

# CAPE WINELANDS DISTRICT MUNICIPALITY AIR QUALITY MANAGEMENT PLAN

DECEMBER 2009



**CAPE WINELANDS DISTRICT**  
MUNICIPALITY • MUNISIPALITEIT • UMASIPALA



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## 1. INTRODUCTION

The National Environmental Management: Air Quality Act 39 of 2004 (AQA) requires Municipalities to introduce Air Quality Management Plans (AQMPs) that set out what will be done to achieve the prescribed air quality standards. Municipalities are required to include an AQMP as part of its Integrated Development Plan.

As detailed in the AQA, a district municipality accordingly has three primary statutory obligations with which it must comply which are to –

- discharge the role of an atmospheric licensing authority;
- designate an Air Quality Officer (AQO); and
- incorporate an Air Quality Management Plan (AQMP) in its IDP and establish the framework of AQMPs for incorporation in its constituent local municipalities. In this regard it is fundamental to note that by the inclusion of an AQMP in its IDP a municipality becomes obliged to enforce and implement what is contained in the AQMP.

The Air Quality Management function within the Cape Winelands District Municipality resolves under the Municipal Health Services Department, with the Director: Municipal Health Services designated as the Air Quality Officer.

The Cape Winelands District Municipality (**CWDM**) is located in the Western Cape Province in South Africa. This district is comprised of five Local Municipalities, namely, Breede Valley, Langeberg, Drakenstein, Stellenbosch and Witzenberg. Agriculture is the main economic activity in the District forming about 38% of the Gross Geographic Product in the District.

Before the promulgation of the National Environmental Management: Air Quality Act 39 of 2004 (AQA) permits used to be issued by National Government in terms of the Atmospheric Pollution Prevention Act, 1965 (Act 45 of 1965). With the exception of Drakenstein and Stellenbosch municipalities where Smoke Control Regulations were declared as well as Dust Control areas in terms of Part 4 of the Act. The district and other local municipalities had little or no input in relation to the issuing of listed processes permits. In these local municipalities and CWDM, air quality issues were restricted to complaints and land-use planning. This resulted in a serious lack of skills in the field of air quality management at district and local municipal level. For this reason, this Air Quality Management Plan must acknowledge these shortcomings and objectives identified within this plan and will focus on addressing issues of capacity building.

Due to this lack in capacity, the CWDM appointed Gondwana Environmental Solutions to assist the CWDM in a scoping exercise to assess the availability of capacity within the authority in terms of personnel, skills, resources and tools. Also to conduct a risk assessment which included a detailed baseline assessment of the meteorological conditions and the ambient air quality situation in the District. An emissions inventory was compiled for air pollution sources in the District with specific focus on quantifiable sources such as industries, vehicles and domestic fuel burning. Dispersion modelling simulations were undertaken using the international ADMS-Urban model developed by the Cambridge Environmental Research Consultants in the United Kingdom in terms of air quality for the district.

This Air Quality Management Plan will be largely based on the findings of Gondwana, as very little information was available relating to air quality throughout the district.



## **2. STATUS OF AIR QUALITY**

### **2.1 Areas of concern in the District**

Based on the available ambient air quality monitoring data and the emissions inventory compiled for the District, air pollution priority areas or 'hotspots' were identified in the District. Emphasis was placed on areas with high population densities and the spatial distribution of sources in relation to residential areas. Given that PM10 (Parts per Million smaller than ten microns) concentrations have been identified to be the main pollutant of concern in the District, the focus was on areas where PM10 was identified to be of significance.

Based on the above mentioned criteria, these areas have been identified to be:

- Paarl and Wellington (Drakenstein Local Municipality) Preliminary continuous monitoring data indicates elevated PM10 concentrations in these areas.
- Worcester (Breede Valley Local Municipality) – This Local Municipality accounts for approximately 34% of total PM10 emissions in the District. Emissions from industries were identified to be significant in this area.
- In addition the town of Stellenbosch within the Stellenbosch Local Municipality is also identified to be a potential 'hotspot' area. The Cape Town Brown Haze II Study in 2003 was an airborne research campaign to analyse the brown haze which hangs over Cape Town during the winter months. Although the highest concentrations occurred over the Cape Town Metropolitan Area, Stellenbosch was identified to be an area of interest in terms of the aerosol (particulate) concentrations recorded in this area.

### **2.2 Potential air pollution sources in the Cape Winelands have been identified as:**

- Industrial operations,
- Agricultural activities
- Biomass burning (veld fires),
- Domestic fuel burning (particularly, wood and paraffin),
- Vehicle tailpipe emissions,
- Waste treatment and disposal (landfills and incineration),
- Vehicle entrainment of dust from paved and unpaved roads,
- Other fugitive dust sources such as wind erosion of exposed areas.

#### **Air pollution sources and their associated emissions in the District.**

<b>Source</b>	<b>PM10</b>	<b>SO2</b>	<b>NOx</b>
Agricultural activities	✓		
Biomass burning	✓	✓	✓
Domestic fuel burning	✓	✓	✓
Industries	✓	✓	✓
Landfills	✓		
Tyre burning	✓	✓	✓
Vehicle entrainment on unpaved roads	✓		
Vehicle tailpipe emissions	✓	✓	✓
Wind-blown dust	✓		
Trans-boundary transport	✓	✓	✓

### **2.3 Number of registered industrial processes and scheduled processes in the Cape Winelands District Municipality**

<b>Registered Sources</b>	<b>Scheduled Processes</b>
113	16



### **3. GAPS AND PROBLEMS**

- i The division of roles and responsibilities between local and district municipalities are not clearly understood or have not been accepted by certain local municipalities and this hampers cooperative governance and the implementation of the function.
- ii Not all Local Municipalities have appointed Air Quality Officers and this hampers communication and accountability.
- iii Air Quality management requires cooperation from various disciplines within local government which includes amongst others, traffic, town planning, environmental services, cleansing services, housing, building control, Municipal Health Services, Law enforcement, social and developmental services and political buy in. The successful implementation of an air quality management plan is thus strongly dependent upon cooperation and communication amongst all the local governments within the district. This has always been an area of concern within the district and is expected to be a major challenge in the implementation of this function throughout the district.
- iv Inadequate financial provision specifically earmarked for AQM by all local authorities within the district.
- v The availability of suitably skilled human resources also remains a challenge.

### **4. VISION THE AIR QUALITY MANAGEMENT PLAN(AQMP)**

To be a district within which the constitutional right of all inhabitants to clean and healthy air is maintained in a sustainable manner without compromising economic and social development for the benefit of present and future generations.

### **5. MISSION THE AQMP**

To implement sustainable air quality management practises throughout the district to progressively achieve air quality goals.

### **6. PURPOSE OF THE AQMP**

The purpose of this plan will be to maintain, improve and protect air quality throughout the district by preventing pollution and ecological degradation in order to give effect to the legal responsibility of the CWDM in terms of National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004) and the National Framework for air quality management in the republic of South Africa

### **7. AQMP GOALS**

- **Effective Air Quality Management**
- **Promote communication in relation to Air Quality Management**
- **Compliance monitoring and enforcement**

### **8. AQMP OBJECTIVES**

#### **8.1 EFFECTIVE AIR QUALITY MANAGEMENT**

- Build capacity in air quality management within the Municipal Health Services Directorate.
- To develop and implement an effective Air Emissions Licensing System
- Develop, implement and maintain an Air Quality Management System
- Establish an annual AQMP review process
- Establish an Emission Reduction Strategy



**8.2 PROMOTE COMMUNICATION IN RELATION TO AIR QUALITY MANAGEMENT**

- Establish an Air Quality Forum in order to ensure proper communication between Local and Provincial government, business and industry as well as interested and affected parties.

**8.2 COMPLIANCE MONITORING**

- Establish a compliance monitoring system within CWDM
- Ensure continuous compliance with Atmospheric Emission Licensing Conditions

**9. ROLES AND RESPONSIBILITIES OF THE CAPE WINELANDS DISTRICT MUNICIPALITY**

The roles and responsibilities of District Municipalities are outlined in the National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004) (NEM:AQA) as well as the National Framework for air quality management in the republic of South Africa.

These are:

Monitor ambient air quality and point, non-point and mobile source emissions
The development of air quality management plans as a component of integrated development plans as required by the Municipal Systems Act
The setting of municipal standards for emissions from point, non-point or mobile sources in the municipality in respect of identified substances or mixtures of substances in ambient air which, through ambient concentrations, bioaccumulation, deposition or in any other way, present a threat to health, well-being or the environment in the municipality
Implement the AQA atmospheric emission licensing system referred to and for this purpose perform the functions of licensing authority as set out in Chapter 5 and other provisions of the AQA
Monitoring potential illegal listed activities
Monitoring compliance with emission standards in respect of the manufacture, sale or use of any appliance or conducting of an activity declared as a controlled emitter
Monitoring compliance in respect to reasonable steps to prevent the emission of any offensive odour caused by any activity.
Monitoring compliance with directives to submit an atmospheric impact report
Monitoring compliance with conditions or requirements of an atmospheric emission licence
Monitoring any application for an atmospheric emission licence, or for the transfer, variation or renewal of such a licence to ensure that it does not contain false or misleading information
Monitoring any information provided to an air quality officer to ensure that it does not contain false or misleading information

**10. STAFF STRUCTURE**

Within the CWDM, the Municipal Health Services (MHS) directorate situated within the Community Services and Development Department will be responsible for air quality management. Municipal Health Services (MHS) functions also include most environmental health services as described in the National Health Act, Act 61 of 2003. These include water quality monitoring, food control, waste management, health surveillance of premises, surveillance and prevention of communicable diseases, vector control, environmental pollution control, disposal of the dead and chemical safety. Environmental



Health Practitioners within the MHS directorate are responsible for the execution of these functions throughout the district.

Environmental Health Practitioners (EHP's) employed within the MHS Directorate have been dealing with issues of air quality for several years though it was at a basic level. Their training as EHP's also provides a solid foundation in environmental studies upon which additional skills could be developed. The MHS directorate is also quite familiar with monitoring environmental conditions as well as sampling and the issuing and administration of certificates for various facilities in relation to food, water etc. Additional skills would thus only have to be developed amongst MHS staff in the technical field of air quality.

The District appointed an Air Quality Officer (The Director Municipal Health Services) which in turn appointed an air quality management committee to assist with the function of air quality management.

This committee is led by a coordinator who occupies the position of Manager Environmental and Waste Management within the MHS directorate and five Environmental Health Practitioners (EHP's) who have successfully completed the Environmental Management Inspectors Course (EMI).

As the members of this committee is al currently occupying positions as EHP's within the MHS structure it is not foreseen that any additional staff structures will have to be established to implement this plan for the immediate future. It must however be stressed that as the situation changes and the function develops within the district it might become necessary to establish a specialised unit within the MHS directorate to tend to air quality matters.



**Timeframes: Short-term (6-12 months); Medium-term (1-2 years); Long-term (3-5 years)**

<b>GOALS</b>	<b>OBJECTIVES</b>	<b>TARGETS</b>	<b>ACTIVITIES</b>	<b>TIMEFRAMES</b>
<b>Effective Air Quality Management</b>	Effective Air Quality Management	Build capacity in air quality management within the Municipal Health Services Department	Provide EHP's within the MHS directorate with continuous training and development in air quality management	Continuous
	To develop and implement an effective air emissions licensing system	Build capacity in air emissions licensing	Provide EHP's within the MHS directorate with training and development in Air Emissions Licensing	Short - Medium
			Secure assistance from the provincial department in relation to air emissions licensing	Short-term
	Develop, implement and maintain an Air Quality Management System	Develop an air emissions licensing administration and management system	Develop forms, procedures, documentation and protocols for the administration of air emissions licensing	Short – Medium
			Incorporate the air emissions licensing function into the MHS management system	Short – Medium
			Compile an emission inventory of all line sources	Medium
	Establish an annual AQMP review process	Air Quality monitoring agreement with Province	Compile an emission inventory of all area sources	Medium
			Compile an emission inventory of all industrial sources	Short
			Engagements with Province to assist with air quality monitoring within the district	Short – Long
	Establish an annual AQMP review process	Review systems, structures and processes to review progress in relation to the AQMP.	Establish a committee to review the AQMP	Short – Medium
Establish review mechanism, systems, criteria and procedures			Short – Medium	
			Establish a comprehensive complaints register.	Short





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Establish an emission reduction strategy.	Industries	Electronic database of all small industries to be regularly updated	Short – Medium
		Periodic site inspections and the request of emissions data	Short – Medium
		Develop a register for all non-listed activities	Short – Medium
	Domestic Fuel Burning	Review domestic fuel burning emissions inventory with updated population statistics as these become available	Medium – Long
		Create awareness campaigns around the negative health impacts of domestic fuel burning	Continuous
		Encourage the distribution of alternative forms of domestic energy such as LPG, LSF, gas, methanol, etc	Continuous
		Promote the integration of energy efficiency measures in low cost houses such as housing insulation, solar panels and stove maintenance and replacement	Continuous
		Promote electrification in informal settlements	Continuous
	Transportation	Review vehicle emissions database with updated traffic count data as these become available	Medium – Long
		Promote comprehensive vehicle emissions monitoring and diesel vehicle testing programmes in congested areas	Continuous
		Compile a detailed assessment of the vehicle fleet in the District including information on vehicle numbers, type, age and fuel usage.	Long
	Agriculture	Obtain information on the quantity of pesticides used in the District	Continuous
		Promote the safe and responsible use of pesticides throughout the district.	–Medium – Long
		Promote safe and responsible agricultural burning practises.	Short – Medium



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<p><b>Promote communication in relation to Air Quality Management</b></p>	<p>Establish an air quality forum in order to ensure proper communication between Local and Provincial government, business and industry as well as interested and affected parties.</p>	<p>A committee/forum at a district level representing all interested and affected parties.</p> <p>Clearing up the division of functions between Local and District Municipalities</p> <p>Regular reporting and discussions on issues of AQM.</p>	<p>Identify and quantify emissions from biomass burning</p> <p>Liaise with fire services to assist in air pollution control</p> <p>Obtain information from local Fire Departments to maintain and update a database of the locations of veld fires and the extent of the areas burnt</p> <p>Maintain a database for regional scheduled burn areas that are published for agricultural and management fires</p>	<p>Continuous</p> <p>Short – Medium</p> <p>Short – Medium</p> <p>Short – Medium</p>
			<p>The CWDM to take the leading role in the establishment and management of an Air Quality Officers Committee/ Forum</p> <p>Discussions on the division of functions between B and C municipalities</p> <p>Compile a annual state of air report for the district</p>	<p>Short-term</p> <p>Short – Medium</p> <p>Annually</p>
<p>Waste Treatment and Disposal</p>	<p>Develop an emissions inventory of waste burning sources (incinerators, sewage and waste water treatment works)</p> <p>Ensure all operating incinerators are permitted and are operating within their permit requirements</p> <p>Maintain a current database of permitted and non-permitted landfill sites</p> <p>Introduce awareness programmes and public education of waste minimization and recycling initiatives.</p> <p>Promote efficient service delivery in residential areas in order to reduce illegal dumping and the creation of informal landfills</p>	<p>Short – Medium</p> <p>Continuous</p> <p>Continuous</p> <p>Continuous</p> <p>Continuous</p> <p>Continuous</p>		
			<p>The CWDM to take the leading role in the establishment and management of an Air Quality Officers Committee/ Forum</p> <p>Discussions on the division of functions between B and C municipalities</p> <p>Compile a annual state of air report for the district</p>	<p>Short-term</p> <p>Short – Medium</p> <p>Annually</p>



<b>Compliance monitoring</b>	Establish a compliance monitoring system within CWDM	Build capacity in compliance monitoring within the district.	Provide EHP's within the MHS department with continuous training and development in compliance monitoring. Design and implement a compliance monitoring system	Continuous
	Ensure continuous compliance with Atmospheric Emission Licensing Conditions	Control emissions from listed Processes	Periodic site inspections and retrieval emissions data.	Short – Medium
			Licensing conditions to ensure compulsory monitoring and reporting by industries to the CWDM	Continuous
				Short – Medium