

Hartbeespoort Area Precinct Plan
Precinct Plan



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|---|--|---|
| <ul style="list-style-type: none"> □ Precinct Boundary ▭ Precinct Plan ▭ Protected and Conservation Areas ▭ Rural Residential ▭ Residential Development ▭ Public Resorts ▭ Tourism, Low to Medium Density Residential ▭ Tourism ▭ Eco-Tourism and Conservation ▭ Hartbeespoort Village ▭ K16/R514 Development Corridor | <p>Legend</p> <ul style="list-style-type: none"> ▭ Commercial and Light Industrial ▭ NECSA ▭ Mixed Use ▭ Cradle of Humankind ▭ Medium Density Residential ▭ Rietfontein Community Nodes ▭ Environmentally Sensitive Areas ▭ Proposed Environmental Training Centre ▭ Cableway ▭ Water ▭ Perennial Rivers | <p>Roads and Transportation</p> <ul style="list-style-type: none"> ▬ Regional Roads ▬ Local Roads ▬ Proposed Freeway ▬ Proposed Regional Roads ▬ Proposed Local Roads ▬ Railway Line ▭ Stations ▭ Waste Water Treatment Works ▭ WWTW Buffer 600m ▭ NECSA 2km-5km Minimum and Maximum Alert Zones |
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Figure 22: Precinct Plan

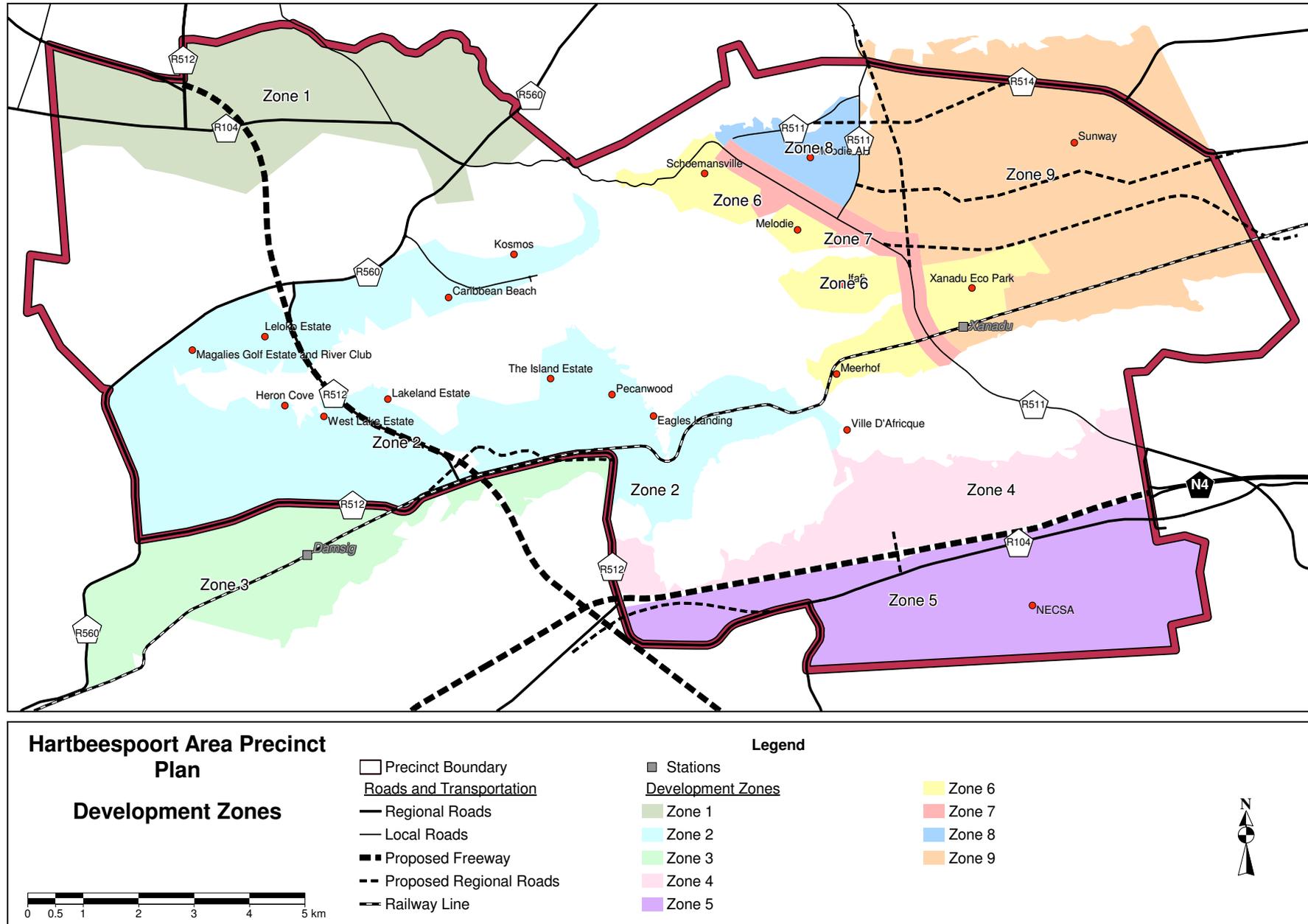


Figure 23: Development Zones

can cater for a variety of housing typologies and income groups and which are supported by sufficient social and community facilities; and

- 7. The protection and management of rural residential opportunities.

5.4 Development Restriction Zones

Development Restriction Zones are those areas where development should be limited because of a potential negative impact associated with a certain type of development. The Development Restriction Areas therefore essentially refer to buffer zones around specific developments. In the case of the Hartbeespoort Area, there are two main Development Restriction Zones, namely (refer to Figure 22):

- An area around the Waste Water Treatment Works; and
- An area around NECSA.

An area of roughly 600m around the Waste Water Treatment Plant (WWTP) have been indicated as a Development Restriction Zone due to the nuisance factors associated with these facilities. The exact buffer around a WWTP should however be determined through a specialist study that will *inter alia* look at wind direction.

In terms of the Madibeng Spatial Development Framework, 2009, an area of 5km around NECSA was indicated as a Development Restriction Zone: *“In terms of the National Nuclear Regulator and the Nuclear Licence for the NECSA facility at Pelindaba, an emergency planning area must be demarcated around a nuclear facility. In the case of the Pelindaba facility, this emergency planning area must comprise a 5km radius around the nuclear facility. In addition, the Pelindaba complex also contains a hazardous chemical installation, and in terms of legislation development is also not permitted in the vicinity of such an installation.”*

In terms of the Madibeng Environmental Management Framework, the Desired State for the Constraint Zone around the nuclear facility is *“to ensure that the risks of catastrophic accidents associated with this nuclear facility are prevented.”*

“According to GDACE (2002), nuclear facilities produce a number of radioactive waste products, which are categorised according to their degree of radioactivity. The preferred exclusion zone as identified by the Atomic Energy Cooperation (AEC) model of radiological dose in the most prominent wind direction is 2km. Development applications should therefore be evaluated in terms of their distance from the potential pollution source or in terms of the proposed industry’s potential pollution emissions and its proximity to residential areas.”¹

Table 13: Development Constraint Zones Around NECSA

Very High Development Constraint Zone	High Development Constraint Zone	Medium Development Constraint Zone	Low Development Constraint Zone
Areas that fall between the nuclear facility footprint and the 2km worst-case buffer zone (minimum alert zone).	Areas that fall between the 2km worst case buffer zone and the 5km best-case (maximum alert zone).	N/A	Areas beyond the 5km alert zone.

Development Zones 4 and 5 fall within these alert zones, and development in these areas should be dealt with accordingly.

5.5 Guidelines for Development Zones

The Precinct Plan has divided the area into specific development zones with specific characteristics that should either be protected or exploited for particular reasons. Rather than allowing development to take place anywhere, the municipality should aim to establish and entrench these different environments through focussed land use management and infrastructure investment.

¹ Source: Madibeng Environmental Management Framework



Figure 24: Indicative Boundaries of Damdoryn Node

5.5.1 Development Zone 1

Table 14: Development Guidelines for Development Zone 1

Location	Envisaged Character	Land Uses	Development Controls
<p>Development Zone 1 is located to the north of the Magaliesberg and west of the Hartbeespoort Dam, and mainly comprises the areas along the R104.</p>	<p>The envisaged character of Precinct 1 is that of a largely rural residential area, with a strong focus on the creation of a low intensity rural tourism corridor along the R104. Visually and functionally, developments should not compromise the rural character of the area and should have a restricted development footprint.</p> <p>Two business nodes are proposed along the R104, the first being the Damdoryn node and the second at the intersection of the R104 and R512.</p> <p>The node at the intersection of the R104 and R512 is intended to be a local rural service node that only provides opportunity for a local business centre and any other community services that are to develop in the area.</p> <p>The Damdoryn Node already comprises a business centre, and should be rounded off and consolidated with the development of limited residential development directly surrounding the centre and the intersection, social services and facilities and tourism developments. The proposed boundaries of the node is indicated on Figure 24).</p>	<p><u>Rural Residential and Tourism Corridor:</u></p> <ul style="list-style-type: none"> • Adventure tourism • Agriculture • Nature Conservation and Nature Reserves as defined by the Madibeng EMF • Lodges, guest houses, camping sites • Restaurants • Art Galleries • Hiking, cycling and horse trails • Wildlife rehabilitation centres • Home Enterprises as per the 'Magaliesberg Protected Environment Environmental Management Framework and Plan' • Country Estates, Private Resorts and Public Resorts as per the 'North West Guidelines for the Establishment of Country Estates, Private Resorts and Public Resorts' 	<p><u>All Development:</u></p> <p>All developments should be environmentally responsible and must ensure the protection and conservation of the Magaliesberg Protected Environment. The guidelines of the Magaliesberg Environmental Management Framework must be strictly adhered to.</p> <p>Properties situated in the most western part of the Development Zone should in particular take cognizance of the sensitive flora habitat and conduct extensive tree audits as part of any development proposal.</p> <p>Access management measures must be incorporated into all developments adjacent to the R104.</p> <p>Important vistas must be protected from intrusive or obstructive developments</p> <p>Ridges with slopes greater than 5 degrees should be protected as per the Madibeng EMF</p>

Location	Envisaged Character	Land Uses	Development Controls
		<p><u>Rural Residential and Tourism Continued:</u></p> <ul style="list-style-type: none"> • Subdivisions: <ul style="list-style-type: none"> • West of R512: Minimum size of 20Ha • East of R512: Minimum Size 3Ha, provided that in areas that fall within the Magaliesberg Protected Environments subdivisions shall not be smaller than 5Ha. 	<p>Large parts of this zone are indicated as Very High and High Development Control Zones in terms of the Madibeng EMF, and should be dealt with accordingly.</p>
		<p><u>Damdoryn Node:</u></p> <ul style="list-style-type: none"> • Businesses (shops, service industries) • Boutique hotels and guest houses • Low to medium density residential development • Restaurants • Social and community facilities (school, religious buildings, medical centre, libraries, community centres etc.) • Art Galleries 	<p><u>Damdoryn Node:</u></p> <p>The visual quality of development within the node (with the exception of the intersection) should strive to maintain a low intensity and low impact facade along the R104 and R560, with the preservation of natural vegetation as far as possible.</p>

5.5.2 Development Zone 2

Table 15: Development Guidelines for Development Zone 2

Location	Envisaged Character	Land Uses
<p>Development Zone 2 comprises the areas to the north-west, west and south of the Hartbeespoort Dam (extending from Kosmos up to Ville d’Afrique).</p>	<p>This area is largely developed for private residential estates, and the majority of land that has not yet been developed is subject to either approved township rights or pending township applications. Interventions in this area include:</p> <ul style="list-style-type: none"> • The development of the Kommandonek and Oberon properties as Public Resorts (as per the North West Guidelines for the Establishment of Country Estates, Private Resorts and Public Resorts); • The identification of suitable land for the development of affordable housing in this area (the land to the south of the Oberon property which is the subject of land claims may be suitable for this purpose); • At least three (3) business centres have been approved along the R512 to the south of the Pecanwood Estate area (i.e. in relative close proximity to each other). Where opportunity exist, this area can be consolidated into a local activity corridor that makes provision for retail, service industries and community services and facilities; • An opportunity for the establishment of an Environmental Training Centre linked to the observatory (on land belonging to the Tshwane University of Technology). 	<ul style="list-style-type: none"> • Residential • Business development limited to the proposed activity corridor • Social and Community Services and Facilities • Country Estates, Private Resorts and Public Resorts as per the ‘North West Guidelines for the Establishment of Country Estates, Private Resorts and Public Resorts

5.5.3 Development Zone 3

Table 16: Development Guidelines for Development Zone 3

Location	Envisaged Character	Land Uses	Development Controls
<p>Development Zone 3 is located to the south of the precinct boundary and to the west of the R512, on either side of the railway line. Although this area has not been included as part of the precinct initially, there is sufficient development pressure in this area to warrant development guidelines.</p>	<p>Large sections of the eastern part of this Zone are already the subject of residential township applications, and it is therefore proposed that this development pattern be supported up to the boundary of the farm Scheerpoort 477 JQ.</p> <p>To the west of this, the area should be predominantly agriculture and rural residential in nature.</p>	<ul style="list-style-type: none"> • Residential development • Country Estates, Private Resorts and Public Resorts as per the 'North West Guidelines for the Establishment of Country Estates, Private Resorts and Public Resorts • Subdivisions: <ul style="list-style-type: none"> • Portions of the farm De Rust 478 JQ: Minimum size of 5Ha • Portions of the farm Scheerpoort 477 JQ: 3Ha, provided that in areas that fall within the Magaliesberg Protected Environments subdivisions shall not be smaller than 5Ha. 	<p>Ridges with slopes greater than 5 degrees should be protected as per the Madibeng EMF.</p> <p>Large parts of this zone are indicated as Very High and High Development Control Zones in terms of the Madibeng EMF, and should be dealt with accordingly.</p> <p>The environmental integrity of the Witwatersberg must be protected and conserved.</p>

5.5.4 Development Zone 4

Table 17: Development Guidelines for Development Zone 4

Location	Envisaged Character	Land Uses	Development Controls
<p>Development Zone 4 is located to the south of the Witwatersberg and north of the proposed N4 (NECSA) extension.</p>	<p>This area should in the short term remain largely rural in character with a focus on agriculture, agricultural processing and rural living.</p> <p>In the longer term, when the Rietfontein areas have developed completely, this area may be reconsidered as a subsequent area for development, but in the short to medium term any investment in this area in terms of infrastructure will detract from the development potential of the Rietfontein area.</p> <p>This zone also falls within the 2km and 5km alert zone around NECSA as indicated in the Madibeng EMF, and significant residential development is not considered appropriate. Any development within this 2km zone should be verified by NECSA in terms of the safety of the development.</p>	<ul style="list-style-type: none"> • Adventure Tourism • Agriculture • Processing and packaging of produce farmed on-site. • Country Estates, Private Resorts and Public Resorts as per the 'North West Guidelines for the Establishment of Country Estates, Private Resorts and Public Resorts' • Subdivisions: <ul style="list-style-type: none"> • Although the minimum subdivision size in the Madibeng SDF, 2009 is indicated as 20Ha, the reality is that the majority of properties in this area have already been subdivided to much smaller portions. A minimum subdivision size of 5Ha is therefore proposed. 	<p>Ridges with slopes greater than 5 degrees should be protected as per the Madibeng EMF.</p> <p>Large parts of this zone are indicated as Very High Development Control Zones in terms of the Madibeng EMF, and should be dealt with accordingly.</p> <p>The environmental integrity of the Witwatersberg must be protected and conserved.</p>

5.5.5 Development Zone 5

Table 18: Development Guidelines for Development Zone 5

Location	Envisaged Character	Land Uses	Development Controls
Development Zone 5 comprises the NECSA property and the land between NECSA and the proposed N4 (NECSA) extension.	<p>The area between the proposed N4 (NECSA)-extension and the NECSA property could be developed as a commercial and light industrial zone along the proposed freeway.</p> <p>Similarly to Development Zone 4, a section of this zone falls within the 2km and 5km alert zones around NECSA as indicated in the Madibeng EMF. Any development within these zones should be verified by NECSA in terms of the safety of the development.</p>	<ul style="list-style-type: none"> • Distribution Centres • Warehouses • Transportation Depots • Service industries • High-tech development industries (e.g. pharmaceutical laboratories) 	<p>Ridges with slopes greater than 5 degrees should be protected as per the Madibeng EMF.</p> <p>Large parts of this zone are indicated as Very High Development Control Zones in terms of the Madibeng EMF, and should be dealt with accordingly.</p>

5.5.6 Development Zone 6

Table 19: Development Guidelines for Development Zone 6

Location	Envisaged Character	Land Uses	Development Controls
Development Zone 6 comprises the established residential areas of Schoemansville, Melodie, Ifafi, Meerhof and Xanadu Eco-Park.	These areas are established neighbourhoods where no change to the status quo are proposed. The only significant proposal is the development of a small scale activity street along Tielman Street in Schoemansville, as an extension of the proposed Tourism Avenue in Zone	<p>As per the Hartbeespoort Dan Town Planning Scheme, 1993 and the Scott Street Local Development Plan</p> <p>Tielman Street: As per Development Zone 8 (Tourism Avenue)</p>	<p>As per the Hartbeespoort Dam Town Planning Scheme, 1993 and the Scott Street Local Development Plan.</p> <p>Tielman Street: As per Development Zone 8 (Tourism Avenue)</p>

5.5.7 Development Zone 7

Table 20: Development Guidelines for Development Zone 7

Location	Envisaged Character	Land Uses	Development Controls
<p>Development Zone 7 represents the R511 Activity Corridor between the railway line and Schoemansville</p>	<p>As the major entrance into the historic Hartbeespoort Dam neighbourhoods and one of the main access routes to the dam from Tshwane and Johannesburg, it is proposed that the section of the road between the railway line and the Village Mall business centre be developed as an urban activity corridor with high quality development to promote this area as a gateway into the area. The corridor should therefore mainly be aimed at high profile or corporate businesses.</p> <p>The establishment of an urban activity corridor will entail the upgrading of the road and the setting of clear urban design standards to ensure both functional and visual qualities of development.</p> <p>The successful development of this corridor is also subject to the construction of the K27 and the scaling down of a large part of the R511 in terms of its function and access management requirements.</p>	<ul style="list-style-type: none"> • Businesses • Offices • Medical Centres • Motor showrooms • Furniture showrooms • High density residential developments • Tertiary education facilities <p>Service industries (such as vehicle repair centres) should be located within the corridor, but preferably within a secondary zone to the back of high profile developments along the road.</p> <p>The municipality should identify a suitable location for the construction of a taxi-rank in this area which is centrally located with maximum accessibility.</p>	<ul style="list-style-type: none"> • Recommended Floor Area Ratio: 1.5 • Maximum Height: 4 storeys • Maximum density: 80 dwelling units/Ha • At least 60% of the street frontage of a property along the street boundary shall comprise buildings. • Properties situated adjacent to an intersection shall comprise buildings for at least 25% of the side street frontage closest to the arterial. • No solid boundary walls are permitted. A maximum of one-quarter of the length of the street boundary barrier may be solid, with the balance being a palisade fence and/or landscaping. The height may not exceed 1.8m. • Buildings must have active facades (i.e. windows). • Not more than 10% on-site parking areas should preferably be located along the main road. Parking should preferably be provided in basements, at the side or to the back of the building or as part of the building. • All parts of a property that lie between the buildings and the road and are visible from road shall be landscaped. • Outdoor storage areas or work areas shall be screened from the public view by a solid wall, subject to the conditions for solid boundary walls. Storage may not exceed the height of the wall. • A built-to-line of 6m should be utilised to determine the placement of buildings along the main road. • All developments will be subject to a Landscape- and Site Development Plan



Figure 25: R511 Activity Corridor

Table 21: Configuration of R511 Activity Corridor

R511 Activity Corridor	
	
	
Essential	<ul style="list-style-type: none"> • paved sidewalks with raised and patterned pedestrian crossings • trees • carriageway lights • sidewalk (pedestrian scale) lights • litter bins • decorative or advertising banners



High quality development should be promoted along the R511 Activity Corridor

5.5.8 Development Zone 8

Table 22: Development Guidelines for Development Zone 8

Location	Envisaged Character	Land Uses	Development Controls
<p>Development Zone 8 comprises the roughly triangular precinct between the R511 and Tielman Street, to the south of the cableway.</p>	<p>This precinct, together with the R511 activity corridor should be considered as the future flagship developments of the area. This particular area, referred to as the 'Hartbeespoort Village' for the purpose of this precinct plan, has a strategic location in terms of proximity to the dam, the cableway, the proposed R511 activity corridor and the established neighbourhoods along the eastern shoreline of the dam. In addition, the largest part of the area has unimpeded views of the dam, with the Magaliesberg as a backdrop. It is envisaged that this area will have a different development morphology than the isolated estates that have been developed to date, and should rather be developed as a well-integrated settlement with finer grained residential and business developments.</p> <p>The road network through the area (although the design thereof is constricted by existing or approved development) should be open and connected to surrounding areas.</p>	<ul style="list-style-type: none"> • Businesses • Small offices • Guest houses • Boutique Hotel • Restaurants • Public Open Space • Medium to High Density Residential Development 	<p><u>Tourism Avenue:</u></p> <ul style="list-style-type: none"> • Recommended Floor Area Ratio: 0.8 • Maximum Height: 3 storeys • Buildings should not be located further than 5m from the street boundary. Ideally, at least 50% of buildings (in particular retail) should be placed on a 0m street built-to-line • At least 60% of the street frontage of a property along the street boundary shall comprise buildings. • Properties situated adjacent to an intersection shall comprise buildings for at least 25% of the side street frontage closest to the arterial. • Not more than 10% of parking may be provided between the building and the street boundary. Additional parking should preferably be provided in basements, at the side or to the back of the building or as part of the building.

Location	Envisaged Character	Land Uses	Development Controls
	<p><u>Tourism Avenue:</u></p> <p>At the heart of the village is a proposed tourism activity street, which is intended to link the cableway with the dam (linking with Tielman Street in Schoemansville) and comprise small tourism related developments such as small shops, restaurants, guest houses and boutique hotels. This street should be developed as a lower order activity street (preferably a shared street) with slow moving traffic, on-street parking and sufficient room for pedestrian movement.</p> <p><u>Residential Development:</u></p> <p>The remainder of the village should comprise a mixture of medium to higher residential developments, with sufficient planning and design for associated community facilities and public open spaces. Because of the large number of smaller land parcels in the area, the envisaged character will not be achieved if every land parcel is developed individually. The acquisition of larger groups of land parcels by precinct developers will therefore be the ideal way of developing the area. To this effect, it is proposed that a detailed Urban Design Framework be drafted for the area.</p> <p>Figure 26 indicates a conceptual notion of how this area should be designed and developed.</p>		<p><u>Tourism Avenue (continued):</u></p> <ul style="list-style-type: none"> • No solid boundary walls are permitted. A maximum of one-quarter of the length of the street boundary barrier may be solid, with the balance being a palisade fence and/or landscaping. The height may not exceed 1.8m. • Buildings must have active facades (i.e. windows). • All parts of a property that lie between the buildings and the road and are visible from road shall be landscaped. <p><u>Residential Development:</u></p> <ul style="list-style-type: none"> • Maximum density: 60 dwelling units/ Ha • Minimum Density: 20 dwelling units per hectare <p>All development shall be subject to a Landscape- and Site Development Plan</p>

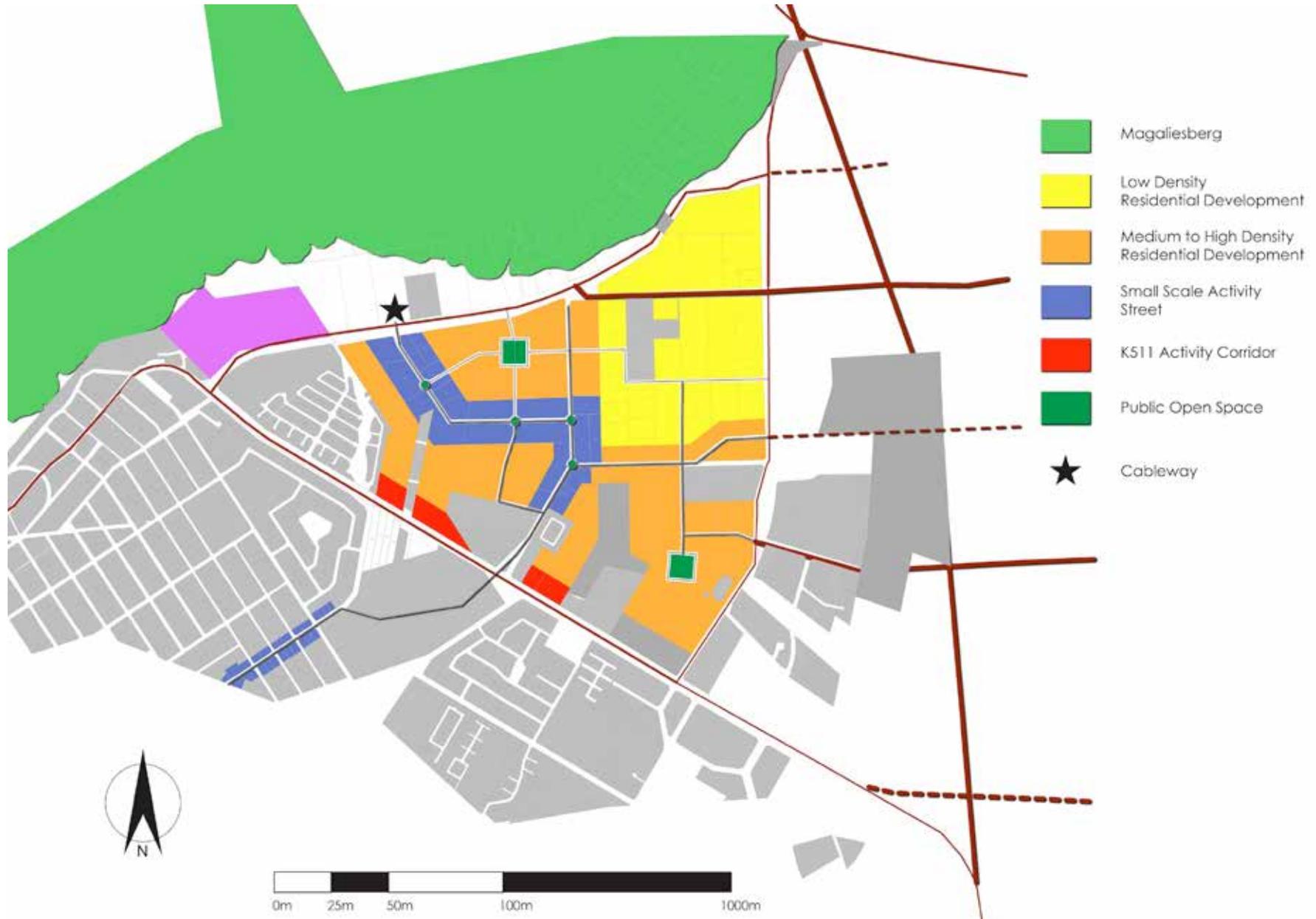


Figure 26: Hartbeespoort Village



Figure 27: Hartbeespoort Village Tourism Avenue

Table 23: Configuration of Tourism Avenue

Tourism Activity Avenue	
	 <p>16 - 25m</p>
	
Essential	<ul style="list-style-type: none"> • paved sidewalks • carriageway lights • sidewalk (pedestrian scale) lights • litter bins • street trees • on-street parking • cycling paths

5.5.9 Development Zone 9

Table 24: Development Guidelines for Development Zone 9

Location	Envisaged Character	Land Uses	Development Controls
<p>Development Zone 9 comprises the larger Rietfontein area to the east of the R511 up to the municipal boundary.</p> <p>Refer to Figure 28.</p>	<p>The area already comprises a number of either approved or proposed townships that have already fragmented the area to a large extent. The number of small farm portions also make the holistic development of this area problematic. The remaining land in this area should be developed according to a clear spatial structure that focuses land use typologies and densities around transport and access to social and community services. This area will potentially comprise a large population, and should therefore be developed as a complete sustainable human settlement rather than isolated residential developments.</p> <p>The two main structuring elements in this area are:</p> <ul style="list-style-type: none"> • a public transport movement network; and • a system of local community nodes that are spaced at a maximum 1km walking distance along the public transport route. <p>The area along the K16/R514 can be developed as a service industry corridor that focuses on small scale manufacturing, domestic storage and small service industries.</p>	<ul style="list-style-type: none"> • Single residential developments • Medium density residential developments (duplex residential and walk-ups) • Community and social services and facilities (schools, clinics, community centres etc.) • Parks, sports fields and open spaces • Small local businesses • Small light and service industries (e.g. furniture manufacturing) along R514 	<p><u>Community Nodes</u></p> <p>Community nodes should be developed as local nodes that can service in the needs of the community situated within a radius of 1km of that node. Businesses should therefore only focus on daily convenience goods and other uses in these nodes should be restricted to community facilities and open spaces.</p> <p>Community nodes, as the focal point of public transport, should also comprise appropriate public transport facilities that include well-designed and developed waiting and holding areas.</p> <p><u>Low Density Residential</u></p> <p>Height: Maximum 2 storeys</p> <ul style="list-style-type: none"> • Density per Development: Maximum 20 dwelling units per hectare • No single residential development should be permitted within 500m from a community node

Location	Envisaged Character	Land Uses	Development Controls
			<p><u>Medium Density Residential</u></p> <ul style="list-style-type: none"> • Must be restricted to an area situated within 500m of a community node or along public transport routes • Height: Maximum 3 storeys • Density per Development: Maximum 40 dwelling units per hectare <p><u>Subdivision of Farm Portions:</u></p> <p>As per Madibeng Spatial Development Framework, 2008 : Minimum Size of 5 Hectares</p>

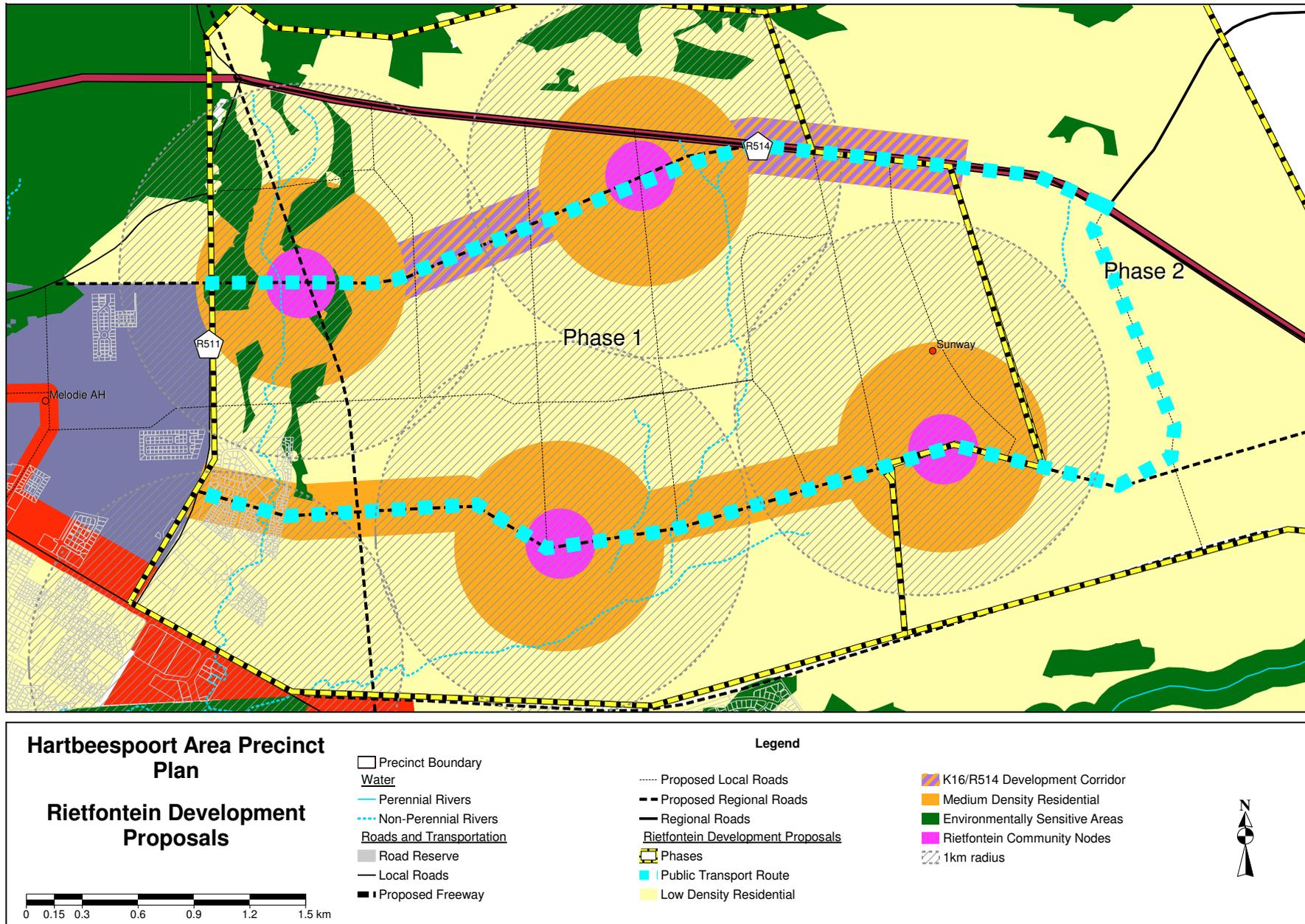


Figure 28: Rietfontein Development Proposals



Chapter 6: Implementation Framework

Chapter 6: Implementation Framework

6.1 Introduction

The Implementation Framework deals with the actions, projects and programmes required to (i) give effect to the Precinct Plan and (ii) to ensure the sustainable development of the area over the long term. The Implementation Framework deals with the following aspects:

- Liveability
- Economic Development
- Infrastructure
- Land Use Management

6.2 Liveability

Liveability refers to the creation of settlements in which people live their lives in a way that is worthy of human beings, that enables contentment, personal growth and healthy social interaction. The quality of life of all people depends, among other on economic, social, environmental and cultural factors, on the physical conditions and spatial characteristics of the settlements.

Table 25 sets out the different proposed interventions related to liveability:

Table 25: Liveability Interventions

Issue	Interventions
Informal settlements and farm workers	<ul style="list-style-type: none"> • Informal settlements must be provided with basic services such as water and sanitation • The expansion of informal settlements in the area must be contained. The municipality must act against further land invasion in the area • The municipality must conduct a survey of all residents of informal settlements as well as farm workers, where they are living, in what conditions they are living and how best to support the future housing needs of these residents • Investigate the possibility of establishing agri-villages in the area to promote self-sufficiency amongst unemployed or poor residents. Areas subject to land claims should be target areas for sustainable rural settlement development
Affordable Housing	<ul style="list-style-type: none"> • A potential location for new affordable housing development that should be investigated is to the south of Oberon on the land that forms part of land claims.
Social and Community Facilities	<ul style="list-style-type: none"> • Table 27 clearly indicates the extensive requirements for social and community facilities which will result from the long-term development of the area. Already there is a severe backlog in terms of the provision of these facilities. • The municipality will have to develop a strategy where developers will either have to provide land for social and community facilities within their developments, or will have to acquire land urgently to set aside for the development of a community node, in particular in the Rietfontein and 'Hartbeespoort Village' area.

Issue	Interventions
Public Transport	<ul style="list-style-type: none"> The municipality must develop a proper taxi rank as part of the proposed R511 corridor. This facility should be developed as an integrated component of the corridor (i.e. not as an after-thought) and should comprise all the necessary services (e.g. ablution, informal trading) that are associated with a taxi rank. The placement and design of the taxi-rank should be done in consultation with the taxi operators and commuters to ensure that the taxi rank meets with their demands and will be utilised.

6.3 Economic Development

Economic development-related interventions focus on further expanding the inherent economic potential of the area. Table 26 sets out some key interventions required for economic development, focusing on tourism but also on the development of the R511 Activity Corridor.

Table 26: Economic Development Interventions

Issue	Interventions
Railways	<ul style="list-style-type: none"> The existing railway line to the south of the dam, connecting the area to the City of Tshwane as well as to Magaliesburg and the Cradle of Humankind, provides the area with a unique opportunity to develop a regional tourism hub linked by rail. The railway line should be upgraded and developed as a tourism rail route (also accommodating commuter trains if there is sufficient demand). Xanadu station should be refurbished and developed as the terminal hub on the tourism rail route.

Issue	Interventions
Cycling	<p>Two key cycling routes are proposed for the area, namely:</p> <ul style="list-style-type: none"> To the west and south of the dam, which can serve as both a recreational attraction and a form of travelling in the area for local residents/workers Through the Hartbeespoort Village, from the cableway through the Tourism Avenue, along Tielman Street and along the dam shoreline
Hartbeespoort Village	<ul style="list-style-type: none"> The development of the Hartbeespoort Village as proposed in the previous chapter will allow for tourism development in an integrated manner with linkages to the main tourism features in the area (i.e. the cableway and the dam) The opportunity to develop this area in the manner proposed will however rely heavily on the management of future development patterns in the area A detailed urban design framework will have to be drafted for this area
R511 Activity Corridor	<ul style="list-style-type: none"> The R511 Activity Corridor will be the main economic development area that is not strictly tourism-oriented. A detailed urban design framework, including inter alia the taxi rank as discussed earlier, will have to be drafted to manage the appropriate development of this area. The R511 will have to be upgraded to accommodate new developments

6.4 Implications of the Precinct Plan for Social and Community Facilities

Table 27 below sets out the potential implications of future residential development as per the precinct plan on the need for social and community facilities for Development Zones 2, 8 and 9 (i.e. these are the zones that have seen the most development in recent years and are also demarcated as the primary development zones in terms of the precinct plan).

In order to manage the future need for these facilities, the municipality will have to start addressing the manner in which development is taking place, the phasing of development as well as the potential acquisition of land in order to accommodate public community facilities.

The standards (with the exception of the retail standard) that were utilised to calculate the social and community facilities are those for 'Large Towns/Regional Service Centres' set out in the CSIR's publication: "Guidelines for the Provision of Social Facilities in South African Settlements, 2012."

The land areas utilised for the calculation include existing developments, as it could be reasonably assumed that social and community facilities have not been provided for these developments, and they should therefore be included in the demand calculations. The land area is a rough calculation of the total hectares in each zone, and more detailed analysis of each zone may result in a slightly different area, and therefore a different demand figure. For the purpose of this scale, the numbers in Table 27 provide an indication of the magnitude of the demand that exist.

Table 27: Required Social and Community Facilities

Gross Residential Development Potential						Provision of Social and Community Services and Facilities											
	Land Area (ha)	Developable Land Area (ha) (-25%)	Gross Density (Units/ha)	Potential Number of Units	Potential Population Size (Avg Household Size 3.2)	Creche	Primary School	Secondary School	Primary Health Clinic	Local Library	Medium Community Hall	Police Station	Fire Station	Potential Retail (m ²) that can be Supported by Potential Population	Large Cemetery	Community Park with Play Equipment	District Park
						1/3000 population	1/7000 population	1/12,500 population	1/70,000 population	1/70,000	1/15,000	1/100,000 population	1/100,000 population	0.5m ² per capita	1/100,000	1/60,000	1/100,000
Zone 2	2800.00	2100.00	10	21000	67200	22.40	9.60	5.38	0.96	0.96	4.48	0.67	0.67	33600	0.67	1.12	0.67
Zone 8 Low Density	125.00	93.75	10	938	3000												
Zone 8 Medium Density	125.00	93.75	30	2813	9000												
Total Zone 8	250.00	187.50		3750	12000	4.00	1.71	0.96	0.17	0.17	0.80	0.12	0.12	6000	1.20	0.20	0.12
Zone 9 Low Density	2105.00	1578.75	10	15788	50520												
Zone 9 Medium Density	640.00	480.00	30	14400	46080												
Total Zone 9	2745.00	2058.75		30188	96600	32.20	13.80	7.73	1.38	1.38	6.44	0.97	0.97	48300	0.97	1.61	0.97
Total	5795.00	4346.25		54938	175800	58.6	25.1	14.1	2.5	2.5	11.7	1.8	1.8	87900	2.8	2.9	1.8

6.5 Engineering Infrastructure

The engineering infrastructure implications for water and sanitation, based on the potential number of dwelling units as set out in Table 27 are set out below. It is evident that major upgrades regarding storage capacity and waste water treatment will have to be carried out in order to accommodate the number of units and land uses proposed in the Precinct Plan.

6.5.1 Water

6.5.1.1 Zone 2

The main source supplying water to Zone 2 will be the extensions to the H26 Rand Water Pipeline i.e. H26B. The pipeline is currently constructed up to the Meerhoff turn-off from Road P249-1. The pipeline will be extended up to the Leloko Development.

Only one storage reservoir, i.e. 5MI Kommandonek reservoir, exists within Zone 2. No storage facilities exist to the south of Hartbeespoort Dam. The following storage reservoirs have previously been proposed for Zone 2:

Table 28: Previous Reservoir Proposals

Reservoir	24h Storage Capacity	36h Storage Capacity	48h Storage Capacity
Oberon Reservoir	4MI	6MI	8MI
Pecanwood Reservoir	6MI	9MI	12MI
Westlake Reservoir	4MI	6MI	8MI
Kommandonek Reservoir	8MI	12MI	16MI

Reservoir	24h Storage Capacity	36h Storage Capacity	48h Storage Capacity
Total	22MI	33MI	44MI

Should the number of potential dwelling units in this Zone realise, these reservoirs will only be adequate for 24-hour storage. Should 36-hour or 48-hour storage be required, additional or larger reservoirs will have to be constructed.

6.5.1.2 Zone 8 and Zone 9

The main source presently supplying water to Zone 8 and 9 is the H26 Rand Water Pipeline, i.e. H26A. The pipeline is currently constructed up to the Meerhoff turn-off from Road P249-1. No dedicated storage facilities exist for Zone 8 and 9. Previous proposals included:

- The construction of a 10MI reservoir south of Xanadu; and
- The construction of an additional 8MI reservoir in Zilkaatsnek.

Should the potential number of units for these zones however realise, these proposed reservoirs will not even be adequate to provide 24-hours of storage for Zone 8 and Zone 9. Table 29 sets out the anticipated demand for storage capacity that will be created should these two zones develop in full.

To put this into perspective it must be taken into account that 33MI is more than double the total storage capacity currently available in the Hartbeespoort Area.

Table 29: Storage Capacity Demand for Zone 8 and 9

Reservoir	24h Storage Capacity	36h Storage Capacity	48h Storage Capacity
Zone 8	3MI	4MI	6MI
Zone 9	30MI	45MI	60MI
Total	33MI	49MI	66MI

6.5.2 Sanitation

6.5.2.1 Zone 2

The private developments in Zone 2 provide package plants for the handling of sewerage and there is no municipal waste water treatment plant in Zone 2.

Should a centrally located waste water treatment plant be constructed, it must be taken into consideration that various pump stations will have to be constructed in order to pump the sewage to the plant.

Based on the potential number of units and land uses, a centrally located waste water treatment plant of at least 10MI per day will have to be constructed. This capacity will be nearly double the capacity of the Rietfontein Waste Water Treatment Plant to the east of the dam, which is the only operational municipal waste water treatment plant around the dam.

6.5.2.2 Zone 8 and 9

Rietfontein Waste Water Treatment Plant is located within Zone 9 and is the only waste water treatment plant to the east of the dam. Sewage from Zone 6 is presently treated at this plant. The capacity of this plant is currently in the process to be upgraded to a 5.5MI per day facility.

Should the full development potential of this area realise, the capacity of this plant will have to be increased to at least 20MI per day.

6.5.3 Electricity

Working from the possible development potential set out in Table 27, the substations servicing the proposed development zones do not have sufficient capacity to cater for the future load. Approximately 8 MVA spread over the area can still be accommodated.

The development potential for Zones 2, 8 and 9) will require an additional 48 MVA. Table 30 shows the demand for the different zones.

Table 30: Future Electrical Capacity Demand

Zone	Substation servicing area	Total future load (MVA)	Existing load	Available safe capacity	Upgrade requirement
Zone 2	Skeerpoort (Eskom) (2x5MVA installed) (2x20MVA Planned)	27	8	2	Upgrade to 2x20MVA
	Leloko (Eskom) (2x10MVA installed)		8	2	Upgrade to 2x20MVA
	Broederstroom (Tshwane/Madibeng) (3x5MVA installed)		9	0	Upgrade to 2x20MVA
Zone 8	Ifafi (Tshwane/Madibeng) (2x5MVA+ 2x10MVA installed)	6	22	0	Upgrade to 3x20MVA or 2x40MVA
Zone 9	Hartbeespoort Dam (Eskom) (2x40MVA installed)	51			

6.6 Phasing of Rietfontein Development

New development should be approved incrementally (in accordance with a phasing approach) from the dam towards the municipal boundary.

This is a considerable development area, with significant infrastructure challenges. In order to manage the development of this area, it is important to phase development. It is therefore proposed that the area to the west of Sunway Village comprise phase 1, and that phase 2 to the east of Sunway Village only be considered for development once the first phase as well as the Hartbeespoort Village have been developed. Phase 2 should

also be restricted to low density residential development (towards the adjoining rural areas in the City of Tshwane).

6.7 Land Use Management

One of the most important requirements for the development of the area in accordance with a particular vision is consistent and responsible land use management.

Table 31: Land Use Management Interventions

Issue	Interventions
Aesthetics Committee	The municipality should establish an aesthetics committee which will be made up of municipal officials as well as professionals who are active in the area (architects, landscape architects, environmental specialists, town planners etc.) to evaluate applications within the key focus areas (e.g. R511 and Hartbeespoort Village)
Subdivision of Agricultural Land	Application must be made by the municipality to the Department of Agriculture to have all land parcels within the study area excluded from the provisions of the Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970)

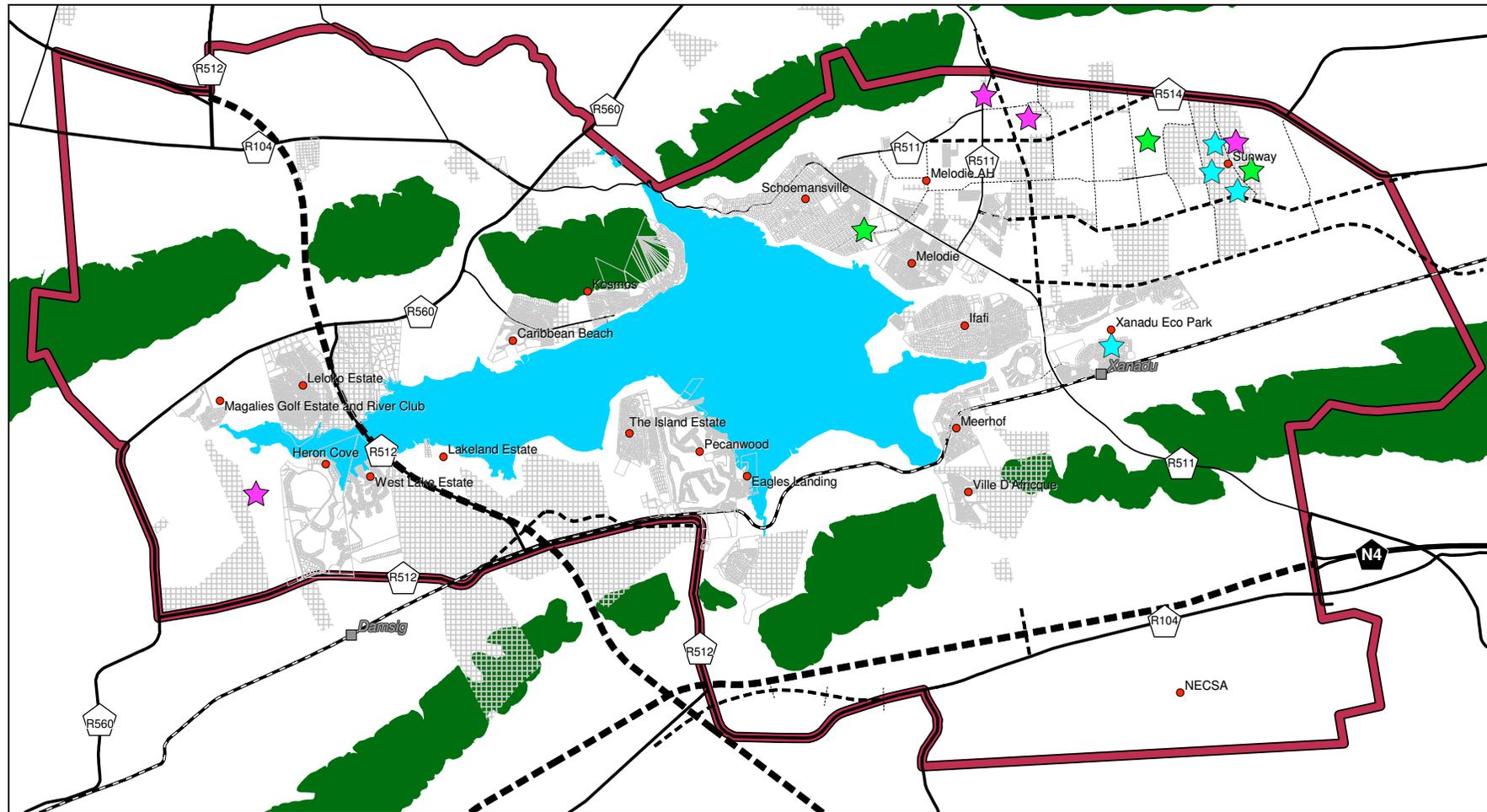
Issue	Interventions
Decision Support Criteria	<p>All land use management decisions should be based on the following criteria:</p> <ul style="list-style-type: none"> • How the development fits in with the overall vision and spatial structure of the area • The impact that the development will have on environmentally or culturally sensitive areas and what special measures/controls must be employed to mitigate any potential risks. In this regard, all management decisions should defer to the Magaliesberg Environmental Management Framework, the Madibeng Environmental Management Framework and the Cradle of Humankind Management Framework • The intensity and density of development and the implications that it will have on engineering infrastructure and community services • What the appropriate built form is in relation to the location of the proposed development, insofar as it pertains to <i>inter alia</i>: <ul style="list-style-type: none"> • Height and Coverage of buildings • Density of residential development • The treatment of facades along major roads and public open space • Placement of parking • Landscaping

6.8 Planned Municipal Capital Investment

In terms of the Madibeng Integrated Development Plan, 2013/2014, the following are funded capital investment projects in the precinct.

Table 32: Funded Projects

Prioritised Projects	Total Budget	2013/2014	2014/2015	2015/2016	Funding Source	Ward
Sunway Village Bulk Water Supply	40,000,000	30,000,000			MIG	32
Sunway Village Bulk Sewer Line	11,000,000	1,000,000			MIG	32
Rietfontein Waste Water Treatment Works	4,500,000	2,000,000			MIG	32
Xanadu Bulk Water Pipeline		2,423,000			EPWP	
Sunway Village Electrification, 1000 units	10,000,000		10,000,000		INEP	29
Refentse Electrification 100 units	1,500,000			1,500,000	INEP	29
Refentse Electrification		2,526,000			ESKOM	
Electrification	18,500,000			18,000,000	INEP	29
Sunway Development Project Linked Housing	77,868,000	31,147,200	46,720,800		NWHS	30
Melodie & Schoemansville IRDP Housing	14,706,250	2,647,126	5,882,500	7,941,375	NWHS	30
Ward 30 Informal Settlement Upgrade	3,529,500		1,470,625	2,058,875	NWHS	30



Hartbeespoort Area Precinct Plan

Madibeng IDP 2013/14 Prioritised Projects

Funded Projects

- ★ Water and Sanitation
- ★ Electricity
- ★ Land and Housing
- Railway Line
- Stations

Legend

- ▨ Proposed and Approved Townships
- Roads and Transportation
- Regional Roads
- Local Roads
- Proposed Freeway
- - Proposed Regional Roads
- Proposed Local Roads

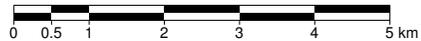


Figure 29: IDP 2013/2014 Funded Projects