

Section B: Desired State, Sensitivity Analysis and Environmental Management Zones

Table of Contents

1. Introduction	3
2. Desired State Summary.....	5
2.1. Government priorities.....	5
2.2. Key issues that affect the desired state	7
2.3. Development and conservation priorities	9
3. Environmental Sensitivity Assessment	9
4. Unique Control Areas.....	11
5. Environmental Management Zones.....	11
5.1. Zone 1: Urban development zone	11
5.2. Zone 2: High control zone (within the urban development zone).....	12
5.3. Zone 3: High control zone (outside the urban development zone).....	12
5.4. Zone 4: Normal control zone	12
5.5. Zone 5: Industrial and large commercial focus zone	14
5.6. Protected areas.....	14
5.7. Development or land-uses that would be compatible, conditionally compatible and undesirable in the Environmental Management Zones	14
5.8. General guidelines for the Environmental Management Zones.....	15
6. Special Control Zones.....	21
6.1. Dinokeng special management zone	21
6.2. The Cradle of Humankind World Heritage Site (CoHWHS) special control zone.....	21
6.3. CoHWHS environmental management zones and management guidelines.....	21
6.4. Vaal Dam special management zone	22
6.5. Johannesburg South special control zone	22

6.6. Johannesburg North special management zone (the Greater Kyalami Conservancy)	23
6.7. Special control zone for conservation, recreation and tourism, as indicated on Figure 14	23
7. Recommendation for potential activities to be excluded from EIA Processes.....	24
7.1. Zone 1: Urban development zone	24
7.2. Zone 5: Industrial and commercial development focus zone.....	24

List of figures

Figure B1	The development process of the Environmental Management Zones	3
Figure B2	Final Environmental Management Zones	4
Figure B3	Implementation	4
Figure B4	C-Plan conservation priorities	5
Figure B5	GAPA agricultural priorities	5
Figure B6	GSDF urban development priorities	5
Figure B7	Pressure points between conservation and agriculture	6
Figure B8	Pressure points between conservation and urban development	6
Figure B9	Pressure points between conservation and rural development	7
Figure B10	Pressure points between agriculture and urban development	7
Figure B11	Development and conservation priorities	10
Figure B12	Environmental sensitivity	11
Figure B13	Unique control areas	12
Figure B14	Environmental Management Zones	13
Figure B15	Dinokeng SCZ	22
Figure B16	The Cradle of Humankind World Heritage Site SCZ	23
Figure B17	The Cradle of Humankind World Heritage Site environmental management zones	23
Figure B18	Vaal Dam SCZ	25
Figure B19	Johannesburg North SCZ	25
Figure B20	Johannesburg South SCZ	26

List of tables

Table B1	Meetings and workshops	8
Table B2	Developments or land uses that would be compatible, conditionally compatible and undesirable in the Environmental Management Zones	15
Table B3	General guidelines for the Environmental Management Zones	17
Table B4	Proposed exclusion/exemption activities in respect to No. R. 544 18 June 2010 : Listing Notice 1 : List of activities in respect to Gauteng	28
Table B5	Proposed exclusion/exemption activities in respect to No. R. 545 18 June 2010 : Listing Notice 2 : List of activities in respect to Gauteng	30
Table B6	Proposed exclusion/exemption activities in respect to No. R. 546 18 June 2010 : Listing Notice 3 : List of activities in respect to Gauteng	31

Please note that Abbreviations are situated after the list of graphs in the Section A part of the report.

References are included in the text or as footnotes.

1. Introduction

The guiding objectives that emerged during the course of the developed of the GEMF are:

- To facilitate the optimal use of current industrial, mining land and other suitable derelict land for the development of non-polluting industrial and large commercial developments.
- To protect Critical Biodiversity Areas (CBAs as defined in C-Plan 3.3) within urban and rural environments.
- To ensure the proper integration Ecological Support Areas (ESAs as defined in C-Plan 3.3) into rural land use change and development.
- To use ESAs as defined in municipal bioregional plans in spatial planning of urban open space corridors and links within urban areas.
- To focus on the sustainability of development through the implementation of initiatives such as:
 - Energy efficiency programmes, plans and designs;
 - Waste minimisation, reuse and recycling;
 - Green infrastructure in urban areas; and
 - Sustainable Drainage Systems (SuDS).

This section of the Gauteng Provincial Environmental Management Framework (GPEMF) describes the development of the Environmental Management Zones as it was informed by information from the Status Quo elements, the Desired State elements as well as the Sensitivity Assessment. The EMZ development process is reflected in Figures B1 and B2. The implementation process is outlined in Figure B3.

The process is summarised in Figures B1, B2 and B3.

2. Desired State Summary

2.1. Government priorities

The desired state assessment is a spatial assessment of the current development and or conservation priorities as expressed in the following policy documents:

- The Gauteng Conservation Plan (C-Plan 3.3), as reflected in Figure B4;
- The Gauteng Agricultural Potential Atlas (GAPA IV), as reflected in Figure B5;
- The Gauteng Provincial Spatial Development Framework, as reflected in Figure B6; and
- The draft Area Based Plans for rural development in Gauteng.

These represent the foundation for determining the likely nature of the future use of land in Gauteng as currently foreseen by government (at least at a provincial level). In the desired state process the various spatial plans have been simplified to reflect spatial priorities for conservation, agriculture development, urban development and rural development. Given the different mandates and goals of each of the policies, there are obviously significant areas where the different land use options are not aligned. For the purpose of the desired state phase these areas are described as pressure points.

Pressure points between conservation priorities and agricultural priorities are illustrated on Figure B7 and cover the following areas:

- Areas where there is no pressure from agricultural priorities on conservation priorities = 3883.3km².
- Areas where there is no pressure from conservation priorities on agricultural priorities = 7576.2km².
- Areas where there is overlapping pressure between conservation priorities and agricultural priorities = 5312.5km².

Pressure points between conservation and urban development priorities are illustrated on Figure B8 and cover the following areas:

- Areas where there is no pressure from urban development priorities on conservation priorities = 6654.8km².

- Areas where there is no pressure from conservation priorities on urban development priorities = 4334.5km².
- Areas where there is overlapping pressure between conservation priorities and urban development priorities = 1397.7km².

Pressure points between conservation priorities and rural development priorities are illustrated on Figure B9 and cover the following areas:

- Areas where there is no pressure from rural development priorities on conservation priorities = 3865.1km².
- Areas where there is no pressure from conservation priorities on rural development priorities = 6033.3km².
- Areas where there is overlapping pressure between conservation priorities and rural development priorities = 4679.4km².

Pressure points between agricultural priorities and urban development priorities are illustrated on Figure B10 and cover the following areas:

- Areas where there is no pressure from urban development priorities on agricultural priorities = 11334.8km².
- Areas where there is no pressure from agricultural priorities on urban development priorities = 1498.5km².
- Areas where there is overlapping pressure between agricultural priorities and urban development priorities = 1553.9km².

2.2. Key issues that affect the desired state

The public participation process of the GPEMF included a variety of meetings and workshops over a period of approximately one year (See Table B1). More than 200 people participated and provided inputs at various stages. (The minutes of meetings and workshops are available in electronic format on request).

Table B1: Meetings and workshops

Meeting Dates	With Organisations	Type of Meeting / Workshop		
				City of Johannesburg Metropolitan Municipality City of Tshwane Metropolitan Municipality Ekurhuleni Metropolitan municipality Emfuleni Local Municipality
			28 November 2013	Gauteng Planning Commission Gauteng Economic Development South African National Biodiversity Institute Meeting with the Reference Group
			28 November 2013	Gauteng Department of Agriculture and Rural Development Gauteng City-Region Observatory (GCRO) Project Steering Committee
			09 December 2013	Department of Mineral Resources (DMR) Meeting with officials
			07 February 2014	Department of Rural Development and Land Reform Meeting with project teams of Gauteng Area Based Plan and GDARD
			25 February 2014	GDARD, Municipalities, various stakeholders and the public Desired State workshop
			05 March 2014	Ekurhuleni Metropolitan Municipality South African Biodiversity Institute Workshop with officials
			16 April 2014	GDARD Workshop with officials
			17 April 2014	Members of the Magaliesberg Biosphere Rhenosterspruit Nature Conservancy Meeting with members
			29 May 2014	Various Departments and Municipalities 2014 2015 1 st Quarter Gauteng Planning Forum meeting
			27 June 2014	GDARD Stakeholders: WASSUP Rhenosterspruit Conservancy Bontle ke Thlago Co-op Greater Kyalami Conservancy (GEKCO) KlipSA Workshop
			30 June 2014	GDARD Business Enterprises at University of Pretoria representing the Department of Rural Development and Land Affairs Meeting with Prof. Mark Oranje
			10 July 2014	Ekurhuleni Metro Meeting with Elisabeth van der Merwe
			15 July 2014	GDARD Gauteng Planning Commission Meeting
			18 July 2014	GDARD Cradle of Humankind World Heritage Site and Dinokeng Meeting with Peter Mills
31 July 2013	Gauteng Department of Agriculture and Rural Development (GDARD) Department of Water Affairs (DWA) Department of Environmental Affairs (DEA)	Project Steering Committee		
26 August 2013	Ekurhuleni Metropolitan Municipality	Meeting with officials		
30 August 2013	West Rand District Municipality	Meeting with officials		
6 September 2013	City of Tshwane Metropolitan Municipality	Meeting with officials		
9 September 2013	Randfontein Local Municipality	Meeting with officials		
18 September 2013	Emfuleni Local Municipality	Meeting with officials		
19 September 2013	Midvaal Local Municipality	Meeting with officials		
19 September 2013	Merafong Local Municipality	Meeting with officials		
20 September 2013	Mogale City Local Municipality	Meeting with officials		
07 October 2013	GDARD DWA	Project Steering Committee		
2 October 2013	City of Johannesburg Metropolitan Municipality	Meeting with officials		
14 October 2013	Westonaria Local Municipality	Meeting with officials		
16 October 2013	Lesedi Local Municipality	Meeting with officials		
28 October 2013	Gauteng Planning Commission	Meeting with officials		
22 November 2013	South African Poultry Association KlipSA Ward Councillor COJ	Open day with stakeholders		
27 November 2013	South African Property Owners Association	Open day with stakeholders		
28 November 2013	West Rand District Municipality Mogale City Local Municipality	Open day with municipalities		

29 July 2014	GDARD Gauteng Department of Roads and Transport	Meeting
01 August 2014	GDARD GCRO Department of Energy	Project Steering Committee

The key issues that were highlighted include the following:

- Water quality and the state of the rivers in Gauteng constituted the biggest single concern in Gauteng and inter alia includes:
 - Unacceptably high levels of pollution in almost all rivers from many sources;
 - Need for new development to incorporate the following planning and design:
 - Water catchment capacity for foreseen additional urban development;
 - Sewage capacity and management in respect to existing and foreseen additional urban development;
 - The management of erosion and excessive sedimentation in respect to existing and foreseen additional urban development;
 - The management and remediation of acid mine drainage where it occurs and its impact on the development, production and conservation potential of Gauteng; and
 - The maintenance of river banks and channels to ensure proper drainage in order to avoid current and likely increased water runoff, especially in urban areas.
- Geotechnical investigations in dolomite areas are extremely expensive and there is a dire need for subsidised geotechnical surveys and updated “good practice” development guidelines in certain areas (especially where low cost housing is required to alleviate the dire housing needs of people);
- Too many boreholes due to subdivisions and low density development in small-holding areas on dolomite exacerbates dolomite problems because of over extraction that takes place in these areas;
- There are many and varied real and perceived conflicts between different land-uses in Gauteng, including:
 - Conflicts between sand-winning and tourism (especially in Dinokeng, Tshwane);
 - Conflicts between rural residential (including small holdings) and informal housing (example: Diepsloot area);
 - Landfill sites, sewage treatment works, mine dumps and tailings conflicts with most other land uses in the areas where they occur. These need to be consolidated and minimised;
 - General urban encroachment on rural agricultural/farming activities (especially chicken farming and other forms of battery farming) that are incompatible with urban areas results in the unsustainability of the agricultural sector with potential long term negative impacts on food security;
 - Lifestyle estates is generally incompatible with agricultural, tourism and conservation activities in rural areas; and
 - The expansion of existing industrial areas and the development of new industrial areas while many industrial areas and facilities are currently underutilised.
- Surprisingly, conservation of nature as well as cultural historical features did not come out as particularly important issues in Gauteng, especially not with the majority of local authorities who seem to be more occupied with day to day crises management amid serious capacity constraints. The following were nevertheless highlighted:
 - The high cost of land for conservation purposes in Gauteng;
 - An overreliance by government on private initiatives with inadequate public provision for land acquisition and expansion of protected areas (as a land use) by provincial and national government;
 - There is a general expectation that government must “protect” the environment through stricter “no-go” legislation where the environment is sensitive to development instead of providing unnecessary application processes that eventually undermine the conservation of such sensitive areas (this view is in contrast to the two views above); and
 - There is a view that while government’s conservation planning is ambitious and of a high standard, implementation of the plans and the management of existing protected areas are not good enough (too much planning but not enough implementation).
- Environmental and development application processes were highlighted as an area of concern:
 - Application and decision-making processes are very expensive and unnecessarily time consuming to the extent that it seriously hampers the development of Gauteng;
 - The duplication of too many processes is expensive and often an administrative nightmare;
 - It is unclear how, if at all, current administrative processes contribute to sustainable development;
 - There is not enough emphasis on urban open space and the importance in sustaining, creating and enhancing green urban infrastructure (ecological, social and functional services) in an integrated manner with the general urban fabric; and
 - In the urban areas the focus on sites and features in the protection of cultural historical elements should shift to precincts and integration with urban features.
- There is a general perception of overregulation of development processes in Gauteng. It includes the following specific issues:
 - There is an over reliance on the letter of the law and not enough discretionary powers for officials that make decisions;
 - There are too many different mandates and overlapping processes such as SDFs, SPLUMA, LUMS, EMF zones, bioregional plans, EIA processes, water use licences, municipal approvals, SAHRA, etc.; and
 - “Professional industries” (Town planning, biodiversity, EIA, geotechnical, etc.) that drive their businesses through legislation which often require unnecessary costly specialist work.
- In the light of capacity constraints there is an urgent need for focus on the following:
 - All energy and resources on the really important issues first;
 - The immediate future when it comes to implementation of policies and plans – the next steps in the right direction along a clearly laid out short term path (3 to 5 years)

- maximum) – tomorrow, next week, next month (overcome the inertia and get the train rolling);
 - Avoid duplication of effort within and between organisations;
 - Avoid incremental decision-making (stay within your mandate); and
 - Determine measurable indicators for measuring performance.
- Waste management is viewed as an increasingly difficult aspect due the following factors:
 - Many existing landfill sites are reaching the end of their effective life spans;
 - Waste management controls are insufficient in certain areas and especially in many rural areas;
 - The final disposal of waste can be reduced dramatically through reuse, composting but especially recycling;
- Air pollution remains a serious condition in Gauteng but has not really featured as an issues with the exception to the following:
 - Pollution monitoring in Gauteng is performed by various authorities but the results are often incomplete and the assimilation of results does not give an overall picture due to incomplete data capturing which is reportedly due to chronic personnel shortages, lack of adequate equipment maintenance and insufficient monitoring stations¹.
- While the agricultural contribution to the provincial GDP is relatively low it is regarded as an important sector for economic growth, employment and land reform, with the development of niche agriculture and related agro-industries as a key component, especially in certain places close to the urban core.
- Reliable and affordable energy supply is regarded as the most important element to ensure the economic growth aspiration of the province. There is a strong view that energy conservation should be a primary focus in the urbanisation process of Gauteng and that “green” energy should play a much more important role.

2.3. Development and conservation priorities

The end result of the desired state assessment resulted in a spatial layer that indicates the combination priorities for conservation, urban development, rural development and agriculture in the province. These priority combinations (based on the desired state assessment) together with the Environmental Sensitivity Assessment forms the foundation for the definition of Environmental Management Areas (EMAs) for the GPEMF. It also provides information that is relevant for the drafting of policies, guidelines and/or management criteria for the eventual EMZs. The development and conservation priorities are:

- Agricultural priority;
- Agricultural and conservation priority;
- Agricultural and rural development priority;
- Agricultural and urban development priority;
- Agricultural, conservation and rural development priority;

- Agricultural, conservation and urban development priority;
- Agriculture, conservation, rural and urban development priority;
- Agricultural, rural and urban development priority;
- Conservation priority;
- Conservation and rural development priority;
- Conservation and urban development priority;
- Conservation and rural urban development priority;
- No priority (developed);
- Rural development priority;
- Rural and urban development priority; and
- Urban development priority.

3. Environmental Sensitivity Assessment

The Environmental Sensitivity Assessment is based on the environmental management parameters used by GDARD as well as other relevant competent authorities² in assessing potential impacts, namely:

- Current conservation status;
- Conservation priorities as defined in C-Plan 3.3;
- Ridges as defined in the Gauteng Ridges Policy and the GPEMF;
- Surface hydrological features in Gauteng; and
- Current land use in Gauteng.

The current conservation status was assessed in terms of the level of current statutory protection and divided into the following three protection level groups:

- Areas with a high level of protection where such areas are protected in terms of the Protected Areas Act (high level of importance);
- Areas with a medium level of protection where it falls within an area designated for conservation related uses (medium level of importance); and
- All other parts of the province that does not enjoy any level of formal protection, including conservancies (level of importance not applicable).

Conservation priorities as defined in C-Plan 3.3 were included in terms of the following three categories:

- Critical Biodiversity Areas (CBAs) (very high level of importance);
- Ecological Support Areas (ESAs) (high level of importance); and
- All other parts of the province that is not classified as either CBAs or ESAs (importance not applicable).

¹ Officials from Ekurhuleni confirmed that these issues are being addressed at the different levels of government and that significant improvement can be expected in the near future.

² As defined in NEMA and the EIA Regulations.

The ridges represent ridges as defined in terms of the Gauteng Ridges Policy and ridges that were defined in more detail in this GPEMF process and include:

- Ridges in a natural state (high level of importance); and
- All other parts of the province that is not classified as ridges in a natural state (importance level not applicable).

The surface hydrology of the province together with a 32m sensitivity zone (buffer) on either side of the element was included in the assessment as:

- All hydrological features (very high level of importance); and
- All other areas in the province (level of importance not applicable).

Protected areas were included as a sensitive land use.

4. Unique Control Areas

Three categories of preliminary unique areas have been identified out of the desired state process, namely:

- Low Control Areas;
- High Control Areas; and
- Inter-sector Management areas.

These are based on the integration and analysis of 4 primary GIS datasets, i.e. C-Plan 3.3, GAPA IV, the Gauteng SDF and Gauteng Rural Development Strategy that together represent the current provincial spatial policy framework. Where percentages are mentioned below, it is only indicative of the total coverage of the combined 4 datasets within Gauteng³. The three categories are further described as follows:

- Low control areas (4 types of areas) made up out of:
 - LC01: Urban existing developed land ($\pm 9.22\%$ of total area);
 - LC02: Urban development priority ($\pm 2.35\%$ of total area);
 - LC03: Rural development priority ($\pm 4.72\%$ of total area); and
 - LC04: Rural and urban development priority ($\pm 0.47\%$ of total area).

The focus in these areas would be to exclude as many as possible compatible activities from EIA requirements provided that such activities conform to basic norms and standards that must be enforced through the relevant town planning and local development approval processes.

- High control areas (4 types of areas) made up out of:
 - HC01: Conservation priority ($\pm 5.97\%$ of total area);
 - HC02: Agriculture priority ($\pm 0.97\%$ of total area);
 - HC03: Agriculture and rural development priorities ($\pm 33.79\%$ of total area)⁴; and
 - HC04: Conservation and rural development priorities ($\pm 5.69\%$ of total area)⁵.

The focus in these areas would be to ensure that the potential of the various priorities are maximised by limiting non-compatible activities in these areas to the fullest extent possible (i.e. it may require additional activities to be listed for EIA processes).

- Inter-sector management areas (8 area types), constitute areas where there are different and so - referred to as conflict management areas (Figure B13):
 - ISM01: Conservation and agricultural priorities ($\pm 5.51\%$ of total area);
 - ISM02: Conservation and urban development priorities ($\pm 2.25\%$ of total area);
 - ISM03: Conservation, urban development and rural development priorities ($\pm 0.37\%$ of total area);
 - ISM04: Agriculture and urban development priorities ($\pm 3.48\%$ of total area);
 - ISM05: Agriculture, conservation and rural development priorities ($\pm 21.28\%$ of total area);

- ISM06: Agriculture, conservation and urban development priorities ($\pm 1.58\%$ of the total area);
- ISM07: Agriculture, conservation, Urban development and rural development priorities ($\pm 0.92\%$ of total area); and
- ISM08: agriculture, rural and urban development priorities ($\pm 1.45\%$ of total area).

5. Environmental Management Zones

The Environmental Management Zones were derived from the desired state, the environmental sensitivity as well the unique control areas as identified in sections 1, 2 and 3. The EMZs were also presented to the Gauteng Planning Forum⁶ where it was generally accepted as a suitable contribution to facilitate appropriate development in Gauteng. The EMZs also took the Gauteng Growth and Management Perspective, 2014, into account and is therefore aligned to the general development policy for Gauteng.

Five EMZs were identified and overlaying those a further six Special Management Areas (see section 6) were identified where specific planning and policy measures are necessary to achieve the development objective of those areas. One of the Special Management Areas is the Cradle of Humankind World Heritage Site (CoHWHS) for which a recent EMF has been completed. It was decided to incorporate that EMF within the GPEMF (the only other EMF to be incorporated as a whole).

The five EMZs are described in the sections below:

5.1. Zone 1: Urban development zone

Intention

The intention with Zone 1 is to streamline urban development activities in it and to promote development infill, densification and concentration of urban development within the urban development zones as defined in the Gauteng Spatial Development Framework (GSDF), in order to establish a more effective and efficient city region that will minimise urban sprawl into rural areas. Certain currently listed activities (see section 5) may be exempted from environmental assessment requirements at the discretion of the competent authority.

Composition

The Urban Development Zone is composed of the following control areas within the area covered by the GSDF as defined in the previous chapter:

- LC01: Urban existing developed land⁷;
- LC02: Urban development priority;
- LC03: Rural development priority;

³ It must be noted that none of these datasets provide a full coverage of the whole province.

⁴ These areas could be earmarked as agricultural areas that support the land reform process.

⁵ These areas could be earmarked as nature tourism orientated areas that support the land reform process.

⁶ Relevant provincial departments and planning representatives from the municipalities in Gauteng under the auspices of the Gauteng Planning Commission in the Office of the Premier.

⁷ The coverage of each area will be calculated and included in the GIS layers.

- LC04: Rural and urban development priority⁸.
- ISM01: Conservation and agricultural priorities;
- ISM02: Conservation and urban development priorities;
- ISM03: Conservation, urban development and rural development priorities;
- ISM04: Agriculture and urban development priorities;
- ISM05: Agriculture, conservation and rural development priorities⁹;
- ISM06: Agriculture, conservation and urban development priorities;
- ISM07: Agriculture, conservation, urban development and rural development priorities; and
- ISM08: Agriculture, rural and urban development priorities.

The boundary of this zone is the effective equivalent of an “urban edge” as envisaged by the Gauteng Spatial Development Framework and incorporated in the GPEMF. It should be used as such for the purpose of interpreting the EIA Regulations (current and future).

Conditions

- Development in this area must be sustainable in respect to the capacity of the environment and specifically the hydrological system to absorb additional sewage and stormwater loads as a result of increased densities;
- Existing open spaces and urban parks should be retained as open space to cater for the open space needs of the foreseen increased densities; and
- Stormwater drainage must be in accordance with the Water Research Commission Report, 2012 and the South African Guidelines for Sustainable Drainage Systems.

5.2. Zone 2: High control zone (within the urban development zone)

Intention

Sensitive areas within the urban development zone must be conserved and where linear development (roads etc.) cannot avoid these areas, a proper assessment and implementation of alternatives must be undertaken.

Composition

Sensitive areas within the Urban Development Zone include:

- Conservation priority areas (CBAs: Irreplaceable areas);
- Rivers (including 32m buffers);
- Ridges;
- Areas that are sensitive (as determined in the sensitivity assessment); and
- Protected areas.

5.3. Zone 3: High control zone (outside the urban development zone)

Intention

Special control zones are sensitive areas outside the urban development zone. These areas are sensitive to development activities and in several cases also have specific values that need to be protected.

Composition

The following areas have been identified in this zone:

- CBAs (Irreplaceable and Important areas) and ESAs outside the urban development zone as defined in C-Plan 3.3;
- Rivers (including a 32m buffer on each side) and currently undeveloped ridges that must be conserved;
- Areas that are sensitive (as determined in the sensitivity assessment); and
- Protected areas.

Conditions

No listed activities may be excluded from environmental assessment requirements in this zone and further activities may be added where necessary to protect the environment in this zone. Additional requirements (guidelines, precinct plans, etc.) to ensure the proper development of identified areas in this zone, in a manner that will enhance their potential for conservation, tourism and recreation may be introduced.

5.4. Zone 4: Normal control zone

Intention

This zone is dominated by agricultural uses outside the urban development zone as defined in the Gauteng Spatial Development Framework. No listed activities may be excluded from environmental assessment requirements in this zone.

Composition

The normal control zone is comprised of the following areas outside the SDF area and special control areas:

⁸ Potential “high density development nodes” in rural areas.

⁹ These areas are large and will require a criteria based policy to ensure that conservation, agriculture and the land reform processes in these areas are managed in the most sustainable way.

LC01, LC02, LC03, LC04, ISM01, ISM02, ISM03, ISM04, ISM05, ISM06, ISM07, ISM08

5.5. Zone 5: Industrial and large commercial focus zone

Intention

The intention with Zone 5 is to streamline non-polluting industrial and large scale commercial (warehouses etc.) activities in areas that are already used for such purposes and areas that are severely degraded but in close proximity to required infrastructure (such as old and even current mining areas). Certain currently listed activities (see section 5), in addition to those intended for Zone 1 may be excluded from environmental assessment requirements in this zone in future.

Conditions

Development in this area must be sustainable in respect to the capacity of the environment and specifically the hydrological system to absorb additional sewage and stormwater loads of increased densities; and

Development in this area must identify any unmapped wetlands, especially seep areas that may occur on any site and when necessary apply for the required water use licence.

Non-polluting Industrial promotion areas where selected activities are to be excluded from EIA processes in addition to those excluded in Zone 1.

5.6. Protected areas

Each protected area is required to have a management plan in terms of NEM: Protected Areas Act. Compatible, conditionally compatible and undesirable development and land-uses in protected areas must therefore be determined in each of the management plans.

5.7. Development or land-uses that would be compatible, conditionally compatible and undesirable in the Environmental Management Zones

The purpose of this section is to indicate whether proposed developments or land uses are compatible, conditionally compatible or undesirable in the various EMZs. It must serve as a guide for decision-makers in the evaluation of applications and as a guide to developers of what could reasonably be the expected outcome of applications.

Table B2: Developments or land uses that would be compatible, conditionally compatible and undesirable in the Environmental Management zones

Category of developments or land uses	Developments or land uses ¹⁰	Zones that are:		
		Compatible with the developments or land uses	Conditionally compatible with the developments or land uses	Undesirable for the developments and land uses
Agriculture & fisheries	Crop production (excluding existing crop production).	4	3	1, 2 and 5
	Cultivation of virgin soil.	4	1 and 5	2 and 3
	Animal production (free range).	3 and 4	2	1 and 5
	Agricultural infrastructure.	4	3	
	Battery farming (poultry, feedlots, etc.).	4	5	1, 2 and 3
	Aquaculture (off stream).	5	4	1, 2 and 3
	Urban agriculture.	1 and 5	4	2 and 3
Forestry	Production forestry.	4	5	1, 2 and 3
	Subsistence forest use (small scale forest use).	4	1 and 5	2 and 3
	Agroforestry.	4	5	1, 2 and 3
	Forestry research & education.	4	1 and 5	2 and 3
	Forest resource use (natural indigenous).		1, 4 and 5	2 and 3
	Forest recreation & tourism.	3 and 4	1 and 2	5
	Forest cultural / spiritual use.	1, 2, 3 and 4		
Conservation	Protected areas.	2 and 3	4	1 and 5
	Conservation areas.	2 and 3	4	1 and 5
	Cultural and historical conservation of sites, features and precincts.	1, 2, 3, 4 and 5		
Residential	Accommodation establishments / temporary or transient formal residential.	1	5	2, 3 and 4
	Multiple residential.	1	5	2, 3 and 4

¹⁰ Based on the new land use categories currently being developed by the Department of Rural Development and Land Affairs as part of the SPLUMA implementation.

	Single residential.	1	5	2, 3 and 4
	Transitional residential settlement area.	1	5	2, 3 and 4
	Dispersed residential.	1	5	2, 3 and 4
	Farm worker accommodation.	3 and 4	5	1 and 2
	Living accommodation for domestic workers.	1	5	2, 3 and 4
	Holiday housing.	1 and 4	3	2 and 5
	Rural residential development nodes (not dispersed residential).		4	1, 2, 3 and 5
	Life style estates ¹¹ .		1 and 5	2, 3 and 4
Infrastructure and transport	Roads.	1, 4 and 5	2 and 3	
	Water network.	1, 4 and 5	2 and 3	
	Railways.	1, 4 and 5	2	3
	Sanitation network.	1, 4 and 5	2 and 3	
	Electricity network.	1, 4 and 5	2 and 3	
	Solid waste.	5	1 and 4	2 and 3
	Telecommunication.	1, 4 and 5	2 and 3	
Sport and recreation	Transport.	1, 4 and 5	2 and 3	
	Place of refreshment.	1 and 5		
	Place of amusement / entertainment.			
	Holiday resorts, camps, loges and cottage hospitality.	4	1 and 3	2 and 5
	Hospitality industry.	1 and 4	3 and 5	2
	Sports.	1 and 5	4	
	Urban open space.	1, 2 and 5		3 and 4
Industrial and storage	Domestic service industry.	5	1	
	Light industry / service industry.	5	1	2, 3 and 4

	Noxious industry.		5	1, 2, 3 and 4
	Vehicle service related industry.	5		1, 2, 3 and 4
	Warehousing /distribution and storage.	5		1, 2, 3 and 4
	Agricultural industry.	5	4	1, 2 and 3
Mining and quarrying	Reconnaissance.		4 and 5	1, 2, and 3
	Active mining.	5	4	1, 2 and 3
	Ore extraction & beneficiation.		4 and 5	1, 2 and 3
	Disposal.		4 and 5	1, 2 and 3
Community facilities	Medical and health care services.	1	4	2, 3 and 5
	Cemetery / crematoria.	5	1 and 4	2 and 3
	Child care centre / facility.	1	4 and 5	2 and 3
	Institution.	1 and 5	4	2 and 3
	Place of assembly.	1 and 5	4	2 and 3
	Place of public worship.	1	4 and 5	2 and 3
	Educational / place of education / place of instruction.	1	4	2, 3 and 5
	Protection services.	1 and 5	3 and 4	2
	Post offices.	1 and 5	3 and 4	2
	Law courts.	1 and 5	4	2 and 3
	Offices.	1 and 5	4	2 and 3
	Financial services.	1 and 5	4	2 and 3
	Personal services.	1 and 5	4	2 and 3
	Retail.	1 and 5	4	2 and 3
Motor vehicle business.	1 and 5		2, 3 and 4	

5.8. General guidelines for the Environmental Management Zones

The general guidelines in Table B3 are a direct response to key issues identified in the process as well as inputs received from stakeholders that participated. The guidelines should be

¹¹ Life style estates includes any estate that provide exclusive facilities to its residents. It may for example include recreation facilities, sports facilities, education facilities, health and welfare facilities, hospitality facilities, etc.

implemented through the EIA process in the various EMZs. Where activities are excluded from the requirement of the relevant EIA process, it will serve as conditions of such exclusions.

Table B3: General guidelines for the Environmental Management Zones

Ref.	Guideline description	Applicable zones
	Water utilisation	
1.	Water utilisation from the surface natural hydrological system in this zone should be kept to an absolute minimum. Preservation of the water systems in its most natural state possible is desired as rivers and streams form the most important links with natural areas in other zones. No additional damming of rivers and streams should be allowed in this zone.	1, 2, 3, 4 and 5
2.	Water abstraction from karst aquifers (aquifers occurring in dolomite) in this zone should be prohibited except in places where it forms part of the management of Acid Mine Drainage (AMD) as authorised by the Department of Water and Sanitation (DWS).	1, 2 and 5
	Water quality and stormwater management	
3.	The water quality of all rivers in this zone is unacceptable and should not be allowed to deteriorate any further due to any kind of development. Legislation to protect water quality and prevent pollution should be strictly enforced and policed.	1, 2, 3, 4 and 5
4.	The management of stormwater to prevent flooding must be done in accordance with the requirements of the relevant municipal engineer, and in accordance with DWS requirements, which must ensure that additional runoff water is stored and released at a rate that will not impact negatively (not be more than before the development activity) on the natural flow capacity of rivers and streams. Caution must be exercised in dolomitic areas where stormwater retention methods and structures should be approved by the South African Council for Geosciences. Special caution must also be exercised in instances where additional runoff is released on granitic soils, especially in the presence of shallow perched water tables underlain by a hard plintic (hard ferrous or "oukclip") layer.	1, 4 and 5
5.	Stormwater retention facilities should ideally incorporate an additional 15% to 20% capacity to cater for potential higher runoff events that are likely to occur as a result of climate change.	1 and 5
6.	The use of impermeable surface in new developments should be kept to the minimum and SuDS ¹² components should be included to the extent possible.	1 and 5

¹² The South African Guidelines for Sustainable Drainage Systems (SuDS), 2013 (WRC Report No. TT558/13 of the Water Resource Commission, by University of Cape Town) can be download from: http://www.wrc.org.za/Pages/DisplayItem.aspx?ItemID=10575&FromURL=%2fPages%2fKH_AdvancedSearch.aspx%3fd%3d%26ms%3d%26d%3dThe+South+African+Guidelines+for+Sustainable+Drainage+Systems%26start%3d1 (registration might be necessary).

7.	<p>Stormwater management must be based on the following principles:</p> <ul style="list-style-type: none"> • The need to protect the health, welfare and safety of the public, and to protect property from flood hazards by safely routing and discharging stormwater from developments; • the quest to improve the quality of life of affected communities; • the opportunity to conserve water and make it available to the public for beneficial uses; • the responsibility to preserve the natural environment; • the need to strive for a sustainable environment while pursuing economic development; and • the desire to provide the optimum methods of controlling runoff in such a way that the main beneficiaries pay in accordance with their potential benefits. <p>The following guidelines must be applied to all development activities in this zone in a manner that will satisfy these principles:</p> <ul style="list-style-type: none"> • Water Research Commission Report, 2012. <i>The South African Guidelines for Sustainable Drainage Systems</i>. • CSIR, 2000. <i>Guidelines for Human Settlement Planning and Design, Volume 2, Chapter 6: Stormwater Management</i>. 	1 and 5
8.	<p>Stormwater and sewage drainage must remain separate at all times.</p> <p>Waste water treatment and disposal</p>	1 and 5
9.	<p>No new development of whatever kind should be allowed in this zone unless there is adequate existing capacity for waste water transport (maintained pipes, pumps, etc.) and treatment to the required standard. <i>In the light of the current state of affairs where many waste water treatment plants are not up to standard¹³, this crucial requirement may become a major obstacle to development unless it is urgently addressed by the responsible authorities.</i> Municipal SDFs must incorporate water cathment management plans that cater for anticipated future increased runoff and sewage.</p>	1,2 and 5
10.	No untreated sewage may be disposed of into natural rivers and streams or stormwater systems.	1, 2, 3, 4 and 5
11.	New septic tanks, soak-aways and conservation tanks must be constructed to the specification in Appendix [to be numbered] or to any other specification required by DWS or the relevant municipality for the specific area and conditions.	3 and 4
12.	Where possible, new waste water treatment plants should be located in this zone.	5
13.	The upgrade, modernisation or expansion of existing waste water treatment plants is preferred to new waste water treatment plants in this zone.	1, 2, 3, 4 and 5
	Solid waste management and disposal	
14.	New development activities must comply with legislation ¹⁴ that governs waste management in all instances.	1, 2 and 5

¹³ Department of Water and Sanitation. 2012 and 20123 Green and Blue Drop Reporting documents.

¹⁴ Waste in South Africa is currently governed by means of a number of pieces of legislation, including:

15.	The General Waste Minimisation Plan for Gauteng, 2009, must be consulted in respect to the implementation of the identified waste minimisation options.	1, 2 and 5	23.	The use of coal products for cooking and space heating must be prohibited in all new development activities.	1
16.	For all new development activities the following recyclable materials must be separated from general waste and be recycled ¹⁵ : <ul style="list-style-type: none"> • Paper, including: K4 (cardboard), flat news (newspaper), Kraft paper (brown paper), HL-1 (Photostat and printing paper) and Tetra Pak (juice and milk cartons); • Plastic, including: PET (cold drink and mineral water bottles), HDPE (milk bottles), PVC (water pipes), LDPE (clear and coloured plastic bags, shrink wrap), PP (ice cream and yogurt tubs, cold drink bottle caps), PS (polystyrene packaging and food containers); • Metal (ferrous and non-ferrous cans); and • Glass (bottles – no toughened glass). 	1, 2 and 5	24.	Solar energy, especially for the heating of water but also space heating, should be maximised in all buildings.	1
17.	Garden and vegetative food waste should be composted and re-used in gardens whenever possible. Care must be taken that it is not contaminated by pet faeces, which should be removed daily and be disposed of in the sewage system.	1	25.	Solar energy for the purpose of lighting must also be promoted together with the use of LED globes and other energy saving innovations.	1
18.	General (non-recyclable) solid waste generated must be removed by the relevant local authority or service provider to an appropriate class landfill site.	1, 2 and 5	26.	LP Gas or natural gas should be considered as an alternative energy source to electricity for cooking, space heating and water heating (often very effective if combined with solar water heating).	1
19.	New landfill sites should as far as possible be located in this zone.	5	27.	The Department of Public Works Guideline, Appropriate Development of Infrastructure on Dolomite: Guideline for Consultants, 2003, as well as the requirements of the Council for Geoscience as reflected in the South African National Standards (SANS) ¹⁷ , must also be taken into account and be adhered to when development is envisaged on dolomites ¹⁸ .	1
Housing / Residential			28.	Residential development in this zone should focus (there should be a bias/preference) on medium-density mixed housing in order to attain the desired higher density for the zone ¹⁹ . Residential development should also be planned to make maximum use of public transport (existing and future).	1
20.	All new housing developments must comply with the energy efficiency requirements of the National Building Regulations through the application of South African National Standard ¹⁶ SANS 10400 Part XA: Energy usage in buildings (See Appendix : Guidance on how to comply with Regulation XA).	1	29.	Retail development should be planned to be efficient in terms of location in respect to customers (residential and places of work).	1
21.	Green roofs and other source control methods should be incorporated into existing and new developments.	1	30.	Low density residential development, including new natural urban open space, in this zone should be located on land that is not suitable for medium to high density residential purposes due to geological constraints.	1
22.	Water recycling and the use of grey water should be included in design.	1	31.	Gardens and parks should be regarded as an important part of the “green infrastructure” of Gauteng ²⁰ and should be incorporated in the planning of all new development in this zone. It should also be designed to assist with SuDS goals. Food gardens should also be incorporated in design where possible and appropriate.	1

- The South African Constitution (Act 108 of 1996);
- Hazardous Substances Act (Act 5 of 1973);
- Health Act (Act 63 of 1977);
- Environment Conservation Act (Act 73 of 1989);
- Occupational Health and Safety Act (Act 85 of 1993);
- National Water Act (Act 36 of 1998);
- The National Environmental Management Act (Act 107 of 1998);
- Municipal Structures Act (Act 117 of 1998);
- Municipal Systems Act (Act 32 of 2000);
- Mineral and Petroleum Resources Development Act (Act 28 of 2002);
- Air Quality Act (Act 39 of 2004); and
- National Environmental Management: Waste Act, 2008 (Act 59 of 2008).

¹⁵ There are several service providers that can provide the collection and recycling service. Separation of recyclables is generally also not necessary. The information below has been sourced from the marketing material of some of these service providers i.e. the infrastructure is already in place in Gauteng.

¹⁶ South African National Standards (SANS) documents must be purchased from the South African Bureau of Standards.

¹⁷ There are six national standards (SANS), the SANS 1936 series, dealing with the subject of land development on dolomite (October 2012). The objective of the SANS 1936 series is to set requirements for the development of dolomite land in order to ensure that people live and work in an environment that is seen by society to be acceptably safe, where loss of assets is within tolerable limits, and where cost-effective and sustainable land usage is achieved. SANS 633:2012 soil profiling and rotary percussion borehole logging on dolomite land in Southern Africa for engineering purposes was developed for the purpose of soil and rock profiling for dolomite areas. The standard serves to standardise the methods, procedures and nomenclature required to accurately define ground profiles for the purposes of infrastructure development and the repair of subsiding dolomite land. SANS 634:2012 geotechnical investigations for township development identifies the applicable requirements for a preliminary and two-phase detailed geotechnical site investigation on unoccupied undeveloped parcels of land for settlement development purposes. SANS 633 and SANS 634 are complimentary to the SANS 1936 series.

¹⁸ It is recognised that the cost of geotechnical investigations is very high and that it has a crippling effect on especially low cost housing projects in certain areas with devastating unintended consequences. This is a matter that needs to be dealt with urgently by all the relevant government organisations.

¹⁹ For more insight please read: the June 2011 CSIR factsheet: Focus on medium-density mixed housing – and important component in the transformation of South African housing environments.

²⁰ For more insight please read: *State of Green Infrastructure in the Gauteng City-Region*, 2013. Published by the Gauteng City-Region Observatory, a partnership between the University of Johannesburg, the University of the Witwatersrand and the Gauteng Provincial Government.

32.	Existing indigenous trees should not be removed in new developments and the developments should be designed around such trees.	1		
33.	At least 5% of development budgets should be allocated to gardens and parks for all new development activities in this zone and be designed to maximise their green infrastructure value ²¹ .	1		
34.	High energy and maintenance facilities such as swimming pools should preferably be incorporated into communal facilities instead of private facilities.	1		
35.	“Water-wise” gardens and parks are preferred in this zone.	1		
36.	The use of vegetation that is endemic (local indigenous vegetation) to the area in gardens and parks is encouraged in order to contribute to the value of the wider Gauteng eco-system.	1		
	Business and retail			
37.	All new business and retail developments must comply with the energy efficiency requirements of the National Building Regulations (SANS 10400-1990 ²²) and in particular SANS 10400 Part X: Environmental sustainability and SANS 10400 Part XA: Energy usage in buildings.	1 and 5		
38.	Solar energy, especially for the heating of water but also space heating, should be maximised in all buildings. Solar energy for the purpose of lighting must also be promoted together with the use of LED globes and other energy saving innovations.	1 and 5		
39.	The large roof areas of businesses and retail facilities including covered parking lots provide ideal surfaces for mass installation of solar energy panels and should be considered as an option in every new development.	1 and 5	47.	Non-polluting industry and large commercial activities should be located in this zone whenever possible. 5
40.	Green roofs and roof gardens should also be prioritised as this would change the urban heat environment and can add to open space and outdoor recreation space.	1 and 5	48.	New industrial and commercial developments should only be allowed in this zone if there is no suitable alternative location available in zone 5. Any such location of commercial and industrial developments must take the guidelines applicable to Zone 1 into account. 1
41.	Rain water tanks and other source control measures must be incorporated into the designs of buildings.	1 and 5	49.	Solar energy, especially for the heating of water but also space heating, should be maximised in all buildings. Solar energy for the purpose of lighting must also be promoted together with the use of LED globes and other energy saving innovations. 1 and 5
42.	Rain gardens should be incorporated.	1 and 5		
43.	Open parking areas should adhere to principles of SuDS and include permeable paving, swales and bio-retention areas.	1 and 5	50.	The large roof areas of new and existing Industrial and commercial facilities including covered parking lots provide ideal surfaces for mass installation of solar energy panels and should be considered as an option in every new development. 5
44.	Water recycling and use of grey water should be included in design.	1 and 5	51.	Open parking areas should adhere to principles of SuDS and include permeable paving, swales and bio-retention areas. 5
45.	Existing indigenous trees should not be removed in new developments and the developments should be designed around such trees.	1 and 5	52.	Water recycling and the use of grey water should be included in design. 5
	Urban open space		53.	Green infrastructure should be used in these areas for water and air purification and water treatment. 5
46.	The design and development of new urban open space should contribute to the following at every scale:	1 and 5	54.	Green roofs and roof gardens should also be prioritised as this would change the urban heat environment. 5
				<ul style="list-style-type: none"> • Ecosystem services that include: <ul style="list-style-type: none"> ○ Climatic amelioration/regulation; ○ Water and air purification; ○ Water supply regulation; ○ Erosion and sediment control; ○ Hazard mitigation; ○ Waste treatment; ○ Noise screening; ○ Stormwater management; ○ Prevent habitat fragmentation; and ○ Provision of habitats for indigenous plants and animals. • Social functions that include: <ul style="list-style-type: none"> ○ Provision of space for leisure and recreation; ○ Facilitating social contact and communication; ○ Allowing access to nature; ○ Providing space for, and allowing access to community (food) gardens; ○ Reduction of social inequality, ○ Promoting access to public open space, and ○ Influencing human health and well-being. • Structural and symbolic functions including: <ul style="list-style-type: none"> ○ Articulating, dividing and linking areas of the urban fabric; ○ Improving the legibility of the urban landscape; ○ Establish as sense of place; and ○ Provide identity, meaning and values.

²¹ The CSIR “Red Book” *Guidelines for Human Settlement Planning and Design Chapter 5.4: Soft Open Spaces*, can be consulted for more information.

²² South African National Standards (SANS) documents must be purchased from the South African Bureau of Standards.

	has area specific management plans and objectives.	
74.	Land used for agriculture in this area forms part of Ecological Support Areas and agriculture should therefore continue on such land as a compatible land use.	3
	Agriculture	
75.	Agriculture is a primary activity in this zone and new development activities that would impact on agriculture potential ²⁴ in this zone should not be allowed, with the exception of unavoidable linear service infrastructure that may be allowed in this area.	4
76.	New agricultural practices must allow enough land to remain in a natural state to allow for refugia for pollinators and predators of pests (ecosystem services to farmers, especially small scale ones).	4
77.	New agricultural practices should take water wise principles into account, using rain gardens and retention strategies whenever possible.	4
78.	New extensive agriculture should not be encouraged in this zone. Existing farming may continue as long as it remains viable in the urban development context.	1, 2, 3 and 5
79.	Small scale niche market agriculture may be appropriate as part of other development initiatives. The feasibility and desirability of such initiatives should be evaluated as part of the town/development planning process in this zone.	1 and 5
80.	Vegetable gardens and fruit trees within the urban development structure should be encouraged in this zone, especially if it makes extensive use of rainwater runoff.	1
81.	The use of polluting fertilisers and pesticides should be limited and releasing polluted water into the natural system must be prohibited.	4
	Game and cattle farming	
82.	Sustainable game and cattle farming may be appropriate in this zone but each new development of such farming activities should be assessed for its sustainability in terms of natural veld conditions.	3 and 4
83.	Game and cattle farming should not be encouraged in this zone. Existing game (with the necessary permits) and cattle farming may continue as long as it remains viable in the urban development context.	1 and 5

²⁴ Refer to: Gauteng Agricultural Potential Atlas (GAPA IV), 2014.

6. Special Control Zones

6.1. Dinokeng special management zone²⁵

The Dinokeng area has a very high potential for nature tourism activities within an area with a strong nature conservation character. Its location in respect to the urban areas of Gauteng and especially the OR Tambo International Airport makes it an ideal area for wildlife tourism. Other activities that should be promoted include:

- Recreation (especially in the Roodeplaas Dam area);
- Hospitality (especially lodges);
- Rural development that caters for the specific needs of the area; and
- Maintenance of current agricultural activities.

Activities that should be avoided as far as possible include:

- Battery farming and feedlots;
- Mining and sand winning;
- Industrial activities; and
- Large commercial and retail developments.

The normal EMZ guidelines will apply in this area.

6.2. The Cradle of Humankind World Heritage Site (CoHWHS) special control zone

The purpose of this special zone is to incorporate the Cradle of Humankind World Heritage Site EMF into the Gauteng EMF. It has its own management zones and management guidelines that must be followed.

6.3. CoHWHS environmental management zones and management guidelines

(a) Primary Zone

Description

The primary zone is considered the most important zone in terms of the outstanding universal value of the CoHWHS. This zone represents the extent of the fossil bearing dolomitic limestone features and caves and Karst system that extends beyond the boundary of the existing proclaimed WHS and originally proposed buffer zone (2008). These physical features and resulted landscapes define geographically as the most important primary natural elements of the CoHWHS. The need to protect and preserve the integrity of this

zone is without doubt the prime management responsibility of the Management Authority in terms of its mandate to protect, preserve and present these elements.

Desirable development and associated infrastructure

Additional dwelling unit; Agricultural buildings; Boutique hotel/lodge; Dwelling house; Extensive agriculture; Farm labourer structures; Fossil research and associated infrastructure; Guest houses; Guided scientific tours; Home occupation; Infrastructure; Associated infrastructure; Low impact camping site; Nature and heritage trails; Mountain biking and horse trails; Servant quarters; Tourism incentive accommodation.

Undesirable development and associated infrastructure

Advertising on site; Agri-industry or expansion of existing operations; Aircraft landing strips or expansion of existing strips; Bed and breakfast; Business premises or expansion of existing facilities; Camping; Commercial antennae; Conference facility in excess that provided for in this guideline or expansion of existing facilities; Farm shop; Heli-stops or expansion; High density residential development or expansion of existing facilities; Holiday accommodation; Industrial activity; Infrastructure; Bulk engineering infrastructure facilities or transmission lines; Intensive agriculture or expansion; Lifestyle estates or expansion of existing estate; Mining and quarries; Motorised outdoor recreation; Place of instruction; Place of worship; Resort; Restaurant; Retirement village; Roadside advertising; Service stations or expansion; Service trade; Subdivision of farm portions or land.

(b) Buffer

Description

The proposed new buffer zone (2011) to the north-east of the proclaimed WHS extends into an area that is essentially rural in nature with existing development that is focused around homesteads on portions of largely undeveloped land.

The proposed new buffer zone (2011) to the south-west of the WHS is however substantially fragmented being an area of agricultural holdings with associated mixed use development.

Desirable development and associated infrastructure

Same requirements as those for the CoHWHS Primary Zone.

Undesirable development and associated infrastructure

Same requirements as those for the COH WHS unless the area has already been substantially subdivided and developed such as the agricultural holdings and informal settlements located to the south of the N14 and west of Krugersdorp Nature Reserve. In these instances, best practice management in terms of services provision and impact mitigation should apply to try and limit negative impacts on water and visual resources.

(c) Secondary Zone 1

Description

²⁵ The area selected is based on several factors and does not conform to the official Dinokeng boundary where it does not make sense for one or another reason.

Zone 1 is located predominantly away from urban pressures and immediate access from the adjoining urban areas. The farm portions in this area have generally remained extensive except for a number of smaller portions (smaller than 40 ha) located in the far northern reaches of this zone in close proximity to the Hartbeespoort Dam and adjoining tourism facilities. This area is characterised by limited development except for the Hartebeesthoek Satellite Tracking facility and associated structures which visually detract from the surrounding rural landscape. The Maropeng Information Centre is also located within this zone.

Desirable development and associated infrastructure

Same provision as for the primary zone excluding:

Bed and breakfast; Farm stalls; Fossil research and associated infrastructure;

but including:

Infrastructure; Associated infrastructure; Resort; Restaurants.

Undesirable development and associated infrastructure

Same as for the primary zone excluding uses indicated as desirable.

(d) Secondary Zone 2

Description

Zone 2 is an area consisting mainly of subdivided farm portions in an area characterised by strongly undulating plains, prominent ridges and secluded hills and rocky outcrops. Development in this area is characterised by a mixed use of rural and tourism facilities resulting in a cultural landscape with a general rural character that has seen limited modification due to intensive agricultural or agri-industry and tourism related facilities dispersed in the landscape. This area is well provided with surfaced road infrastructure resulting in these roads becoming popular tourism routes both for motorised vehicles and cyclists alike.

Desirable development and associated infrastructure

Same provision as for the primary zone excluding:

Bed and breakfast; Commercial kennel; Farm stalls; Fossil research and associated infrastructure;

but including:

Infrastructure; Associated infrastructure; Plant nursery; Resort; Restaurants.

Undesirable development and associated infrastructure

Same as for the primary zone excluding uses indicated as desirable.

Limited modification due to intensive agricultural or agri-industry and tourism related facilities dispersed in the landscape. This area is well provided with surfaced road infrastructure resulting in these roads becoming popular tourism routes both for motorised vehicles and cyclists alike.

Desirable development and associated infrastructure

Same provision as for the primary zone excluding:

Bed and breakfast; Commercial kennel; Farm stalls; Fossil research and associated infrastructure;

but including:

Infrastructure; Associated infrastructure; Plant nursery; Resort; Restaurants.

Undesirable development and associated infrastructure

Same as for the primary zone excluding uses indicated as desirable.

6.4. Vaal Dam special management zone

While the normal EMZ guidelines will apply in this area, additional consideration needs to be given in respect to the following:

- Local tourism focused on the domestic market;
- Intensive recreation next to the Vaal Dam;
- Conservation of grassland habitat in the area;
- Rural development that focusses on tourism and recreation;
- Recreation.

6.5. Johannesburg South special control zone

The Johannesburg South special control zone (Klipriviersberg Economic and Ecosystem Development Zone project area) is special in the sense that it combines several environmental and development features that can form a valuable conservation, recreation and local

agricultural and related employment opportunities. It includes the SOJO and KlipSA initiatives. In addition to the normal EMZ guidelines that will apply to the various zones in this area decisions should also be taken with due regard of the current initiatives in the area, including an emphasis on hospitality, tourism and recreation associated development as the nature and basis of economic activities in the area is the integration of agricultural, tourism and recreation value chains.

6.6. Johannesburg North special management zone (the Greater Kyalami Conservancy)

While the normal EMZ guidelines will apply in this area, additional consideration needs to be given in respect to the following:

- **Desired activities (development) for the area:**

Equestrian therapy centres and facilities for interaction with horses for surrounding urban dwellers. Existing facilities such as Shumbashaba Equine Assisted Therapy Centre offer an exceptional service to the community of Diepsloot through their programmes with at-risk youth and disabled individuals. There is a great demand for these programmes which are being recognised nationally and internationally. Environmental educational facilities that could be utilised by schools and research institutions in the region. Nature trails and training of nature guides, bird watching facilities, green building resource centre, urban agriculture projects to increase food security and create employment for neighbouring communities. Nurseries to grow local indigenous plants and herbs. Low density, residential development sensitive to the hydrology in the area. Trails for mountain biking, trail running and bridle trails. Shared equestrian facilities and supporting businesses. Cycling infrastructure on perimeter roads to encourage non-motorised transport and offer a low cost transport option for commuters from Diepsloot and Olivenhoutbosh.

- **Activities that are not desired in the area:**

Medium density residential developments and golf estates.

While one appreciates the need for security in this part of Johannesburg it should be a development aim to discourage gated communities and walled estates within the Greater Kyalami Area. It is acknowledged that there are existing gated communities which have been lawfully established. It is deemed that the continued creation of insular communities with the Greater Kyalami Area will not serve its long term goal as an open and accessible area where security is maintained through other less draconian means.

- **Activities that should not be allowed under any circumstance:**

Light industrial or industrial development, large scale (big-box) retail and warehousing, high density residential development, retail or commercial development.

6.7. Special control zone for conservation, recreation and tourism, as indicated on Figure 14

This area falls mostly within the buffer area of the CoHWHS. The management plan should at least comply with the restrictions placed on the buffer zone area in the CoHWHS Management Guidelines.

It does however have a high potential for conservation, local recreation (hiking, mountain biking, etc.) and cottage style hospitality. Development decision-making must take the character of this area into account to ensure its potential as an important conservation and recreation area.

7. Recommendation for potential activities to be excluded from EIA Processes

One of the key motivations for the GPEMF is to streamline environmental impact management in Gauteng in a manner that would:

- Contribute to the City Region urban development goals of densification, limiting urban sprawl, limit development pressure on rural areas and to achieve better economies of scale for public services;
- Release capacity in government to focus on the important environmental aspects of protection of natural resources, water quality management and enforcement, air quality management and enforcement as well as proactive engagement in making development more sustainable.

NEMA provides for the exclusion of listed in terms of the Environmental Impact Assessment Regulations, 2010.

Activities are only proposed for exclusion in EMZs 1 and 5. During the process no additional activities were proposed by anyone for any of the EMZs.

7.1. Zone 1: Urban development zone

The following activities are proposed to be excluded in EMZ 1:

(a) Listing notice 1:

9., 10., 12., 13 in respect of filling stations., 21., 22., 23., 24?., 26., 37., 38.,41., 42 in respect of filling stations., 46., 47., 50., 52., 53., 55 and phased activities relating to the excluded activities.

(b) Listing notice 2:

15. and 18.

(c) Listing notice 3:

1(b)v., 2(b)iv and vi., 3(b)v. and vi., 4(b)v., vi. and ix., 5(c),(e)i. and ii., 6(b)v. and vii., 7(b)v. and vii., 8(b)v., 9(b)ii., 10(c)v., 12(b)., 13(a) and (d)v., 16(b)v., 17(b)v. and vii., 18(b)v. and vii., 19(b)v. and vi., 20(b)v., 21(b)ii., 22(d)v. and viii., 23(b)v. and viii., 24(b) v. 25 and 26.

(d) Conditions for exclusion:

- Ensure that there are no wetlands and or rivers on the site that will be affected;
- Ensure that adequate stormwater retention is provided;
- Indicate how the relevant general guidelines as indicated in Table B2 have been incorporated in the design and construction of the development or land use; and
- Exclusion from the EIA process does not exclude the proposed development or land use from complying with the requirements of any other legislation.

7.2. Zone 5: Industrial and commercial development focus zone

The following activities are proposed to be excluded in EMZ 5:

(a) Listing notice 1:

1 if it is renewable energy generation (no air pollution)., 9., 10., 12., 13 in respect of filling stations., 21., 22., 23., 24?., 26., 29 if it is renewable energy generation (no air pollution)., 37., 38.,41., 42 in respect of filling stations., 46., 47., 50., 52., 53., 55., phased activities relating to the excluded activities.

(b) Listing notice 2:

6., 8., 10., 11.,15., 18.,

(c) Listing notice 3:

1(b)v., 2(b)iv and vi., 3(b)v. and vi., 4(b)v., vi. and ix., 5(c),(e)i. and ii., 6(b)v. and vii., 7(b)v. and vii., 8(b)v., 9(b)ii., 10(c)v., 12(b)., 13(a) and (d)v., 16(b)v., 17(b)v. and vii., 18(b)v. and vii., 19(b)v. and vi., 20(b)v., 21(b)ii., 22(d)v. and viii., 23(b)v. and viii., 24(b) v. 25 and 26.

(d) Conditions for exclusion:

- Ensure that there are no wetlands and or rivers on the site that will be affected;
- Ensure that adequate stormwater retention is provided;
- Indicate how the relevant general guidelines as indicated in Table B2 have been incorporated in the design and construction of the development or land use; and
- Exclusion from the EIA process does not exclude the proposed development or land use from complying with the requirements of any other legislation.

The activities that are proposed for exclusion in EMZs 1 and 5 are described in more detail in Tables B4, B5 and B6.

Table B4: Proposed exclusion/exemption activities in respect to No. R. 544 18 June 2010: LISTING NOTICE 1: LIST OF ACTIVITIES IN RESPECT TO GAUTENG

Activity No.	Activity description	Zone 1	Zone 5
1	The construction of facilities or infrastructure for the generation of electricity where: i. the electricity output is more than 10 megawatts but less than 20 megawatts; or ii. the output is 10 megawatts or less but the total extent of the facility covers an area in excess of 1 hectare.		x ²⁶

²⁶ Only if it is renewable energy generation (no air pollution).

9	The construction of facilities or infrastructure exceeding 1000 metres in length for the bulk transportation of water, sewage or stormwater - (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more, excluding where: a. such facilities or infrastructure are for bulk transportation of water, sewage or stormwater or storm water drainage inside a road reserve; or b. where such construction will occur within urban areas but further than 32 metres from a watercourse, measured from the edge of the watercourse.	X	X	23	The transformation of undeveloped, vacant or derelict land to – (i) residential, retail, commercial, recreational, industrial or institutional use, inside an urban area, and where the total area to be transformed is 5 hectares or more, but less than 20 hectares, or (ii) residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares; - except where such transformation takes place – (i) for linear activities; or (ii) for purposes of agriculture or afforestation, in which case Activity 16 of Notice No. R. 545 apply.	X	X
10	The construction of facilities or infrastructure for the transmission and distribution of electricity - (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or (ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more.	X	X	24	The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, at the time of the coming into effect of this Schedule or thereafter such land was zoned open space, conservation or had an equivalent zoning.	X	X
12	The construction of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50000 cubic metres or more, unless such storage falls within the ambit of activity 19 of Notice 545 of 2010;	X	X	26	Any process or activity identified in terms of section 53(1) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).	X	X
13	The construction of facilities or infrastructure for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 but not exceeding 500 cubic metres;	X ²⁷	X	29	The expansion of facilities for the generation of electricity where: (i) the electricity output will be increased by 10 megawatts or more, excluding where such expansion takes place on the original development footprint; or (ii) regardless the increased output of the facility, the development footprint will be expanded by 1 hectare or more.		X
21	The establishment of cemeteries of 2500 square metres or more in size.	X	X				
22	The construction of a road, outside urban areas, (i) with a reserve wider than 13,5 meters or, (ii) where no reserve exists where the road is wider than 8 metres, or (iii) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010.	X	X	37	The expansion of facilities or infrastructure for the bulk transportation of water, sewage or stormwater where: (a) the facility or infrastructure is expanded by more than 1000 metres in length; or (b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more– excluding where such expansion: (i) relates to transportation of water, sewage or storm water within a road reserve; or (ii) where such expansion will occur within urban areas but further than 32 metres from a watercourse, measured from the edge of the watercourse.	X	X
				38	The expansion of facilities for the transmission and distribution of electricity where the expanded capacity will exceed 275 kilovolts and the development footprint will increase.	X	X

²⁷ Only in respect to filling stations.

41	The expansion of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, where the combined capacity will be increased by 50000 cubic metres or more.	X	X
42	The expansion of facilities for the storage, or storage and handling, of a dangerous good, where the capacity of such storage facility will be expanded by 80 cubic metres or more.	X ²⁸	X
46	The expansion of cemeteries by an additional 2500 square metres or more.	X	X
47	The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre - (i) where the existing reserve is wider than 13,5 meters; or (ii) where no reserve exists, where the existing road is wider than 8 metres – excluding widening or lengthening occurring inside urban areas.	X	X
50	The expansion of airports where the development footprint will be increased.	X	X
52	The expansion of facilities or infrastructure for the transfer of water from and to or between any combination of the following: (i) water catchments; (ii) water treatment works; or (iii) impoundments; where the capacity will be increased by 50 000 cubic metres or more per day, but excluding water treatment works where water is treated for drinking purposes.	X	X
53	The expansion of railway lines, stations or shunting yards where there will be an increased development footprint – excluding: (i) railway lines, shunting yards and railway stations in industrial complexes or zones; (ii) underground railway lines in mines; and (iii) additional railway lines within the reserve of an existing railway line.	X	X
55	The expansion of a dam where: (i) the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, was originally 5 metres or higher and where the height of the wall is increased by 2,5 metres or more; or (ii) where the high-water mark of the dam will be increased with 10 hectares or more.	X	X

56	The following phased activities for all activities listed in this Schedule: 1 if it is renewable energy generation (no air pollution), 9., 10., 12., 13 in respect to filling stations., 21., 22., 23., 24, 26., 29 if it is renewable energy generation (no air pollution), 37., 38., 41., 42 in respect of filling stations., 46., 47., 50., 52., 53., 55., phased activities relating to the excluded activities.	X	X
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**Table B5: Proposed exclusion/exemption activities in respect to No. R. 545 18 June 2010:
LISTING NOTICE 2: LIST OF ACTIVITIES IN RESPECT TO GAUTENG**

Activity No.	Activity description	Zone 1	Zone 5
6	The construction of facilities or infrastructure for the bulk transportation of dangerous goods - (i) in gas form, outside an industrial complex, using pipelines, exceeding 1000 metres in length, with a throughput capacity of more than 700 tons per day; (ii) in liquid form, outside an industrial complex, using pipelines, exceeding 1000 metres in length, with a throughput capacity more than 50 cubic metres per day; or (iii) in solid form, outside an industrial complex, using funiculars or conveyors with a throughput capacity of more than 50 tons day.		X
8	The construction of facilities or infrastructure for the transmission and distribution of electricity with a capacity of 275 kilovolts or more, outside an urban area or industrial complex.		X
10	The construction of facilities or infrastructure for the transfer of 50 000 cubic metres or more water per day, from and to or between any combination of the following: (i) water catchments, (ii) water treatment works; or (iii) impoundments, excluding treatment works where water is to be treated for drinking purposes.		X
11	The construction of railway lines, stations or shunting yards, excluding - (i) railway lines, shunting yards and railway stations in industrial complexes or zones; (ii) underground railway lines in a mining area; and (iii) additional railway lines within the reserve of an existing railway line.		X

²⁸ Only in respect to filling stations.

15	Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more; except where such physical alteration takes place for: (i) linear development activities; or (ii) agriculture or afforestation where activity 16 in this Schedule will apply.	X	X	3(b)	The construction of masts or towers of any material or type used for telecommunication broadcasting or radio transmission purposes where the mast: (a) is to be placed on a site not previously used for this purpose, and (b) will exceed 15 metres in height, but excluding attachments to existing buildings and masts on rooftops, within (b): v. Sites identified as irreplaceable or important sites in the Gauteng Conservation Plan, and, vi. Areas larger than 2 hectares zoned for use as public open space.	X	X
18	The route determination of roads and design of associated physical infrastructure, including roads that have not yet been built for which routes have been determined before 03 July 2006 and which have not been authorised by a competent authority in terms of the Environmental Impact Assessment Regulations, 2006 or 2009, made under section 24(5) of the Act and published in Government Notice No. R. 385 of 2006,— (i) it is a national road as defined in section 40 of the South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 7 of 1998); (ii) it is a road administered by a provincial authority; (iii) the road reserve is wider than 30 metres; or (iv) the road will cater for more than one lane of traffic in both directions.	X	X	4(b)	The construction of a road wider than 4 metres with a reserve less than 13,5 metres, within: v. Sites identified as irreplaceable or important in the Gauteng Conservation plan; vi. Areas larger than 2 hectares zoned for use as public open space; ix. Any site identified as land with high agricultural potential located within the Agricultural Hubs or Important Agricultural Sites identified in terms of the Gauteng Agricultural Potential Atlas, 2006.	X	X
				5(c)	The construction of resorts, lodges or other tourism accommodation facilities that sleep less than 15 people, outside urban areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve.	X	X
				5(e)	The construction of resorts, lodges or other tourism accommodation facilities that sleep less than 15 people, within: i. Sites that have been identified as irreplaceable or important in the Gauteng Conservation Plan; ii. Any sites located within the Agricultural Hubs or Important Agricultural Sites identified in terms of the applicable Gauteng Agricultural Potential Atlas.	X	X
				6(b)	The construction of resorts, lodges or other tourism accommodation facilities that sleep 15 people or more, within: v. Sites identified as irreplaceable or important in the Gauteng Conservation Plan; vii. Any sites located within the Agricultural Hubs or Important Agricultural Sites identified in terms of the applicable Gauteng Agricultural Potential Atlas.	X	X

**Table B6: Proposed exclusion/exemption activities in respect to No. R. 546 18 June 2010:
LISTING NOTICE 3: LIST OF ACTIVITIES IN RESPECT TO GAUTENG**

Activity No	Activity description (applicable portions)	Zone 1	Zone 5
1(b)	The construction of billboards exceeding 18 square metres in size outside urban or mining areas or outside industrial complexes, within: v. Sites identified as irreplaceable or important sites in the Gauteng Conservation Plan.	X	X
2(b)	The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic metres, within: v. Sites identified as irreplaceable or important sites in the Gauteng Conservation Plan; vi. Areas larger than 2 hectares zoned for use as public open space.	X	X

7(b)	The conversion of existing structures to resorts, lodges or tourism accommodation facilities that sleep 15 people or more, within: v. Sites identified as irreplaceable or important in the Gauteng Conservation Plan; vii. Any sites located within the Agricultural Hubs or Important Agricultural Sites identified in terms of the applicable Gauteng Agricultural Potential Atlas.	X	X	17(b)	The expansion of reservoirs for bulk water supply where the capacity will be increased by more than 250 cubic metres, within: v. Sites identified as irreplaceable or important sites in the Gauteng Conservation Plan; vi. Areas larger than 2 hectares zoned for use as public open space.	X	X
8(b)	The construction of aircraft landing strips and runways [shorter than 1,4 kilometres] 1.4 kilometres and shorter, within: v. Sites identified as irreplaceable or important in the Gauteng Conservation Plan.	X	X	18(b)	The expansion of a resort, lodge, hotel and tourism or hospitality facilities where the development footprint will be expanded, within: v. Sites identified as irreplaceable or important in the Gauteng Conservation Plan; vii. Any sites located within the Agricultural Hubs or Important Agricultural Sites identified in terms of the applicable Gauteng Agricultural Potential Atlas.	X	X
9(b)	The construction of above ground cableways and funiculars within: ii. Sites identified as irreplaceable or important in the Gauteng Conservation plan.	X	X	19(b)	The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre, within: v. Any site identified as land with high agricultural potential located within the Agricultural Hubs or Important Agricultural Sites identified in terms of the Gauteng Agricultural Potential Atlas, 2006; vi. All sites identified as irreplaceable or important in terms of the applicable Gauteng Conservation Plan.	X	X
10(c)	The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres, within: v. Sites identified as irreplaceable or important in the Gauteng Conservation Plan.	X	X	20(b)	The expansion of runways or aircraft landing strips where the expanded runways or aircraft landing strips will be longer than 1,4 kilometres in length, within:v. Sites identified as irreplaceable or important in the Gauteng Conservation Plan.	X	X
12(b)	The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation within critical biodiversity areas identified in bioregional plans.	X	X	21(b)	The expansion of above ground cableways and funiculars where the development footprint will be increased, within: ii. Sites identified as irreplaceable or important in the Gauteng Conservation Plan.	X	X
13(a)	The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation.	X	X	22(d)	The expansion of tracks or routes for the testing, recreational use or outdoor racing of motor powered vehicles excluding conversion of existing tracks or routes for the testing, recreational use or outdoor racing of motor powered vehicles, where the development footprint will be expanded, within: v. Sites identified as irreplaceable or important in the Gauteng Conservation Plan; viii. Areas larger than two hectares zoned for use as public open space.	X	X
13(d)	The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, within: v. Sites identified as irreplaceable or important in the Gauteng Conservation Plan.	X	X				
16(b)	The construction of: (i) jetties exceeding 10 square metres in size; (ii) slipways exceeding 10 square metres in size; (iii) buildings with a footprint exceeding 10 square metres in size; or (iv) infrastructure covering 10 square metres or more, where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line, within: v. Sites identified as irreplaceable or important in the Gauteng Conservation Plan.	X	X				

23(b)	<p>The expansion of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage facilities will be expanded by 30 cubic metres or more but less than 80 cubic metres, within:</p> <p>v. Sites identified as irreplaceable or important in the Gauteng Conservation Plan;</p> <p>viii. Areas larger than two hectares zoned for use as public open space.</p>	X	X
24(b)	<p>The expansion of</p> <p>(a) jetties where the jetty will be expanded by 10 square metres in size or more;</p> <p>(b) slipways where the slipway will be expanded by 10 square metres or more;</p> <p>(c) buildings where the buildings will be expanded by 10 square metres or more in size; or</p> <p>(d) infrastructure where the infrastructure will be expanded by 10 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.</p> <p>Within:</p> <p>(b)v. Sites identified as irreplaceable or important in the Gauteng Conservation Plan.</p>	X	X
25	<p>The expansion of facilities, infrastructure or structures of any size for any form of aquaculture.</p>	X	X
26	<p>The following phased activities for all activities listed in this Schedule: 1(b)v., 2(b)iv and vi., 3(b)v. and vi., 4(b)v., vi. and ix., 5(c),(e)i. and ii., 6(b)v. and vii., 7(b)v. and vii., 8(b)v., 9(b)ii., 10(c)v., 12(b)., 13(a) and (d)v., 16(b)v., 17(b)v. and vii., 18(b)v. and vii., 19(b)v. and vi., 20(b)v., 21(b)ii., 22(d)v. and viii., 23(b)v. and viii., 24(b) v., 25.</p>	X	X

Bibliography

Council for Geoscience. 2010. **Report to the Inter-ministerial Committee on Acid Mine Drainage – mine water management in the Witwatersrand gold fields with special emphasis on acid mine drainage.** Council for Geoscience. Pretoria.

Council for Geoscience. As at 2013. **1:750 000 Mineral Map of Gauteng.** Council for Geoscience, Pretoria.

Council for Geoscience. As at 2013. **1:250 000 Geology Map.** Council for Geoscience, Pretoria.

CSIR, 2010. **SA Geospatial Analysis Platform.** CSIR. Pretoria.

CSIR. 2000. **Guidelines for Human Settlement Planning and Design (The Red Book).** CSIR. Pretoria.

CSIR. 2009. **Acid Mine Drainage in South Africa (Briefing Note 2009/02).** CSIR. Pretoria.

Department of Environmental Affairs. 2014. **National Environmental Management: Biodiversity Act 2004 (Act No. 10 of 2004) – Alien and invasive species list, 2014.** The Government Printer. Pretoria.

Department of Water Affairs and Sanitation. 2009. **Gauteng and North West Dolomite Units (Map and tables).** Department of Water Affairs and Sanitation. Pretoria.

Department of Water Affairs and Sanitation. 2011. **Blue Drop Report.** Department of Water Affairs and Sanitation. Pretoria.

Department of Water Affairs and Sanitation. 2011. **Green Drop Report.** Department of Water Affairs and Sanitation. Pretoria.

Dr. David Hoare. 2013. **Threatened Species in Gauteng.** David Hoare Consulting. Pretoria.

EMFs that have been consulted:

- Alexandra;
- Klipriviersberg;
- Mogale City;
- Loch Vaal;
- Kungwini West;
- Lesedi;
- Kayalami Modderfontein;
- Ekurhuleni;
- Tshwane Zone of Choice;
- Dinokeng;
- West Rand; and
- Cradle of Humankind (incorporated).

Gauteng Department of Agriculture and Rural Development (GDARD). 2014. **GAPA IV (Gauteng Agricultural Potential Atlas version 4).** GDARD. Johannesburg.

Gauteng Department of Agriculture and Rural Development (GDARD). 2011. **C-Plan 3.3 (Conservation Plan version 3.3.).** GDARD. Johannesburg.

Gauteng Department of Agriculture and Rural Development (GDARD). 2010. **Comprehensive Rural Development Strategy.** GDARD, Johannesburg.

Gauteng Planning Commission. 2011. **Gauteng Spatial Development Framework.** Gauteng Department of Economic Development. Johannesburg.

Mabin, A. 2013. **The map of Gauteng: evolution of a city-region in concept and plan.** Research paper produced for the Gauteng City-Region Observatory (GCRO). Johannesburg.

Marathe, S. Eltrop, L. & Nadkarni, N. (eds). 2014. **Energy and Environment Atlas (Gauteng).** University of Stuttgart. Stuttgart.

McCarthy, T.S. 2011. **The Impact of Acid Mine Drainage in South Africa.** S Afr J Sci. 107(5/6), Art #712, 7 pages. Doi : 10.4102/sajs.v107i5/6.712.

Mucina, L. & Rutherford, M.C. (eds) 2006. **The Vegetation of South Africa, Lesotho and Swaziland.** Strelitzia 19. South African National Biodiversity Institute. Pretoria.

Muditambi, L. 2013. **Air Quality Monitoring and Reporting in the Gauteng Province.** Presentation at the 8th Annual Air Quality Governance Lekgotla, Cape Town. 30 September 2013.

Municipal SDFS that have been consulted:

- Johannesburg;
- Tshwane;
- Ekurhuleni;
- Lesedi;
- Midvaal;
- Emfuleni;
- Randfontein;
- Merafong; and
- Mogale.

Oelofse S.H.H., Hobbs P.J., Rascher J., & Cobbing J.E. 2010. **The Pollution and Destruction Threat of Gold Mining Waste on the Witwatersrand – A West Rand case study.** CSIR. Pretoria.

Schäffler, A. et al. 2013. **State of Green Infrastructure in the Gauteng City-Region.** Gauteng City-Region Observatory, a partnership between the University of Johannesburg, the University of the Witwatersrand and the Gauteng Provincial Government. Johannesburg.

Schulze, R.E. 2010. **Atlas of Climate Change and the South African Agricultural Sector: A 2010 Perspective.** Department of Agriculture, Forestry and Fisheries, Pretoria, RSA, Chapter 10.2, 363 - 391.

South African Weather Service. 2013. **Typical weather at the OR Tambo Airport based on information from 1994 to 2012.** Extrated information, SA Weatehr Service. Pretoria.

Statistics South Africa. 2013. **Assessment of the 2011 Census information for Gauteng and its municipalities.** Statistics South Africa. Pretoria.

The South African Institute for Architectural Technologists. 2011. **Guidance on how to comply with regulation XA.** National regulator for compulsory specification (NRCS). Pretoria.

Wray, C. Gotz, G (eds). 2014. **Mobility in the Gauteng City Region.** Gauteng City-Region Observatory, a partnership between the University of Johannesburg, the University of the Witwatersrand and the Gauteng Provincial Government. Johannesburg.

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