



uMngeni Municipality

Draft Strategic Environmental Assessment:

The Introduction and Status Quo

**(Prepared by the office of the General Manager: Economic Development
and Planning's Environmental Unit)**

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Definitions

The office of the General Manager: Economic Development and Planning's Environmental Unit has developed a standard suite of environmental and biodiversity related definitions and terminology.

Key environmental and biodiversity terms are outlined here to help with an understanding of terminology used in this Inception Report.

Biodiversity: The diversity of genes, species and ecosystems on Earth, and the ecological and evolutionary processes that maintain this diversity

Biodiversity plan: A spatial plan that identifies one or more categories of biodiversity priority area, using the principles and methods of systematic biodiversity planning

Biodiversity priority areas: Natural or semi-natural areas in the landscape or seascape that are important for conserving a representative sample of ecosystems and species, for maintaining ecological processes, or for the provision of ecosystem services. This includes Protected Areas, Critical Biodiversity Areas and Ecological Support Areas.

Biodiversity sector plan: A map of Critical Biodiversity Areas and Ecological Support Areas accompanied by contextual information, land- and resource use guidelines and supporting GIS data. The map must be produced using the principles and methods of systematic biodiversity planning.

Conservation: Refers to management for explicit biodiversity conservation objectives, which may or may not include formal protection.

Conservation Area: An area of land (or sea) that is not formally protected in terms of the Protected Areas Act but is nevertheless managed as least partly for biodiversity conservation. Because there is no long-term security associated with conservation areas they are not considered a strong form of protection. Conservation areas contribute towards the conservation estate but not the protected area estate.

Critical Biodiversity Area (CBA) Map: A map showing Critical Biodiversity Areas and Ecological Support Areas, based on a systematic biodiversity plan. It also shows Protected Areas, Other Natural Areas and areas with No Natural Remaining (NNR) and often forms the basis for a biodiversity sector plan or bioregional plan.

Critical Biodiversity Area (CBA): An area that must be maintained in or restored to a good ecological condition (natural or near-natural state) in order to meet biodiversity targets. CBAs collectively meet biodiversity targets for all ecosystem types as well as for species and ecological processes that depend on natural or near natural habitat that have not already been met in the Protected Area network. CBA Maps often differentiate between CBA 1-areas that are irreplaceable for meeting targets and CBA 2-areas that are the best option for meeting biodiversity targets in the smallest area while avoiding conflict with other land uses. One of five broad categories on a CBA map, and a subset of biodiversity priority areas.

Critical Biodiversity Areas (CBA) Map: A fine-scale systematic biodiversity plan that delineates on a map Critical Biodiversity Areas and Ecological Support Areas which require safeguarding to ensure the continued existence of biodiversity, its ecological processes (e.g. animal migration, pollination) and its ecosystem services e.g. water supply.

The map also delineates formal Protected Areas, Other Natural Areas and areas with No Natural Remaining.

Ecological infrastructure: Naturally functioning ecosystems that generate or deliver valuable services to people. It is the nature-based equivalent of built infrastructure and is just as important for providing services and underpinning economic development.

Ecological Support Area (ESA): An area that must be maintained in at least fair ecological condition (semi-natural/moderately modified state) in order to support the ecological functioning of a CBA or Protected Area, or to generate or deliver ecosystem services, or to meet remaining biodiversity targets for ecosystem types or species when it is not possible or not necessary to meet them in natural or near-natural areas. One of five broad categories on a CBA map, and a subset of biodiversity priority areas.

Green Infrastructure: Refers to man-made or natural green corridors, wetlands, biological corridors or storm water management facilities which are required because of development, to protect biodiversity, ensure links between biodiversity sites, or any other such purpose which has the effect of improving climate resilience.

Other Natural Areas (ONA): An area in good or fair ecological condition (natural, near-natural or semi-natural) that is not required to meet biodiversity targets for ecosystem types, species or ecological processes. One of five broad categories on a CBA map.

Protected Area: An area of land (or sea) that is formally protected in terms of the National Environmental Management: Protected Areas Act, No. 57 of 2003 and managed mainly for biodiversity conservation. Includes state owned Protected Areas and contract Protected Areas or protected environments on private and communal land.

List of Abbreviations

Abbreviation	Definition
BSP:	Biodiversity Sector Plan / Biodiversity Spatial Plan;
CBA:	Critical Biodiversity Area;
DFFE:	Department of Forestry, Fisheries and the Environment;
DALRRD:	Department of Agriculture, Land Reform and Rural Development;
DHWS:	Department of Human Settlements, Water and Sanitation;
EBA:	Ecosystem-based adaptation;
EIA:	Environmental Impact Assessment;
EO:	Environmental Overlay;
ESA:	Ecological Support Area;
FAPs:	Functional Area Plans;
IDP:	Integrated Development Plan;
LAPs:	Local Area Plans;
LUS:	Land Use Scheme;
LUMS:	Land Use Management System;
MPB-L:	Municipal Planning By-Law;
MPT:	Municipal Planning Tribunal;
NDP:	National Development Plan;
NEMA:	National Environmental Management Act, No. 107 of 1998, as amended;
NEMBA:	National Environmental Management: Biodiversity Act, No. 10 of 2004;
NEMPAA:	National Environmental Management: Protected Areas Act, No. 57 of 2003;
NFA:	National Forest Act, No. 84 of 1998;
NNR:	Areas with No Natural Habitat Remaining;
NWA:	National Water Act, No. 36 of 1998;
ONA:	Other Natural Areas;
OS:	Open Space;
OSZs:	Open Space Zones;
PA:	Protected Area;
PE:	Protected Environment;
RMP:	Reserve Management Plan;
SANBI:	South African National Biodiversity Institute;

SDF:	Spatial Development Framework;
SPLUM:	Spatial Planning and Land Use Management;
SPLUMA	Spatial Planning and Land Use Management Act, No. 16 of 2013.

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1. CHAPTER 1 SETTING THE CONTEXT

1.1. Introduction

The uMngeni municipality has identified the need for a Strategic Environmental Assessment (SEA) to inform the Municipality about the balance between developmental, socio-economic and biophysical implications of the broad development options of the study area. This includes identifying environmental constraints and opportunities to assist the Municipality in choosing the most appropriate action on environment and socio-economic grounds to minimise ecological impacts.

In terms of Chapter 2, Section 24 of the Constitution of the Republic of South Africa, Act No. 108 of 1996:

“Everyone has the right –

- (a) to an environment that is not harmful to their health or wellbeing; and*
- (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –*
 - (i) prevent pollution and ecological degradation;*
 - (ii) promote conservation; and*
 - (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”*

The Strategic Environmental Assessment (SEA), is the most recent addition to the established list of Integrated Environmental

Management (IEM) Tools. These tools include Environmental Impact Assessment (EIA's) and Environmental Management Systems (EMS), Strategic Environmental Management Frameworks (EMF) and Strategic Environmental Management Plans (SEMP). The introduction of the SEA has resulted from the limitations of project-specific EIA's and the need to ensure that environmental issues are proactively addressed in policies, plans and programmes such as the Integrated Development (IDP), the Spatial Development Framework Plan (SDF) and the Municipality's Spatial Development and Land Use Management By-Laws and Planning Scheme.

1.2. Contextualising the Strategic Environmental Assessment (SEA)

The Strategic Environmental Assessment (SEA) is a planning and environmental management tool used in terms of the National Environmental Management Act, No. 107 of 1998, as amended, to integrate environmental factors and sustainability goals into the mainstream of development policy and decision making. It is recommended by the Department of Forestry, Fisheries and the Environment (DFFE) and the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (KZN EDTEA) as a sector plan to the IDP. It follows the same process as the IDP but focusses on environmental issues. It should integrate sustainability considerations into the various phases of the IDP.

The uMngeni Municipality considers the SEA a priority especially in guiding environmental sustainability in the development of the Integrated Development Plan (IDP) and other sectoral plans. This is true, particularly because the IDP requires the Municipality to consider the consequences of a wide range of alternatives and actions at an early stage in the planning process and the SEA is well positioned to assist on this aspect. It intends to assist the Municipality in choosing the most appropriate actions on environment and socio-economic grounds to minimise environmental impacts. While the uMngeni Municipality is still in the process of completing its Spatial Development Framework Plan (SDF) to include additional environmental information, it currently does not have the SEA in place to advise development actions by minimising negative impact and maximising positive impact on both socio-economic and environment. The previous SEA was prepared wholly by consultants in 2006/2007 but appeared to have never been formally adopted by the uMngeni Municipality nor was it ever gazetted for reasons unknown to the current Environmental Advisor.

The uMngeni Local Municipality adopt this tool as a planning and environmental management tool to achieve sustainable development by addressing environmental issues in land development planning prior to development and policy implementation. The adoption and use of the SEA vary both geographically and with regard to the levels and sectors of decision making that are addressed. The Municipality aims to use the SEA approach to address environmental issues by considering the consequences of a wide range of alternatives and

actions at the planning phase. It is strategic in nature, and its propensity is to put emphasis in identifying appropriate development for various areas which will be employed in this case to identify most appropriate type of development based on the environment, rather than constraining development through the mitigation of impacts. As part of the Municipal goal to promote both equity and public participation (Promote participatory governance and multi-stakeholder engagements), the SEA will therefore assist the Municipality to take a proactive approach by requiring planning decisions to be made in a more rational and transparent manner.

1.3. SEA Relationship Other Municipal Plans

The role of the SEA is to identify the most appropriate type of development through mitigation of impacts at a planning stage. It however, forms part of the Municipal SDF, addressing environmental issues by assisting Municipality to consider wide range of alternatives in policy and planning stage.

1.4. Spatial Context

The uMngeni municipality is a Category B Local Municipality and is one of seven Municipalities that make up the uMgungundlovu District Municipality situated in the province of KwaZulu Natal, South Africa. It comprises the former Transitional Local Council areas of Mpophomeni, Howick, Hilton and Worlds View Area, Lidgetton, Nottingham Road and a substantial amount of farmland. The Municipality is centrally situated within uMgungundlovu District and

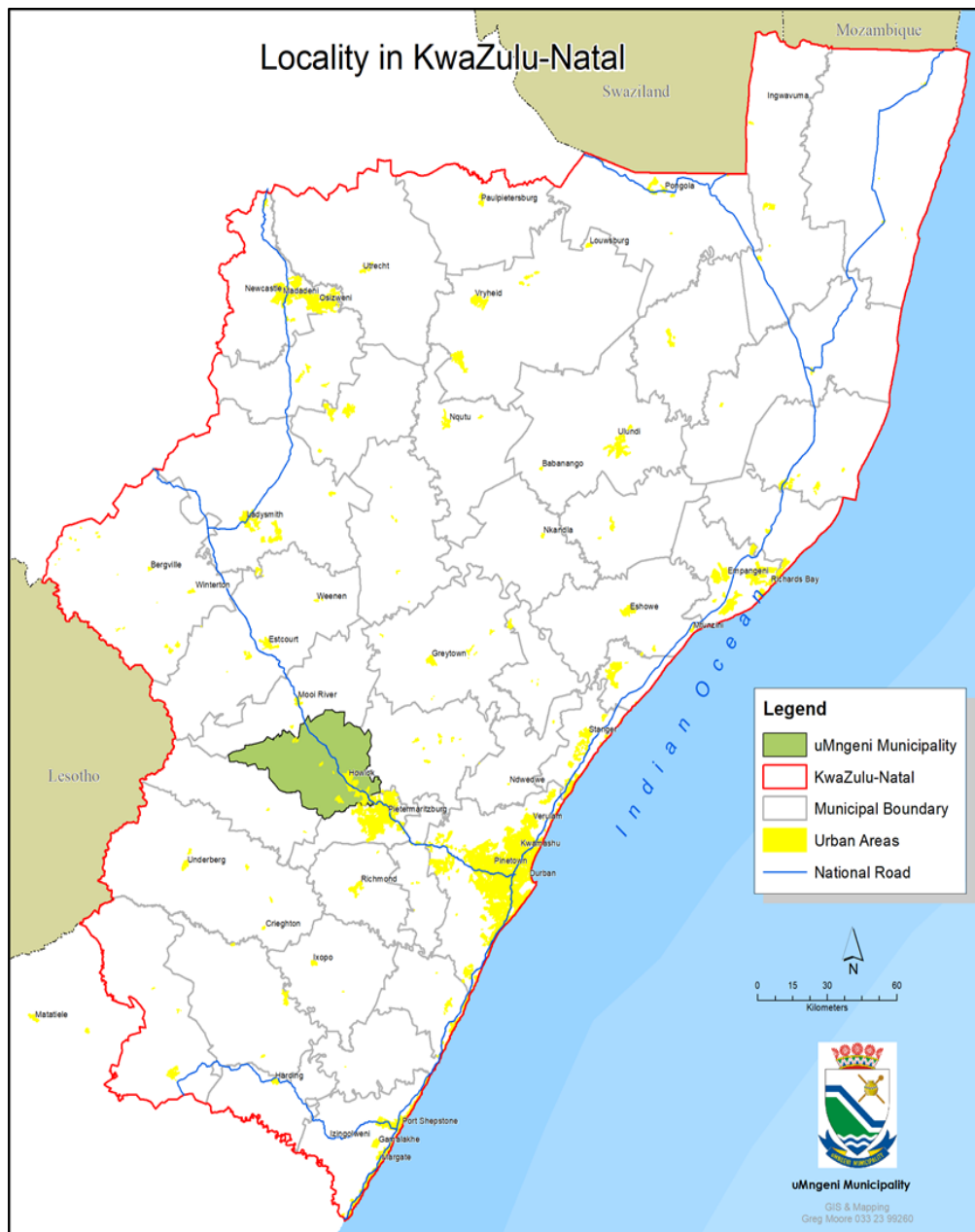


Figure 1: Study Area Map

shares a boundary with the Impendle Local Municipality to the south-west, to the north, and North West is the Mpofana Local Municipality and to the south-east is the Msunduzi Local Municipality which is the capital of the province and an economic hub of the district. To the east of the uMngeni Municipality is the uMshwati Local Municipality and to the west are the former District Management Areas of the Drakensberg that fall under the uKhahlamba Trans-Frontier Development Initiative related to the World Heritage Site. The locality of uMngeni Municipality is illustrated in Figure 1 below.

1.5. BIOPHYSICAL CONTEXT

1.5.1. *Topography*

The Municipality is situated within a relatively gently slope, with about 968 square km² of land suitable for development with only 203 square km² not suitable for development and settlement. This situation exposes the Municipality to exponential transformation of land. Slope analyses further indicates that the central area within of the Municipality fall within the <1:10 and 1:8 – 1:10 category on the outskirts of the Municipality from the north, south, east and west are dominated by category >1:3 and 1:3 – 1:5.

1.6. SOCIO-ECONOMIC CONTEXT

1.6.1. Population and Population Distribution

The uMngeni Municipality serves a total population of 109,867 people with an average annual growth rate of approximately 3.58% based on the 2016 Community Survey by Statistics South Africa (Stats SA). There is some notable high concentration of population within the urban edges of the Municipality. Ward 10 and 11 are holding the lion's share of about 1744 to 7652 people per km², followed by Ward 1 which includes Howick and Howick West among other areas. Accordingly, Wards 3, 4, 5, 6 and some areas of ward 9 have the lowest population density.

1.6.2. Level of Education and Employability

A high proportion of the population (74%) over the age of twenty (20) have received some level of secondary education, but only 10.1% have been exposed to higher education. This is the second highest rate in the District following the Msunduzi Municipality. This statistic provides some undesirable indication with respect to the capacity of the labour force. The Municipality shows an improved record of unemployment rate when compared to the year 2011. As of 2017, the Municipality recorded an improved female unemployment rate of 16, 5% which is relatively low by 9.7% when compared to the year 2011 and 17, 3% for males which is also down by 4.3% when compared to 2011. This statistic is in line with household income which has increased from R66, 135 per annum in 2001 to R117, 881 in 2011.

1.6.3. Employment Sector

The Municipality's key economic sectors contributing to the economic growth of the Municipality includes community services (23%); manufacturing (16%); finance (15%); trade (14%); agriculture (12%); transport (9%); electricity (5%); construction (5%); and mining (1%) respectively. Although the community services sector is the largest contributor, uMngeni has an abundance of high potential agricultural land making it ideal for further growing in this economy through the forward and backward linkages of the agricultural sector to other sectors of the economy especially the manufacturing sector through agro-processing. Presently, the Municipality has a wide range of processing plants within the locality including dairy, poultry and timber.

2. CHAPTER 2: ENVIRONMENTAL ANALYSES

2.1 Water Resources Features

Water is a fundamental resource to life on earth. The Geographical situation of South Africa (SA) in the semi-arid region communicates that water is a scarce resource in the country. In addition, the resource susceptibility to pollution from various human activities in various Municipalities across the country, compounds the shortage. Adding to this status quo, is the rise in climate change, development and urbanisation across the world, the demand for water is expected to rise exponential in the next 3 decades.

There is a need to understand regional status quo of water, possible threat and develop proper planning to preserve both the quantity and quality. The uMngeni Municipality shares a number of catchments with its neighbours. These catchment and the tributaries through the Mooi, the uMngeni and Lions River feed into the Spring Grove, Midmar and Albert Falls dams which serve the needs for the benefits of development and support life for the uMgungundlovu District and eThekweni Metropolitan. Its possesses key waters bodies such as Midmar Dam and Spring Grove Dam which support economic activities in Durban and Pietermaritzburg. The Socio-Economic activities that pose negative implications on water quality and quantity in this area should be avoided or approved based on approved Water Management Plans.

2.3 River Systems and Catchment

The uMngeni Municipality is well watered with many river systems cutting through the landscape. The topography of the area strongly influences the morphological characteristics of rivers in the Municipality. Thus rivers in the low lying areas south and centre of the Municipality are characterised by broad river valleys that tend to form wetlands. In the high lying areas, especially in the headwaters of the catchment, rivers are characterised by incised valleys. The major watercourses originate from the North and North West to join the uMngeni and Midmar South of the Municipality. These watercourses are the Mooi River, which drains from the north-western part of the Municipality, the uMngeni River with its major tributaries and the Lions and Karkloof Rivers and several smaller

ones (See Figure 2). The major rivers are classified as free-flowing rivers according to Ezemvelo KZN Wildlife (EKZWL), which means they have no barriers disrupting species movement and migration. The Municipality consists of three (3) catchments (1, Mkhomazi, 2 uMngeni and 3 Mooi Mpofana Catchment) and is receiving their flow from headwater catchments of the Drakensberg, most of these rivers are restricted to the uMngeni catchment alone. While this is advantageous in terms of catchment management, it also means that any impact within the catchment will affect the entire Municipality.

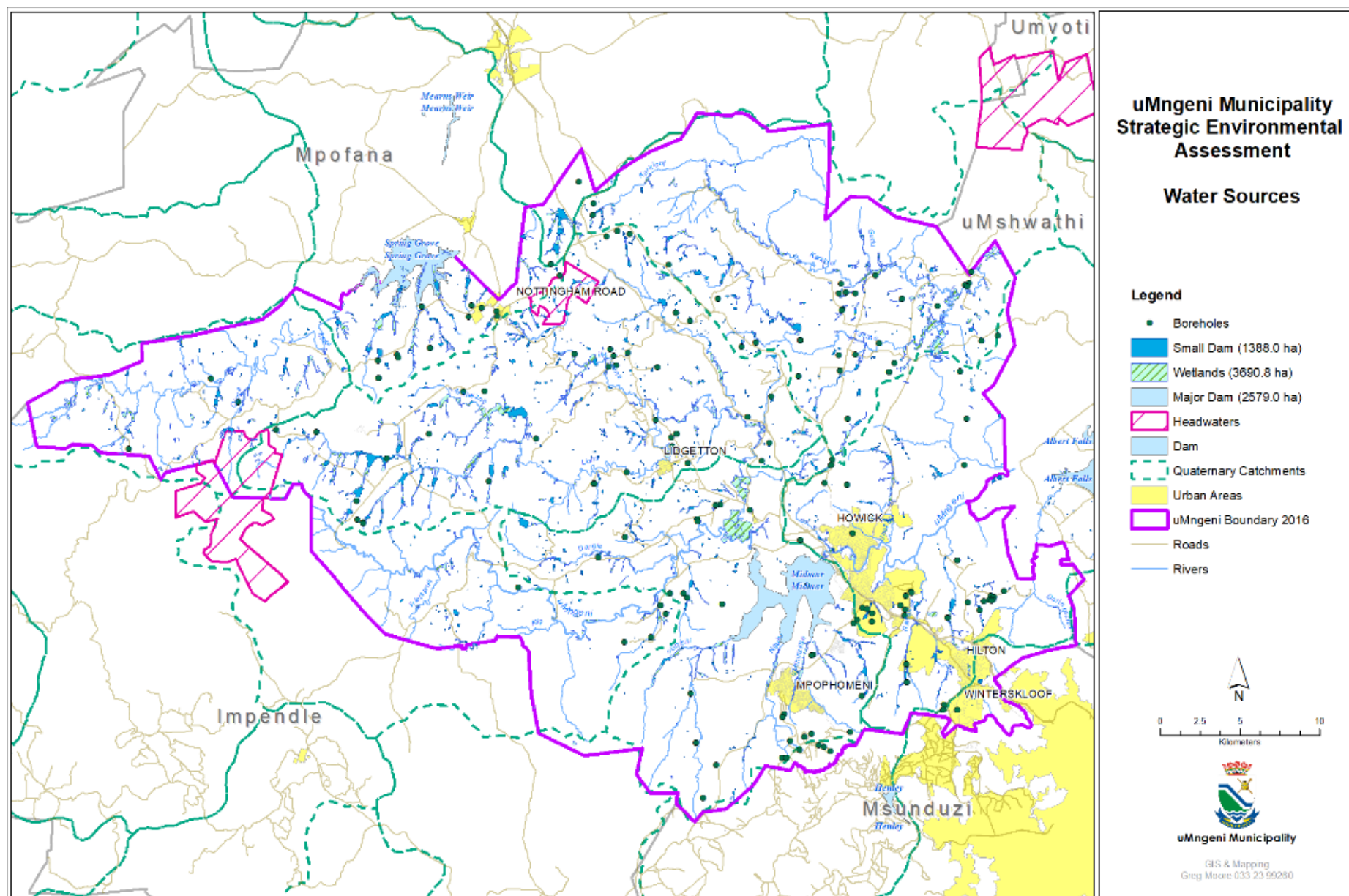


Figure 2: Geographical Location of Water Sources at uMngeni LM

2.2 Pressures and Impact Analyses

Three (3) indicators were selected in this study to analyse the impacts of development in water features to represent status quo, pressures and impact on water resources at uMngeni Municipality:

- 1) Water quantity
- 2) Water quality
- 3) Ecological status of rivers

2.2.1 Water Quantity

The Umngeni Municipality is very well (See Figure 2) watered with many perennial rivers and streams and a large number of farm dams as well as the two major impoundments: Midmar and Spring Grove Dam which support economic activities in Pietermaritzburg and Durban. The Municipality constitutes a number of free flowing rivers, wetlands and underground waters already accessed by commercial farmers in the form of boreholes (See appendix B attached). These are critical water sources and aquatic biodiversity habitat that supplies water for the wider population of uMngeni. However, economic activities such as sand mining, illegal dumping of solid waste in residential areas, agricultural activities and other activities on land that allows the transportation of soil to the nearest rivers threatens the capacity of these sources, for example Midmar dam. These activities should be monitored closely because If not managed well can cause devastating social and environmental challenges.

2.3.2 Water Quality

The quality of water in the water sources of the uMngeni Municipality is generally fair, but there is a need to address the continuous

depositing of solid waste from households and business including effluent from aging sewer infrastructure into streams. The Inguka and uMthinzima river which discharge into the Midmar dam are typical examples of polluted streams due to effluent from aging infrastructure and solid waste deposition (Mpophomeni Nodal Plan, 2020). If this process continues unchecked, it will affect water quality in the Midmar Dam. The uMngeni River shows less signs of ecological disturbance before the dam but the water quality status after the dam is worrying as it passes through the town of Howick and other concentrated residential areas (NEFPA, 2011). Although the effluent and solid waste elements are lower in uMngeni River before the dam, livestock farming and dairy farming activities existing in the catchment has a potential to affect water quality as they release solid livestock waste and general dairy farming waste from intensive dairy farming above the dam.

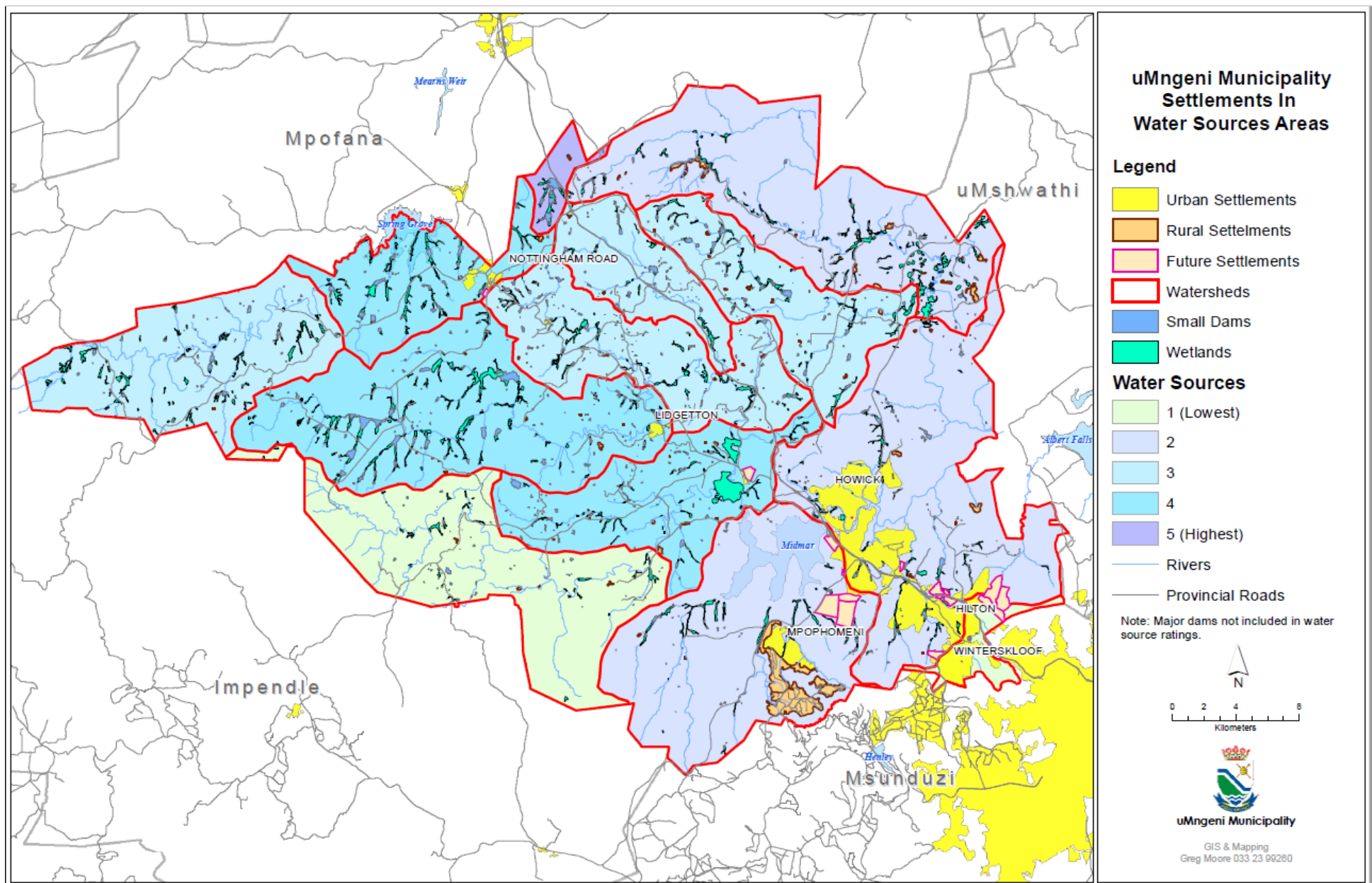


Figure 3:Umngeni Municipality Settlements in Water source areas

2.3.3 Ecological Status

Rivers do not normally remain in natural state, especially with urbanisation and the increased need for economic development. The uMngeni Municipality is not immune to this, but cannot confirm this, since there is no proper study conducted to investigate the state of aquatic Biota and water quality in the uMngeni Rivers. This SEA relied on the National Freshwater Ecosystem Priority Areas Project (NFEPA) data which provides strategic spatial priorities for conserving South Africa's freshwater ecosystems and supports sustainable use of water resources. It should be noted however that this study was developed at a much larger scale. A more focused study may be necessary to confirm these results. This project identifies most rivers of the uMngeni as suitable habitat for various species except for the portion of rivers that cut through concentrated settlements. They remain in natural state with moderate modification. This National project is rather broad and thus cannot provide a list of species found in these rivers. There is need for the Municipality to conduct a more localised study that determines the ecological status of rivers and highlight areas requiring urgent attention. This is important considering the high biodiversity status within the Municipality. For the purposes of this study, all rivers should be treated with the same level of urgency for protection and prevention.

2.3.3.1 Ecosystem Functioning and River Health

The **National Freshwater Ecosystem Priority Areas Project (NFEPA)** identifies Freshwater Ecosystem Priority Areas (FEPAs), which are delineated spatial priorities for conserving South Africa's

freshwater ecosystems and supporting the sustainable use of water resources (Driver et al., 2011). These are wetlands (estuaries) and rivers deemed priority and must be sustained for both quality (for human consumption) and ecosystem functioning. This does not mean they should be fenced, but rather be supported by good planning for sustainable use to ensure that continuous use does not impact the integrity of the ecosystem.

The NEPFA atlas indicates that most rivers at uMngeni are moderately modified especially those that cut across high concentrated settlements such as Mpophomeni and Howick. In particular, the uMngeni River which is largely natural upstream and changes as it approaches Howick to join with Gqishi, Nguka and Mpofana just before the Midmar Dam. Other rivers in this category include Kusane, Ndiza, Lions River and Dorling Spruit. There is a severe notable threat to river health posed by anthropogenic activities within the uMngeni catchment. Proper environmental planning and some level of rehabilitation are required to ensure sustainable development. Further to this, water quality sensitivity is very high in most parts of the uMngeni catchment, meaning further uncontrolled use of these waters will cause serious damage to water quality and ecosystem functioning of the water resources such as Midmar Dam and the rivers in these management systems in Mpophomeni and surrounding areas. Development in these areas should be supported by proper environmental planning to avoid further deterioration of water resources.

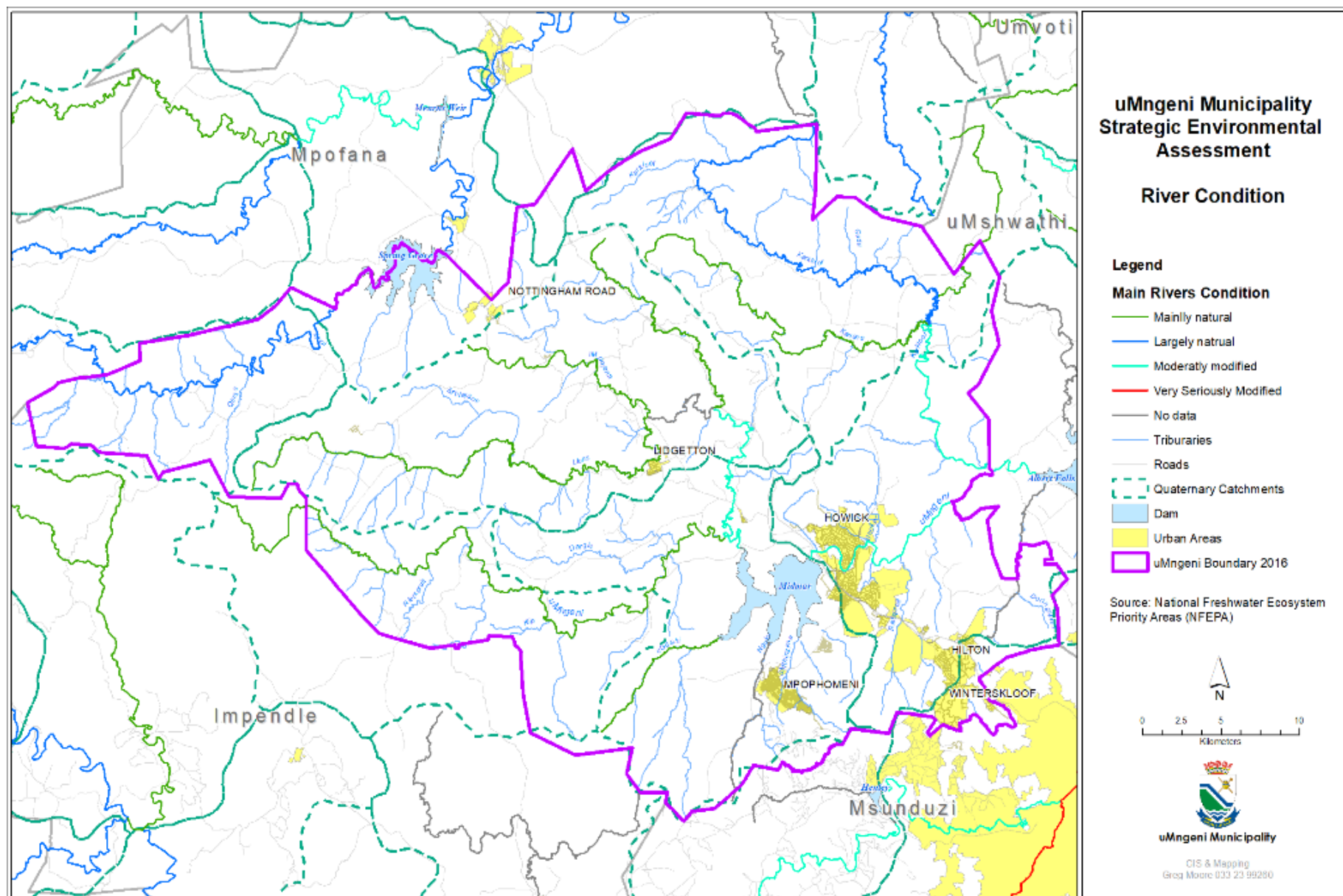


Figure 4: Ecological Status of Main Rivers at uMngeni LM

2.4 Wetlands

By definition, a wetland is land located in the transitional area between terrestrial and aquatic systems. A high water table often characterises it, usually at or near the surface, periodically covered with shallow water. The land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil (EIA Regulations, 2014, ICMA & NWA). Owing to their high levels of biodiversity and the crucial role they perform in the natural hydrological functioning of river systems, these are essential aspects of the environment with high conservation importance. Wetland ecosystems are vital for purifying water and regulating water flows, acting as sponges that store water and release it slowly, filtering pollutants and easing the impact of droughts and floods in the process (Ezemvelo KZN Wildlife, 2017). They are also a source of natural products/herbs, good grazing for livestock, and recreation and tourism. In the uMngeni Municipality, the most critical function/benefits of wetlands relates to their hydrological value, water purification and flow regulation, and providing a source for water supply, grazing, and natural products. However, it is important to note that all of these benefits could easily be degraded if unsustainable practices and poor environmental planning occur.

The map below shows wetlands situated within the Municipality, their protection level and health status. The Municipality constitutes both artificial and natural wetlands with the status of risk ranging from 15 to 16, as identified by EKZNW. Some of these wetlands are situated in poorly protected environments, with others situated within the

environment that is not protected. This makes the wetlands susceptible to significant deterioration. Urgent attention is required to maintain species habitat and enhance sustainable development. Although this does not mean that it should be fenced, it can be protected through proper planning support if any activity is to occur within and in close wetland proximity, as mentioned elsewhere in this document. Notable, information is lacking regarding the extent and functionality of wetlands within the Municipality. This is critical to provide clarity as to which wetland requires more attention than the others. A special wetland study will assist the Municipality to bridge this gap.

Key Strategic Priorities

Key Strategic Priorities for water within the uMngeni Municipality include:

- Improve management of river flood lines;
- The development of a wetland and water resource management policy;
- The involvement of the Working for Water Programme, especially for areas along the uMngeni River just after the dam and before the Howick Falls;
- The control of discharges from various economic activities;
- The assessment and management of sewer discharges and illegal; and
- The coordination of water resource management with disaster management.

Table 1: Vegetation Protection Status and Threat

BIOREGION	THREAT LEVEL	ENDEMICITY	PROTECTION LEVEL
Sub-Escarpment Grassland Bioregion	Least threatened	Endemic	Poorly Protected
Sub-Escarpment Grassland Bioregion	Vulnerable	Endemic	Not Protected
Sub-Escarpment Savannah Bioregion	Least Threatened	Endemic	Not Protected
Sub-Escarpment Grassland Bioregion	Vulnerable	Endemic	Poorly Protected
Sub-Escarpment Grassland Bioregion	Vulnerable	Endemic	Not Protected
Sub-Escarpment Grassland Bioregion	Endangered	Endemic	Poorly Protected
Zonal & Intra zonal Forests	Least threatened	Endemic	Well Protected
Drakensberg Grassland Bioregion	Least threatened	Likely endemic to ZA, Ls, Sz	Well Protected
Sub-Escarpment Grassland Bioregion	Endangered	Endemic	Poorly Protected
Zonal & Intra zonal Forests	Least threatened	Endemic	Moderately Protected

2.2 BIODIVERSITY

Biodiversity is “the variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part and also includes diversity within species, between species, and of ecosystems” (The National Environmental Management: Biodiversity Act, No. 10 of 2004). This encompasses various plant and animal life from the smallest organisms to biophysical landscapes in the world or of a particular habitat. It is a critical building block of all life that has a significant influence on economic and social development. Thus, planning without understanding threats and opportunities of this environmental sector could lead to, amongst other things, the degradation of human socio-economic wellbeing.

This section seeks to portray the identified high biodiversity areas, extent and the historical extent of biodiversity within the uMngeni Municipality.

2.2.1 Vegetation

Vegetation, which serves several critical functions in the biosphere and the greater environment ranging from controlling the flow of numerous biogeochemical cycles to regulating local and global energy balance, is vital in protecting different habitats, their types and species compositions. Understanding their local extent and which vegetation types are threatened and in need of protection is essential in Municipal planning, environmental management and biodiversity protection.

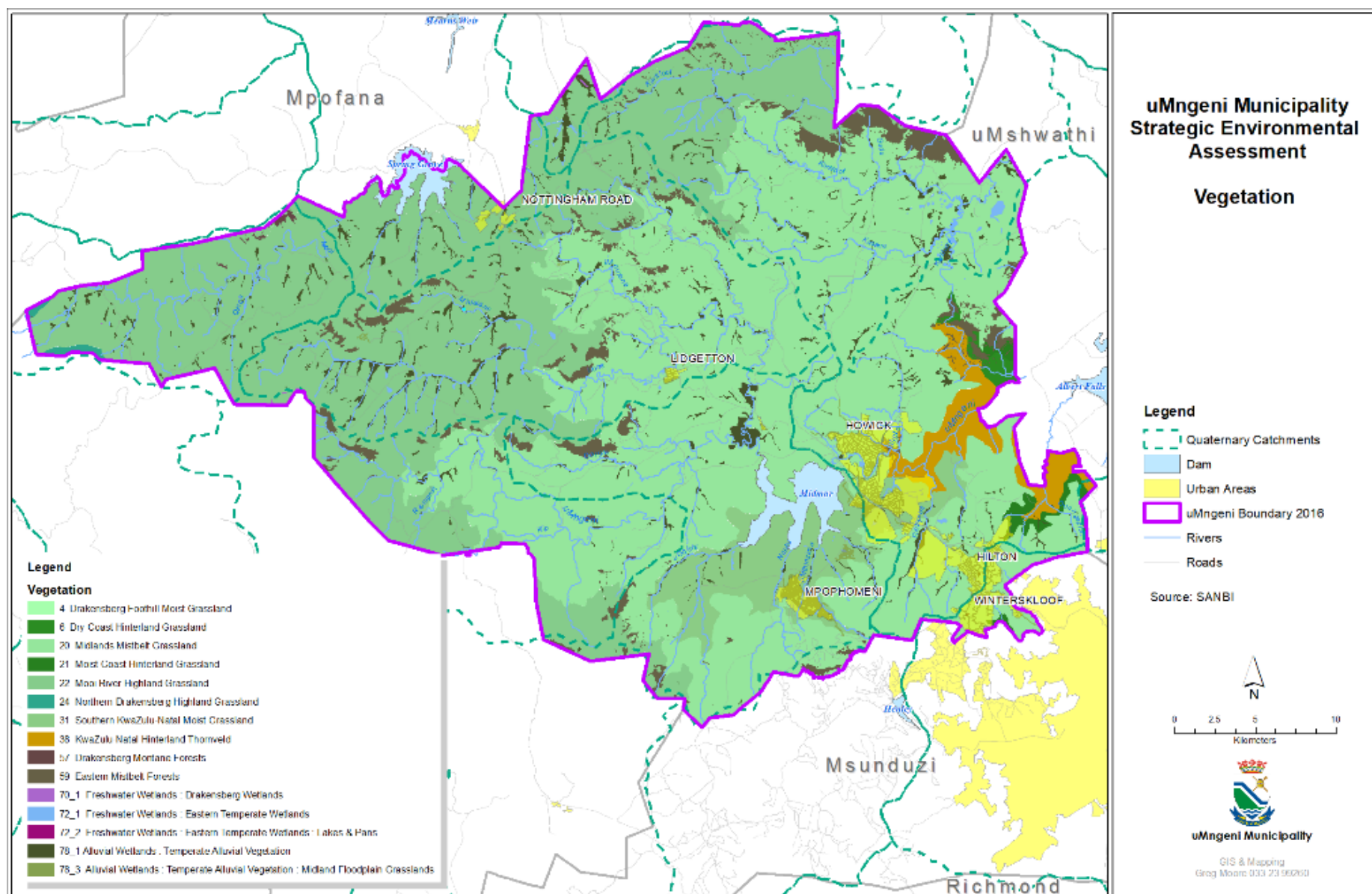


Figure 5: Vegetation Type

Historical data indicate that prior to development and exotic afforestation, the uMngeni Municipality was extensively covered by Valley Bushveld Southern Tall Grassland, Ngongoni Veld, and Natal Mist Belt Ngongoni Veld (Acocks, 1988). Preceding the arrival of the first white settlers, the region was, in all likelihood, covered with large areas of forest (Wanger, 1976) and grassland, where dryness or repetitive burning prevented a closed woody community from forming. Currently, the Municipality contains several different species of vegetation. For the purposes of this study all vegetation types existing within Municipality have been grouped according to their associated biome. These are Forest, Grassland, Water Bodies, Savannah, and Azonal vegetation.

Biomes provide the basic template for defining the extent of species-specific habitat that potentially supports a wide variety of biodiversity (UMDM EMF STATUS QUO REPORT, 2017). The status quo indicates that most part of vegetation has been transformed (52%) to make space for residential and economic-related activities such as agriculture. The remaining extent to date of vegetation includes Midlands Mistbelt Grassland (44%), Mooiriver Highland Grassland (38%), and Moist Coast Hinterland Grassland (6%) among other vegetation types. This does not include the areas where Alien Invasive Species have encroached, however a detailed list of indemnity, and threat status is shown in Table 1 above.

Specific veld types also known as bioregion have been identified in the Municipality. These communities of vegetation have been

identified by EKZNW at a provincial scale by considering physiographic and climatic conditions of an area. Owing to their scale of detection, these communities do not take into account the microclimate and local physiographic changes. They do however, provide a broad overview of the conditions, limits and opportunities in the Municipality. Please refer to the table below for details of these Bioregions, treats status, protection level and their endeminity. (Table Showing Bioregions).

2.2.2 Protected and Conservation areas

2.2.2.1 Protected areas

Protected areas are areas of land that is, protected by law (National Environmental Management: Protected Areas Act, No. 57 of 2003) for the purpose of managing and conserving biodiversity. Owing to their diversified nature due to site-specific, varied purposes and values, a number of Acts have in the past provided for and/or currently provide for the declaration of an area as being of biodiversity or cultural importance and requiring protection. This includes the National Forest Act, Mountain Catchment Act, World Heritage Convention Act, Marine Living Resources Act, Environmental Conservation Act, National Parks Act, and the various Provincial Conservation Ordinances and Acts among others all recognise a Protected Area requiring protection and management under the Protected Areas Act (NEMPA).

The uMngeni Municipality has a number of formally protected areas ranging from Protected Environments, Biodiversity Stewardship Sites to

Nature Reserves (See Figure 5). A total area of 9114,28 Ha (Approximately 6% of the Municipal land) is protected. To this point there is no scientific analyses conducted to understand the pressures that

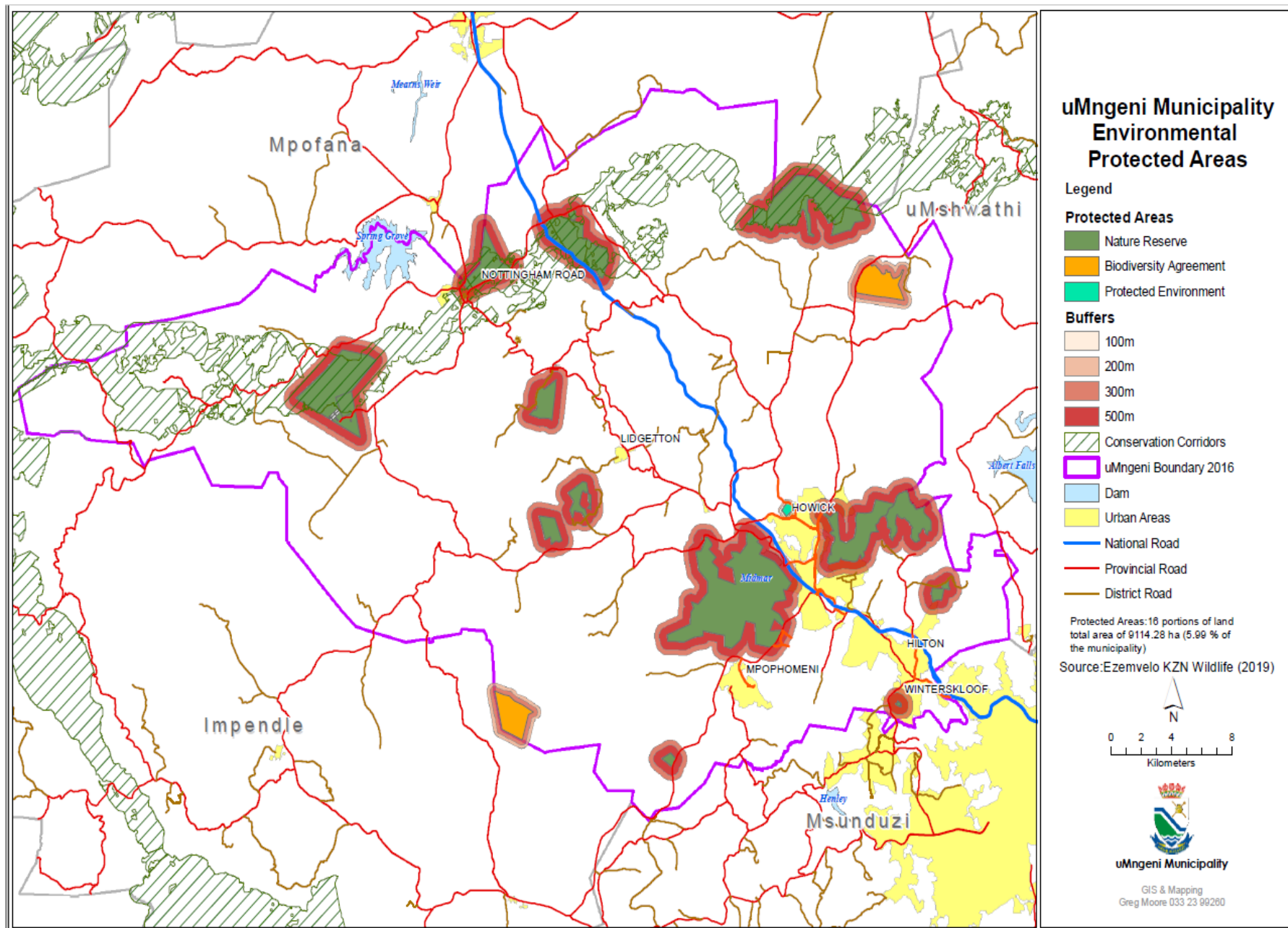


Figure 6: uMngeni Protected Areas and Proposed Buffering

would affect specific objective of each Protected Area. However, as the Municipality's intention is to promote sustainable development, a reasonable buffer is proposed around each Protected Area (See Figure 6 below). Through this buffering system the Municipality is acknowledging the fact that land use surrounding the Protected Area may have significant impact to the species population in the Protected Area through noise, visual and pollution among other things. Consideration of this buffer system in the project, programmes and Municipal spatial planning would play a critical role in preserving these areas and the status of its designation. Please see the details of a two-layer buffer system in Appendix 2.

Further to this buffer system the uMngeni Municipality should acknowledge a recently proposed buffer of the UKhahlamba Drakensberg Park World Heritage Site (UDP WHS) which extends into the uMngeni Municipality. This is an area with international recognition supporting important biodiversity and ecosystems assets. Through this recognition, the UDP WHS has become listed as a Ramsar Site thereby supporting wetlands of international importance. Thus, there is a need for the Municipality to improve connectivity to this space to allow for species movement, gene flow, and ecological and climate change processes, among other things.

2.2.2.2 Conservation Area

Conservation areas are areas that are not formally protected by law (Protected Areas Act) but are nevertheless managed at least partly for biodiversity conservation, and they contribute to the broader

conservation estate. Owing to their nature, they are not regarded as strong areas of conservation, but they are useful as an entry-level to Biodiversity Stewardship Agreement and can be a starting point for pursuing contract agreements, as long as they fall within important areas for Protected Area expansion. Hence their contribution to the conservation estate should be recognised in Municipal spatial planning.

The uMngeni Municipality contains some protected areas in the form of Biodiversity Stewardship Agreements. Other areas of recent environmental planning include the Provincial Environmental Corridors and the buffer proposed to preserve the uKhahlamba Drakensberg World Heritage Site and uMngeni Protected Areas. Some of these areas present a great potential for conservation as they fall within the high Critical Biodiversity Areas (CBA) (Discussed below). High intensity and incompatible land uses in such areas should be avoided.

2.2.3 Critical Biodiversity Areas (CBAs)

The uMgungundlovu District Municipality has combined several datasets to identify biodiversity areas of importance for protection to ensure the persistence of species and their habitat. It was mapped with reference to provincial systematic conservation planning where conservation targets for one or more biodiversity feature (e.g. species, ecosystem, etc.) occurring within an area can be met. These areas were deemed sensitive in that they are not formally protected, and any losses of land containing CBAs will have detrimental impacts

on the biodiversity features therein. They are deemed environmental sensitive and form part of the Department of Forestry, Fisheries and the Environment (DFFE) Protected Areas Expansion Plan. As mentioned elsewhere in this document, high intensive and incompatible land uses in these areas should be avoided and further included in the long-term Municipal planning as potential expansion for protected areas network.

CBAs within the uMngeni municipality shows high sensitivity mostly at the western part of the Municipality and very less transformation has occurred so far at least on the western part of the Municipality (**See Biodiversity Map Below**). This is the same area where the uKhahlamba Drakensberg Heritage Site buffer extends to. The worrying concern is that most of this land is privately owned. This makes it difficult to protect the biodiversity in this area. The active participation of Environmental Management Inspectors (EMIs) to create awareness and enforce regulations would play a critical role in protecting these areas. Although some other parts of the uMngeni Municipality is highly transformed, there is still a need to find ways of protecting the remaining areas of high sensitivity in other areas as well to avoid the significant impact of biodiversity and species habitat.

2.4 AGRICULTURAL POTENTIAL

A substantial amount of land within the uMngeni Municipality is generally classified as having high potential for agriculture. 28% of this land is currently in use with key activities being forestry, dairy farming, livestock and grazing. The worrying concern is that the

underutilised agricultural land corresponds with both tourism favourable areas and high biodiversity areas. There is a need to design acceptable limits for high biodiversity area and the need for tourism development to aid socio economic development. Although uMngeni has 28% of agricultural land currently in use, most of it has suffered a lot from poor land use management practices and subdivision of land to make space for tourism activities foregoing agricultural use. Considering that high potential agricultural land has become a scarce and a deteriorating resource, it should be prioritised as it is with the Department of Agriculture. These two industries are major components in economic generation and poverty alleviation. A situation where each scratch and or replacing of the other should be avoided through proper environmental planning and consideration of alternatives. Currently uMngeni has no environmental guidelines for the specific use for development on agricultural land and thus has to rely on the UMDM EMF.

CHAPTER 3 DESIRED STATE OF ENVIRONMENT

3.1 Limits of acceptable change

This Environmental Assessment was conducted in house and hence there were no specialist studies to define the desired state of the environment as per each environmental criterion. Considering this shortcoming, the acceptable limits for the uMngeni Municipality were identified through consulting legislative requirements determining

threshold of environmental change. We focused mostly on the issues that tend to guide various spheres of government including local government. In addition to this, a number of similar planning documents that cut across the issues of environmental management were analysed to inform this section. This was necessitated by the need to include perception and opinions of the uMngeni Municipality citizens and these planning tools were developed together with the community.

3.1.1 Summary of Environmental legislative requirements

3.1.1.1 National Legislative and Policies

Section 24 of the Constitution of the Republic of South Africa, 1996 and the Bill of Rights makes provisions that everyone has the right:

1. *to an environment that is not harmful to their health or wellbeing; and*
2. *to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that*
 - a. *prevent pollution and ecological degradation*
 - b. *promote conservation; and*
 - c. *secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.*

Section 52 provides that among other objectives local government should promote a safe and healthy environment. The Municipal Systems Act, No. 32 of 2000 requires Municipalities to provide services that are both financially and environmentally sustainable. Municipal Planning and Performance Management Regulations promulgated in 2001 in terms of the Municipal Systems Act, state that the Spatial Development Framework (SDF) must contain a strategic assessment of the environmental impact of the SDF. These legislation provide a clear mandate for local government to take on environmental management responsibilities. Further to this the Environmental Management Act, No. 107 of 1998 (NEMA) creates

an enabling context for environmental management and embraces the principles for environmental management.

In addition to these legislative requirements mentioned above, below is a list of a few of other legislative requirements that may help to maintain a desired state of the environment.

- ❖ The Municipality should aim to ensure that activities listed in terms of the NEMA EIA regulations and the Conservation of Agricultural Resources Act do not take place without authorisation.
- ❖ The National Building Regulations and Standards Act, No. 103 of 1977 provides for control of development in areas vulnerable to flooding and minimum requirements for storm water control and disposal.
- ❖ Sections 21 and 22 of the National Environmental Management: Air Quality Act (NEMAQA) provides the listing of activities which generate atmospheric emissions and impact on human health and the environment.
- ❖ National Ambient Air Quality Standards have been Gazetted by the National Minister of the Department of Water and Environmental Affairs in GN No. 1210 of 24 December 2009 in terms of S9(1) of the NEMAQA.
- ❖ SANS 1929:2005 provides guidelines for ambient air quality limits for common pollutants.
- ❖ EKZNW has set targets for biodiversity conservation in the Province as part of its conservation plan.

3.2 Environmental Vision and objectives of uMngeni Local Municipality

An environmental vision for the uMngeni Municipality was adopted from the previous SEA which produced an environmental vision through information gathering process and issues identified during the Status Quo of that time. It is being used in this document for now and will be updated following the public participation process. The environmental vision should be aligned with the goal of the Municipality's IDP where the Municipality commits to maintain a sustainable development by complying with the applicable

environmental legislation. It is expected that this goal may change or maybe amended if the public express valid reason to amend this vision.

3.2.2 Environmental Vision

“We shall endeavour to ensure that resources, biodiversity and its associated goods and services are conserved for the benefits of both present and future generations. We will reduce pressure on the natural environment through sustainable development within the municipality to improve the economic environment as a people focussed, efficient and cost effective municipality providing quality services and improving the social environment by addressing unemployment, poverty and ensuring fair benefit sharing through the promotion of agricultural, commercial and industrial productivity, education, tourism and conservation”.

3.2.3 Environmental Objectives of the uMngeni Local Municipality

- a) To reduce litter;
- b) To promote the conservation of important ecosystems including wetlands, culturally significant areas, critical species and the habitats that support them within the municipality,
- c) To take an active role in soil conservation;
- d) To prepare an open space system for the municipality that creates linkages and corridors of biodiversity to allow for migration and flow of genetic material;
- e) To assist in the establishment of and participate in the catchment management agency;
- f) To build environmental capacity within the local municipality and amongst landowners;
- g) To promote the integration of the environment and sustainability into the local IDP;
- h) To promote sustainable farming and afforestation practices;
- i) To effectively manage alien invasive species

- j) To ensure compliance with development controls;
- k) To plan for the increase in the industrial and domestic effluent; and
- l) To assist the National Department of Agriculture in Dealing with subdivision of agricultural land.

3.4 Sustainability criteria for strategic assessment

The final stages of the desired state of the environment is the identification of sustainable criteria for the Municipality which must ensure strategic environmental sustainability in proposed developments and land practices. This includes strategies that could be used to maintain the desired state of the environment. The sustainability criteria used in this study was developed by KZN EDTEA in line with the country's strategic sustainable development priorities as reflected in the National Strategy for Sustainable Development (NSSD, 2011), and has been used for the uMngeni SDF sustainability appraisal. The level of acceptable change or desired state of the environment was then adopted from the District EMF environmental objectives for each sustainability criteria. Those that do not have an associated objective in the district EMF were designed through assessing the status quo and environmental sensitivity. Indicators are included to assist the Municipality to measure the achievement of each sustainability criteria. The **Table above** shows a sustainability criteria and the desired state of environment to be achieved.

Sustainability criteria	Desired State
1. Environmental sustainability	Ensure Efficient and Sustainable use of Natural Resources
2. Water resource features	Ensure minimum water quality targets are maintained while protecting and enhance ecological infrastructure to maintain a natural supply of water from stream flow and dry-flow base.
3. Protected areas & buffers	Maintain Conservation status of the municipality through appropriate management strategies such as buffering
4. Priority biodiversity areas	Maintain, enhance, and where possible, protect areas of high biodiversity value through sustainable development planning and land use management practices that promote biodiversity patterns and processes across a more connected and biodiversity enriched landscape.
5. Threatened ecosystems	Identify and manage both existing and new development from encroaching and rehabilitate all degraded areas
6. Green economy	Identify opportunities presented by ecological infrastructure and priority biodiversity areas to improve social wellbeing.
7. Service infrastructure	Maintain the existing infrastructure and ensure that there is sufficient infrastructure to mitigate potential adverse effects on natural resource quality (particularly water quality)
8. High potential agricultural land	Promote the use of high agricultural land for sustainable agricultural production
9. Erosion and land degradation	Identify and rehabilitate degraded land and promote land productivity
10. Open space systems & critical ecological infrastructure	Control human-orientated land development patterns and use land efficiently
11. Climate related impacts and risks	Reduce greenhouse gas emission and manage flood prone areas to avoid environmental risk and social impacts.

4. CHAPTER 4 KEY CONSTRAINTS AND OPPORTUNITIES

4.1 Introduction

Section 21 of the Spatial Planning and Land Use Act advocates that the SDF should include a strategic assessment of the environmental pressures and opportunities. Such an assessment can be undertaken in-depth through a detailed SEA type process, and such an approach would be able to give the Municipality proper guidance on the pressures and key issues in the Municipal area. EKZNW through their guidelines for biodiversity incorporation into SDF advise that such information can also be obtained from Environmental Management Frameworks (EMF) that have been undertaken for the District.

However, careful consideration of scale, context, and relevance/applicability to a particular Municipality is advised. This section will summarise opportunities and pressures that development places on the environment in the context of the information presented above.

4.2 Key Constraints and Opportunities

The Municipality has extremely high-value ecosystem goods and services as a result of the area's indigenous forests and grasslands. There are several wetland and river systems that provide clean water (Ecosystems goods and services) to urban centres, farmers and plantations downstream. The region's vegetation and wetlands on the west part of uMngeni constitute high biodiversity with less human interference. This region's association with the UKhahlamba Drakensberg World Heritage site provides a migratory corridor for certain bird species, reptiles and mammals. All these attributes contribute to Municipal amenity and aesthetical beauty. The amenity of the Municipality is critical to its appeal as a tourist destination. An open space system will help to ensure the maintenance of the

amenity of the Municipality. To ensure linkages and the added benefit of improving biodiversity goods and services, the plan should focus on catchments and rivers as entry points to the area in terms of amenity.

Identification and education of the value of ecosystem goods and services is a project that will aid in the understanding of the value of natural ecosystems and as such will enable agricultural incentive-based programmes to be designed and implemented.

While the area consists of high agricultural potential, burning of forestry by-products after harvesting causes air pollution and is particularly problematic where plantations and forestry operations exist close to built-up areas. Burning of timber for cooking and to keep warm, especially during inclement weather and during winter months also contribute to the growing air pollution. Examples of this would be found in rural areas embedded deep within the farms and are experiencing difficulties with accessing energy. Agriculture, in particular dairies, piggeries and maize production, impacts moderately on river health through excessive nutrient input into the rivers. This is a problem throughout the Municipality and can be seen just above Midmar Dam which collects runoff from dairy farmer's north of the urban areas where rivers and cultivated areas border on one another.

Subdivision of agricultural land is of concern as small subdivisions have in the past proved to be unsustainable and therefore have an impact on the agricultural potential and economic development of an area. Areas of high tourism development such as Nottingham Road and the secondary transportation route are most threatened.

Degradation of wetlands as a result of cultivation and artificial drainage, dams, urbanisation, soil erosion and alien and invasive plant invasion will have far-reaching consequences for ecological function and water quality. Forest plantations and other monoculture uses will result in reducing biodiversity and in some cases contribute

to sedimentation and destabilisation of riverbanks, this is of particular concern in areas where cultivation and monoculture occur close to rivers. Monoculture has created islands of biodiversity in the uMngeni Municipality, which inhibit the ability of ecosystems to adapt and migrate and grow. This is a concern since migration of biodiversity up and down altitudinal gradients is a critical part of the survival of species during global climatic events. Sappi and Mondi have started a delineation programme to remove plantations from river banks and wetlands. This will go a long way to reducing the sedimentation of rivers and will improve water quality in the Municipality.

Informal housing specifically on the banks of rivers, near highways and in the Howick West area is a weakness that must be addressed. Informal housing has large biophysical and social impacts, namely water pollution due to a lack of water or sanitation, aesthetic impacts, poor land management and health and safety issues. Maintenance of storm water management infrastructure specifically in and around urban areas, especially Howick due to its close proximity to the uMngeni River. Littering is a problem in the urban areas and along several provincial transportation routes including wetlands and watercourses and has negative impacts on ecology, animals and human health and severely impacts on the tourism potential of the greater uMngeni Municipality.

As a result of the value of biodiversity for the production of high-quality water, monoculture resulting in a loss of both genetic and biodiversity monoculture is a threat to the water quality produced by the catchment, especially due to the extent to which the uMngeni Municipality has been transformed from natural vegetation to monoculture in a number of areas.

Natural vegetation in the form of grassland, forests and Bushveld are very effective in run-off attenuation and nutrient recycling for the benefits of the entire ecosystem. Injudicious afforestation and

building contributes to excessive sedimentation and destabilisation of riverbanks.

Alien plants also use large amounts of water and over shade the ground preventing undergrowth responsible for soil stabilisation. Exotic vegetation threatens biodiversity on both public and private properties.

Consolidation of the economic hubs and residential densification poses a threat as it may result in pollution being concentrated and associated environmental carrying capacity problems. Nottingham Road and the R103 are currently very susceptible as a result of the high demand for tourism development, specifically residential development in this area. The demand for development in these areas must be very carefully assessed against limits of acceptable change.

The use of pit latrines and septic tank and French drain systems specifically as part of low-cost housing developments to serve the increasing density of urban development could lead to environmental problems. If the properties are provided with individual septic tanks and french drains the cumulative effect with the disposal of grey water, can have implications for both health standards and water quality.

4.3. Summarised Threats and Opportunities against the Environmental Goals/objectives

Treats	Opportunities
Water Resources <i>Ensure minimum water quality targets are maintained while protecting and enhance ecological infrastructure to maintain a natural supply of water from stream flow and dry-flow base.</i>	
• Some Wetlands in the uMngeni Municipality are generally degraded, both in terms of quality and functionality, as a result of uncontrolled development along the streams. • Climate change generally poses a major threat to water resource availability throughout the Municipality, as well as occurrence of droughts and more extreme weather events. • The Mpophomeni Nodal plan identifies the ecological state of Nguka and Mthinzima stream to heavily disturbed areas due to waste and sewerage leaking from aging infrastructure. These are critical as they supply water to Midmar Dam. • Legal and illegal discharges of treated and/ or untreated wastewater together with poor sanitation in concentrated settlement and rural areas contributes to faecal contamination in rivers, dams and estuaries. • Pollution from known and unknown sources affecting water quality and hence availability. Examples of sources would include: solid waste pollution in and around water resources (rivers, streams, etc.); river bank erosion (leading to sedimentation); chemical contamination from industries located in close proximity to water resources; and water quality	• There is a number of steep rivers across the uMngeni which highlight a possible area for water generated electricity (e.g. Hydro-electrical projects) development. • There is also an opportunity to improve the Green Drop status once the SEA has been finalised and appropriate areas identified. • Wetland rehabilitation projects provide an opportunity to improve wetland functionality and hence increase the goods and services they provide. • Public works programmes, such as Working for Water, could create jobs to assist in cleaning the water and alien plant removal. • Opportunities for employment through IASP programme and Wetland rehabilitation projects.

degradation due to increased and often polluted storm water run-off. • Impacts of alien vegetation and alien fauna on water resources, viz. availability and quality. • The combination of impoundments and water abstractions for domestic, industrial and irrigation purposes drastically reduce natural run-off, resulting in reduced total flow volumes and altered seasonal flow patterns in rivers, streams, etc. • Nutrients (nitrates and phosphates) originating from agricultural practices (use of fertilisers and irrigation run-off) can result in eutrophication (i.e. excessive nutrient concentrations) which in turn results in the proliferation of alien aquatic plant species.	
Biodiversity <i>The municipality aims to maintain, enhance, and where possible, protect areas of high biodiversity value through sustainable development planning and land use management practices that promote biodiversity patterns and processes across a more connected and biodiversity enriched landscape.</i>	
• Historical transformation and land use have resulted in significant impacts on the environment, particularly along the coast. • The uMngeni Municipality is located within the Maputaland-Albany-Pondoland Hotspot, a globally recognised biogeographic region of significance, which contains unusually high numbers of endemic species, as well as globally unique ecosystem diversity in terrestrial, freshwater and marine systems. A large number of ecosystems and vegetation types are endangered or critically endangered.	• Public works programmes, such as Working for Water, could create jobs to assist in combating the extent and spread of alien invasive plant species. • Opportunities for employment through IASP programme and Wetland rehabilitation projects. • Protected biodiversity can enhance tourism. • Large tracks of natural areas within agricultural and traditional authority areas, which allow opportunity for stewardship programmes and subsequent protection of biodiversity.

• At least 70% of the original habitat, which occurred in this hotspot, has already been lost. • Several fauna and flora species are listed as endangered or critically endangered. • Large areas of the municipality show infestation by alien vegetation. • Agriculture (particularly forestry, livestock farming, dairy farming and subsistence) is the major cause of landscape transformation and biodiversity loss. • Major pressures on natural resources include afforestation, agriculture and alien vegetation. • A significant percentage of wetland vegetation in the municipality have been lost or threatened. • High sensitivity habitats within rural areas, resulting in divides between communities where infrastructure may be required to cut across high sensitivity habitats. • High sensitivity habitats with conservation important species within the urban edge of developing coastal nodes (e.g. Margate airport, Ifafa, iZotsha and Pumula	• This is especially so within rural areas that would allow for ecological corridors and linkages between protected areas. • Established protected areas with significant tracks of natural vegetation adjacent to these areas, which allows for expansion of natural areas and thus protection of biodiversity. • High biodiversity within developed areas, allowing for development of an open space system.
Conservation Areas <i>Maintain Conservation status of the municipality through appropriate management strategies such buffering.</i>	
• A significant percentage of land especially at the western part of the municipality is rich in biodiversity. • Development pressure on high biodiversity areas is a worrying concern for the municipality.	• Formal conservation opportunities currently exist, and more can be created.

	At present the uMngeni Municipality owns two (2) formally Proclaimed Protected Areas in Beacon Hill and Fort Nottingham. A number of privately owned properties have since 2007 been formally Proclaimed in terms of the National Environmental Management: Protected Areas Act, No. 57 of 2003.
Agriculture <i>Promote the use of high agricultural land for sustainable agricultural production</i>	
- Soil erosion (loss of fertile land) and transformation of agricultural land is posing a threat to agriculture in the municipality, as land for farming is being transformed through development. - Subdivision of agricultural areas for tourism destination among other things affect the status and agricultural productivity in the municipality. - Most land in the municipality is classified as high potential agriculture but is mostly used for socio economic development and tourism.	- There is potential for the expansion of agricultural activities with most areas classified as high agricultural potential. - Opportunities for aquaculture should be explored and developed.
Tourism <i>The Desired State is sustainable, environmentally responsible tourism activities/developments that contribute to the economy of the municipality</i>	
Compromised water quality may pose a threat to tourism in the municipality, as insufficient quality and quantity of water will deter tourism.	The area is known to have abundant and varied fauna with conspicuous birdlife. There are also noteworthy populations of invertebrates, amphibians, reptiles and mammals. All these have tourism, education and tourism potential.

• Aged sanitation infrastructure, resulting in re-occurring effluent spills (e.g. Mpophomeni) creating bad smell along the rivers affecting tourism activities In Mpophomeni and elsewhere. • Poor inland infrastructure and facilities to cater for tourism. • Several species of conservation importance exist across the municipal protected areas which may be an opportunity for eco-tourism.	• The area contains a number of sites of archaeological, historical and cultural significance and includes inter alia the Mandela Capture Site. • The uMngeni catchment is a critical catchment that supplies water to both Pietermaritzburg and Durban. With the establishment of Catchment Management Agencies, the opportunity exists for subsidisation of green technologies and environmentally sensitive farming practices. Money generated from the Catchment Management Agency could also be used to formalise areas of particular value for conservation purposes either through purchasing the land or through lease agreements. The climate is excellent and conducive to year-round tourism.
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CHAPTER 5 ENVIRONMENTAL CONTROL ZONES

The purpose of this document is to assess the environment of the uMngeni Municipality and identify threat and opportunities that development and various land use pose to the environment. It is expected that through this process the Municipality will be able to assess development plans and policies to promote sustainable development. The aforementioned chapters have outlined the state of the environment, environmental goals of the Municipality and the desired state of the environment against which plans, programmes and policy can be assessed to determine sustainability at least at a practical level. This chapter then will focus on developing guidelines which highlight constraints or implications for development. It will also detail suitable activities for various areas and highlight the level and scope of environmental assessment required when developing a specific area.

5.2.2 Environmental Guidelines for new Developments

As mentioned above, normally the SEA process requires that a set of guidelines is developed to guide new development in the Municipality. However, the limitation is that this study is conducted internally without the supporting specialist studies and development of such guidelines cannot supersede those developed by specialists at a District level. As result, an already developed environmental sensitivity zone(s) and guidelines through the District EMF is

suggested. This process in the District EMF outlines in detail a set of guidelines and environmental zones to achieve environmental sustainability. It is however, deemed redundant if not unnecessary in this study to re-iterate on the same point that has already been emphasised and supported by specialist studies. Hence, this study suggest that the UMDM EMF is the most suitable tool available to assess the suitability of an activity, policy or programme in a specific area until such time as the uMngeni Municipality has its own promulgated SEA and an EMF.

Albeit the use of the EMF is to guide developments within the uMngeni Municipality, the user is advised to implement the guideline with careful consideration of this Draft SEA's findings.

This study does not identify new environmental control zones, but instead adopts those that the District developed through their EMF study. Hence, development pressures in the study area need to be screened and interpreted against these Environmental Management Zones (EMZ) and must adhere to the management guidelines associated. Development and other growth demands can potentially be supported in areas where existing transformation exists or where detailed specialist studies confirm the receiving environment to be non-sensitive to the earmarked development. The last-mentioned would constitute ground-truthing of the EMF GIS information. Alternatively, the development may be supported by the desired state of the EMZ, such as cultivation in the Agriculture EMZ or appropriate tourism activities in the Terrestrial Biodiversity EMZ.

Conflict areas may arise where a proposed activity / development pressure or opportunity is disproportionate to the environmental sensitivity. In these instances, preference needs to be assigned based on the following considerations:

- Risks posed by planned development activities to the sensitive environmental attributes associated with the EMZ;
- Degree of acceptable change to the state of the environmental features affected by the proposed development;
- Application of principles underpinning sustainable development;
- Maximise the opportunities to the benefit of both the environment and development; and
- The likelihood of the development proceeding, in order to avoid compromising environmental sensitivity for unrealistic development proposals.

The UMDM EMF highlight one environmental issue that the municipality need to revisit at a local scale to improve results and this is slope. It is suggested that before applying the guidelines of the Slope, the Municipality should use data that has more refined scale (5m or less).

5.2.1 Protection and Prevention

As the state of the environment will have a direct bearing on the welfare and wellbeing of people living in that vicinity, the Municipality should strategically exercise their duty of care in planning by

designing strategies and control measures to protect environment and wellbeing. The table below covers that gap by describing the focus area or key environmental issues of uMngeni, their description or rather status quo and strategic measures the Municipality can adopt.

Focus Area /Key Environmental Issue	Description	Control Measures
Pollution	• The uMngeni Municipality has a waste problem caused through illegal dumping which requires urgent attention in order to improve tourism potential and maintain a village atmosphere. • While the landfill is licensed and well the growing number of illegal dumping hotspots notably in residential areas is concerning as it is impacting the water quality, biodiversity and the ecological status in the catchment. • Pollution produced in Howick and other residential, commercial and industrial areas finds its way into the uMngeni River affecting the aesthetic beauty and the tourism activities around the Howick Falls precinct. • Management of waste water treatment is critical with aging infrastructures especially within and around the urban areas. • Geographical positioning of agricultural industry up stream causes eutrophication in water resources within the catchment.	▪ Design a community awareness programme. ▪ Encourage active participation in catchment management forums. ▪ Citizens to inform the relevant authority immediately when leaking sewage is seen and illegal dumping happens.

Rivers and Streams	• Main rivers state of health remains on acceptable levels, except where the uMngeni River passes through Howick and other residential areas. There is a need for good river management programme most particularly for the area beneath the Midmar Dam to the Howick Falls. • Small streams and rivers are largely overwhelmed by waste both solid and trade effluent. • Large areas are denuded as a results of illegal housing development along the R617. Their illegality affords no advice to protect the soils, erosion and proper rehabilitation after building. As a results fine cover soil is washed down various streams to Midmar Dam and may lead to silt problems for the dam.	• Large silt traps should form part of the silt management procedures for rivers that feed the dams. • An Alien and Invasive Species Control Plan should be prepared. • Create environmental awareness programme for the community and the Municipality.
Biodiversity Protection	• Special critical biodiversity vegetation zones as indicated on the map should be conserved to ensure free movement of biota between the mountains to the coast. • Due to the destruction of natural habitat, it is presently only possible to protect the steep slopes and valleys around rivers. These areas are of extreme importance for the preservation of biodiversity and should not be compromised. • It is important for the Municipality to maintain biodiversity in conservation areas and outside of these conservation areas to improve/maintain tourism potential.	▪ Prepare an open space system for the Municipality to create linkages and corridors and allow migration/flow of genetic material. ▪ Assist in the establishment of and participate in the catchment management forum and agency. ▪ Improve environmental law enforcement within the Municipality.

(Human) Climate Change	• Fluctuating rainfall patterns will cause damage to infrastructure through changes in precipitation volumes and seasons. Periods of low rainfall will put strain on Municipal infrastructure systems. • Particular attention should be paid to areas where dwellings and Municipal infrastructure are on done in systems close to the shoreline as well as low lying parts of the towns near floodplains. Applications for new developments in low lying areas should be scrutinised for possible vulnerability to the effects of global warming and in particular sea level rise.	▪ Promote sustainable agriculture ▪ Prepare an environmental education program. ▪ Implement the district EMF. ▪ Promote green buildings. ▪ Ensure compliance with development control and housing.
Invasive Alien Removal	• Alien and invasive vegetation reduces biodiversity. • Invaded wetlands and catchment areas lose the ability to retain rainwater runoff that feeds the rivers. • A loss of riverine vegetation and a higher rate of erosion that results in estuarine siltation • The Municipality should have an Alien and Invasive Species vegetation management plan, containing guidelines for officials who have to enforce regulations and guidelines for proper removal and after care for cleared areas.	▪ Prepare an Alien and Invasive Species Control Programme.
Infrastructure	• Sewage pollution of ground and storm water from leaking sewer pipes. • Water losses through leaking pipes. • Storm water drains not cleaned. Road beds get wet and breakdown. • Critical infrastructure close to water's edge may have to be moved further inland or away from stream and river banks.	▪ Encourage appropriate economic development. ▪ Environmental education and capacity building.

Conclusion and Way Forward

The uMngeni Municipality Strategic Environmental Assessment (SEA) has identified key environmental issues, focus areas, threats and opportunities associated with development trends and land use practices. It has identified limits of acceptable change and desired state of the environment, threat and opportunity associated with the Municipal environmental goals; established control measures which the Municipality can integrate when developing policies, programmes or plans.

A number of strategies have been suggested to address the potential impact on the environment as a result of development pressures, this includes key indicators that can be used for progress monitoring.

It is however, necessary to point out that this is an in house Draft SEA and is still a work in progress considering the number of milestones that are still under development. This includes most importantly the spatial representation of things alluded to in this study.

These milestones require funding and various specialist studies to be complete. This study has completed the first step towards consultation, in a form of Project Steering Committee (PSC) (See Appendix A). It is now due to be reviewed by the 2nd Project Steering Committee (PSC) and lastly public participation.

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DRAFT

ANNEXURE A: PSC Comments

	REFERENCE		uMNGENI LOCAL MUNICIPALITY- SEA-PSC1/11/06/2021	
	TITLE	First Project Steering Committee comments for the draft SEA	Compiled by:	Marc Hattingh and Sluleko Gwala
	CONTACT PERSON	Marc Hattingh 082 457 2389	Date and Time	2021-06-11 At 09h00
Document Type	Report			
Attendees	Mr. Ian Felton Mr. Ian Rushworth Ms. Felicity Elliot Mr. Steve Terry Mr. Zotha Zondo Mr. Greg Moore Ms. Nonkululeko Nxumalo Mr. Ryan Brudvig Mr. Kraigen Govindasamy			
Apologies	Mr. Ian Rushworth indicated he would like to leave early because of a prior commitment.			

Stakeholder Comments for Umgeni SEA

Stakeholder	Responsibility	Comments
Umgeni water	Mr. Steve Terry	• Inclusion of stats and numbers as form of Appendix to support the narrative provided • Inclusion of Spatial representation in a form of maps and KMZ files. • Highlight both bad and good news to give hope back to the community in an area focused format. • Show some specific risk component assessment. Show how environmental issues affect social livelihood. E.g water quality impacts, lack of resources and people washing in dangerous areas, health risk for Mpophomeni and ecotourism. Respond to Marc • Related Environmental Legislation that could be enforced Suggestion • In light of time frame and meeting targets, suggested that we provide a full version first than will review for the next finalised version.
Ezemvelo KZN Wildlife	Mr. Ian Rushworth	• Explain somewhere how this document influence budget, decision making and linking with other municipal planning tools and resources. "This can Guide the level of detail required" he said. • Statement of intent [capture the municipal position in support of this document outcome]. • Show the relation with environment and key economic sectors e.g. uncontrolled spread of wattle in midlands meander, part has been destructed from the value in a long term viability and the need for environmental management. • Statement around future expansion of the protected areas and municipal position on that because it bears some implications for them. The municipality should show whether they want to extend the protected areas through Land Acquisition or Biodiversity Stewardship. Additional Comments • The importance of translating this document to a series of guidelines and policies • In terms of Alien Invasive plants, this document should profile "house crows" because of the threat they pose to human livelihood and environments • It should also be able to provide a debate on the objective and the role of the municipality in controlling such species. • It may be worth to link this document with United Nations Decade of Ecological Restoration.

KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs	Mr. Ian Felton	- The circumstances of this SEA dictates that it should have as much spatial information rather than narrative. This is because this document has to assist the municipality in spatial planning. Way Forward - Spatial information should be able to point out areas that requires urgent attention and where intervention is required and come up with statements of intent. - Maintained that each sustainability criteria as detailed in section 3.4 have its own relevant information as what type of data is required. - In terms of data validity, we may only highlight the level of certainty for each data we are using then the improved will be sorted later if required.
uMngeni Local Municipality GIS and Mapping	Mr. Greg More	Look at urban areas in more details
uMngeni Local Municipality Planning Department	Mr. Zotha Zondo	- Link with Scheme - Looking forward to see this transferred to actual and practical land uses - He further mention that he will require our assistance when reviewing the scheme in October - He want to see a land orientated output, showing what land could be accommodated and what land could not.
Department of Forestry, Fisheries and the Environment	Mr. Ryan Brudvig	- Willing to assist with alien invasive plan. - They have GIS unit available as per need.
uMgungundlovu District Municipality	Ms. Nokulunga Nxumalo	BLU outcome of guideline to incorporate land biodiversity in land use scheme.

DRAFT

ANEXURE B: Mapping

