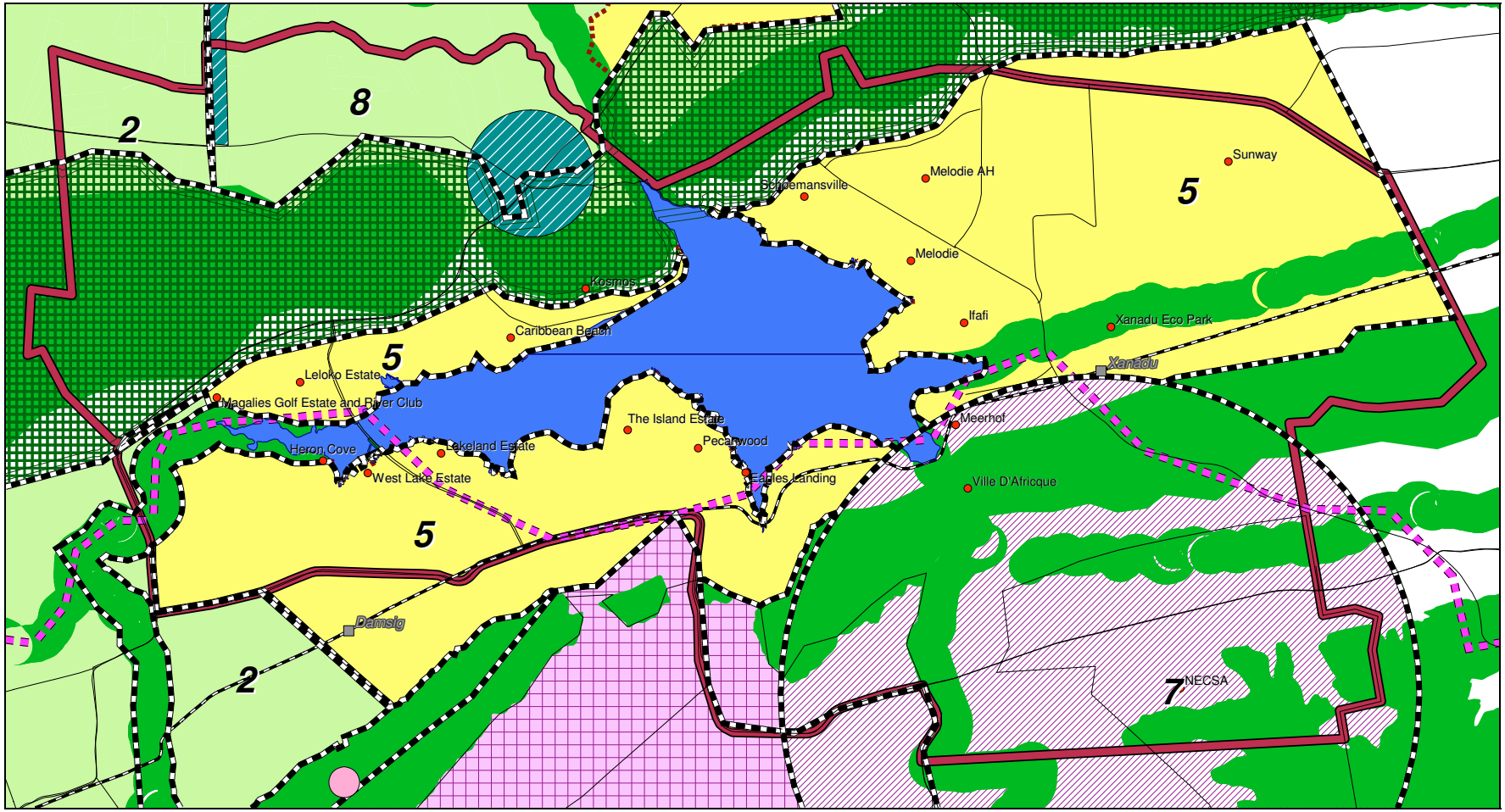

Figure 5: Madibeng Spatial Development Framework, 2009

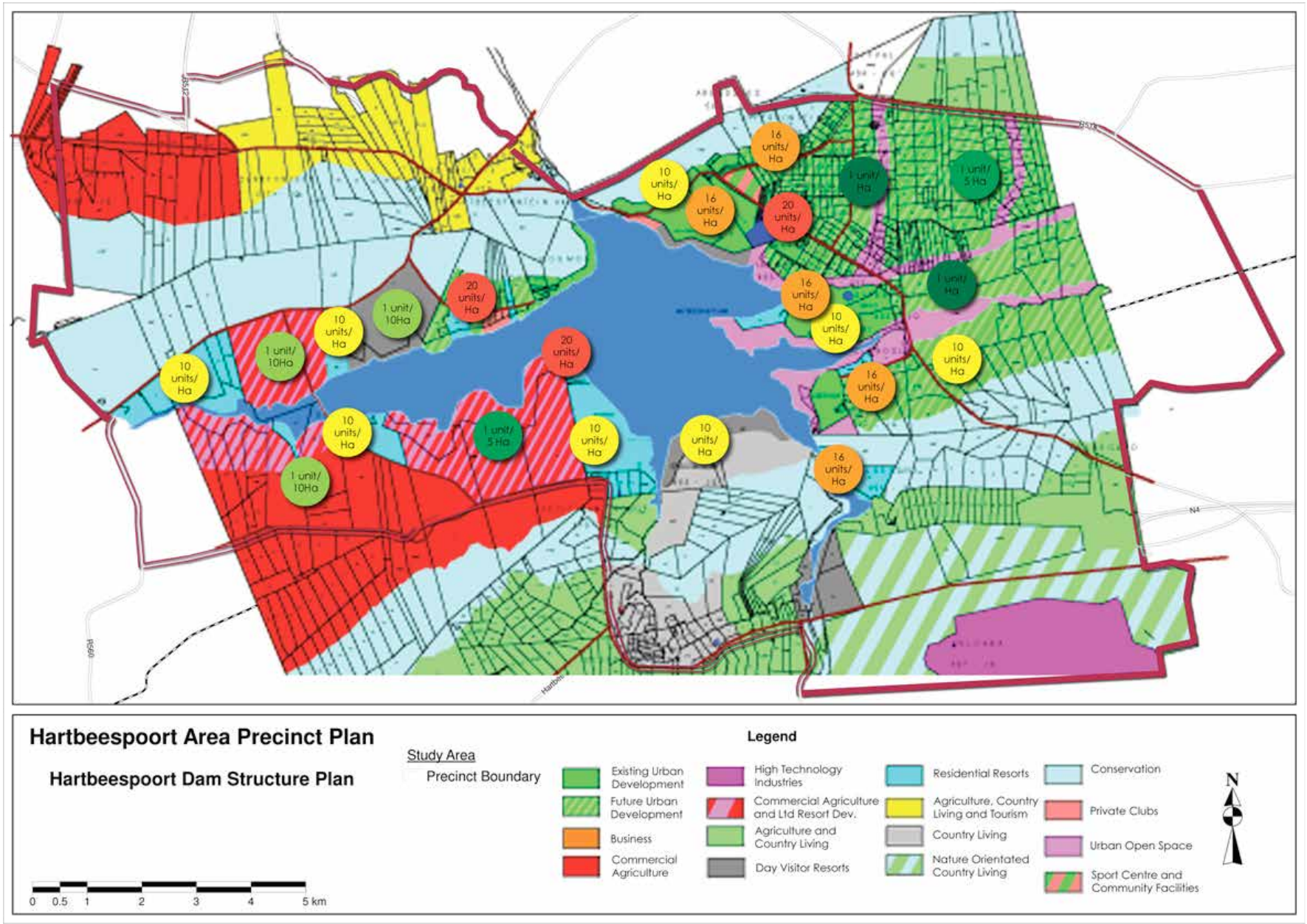

Figure 6: Hartbeespoort Dam Structure Plan

Table 5: Madibeng Environmental Management Framework

Development Control Zone (DCZ)	Development Constraints	Key Considerations and Requirements	Recommended Land Uses
Very High DCZ	• Ecologically sensitive habitats; • Red Data faunal and floral species habitat; • Functional and connected ecosystems that must be protected from development pressures; • Ridges with slopes greater or equal to 5 degrees and larger than 5 hectares in extent; • High potential agricultural land that must be protected for food security; • Nationally and provincially protected historical resources to ensure a continuity of cultural heritage; and • Most of the Critical Biodiversity Areas (CBA) as described in the North West Biodiversity Conservation Assessment	• Sustainable, green building practises should be employed, and sustainable resource use practices, such as rain water harvesting and use of solar energy, should be followed and encouraged; • Unobtrusive buildings in colours that blend into the environment; • Development must be restricted to already disturbed areas in order to maintain large, interconnected areas; • Permanent removal of productive agricultural land must not be undertaken without consideration of its economic importance for the agricultural sector; • Minimal landscaping, using indigenous plants characteristic of the area; and • Restriction or exclusion of activities that may have detrimental effects on the environment, such as quad bike riding.	• Nature Reserve, which includes restaurants and chalets directly associated with the reserve and used for temporary accommodation at a 5% coverage; • Business 1 associated with reserve and excluding dwelling units; • Nature Conservation Area; and • Public Open Space excluding Garden Parks, Playgrounds, Squares, Public Sport Grounds, Caravan Park. <u>Ridges with slope> 5° and larger than 5 hectares in extent</u> • Nature Conservation Area, Nature Reserves and Game Reserves • Educational (e.g. bird hides, hiking trails, etc.); • Agricultural, includes grazing within capacity <u>Riparian Zones, Wetlands and Aquatic Zones</u> • Open space (excluding any permanent structures); and • Agriculture, provided outside of 100m shoreline of dams or 100m - 200m from edge of riparian zone and 100m from the capacity line.

Development Control Zone (DCZ)	Development Constraints	Key Considerations and Requirements	Recommended Land Uses
High DCZ	• Endangered vegetation units; • Conservancies; and • Local and generally protected historical resources to ensure a continuity of cultural heritage.	• Implementation of a Biodiversity Assessment Guideline; • Implementation of buffer zones per ecologically sensitive feature, e.g. rivers; • Involvement and remuneration of rural communities in alien plant removal; and • Environmental education opportunities to communities, subsistence farmers as well as land owners.	• Nature Conservation Area; • Agricultural, includes grazing within capacity; • Nature Reserve; • Game Reserve; • Resort; and • Open Space.
Medium DCZ	• Vulnerable vegetation units; • Ecological Support Areas; • Protected Areas, Type 3: Game farms and Reserves; and • Historical sites that are of an importance rating (level Generally Protected B) that would not hinder development.	Necessity to increase the percentage conservation of vulnerable vegetation units and other pristine vegetation in line with national conservation targets for these vegetation units.	• Nature Conservation Area; • Agricultural, includes grazing within capacity; • Nature Reserve; • Game Reserve; • Resort; and • Open Space.
Low DCZ	• The least threatened vegetation units that are highly transformed and are therefore considered to be secondary grassland; • Historical sites that are of an importance rating (level Generally Protected C) that would not hinder development; • Extensively built-up land or areas where settlements occur; • Degraded portions of land; and • Mines and Quarries.	Although this zone is predominantly disturbed and has a very low conservation value, sustainable development practices are encouraged, as is responsible management of any open spaces within this zone, regardless of their level of disturbance.	A wide variety of land uses can be accommodated in different environmental zones

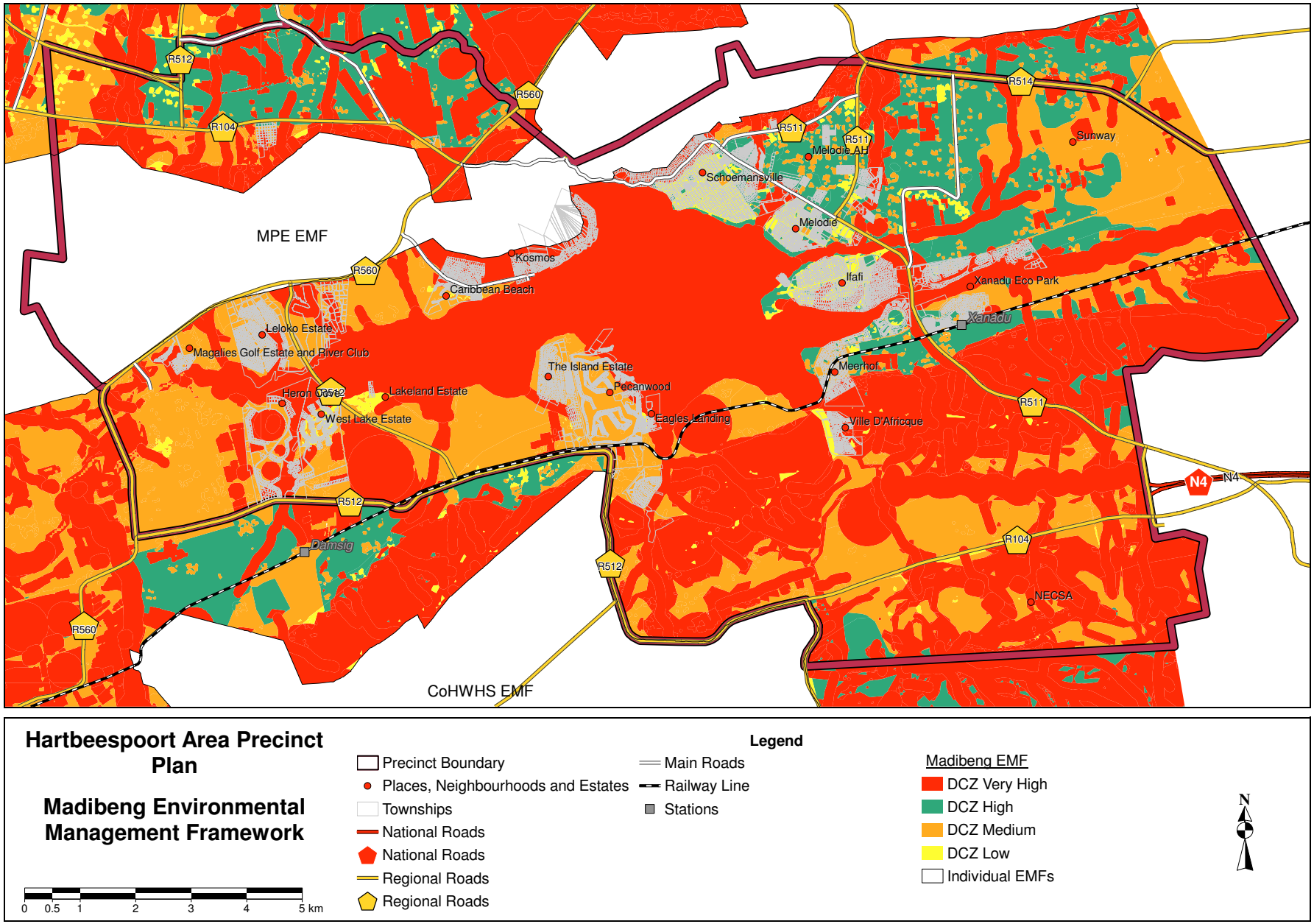

Figure 7: Madibeng Environmental Management Framework, 2009

2.3.4 Magaliesberg Environmental Management Framework and Plan, 2007

Because of the unique geological, visual, biodiversity and ecological characteristics of the Magaliesberg area and the significant pressure on the Magaliesberg Protected Environment (MPE) due to increasing development pressures, the North West Department of Agriculture, Conservation and Environment commissioned the development of an Environmental Management Framework and Plan (EMF) for the part of the Magaliesberg in North West Province.

The EMF describes the vision for the Magaliesberg as follows:

"The Magaliesberg Protected Environment is internationally and nationally recognized for its unique biodiversity, geo-morphology and heritage resources which are protected and conserved to provide sustainable and quality eco-tourism and educational/ research opportunities for current and future generations".

The EMF is seen as a decision support tool that aims to inform strategic level decision making. The EMF provides clear strategic direction to decision makers to ensure that the MPE is managed in line with the set strategic vision and objectives of the area.

2.3.5 Magaliesberg Biosphere

The Magaliesberg has been a declared Protected Natural Environment under the Environmental Conservation Act, 1989 since 1994, and became a Protected Environment when the Protected Areas Act replaced the Environmental Conservation Act, 1989 in 2003. The Magaliesberg is one of the oldest landscapes in the world. It was formed more than 2 billion years ago when vast quantities of molten magma welled up from the earth's inner core depressing the centre of an ancient seabed and thrusting the rock edges upwards.

In 2006 a formal proposal was put forward to have the Magaliesberg area proclaimed a Biosphere under the UNESCO Man and the Biosphere program (MAB) (refer to Figure 8). A biosphere is an area of terrestrial and coastal/marine ecosystem or combination thereof, which is internationally recognized within the framework of UNESCO's Programme on Man and the Biosphere (MAB). In addition to this, a Biosphere embodies an innovative and sustainable approach to the management of land and water resources. The development of a network of Biosphere's, as foreseen by UNESCO, aims to ensure sustainable development and conservation.

The NW Premier approved this request and in 2007 a Steering Committee was established comprising representatives from Magaliesberg Biosphere Initiative Group (MBIG) and Gauteng and NW Provinces. A Magaliesberg Environmental Management Framework (MEMF) was subsequently published containing a basis for regulations for the area.

The situational analysis that was done as part of the Magaliesberg Biosphere Management Plan, 2011 states that "The Magaliesberg region comprises an area of scenic beauty, unique natural features, rich natural and cultural heritage value, significant biodiversity and archaeological interest, which justifies its protection and sustainable utilisation. These features also make the area particularly valuable from a tourism and recreation point of view. The region, however, comprises significant population concentrations and is located adjacent to Pretoria and Johannesburg, the largest urban metropolitan area in the country, as well as the fast growing city of Rustenburg and its expanding mining industry. As such, and according to the Magaliesberg Protected Environment (MPE) Environmental Management Framework (EMF), the region faces enormous development pressure due to the ever increasing demand for housing, infrastructure development, tourism and other forms of development in these urban and surrounding areas. The EMF finds that these pressures and other issues are causing damage and threatening the sustainability of the Magaliesberg environment. The protection of the area is, therefore, of concern."[1]

In terms of the Biosphere Management Plan the area is divided into three Biosphere Zones, namely:

- Core areas, which are securely protected sites for conserving biological diversity, monitoring minimally disturbed ecosystems, and undertaking non-destructive research and other low-impact uses (such as education);

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1 Source: Situational Analysis: Magaliesberg Biosphere Management Plan, 2011

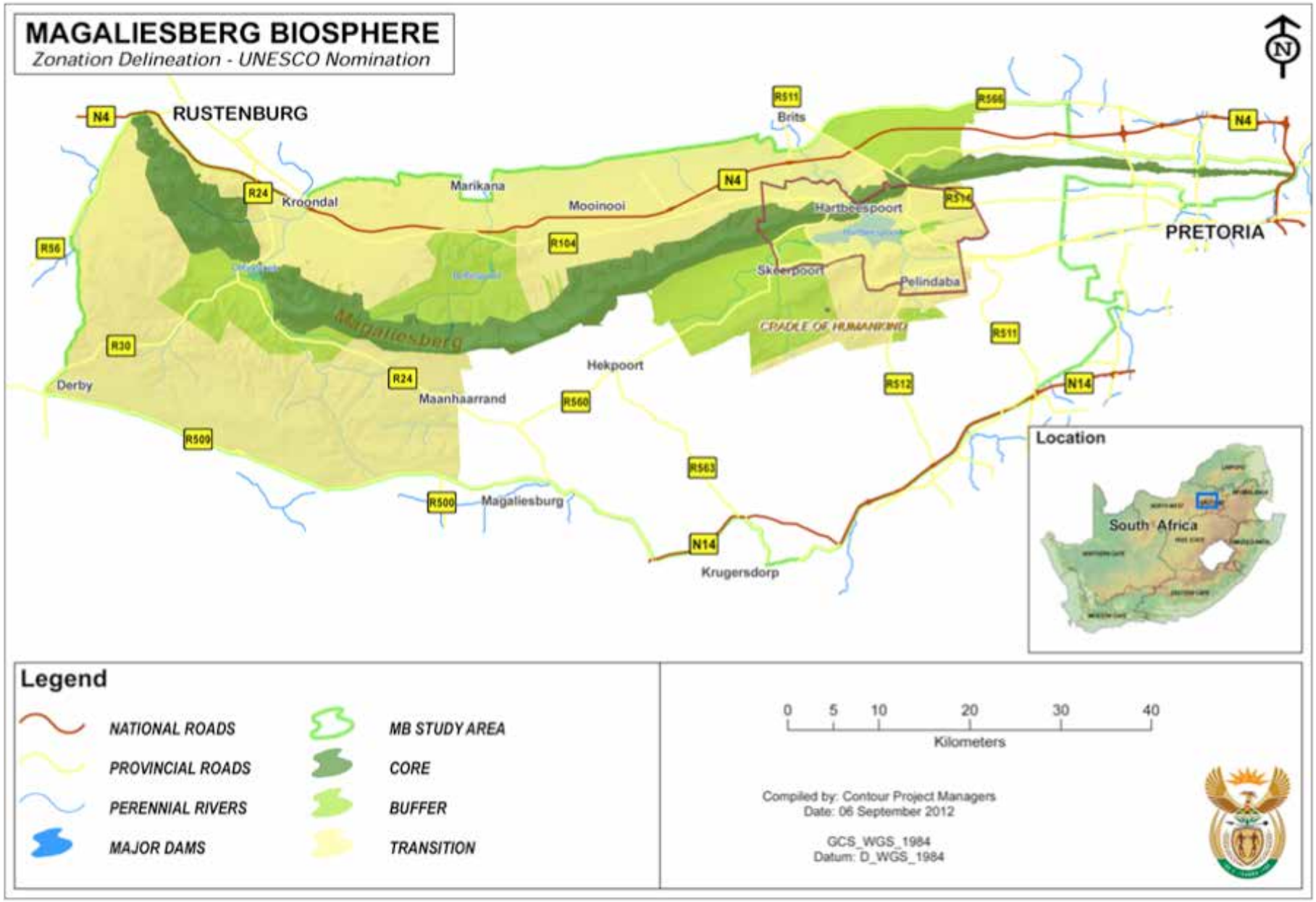

Figure 8: Magaliesberg Biosphere

- Buffer zone, which usually surrounds or adjoins the core areas, and is used for cooperative activities compatible with sound ecological practices, including environmental education, recreation, eco-tourism, and applied and basic research; and

- Flexible transition area, or area of co-operation, which may contain a variety of agricultural activities, settlements and other uses and in which local communities, management agencies, scientists, non-governmental organisations, cultural groups, economic interests and other stakeholders work together to manage and sustainably develop the area's resources.

In terms of the Zonation Delineation (refer to Figure 8), the Magaliesberg forms part of the Core, while most of the precinct to the east and south of the dam falls within the Transition Zone. The section to the west of the dam, up to the R560, is indicated as part of the Buffer Zone. This latter area is however already the subject to township establishment applications.

The land use guidelines as set out in Annexure 1 of the Magaliesberg Biosphere Management Plan, 2011 aim to promote conditions to protect the integrity of the Magaliesberg Biosphere in terms of conservation of existing ecosystems and biodiversity, the diversity of fauna and flora, the visual appearance, the context of core zone, and the limitation of potentially adverse impacts of human development on the Biosphere. The land use guidelines set out in the Magaliesberg Biosphere Management Plan (2011) are set out in Table 6.[2]

2 *Source: Magaliesberg Biosphere Management Plan, 2011*

Table 6: Magaliesberg Biosphere Guidelines

	Core Area	Buffer Zone	Flexible Transition Area
Definition	Comprises formally protected areas and areas seeking formal protection within the Magaliesberg Biosphere, also areas designated as National Parks, Nature Reserves, World Heritage Sites, or the like.	Comprises of relatively undisturbed areas of the Magaliesberg Biosphere that are worthy of protection due to their generally high natural, visual and cultural quality and/or sensitivity and that underpin the core natural and cultural resource base of the Magaliesberg Biosphere.	Areas of co-operation within the Magaliesberg Biosphere, where most people reside and where there is significant and diverse economic activity.
Objectives	Conserve the landscape, biodiversity and cultural history of the Magaliesberg Biosphere -promote the use of these resources in a sustainable way.	Aimed at supporting the environmental integrity of the Core Area, but would allow a wider range of environmentally sensitive land uses and activities which are economically sustainable. Endorsement of Magaliesberg Biosphere by land owners.	The intention in these Areas is that stakeholders work together to manage and develop the area's resources in a sustainable and environmentally friendly way, with due recognition of the Magaliesberg Biosphere.
Land Use/ Desirable activities	Conservation activities, research activities, conservation-based education and limited low-key nature-based tourist facilities and activities with a light touch.	Land uses/activities considered suitable are conservation, research, conservation-based education, tourism (resorts and lodges) and recreational activities. It would also include existing agricultural and other legal land uses.	Land uses/activities that are considered suitable in terms of planning guidelines, with an assessment/ comment by the Management Authority/Board and due recognition of the Magaliesberg Biosphere.

2.3.6 Madibeng Integrated Development Plan, 2013 - 2014

The tables below set out the community needs for each of the wards in the precinct that were identified during the public participation process for the Madibeng Integrated Development Plan, 2013/2014.

Table 7: Ward 29 Needs

Need	Projects	Area
Land and Housing	Acquisition of land RDP Houses PHP Houses	All Areas Shamburg, Orange Farm & Sangiro Poland (CPA)
Electricity	Electricity installation Upgrading of current infrastructure Apollo Lights Streetlights (methanol gas project)	Poland & Shamburg Kosmos & Skeerpoort Poland & Shamburg Damdory & Skeerpoort
Water and Sanitation	Boreholes with tanks VIP toilets	Shamburg, Poland, Orange Farm & Kosmos
Roads and Stormwater	3km tarred road Upgrade of road Speed humps	Skeerpoort to Hartbeeshoek Damdoryn/Kommandonek, Kosmos Shamburg
Social Services	Mobile clinics Environmental health Multi-purpose sports centre Community Hall	All Areas Shamburg, Orange Farm, Sangiro & Poland Skeerpoort & Shamburg
LED	Job Creation	

Table 8: Ward 30 Needs

Need	Projects	Area
Land and Housing	Formalisation of informal settlements Acquisition of land RDP Houses Affordable houses Upgrade existing park area and maintenance	Ten Rooms, Refentse and Sunway Village Rietfontein Rietfontein Rietfontein Ifafi, Melodie, Meerhof
Electricity	Overhead line to be replaced by cable Upgrading of satellite substations from Ifafi to Meerhof House connections Cables to be sunk Erection of high mast lights Removal and relocation of illegal squatters at Rietfontein Street lights along R511 New substation plus backup system in Ifafi Refurbishment of all pumps Backup generator for pumps	Meerhof to Ifafi Meerhof and Ifafi Refentse All areas Refentse
Water and Sanitation	Lowering of suction pump Upgrading of sewage plant (pump station) Construction of water purification plant Provision of water Provision of sewerage Upgrade and replace old asbestos pipes at Ifafi, Melodie and Meerhof Additional reservoir (10Ml) in Meerhof	Hartbeespoort Dam wall Rietfontein and Ifafi Meerhof/Melodie/Ifafi Ten Rooms, Refentse and Sunway Village Ten Rooms, Refentse and Sunway Village
Roads and Stormwater	Upgrading of gravel roads Upgrading of tarred roads Construction of speed humps Upgrading of stormwater system Upgrade and construction of curbing, storm water drainage system and litter traps Broadening of R511	Struben, Rietfontein & Melodie All Areas, Meerhof to Ifafi R512 Crossing at Total Garage and R511 R511, Ifafi, Melodie and Meerhof
Community Safety	Upgrading of Municipal fire equipment Establishment of traffic law enforcement system	

Table 9: Ward 33 Needs

Need	Projects	Area
Land and Housing	Land acquisition	Schoemansville, De Kroon, Zandfontein & Sieling Farms
	Housing formalisation of illegal squatters	De Kroon, Zandfontein & Sielings farms
	RDP Houses	Schoemansville & Zilkaatsnek
	Upgrade existing park areas	Schoemansville
Electricity	Upgrade of network	Schoemansville
	High mast lights	Zandfontein & De Kroon
Water and Sanitation	Upgrade capacity of purification plant	Schoemansville purification plant
	Drilling of boreholes at informal settlements	De Kroon,Zandfontein & Sieling farms
	Upgrade of sewage plant	Schoemansville
	Replace network lines	Schoemansville
	Installation of VIP toilets	Schoemansville
Roads and Stormwater	Rehabilitate and re-seal all roads	Schoemansville/Old Rustenburg Rd
	Erection of road traffic signs	Schoemansville
	Upgrading and construction of curbing & stormwater drainage system	Schoemansville
Social Services	Upgrading of clinic	Schoemansville
	New multi-purpose community centre and sports ground (bowling green)	Hartbeespoort Sports Club Grounds
	Taxi rank	Schoemansville X2
	New sport facilities	De Kroon
LED	Skills development	
	Sustainable job creation	
	Illegal immigrants at Tsosoloso	
Community Services	Transport	
	Traffic Calming	
	Construction of Fire Hydrants	
	Fire First Response	

2.3.7 Regional Spatial Development Framework 2013 for Region 3: City of Tshwane Metropolitan Municipality

The following are pertinent aspects of the Regional Spatial Development Framework, 2013 for Region 3 that pertain to the Precinct Plan:

- The area to the east of the precinct boundary (which forms part of the City of Tshwane) is earmarked for rural development;
- The Tshwane Urban Edge is located 7km away from the precinct boundary along the R104 in the south, and approximately 10km away along the R514 in the north; and
- The area along the R511 has been identified as an area with Tourism Potential.

2.3.8 Land Use Schemes in Operation

There are currently three (3) land use schemes in operation in the study area, namely:

- The Kosmos Town Planning Scheme, 1999;
- The Hartbeespoort Dam Town Planning Scheme, 1993; and
- The Peri-Urban Town Planning Scheme, 1975 (covering all areas where the above two schemes do not apply).

Figure 10 shows the areas where these land use schemes apply.

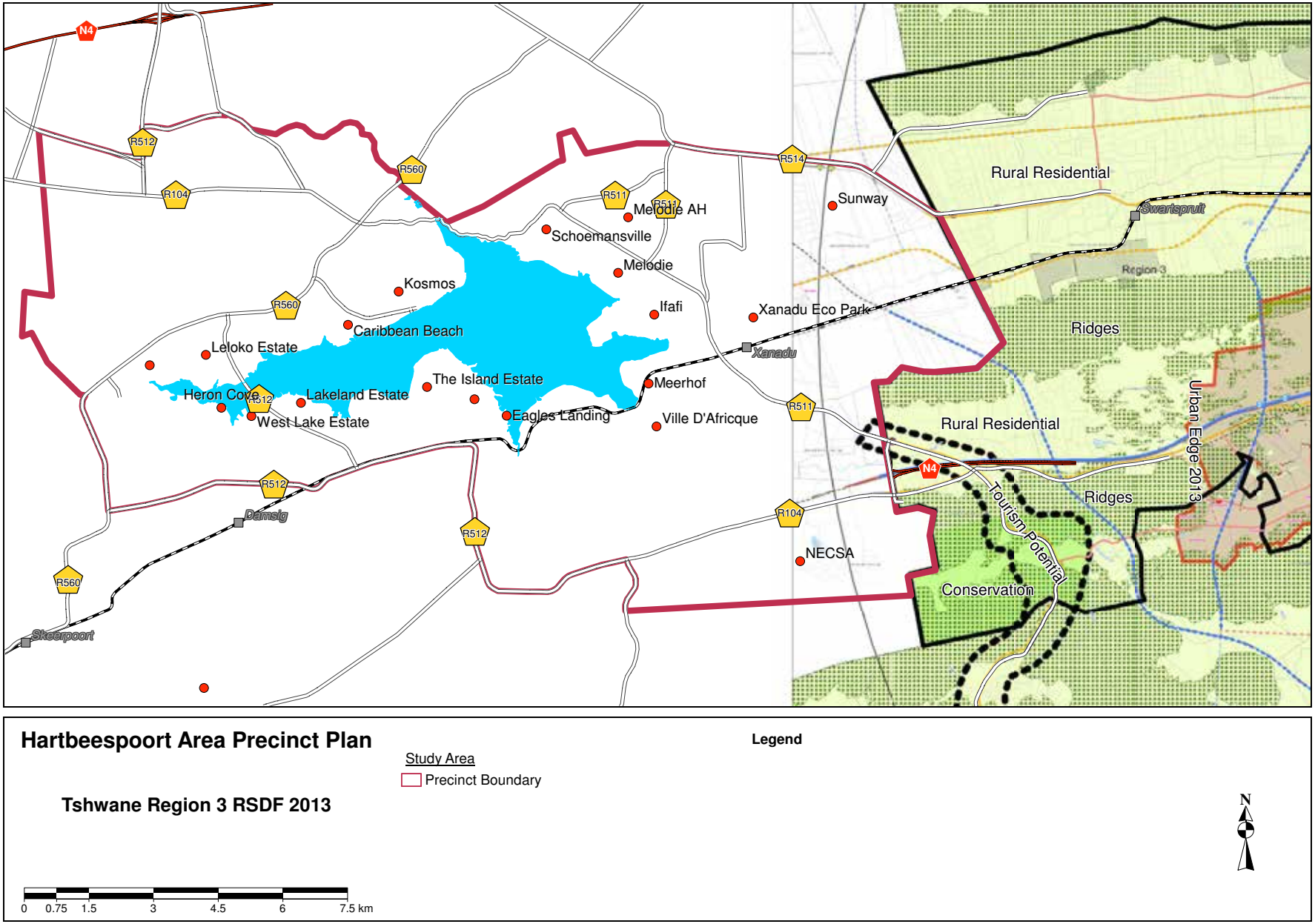

Figure 9: Regional Spatial Development Framework for Region 3 (City of Tshwane)

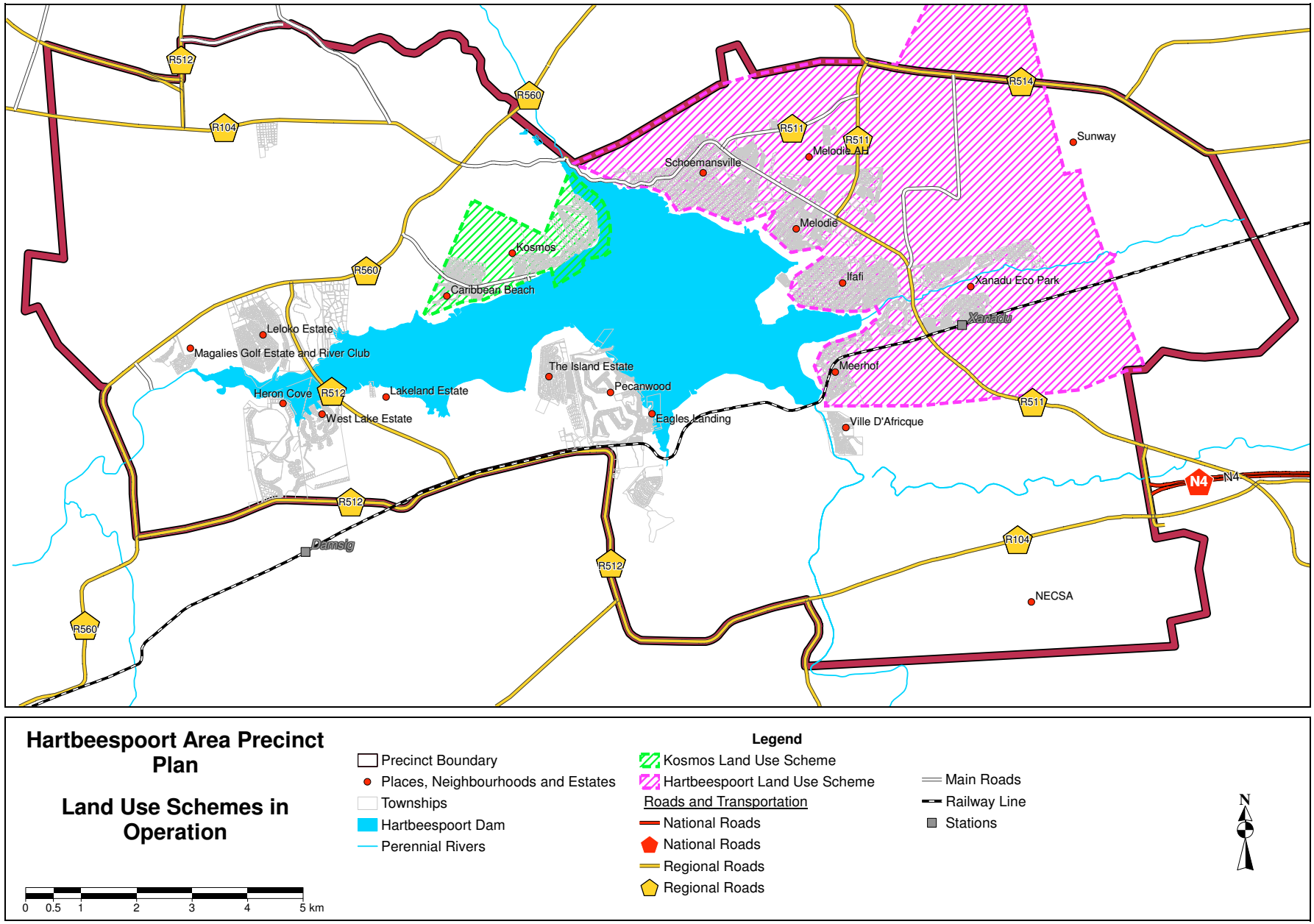

Figure 10: Land Use Schemes in Operation

Chapter 3: Precinct Analysis

Chapter 3: Precinct Analysis

3.1 Biophysical Characteristics

3.1.1 Topography

The three most prominent natural features of the precinct are the Hartbeespoort Dam and the Magaliesberg and Witwatersberg mountain ranges which run in an east-west direction through the northern and southern part of the study area respectively (refer to Figure 11).

The Magaliesberg stretches for approximately 196km with an altitude that varies between the highest point at Nooitgedacht which measures 1,852m above sea level and 532m above the valley floor. In terms of topographical features the slopes (north and south), cliffs, crests and kloofs are the most significant. The Magaliesberg range is also famous for the prominent quartzite cliffs along its south face.[1]

"The Magaliesberg region comprises an area of scenic beauty, unique natural features, rich natural and cultural heritage value, significant biodiversity and archaeological interest, which justifies its protection and sustainable utilisation."[2]

The slightly smaller Witwatersberg is located parallel and to the south of the main Magaliesberg range.

The mountain ranges that run through the study area, in particular where roads cross through the mountains, create a number of important views and vistas of the dam and surrounding landscapes that should be protected from visually intrusive development (refer to Figure 11).

1 *Source: Magaliesberg Biosphere Situational Analysis, 2011*

2 *Source: Magaliesberg Biosphere Situational Analysis, 2011*