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LIST OF ACRONYMS

DDLGH	Department of Development, Local Government and Housing
DWAF	Department of Water Affairs and Forestry
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EMS	Environmental Management System
IAP	Interested and Affected Parties
IDP	Integrated Development Plan
KMR	Kgaswane Mountain Reserve
MPE	Magaliesberg Protected Environment
NEMA	National Environmental Management Act
NEMBA	National Environmental Management Biodiversity Act
NEMPA	National Environmental Management Protected Areas Act
NHRA	National Heritage Resources Act
NW DACE	North West Department of Agriculture, Conservation and Environment
RLUMS	Rustenburg Land Use Management Scheme
SAHRA	South African Heritage Resources Agency
SDF	Spatial Development Framework
SIA	Social Impact Assessment
SOER	State of the Environment Reporting
VIA	Visual Impact Assessment



PREFACE

The Environmental Management Framework and Plan for the Magaliesberg Protected Environment is aimed at addressing the requirements of an Environmental Management Framework as contemplated in Section 71 of the Environmental Impact Assessment Regulations of Government Notice R385 (21 April 2006), as well as the basic components of a Management Plan for a protected area as described in Section 41 of the National Environmental Management: Protected Areas Act (Act 57 of 2003). The resulting Environmental Management Framework and Plan consists of two components:

- *Volume 1: Status Quo Analysis*
- *Volume 2: Environmental Management Framework and Plan*

The Management Plan component is thus specifically applicable to the Magaliesberg Protected Environment (MPE), whereas the Environmental Management Framework considers the interaction of the MPE with its surrounding areas. In the case of the latter it also extends to potential development activities around the MPE boundaries.

The key components of the draft Environmental Management Framework and Plan and its application can be summarized as follows:

- *The desired state of the environment of the MPE and immediately surrounding area is described in terms of an overall vision, objectives and sub-objectives, as well as potential monitoring indicators. These objectives are applicable to the MPE, as well as areas within a 2,5km buffer around the MPE. These objectives may also be applicable to certain activities outside the 2,5km buffer (e.g. large scale mining) which may have an impact on the MPE.*
- *The activity framework outlines “compatible”, “potentially compatible” and “incompatible” development activities, and the spatial management zones associated applicable to properties or portions of properties located within the Magaliesberg Protected Environment.*
- *The environmental management framework and plan recommends that all applications for development activities within the MPE not classified as “compatible activities” in Table 5.2 be subject to a full EIA process as contemplated in Sections 27 to 36 of the Environmental Impact Assessment Regulations. These applications will be dealt with in terms of the process outlined*



in Figure 6.1, as well as the recommendations for specialist inputs and public participation included in the EMF.

- *In order to effectively manage the “edge effects” in the area immediately surrounding the MPE boundary, it is recommended that the objectives as described in the desired state of the environment be considered for all applications within a 2,5km buffer around the MPE. These applications will have to clearly demonstrate their compliance with the specified objectives for the MPE. Furthermore, all activities within the 2,5km buffer area that require a full Environmental Impact Assessment process, are subject to the procedure outlined in Figure 6.1, as well as the minimum requirements for specialist studies and public participation.*



1 INTRODUCTION AND BACKGROUND

The Magaliesberg area is geologically unique and scenically beautiful, and on a world scale very rich in biodiversity and associated ecological interactions. A number of threatened flora and fauna species occur in the Magaliesberg, some of which are near endemics to the mountain. It also contains a number of unique habitats large enough to sustain characteristic vegetation types and species that need large areas to survive. This unique area is located in close proximity to the largest urban conurbation in South Africa, with an estimated 10 million people living within a 100km radius of the Magaliesberg. The accessibility of the Magaliesberg also makes it extremely valuable for recreational and eco-tourism purposes. In view of the significant pressure on the Magaliesberg Protected Environment (MPE) and the increasing demand of housing and other developments and possible associated loss of biodiversity, the North West Department of Agriculture, Conservation and Environment (NW DACE) initiated a process to prepare an Environmental Management Framework (EMF) for the part of the MPE located in the NW Province. This initiative is also intended to address the absence of a clearly defined policy or legal document within the Department to guide decision-making in this area. The purpose and contents of such an Environmental Management Framework is described in Chapter 8 of the Environmental Impact Assessment Regulations of Government Notice R385 (21 April 2006). According to Section 71 of these regulations, a draft Environmental Management Framework must:

- (a) identify by way of a map or otherwise the geographical area to which it applies;
- (b) specify the attributes of the environment in the area, including the sensitivity, extent, interrelationship and significance of those attributes;
- (c) identify any parts in the area to which those attributes relate;
- (d) state the conservation status of the area and in those parts;
- (e) state the environmental management priorities of the area;
- (f) indicate the kind of activities that would have a significant impact on those attributes and those that would not;



(g) indicate the kind of activities that would be undesirable in the area or in specific parts of the area; and

(h) Include any other matters that may be specified.

The methodology for the preparation of the Environmental Management Framework for the study area was guided by these requirements and consists of a status quo analysis, synthesis (including the identification of key issues and challenges, vision and objectives) and an Environmental Management Framework (including Spatial and Management guidelines).

The results of the **analysis phase** have been documented in a separate Status Quo Report which analysed the following aspects in detail:

- The **legal and institutional context** and framework relevant to the Magaliesberg Protected Environment (**Section 2** in Status Quo Report).
- Analysis of the study area within the context of the **existing environmental and spatial planning guidelines** at both provincial and local level (**Section 3** in Status Quo Report).
- A description of the **Natural Environment** including geology, topography and soils, climate, water resources, and biodiversity (**Section 4** in Status Quo Report).
- **Heritage resources, built environment and infrastructure** information (**Section 5** in Status Quo Report).
- The **socio-economic environment** of the study area (**Section 6** in Status Quo Report).

This document represents the draft Environmental Management Framework and Plan and includes the following components:

- A summary of **strategic significant issues** relating to the study area as identified from both the findings of the status quo analysis and the inputs provided during the consultative workshops.
- A description of the **desired state of the environment** in the MPE focusing on the following aspects:



- An overall **development vision** informed by the key issues and challenges.
- A set of **development objectives**.
- Potential **targets and monitoring indicators**.
- **Spatial and Management guidelines** in the form of spatial sensitivity mapping and an activity framework description.
- **Guidelines for Environmental Impact Assessment** with particular reference to the process and the required content of EIA reports.



2 POINTS OF DEPARTURE

In order to clarify the application of the Environmental Management Framework, and specifically the management guidelines, a number of important points of departure need to be highlighted.

2.1 POINT OF DEPARTURE 1: PURPOSE OF THE ENVIRONMENTAL MANAGEMENT FRAMEWORK AND MANAGEMENT GUIDELINES

It must be clearly understood that the EMF is a decision support and not decision making tool. Due to the nature of the information contained in the EMF which is of a distinctly strategic nature, it logically implies that the content aims to inform strategic level decision making. Final project level decisions will only be decided once a full EIA has been conducted presenting the detailed site specific information required for specific development proposals. 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.

2.2 POINT OF DEPARTURE 2: SENSITIVITY AND ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

It must be emphasized that the entire MPE is considered as a sensitive area. Unlike the approach of EMF's in more diverse development areas, there can not be reference to areas of "low" or "medium" sensitivity. Within the MPE, all areas are considered as sensitive and are thus in terms of the spatial guidelines described as "*sensitive*", "*highly sensitive*" and "*areas with exceptional conservation value*". For this reason it is recommended that all proposed activities within the MPE which is not included under the list of "compatible activities" (see Table 5.2) will require full Environmental Impact Assessments as set out in Sections 27 to 36 of the EIA Regulations (No. R 385).



2.3 POINT OF DEPARTURE 3: LAND USE RIGHTS

The proposals contained in the EMF do not infringe or erode primary land use rights of existing land owners. These primary rights have been included under the description of “compatible activities” under section 5. The EMF does however provide clear guidance on applications for the expansion of development rights, or so-called “secondary” rights. To ensure the legal compatibility of the EMF with existing legislation and Land Use Management Systems, the definitions under section 5 reflect existing legal definitions for different land uses. Any activity not listed in the activity description framework will automatically require a full EIA.

2.4 POINT OF DEPARTURE 4: SPATIAL LINKAGES IN REGIONAL CONTEXT

Although the focus of the EMF is the Magaliesberg Protected Environment, it is important that adjacent areas and the management of the broader area also be considered within the context of important functional spatial linkages within a regional context. **These include potential linkages with existing conservancies in and adjacent to the MPE area, the Cradle of Humankind World Heritage Site, as well as important physical linkages to areas such as the Norite Hills towards the North of Magaliesberg and the Witwatersrand Mountains south thereof.** The importance of these linkages and the implementation thereof should thus also be incorporated into relevant policies and guidelines such as the North West Provincial Spatial Development Framework (currently under review), the Municipal Spatial Development Frameworks impacting on the study area, as well as Environmental Management Frameworks of municipalities within and adjacent to the study area.

2.5 POINT OF DEPARTURE 5: NEED FOR ONGOING RESEARCH AND REFINEMENT OF DATA

Despite the unique nature of the Magaliesberg Area, there is a surprising lack of detailed scientific information of this area and more focused and ongoing research, specifically relating to certain species as well as ecological communities, will be required on a finer scale.



3 KEY ISSUES AND CHALLENGES

3.1 INTRODUCTION

This section summarises the key issues and challenges of the study area as identified from the findings of the status quo analysis and the inputs received from stakeholders during the consultative workshops. These issues are not presented in any order of importance or prioritization and it merely serves to highlight some critical issues and challenges. These key issues and challenges are classified under five main headings i.e.:

- Institutional Aspects
- Natural Environment
- Heritage Resources
- Built Environment
- Socio-economic Environment



3.2 ISSUES AND CHALLENGES RELATING TO INSTITUTIONAL ASPECTS

Institutional Aspects	
Findings of Status Quo Analysis	Inputs from Interested and Affected Parties
<p>The legal and institutional context for the MPE is very complex and can be divided into the legal status of the MPE as such, the related strategic planning framework, and the various mandates for project level authorizations.</p> <p>In terms of the legal status of the MPE the following legislation is applicable:</p> <ul style="list-style-type: none"> Administrators Notices, 126 and 127 of 4 May 1994. National Environmental Management Protected Areas Act. NEMA: EIA Regulations dealing with EMFs. <p>The strategic development planning and resource management perspective is set out in the following strategic documents:</p> <ul style="list-style-type: none"> Internal Strategic Perspectives for the Crocodile West Water Management Area prepared by DWAF. National Spatial Biodiversity Assessment prepared by DEAT. North West Biodiversity Site Inventory and Data Base prepared by NW DACE. Spatial Development Frameworks for the province as well as district and local municipalities. Rustenburg Strategic Environmental Assessment (SEA) Hartebeespoortdam SEA <p>Finally, the following project level authorizations are applicable to the MPE:</p> <ul style="list-style-type: none"> Water Licenses issued by DWAF. Subdivision of agricultural land approved by Department of Agriculture. Mining licenses issued by Department of Minerals and Energy. EIA authorizations issued by NW DACE. Heritage authorizations issued by SAHRA. Land use authorizations issued by provincial government. Land use authorizations issued by local authorities. <p>It is evident that the effective management of the MPE will require a clear understanding of its legal mandate, combined with effective alignment with the strategic planning frameworks for the area, as well as effective co-operative governance related to project level authorizations by different spheres of government.</p>	<ul style="list-style-type: none"> The Magaliesberg Protected Environment EMF should take cognizance of the Magaliesberg Biosphere initiative which seeks to obtain Biosphere status from UNESCO for the proposed Magaliesberg biosphere region. The Magaliesberg Protected Environment is defined as the core area of this proposed biosphere region. The management of building/development and other activities involving the conversion of land from its natural state is equally important in the transition zone around the MPE boundaries as it is within the MPE boundaries. The successful implementation of the EMF would be influenced by the effectiveness of the linkage between a spatial decision support tool and an appropriate management plan to be used by all relevant authorities within the area. The rights of private landowners may be affected by the provisions of the proposed EMF. The need to involve landowners through appropriately recognized structures is an important component of the participation process. A clear distinction should be made between primary land use rights, which are those rights which can be exercised by the landowner in terms of the current zoning and status of a property, and secondary rights which are dependant on the approval or authorization by relevant authorities. A clear distinction must be made between "legal" and "illegal" developments and the concept of "appropriate" and "inappropriate" land uses. Different land use definitions as contained in Land Use Management Schemes, Spatial Development Frameworks, existing Strategic Environmental Assessments, and other policy documents is confusing and makes it difficult to establish a common and clearly defined set of land use definitions. The objectives of the Environmental Management Plan will differ within various management zones (e.g. the core area, buffer zone and the transitional zone). It will be difficult to implement the recommendations of the EMF without clearly defined service level agreements or Memorandums Of Understanding between the various authorities such as provincial departments and local governments who will be involved in the implementation of the Environmental Management Framework and Management Plan. The existing recommendations contained in adjacent local municipalities in Gauteng such as the Mogale City should be considered for the purposes of alignment. Ignorance or lack of information about the importance of the Magaliesberg Protected Environment and surrounding areas is often an important contributing factor in the occurrence of inappropriate forms of development. The MPE EMF recommendations will have to take cognizance of and be aligned with the requirements of the Environmental Impact Assessment regulations of 2006. An effective monitoring system will be required to ensure that the EMF recommendations are actually implemented and that approved recommendations are implemented in line with its original intentions. The potential impacts of the so called "country estate" policy of the North West province



Institutional Aspects	
Findings of Status Quo Analysis	Inputs from Interested and Affected Parties
	<p>and the description of appropriate land uses within these type of developments should be clearly defined.</p> <ul style="list-style-type: none">• The local government sphere (both local and district municipalities) will have a key role to play to ensure that land use applications and those for environmental authorizations are better aligned.• The possibility of tax incentives or benefits for landowners with heritage resources on their properties or owners of land within a protected environment could potentially be investigated.• The EMF should not unduly restrict appropriate forms of development but must ensure and encourage that the developments is implemented in a responsible and sustainable manner.• Activities not listed under the EIA regulations of 2006 can also be managed through the EMF.• The use of water resources and water rights is a complex issue that requires clear management guidelines.• It will be necessary to improve the capacity of all relevant authorities regarding the implementation and use of the EMF at its completion to ensure effective implementation thereof.• There is a need to clearly define what is meant by 'buffer zones', 'intermediate zone' and 'core areas'.• Inventories and lack of knowledge and a legal framework for the management of nuisance reptiles was raised as a serious issue in the area.• The need to clarify and promote the role of Conservancies as a option towards conserving and managing the area was expressed.• The need to consider the setting of biodiversity targets for the MPE was raised. This could also form part of the bioregional initiative for the MPE.• It was proposed that the ridges policies applicable to Gauteng be introduced to the MPE.



3.3 ISSUES AND CHALLENGES RELATING TO THE NATURAL ENVIRONMENT

Natural Environment	
Findings of Status Quo Analysis	Inputs from Interested and Affected Parties
<p>The status quo analysis described the natural environment in relation to geology, topography and soils; climate; water resources; and biodiversity. The following main conclusions are summarized:</p> <ul style="list-style-type: none"> The Magaliesberg represents an area with unique geological, geomorphological and topographical features which is closely linked to the functioning of the natural systems. For this reason a number of unique habitats, vegetation types and species occur. The mountain also represents a climatic transitional area between two climatic regions which contributes to the unique and varying natural characteristics of the north and south sloping regions. In terms of water resources the following conclusions were made: <ul style="list-style-type: none"> Due to the poor water quality in the region the MPE makes a significant contribution in terms of water quality. Firstly the role of the various wetlands located within the MPE in terms of a filter effect is widely recognized. Secondly, due to the status of the MPE and the subsequent low levels of development within its borders there are currently no serious point source pollution problems. The River Health programme has also confirmed that the water emanating from the MPE, and specifically from the KMR, is of particularly good quality. For some of these rivers such as the Lower Hex, Lower Sterkstroom, Kareespruit and Magalies, the mountain provides the majority of the overall limited supply of good quality water they receive. The contribution of the runoff from the MPE to the overall system yield for both surface and groundwater resources have not been determined. However, in light of the deteriorating state of the water resources surrounding the MPE, together with future climate change scenarios which suggest that this region would probably become drier – the contribution of the mountain is also considered potentially important from a system yield perspective. Various special water features are located along the mountain range which includes mountain streams, five types of wetlands and natural springs. These features have a particular role to play in terms of maintaining unique biodiversity and ensuring water quantity and quality. It is obvious that the conservation of water 	<ul style="list-style-type: none"> Due to national and international economic trends property prices in the area has changed along with the economic viability of agricultural land use. The result has been that land owners are exploring alternative land use options additional to agriculture - this has been a main driver of land use change adjacent to the MPE. Mining activities within the MPE such as silica has caused land transformation and destruction of habitat – along with a nuisance effect. Alien invasive species associated with increasing urbanisation has impacted on biodiversity – these species include both flora and fauna. Alien invasive species associated with inappropriate agricultural practices adjacent and within the MPE. Poor land management in certain farming areas lead to bush encroachment along and within the MPE Urban development encroaching on the mountain especially in the Hartebeespoort area is considered a concern, both from a transformation of land point of view, as well as through increasing access. Overstocking of game for tourism purposes on portions of land that is unable to support the densities. This is again related to the change in agricultural practices in the area. Small-scale poaching from residential areas directly adjacent the MPE. Informal and badly managed hiking trails have caused erosion and uncontrolled access to the MPE. Harvesting of plants for medicinal purposes by traditional healers occurs in the vicinity of Kgaswane. It is uncertain what the extent of the harvesting is but this should be investigated to ensure sustainable utilization. Pets from adjacent properties roaming around in the MPE. Climate change scenarios combined with fragmentation of habitat could over the medium and long term have a substantial effect on the biodiversity and ecology of the MPE. Uncontrolled fires caused by human activities (i.e. agricultural practices, burning of waste, etc.) could potentially impact on biodiversity – although this aspect is still poorly understood. The use of quad bikes on the mountain is associated with noise pollution, erosion, etc. The importance of the buffer areas to provide corridors for the migration of wildlife from and to the mountain. The re-introduction of South African animals that are not traditionally (or through historic account) associated with the Magaliesberg was raised as a potential issue. The need for bird flight corridors was highlighted – also in relation to the birding routes planned for the area. The gaps in knowledge concerning biodiversity in the MPE require that the 'precautionary principle' be applied – and that developments are considered against this lack of knowledge. Loss of biodiversity due to poaching practices.



Natural Environment	
Findings of Status Quo Analysis	Inputs from Interested and Affected Parties
<p>quality (see previous point) relates directly to the protection of these water features.</p> <ul style="list-style-type: none"> It is recognized that the water features within the MPE provides a significant opportunity in terms of future eco-tourism development. It is safe to argue that the eco-tourism potential of the MPE can only be realized and sustained if water features are effectively managed. In terms of ecosystem services DWAF specifically acknowledges the importance of the streams that rise in Magaliesberg and propose that a Reserve determination of these streams be conducted to protect important ecological functions. <ul style="list-style-type: none"> The importance of the biodiversity resources of the MPE needs to be considered against the following: <ul style="list-style-type: none"> It provides a unique landscape where the savanna, grassland and forest biomes meet in a mosaic of vegetation types. The western-most outliers of Northern Afrotemperate Forest in South Africa occur in the deep kloofs on the northern side of the mountain. The MPE is one of the few large natural montane landscapes that are not severely fragmented or disturbed by urban sprawl and if managed properly have the potential to remain as such. The steep cliffs provide suitable nesting sites for large threatened birds such as the Cape vulture and rare raptors such as Verreaux's (black) eagle. The remote upper northern slopes and grassland patches provide suitable secure habitats for threatened plant species such as <i>Aloe peglerae</i> and <i>Frithia pulchra</i>. Ideal habitats for rare invertebrate species likely to be red-listed in future, such as the rock scorpion, <i>Hadogenes gunningi</i> and the fruit chafer beetles <i>Ichneustoma stobbiai</i> and <i>Trichocephala brincki</i> are also present in these areas. The azonal wetlands in the Magaliesberg, although poorly studied, are already recognized for their valuable contribution towards biodiversity conservation in the area. The full significance of these wetlands on aquatic fauna lower down is currently not fully analyzed. As a pre-caution the use of water from these wetlands and tributaries to rivers lower down should be regulated. 	<ul style="list-style-type: none"> Loss of wildlife corridors which restricts the movement of wildlife and could lead to extinction. Ecological services feeding from the mountain abruptly ends at the boundary of the MPE due to many new developments, which implies that the 'downstream' benefit emanating from the mountain does not achieve its optimum downstream effect. Poaching from hiking trails with specific reference to floral species such as <i>A. peglerae</i>. The introduction of alien invasive species which includes flora and fauna (mammals and fish). It was claimed that Argentine ants have been found on the mountain. Unnatural fire regimes is a potential cause of concern although still poorly understood. Impacts associated with fire are loss of biodiversity, erosion, etc. Erosion caused by quad bikes. Impacts on the vulture communities were highlighted – these include: air traffic such as helicopters, power lines, human disturbance, land transformation directly underneath the cliffs impacting on fledgling birds, etc. Wood harvesting by adjacent communities – especially those who do not have access to alternative energy sources. Loss of habitat through the transformation of land. Power lines across the mountains could impact on birds as well as the visual aesthetic character of the mountain – important for tourism in the region. Air pollution emanating from the adjacent mining activities – although the exact extent is uncertain and not quantified. Dust pollution from the tailings dams is claimed to have an impact on the biodiversity of the mountain – this aspects still needs to be explored further. The high erodability potential of the MPE was highlighted – this is due to the susceptibility of quartz to erosion



3.4 ISSUES AND CHALLENGES RELATING TO HERITAGE RESOURCES

Heritage Resources	
Findings of Status Quo Analysis	Inputs from Interested and Affected Parties
<ul style="list-style-type: none"> Many of the types of heritage resources as described in the National Heritage Resource Act are represented in the Magaliesberg and include: <ul style="list-style-type: none"> Sites dating from the Early Stone Age (500 000+ years old), Middle Stone Age (200 000 to 22 000 years old) and Late Stone Age (which date from the last 22 000 years). A number of rock painting sites. Engravings are more common. However, many engravings have been lost as a result of illegal removal. Sites dating from the Early Iron Age (AD300-AD500). Stone walled settlements dating from the Late Iron Age (AD1600-AD1840) which were occupied by baTswana and Ndebele clans. Residential and military villages occupied by the Ndebele of Mzilikazi (AD1827-AD1832). Battlefields from the Second Anglo Transvaal War (AD1899-1902). Blockhouses, redoubts and other remnants from the Second Anglo Transvaal War. Voortrekker (colonial) farm homesteads with outbuildings, cemeteries, churches, schools, mills, etc. Infrastructure such as the Hartbeespoortdam, Olifantsnek and Buffelspoort Dams constructed during the depression (1920's), as well as associated buildings, cemeteries and a memorial. The generally low level of awareness of the significance, importance and protected status of heritage resources causes unnecessary pressure on heritage sites and cultural landscapes which may not necessarily receive the same protected status as natural resources in the Magaliesberg. Uncontrolled and unplanned urban development such as the establishment of informal settlements or the expansion of existing suburbs in towns near the Magaliesberg can lead to the alteration or destruction of heritage resources and cultural landscapes near the foot of the Magaliesberg. The development of an increasing number of high density up-market residential areas near the Magaliesberg or in the foothills of these mountains is threatening the unspoilt outlying edges of the Magaliesberg region where large numbers of undiscovered heritage resources may still exist. Increased crime levels caused by population pressure, homelessness and unemployment may also lead to the vandalism of cultural heritage 	<ul style="list-style-type: none"> Cultural Historic assets need to be protected from uncontrolled access. The Cradle of Humankind World Heritage sites provide an example of an area where a "buffer zone" is declared to assist with the management of the core area. A potential sustainable approach to protect buildings and structures with a historical or archaeological value is to convert these buildings or infrastructure into an alternative viable use.



Heritage Resources	
Findings of Status Quo Analysis	Inputs from Interested and Affected Parties
<p>resources such as memorials, graves, archaeological sites and historical buildings.</p> <ul style="list-style-type: none">• The increasing development of tourism and recreational facilities such as lodges and hotels near the Magaliesberg provide greater access to heritage sites associated with the Magaliesberg.• The development of mines (such as silica and clay mines in the Magaliesberg) or the construction of infrastructure such as roads, pipelines, power lines, antennas and towers tends to encroach on existing heritage resources and contributes to the destruction of these resources.• Uncontrolled recreational activities such as hiking along walking trails in the Magaliesberg may also lead to acts of vandalism or the illegal removal of artefacts from sites high up on the mountain, such as blockhouses, cave sites and rock painting sites.• A general lack of awareness of the significance of heritage resources on the Magaliesberg, as elsewhere, creates legal liabilities for people living and working on or near the Magaliesberg – even if they are not aware of the penalties associated with damaging heritage sites and cultural landscapes and the illegal removal of artefacts from heritage sites. Ignorance also increases the risk that heritage sites, cultural landscapes and artefacts may be negatively affected (damaged, destroyed or removed).• Increased air pollution from mining and industry in the North-West Province may eventually cause damage to rock paintings and engravings. Not very many such sites have as yet been found in the region, but the threat posed by such mining and industrial side effects would have to be controlled more strictly if larger numbers of these heritage types were to be discovered in the Magaliesberg in the long term.• A large number of the Magaliesberg's heritage resources have not yet been discovered, geo-referenced or recorded in a heritage register which can serve as a managing tool in the protection of the Magaliesberg's cultural history.	



3.5 ISSUES AND CHALLENGES RELATING TO THE BUILT ENVIRONMENT

Built Environment	
Findings of Status Quo Analysis	Inputs from Interested and Affected Parties
<ul style="list-style-type: none"> Decline in the agricultural sector has lead to the transformation of many agricultural areas to alternative uses such as tourism and urban development. Many areas of intense agricultural activities have also been transformed to cattle grazing. A total of approximately 1 800ha of land within a 2,5 buffer around the MPE area boundary is used for intensive crop production and irrigation. Potential impact of water utilization for these irrigation purposes could be significant. Mining and quarrying activities results in significant visual and environmental impacts. The impact of surrounding large mining activities, specifically north of the Magaliesberg can have an impact on biodiversity as well as on rock paintings in the form of air pollution. Large scale urban development in close proximity to and adjacent to the Magaliesberg Protected Environment leads to increased intensity of habitat fragmentation. Reduced sense of wilderness and associated increase in light and noise pollution with a potential impact on tourism potential Pets (cats and dogs) hunting in a protected area. Informal settlement without appropriate infrastructure services based on biodiversity aspects (e.g. collection of fire wood for heating and cooking purposes). The Magaliesberg Area is an exceptionally captivating tourism destination, specifically in terms of adventure tourism. The tourism facilities within the Magaliesberg Area attract large numbers of day visitors and domestic tourists, specifically from the large domestic market in Gauteng. As much as 41% of the total land area within a 2,5 km buffer around the MPE boundary has been transformed by a variety of land uses. A total of approximately 3 700 household residing within the MPE area and the surrounding 2,5km buffer area are currently without electricity. An estimated 1 600 and 3 900 households respectively living within the MPE area and the surrounding 2,5km buffer area are currently without a formal water supply and sanitation. The east-west alignment of the MPE area acts as a physical barrier to the north-south alignment of infrastructure such as roads, electricity lines, water pipelines, etc. 	<ul style="list-style-type: none"> The provision of services infrastructure to serve both the area within and directly adjacent the MPE as well as the broader region could potentially impact on the MPE – these include power lines, water pipelines and roads traversing the mountain. Such development should be carefully considered. Spill over of pollution from poorly serviced residential areas but also from the mining activities to the north of the mountain in the form of air and light pollution. Certain landowners have to consider alternative forms of economically viable land uses due to the constraints on the agricultural sector, specifically the availability of water resources. The definition of “agricultural activities” and what forms part and doesn’t form part of this definition is not clear. Low cost housing development with associated poor services infrastructure impacts negative on the MPE with special reference to water resources. Informal settlements with total absence of services infrastructure in the Madibeng area cause serious environment degradation in the form of land transformation, water pollution and wood harvesting. Illegal landfill sites on private land is considered a major pollution issue (no complete database exists). Uncontrolled access to the MPE via new residential extensions adjacent the boundary of the MPE. In some instances guaranteed access to the MPE are included in the marketing of these areas – which is illegal.



3.6 SOCIO-ECONOMIC CHALLENGES AND ISSUES

Socio-economic Environment	
Findings of Status Quo Analysis	Inputs from Interested and Affected Parties
<ul style="list-style-type: none"> Current demand for employment opportunities is high, as indicated by unemployment rates of 32.2% and 41.6% for Rustenburg LM and Madibeng LM respectively. Future demand for employment opportunities in the region will be high. With 9.2% of the population being 4 years of age or younger, and a further 29.6% between 5 and 19 years the area has a very youthful age structure. This implies that large numbers of currently young people will be seeking employment opportunities over the next 5-10 years. The economy of the region, although growing rapidly is not sufficiently diversified and highly dependent on the mining sector. The MPE can potentially play an important role in direct employment creation in the eco-tourism sector, with indirect and induced job creation and investment. A clearly defined vision of eco-tourism development will provide a motive to conserve or maintain an aesthetically pleasant environment. This will directly benefit land owners and communities living in and around the MPE. Economic activities associated with the MPE (e.g. eco-tourism) may play an important role in diversification of the local economy and reduce dependency on the mining sector. It should be kept in mind that the MPE is not a non-renewable resource as is the case of mineral resources. The MPE may continue to provide economic benefits to the region (if the MPE are properly conserved) in the long term. 	<ul style="list-style-type: none"> Due to the increasing economic activities in the region – increasing migration of people into the area is experienced, which places pressure on natural resources – ‘honey-pot effect’. Eco-tourism is regarded as an important contributor towards local economic development of the Magaliesberg area but “mass tourism” is not viewed as appropriate in sensitive areas. The dissemination of relevant information regarding the status and value of the Magaliesberg Area to the wider public could contribute towards the establishment of a broader understanding of the management of this region. Due to the dynamic socio-economic environment of the study area, the EMF should be flexible/dynamic and able to accommodate change over time. Improved signage to facilities and sites in the Magaliesberg Area can have both a positive and negative implication. Positive, in the sense of making people more aware of facilities and attractions in the Magaliesberg, and negative in a sense of increasing development pressure at sensitive sites or environments. Mining outside of the MPE along the Merensky Reef has been a major driver for economic change, population migration and various related indirect impacts on the MPE such as light pollution, visual impacts and air pollution. Visual aspects should not be underestimated – this is especially important in relation to the current and future tourism potential for the area. Light pollution from the mining activities to the north of the mountain is considered significant – again in relation to the ‘nature experience’ associated with the MPE.



4 DEVELOPMENT OBJECTIVES, TARGETS AND INDICATORS

4.1 BACKGROUND

As indicated in Section 1, the Environmental Management Framework needs to be guided by a clearly defined vision and overall set of development objectives describing the desired state of the environment of the study area. This vision and objectives are based on the findings of the status quo analysis and the key issues synthesized from the consultative workshops. This section firstly outlines a development vision for the study area, followed by a set of overall development objectives. The findings of the status quo analysis and the identified issues and challenges clearly indicate that the development objectives must address six key themes:

- Water resources
- Biodiversity
- Heritage resources
- Visual and aesthetic aspects
- Built environment
- Socio-economic environment

In certain instances it may be possible that activities could have conflicting impacts on the objectives of the main themes outlined above. In these instances, the order of the themes outlined above also represents the priority objectives with regards to the study area. This will for example imply that biodiversity objectives will take precedence over visual and aesthetic objectives. Similarly, visual and aesthetic objectives would take precedence over socio-economic development objectives. The objectives, potential indicators and targets relating to each of these main themes are described in tabular format in the subsequent sections, dealing with the following aspects:

- *Justification for the objective.* It is important for the MPE management authority to be able to justify and explain the rational behind the various objectives – especially when assessing development applications.
- *Description of the overall objectives and sub-objectives.* The objectives will form one of the main parameters against which to assess future development proposals, both within the MPE



and within a 2,5km buffer around the MPE. For this reason it is important that the objectives are well formulated and clearly understandable.

- *Potential indicators and targets relating to each sub objective.* Although targets and indicators are proposed in the following sections, more detailed targets and indicators can only be finalized once more detailed information becomes available. The targets and indicators presented here should be regarded as indicative and to be refined over time.

4.2 DEVELOPMENT VISION

A vision can be described as *“a forward looking ideal of where a community or area wants to be. It not only inspires and challenges but is meaningful enough that all residents can relate to it”* (Webster, D). A well defined vision will also satisfy the following criteria:

- Futuristic and visionary, but realistic
- Long term focus but motivating short term actions
- Easily understandable

The vision for the MPE is defined 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”.

4.3 OBJECTIVE 1: WATER

Objective 1: *To maintain and enhance the contribution of the MPE to water quality and quantity to the Crocodile West and Marico Water Management Area and specifically to the Elands and Upper Crocodile Sub-management Areas.*



Wetlands are considered areas with exceptional conservation value – due to their water retention and filtering functions.



The ecological functioning of the MPE and its related eco-tourism potential is directly dependant on the quality and quantity of water resources.

Justification for the objective

The MPE forms part of the Crocodile West and Marico Water Management Area and falls within the Elands and Upper Crocodile Sub-management Areas. Based on the status quo analysis the following strategic issues inform this objective:

- There will be a significant increase in future water demand along the Platinum Belt directly to the north of the MPE.
- Currently close to 50% of bulk water demand is imported (mostly from upper Vaal WMA) to service industry and urban centers.
- Local water resources in the WMA are already fully utilized and there is no significant potential for further development of local water resources (i.e. new dams).
- It is assumed that future water demand will be supplied through transfers over the medium and longer term, as well as the large quantities of return flows generated in the upper catchment over the short term. However, DWAF wants local authorities to demonstrate optimum resource use before further transfers are approved.
- From a strategic perspective, the MPE is specifically highlighted by DWAF as a strategically significant contributor to the quantity and quality of water resources in the region which needs to be protected.



The specific contribution of the MPE in relation to water resources can be summarised as follows:

- Due to the poor water quality in the region the MPE **makes a significant contribution in terms of water quality**. Firstly the role of the various wetlands located within the MPE in terms of a filter effect is widely recognized. Secondly, due to the status of the MPE and the subsequent low levels of development within its borders, there are currently no serious point source pollution problems. The River Health Programme has also confirmed that the water emanating from the MPE, and specifically from the KMR, is of particularly good quality. For some of these rivers such as the Lower Hex, Lower Sterkstroom, Kareespruit and Magalies, the mountain provides the majority of the overall limited supply of good quality water they receive.
- The contribution of the runoff from the MPE to the overall system yield for both surface and groundwater resources have not been determined. However, in light of the deteriorating state of the water resources surrounding the MPE, together with future climate change scenarios which suggest that this region would probably become drier – the contribution of the mountain is also considered potentially **important from a system yield perspective**.
- Various **special water features** are located along the mountain range which includes mountain streams, five types of wetlands and natural springs. These features have a particular role to play in terms of maintaining unique biodiversity and ensuring water quantity and quality. It is obvious that the conservation of water quality relates directly to the protection of these water features.
- It is recognized that the water features within the MPE provides a significant opportunity in terms of **future eco-tourism development**. It is safe to argue that the eco-tourism potential of the MPE can only be realized and sustained if water features are effectively managed.
- In terms of **ecosystem services** DWAF specifically acknowledges the importance of the streams that rise in Magaliesberg and propose that a Reserve determination of these streams be conducted to protect important ecological functions.

Sub-objective	Targets	Indicators
Objective 1.1: To maintain and enhance water quality emanating from the MPE	<ul style="list-style-type: none">▪ In stream quality objectives and targets will need to be developed for the specific water features within the MPE according to DWAF guidelines for the Elands and Upper Crocodile Sub-management Areas	<ul style="list-style-type: none">▪ The indicators will relate to the designed objectives. Water quality indicators as described in the NW Sustainable Development Indicator Framework (2006), as well as in the River Health Programme can be used as a point of departure.



Objective 1.2: To maintain the water quantity, related to the natural hydrological cycle, emanating from the MPE	<ul style="list-style-type: none"> To be designed in relation to stream flow determination, ground water recharge, etc. 	<ul style="list-style-type: none"> To be designed in relation to stream flow determination, ground water recharge, etc.
Objective 1.3: To protect and conserve special water features within the MPE (such as mountain streams, wetlands, and natural springs).	<ul style="list-style-type: none"> Zero loss of natural wetlands. The extent of wetlands must be defined and delineated according to the September 2005 guidelines issued by DWAF entitled – 'A practical field procedure for identification and delineation of wetlands and riparian areas' 	<ul style="list-style-type: none"> Percentage loss of wetlands within the MPE (due to the fact that the exact extent of wetlands have not yet been determined the indicator could in the mean time reflect real extent of loss until such time that the loss could be expressed as a percentage of the total extent of wetlands)
Objective 1.4: To maintain the functionality of wetlands in the MPE	<ul style="list-style-type: none"> Zero loss of natural wetlands. 	<ul style="list-style-type: none"> Percentage loss of wetlands within the MPE
Other important points to consider: <ul style="list-style-type: none"> Certain water features such as wetlands and riparian areas are legally protected by legislation outside of the EMF and EMP mandate - such as the National Water Act, 36 of 1998. The mandate to protect wetlands stretches across departments and there needs to be consultation with DWAF in all cases where development might impact on special water features. DWAF is the custodian of water resources in the country. The water use licensing regime is discussed under section 2.4 of the Status Quo report. The status of the water use associated with future developments needs to be determined for each development proposal. Although the legal mandate rests with DWAF, it is important that NW DACE take note and communicate with DWAF in this regard. 		

4.4 OBJECTIVE 2: BIODIVERSITY

Objective 2: To maintain and promote the contribution of the MPE to the conservation of biodiversity in South Africa, both in terms of ecosystem integrity and species diversity.



Aloe peglerae



Hyalites anacreon – dependent on wetlands of northern slopes

Justification for the objective

The MPE constitutes a protected environment with rich biodiversity. The objective is in line with the National Environmental Management Act, 1998 as well as the National Environmental: Biodiversity Act, 2004. The latter provides not only for the conservation of threatened species, but also the conservation of the ecological integrity of unique ecosystems. Based on the status quo analysis the following strategic issues need to be considered:

- A number of threatened plant and animal species occur on the mountain, some of which are near-endemics to the mountain.
- A number of plant and animal species, not threatened at present, but of special conservation interest are encountered on the mountain.
- On a world scale, the mountain is very rich in biodiversity, also in terms of the myriad of associated interesting ecological interactions that are present.
- Due to its location, its largely west-east orientation, its varied topography and geology, the mountain contains a number of unique habitats large enough to sustain characteristic vegetation types and also species that need large areas to survive.



- It is likely that research projects in future will reveal much more to be appreciated about the biodiversity of the mountain. **More focused research projects on threatened species as well as ecological communities on a finer scale are necessary.**
- Agricultural, urban and mining developments in the vicinity of the mountain are increasing significantly. Two important issues are at stake:
 - Pressure to develop in the MPE will increase,
 - Pro-active steps need to be taken to ensure that the MPE does not become isolated. This can be achieved through the provision of a buffer zone and corridors linking adjacent vegetation types and natural features such as the norite ridges.
- **Literature investigations produced surprising little detailed scientific information. In view of the latter, urgent and focused research on the management of habitats and rare species on the mountain is required.**

The specific contribution of the MPE in relation to biodiversity resources can be summarized as follows:

- It provides a unique landscape where the savanna, grassland and forest biomes meet in a mosaic of vegetation types. The western-most outliers of Northern Afrotropical Forest in South Africa occur in the deep kloofs on the northern side of the mountain.
- The MPE is one of the few large natural montane landscapes that are not severely fragmented or disturbed by urban sprawl and if managed properly have the potential to remain as such.
- The steep cliffs provide suitable nesting sites for large threatened birds such as the Cape vulture and rare raptors such as Verreaux's (black) eagle.
- The **remote upper northern slopes and grassland patches provide suitable secure habitats for threatened plant species such as *Aloe peglerae* and *Frithia pulchra*. Ideal habitats for rare invertebrate species likely to be red-listed in future, such as the rock scorpion, *Hadogenes gunningi* and the fruit chafer beetles *Ichneustoma stobbiai* and *Trichocephala brincki* which are also present in these areas.**
- The azonal wetlands in the Magaliesberg, although poorly studied, are already recognized for their valuable contribution towards biodiversity conservation in the area. The full significance of these wetlands on aquatic fauna lower down is currently not fully analyzed. As a pre-caution the use of water from these wetlands and tributaries to rivers lower down should be regulated.

Sub-objective	Targets	Indicators
Objective 2.1: To conserve the ecological integrity of ecosystems of the mountain.	<ul style="list-style-type: none"> ▪ Zero loss of natural vegetation types and natural ecological communities in the mountain. 	<ul style="list-style-type: none"> ▪ Percentage loss of vegetation types and habitat types in the mountain. The extent of occurrence of the major vegetation types is described in the Status Quo Analysis. (However, more detailed research is required to refine



		the occurrence and spatial distribution of habitat types and special ecosystems of high conservation priority).
Objective 2.2: To conserve indigenous threatened species and other species of high conservation priority in the mountain.	<ul style="list-style-type: none"> Zero loss of indigenous threatened species or other indigenous species of high conservation priority in the mountain. 	<ul style="list-style-type: none"> Percentage loss of extent of occurrence of populations of threatened species and other species of high conservation priority. Ideally, the area of occupancy and local populations should also be monitored, but insufficient scientific information is available on the local populations. Urgent research is necessary for the latter.
Objective 2.3: To conserve the rich indigenous biodiversity of the mountain.	<ul style="list-style-type: none"> Zero loss of indigenous species, subspecies and variants of species on the mountain. 	<ul style="list-style-type: none"> Percentage loss of species, as well as intra-specific taxa, i.e. subspecies, variants. Though an inventory of the species on the mountain exists, an effort should be made to make this inventory as complete as possible so that the conservation of overall biodiversity can be monitored.
Other important points to consider: <ul style="list-style-type: none"> Permission from NW DACE is required for collecting of fauna and flora. All the vegetation and habitat units identified are regarded as biologically sensitive, some to a very high degree. EIAs need to address biodiversity issues in detail. 		



4.5 OBJECTIVE 3: HERITAGE RESOURCES

Objective 3: *To protect and manage all types of heritage resources within the MPE as an important physical and eco-tourism asset.*

Justification for the objective

- Many of the types of heritage resources as described in the National Heritage Resource Act are represented in the Magaliesberg and include:
 - Sites dating from the Early Stone Age (500 000+ years old), Middle Stone Age (200 000 to 22 000 years old) and Late Stone Age (which date from the last 22 000 years).
 - A limited number of rock painting sites. Engravings are more common. However, many engravings have been lost as a result of illegal removal.
 - Sites dating from the Early Iron Age (AD300-AD500).
 - Stone walled settlements dating from the Late Iron Age (AD1600-AD1840) which were occupied by baTswana and Ndebele clans.
 - Residential and military villages occupied by the Ndebele of Mzilikazi (AD1827-AD1832).
 - Battlefields from the Second Anglo Transvaal War (AD1899-1902).
 - Blockhouses, redoubts and other remnants from the Second Anglo Transvaal War.
 - Voortrekker (colonial) farm homesteads with outbuildings, cemeteries, churches, schools, mills, etc.
 - Infrastructure such as the Hartbeespoortdam, Olifantsnek and Buffelspoort Dams constructed during the depression (1920's), as well as associated buildings, cemeteries and a memorial.
- The generally low level of awareness of the significance, importance and protected status of heritage resources causes unnecessary pressure on heritage sites and cultural landscapes which may not necessarily receive the same protected status as natural resources in the Magaliesberg.
- Uncontrolled and unplanned urban development such as the establishment of informal settlements or the expansion of existing suburbs in towns near the Magaliesberg can lead to the alteration or destruction of heritage resources and cultural landscapes near the foot of the Magaliesberg.
- The development of an increasing number of high density up-market residential areas near the Magaliesberg or in the foothills of these mountains is threatening the unspoilt outlying edges of the Magaliesberg region where large numbers of undiscovered heritage resources may still exist.
- Increased crime levels caused by population pressure, homelessness and unemployment may also lead to the vandalism of cultural heritage resources such as memorials, graves, archaeological sites and historical buildings.
- The increasing development of tourism and recreational facilities such as lodges and hotels near



the Magaliesberg provide greater access to heritage sites associated with the Magaliesberg.

- The development of mines (such as silica and clay mines in the Magaliesberg) or the construction of infrastructure such as roads, pipelines, power lines, antennas and towers tends to encroach on existing heritage resources and contributes to the destruction of these resources.
- Uncontrolled recreational activities such as hiking along walking trails in the Magaliesberg may also lead to acts of vandalism or the illegal removal of artefacts from sites high up on the mountain, such as blockhouses, cave sites and rock painting sites.
- A general lack of awareness of the significance of heritage resources on the Magaliesberg, as elsewhere, creates legal liabilities for people living and working on or near the Magaliesberg – even if they are not aware of the penalties associated with damaging heritage sites and cultural landscapes and the illegal removal of artefacts from heritage sites. Ignorance also increases the risk that heritage sites, cultural landscapes and artefacts may be negatively affected (damaged, destroyed or removed).
- Increased air pollution from mining and industry in the North-West Province may eventually cause damage to rock paintings and engravings. Not many such sites have as yet been found in the region, but the threat posed by such mining and industrial side effects would have to be controlled more strictly if larger numbers of these heritage types were to be discovered in the Magaliesberg in the long term.
- A large number of the Magaliesberg's heritage resources have not yet been discovered, geo-referenced or recorded in a heritage register which can serve as a managing tool in the protection of the Magaliesberg's cultural history.

Sub-objective	Targets	Indicators
Objective 3.1: To develop, and continually update, a detailed heritage register for the Magaliesberg which can serve as a management tool in the protection of the areas cultural history.	<ul style="list-style-type: none"> • Annual increase in the number of heritage resources recorded in the Magaliesberg Heritage Resource Register. 	<ul style="list-style-type: none"> • Number of identified heritage resources and sites within the MPE area.
Objective 3.2: To prohibit the alteration or destruction of heritage resources and cultural landscapes resulting from uncontrolled and unplanned development within and immediately adjacent to the	<ul style="list-style-type: none"> • Zero land conversion and development on and around heritage resource sites. 	<ul style="list-style-type: none"> • Extent of development and infrastructure within a 50m buffer around heritage sites.



Magaliesberg Protected Environment.		
Objective 3.3: To limit the potential impact of tourism and recreational facilities such as lodges and hotels, as well as associated infrastructure such as hiking and walking trails which may contribute to vandalism and illegal removal of artifacts from heritage sites.	<ul style="list-style-type: none"> Number of heritage resource sites clearly marked and with access control (Once the overall extent of the heritage resources is known a more detailed target can be defined – possibly in relation to a percentage of the total). 	<ul style="list-style-type: none"> Number of heritage resource sites accessible from tourism and ancillary facilities.
Objective 3.4: To improve the general awareness of the significance of heritage resources of the Magaliesberg Area and the legal obligations for protection and management of these resources.	<ul style="list-style-type: none"> Zero incidence of damage and vandalism of heritage sites. 	<ul style="list-style-type: none"> Number of heritage resource sites damaged or vandalized. Number of heritage resource sites published and contained in tourism and other promotional material.
Other important points to consider: <ul style="list-style-type: none"> In view of the rich variety of heritage resources located within and adjacent the MPE, heritage legislation and authorization is of particular importance to the management of the MPE. NEMA and the National Heritage Resources Act (25 of 1999) are the relevant legislation mandating the protection of natural and cultural resources and the execution of EIA's and heritage impact assessments (HIA's). NEMA and NHRA have different definitions for developments that need impact assessments, and in some cases these definitions overlap. 		

4.6 OBJECTIVE 4: VISUAL AND AESTHETICS

Objective 4: *To maintain and enhance the visual and aesthetical character of the MPE with a view to protect the eco- tourism potential of the mountain.*



Telecommunication infrastructure is associated with significant visual impacts. Mining activities results in significant visual impacts.

Justification for the objective

The status quo analysis clearly highlighted the fact that the MPE is the closest eco-tourism destination to Gauteng which presents both a development opportunity, but also a potential threat to the MPE if not properly managed. The main tourism value can be directly linked to the nature experience, sense of place and natural character of the Magaliesberg. The main threats to this tourism potential relates to development which might impact on or spoil this nature experience.

It was also highlighted at the consultative workshops that the significance of visual and aesthetic aspects should not be underestimated especially in relation to the current and future tourism potential for the area. Moreover, it was highlighted that the management of building/development and other activities involving the conversion of land from its natural state is equally important in the transition zone around the MPE boundaries as it is within the MPE boundaries.

More specific issues related to visual and aesthetical aspects raised during the public workshop were:

- Light pollution from the mining activities to the north of the mountain is considered significant – again in relation to the “*nature experience*” associated with the MPE.
- Specific mining activities (such as silica) within and directly adjacent the MPE has caused land transformation and destruction of habitat – along with a serious nuisance and visual effect.



- The provision of services infrastructure to serve both the area within and directly adjacent the MPE as well as the broader region could potentially impact on the visual aesthetic character of the MPE – these include power lines, water pipelines and roads traversing the mountain. Such developments should be discouraged and where they are unavoidable be carefully considered.
- The use of quad bikes on the mountain is associated with noise pollution and nuisance.

Ultimately potential visual and aesthetic aspects need to be considered both from inward and outward perspectives. Inwards it is important to maintain the majestic topographical features and skyline which gives the mountain its appeal. Outward looking it is important to maintain and enhance the nature experience within the MPE. Unfortunately significant impacts have already occurred in relation to the latter with the most prominent being the light pollution emanating from the mining activities to the north as well as in relation to housing development directly adjacent the KMR. It is save to argue that the development potential of the MPE and surrounds are directly related to and dependant on protecting and enhancing the visual and aesthetical character of the MPE.

It need also be stressed that aesthetical aspects could also be interpreted to refer to the wider nuisance issues such as noise and smells. Although some of these aspects appear less prominent than the visual aspects, they are equally important and potentially just as detrimental to the aesthetical character of the area.

Sub-objective	Targets	Indicators
Objective 4.1: To prohibit development on the steeper slopes, higher lying crest and plateau regions of the MPE.	<ul style="list-style-type: none"> ▪ Zero new developments on the plateau and crest regions which include but are not limited to the Waterberg-Magaliesberg Summit Sourveld vegetation. 	<ul style="list-style-type: none"> ▪ Extent of new developments on the plateau and crest regions.
Objective 4.2 No earth moving or excavation activities within or directly adjacent (bordering) the MPE.	<ul style="list-style-type: none"> ▪ Zero mining within and adjacent the MPE. 	<ul style="list-style-type: none"> ▪ Extent of mining activities and number of mining licenses issued within and directly adjacent (bordering) the MPE. ▪ Number of illegal mining and quarrying activities within and adjacent the MPE.
Objective 4.3 <ul style="list-style-type: none"> • To prohibit the development of bulk infrastructure such as power lines, reservoirs 	<ul style="list-style-type: none"> • No bulk services development within or traversing MPE. 	<ul style="list-style-type: none"> • Number and extent of bulk services infrastructure within or traversing MPE. • Number of bird fatalities resulting



and bulk water supply pipelines, within or traversing the MPE.		from power lines (sample monitoring); <ul style="list-style-type: none">• Length and surface area of vegetation trimming along power line servitudes;• Fixed point photography of daytime vista from selected spots along travel routes, from settlements and tourist areas next to the mountain, and from selected spots on the mountain itself, towards the mountain.
Other important points to consider: <ul style="list-style-type: none">• It is recommended that visual impact assessments and/or sense of place specialist studies be required for all applications in MPE and buffer area (see Section 5).		

4.7 OBJECTIVE 5: BUILT ENVIRONMENT

Objective 5: To manage the built environment and development activities in a sustainable manner, without reducing the aesthetic appeal or ecosystem function of the MPE.



Development on Fringes of MPE



Development on Fringes of MPE

Justification for the objective

The MPE is located within the rapidly growing Rustenburg and Madibeng Local Municipalities. The economic growth in the district rates amongst the highest in South Africa. The status quo analysis clearly highlighted the following strategic issues:

- The high levels of economic growth and associated population increase in the study area will result in a significant increase in future demand for transport and other services infrastructure.
- As the general trend of urbanization continues and the growth in the mining sector results in an increased need for provision of housing, the demand for land for urban expansion around the MPE is likely to increase.
- The MPE is rich in a variety of heritage resources.
- High levels of economic and population growth in the district and the proximity to Gauteng implies a growing demand for prime space for recreation, tourism development and upmarket residential development.
- The Magaliesberg serves as a barrier to the north-south alignment of linear bulk infrastructure components.



The impact of the built environment on the MPE includes the following:

- Different types of development activities act as point- and diffuse sources of various types and intensities of pollution (e.g. water, air, visual, etc.)
- Sub-division and/or transformation of land and linear infrastructure components contribute to habitat fragmentation.
- Various forms of development necessitate appropriate waste management and the application of minimum standards for service provision.

Sub-objective	Targets	Indicators
Objective 5.1: To manage the intensity of development around the MPE in order to limit the “edge effect” on the MPE boundaries.	<ul style="list-style-type: none"> • Number of applications within 2,5km buffer illustrating compliance or non-compliance with the MPE objectives. 	<ul style="list-style-type: none"> • Level of compliance with MPE objectives.
Objective 5.2: To investigate the provision of incentives to land owners within the MPE, especially areas of sensitive features of conservation or heritage importance.	<ul style="list-style-type: none"> • Percentage rates or tax incentives (the ideal would be to have the total area covered). 	<ul style="list-style-type: none"> • Value of rates or tax incentives to landowners within the MPE. • Number of Land owners actively involved in conservation activities.
Objective 5.3: To limit uncontrolled and illegal access to the MPE and focus public access along clearly defined eco-tourism routes.	<ul style="list-style-type: none"> • No new illegal access routes or tracks in MPE. 	<ul style="list-style-type: none"> • Annual increase in length of roads and tracks within MPE.
Objective 5.4: To develop and ensure the implementation of minimum standards for services such as water, sanitation, electricity and waste management for all developments within MPE and 2,5km buffer zone.	<ul style="list-style-type: none"> • No sites with substandard services. 	<ul style="list-style-type: none"> • Chemical and microbial surface- and groundwater quality monitoring; • SASS 5 scores. • Number of development sites with and without minimum services.



<p>Objective 5.5:</p> <ul style="list-style-type: none"> To prohibit the development of bulk infrastructure such as power lines, reservoirs and bulk water supply pipelines, within or traversing the MPE. 	<ul style="list-style-type: none"> No bulk services development within or traversing MPE. 	<ul style="list-style-type: none"> Number and extent of bulk services infrastructure within or traversing MPE. Number of bird fatalities resulting from power lines (sample monitoring); Length and surface area of vegetation trimming along power line servitudes; Fixed point photography of daytime vista from selected spots along travel routes, from settlements and tourist areas next to the mountain, and from selected spots on the mountain itself, towards the mountain.
<p>Objective 5.6:</p> <p>To develop procedures and standards for establishing and monitoring tracks, hiking trails, quad bike trails and other active recreation activities.</p>	<ul style="list-style-type: none"> Guidelines for the construction, management and maintenance of roads, tracks, hiking trails, mountain biking trails and areas of quad bike activity should be developed and communicated to land owners by 2010. 	<ul style="list-style-type: none"> Annual increase in length of roads, tracks, hiking trails, mountain biking trails and areas of quad bike activity; Estimated length of roads, tracks, hiking trails, mountain biking trails and areas of quad bike activity traversing sensitive areas e.g. wetlands, kloofs and sites of particular high erodibility; Levels of soil erosion along roads, tracks, hiking trails, mountain biking trails and areas of quad bike activity (visual inspection and fixed point photography)

4.8 OBJECTIVE 6: SOCIO-ECONOMIC ENVIRONMENT

Objective 6: *To optimize potential economic and social development opportunities compatible with the MPE, and to conserve the MPE's ability to provide and support these opportunities.*



Attractive area for eco-tourism



Attractive area for eco-tourism

Justification for the objective

The status quo analysis highlighted the following important strategic issues relating to the socio-economic environment:

- Current demand for employment opportunities is high, as indicated by unemployment rates of 32.2% and 41.6% for Rustenburg LM and Madibeng LM respectively.
- Future demand for employment opportunities in the region will be high. With 9.2% of the population being 4 years of age or younger, and a further 29.6% between 5 and 19 years the area has a very youthful age structure. This implies that large numbers of currently young people will be seeking employment opportunities over the next 5-10 years.
- The economy of the region, although growing rapidly is not sufficiently diversified and highly dependent on the mining sector.

The specific contribution of the MPE in relation to the socio-economic environment can be summarised as follows:

- The MPE can potentially play an important role in direct employment creation in the eco-tourism sector, with indirect and induced job creation and investment.



- A clearly defined vision of eco-tourism development will provide a motive to conserve or maintain an aesthetically pleasant environment. This will directly benefit land owners and communities living in and around the MPE.
- Economic activities associated with the MPE may play an important role in diversification of the local economy and reduce dependency on the mining sector. It should be kept in mind that the MPE is not a non-renewable resource as is the case of mineral resources. The MPE may continue to provide economic benefits to the region (if the MPE are properly conserved) in the long term.

Sub-objective	Targets	Indicators
Objective 6.1: To encourage all eco-tourism establishments within and around the MPE to promote the social and environmental education and awareness opportunities of the MPE.	<ul style="list-style-type: none"> • 80% of tourism establishments/facilities within the MPE providing environmental education on the Magaliesberg (e.g. interpretative signage, informative guided tours, booklets, environmental centers, etc) by 2010. 	<ul style="list-style-type: none"> • Report on the reach, extent, quality, informativity and aesthetics regarding tourism and environmental awareness signage, publications and other forms of awareness creation measures.
Objective 6.2: To promote the sustainable development and utilisation of environmentally sensitive eco-tourism and related opportunities in the MPE and surrounding areas.	<ul style="list-style-type: none"> • Targets to be devised in consultation with relevant organizations such as tourism associations, municipalities, NW Parks and Tourism Board, etc. 	<ul style="list-style-type: none"> • Number of eco-tourism activities in the MPE and surrounding areas. • Number of employment opportunities in eco-tourism sector. • Annual visitors to tourism facilities in MPE and surrounding 2,5km buffer.
Objective 6.3: To utilize heritage resources for tourism and educational purposes where possible.	By 2010: <ul style="list-style-type: none"> • All heritage resources with significant tourism potential within the MPE, should be identified and linked to NW SAHRA database. • System to provide land owners or local tourism entrepreneurs with advice or other forms of support on 	<ul style="list-style-type: none"> • Number, location and significance of heritage resources within the MPE; • Case studies of innovative uses of buildings and sites of heritage value, aimed to protect those heritage resources.



	management of local heritage resources.	
Objective 6.4: To promote the importance of conservation, the value of the Magaliesberg, and environmental best practice amongst land owners.	<ul style="list-style-type: none">• 50% of land owners actively involved in conservation initiatives by 2012.	<ul style="list-style-type: none">• Indicators to measure the promotion of conservation, environmental best practice and local community involvement amongst land owners.
Other important points to consider: <ul style="list-style-type: none">• Intersectoral competition between eco-tourism and other local industries (competing for land, natural resources, human resources, finance, etc.) should be investigated during environmental impact assessments and other processes. Other industries may have a negative impact on eco-tourism and conservation activities and may severely reduce the scenery and tourism potential of the Magaliesberg landscape.		



5 MANAGEMENT GUIDELINES

5.1 SPATIAL MANAGEMENT ZONES

5.1.1 Introduction and Approach

One of the components of the Environmental Management Framework is to identify spatial management zones which signify areas of particular environmental or ecological significance and which may require special attention. This approach is also in line with the contents of Chapter 8 of the Environmental Impact Assessment Regulations of 2006. Section 69 of these regulations makes provision for the compilation of information and maps which specify the attributes of the environment in a particular geographical area and for such maps to be used as environmental management frameworks.

As indicated earlier in the points of departure outlined in Section 2, the entire MPE area is regarded as a sensitive area. However for the purposes of evaluating the relative sensitivity, a number of criteria have been utilized to classify the area in terms of “*sensitive*”, “*highly sensitive*” and “*areas with exceptional conservation value*”. This also implies that all applications for any form of development not classified as “compatible activities” (Table 5.2) will require a full Environmental Impact Assessment subject to the specific guidelines and studies as more fully outlined in Section 6.

The methodology adopted for the **determination of Spatial Management Zones** within the MPE included the following steps:

- Determining **parameters/ variables** for use in analysis (e.g. vegetation types, etc).
- Undertaking an **assessment of existing available data**. For the purposes of Spatial modelling it is necessary to have information available at similar levels of detail across the entire study area. In many instances potential parameters and variables were identified for use in the modelling process but the non-availability of appropriate data across the study area mitigated against the practical use of these variables in the modelling process.



- **Compile and integrate** a set of **base data** to be used for spatial analysis purposes.
- **Scoring** and **weighting** of variables. This include the assessment of the relative importance of the indicators in relation to one another (weighting) as well as the analysis of the different classes within each indicator (scoring).
- **Spatial analysis and modeling.**
- Identification and mapping of potential **Management Zones**.

5.1.2 Identification and relative importance of indicators

A number of factors were identified which, in combination, will contribute to a specific level of sensitivity at any particular location. The key variables for which information is generally available at a similar level of detail and scale across the entire study include the following:

- Extent to which areas is affected or already impacted on by development activities (e.g. build up areas, agriculture activities, structures, roads and tracks, etc.)
- Vegetation/Habitat type
- Threatened/near threatened species potentially associated with various habitat types
- Perennial and non-perennial rivers and streams
- Pans and dams
- Heritage sites
- Wetlands

Ideally, location specific ecological and biodiversity information is a key indicator. However, detailed site specific information is simply not available for the entire extent of the mountain and selected point data based on available information can thus not be applied across the entire study area. This factor has however been incorporated to some extent into the above set of criteria through the identification of the potential occurrence of threatened and near-threatened species likely to be associated with the different vegetation categories.

A brief rationale for selecting the variables is outlined below.



(i) Vegetation/habitat type and occurrence of threatened/near-threatened species

Sensitivity values were allocated to the various vegetation categories based on the relative sensitivity, and likelihood of occurrence of identified threatened and near-threatened species within each of these habitats.

(ii) Wetlands

Areas identified as wetlands from satellite imagery, topographical maps and sample survey areas were assumed to be areas of high environmental sensitivity.

(iii) Heritage and Archaeological Sites

The location of these areas have a significant environmental and social value. There is also a legal imperative to protect these features. A buffer of 50m around known cultural or heritage sites with a site specific coordinate was included in this analysis.

(iv) Extent of areas affected or transformed by development

Parts of the study area have been transformed through various forms of development activities including agriculture, various forms of urban development, mining/quarrying, commercial uses, roads and tracks, and other structures. The extent to which a specific location and its immediate surroundings has been affected is thus an important indicator of the natural state of the environment, and areas not affected by any development activities were thus accorded a higher environmental value.

(v) Pans and Dams

It is assumed that all areas immediately surrounding natural pans and manmade dams are likely to be characterized by higher levels of biodiversity.

(vi) Rivers and Streams

A buffer of 32m on either side of perennial and non-perennial streams and rivers were assumed as potentially sensitive areas (both from a water quality and riparian vegetation perspective).



The weighting (relative importance) attached to the various indicators (on a scale of 1 to 5) is summarized below. Each class or category within each variable outlined below were also scored using a scale of 1 to 5.

Table 5.1: Weighting of selected indicators

Indicator	Relative Weight
Extent of transformed areas	2
Vegetation/habitat type	4
Wetlands	5
Heritage Sites	3
Pans and Dams	5
Rivers and Streams	5

1= Very Low importance relative to other variables

2= Low importance relative to other variables

3= Medium importance relative to other variables

4= High importance relative to other variables

5= Very high importance relative to other variables

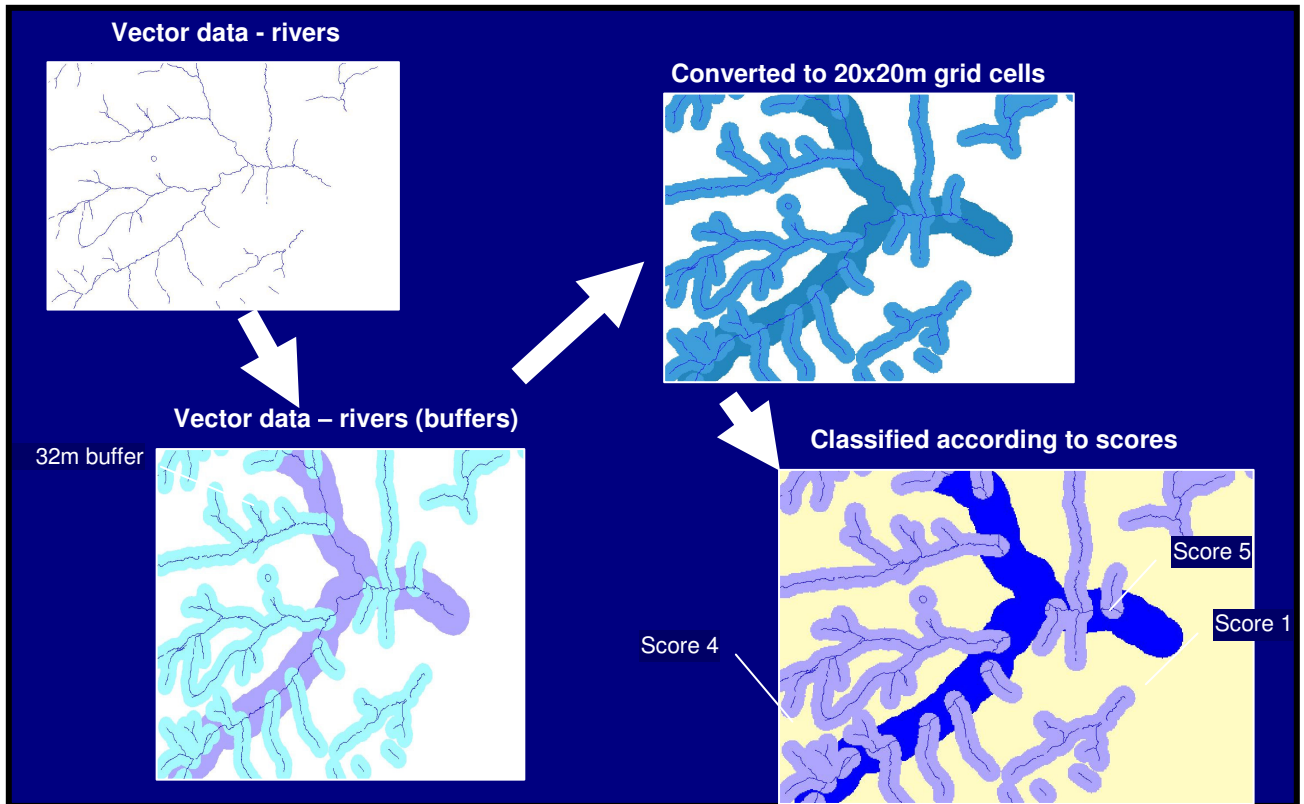
5.1.3 Spatial Analysis and Modeling

A spatial grid-cell analysis procedure was conducted whereby each of the variables outlined above was weighted and individual categories within each of the variables provided with a score on a similar scale of 1 to 5.

The GIS modeling procedure that was utilized in the above process can be summarized as follows:

- Compilation of relevant spatial data for each selected variable (Vector format).
- Conversion of vector data into grid cell format. For spatial modeling purposes a grid cell size of 20 x 20m was utilized.
- Reclassification of grid cell values for grid themes based on the evaluation of the various classes within each variable.
- Map algebra utilizing the grid cell values, as well as the relative importance of each variable (weight), to determine an overall potential sensitivity value for each grid cell.

Figure 5.1: Schematic representation of grid cell analysis



The resulting overall value was used as a basis for classification of the study area in terms of its relative environmental sensitivity. These relative environmental sensitivity values were classified into three categories according to equal intervals within the calculated overall sensitivity values. The results of this process are illustrated on the attached thematic map.



5.2 ACTIVITY DESCRIPTION FRAMEWORK

One of the key components of an Environmental Management Framework is to indicate the type of activities that would have a significant impact on the environmental attributes described in the status quo report and depicted on the environmental sensitivity map, and those that would not, and to indicate the types of activities that would be undesirable in the area or specific parts of the area (also refer to Section 71 of the Environmental Impact Assessment Regulations of 2006). Having established a set of overall development objectives to support the long term vision of the MPE, and having outlined environmental sensitivity zones based on a combination of environmental criteria, it is necessary to identify those activities that will be compatible with the various environmental sensitivity zones and indicate the extent to which they will support implementation of the identified objectives.

To ensure the compatibility of the EMF with existing legislation and Land Use Management Systems, the definition of activities are based on existing legal definitions contained in legislation and other guidelines relevant to the MPE. These include the Administrators Notices 126 and 127 of 1994, the Rustenburg Land Use Management Scheme of 2005, the listed activities in Government Notices R386 and R387, and other definitions from relevant legislation. Part of the Magaliesberg MPE falls within the Madibeng Local Municipality which currently utilizes four different town planning schemes i.e. the Brits, Kosmos, Hartebeespoort and Peri urban planning schemes. The Madibeng LM is currently in the process of finalizing and promulgating a new land use management scheme for the Madibeng area. The definitions used in the table below were thus mainly drawn from the Rustenburg Land Use Management Scheme which was prepared in 2005 and thus provides more recent definitions than the existing town planning schemes currently in operation in the Madibeng area.

The intention is that relevant decision making authorities would use the activity description framework outlined below, together with the environmental sensitivity mapping, and the development objectives to consider the compatibility and desirability of different types of development activities at different locations within the study area. This will provide a first screen of the compatibility of specific types of development activities at various locations and associated environmental authorization requirements.



The following three steps are required in the application and interpretation of the activity framework:

- **Step 1: Locate activity on activity list:**

The first step would be to locate the proposed activity on the activity list and determine if it is classified as “*compatible*”, “*potentially compatible*” or “*incompatible*”. All activities considered compatible could commence without an environmental authorization. Activities listed as “*potentially compatible*” and “*non-compatible*” requires full EIA’s to be conducted. However, it is obvious that activities listed as “*incompatible*” will have a very limited chance of success and will most probably not be supported by the decision making authorities. Any activity not described in the attached table will also require a full EIA.

- **Step 2: Check the location of the activity in relation to the sensitivity zones:**

As already highlighted as a point of departure in Section 2, all areas within the MPE are considered sensitive. However, the different activities have also been evaluated in relation to the spatial location to provide a strategic level spatial perspective. The activities thus also need to be considered in relation to spatial distribution at various levels of environmental sensitivity.

- **Step 3: Consider activity against strategic objectives:**

The different activities have also been analyzed in terms of their alignment with the identified objectives for the MPE. Applications need to be considered against their contribution towards achieving certain objectives and/or their potential to negatively influence achieving the MPE objectives.



Table 5.2: Compatible activities

	Activity	Definitions	Source of definition	Sensitivity Mapping			Environmental Objectives					
				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Compatible Activities	Establishment of bioregions	Means a geographic region which has in terms of Section 40(1) of the NEMBA been determined as a bioregion	NEMBA S1	√	√	√	A	A	A	A	A	A
	Establishment of conservancies	Means – informally protected area that has been established on a voluntary basis including a registered game farm.	RLUMS S1.22	√	√	√	A	A	A	A	A	A
	Conservation	Means – activities normally or otherwise reasonably associated with the use of land for preservation or protection of the natural or built environment, including the preservation or protection of the physical, ecological, cultural or historical characteristics of land against undesirable change or human activity.	RLUMS S1.23	√	√	√	A	A	A	A	A	A
	Establishment of cultural heritage sites	This includes all world, national and provincial heritage sites (archaeological sites, graves, forts, rock art sites, battlefields, conservation worthy buildings as well as monuments, memorials and natural sites)	RLUMS S1.27	√	√	√	A	A	A	A	A	A
	Establishment of nature reserve	Means – an area declared, or regarded as having declared, in terms of S23 of the NEMPA	NEMPA: S1	√	√	√	A	A	A	A	A	A
	Farm Settlement	The use of land for homesteads for people living on a farm and are associated with the bona fide farming activities of that specific farm	RLUMS S1.46	√	Δ	Δ	B	B	B	B	A	A
	Game farming	Means any farming activity involving wild animals, including extensive (ranching) systems and systems where animals are fed (farming).	National Policy on game farming GG 28994 – 2006	√	Δ	Δ	B	B	B	A	A	A



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	Activity	Definitions	Source of definition	Sensitivity Mapping			Environmental Objectives					
				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
	Heritage conservation	Includes protection, maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance	NHRA S1	√	√	√	A	A	A	A	A	A
Compatible Activities	Livestock farming	Land that is used or intended to be used for infrastructure and land uses associated with farming of livestock on natural veld.	Adapted from RLUMS	√	△	△	B	B	B	A	B	A
	Minor structural alterations	Means small structural changes to an existing building for which a building plan is not required and which is smaller than the activities envisaged under "Construction or enlargement of buildings or structures".	RLUMS S1.89	√	√	√	A	A	A	A	A	A
	Protected areas	Means an area of land especially dedicated to the protection and maintenance of biological diversity and of natural and associated cultural resources and managed through legal or other effective means.	RLUMS S1.113	√	√	√	A	A	A	A	A	A
Spatial analysis:			Analysis against environmental objectives:									
√ = compatible location			A = positive contribution to achieving objective									
△ = potentially compatible location			B = potential negative impact on achieving objective									
X = incompatible location			C= negative impact on achieving objective									



Table 5.3: Potentially compatible activities

	Activity	Definitions	Source of definition	Sensitivity Mapping			Environmental Objectives					
				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Potentially Compatible Activities	Accommodation enterprises	Means a residential enterprise which can be conducted from rooms, without a kitchen of its own or a dwelling unit and which forms part of a dwelling unit which is not permanently occupied, used for accommodation of visitors on a temporary basis, subject to such requirements laid down by the relevant authority and may include concepts such as guest houses, bed and breakfast establishments and guest lodges.	Adapted from RLUMS S1.2	√	X	X	B	B	B	B	A	A
	Camping	Land provided with adequate ablution facilities for tenting or camping purposes.	RLUMS S1.16	△	△	X	B	B	B	B	A	A
	Construction or enlargement of buildings or structures	Erection of any structure or building which is higher than 2 meters, or enlargement of existing structures or buildings.	AN 127 - S1(a)	√	√	X	B	B	B	B	A	A
	Fencing	Erecting of fencing structures higher than 2m.	Derived from AN 127 - S1(a)	△	△	△	B	C	C	C	C	C
	Fire breaks	No official definition currently available.	To be determined	△	△	△	B	C	C	C	C	C
	Guest house	A residential enterprise which can be conducted from rooms within a dwelling unit and which forms part of a permanently occupied dwelling unit, used for the accommodation of visitors on a temporary basis, subject to such requirements laid down by the relevant authority but excludes uses included in the definition of a 'Hotel', 'Place of Refreshment', 'Teagarden', 'Restaurant', 'Place of Amusement', and 'Conference Facility', provided that: <ul style="list-style-type: none"> the owner or occupant of the dwelling unit shall reside on the property and shall also conduct the residential enterprise 	RLUMS S1.57	√	△	X	B	B	B	B	A	A



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	Activity	Definitions	Source of definition	Sensitivity Mapping			Environmental Objectives					
				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Potentially Compatible Activities		<ul style="list-style-type: none"> the guest house shall comprise of a maximum of eight (8) bedrooms (including the bedrooms utilised by the owner or occupant of the dwelling unit for personal use) a guest house shall not apply to a second dwelling unit the use shall not interfere with the amenity of the MPE the preparation and serving of food and meals shall be restricted to the inhabitants of the dwelling unit and guest house only 										
	Guest Lodge	<p>A residential enterprise, located within a rural area, which can be conducted from detached or attached rooms, without a kitchen of its own, or a <i>dwelling unit</i>, as approved by the <i>relevant authority</i> for the accommodation of visitors on a temporary basis, subject to such requirements laid down by the relevant authority but excludes uses included in the definition of a 'Hotel', 'Place of Refreshment', 'Teagarden', 'Restaurant', 'Place of Amusement', and 'Conference Facility', provided that:</p> <ul style="list-style-type: none"> the property shall retain its agricultural / rural character the <i>owner</i> / manager of the residential enterprise shall reside on the <i>property</i> and shall also conduct the residential enterprise the guest lodge shall comprise of a maximum of eight (8) guest rooms the use shall not interfere with the amenity of the MPE the preparation and serving of food and meals shall be restricted to the inhabitants of the <i>dwelling unit</i> and guest lodge only no permanent or long-term accommodation (three months or more) shall be permitted and no person (excluding the <i>owner</i> or <i>occupant</i> of the <i>dwelling unit</i>) shall reside on the <i>property</i> for a period in excess of three months in any one calendar year. 	RLUMS S1.58	√	X	X	B	B	B	B	A	A



	Activity	Definitions	Source of definition	Sensitivity Mapping			Environmental Objectives					
				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Potentially Compatible Activities		<ul style="list-style-type: none"> a <i>site development plan</i> be submitted to the relevant authority simultaneously with the submission of an application for the establishment of a guest lodge. <p>The establishment and operation of a guest lodge shall be subject to satisfactory arrangements having been made with regard to the provision of services to the guest lodge to the satisfaction of the relevant authority.</p>										
	Hiking trails	Means any hiking trails for outdoor recreational purposes.	AN 127 - S1(f)	√	√	√	B	B	B	B	A	A
	Home enterprise	<p>A small scale enterprise which is used by the <i>occupant</i> of a <i>dwelling unit</i> for the conducting of a practice or occupation with the aim of deriving income there from and which is practiced by a maximum of three (3) persons, of which at least one is a full time resident of the <i>property</i> subject to such requirements imposed by the relevant authority provided that –</p> <ul style="list-style-type: none"> the dominant use of the <i>property</i> shall remain agricultural; the business shall not exceed a <i>floor area</i> of 40m², which floor area shall include all storage areas; the business shall not be noxious; and the business shall not interfere with the amenity of the MPE; no title condition applicable to the <i>property</i> may be transgressed; 	RLUMS S1.62	√	√	√	B	B	B	B	A	A
	Place of refreshment	includes inter alia a <i>teagarden</i> or coffee shop and means a <i>building</i> which is not a <i>hotel</i> , residential club or boarding house, but which is designed and used for the preparation and serving and/or retail sale of meals, food, beverages and refreshments and may include the retail	RLUMS S1.108	√	X	X	B	B	B	B	A	A



	Activity	Definitions	Source of definition	Sensitivity Mapping			Environmental Objectives					
				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Potentially Compatible		sale of cold drinks, tobacco, reading material, dainties and sweets, but excluding a <i>hotel</i> , <i>accommodation enterprise</i> , <i>guest house</i> , <i>drive-in restaurant</i> and <i>drive-thru-restaurant</i> provided that the establishment and operation of a place of refreshment for the sale or supply to customers of any foodstuff in the form of meals for consumption on or away from the <i>property</i> shall be subject to a licence in terms of the Business Act, 1991 (Act 71 of 1991).										
	Private open space	Private <i>land</i> used for open space of for a sport-, play-, rest- and recreational ground or as an ornamental garden to which the general public does not have right of access except by consent..	RLUMS S1.110	√	△	X	B	B	B	A	A	A
	Public open space	<i>Land</i> used or intended for use by members of the public as undeveloped land, a park, garden, conservation area, a playground, or recreation ground.	RLUMS S1.115	√	△	X	B	B	B	A	A	A
	Recreation	Means any <i>land</i> earmarked for use as private or public recreation site including any <i>building</i> , structure or facility appurtenant thereto but excluding 4X4 tracks and quad bikes.	Adapted from RTPS S1.118	√	△	△	B	B	B	B	A	A
	Roads	To be determined based on classification of tracks, and access roads and width thereof		√	X	X	B	B	B	B	A	A
	Teagarden	Means <i>land</i> and a <i>building</i> designed and used for the preparation or retail sale of meals and refreshments, but does not include a " <i>Restaurant</i> " or " <i>Place of Refreshment</i> ". The area used for a teagarden may be restricted by the relevant authority, provided that the establishment and operation of a teagarden for the sale or supply of any foodstuff in the form of meals for consumption on or away from	RLUMS S1.153	√	X	X	B	B	B	B	A	A



	Activity	Definitions	Source of definition	Sensitivity Mapping			Environmental Objectives					
				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
		the <i>property</i> shall be subject to a licence in terms of the Business Act, 1991 (Act 71 of 1991).										
	Wildlife rehabilitation centre	[Definition to be finalized as part of the drafting of Regulations for the MPE]		√	X	X	B	B	B	B	B	A
Spatial analysis: √ = compatible location △ = potentially compatible location X = incompatible location			Analysis against environmental objectives: A = positive contribution to achieving objective B = potential negative impact on achieving objective C= negative impact on achieving objective									



Table 5.4: Incompatible activities

	Activity	Definitions	Source of definition	Sensitivity Mapping			Environmental Objectives					
				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Incompatible activities	Abattoir	Means a slaughtering facility, whether stationary or mobile, at or on which animals are slaughtered or intended to be slaughtered, and includes areas in or adjacent to such facilities where carcasses are chilled and meat or animal products are handled and in respect of which a registration certificate has been issued in terms of section 8(1) of the Meat Safety Act, (Act 40 of 2000) and in respect of which a grading has been determined in terms of section 8(2) of the said Act.	RLUMS S1.1	X	X	X	C	C	C	C	C	C
	Aerodrome	Means land used or a building designed or used for the landing, departure, storage and maintenance of aircraft and may include landing fields, runways, taxiways, heliport, hangars, control towers, fuel storage and supply areas, public enclosures as well as such training facilities.	RLUMS S1.3	X	X	X	C	C	C	C	B	B
	Agri-industries	Means an undertaking involving the production, processing, manufacture, packaging or storage of agricultural produce and includes battery farm operations that are under one roof.	EIA Regs GN 386 - S1	X	X	X	C	C	C	C	C	C
	Aquaculture	Means the farming of animals and plants in an aquatic environment.	EIA Regs GN 386 - S1	X	X	X	C	C	C	C	C	C
	Bakery	Means a building in which bread, rusks, biscuits, pies, pastries, confectionery and other baked products are produced in bulk for distribution to wholesalers and/or retailers.	RLUMS S1.7	X	X	X	C	C	C	C	C	C
	Caravan Park	Land provided with adequate ablution facilities for temporary accommodation of mobile dwelling units.	RLUMS S1.16	X	X	X	B	B	B	B	A	A
	Cemetery	Means land and buildings used for the purpose of a cemetery and may include buildings used as a mourning chapel, crematory, wall of	RLUMS S1.17	X	X	X	C	C	C	C	C	C



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	Activity	Definitions	Source of definition	Sensitivity Mapping			Environmental Objectives					
				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Incompatible activities		remembrance, as well as such subservient buildings used in connection with the maintenance of the cemetery.										
	Conference facility	Means a <i>building</i> designed for use or used as a temporary lecture hall, training facility, conducting of workshops, meetings, conferences, symposiums and related uses, but does not include a " <i>Place of Instruction</i> ". The area used for a conference facility may be restricted by the <i>relevant authority</i> , and is further subject to the policy of relevant authority as amended from time to time.	RLUMS S1.20	X	X	X	C	C	C	B	B	B
	Construction of bulk infrastructure	Means the construction of (bulk) roads, power lines, canals, reservoirs, cable ways or structures for radio- and telecommunication purposes.	AN 127 - S1(c)	X	X	X	C	C	C	C	B	B
	Country estates	The provision of dwelling houses (non-permanent as well as permanent occupation) for full title or sectional title development – nature orientated – on agricultural land or municipal land.	DDLGH Policy S4	X	X	X	C	C	C	B	B	B
	Crematorium	Means a <i>building</i> equipped with the necessary specialized equipment used for a cremation, including all equipment reasonably necessary or appurtenant thereto and includes any structure approved by the relevant authority under special circumstances as cremation subject to the provision of the Crematoriums Act, 1965 (Act 18 of 1965).	RLUMS S1.26	X	X	X	C	C	C	C	C	C
	Cultivation of virgin soil	Means the transformation of land for cultivation of virgin soil.	Revised EIA Regs GN 386 Act15(c)	X	X	X	C	C	C	C	C	C



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	Activity	Definitions	Source of definition	Sensitivity Mapping			Environmental Objectives					
				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Incompatible activities	Drive-in-restaurant	<i>Land used or a building designed or used as a place of refreshment from where food and refreshments are served to clients who are, inter alia, seated in parked vehicles for consumption on or away from the concerned property provided that the establishment and operation of a Drive-in-restaurant for the sale or supply to customers of any foodstuff in the form of meals for consumption on or away from the property shall be subject to a licence in terms of the Business Act, 1991 (Act 71 of 1991).</i>	RLUMS S1.31	X	X	X	C	C	C	C	C	C
	Drive-through restaurant	<i>Land used or a building designed or used as a place of refreshment from where food and refreshments are sold and served to clients in vehicles for consumption away from the concerned property provided that the establishment and operation of a Drive-thru-restaurant for the sale or supply to customers of any foodstuff in the form of meals for consumption away from the property shall be subject to a licence in terms of the Business Act, 1991 (Act 71 of 1991).</i>	RLUMS S1.32	X	X	X	C	C	C	C	C	C
	Electrical purposes	Means <i>land</i> used or a <i>building</i> designed or used for the purposes of electricity services and more specifically for the purpose of Eskom, provided that any other institution that supplies a similar or complimentary service can be accommodated on the <i>erf</i> or <i>building</i> with the <i>special consent</i> of the relevant authority.	RLUMS S1.36	X	X	X	C	C	C	C	C	C
	Excavation	Means the initiation of any excavation of any nature.	AN 127 - S1(d)	X	X	X	C	C	C	C	C	C
	Factory	A factory as defined in the Act on Machinery and Professional Safety (Act 6 of 1983) or any amendment thereof.	RLUMS S1.44	X	X	X	C	C	C	C	C	C



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				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Incompatible activities	Feedlot	Means the concentration of animals for the purpose of commercial production.	EIA Regs GN 386 Act15(c)	X	X	X	C	C	C	C	C	C
	Filling station	<i>Land</i> used or a <i>building</i> designed or used for the purposes of the fuelling, washing, polishing and lubrication of motor vehicles, including incidental and routine maintenance but excluding a " <i>Public Garage</i> ", panel beating, spray-painting and major repairs and can include the retail trade of emergency spare parts and auxiliary items as a complimentary subservient service as well as a convenience store of which the area, including store rooms, shall not exceed a total area of 100m ² (or such other floor area as approved by the relevant authority with <i>Special Consent</i>), provided that if any other area is stipulated by any approving authority, the most prohibitive condition shall prevail.	RLUMS S1.47	X	X	X	C	C	C	C	C	C
	Government purposes	<i>Land</i> used or <i>buildings</i> designed or used for government or <i>municipal purposes</i> which may include communal facilities provided by the Government or the <i>relevant authority</i> .	RLUMS S1.53	X	X	X	C	C	C	C	C	C
	Golf estate	Official definition to be determined		X	X	X	C	C	C	C	C	C
	Group housing	A group of detached and / or attached <i>dwelling units</i> on a stand or stands that form an integrated, harmonious and architectural unit and include concepts like group housing, townhouses, simplexes, duplexes and all such development.	RLUMS S1.56	X	X	X	C	C	C	C	C	C
	Gymnasium	A business where people do physical and aerobic exercises with or without apparatus.	RLUMS S1.59	X	X	X	C	C	C	C	C	C



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				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Incompatible activities	Hotel	An <i>accommodation enterprise</i> that is registered as a Hotel by virtue of Section 1 of the Act on Hotels 1965 (Act 70 of 1965) as amended (including but not limited to budget hotels such as Town-, City-, and Road Lodges) and includes <i>places of amusement</i> .	RLUMS S1.63	X	X	X	C	C	C	C	B	B
	Industry	The use of <i>land</i> or a <i>building</i> for a <i>factory</i> , distributing depot, wholesale, storage, warehouse for the storage of wholesale merchandise, carting and transport services, laboratories, workshop and <i>vehicle workshop</i> and may also include <i>offices</i> which are normally associated with or which are reasonably essential for the main use as well as the sale of goods wholly or partially manufactured, processed or packed on the <i>property</i> .	RLUMS S1.64	X	X	X	C	C	C	C	C	C
	Informal rural settlement	Settlement situated on private, tribal or state land. Settlement is not planned or surveyed. Ownership is communal and is managed by a <i>communal property association</i> or <i>tribal authority</i> .	RLUMS S1.66	X	X	X	C	C	C	C	C	C
	Informal structure	Residential shelter of a temporary nature in accordance with the provisions of the Act on National Building Regulations and Building Standards, 1977 (Act 103 of 1977) and any amendments thereof subject to the provisions of Clause 27.	RLUMS S1.67	X	X	X	C	C	C	C	C	C
	Installation of bulk pipelines	Means the installation of any (bulk) water-, fuel- or mineral pipeline	AN 127 - S1(b)	X	X	X	C	C	C	C	C	C
	Kennels	Means <i>land</i> used for the purpose of keeping, breeding, accommodating and lodging of any domestic animal.	RLUMS S1.71	X	X	X	C	C	C	C	C	C
	Light industry	A use, which, in the opinion of the <i>relevant authority</i> is a small-scale industry, with emphasis on non-noxious production activities,	RLUMS S1.79	X	X	X	C	C	C	C	C	C



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	Activity	Definitions	Source of definition	Sensitivity Mapping			Environmental Objectives					
				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Incompatible activities		maintenance and repair, as well as <i>retail trade</i> in connection therewith, and may include <i>offices</i> which are related directly to and are complementary to the main use.										
	Liquor activities	<i>Land</i> used or a <i>building</i> designed or used for the purpose of carrying on <i>retail trade</i> in liquor products as defined in terms of section 2(1)(xv) of the Liquor Act, 1989 (Act 27 of 1989) and in any amendments thereof, for consumption off the licensed premises and includes uses requiring brewers licenses, liquor store licenses, sorghum beer brewer's licenses, sorghum beer licenses for off-consumption and special licenses for off-consumption as defined in terms of Chapter 8 of the Liquor Act, 1989 (Act 27 of 1989) but excludes uses requiring grocers' wine licenses as defined in terms of Chapter 8, Sections 87 to 90 of the Liquor Act, 1989 (Act 27 of 1989) and in any amendments thereof.	RLUMS S1.80	X	X	X	C	C	C	C	C	C
	Livestock yard	<i>Land</i> used or a <i>building</i> designed or used for the keeping of and retail / wholesale in livestock including inter alia horses, mules, goats, pigs, poultry, ostriches and other animals or birds for human consumption or of a domestic nature but excludes activities included in the definitions of " <i>agri-industries</i> ", " <i>abattoirs</i> " and " <i>feedlots</i> ".	RLUMS S1.82	X	X	X	C	C	C	C	C	C
	Mining	Means activities that under the Mineral and Petroleum Resources Development Act, (28 of 2002) and any amendments thereof, are used or designated for mining and / or exploitation of minerals, or for which purpose a permit has been issued under the aforementioned Act and includes such uses directly related and appurtenant to the use of the land and buildings for mining purposes.	RLUMS S1.87	X	X	X	C	C	C	C	C	C
	Mobile grave yard	Means <i>land</i> used or a <i>building</i> designed or used for the purposes of dumping and abandoning disused motor vehicles and parts thereof.	RLUMS S1.91	X	X	X	C	C	C	C	C	C



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	Activity	Definitions	Source of definition	Sensitivity Mapping			Environmental Objectives					
				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Incompatible activities	Nursery	<i>Land used or buildings designed or used for the purposes of growing plants or seed for horticulture, growing of vegetables, flowers or any other shrub or tree or the purchasing of plants and / or retail trade therein, including subservient retail trade in related and non-motorized gardening equipment, garden furniture or decorations as well as irrigation equipment, excluding however agricultural equipment.</i>	RLUMS S1.94	√	X	X	B	B	A	B	B	B
	Panel beating	The replacement, reparation and/or panel beating of the body and spare parts of vehicles and / or the spray-painting thereof.	RLUMS S1.100	X	X	X	C	C	C	C	C	C
	Peat extraction (harvesting, mining)	To be determined		X	X	X	C	C	C	C	C	C
	Place of amusement	<i>Land used or a building designed for or used as a public hall, theatre, cinema, music hall, concert hall, billiards saloon, sports arena / stadium, skating rink, dance hall, amusement park, gambling place or non-residential club - or for other recreational purposes, or for trade- or industrial exhibitions or for pinball machines or electric games with more than three (3) machines, provided that the use of land or a building designed for or used for an amusement facility as contained in Schedule 1 (Item 2) of the Business Act, 1991 (Act 71 of 1991) (Refer Schedule E) shall be subject to a licence as set out in the Act. Provided further that the use of the land or a building for the purposes of a gambling place shall be subject to a licence in terms of the North West Gambling Act, 2001 (Act 2 of 2001) as amended from time to time / or in any amendments thereof.</i>	RLUMS S1.106	X	X	X	C	C	C	C	C	C



	Activity	Definitions	Source of definition	Sensitivity Mapping			Environmental Objectives					
				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Incompatible activities	Place of instruction	A <i>building</i> designed for use as a school, college, technical or academic institution, crèche, lecture hall, nursery school, after school care centre, or other educational centre and a hostel in connection therewith and includes a convent or monastery, a library, art gallery and a museum.	RLUMS S1.107	X	X	X	C	C	C	C	C	B
	Public resorts	Means to provide chalets, caravan park, camping, etc. (non-permanent occupation) and recreational facilities to rent out to the public on weekends and holidays – nature orientated	DDLGH Policy S4	X	X	X	B	B	B	B	A	A
	Private resorts	Means to provide dwelling units (non permanent occupation) for sectional title development – nature orientated – on agricultural land or municipal land.	DDLGH Policy S4	X	X	X	C	C	C	C	B	B
	Public garage	A <i>building</i> used, with a view to profit, for the maintenance, repair or fuelling of vehicles and associated purposes, and may include a <i>vehicle workshop</i> , the display and sale of new and used motor vehicles, the cleaning and washing thereof, the sale of spare parts, accessories, fuel and lubricants and may also include a <i>place of refreshment</i> and convenience store as subservient use but excludes spray-painting, <i>panel beating</i> or a <i>scrapyard</i> , provided that the convenience store and <i>place of refreshment</i> , including store rooms, shall not exceed a total area of 100m ² (or such other floor area as approved by the relevant authority, provided that if any other area is stipulated by any approving authority the most prohibitive condition shall prevail.	RLUMS S1.114	X	X	X	C	C	C	C	C	C
	Public worship	A <i>building</i> designed for use or used as a church, chapel, oratory, prayer house, mosque, synagogue or other place of public devotion, and includes a <i>building</i> designed to be used as a place of religious institution and / or a <i>building</i> designed for social intercourse and recreation on the same <i>property</i> as and associated with any of the foregoing <i>buildings</i> .	RLUMS S1.116	X	X	X	C	C	C	C	C	C



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	Activity	Definitions	Source of definition	Sensitivity Mapping			Environmental Objectives					
				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Incompatible activities	Quad bike trails/ facilities	To be determined		X	X	X	C	C	C	C	C	C
	Railway purposes	Means the use of <i>land</i> or a <i>building</i> designed or used for railway purposes and for a telecommunication reception base station, including a mast.	RLUMS S1.117	X	X	X	C	C	C	C	C	C
	Restaurant	Means a <i>building</i> or part of a <i>building</i> used for the preparation and sale of meals and refreshments, as well as confectionery for consumption on the <i>erf</i> or the <i>property</i> and includes entertainment subsidiary to the main use and can include a <i>place of refreshment</i> , as well as a <i>drive-thru restaurant</i> provided that the establishment and operation of a Restaurant for the sale or supply to customers of any foodstuff in the form of meals for consumption on or away from the <i>property</i> shall be subject to a licence in terms of the Business Act, 1991 (Act 71 of 1991).	RLUMS S1.121	X	X	X	C	C	C	C	C	C
	Retirement village	Includes <i>dwelling units</i> and community facilities such as a dining hall, sickbay, sport and recreation facilities or such other facilities, approved by the <i>relevant authority</i> , for occupancy and use by elderly people.	RLUMS S1.123	X	X	X	C	C	C	C	C	C
	Scrapyard	<i>Land</i> or <i>buildings</i> used as a scrapyard or for the dismantling, stacking, storing or preparing for resale of any used material, waste metal, scrap vehicles, scrap machinery or any other scrap material whether or not such dismantling or stacking is done with a view to disposal or re-use of such waste.	RLUMS S1.132	X	X	X	C	C	C	C	C	C
	Semi formal rural settlement	Settlement situated on private, tribal or state land. Settlement is planned and surveyed. Ownership is communal and is managed by a <i>Communal Property Association</i> or <i>Tribal Authority</i> .	RLUMS S1.134	X	X	X	C	C	C	C	C	C



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	Activity	Definitions	Source of definition	Sensitivity Mapping			Environmental Objectives					
				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Incompatible activities	Shop	<i>Land</i> used or a <i>building</i> designed or used for the purpose of carrying on <i>retail trade</i> and the necessary accompanying storage and packing and includes any accompanying uses on the same <i>property</i> appurtenant but ancillary to the <i>retail trade</i> being carried on. The following uses are not regarded as appurtenant to a shop: a “ <i>noxious use</i> ”, “ <i>drive-in-restaurant</i> ”, “ <i>place of refreshment</i> ”, “ <i>drive-thru restaurant</i> ”, “ <i>liquor enterprise</i> ”, “ <i>scrapyard</i> ”, and “ <i>filling station</i> ”.	RLUMS S1.137	X	X	X	C	C	C	C	C	C
	Signage	Means the making of any name, message or sign by means of lime or paint on the ground.	AN 127 - S1(g)	X	X	X	C	C	C	C	C	C
	Social hall	A <i>building</i> designed for use, or used for cultural activities, social meetings, gatherings and recreational purposes, that is not profit seeking in its primary purpose, and includes a non-residential / <i>private club</i> but excludes a <i>place of amusement</i>	RLUMS S1.140	X	X	X	C	C	C	C	C	C
	Sub-division of land	The sub-division of portions of land 9ha or larger into portions of 5ha or less	EIA Regulations GN 386	X	X	X	C	C	C	C	B	B
	Tavern	Means <i>land</i> or a <i>building</i> designed for or a portion of a <i>building</i> used for the purposes of selling and serving liquor, other beverages and subservient prepared food / snacks, to be consumed on the premises but excluding a <i>place of amusement</i> , provided that the establishment and operation of a tavern shall be subject to a licence in terms of the Liquor Act, 1989 (Act 27 of 1989) as well as a licence in terms of the Business Act, 1991 (Act 71 of 1991) in respect of the sale or supply to consumers of any foodstuff in the form of meals for consumption on the <i>property</i> .	RLUMS S1.149	X	X	X	C	C	C	C	C	C
	Taxi holding area	Means an area, usually off-street, where mini buses (taxis) hold before proceeding to loading points and where generally there is no passenger activity. A holding area can either be included within or separate from a <i>taxi rank</i> .	RLUMS S1.150	X	X	X	C	C	C	C	C	C



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				Sensitive	Highly Sensitive	Areas with Exceptional Conservation Value	1	2	3	4	5	6
Incompatible activities	Taxi parking area	Means a demarcated part of a parking lot which may be used by minibuses (taxis) aiming to provide a public transport service.	RLUMS S1.151	X	X	X	C	C	C	C	C	C
	Taxi rank	Means a place at which mini busses (taxis) and busses are allowed to wait and / or stop for passengers boarding or alighting.	RLUMS S1.152	X	X	X	C	C	C	C	C	C
	Telecommuni-cation	Means <i>land</i> used or a <i>building</i> designed or used for the purposes of telecommunication services and includes telephone exchanges, telecommunication masts and related infrastructure.	RLUMS S1.154	X	X	X	C	C	C	C	C	C
	Transport uses	Means the use of <i>land</i> and / or <i>buildings</i> for the operation of a business consisting of the transportation of goods and/or passengers by rail, air, road and pipelines and includes uses such as stations, transportation amenities and facilities, parking, administrative offices and ancillary uses such as warehouses, container parks, workshops as well as residential uses and amenities for personnel, and may further include any uses such as <i>shops</i> or <i>offices</i> which are of service and convenience to passengers, as approved by the relevant authority.	RLUMS S1.157	X	X	X	C	C	C	C	C	C
	Waste disposal	Means the construction of any waste disposal site or the dumping of any litter or waste	AN 127 - S1(e)	X	X	X	C	C	C	C	C	C
	Wholesale trade	The sale of goods or produce in large quantities to other retailers and excludes sales to the general public.	RLUMS S1.165	X	X	X	C	C	C	C	C	C
Spatial analysis:			Analysis against environmental objectives:									
√ = compatible location			A = positive contribution to achieving objective									
△ = potentially compatible location			B = potential negative impact on achieving objective									
X = incompatible location			C= negative impact on achieving objective									



6 GUIDELINES FOR USE IN EIA PROCESS

The purpose of an EMF as described in legislation mainly relates to the screening and evaluation of EIA applications. This section aims to provide guidelines on how the EIA process should be managed with the assistance of the EMF, as well as providing guidelines for required content of EIA's. As stated in previous sections, the entire MPE is regarded as sensitive and all activities not included in the description of "*compatible activities*" in Table 5.2 require a full EIA process, including as a minimum the specialist studies outlined in Section 6.2, relevant to the specific application.

6.1 EIA PROCESS

The so-called full EIA process is prescribed in the EIA Regulations (No. R 385) under sections 27 to 36 as "*Applications subject to scoping and environmental impact assessment*". Since the EIA process described in the regulations is legally binding it is not within the mandate of the EMF to change the process. However, this section provides some additional considerations for the decision-making framework linked to the different EIA phases, which are important to improve coordinated decision making through co-operative governance within provincial government, as well as between different spheres of government. Figure 6.1 illustrates the recommended EIA process for applications within the MPE.

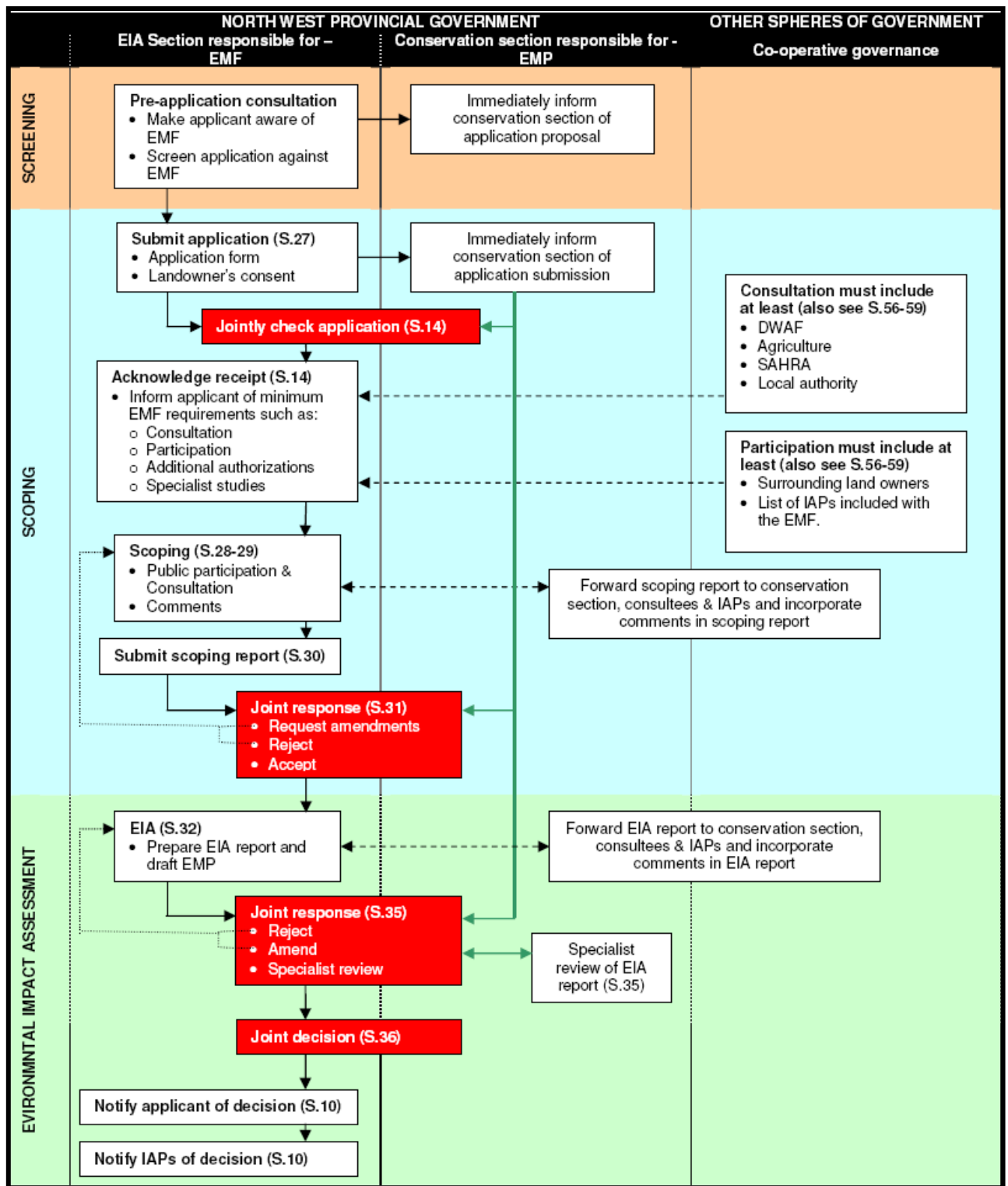
6.1.1 Who must be involved?

The main role players with regards to the evaluation of development authorizations within and around the MPE are:

- The provincial environmental authority, EIA section - with the mandate to implement the provisions of the EIA regulations. This implies that they are responsible for the application of the EMF and also the administration and evaluation of the EIA process which culminates in a final decision in the form of a Record Of Decision.
- The provincial environmental authority, conservation section - with the mandate to manage the MPE in accordance with the defined environmental objectives and other provisions contained in the EMF. It is recommended that the conservation section be based in Rustenburg which will ensure good access to the MPE, as well as provide an ideal location from where to interact with stakeholders concerned with the management of the MPE.



Figure 6.1: Process diagram for consideration of EIA applications in the MPE





- Other spheres of government - responsible for different authorizations related to water, heritage resources, land use change, etc.
- Key representative bodies and IAP's with an interest in the MPE. These IAP's need to be consulted as part of any development application.

It is imperative that these agencies be involved from an early stage in any development decision (see Section 2 of status quo document for summary of authorization agencies). It is thus evident that any authorization process for development within the MPE will require:

- i) horizontal co-operation within the provincial government with specific reference to the EIA section and the conservation section;
- ii) co-operative governance between different spheres of government with particular reference to parallel authorization processes as well as;
- iii) wide consultation with IAP's.

6.1.2 What are the phases?

Broadly speaking the full EIA process can be divided into three phases, namely the screening, scoping and EIA phases. Figure 6.1 describes these three phases for EIA applications lodged within the MPE.

- **Screening phase:**

It is important that all potential applicants are informed at a very early stage of the EMF and EMP. It is also proposed that the EIA section immediately inform the conservation section should pre-application meetings be arranged. Good communication could assist the environmental authority to screen out incompatible developments at a very early stage saving time and money for all parties concerned. Due to the very limited scope for development in the MPE – it is evident that only a selected few proposals would be considered with a realistic chance of success. Embarking on a formal EIA process which is bound to produce a negative result should be avoided.



- **Scoping phase:**

This phase starts with the formal submission of an application to the environmental authority – EIA section. Once such an application is lodged the EIA section should immediately inform the conservation section and arrange that the contents be checked jointly – in line with section 14 of the Regulations. The EIA section will then acknowledge receipt and inform the applicant of the EMF requirements in terms of consultation, participation, specialist studies as well as additional authorizations that are required such as water licenses, heritage resources, land use change, etc.

The applicant then needs to compile his scoping report and distribute for comment to the conservation section and all other required consultation bodies and IAPs. All comments should be included in the submitted scoping report which will then be considered jointly by the EIA section and the conservation section. A joint decision will be made after which amendments could be requested or it could be rejected. If it is accepted the applicant may then proceed with the EIA phase.

- **Environmental Impact Assessment (EIA) phase:**

The EIA report also has to be forwarded to the conservation section as well as all other consultation bodies and IAPs for comment. Once all the comments have been received, an EIA report can be compiled and submitted to the EIA section. Again, similar to the scoping report, the contents of the EIA report will be considered jointly by the EIA and conservation sections. Moreover, it will be standard practice to submit the EIA report for specialist review as provided for under Section 35 of the EIA Regulations. A final joint decision will be made based on the contents of the EIA report and the specialist review.

6.2 CONTENTS OF EIA REPORTS

The contents of all reports to be submitted to the competent authority as part of the full EIA process are clearly described in the Environmental Impact Assessment Regulations of 2006 (Notice R385). The contents of scoping reports, Environmental Impact Assessment reports, Specialist reports and reports of specialised processes, and the contents of Draft Environmental Management Plans are described in Sections 29, 32, 33, and 34 respectively. It is recommended that the EIA reports for all applications in the EMF area should include at least specialist studies which will address the key aspects as outlined in the objectives for the MPE. These priority objectives are related to water



resources, biodiversity, heritage resources, visual and aesthetic aspects, the build environment and socio-economic considerations. The requirement for these specialist studies will be determined by its relevance to the specific application, as agreed with NWDACE.

6.2.1 Geo-hydrological study

The contribution of the MPE in terms of both water quality and quantity has been identified as a critical aspect throughout this study. Moreover, there are generally no water and sanitation bulk infrastructure available in the MPE, and only limited infrastructure within the 2,5km buffer. Any application will thus have to include a specialist geo-hydrological study to evaluate the impact on the use and quality of all water resources. Aspects that could be considered in such a specialist study include the following:

- Impact of land use change on rainwater retention, with resultant impact on groundwater recharge, peak stormwater flow and flood regulation;
- Impact of vegetation removal (e.g. clearance, trampling) or addition (e.g. alien/invasive plants or afforestation) on erosion, water retention, reduced water availability due to excessive transpiration, impact on stream bank stability);
- Types of pollutants, and increase in their concentrations;
- Impact or reduced surface water quality / pollution on aquatic ecology;
- Impact or reduced surface water quantity on aquatic ecology, including an estimation of Intream Flow Requirement to maintain aquatic ecological integrity;
- Possibility of eutrophication, and its associated impacts;
- Impact of increased sediment load, including ecological and economic impact of downstream sedimentation;
- Impact of reduced sediment load (e.g. if stream impoundment is proposed), including impact on downstream nutrient availability, and increased downstream stream bed erosion;
- Impact of modification of stream channel, including impact of increased flood peak, erosion, interaction with base flow, and in-stream habitat;
- Impact on limnological factors related to streams, pools, and wetlands, including community ecology (plankton, littoral communities, benthic biota and biota associated with detritus) light penetration, temperature, oxygen concentration, salinity, important nutrient cycles (carbon, nitrogen, phosphorous, iron, sulphur);
- In case of water abstraction, impact on surface- and groundwater availability to other water users within the aquifer and/or watershed, as well as interaction between local groundwater and



surface water resources, especially the surface water, base flow and spring/seepage line interdependencies, seasonal flow and annual flow;

- Economic impacts of pollution, e.g. reduced life of impoundments due to increased sedimentation, reduced recreational value of downstream dams or rivers, reduced agricultural yield due to decreased quality or quantity of water for irrigation, cost to mitigate health impacts, etc;
- Impact of water table on infrastructure and land use ;
- Impact of water addition or subtraction on slope or soil stability;
- Possible influence of climate change on geo-hydrological impacts (e.g. synergy or cumulative impacts) should be considered;

The guidelines for involving hydro geologists in EIA processes: Edition 1 (*Saayman, 2005*) provide valuable guidance for these types of studies.

6.2.2 Bio-diversity surveys/studies

The specialist survey should be conducted by a competent ecologist with at least a Master's degree or equivalent thereof in an appropriate field such as zoology, botany or ecology. The specialist should be registered with SACNASP (South African Council for Natural Scientific Professions) or only conduct the survey under the supervision of somebody who is registered with SACNASP.

Specialist surveys should primarily focus on the possibility that red-listed species or sensitive habitats may be impacted on if the relevant proposed development would be allowed. Furthermore the specialist survey must address not only red-listed species but other species of high conservation priority that are listed in the status quo report.

It is proposed that the report of the survey should at least address the following aspects systematically:

(i) Introduction

The introduction should state the main aim and focus of the survey clearly. Furthermore the introduction should include the objectives and scope of the study.



(ii) Study Area

Vegetation types of which the study area form part of should be described as well as main characteristics of the study area and landscape.

(iii) Methods

(a) Habitat characteristics and vegetation

Due to the time constraints a specialist report on any group of fauna should include a habitat survey. A habitat description serves as a very important reference for both vegetation and faunal surveys. The habitat must be investigated by noting habitat structure (rockiness, slope, plant structure/physiognomy) as well as aspects of the floristic composition. Voucher specimens of plant species should be taken where the taxonomy is in doubt and where the plant specimens were of significant relevance for the faunal group investigated invertebrate conservation. Field guides such as those by Van Oudtshoorn (1999), Van Wyk & Malan (1998) and Van Wyk & Van Wyk (1997) can be used to confirm the taxonomy of the species.

(b) Methods pertaining to the flora or faunal group studied

The appropriate methods and material that are used to survey the group under investigation should be outlined clearly.

(c) Limitations

Limitations of the study should be stated clearly. Most of the surveys cannot comprise an exhaustive list of the fauna or flora present on the site, because of the time constraint. Two important conditions should be noted clearly:

- The season during which the surveys were done and its optimality with a view to the group of organisms under investigation.
- The weather conditions (temperature, cloudiness, wind, precipitation) during the surveys should be noted clearly, often as a subjective estimate and also whether the conditions were optimal to find species of high conservation priority.



(iv) Results

The habitat survey should include a description summarizing the following aspects:

(a) Habitat description

The habitat survey should include a description summarizing the following aspects:

Habitat Feature	Description
Topography	General landscape features and slope.
Rockiness	Any rocky outcrops or ridges should be briefly described.
Presence of wetlands	Any wetlands in the area should be outlined.
Vegetation	An outline of the conspicuous aspects of the vegetation should be given. The general occurrence of indigenous and alien invasive species in the study area should be outlined.
Signs of disturbances	Residential areas, cultivated areas, smallholdings, excavations, formal or informal dumping, trampling, and any habitat modifications should be described briefly in this section
Characteristics of surrounding areas (with a view to buffer zones, corridors and connectivity of habitats with more natural vegetation)	The scope of the study area in terms of buffer zones and corridors for the conservation of biodiversity should be evaluated and briefly outlined in this section.

(b) Threatened species

Results should include a table of the threatened species that was investigated for the site with a clear indication of their likely presence or not. For example butterflies:

Example: Butterfly species in the North West Province that appear in the present revised red data book of butterfly species in South Africa (Henning, Terblanche & Ball 2007 *in prep.*). No = 0; Yes = 1.

Species	English / Afrikaans Name	Resident at Site	Not Found/ Unlikely to Occur at Site
<i>Lepidochrysops praeterita</i>	Highveld Blue Hoëveld bloutjie	0	1
<i>Metisella meninx</i>	Marsh Sylph Moeraswalsertjie	0	1
<i>Platylesches dolomitica</i>	Hilltop Hopper Heuweltop hopper	0	1



(c) Species of high/ special conservation significance

Results should include a table of species of high conservation priority that were investigated for the site with a clear indication of their likely presence or not. For example beetles:

Example: Fruit chafer species (Coleoptera: Scarabaeidae: Cetoniinae) in the North West Province that are known to be of high conservation priority. No = 0; Yes = 1.

Species	Resident At Site	Not Found/ Unlikely To Occur At Site
<i>Ichneustoma stobbiai</i>	0	1
<i>Trichocephala brincki</i>	0	1

(d) Biodiversity in general

A list of the species that are likely or were found on site should be included in the survey report. A general estimate (low, medium, high) of the biodiversity at the study site should also be given with reference to the habitat features described in section 4.1.

(e) A map with sensitive areas

A map that indicates sensitive areas on the site should be included.

(v) Discussion

(a) Status of threatened species at the site

The estimated status of threatened species on the site investigated should be discussed with clear indication of their likely presence or not. Reference should be made of the tables in the results section.

(b) Status of non red-listed species of special conservation significance

The estimated status of non red-listed species that are still of high conservation priority, that have been investigated on the site, should be discussed with clear indication of their likely presence or not. Reference should be made of the tables in the results section.



(c) Biodiversity in general

The probable low, medium or high biodiversity on the site should be discussed with reference to the species lists and habitat characteristics.

(vi) Mitigation Measures

Mitigations relevant to the group of organisms that were investigated should be proposed in this section for a scenario if the proposed development would be allowed. Efforts that will minimise possible impacts should be put forward.

(vii) Recommendation

Recommendations with regards the conservation of the group of organisms that have been investigated on the site should be given.

(viii) Conclusion

This section contains the overall conclusion and should at least include:

- Any imperative follow-up research
- A conclusion on the status of the threatened species at the site that was investigated.
- A conclusion on the status of any non red-listed but high conservation priority species at the site that was investigated.
- A conclusion on the status of any special ecosystems on the site that was investigated.
- A conclusion on the general biodiversity at the site that was investigated.

(ix) References

References should include those used for the identification of species, for noting important ecological aspects, for noting the conservation status of species and those for noting vegetation types. The intellectual property of workers in the field as well as contributors to the report should be respected and acknowledged throughout the report.



6.2.3 Heritage Impact Assessment

The execution of Heritage Impact Assessments are legislated and mandated in the National Heritage Resources Act (Act 25 of 1999). Section 38 of the National Heritage Resources Act describes the types of activities that will need a Heritage Impact Assessment. These definitions are somewhat different to the definitions used in the Environmental Impact Assessment regulations of 2006, and in some cases there are some overlapping between these definitions. However, in view of the number and extent of distribution of various types of heritage resources in the MPE and surrounding areas, and the fact that heritage resources is one of the priority objectives of the MPE area, it is recommended that all applications in the MPE and the adjacent 2,5km buffer will require compulsory Phase 1 Heritage Impact Assessment as a minimum requirement. The process and contents of this study will be in accordance with the National Heritage Resources Act and the specific guidelines of the South African Heritage Resources Agency.

6.2.4 Visual Impact Assessment

It was clearly indicated in Section 4 that the characteristics and potential of the MPE area and its immediately surrounding areas are directly related to and dependant on protecting and enhancing the visual and aesthetic character of the area. The execution of visual impact assessment specialist studies is therefore regarded as a critical requirement to ensure that this objective of the EMF is actively pursued. It also needs to be stressed that aesthetical aspects could also be interpreted to refer to wider nuisance issues such as noise and smell. Although some of these aspects may appear to be less prominent than the visual aspects, they are equally important and potentially just as detrimental to the overall character of the area.

Special focus should be placed on visual impact on and from the following sites:

- Areas with heritage resource sites or scenic routes;
- Areas with intact wilderness qualities, or pristine ecosystems;
- Areas with a recognized special character or sense of place;
- Areas with very rare or unique visual features;
- Areas with sites of cultural or religious significance;
- Areas of important tourism or recreation value;
- Areas with important vistas or scenic corridors;
- Areas with visually prominent ridgelines or skylines.



The following aspects could be considered as part of a VIA:

- Relative positions, categories, sensitivity, number of and impact on observers / viewers within the viewshed of the site of proposed development, including local residents, tourists, and people passing by, as well as the distribution of visual impacts, i.e. beneficiaries and losers (Oberholzer, 2005);
- Identification of all scenic resources, protected areas, natural historic, cultural and spiritual aspects, and sites of special interest, together with their relative importance (Oberholzer, 2005);
- Visual impact on geological (formations, rock outcrops, etc.) and geomorphologic features (ridgelines, spurs, plateaux, convex slopes, valleys, terraces, associated silhouette effects, etc.) that give the area its particular character (Oberholzer, 2005);
- Visual impact of construction vehicles and machinery, batching areas, construction camps, areas cleared for construction, stockpiles, storage areas, haul roads, and buildings/structures in process of construction;
- Visual disturbances caused by cut and/or fill on the mountain slope for e.g. roads or to level the terrain;
- Degree to which introduced objects / structures / features blend in or is compatible with the surrounding natural or cultural environment);
- Visual impact of specific materials or surface coatings used (including bright, contrasting or incompatible colours and shining surfaces) and how this may be altered (e.g. its easy to change roof tiles or re-paint structures with another colour as time goes by) or change over time (e.g. visual impact of newly thatched roof is higher than older thatched roof)
- Visual impact of introduced objects / structures / features if not properly maintained or managed (e.g. paint deterioration, stained walls, corroded metal surfaces, unkept gardens, untidy yards, deteriorating buildings, keeping of scrap metal, etc);
- Visual impact of outdoor signage associated with the proposed project (e.g. direction giving, promotional, safety related signage etc)
- Visual impact of all related ancillary structures, e.g. masts, antennas, security fencing, gatehouses, substations, electrical kiosks, reservoirs, overhead power-lines and other cables (both on and off the site) (Oberholzer, 2005);
- Visual impact of traffic within the site, or to and from the site (Oberholzer, 2005);
- Light pollution (including light trespass, over-illumination, glare, clutter, and sky glow);
- Obstruction of views;
- Removal of screening vegetation, including plantations, alien vegetation (Oberholzer, 2005), natural vegetation, and orchards;



- Visual impact associated with dust emissions, including (but not limited to) dust from construction activities and dust from vehicles passing dirt roads;
- Visual impact associated with visible gaseous emissions, smoke, vapours, flames from stacks, etc.;
- Change in the degree to which the area is being perceived as rural, including influence on the perceived rural character of the area;
- Change in the degree to which the area is being perceived as natural / un-disturbed / pristine;
- Change in the degree to which the area is being perceived as isolated or removed from human activities;
- Impact on the perceived unique or special character of the place, or impact on characteristics that induce a sense of authentic attachment and belonging to the place ("sense of place");
- Compatibility with the regional or local idiom, including building styles and materials, particularly where these form a strong or coherent theme (Oberholzer, 2005);
- Visual impact associated with vegetation clearance, as well as change in vegetation structure;
- Probable changes in the landscape and surrounding land uses over time (Oberholzer, 2005), and visual compatibility of proposed development on such a future landscape;
- Economic impact of loss of scenic resources on tourism and property values, determined with an economic specialist (Oberholzer, 2005);
- Abovementioned issues should be assessed against seasonal changes in landscape appearance;
- Cumulative visual impacts (Oberholzer, 2005).

The depth of assessment or impact required will be determined by the extent of visual impact expected (*Oberholzer, 2005*):

Level 1 input (Little or no visual impact expected - Potentially little influence on scenic resources or visual character of the area; generally compatible with existing development in the area; Possible scope for enhancement of the area):

- Identification of issues, and site visit;
- Brief comment on visual influence of the project and an indication of the expected impacts / benefits.



Level 2 input (Minimal visual impact expected - Potentially low level of intrusion on landscapes or scenic resources; Limited change in the visual character of the area; Low-key development, similar in nature to existing development):

- Identification of issues raised in scoping phase, and site visit;
- Description of the receiving environment and the proposed project;
- Establishment of view catchment area and receptors;
- Brief indication of potential visual impacts, and possible mitigation measures.

Level 3 assessment (Moderate visual impact expected - Potentially some affect on protected landscapes or scenic resources; Some change in the visual character of the area; Introduces new development or adds to existing development in the area):

- Identification of issues raised in scoping phase, and site visit;
- Description of the receiving environment and the proposed project;
- Establishment of view catchment area, view corridors, viewpoints and receptors;
- Indication of potential visual impacts using established criteria;
- Inclusion of potential lighting impacts at night;
- Description of alternatives, mitigation measures and monitoring programmes.
- Review by independent, experienced visual specialist (if required).

Level 4 assessment (High or Very high visual impact expected - Potentially significant effect on wilderness quality or scenic resources; Potential intrusion on protected landscapes or scenic resources; Noticeable or fundamental change in visual character of the area; Establishes a new precedent for development in the area):

- As per Level 3 assessment, plus complete 3D modeling and simulations, with and without mitigation.
- Review by independent, experienced visual specialist (if required).

6.2.5 Social Impact Assessment

The potential impact of development in the MPE is not only limited to the bio-physical aspects but also includes socio-economic impacts. Critical aspects that could be included in a social impact assessment include the following:

- **Population impacts**
 - Population change
 - Influx or outflux of temporary workers



-
- Presence of temporary, seasonal or weekend residents or tourists
 - Relocation of individuals or families

 - **Individual and family level impacts**
 - Disruption of daily living and movement patterns
 - Alteration of family structure
 - Disruption of social networks
 - Community perception on impact on public health and safety
 - Change in leisure opportunities

 - **Other issues**
 - Impact on quality of life to local people (improvement of basic or higher needs)
 - Impact on education opportunities not only to workers but also to the community in general
 - Social benefits of employment
 - Impact on availability of recreational opportunities
 - Global, national and local benefits of product/service produced by proposed project (overall need or desirability)
 - Contribution to Local Economic Development
 - Impact on tourism potential of the local area
 - Direct, indirect and induced job creation
 - Public income generation through e.g. taxes
 - Reduction or increase of economic leakages due to proposed development (e.g. increase of more local spending opportunities in case of proposed recreational or retail development).



7 IMPLEMENTATION PLAN

7.1 KEY IMPLEMENTATION TASKS

In order to ensure the implementation and application of the recommendations contained in the EMF, a number of important implementation strategies will have to be pursued:

- **Formal adoption** of the EMF and EMP according to the stipulations of:
 - Section 72 of the National Environmental Management Act, EIA Regulations (R.385). The final Draft Environmental Management Framework will be subject to a public comment process for which purpose the North West Department of Agriculture, Conservation and Environment will invite Interested and Affected Parties by advertisements in newspaper circulating in the area to provide and submit comments and presentations with regards to the Draft EMF prior to adoption.
 - The provisions of the National Environmental Management Protected Areas Act.
- **Drafting of Regulations for the MPE.** These regulations should incorporate the recommendations of the EMF and provide the legal framework for the management of the MPE.
- **Training and capacity** building of relevant officials directly responsible for the application of the EMF and EMP. This refers to both the EIA and conservation officials within NW DACE. Capacitation of IEM officials to ensure integration into IDP's, SDF's and other relevant plans will also be required. The application of the Environmental Management Framework and Plan as described in Sections 5 and 6 will be largely dependant on the application thereof within the North West Department of Agriculture, Conservation and Environment. It is thus imperative that all relevant officials, both in the EIA and Conservation sections, be trained and capacitated on the application of the process outlined in Section 6 and the general approach and principles of the EMF. It will also be necessary to liaise with the relevant officials from the Rustenburg and Madibeng Local Municipalities as well as the Bojanala Platinum District Municipality in terms of the use and application of the EMF in their areas of jurisdiction.



- **Awareness raising** and information sharing with other spheres of government who needs to align their strategic planning and decision making with the EMF outcomes. It would include DWAF, Department of Agriculture, North West Provincial Department of Development Local Government and Housing, SAHRA, and local and district municipalities. The purpose of these awareness raising workshops will be to ensure that all relevant authorities are aware of the EMF and its content and fully understand their role in terms of the use and application thereof.
- **Develop research programme** to address gaps in information and knowledge important for the long term management of the MPE. The research undertaken as part of the status quo analysis revealed a surprising lack of extensive and detailed research relating to water resources, biodiversity and cultural heritage resources and sites within the MPE area. It will thus be imperative to initiate a process to develop a coordinated research programme to improve the level of detail of available information on these aspects. It is thus recommended that a core group of stakeholders with an interest in the MPE be tasked with this assignment to address the following aspects:
 - Defining research needs
 - Prepare and submit a research proposal and program to the North West Research Coordinating Council for possible funding
 - Identify role players and responsibilities within the proposed research programme

It is strongly recommended that the approach, methodology and formats to be used in this research programme also be compatible with information and database formats used by the North West Department of Agriculture, Conservation and Environment in the development of the Provincial Biodiversity Information Management System (BIMS).

- **Integration with municipal plans and strategies.** The successful implementation and level of impact of the EMF will be significantly enhanced if the overall objectives and management recommendations are also incorporated in key strategic and policy documents of local municipalities, most notably the Integrated Development Plans, the Spatial Development Frameworks and Environmental Management Frameworks or Strategic Environmental Assessments. It is proposed that the objectives describing the desired stage of the environment for the MPE area be incorporated within the overall objectives of the Integrated Development Plans of the three municipalities within which the MPE in the North West is located i.e Rustenburg and Madibeng Local Municipalities and the Bojanala Platinum District Municipality. Although the MPE is generally recognized in the Spatial Development Frameworks of all three these municipalities in terms of forming part of the regional open space or conservation



network, the formal proposals, spatial definitions and associated management guidelines proposed in the draft EMF should be incorporated in the revision of these Municipal Spatial Development Frameworks. More importantly, it is understood that both the Madibeng and Rustenburg Local Municipalities have initiated or are contemplating the preparation of Environmental Management Frameworks for their areas of jurisdiction. The incorporation of the EMF proposals for the MPE in these processes would be of utmost importance.

7.2 IMPLEMENTATION PLAN

The detailed implementation plan for the tasks outlined above is summarized in Table 7.1. This implementation plan describes the individual activities associated with the various tasks, assigns responsibilities, and describes a timeframe for implementation.

Table 7.1: Implementation Plan

Task	Activities	Responsibility	Timeframe					
			2008				2009	2010
			Q1	Q2	Q3	Q4		
1. Training and capacity building								
1.1) Training and capacity building within NWDACE: ➤ Directorate Environmental Management and Protection ➤ Directorate Biodiversity and Conservation	• Make documentation available to the relevant officials.	NW DACE	X					
	• Arrange capacity building session with relevant officials from Directorate Environmental Management and Protection as well as the Directorate Biodiversity and Conservation.	NW DACE in co-ordination with EMF project team	X					
	• Arrange follow up meetings for clarification purposes (if required)	NW DACE in co-ordination with EMF project team		X	X			
1.2) Training and capacity building of Local and District Municipalities: ➤ Rustenburg LM ➤ Madibeng LM ➤ Bojanala Platinum DM	• Make documentation available to relevant municipalities	NW DACE	X					
	• Arrange capacity building sessions with relevant officials from the municipalities.	NW DACE in co-ordination with EMF project team	X					
	• Arrange following up meeting (if required)	NW DACE in co-ordination with EMF project team		X	X			
1.3) Capacity building and awareness raising for new staff members who were not part of the EMF process or the capacity building initiatives.	• Make documentation available to new staff members	NW DACE		X	X	X	X	X
	• Inform new staff members of the EMF			X	X	X	X	X
2. Formal adoption								
2.1) Formal adoption of EMF in accordance with the stipulations of Sections 70 and 72 of the EIA Regulations (R.385).	• Make draft available for public inspection and invite potential IAP's by way of advertisement in newspapers circulating in the area (or other appropriate way) to submit comments.	NW DACE	X					
	• If necessary, review draft in view of comments.	NW DACE	X					
	• Adopt EMF and give notice in the Government Gazette or the Provincial Gazette of the adoption of the environmental management framework; and the place where the	NW DACE; MEC	X					

Task	Activities	Responsibility	Timeframe					
			2008				2009	2010
			Q1	Q2	Q3	Q4		
	environmental management framework is available for public scrutiny.							
	<ul style="list-style-type: none"> Consider EMF in the consideration of applications for environmental consideration 	NW DACE		X	X	X	X	X
2.2) Formal adoption of EMP in accordance with the stipulations of the provisions of NEMPA.	<ul style="list-style-type: none"> Identify Management Authority for the MPE according to Section 38(1) or (2). 	NW DACE to submit request to MEC	X					
	<ul style="list-style-type: none"> Management Authority to submit the EMP within 12 months of its completion to the MEC in accordance with Section 39(2), accompanied by: <ul style="list-style-type: none"> proof on consultation with municipalities, organs of state, local communities and other affected parties which have an interest in the area in accordance with Section 39(3) proof of how the relevant IDPs have been considered in accordance with Section 39(4) 	NW DACE		X	X	X		
3. Awareness raising								
3.1) Awareness raising and information sharing with state departments having jurisdiction in the area: <ul style="list-style-type: none"> DWAF SAHRA Department of Agriculture NW DLGH DME 	<ul style="list-style-type: none"> Identify relevant contact persons within the respective organs of state. 	NW DACE	X					
	<ul style="list-style-type: none"> Make EMF and EMP documentation available to organs of state. 	NW DACE	X					
	<ul style="list-style-type: none"> Arrange and conduct implementation workshop 	NW DACE, DWAF, SAHRA, Dept Agriculture, NWDLGH, DME	X					
3.2) General awareness raising to broader public	<ul style="list-style-type: none"> Publish on NWDACE website 	NWDACE, Local Authorities		X	X	X	X	X
	<ul style="list-style-type: none"> Arrange for press releases in local newspapers 	NWDACE, Local Authorities		X				
4. Alignment and integration with other plans and strategies								
4.1) Alignment of EMF and EMP with	<ul style="list-style-type: none"> Identify relevant provincial and municipal plans 	NW DACE; DDLGH; Office	X	X	X	X		



the dace

Department: Agriculture, Conservation
and Environment
North West Provincial Government
Republic of South Africa

Magaliesberg MPE : Environmental Management Framework and Plan

Task	Activities	Responsibility	Timeframe					
			2008				2009	2010
			Q1	Q2	Q3	Q4		
relevant provincial and municipal plans and strategies	and strategies requiring alignment	of the Premier						
	<ul style="list-style-type: none"> Provincial Spatial Development Framework <ul style="list-style-type: none"> Ensure recognition of MPE and recommendations in Provincial SDF currently under revision. 	NW DACE; DDLGH; Provincial SDF consultant team	X					
	<ul style="list-style-type: none"> Municipal IDP's and sector plans (e.g. SDF's) <ul style="list-style-type: none"> The recommendations of the EMF, specifically relating to the objectives and spatial proposals, should be reflected in the IDP's and informing sector plans such as the Spatial Development Framework. The EMF should be made available to the relevant local municipalities for consideration in their IDP revision process. 	NW DACE; DDLGH; Madibeng LM, Rustenburg LM, Bojanala Platinum DM	X	X				
	<ul style="list-style-type: none"> Potential new plans (e.g. Municipal EMF's) <ul style="list-style-type: none"> It is understood that both the Madibeng and Rustenburg Local Municipalities are contemplating the preparation of Environmental Management Framework for their areas of jurisdiction. The outcomes of the Magaliesberg MPE EMF should be aligned and integrated with these municipal EMF's. 	NW DACE; Madibeng LM, Rustenburg LM	X	X	X	X		
4.2) Alignment of EMF and EMP with other DACE initiatives (i.e. Hartebeespoort SEA)	<ul style="list-style-type: none"> Identify other interdepartmental strategic initiatives and align where necessary. 	NW DACE	X	X				
4.3) Formalization of proposed consultation and co-operative governance arrangements within NWDACE, as well as with other organs of state having jurisdiction	<ul style="list-style-type: none"> Identify relevant contact persons within NWDACE as well as other organs of state having jurisdiction. 	NW DACE	X					
	<ul style="list-style-type: none"> Guidelines for alignment of decision making processes as proposed by EMF. 	NW DACE	X					
	<ul style="list-style-type: none"> Formalize processes and agreements through memorandums of understanding (MOUs). 	NW DACE, DWAF, Depart Agriculture, SAHRA, Local Authorities, DLGH	X	X				

Task	Activities	Responsibility	Timeframe					
			2008				2009	2010
			Q1	Q2	Q3	Q4		
5 Establish legal framework								
5.1) Drafting of Regulations for the MPE	<ul style="list-style-type: none">Appoint a service provider to draft new regulations governing the MPE.	NW DACE, GDACE and other relevant authorities	X	X	X			
6. Continual implementation and monitoring								
6.1) Application of EMF	<ul style="list-style-type: none">Screening of EIA applications against the spatial guidelines and objectives contained in the EMF.	Directorate Environmental Management and Protection		X	X	X	X	X
	<ul style="list-style-type: none">Implementing the co-operative governance arrangements as described in the EMF for EIA applications.	NWDACE and other relevant organs of state		X	X	X	X	X
6.2) Refinement of targets and indicators	<ul style="list-style-type: none">Refine proposed and develop new targets and indicators where necessary.	Directorate Biodiversity and Conservation	X	X				
6.3) Continual monitoring against set targets and indicators	<ul style="list-style-type: none">Assign responsibilities for monitoring of the different targets and indicators relating to the various objectives.	Directorate Biodiversity and Conservation		X	X	X	X	X
	<ul style="list-style-type: none">Prepare annual report on targets and indicators	Directorate Biodiversity and Conservation				X	X	X
7. Research Programme								
7.1) Develop research programme to address gaps in information and knowledge	<ul style="list-style-type: none">Define research priorities focusing on the detailed ecological assessment of threatened and protected ecosystems and species (informed by findings of status quo analysis)	NW DACE: Directorate Biodiversity and Conservation	X					
	<ul style="list-style-type: none">Prepare a multi-year research programme involving relevant parties	NW DACE, North West University, Magaliesberg Protection Association, other relevant roleplayers	X	X				
	<ul style="list-style-type: none">Submit research programme for possible funding<ul style="list-style-type: none">Internal – NWDACENW Research Coordinating Council	NWDACE, NWRCC		X	X			
	<ul style="list-style-type: none">Develop protocols for information collection	NWDACE		X	X			



Task	Activities	Responsibility	Timeframe					
			2008				2009	2010
			Q1	Q2	Q3	Q4		
	and analysis compatible with Provincial Biodiversity Information Management System (BIMS)							
	<ul style="list-style-type: none"> Implement research programme and integrate findings with BIMS. 	NWDACE			X	X	X	X