisonous fumes or cause explosions;
  - includes a builder's yard and allied trades, laundry, bakery, dairy depot and similar types of uses; but
  - does not include an abattoir, brick-making site, sewage works, service station or motor repair garage.
- **“tourism incentive accommodation”** means permanent provision of accommodation units on actively farmed properties to provide bona fide farmers with additional opportunity to generate income. Units may not exceed the following provisions: 1 unit per 10ha of property size, 5 units maximum per property, each unit limited to 150m<sup>2</sup> including a structure for the parking of a car, development footprint not exceeding 250m<sup>2</sup>. Owner must submit a formal application for such unit/s and provide a detailed motivation including services

provision for consideration. Land or units may not be transferred to any other person, organisation or group of people. Provision does not apply to already existing agricultural holdings.