Environmental Management Framework:
Cape Winelands District Municipality
DRAFT STATUS QUO REPORT – NON-TECHNICAL SUMMARY

1 INTRODUCTION

The Cape Winelands District Municipality (CWDM) appointed SRK Consulting (SRK) to develop an Environmental Management Framework (EMF) for the eastern portion of the CWDM. The study area includes the District Management Area (DMA), Witzenberg, Breede Valley and Langeberg Local Municipalities, but excludes the Drakenstein and Stellenbosch Municipalities (see Figure 1).

The CWDM has many natural areas with important ecosystems, which have been studied and mapped in more detail in this area than in many others. The CWDM also has a large and important agricultural sector, which is the foundation of the district's economy. Identifying areas that are environmentally sensitive and those that may still be able to support further agricultural and other activities is the main reason for undertaking the EMF.

2 PURPOSE OF THE EMF

Each province, district and municipality in South Africa has to prepare plans for the future development of its areas. Such plans include the Integrated Development Plan (IDP), which identifies the planning strategy for a specific area, and the Spatial Development Framework (SDF), which identifies specific areas for planned developments.

The EMF is a new plan that will inform the SDF. It analyses the environmental attributes (features) of an area, identifies areas that are environmentally sensitive and provides guidelines about where certain activities should or should not take place. While SDFs typically consider what land is *available* for certain developments, the EMF will provide information on what land is *suitable* for certain types of development.

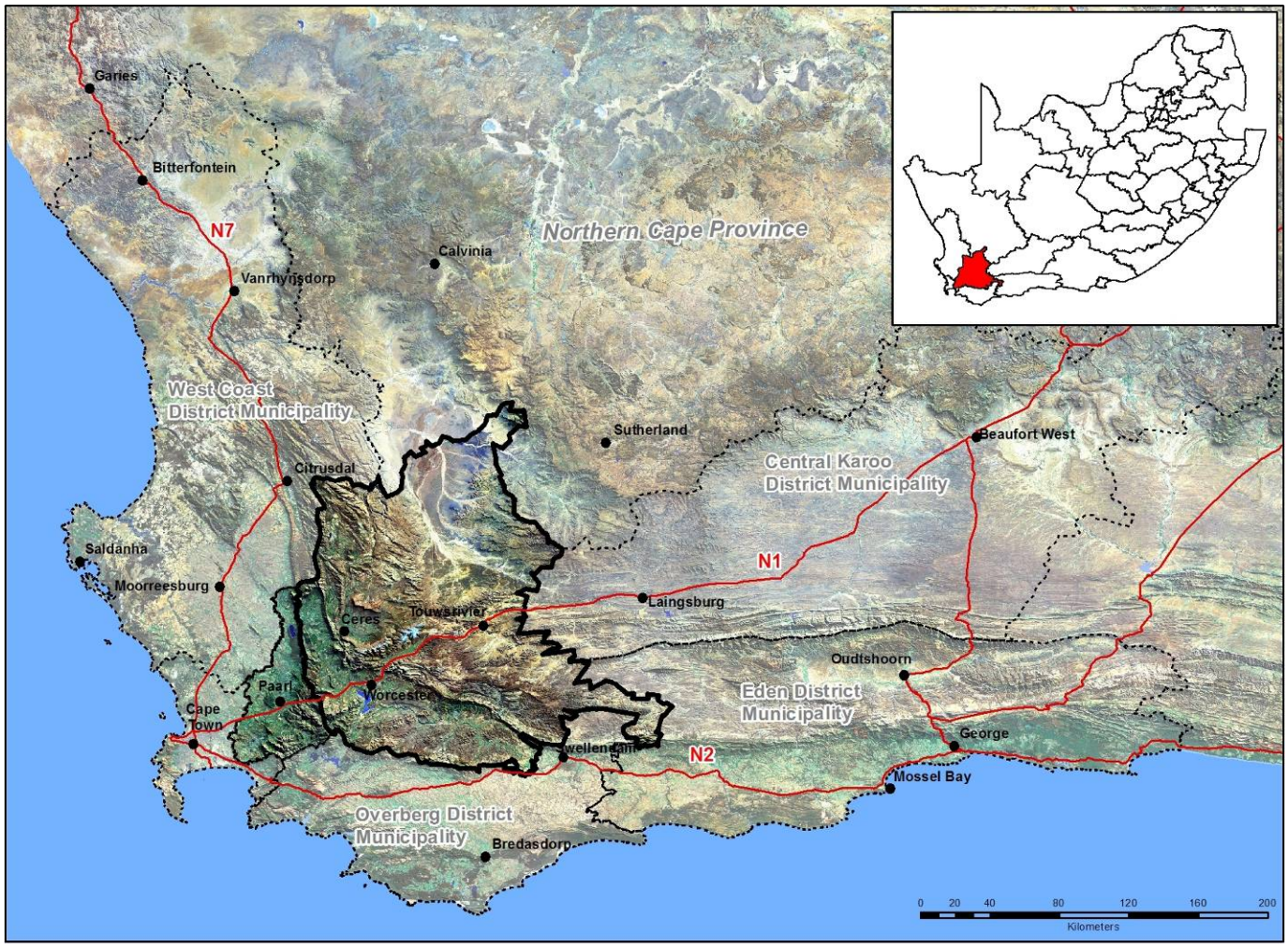

Figure 1: Location of the CWDM – the study area is outlined by the bold black line

Regulations for EMFs have been promulgated in terms of the National Environmental Management Act (Act No. 107 of 1998) (NEMA), specify the contents of an EMF and the process to be followed in developing an EMF. They further specify that once an EMF is approved, authorities must consider the guidelines and recommendations of the EMF when deciding on any land use applications.

3 STATUS QUO REPORT

The Status Quo Report is the first document produced in the process of developing an EMF. It describes the current conditions within the study area (eastern portion of the CWDM), based on a review of existing literature and data, specialist input where required and consultation with key stakeholders. It shows that the study area comprises a unique collection of biophysical and socio-economic assets that require proper consideration and sound management.

The sections below briefly summarise the environmental attributes of the study area that are discussed in the Status Quo Report and summarises pressures on and trends relative to these attributes.

3.1 Climate

The study area has some of the wettest and some of the driest areas of the Western Cape and South Africa, and is generally a water-scarce region. It is predicted that the Western Cape will become dryer in the future, with less winter rainfall and possibly slightly more summer rainfall (mainly in the east of the province). Rainfall is also likely to become more irregular with more extreme rainfall events. Temperatures are predicted to increase on average.

3.2 Geology, Topography and Soils

The study area is defined by several important mountain ranges, including the Cederberg, Winterhoek, Hex River, Du Toitskloof, Langeberg and Riviersonderend Mountains. Most soils in the area are poorly developed and not very suitable for cultivation. Land degradation is a particular problem in the northern DMA. Pressures and threats to the geology and soils in the study area mainly result from:

- *Mining and poor agricultural practices* (where these occur), which can create erosion or contamination of soil; and
- *Alien plants*, which make veld fires more likely and more intense, destroying soil structure.

3.3 Hydrology

Rivers are the main source of water for farmers, rural communities, towns and industry. Rivers are also used for recreation and tourism, fishing and some waste release. The largest / most important rivers in the area are the:

- Breede River, from which large amounts of water are abstracted for irrigation and other human use;
- Olifants River, of which only the headwaters lie within the study area;
- Doring River, the only large river that is still in a natural condition; and
- Touws River, which is significantly modified.

A number of wetlands occur in the area. Most wetlands, as well as many farm dams, are located along the Breede River. Wetlands filter flood water before it is release into rivers or ground water systems.

Areas around Ceres, Wolseley, Worcester and McGregor have the best potential groundwater resources. Many of these are also vulnerable to pollution.

Water is in high demand in the study area, mostly for irrigation. Most surface and groundwater is abstracted from the Breede River system.

Upper Breede River near Ceres

Lakenvallei Dam

Pressures and threats to water resources in the area are:

- *Over-abstraction of water and damming of rivers*, as historic water allocations have not taken into account the 'ecological reserve' of water needed to maintain life in the river. This causes death of river plants and animals and increases sedimentation, making rivers shallower;
- *Pollution of water* by contaminated run-off and agricultural chemicals (although efficient irrigation on many farms limits this). Polluted water can promote algal growth and make the water dangerous to aquatic animals and humans (through drinking, bathing or irrigation);
- *Infestation of water courses by alien species*, which replace indigenous species and have a knock-on effect on the wider system;
- *Encroachment of agricultural activities on rivers,* which increases the flood potential downstream if upstream floodplains are converted; and
- *Neglect of wetlands* (which is widespread in South Africa), despite of their protection in terms of the National Water Act (Act No. 36 of 1998).

Trends regarding water resources in the study area are:

- *Increasingly efficient use of water for irrigation* due to relatively small water allocations for many farmers;

- *Increasing abstraction of groundwater* due to scarcity of surface water;
- *Increasing demand for water* due to planting more crops with high water demand (e.g. fruit), transfer of more water to the City of Cape Town and expansion of human settlements in the study area;
- *Climate change* which is predicted to result in reduced rainfall and increased temperatures in the area, which decreases water volumes available for use; and
- *Degradation of main rivers and main tributaries,* especially in areas where agriculture takes place.

3.4 Biodiversity and Conservation

Functioning ecosystems are the basis of human life on Earth. The CWDM is located in both the Fynbos and Succulent Karoo regions and has a very high number of different plants and animals (high biodiversity), many of which only occur in the CWDM or small parts of it and nowhere else. Across the study area, 84% of the area still has natural vegetation (least in Witzenberg – 72%, and most in the DMA – 89%), and 7.6% of the land lies in protected areas, although these are not always in the best location or in good shape. Several plants (e.g. many Fynbos and Renosterveld types) and animals (e.g. Riverine Rabbit) are threatened to disappear forever.

Breede Alluvium Fynbos

Riverine Rabbit

The following are threats to biodiversity in study area:

- *Loss and fragmentation of natural habitat*, caused by rapid urban and agricultural expansion. Renosterveld is particularly suitable for agriculture and thus vulnerable;
- *Alien invasive plants and animals* change the functioning of mountain catchments and river corridors and replace indigenous species;
- *Change in natural fire patterns* due to alien plants and development which reduce the number of local species;
- *Water abstraction and modification of wetlands* reduce the system's ability to clean water and reduce floods;
- *Climate change,* which will significantly impact on plant and animal distribution in the future; and
- *Inappropriate development* such as planting crops with high water requirements in water-scarce areas, sand and gravel mining in river systems, overgrazing and tourism (e.g. 4x4 routes) in sensitive areas, which contribute to land degradation and the gradual deterioration of biodiversity and ecosystem services in the study area.

3.5 Cultural Heritage Resources

People have been living in the study area for more than a million years. Rock paintings are found in many parts of the area, and places connected to early settlers (e.g. Gydo and Bainskloof pass and early farmsteads), the Anglo-Boer War (e.g. blockhouses and fortifications) and Apartheid (e.g. separated development) also form part of the cultural landscape. Worcester, Montagu, McGregor, Robertson and Tulbagh have the highest number of provincial or other built heritage sites, although many structures in Tulbagh, Worcester and Ceres were badly damaged during the 1969 earthquake. Many routes in the area are very scenic, including the R43, R46, R60, R62, R303 and R355.

Male figure carrying a tasselled bag. Hand print is visible in the picture

View of the Ceres Basin cultural landscape taken from Gydo Pass

Pressures and threats to the cultural and heritage resources in the study area are:

- *Urban densification,* which means that the approaches to historic towns need to be carefully managed*;*
- *Urban and rural development*, including gated communities, golf estates, power lines and roads, change the historical character (or 'sense of place')*;*
- *Lower income housing and informal settlements*, which must be integrated carefully in areas with high heritage value;
- *Heritage tourism,* which makes heritage sites such as rock painting more accessible and vulnerable*.*

3.6 Social and Economic Characteristics

Some 295 000 people lived in the study area in 2007. Most people live in the Breede Valley Municipality, where unemployment is also highest (12%, compared to 2% in the DMA). Some 89% of the population of the study area earned less than R12 800 per month in 2007, and only 2%

have a university degree. Most crime cases were reported in Worcester and Ceres (the two largest towns). Tuberculosis, HIV and infant mortality are all lower than the South African average but higher than average levels in the Western Cape.

The area is very rural, and only 0.5% of land is located within towns. Poorer areas continue to have higher population densities and be located on the outskirts of towns. Many towns grew significantly around 2005 but slowed towards the end of the decade. Most areas are well connected to service infrastructure.

Pressures and threats to the social fabric are:

- *Low level of education*, which determines people's earning potential and businesses that establish;
- *High incidence of TB, HIV and infant mortality* relative to the Western Cape;
- *Very low and often seasonal income*, leading to poverty and associated issues;
- *Increasing demand on service infrastructure,* so that upgrades to the stormwater system, water supply, sanitation and roads are required more quickly; and
- *Insufficient capacity and poor management of landfills* can create pollution and health risks.

Social and settlement trends in the study area include:

- *Decreasing population* according to Census 2007 data (although provincial projections predicted an increase);
- *More freestanding houses*, which requires more space and makes service delivery more expensive;
- *More TB and HIV*, which burdens families and communities, increases health costs and lowers productivity;
- *Increasing crime levels,* particularly drug related crime; and
- *Increasing waste generation* due to more development and activities in the area exceeds landfill capacity.

The Breede Valley municipality has the largest economy in the area, followed by Langeberg and Witzenberg. The largest sector in both Breede Valley and Witzenberg, and a close second in Langeberg, is the agricultural sector. It contributes some 20% to 36% to the economy in each municipality. Agriculture is also the most important employer, especially in the DMA. Wine grapes and fruits are the main agricultural products, much of it is exported. Despite the economic importance of agriculture, only 5% of the land is under cultivation. The remaining land is often not suitable for agriculture. Tourism is increasingly important for income in the area.

Vineyards near Robertson

Pressures and threats to agriculture in the area are:

- *Presence of high biodiversity areas*, as agriculture within these areas alters the ecosystem;
- *Lack of additional water for irrigation*, as surface water and increasingly groundwater are already well used. This has increased irrigation efficiency but nevertheless restricts the additional number of farming businesses that can establish in the future;
- *Poor water quality,* which can lead to a ban on exports from the region;
- *The need for land reform*, as little transformation in the ownership of land has taken place, which can result in expansion of farming areas and uncertainties;
- *The need for processing more agricultural produce,* which may increase industrial and agro-industrial businesses and land use in the area;
- *Climate change* which will directly impact agriculture through higher temperatures (which can reduce the quality of crops) and lower rainfall;
- *Rezoning of agricultural land for other land uses,* e.g. housing, residential estates or golf courses; and
- *Mining of sand and gravel*, which mainly takes place on agricultural land.

The main agricultural trends in the study area lead to:

- *Increased consolidation of farms* due to reduced profitability of farming;
- *Further expansion of vineyards,* as wine production has been relatively profitable*;*
- *Introduction of other products* such as olives, tea, herbs for essential oils and aquaculture;
- *Increased diversification of agricultural businesses* to include e.g. tourism activities, placing pressure on the transport and services infrastructure in the area;
- *Increased use of seasonal farm workers*, meaning more volatility in employment and seasonal population numbers; and
- *Gradually deteriorating air quality* due to agrochemicals, veld fires and burning of crop residues and industrial emissions.

3.7 Environmental Risks

Key environmental risks in the study area are related to:

- *Climate change*, which changes the weather conditions in the area and therefore impacts on the availability of suitable habitat for natural vegetation, on the availability of natural water resources and on agricultural activities. Keeping ecological corridors (often located along rivers) healthy allows the ecosystem to better adapt to climate change and continue to provide ecosystem services;
- *Veld fires*, which threaten natural areas and human activities alike. Mountainous areas are at highest risk in the study area and the risk and intensity of veld fires is increased through the presence of alien plants;
- *Flood risk*, which is among the highest in the country, as the study area has many mountainous areas that receive high rainfall. Development of river corridors increases the downstream flood risk and damage; and
- *Seismic activity*, which has been regularly recorded in the Western Cape. The most destructive earthquake occurred on 29 September 1969 near Tulbagh / Ceres.

Areas affected by veld fire near Robertson

3.8 Interrelationships of Attributes

The environmental attributes discussed in the report do not exist in isolation. They form part of a larger integrated system. As such, they all influence each other to some degree, and impacts on one aspect of the system (e.g. water) usually have knock-on effects on others (e.g. agriculture and biodiversity). Recognising these interrelationships is crucial for the management of any one of the attributes, as they cannot be dealt with in isolation.

4 COMMENTING ON THE STATUS QUO REPORT

The draft Status Quo Report is being made available for public review and comment for 60 days. Copies of the Report can be found in the following places:

- Ashton Library, Faure Street;
- Robertson Library, Van Rheenen Street;
- Montagu Library, Piet Retief Street;
- Bonnievale Library, Van Zyl Street;
- McGregor Library, Tindale Street;
- Worcester Library, Waterloo Street;
- Goudini (Rawsonville) Library, Stasie Road;
- Touwsrivier Library, James Street;
- Wolseley Library, Voortrekker Road;
- Tulbagh Library, Plein Street;
- Ceres Municipal Offices, Voortrekker Road;
- Prince Alfred's Hamlet, Voortrekker Road;
- Accent Offices, Bergsig Street, Op-die-berg; and
- SRK Offices, Main Road, Rondebosch.

The report can also be downloaded from SRK's website www.srk.co.za (via the Recent Publications / Public Documents link). Upon request, hard copies of the report and digital copies on CD can also be mailed to stakeholders at a cost.

The public is invited to review this Status Quo Report and send written comment to:

Sharon Jones at SRK Consulting

Postnet Suite #206
Private Bag X18
Rondebosch
7701

email: sjones@srk.co.za
Tel: (021) 659 3060
Fax: (021) 685 7105

For **comments** to be considered in the revision of the Status Quo Report, they **must reach us by 1 August 2011**.

5 NEXT STEPS IN THE EMF PROCESS

In the next phase of the EMF process, the information compiled for the Status Quo Report as well as policies, guidelines and environmental management objectives applicable to the study area will be analysed to:

- Determine the desired state of environment;
- Identify sensitive areas;
- Map environmental management zones;
- Produce environmental management guidelines; and
- Create a GIS (computer based mapping) Tool to display the relevant spatial information.

An EMF Report will be compiled, which will also be made available for public review. All stakeholders who submit comments or show an interest in the project during the Status Quo Phase will automatically be informed when the EMF Report is available for public review.

SHARON JONES
Principal Consultant

'n Afrikaanse weergawe van hierdie dokument is beskikbaar – kontak asseblief vir SRK.