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EDEN DISTRICT MUNICIPALITY (EDM)

AIR QUALITY MANAGEMENT PLAN

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ABBREVIATIONS AND DEFINITIONS

APPA	Atmospheric Pollution Prevention Act, 1965
AQA	Air Quality Act, Act 39 of 2004
AQM	Air Quality Monitoring
AQMP	Air Quality Management Plan
AQO	Air Quality Officer
CBA	Clay Brick Association
CO	Carbon Monoxide
CO_2	Carbon Dioxide
DEADP	Department of Environmental Affairs and Development Planning
DEAT	Department of Environmental Affairs and Tourism
DME	Department of Minerals and Energy
DWAF	Department of Water Affairs and Forestry
EIA	Environmental Impact Assessment
EDM	Eden District Municipality
EU	European Union
GHG	Green House Gas
GIS	Geographic Information System
H_2S	Hydrogen Sulphide
HBr	Hydrogen Bromide
HCl	Hydrogen Chloride (hydrochloric acid)
HF	Hydrogen Fluoride (hydrofluoric acid)
HFO	Heavy Furnace Oil
IDP	Integrated Development Plan
IPWIS	Integrated Pollution and Waste Information System
mg/ton	Milligrams per Ton
MJ/kg	Mega Joule per Kilogram
MSA	Municipal Systems Act
MSW	Municipal Solid Waste
NO	Nitrogen Monoxide

NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxides
NEMA	National Environmental Management Act
NGO	Non Governmental Organisation
PCB	Polychlorinated Bi-Phenyls
PM	Particulate Matter
PM10	Particulate Matter with aerodynamic diameter smaller than 10 micron
SAAQIS	South African Air Quality Information System
SA	South Africa
SAWS	South African Weather Service
SO_2	Sulphur Dioxide
SO_3	Sulphur Trioxide
THC	Total Hydrocarbon Content
tpa	Tons per Annum
UPS	Uninterruptible Power Supply
USA	United States of America
USEPA	United States of America Environmental Protection Agency
WC	Western Cape

EDEN DISTRICT MUNICIPALITY
AIR QUALITY MANAGEMENT PLAN

EXECUTIVE SUMMARY

An extensive investigation into the state of air quality knowledge, capacity and management in the Eden municipal district was carried out with the support of all of the municipalities in the district. The investigation was also supported by a detailed public participation process in which valuable inputs were provided by various members of the public and representatives of industries in the area.

The outcome of the investigation and the diversity of the region in general led to the development of an air quality management plan with the following vision and mission statements:

VISION

TO HAVE AIR QUALITY WORTHY OF THE NAMES
"EDEN" AND "THE GARDEN ROUTE"

MISSION STATEMENT

TO MINIMISE THE IMPACT OF AIR POLLUTANT EMISSIONS ON THE POPULATION AND THE NATURAL ENVIRONMENT OF THE EDEN MUNICIPAL DISTRICT

To pursue the vision and mission of the plan thirteen objectives were set and are listed below:

Objective 1: Formalise air pollution control function in the EDM
Objective 2: Compile an Emissions Inventory for the region
Objective 3: Air quality monitoring
Objective 4: Meteorological monitoring
Objective 5: Dispersion modelling facility

Objective 6: Capacity building within the EDM

Objective 7: Centre of expertise

Objective 8: Spirit of cooperation

Objective 9: Law enforcement

Objective 10: Dissemination of information

Objective 11: Air quality impacts in town and regional planning activities

Objective 12: Regional waste management strategy

Objective 13: Review of the air quality management plan

By pursuing these objectives diligently the air quality management plan will have a significant role to play in the reduction of air pollutants across the whole of the Eden district. Of course the vision is something that will probably never be achieved, but a significant improvement in air quality and protection of people against harmful air pollutants will result.

EDEN DISTRICT MUNICIPALITY
AIR QUALITY MANAGEMENT PLAN

INTRODUCTION

Parliament saw fit to pass the Air Quality Act (AQA), Act 39 of 2004, in 2006. This Act resulted in a paradigm shift in air pollution control in South Africa as its main aim is the protection of ambient air quality, i.e. the air that all people are exposed to on a daily basis. At the onset of the Act, in Section 2b, it is stated that the object of the Act is

"2(b) generally to give effect to section 24(b) of the Constitution in order to enhance the quality of ambient air for the sake of securing an environment that is not harmful to the health and well-being of people."

Its basis lies, therefore, in the Constitution of South Africa. In support of the Act the Department of Environmental Affairs and Tourism (DEAT) formulated a National Framework for Air Quality Management in the Republic of South Africa. Both the AQA and the National Framework place great emphasis on public participation in the decision-making process.

The air quality management plan (AQMP) discussed in this document is the result of an extensive public participation process that consisted of three rounds of public meetings in each of the seven major municipal areas in the Eden district, many e-mail messages between members of the public and C&M Consulting Engineers (C&M), many telephone discussions with various members of the public and several visits to industries in the Eden district.

The public involvement in the development of the AQMP plan and its future maintenance and development is of such importance that it plays a role in two of the objectives discussed in the plan.

The AQMP was compiled after an extensive investigation into the Eden district, the findings of which were given in four progress reports by C&M. These are:

Report No. 367/06 PR.1: Baseline assessment
Report No. 367/06 PR.2: Emissions inventory
Report No. 367/06 PR.3: Control options
Report No. 367/06 PR.4: Monitoring and modelling requirements

Together these reports provide the basis on which this proposed air quality management plan is based.

RATIONALE BACKGROUND

The Eden municipal district (Eden) is characterized by its diversity.

The weather patterns in the region are hugely influenced by the sea and mountain ranges resulting in diversity in rainfall, wind speeds and direction, temperature and humidity in the region.

Its flora varies from typical shrubs found in the semi-arid landscapes of the Klein Karoo through fynbos at the coastal regions to indigenous forests in the Knysna region.

Its fauna varies from the humble meerkat through several species of antelope to the mighty Knysna elephant.

Its scenery varies from the solace of the Klein Karoo and Swartberg Mountains through the rural farming region of Hessequa and the coastal region with breath-taking shore line to the Outeniqua Mountains.

Its roadways include some of the most spectacular mountain passes in the country and the main route from Cape Town to the Eastern Cape. It is also home to most of the Garden Route, one of South Africa's most popular tourist attractions.

It is only natural that a region of such diversity and scenic beauty will attract a multitude of people who would like to visit, live and work in such an environment and this has led to a further unique diversity. This diversity varies from some extremely wealthy local and international individuals who own property in the region and visit it frequently, through a broad-based middle class citizenry who live and work in the district to areas where poverty is common.

The varied natural resources in the Eden municipal district led to the establishment of a diverse industrial sector, ranging from small manufacturing industries to a substantial petrochemical installation. This industrial diversity and its concomitant employee base are the cause of a wide diversity in air pollutants emitted across the municipal district on a daily basis. These pollutants include particulates and gases emitted from industrial activities, traffic sources and residential burning of fuels.

The natural beauty of the region draws a huge number of local and international tourists on an annual basis. While this industry plays an enormous role in the economy of the region, it also results in a significant impact on localized air quality as a result of increased motor vehicle emissions.

This unique diversity must be protected from abuse and exploitation if the region is to remain a tourist attraction and preferred residential region in years to come. A key step in this protection is management of the ambient air quality as it is a basic requirement for all living species. It is of sufficient importance to be included in Section 24 of the Constitution of South Africa.

This air quality management plan (AQMP) is aimed at achieving exactly that: the protection of the ambient air quality in the Eden municipal district. To guide the air quality management plan the following vision and mission statement have been formulated:

VISION

TO HAVE AIR QUALITY WORTHY OF THE NAMES
"EDEN" AND "THE GARDEN ROUTE"

MISSION STATEMENT

TO MINIMISE THE IMPACT OF AIR POLLUTANT EMISSIONS ON THE POPULATION AND THE NATURAL ENVIRONMENT OF THE EDEN MUNICIPAL DISTRICT

EDEN AIR QUALITY MANAGEMENT PLAN

AIR QUALITY IN THE EDEN MUNICIPAL DISTRICT

An extremely limited level of information about the quality of the ambient air in Eden is available due to historical reasons. It is, therefore, not possible to make any clear deduction about any potential risk that may exist in the region. Nevertheless, the Department of Environmental Affairs and Tourism (DEAT) rates the air quality in Eden as "potentially poor" as a result of the combined urban and industrial activities in the region. DEAT defines "potentially poor" air as "air quality that is poor at times or deteriorating".

There is also a limited amount of data available about air pollutant emissions in general, specifically from automotive and residential sources. While some gaps exist in industrial emission data, current information shows that significant quantities of particulate matter, sulphur dioxide, nitrogen oxides, carbon monoxide, hydrocarbons and greenhouse gases (mainly carbon dioxide) are emitted by industries on an annual basis.

An introductory emission inventory has shown that some areas exist where the concentration of air pollutants may be higher than expected, but no interpretation of potential risks can be determined due to a lack of credible air quality information.

There is, therefore, a dire need to obtain relevant and representative air quality data in some locations within the Eden municipal district before any remedial steps can be taken.

OBJECTIVES

The Eden District Municipality (EDM) will pursue the vision and mission of the AQMP through a series of objectives, each aimed at enhancing the EDM's role as manager of the air quality in Eden.

The various objectives detailed below must be regarded as the initialisation steps in the establishment of an effective air quality management system in the Eden municipal district. The order in which the objectives are arranged is aimed at a systematic program for implementation of the AQMP.

As the objectives are met and the AQMP unfolds, it is quite probable that other objectives will be identified and prioritised. This is a natural process and will lead to regular review of the plan. In fact, scheduled review of the AQMP is the last objective listed below.

Objective 1: Formalise air pollution control function in the EDM
Objective 2: Compile an emissions inventory for the region
Objective 3: Air quality monitoring
Objective 4: Meteorological monitoring
Objective 5: Dispersion modelling facility
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Where possible time scales have been suggested for meeting various targets in each objective. The time scales refer to “short term”, “medium term” and “long term”. A short term time scale implies 1 to 2 years. A medium time scale implies 3 to 5 years and a long term time scale implies more than 5 years.

OBJECTIVE 1
FORMALISE AIR POLLUTION CONTROL FUNCTION IN THE EDM

Other than the appointment of an air quality officer in accordance with the Air Quality Act (AQA), no formal air quality management structure exists in the Eden municipal district.

The AQA and the Municipal Systems Act (MSA) both delegate powers of responsibility for air pollution related issues to municipalities, but to different levels. While the AQA delegates powers to the District Municipality, the MSA delegates responsibilities to individual municipalities within a district.

A framework for the effective management of air pollution will be developed by the EDM in consultation with individual municipalities. Where individual municipalities wish to play an active role in the management of air quality, certain responsibilities will be delegated to those municipalities. The level of authority delegated to a municipality will be determined by the EDM managers and individual municipalities.

Should individual municipalities wish not to be directly involved with air quality management, e.g. due to a lack of suitable manpower, minimum of air pollution sources, etc., service-level agreements will be entered into between those municipalities and the EDM. However, these municipalities should review their level on involvement on an annual basis.

The goal of this objective is the definition and formation of an effective air quality management system for the EDM. A schematic diagram of a typical system is given in Figure 1 below. It was obtained from the Air Quality Management Plan compiled for the City of Cape Town.

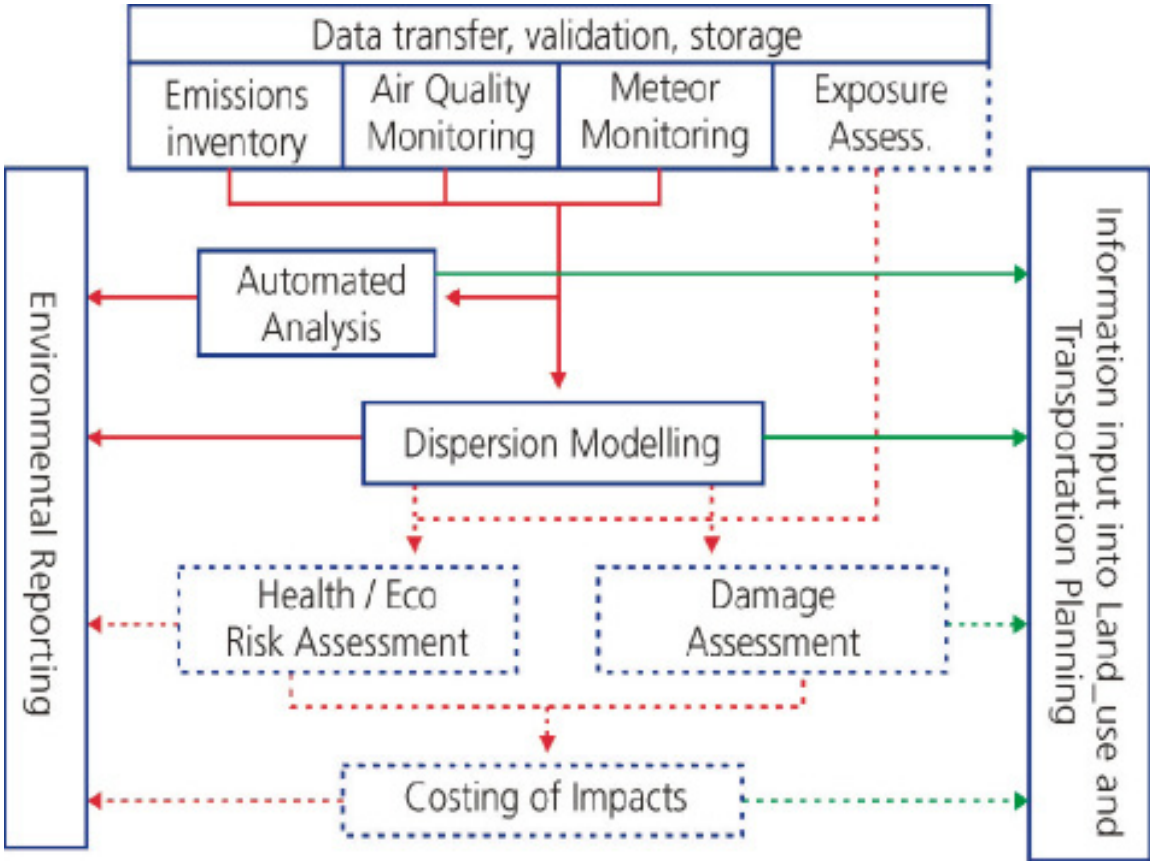
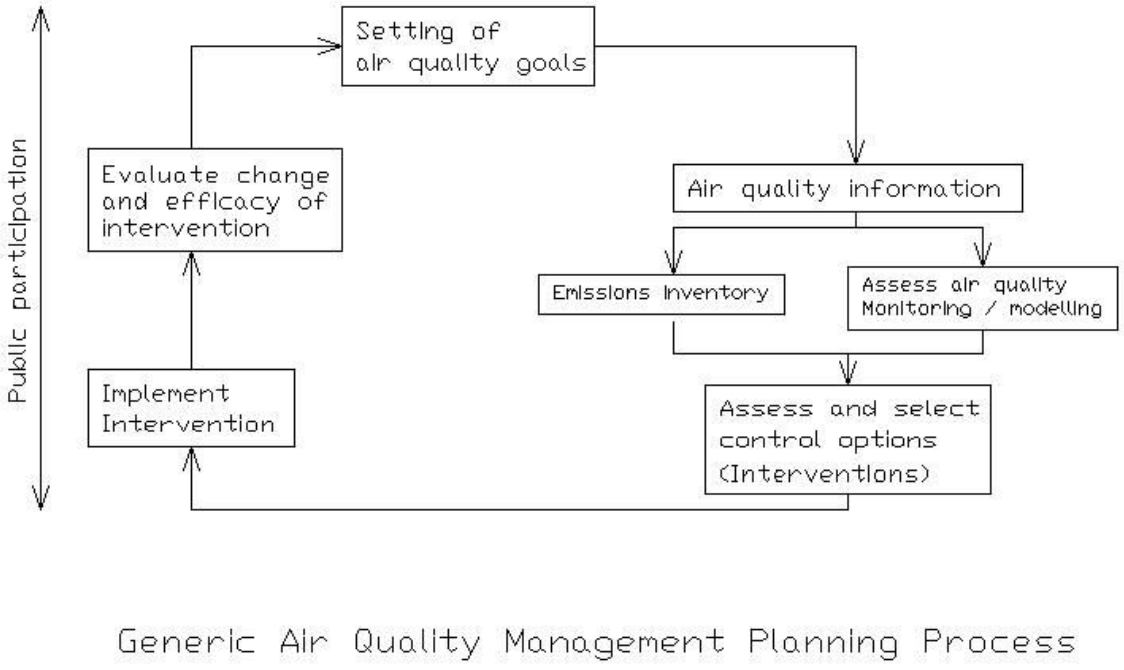


FIGURE 1: Schematic diagram of an Air Quality Management System

The Department of Environmental Affairs and Tourism (DEAT) defined a National Framework for Air Quality Management in the Republic of South Africa. In the section dealing with air quality management plans the National Framework suggests the graphic generic air quality management process given in Figure 2 below.



Generic Air Quality Management Planning Process

FIGURE 2: Air Quality Management System suggested in the National Framework

Both processes shown above indicate that all decisions on air pollution control measures are based on the air quality in the region which is either measured directly or determined by modelling studies. Of particular note is the emphasis placed on public participation throughout the process.

As can be seen from Figures 1 and 2 an emissions inventory, air quality data, meteorological data and dispersion modelling capabilities form the corner stones of the air quality management system and are paramount in its execution. These requirements are discussed as individual objectives herewith.

The air quality management system must generate sufficient information to assess the impact on air quality of all future development plans, regardless of whether these plans are aimed at residential, industrial, land-use or road network development planning. This implies an inter-departmental approach to development planning in the region. Please see Objective 11 below.

According to the Air Quality Act EDM must appoint one (or more) air quality officers who will be responsible for the day-to-day activities defined by the Act. This officer/s will be responsible for carrying out the various activities shown in the schematic diagram above. The appointment is, therefore, of extreme importance.

This objective should, therefore, have the following targets:

--	Formal appointment of air quality officer/s:	Short term
--	Definition of air quality management system:	Short term
--	Formalise cooperation with individual municipalities:	Short term
--	Implement air quality management system:	Short term

OBJECTIVE 2
COMPILE AN EMISSIONS INVENTORY FOR THE REGION

While a preliminary emission inventory has been compiled, it is limited by the fact that very little measured air pollution data exists. Extensive use was made of typical emission factors found in similar industries in the United States of America. Annual emission rates were subsequently calculated from these factors and fuel consumption rates provided by industry, but no cognisance was taken of additional sources of emissions from industry, e.g. fugitive emissions, stack emissions from non-combustion processes, etc.

No useful data could be derived for motor vehicle emissions, nor could any be derived for residential emissions. Both of these sources are regarded as of major importance in the EDM.

It is clear that a comprehensive emissions inventory is required for the whole region. Pertinent data will, therefore, be obtained through the use of questionnaires to industry, traffic counts, vehicle fleet composition, residential fuel usage, etc. In addition, industrial emission limits, when defined by DEAT, will be used to compile an extensive emissions inventory for the EDM.

The inventory will be customised to suit the various demands defined by the air quality management system and will be GIS-based to facilitate dispersion modelling studies in the region. Due to population expansions, industrial development, traffic variations, etc., compiling the emissions database is not a finite project, but an on-going activity that must be maintained on a continuous basis.

From the emissions inventory and DEAT's emission limits, special air pollution control measures will be developed as and where necessary, e.g. a ban on all open/uncontrolled fires.

Compiling an emissions inventory is an ongoing activity. As it involves other municipal departments, e.g. traffic, housing, etc., it must be commenced with as early as is convenient in the short term.

Where industrial emissions are concerned, the requirements stipulated in DEADP's Guide to Reporting and Estimating Emissions for the Integrated Pollution and Waste Information System (IPWIS) will be taken into account. This Guide defines priority pollutants, many of which are emitted within the EDM region.

Using the Guide as basis an industrial emissions inventory will result which not only meets the requirements of EDM, but also of DEADP.

OBJECTIVE 3
AIR QUALITY MONITORING

Reliable ambient air quality data is one of the corner stones of the air quality management system. The preliminary emissions database indicated that three areas warrant continuous air quality monitoring. These areas are Voorbaai near Mossel Bay, George and Knysna, albeit for different reasons.

An automated ambient air quality monitoring station at Voorbaai will monitor the concentration of volatile organic compound emissions from the tank farm located at Voorbaai. The aim of the station will not be to point a finger at the operators of the tank farm, but to determine if emissions from the facility pose a potential risk to residents near the tank farm.

The preliminary emissions database shows that particulate emissions are common in and around George. The close proximity of the Outeniqua mountains limits the dispersion of these emissions as the mountains interfere with the prevailing wind patterns. A network of manually operated particulate samplers will, therefore, be established as screening tools to determine if the concentration of PM10 particulates pose a threat to human health in George. Should the network prove that this is, indeed, the case automated particulate samplers will be considered for long-term monitoring of the air-borne particulates.

Virtually all of the road traffic, especially heavy diesel-powered vehicles, between the Western Cape and the Eastern Cape pass through the town of Knysna and the average speeds of the traffic is very low, especially in the town centre. The combustion efficiency of internal combustion engines is poor at low speeds, resulting in increased levels of air pollutant emissions. An automated ambient air quality monitoring station aimed at monitoring the impact of the heavy traffic flow on air quality will be established in Knysna.

Additional ambient air quality monitoring needs, e.g. air quality monitoring in Oudtshoorn, will be defined by the outcomes of the dispersion modelling facility discussed in Objective 5 below.

The Western Cape Province's Department of Environmental Affairs and Development Planning (DEADP) has indicated that it will provide an ambient air quality monitoring station on a loan basis to the Eden District Municipality. This station is mobile and can be moved between locations.

The station is limited in its capacity, e.g. it cannot measure volatile organic compounds, but it will nevertheless provide valuable information about ambient air quality levels at its given location. This data will form a sound foundation on which future monitoring activities can be based.

As the station will be on loan only and will have limited capabilities, the time will come where the District Municipality must carry out its own monitoring work. This objective should, therefore, have the following targets:

-- The definition of ambient air quality monitoring requirement: Short term
-- Budgeting for capital and running costs: Short term
-- Implementation of monitoring activities: Medium term

OBJECTIVE 4
METEOROLOGICAL MONITORING

A further corner stone of an air quality management system is accurate meteorological data, especially data that is compatible with modern dispersion modelling requirements. At least 18 months' valid and reliable data is required for this purpose.

The topographical diversity in the EDM implies that various micro meteorological conditions will exist in various locations within the EDM. This implies that the prevailing meteorological conditions in, e.g., Mossel Bay will not be suitable for dispersion modelling studies in, e.g. Ladismith.

To fulfil the need for accurate data eight meteorological monitoring stations will be established for location in Riversdale, Mossel Bay, George, Knysna, Plettenberg Bay, Ladismith, Oudtshoorn and Uniondale.

These monitoring stations will monitor all of the relevant meteorological parameters required for dispersion modelling studies, i.e. wind speed, wind direction, solar radiation, temperature and humidity. Where necessary additional sensors will be added to a station, e.g. to measure atmospheric pressure, rainfall, visibility, etc.

Ambient air quality and meteorological monitoring activities result in the generation of huge quantities of data, i.e. numbers, which has little meaning to most individuals. The data must be assessed, validated and condensed into meaningful information on which air quality management decision scan be made. It is, therefore, essential that this activity is automated as much as possible.

This objective should, therefore, have the following targets:

-- Monitoring stations in Mossel Bay, George & Knysna: Short term
-- Establishing data management system: Short term
-- Monitoring stations in other areas: Medium term

OBJECTIVE 5
DISPERSION MODELLING FACILITY

Ambient air quality monitoring is an expensive exercise and it is physically impossible to monitor everything everywhere. There are several situations where the impact on air quality needs to be investigated, e.g. where new developments are planned, to assess the impact of emissions from a specific source, etc. Ambient air quality information may also be required for day-to-day purposes, e.g. to respond to public complaints, etc.

By far the quickest and most reliable method of acquiring the necessary air quality information in these cases is through dispersion modelling activities. As a result a regional dispersion modelling facility will be established for specific use by the EDM's air quality management personnel. The regional facility will be located at a central location, e.g. Mossel Bay or George, but will be accessible to all EDM air quality management personnel via the District Municipality's local area network.

A GIS-based map of the district municipality will be generated in consultation with EDM's GIS Department. Input data for the dispersion model will be obtained from the emissions database and the network of meteorological monitoring stations described in Objectives 2 and 4 above.

A major advantage of a combination of some air quality monitoring stations and a dispersion model lies in the fact that a correlation between estimated ground-level concentrations predicted by the model and real measurements taken by the monitoring stations can be determined over time. Once confidence in the correlation has been gained, the model can be used reliably to predict ground level concentrations of pollutants in other regions of the EDM.

While DEADP will also have its own dispersion modelling facility, its requirements are for provincial air quality management and not localised activities, as will be required by EDM. As it will take at least 18 months to collect sufficient weather data, the time scale for the establishment of this facility is aimed at the medium term.

OBJECTIVE 6
CAPACITY BUILDING WITHIN THE EDM

Except for only a few instances, municipal officials do not have the necessary skills level to deal with the variety and complexity of modern air pollution monitoring, modelling and control functions.

As a result an accelerated training program will be established so that the officials can gain the level of expertise demanded by their functions. This will enable them to exercise their duties with more effectiveness, resulting in an improved level of air quality management across the EDM.

As and when required, EDM will appoint specialist consultants to assist EDM's air quality officers to solve special problems that may arise. In this process the air quality officers will gain valuable expertise from the consultants and build up a substantial level of expertise over time.

Such a development will be beneficial to everybody concerned. The members of the public will be assured that the officials can operate effectively while members of industry will have access to a source of expertise that can provide pertinent and reliable input into air pollution control actions.

This objective should, therefore, have the following targets:

--	Definition of accelerated training program	Short term
--	Allocate officials to training program	As needed

OBJECTIVE 7
CENTRE OF EXPERTISE

The diversity of the region implies that a diversity of air pollution issues will arise from time-to-time. In some areas the problems may be more frequent than in others, but not of a scale that would warrant a dedicated air quality officer appointed by a specific municipality in the EDM.

A centre of air pollution expertise will, therefore, be established by the EDM and situated at a central location, e.g. Mossel Bay or George. This centre of expertise will be accessible by all municipalities in the EDM and disseminate relevant information to municipalities as and when required.

It will also enable EDM personnel to evaluate industrial development proposal effectively. The centre of expertise will have access to pertinent technical information enabling personnel to understand technical proposals and judge proposals by the applicability of air pollution control technology described in the proposals.

This centre will reside with the EDM's air quality officer/s. At least one official will be trained to serve as "green scorpion" to lend an additional level of environmental control to the EDM, extending to areas other than air pollution control.

The establishment of the centre of expertise goes hand-in-hand with training and capacity building of EDM officials. The time scale for this activity is, therefore, medium term.

OBJECTIVE 8
SPIRIT OF CO-OPERATION

The EDM will try its utmost to create a spirit of co-operation between itself, members of the public and industry as such a spirit will provide the shortest route to effective air quality management in the region. Examples of steps that can be followed are frequent discussion forums, regular dissemination of information through the media (press, radio, etc.), provision of an air quality hot-line for registering of complaints and concerns, etc.

Free and open discussion of all matters relating to air quality will give all interested and affected parties an opportunity to openly communicate their concerns in addition to being informed of the difficulties experienced by others.

Meeting this objective is of the utmost importance and must be pursued with vigour right from the onset.

OBJECTIVE 9
LAW ENFORCEMENT

The Air Quality Act charges the District Municipality with the responsibility to issue atmospheric emission licences to industries listed in the Act and to enforce emission limits set on those industries by DEAT. These powers will be used to define emission verification measures that industry will have to employ to prove that their emissions comply with limitations set by DEAT and/or EDM. It will also be used to define any specific air quality monitoring activities that a particular industry must embark on to show that its emissions do not result in an exceedence of ambient air quality limits or cause a nuisance to its neighbours.

DEAT is in the process of compiling an "emissions calculator" that will be used to determine a fee structure for the licensing process. The eventual fee structure will be developed by the relevant departments involved in the activity.

In addition, DEAT is compiling a set of generic municipal by-laws to aid local authorities in the process of formulating their own set of by-laws. DEAT's set of by-laws is not meant to be definitive, but rather as a tool to be customised and expanded by local authorities. Modifying the generic set of by-laws to meet EDM's requirements will ensure effective implementation of the AQMP.

Municipal managers will discuss and plan the inclusion of the AQMP into the region's integrated development plans (IDP), as required by the AQA.

The emissions inventory and emission limits defined by DEAT will indicate which industries exceed their limits. Furthermore, the ambient air quality monitoring stations and regional dispersion model will indicate if ambient air quality limits are exceeded, or in danger of being exceeded. Should this occur EDM will exercise its powers under the Air Quality Act and set emission limits and air quality standards that are stricter than those imposed by DEAT.

In keeping with the principle of "polluter pays", a penalty structure will be defined in consultation with DEAT and the Courts. This will not only cover industrial emissions, but all other illegal activity, e.g. open burning activities, etc.

In addition, EDM will establish a diesel vehicle exhaust emission measuring facility that will be used to determine if diesel powered vehicle exceed emission limits set by the DEAT and the Department of Minerals and Energy. A suitable fines structure will be developed for application in this regard.

This objective should, therefore, have the following targets:

--	Definition of licence fee structure:	Short term
--	Inclusion of AQM in municipal IDPs:	Short term
--	Definition of penalty structure:	Short to medium term
--	Establishment of diesel exhaust measuring facility:	Medium term

OBJECTIVE 10
DISSEMINATION OF INFORMATION

The ambient air quality and meteorological monitoring stations discussed in Object 3 above are automated systems capable of recording air quality and meteorological parameters on a continuous basis. Automated stations lend themselves to automated data validation and reporting functions, including publication of summarised results.

A web site will be set up on the internet and linked to EDM's web site so that summarised data will be reported on the site as a continuous activity. The activity will be automated and the web site updated automatically so that all members of the public will be able to access the data and gain first-hand information about the air quality and prevailing meteorological parameters.

As meeting this objective is dependent on the availability of air quality and meteorological data, a medium-term time scale is applicable to this objective.

OBJECTIVE 11

AIR QUALITY IMPACTS IN TOWN AND REGIONAL PLANNING ACTIVITIES

According to the Air Quality Act the AQMP must be included in the EDM's Integrated Development Plan and it will, therefore, play a role in all future development activities in the region.

Therefore, the centre of expertise, as discussed under Objective 7 above, will provide an input into land-use and transport planning activities.

The aim is to ensure that the relevant authorities, policies, strategies and plans take into account the potential impact of land use and transport planning on air quality. This implies that inter-departmental communication cannels must be set up to facilitate proper planning activities.

Air quality impacts extend much further than then EDM boundary. South Africa has ratified several multilateral environmental agreements, notably on greenhouse gases and cognisance must be taken of Eden's contribution to those pollutant groups.

The formalisation of air quality impacts in all aspects of town and regional planning must receive high priority and must, therefore, be addressed in the short term.

OBJECTIVE 12
REGIONAL WASTE DISPOSAL STRATEGY

The Air Quality Act does not only apply to the private sector only, but also to all governmental activities. As such it is applicable to air pollution generated by, inter alia, activities carried out by town councils and district municipalities.

As the EDM and the individual municipalities in the region cannot be players and referees at the same time, a concerted effort will be undertaken to ensure that municipal activities comply with all air quality limits imposed by DEAT, including all diesel vehicle exhaust emissions and waste burning activities. The latter occurs to some extent in smaller towns where suitable landfill sites are not available and can be a source of emissions of dangerous compounds.

As a result the regional waste management strategy will be modified to include air quality impacts to ensure that municipal waste disposal activities meet modern municipal waste handling and disposal practice. Options that will be considered include transporting of waste to the nearest suitable landfill site, incineration of municipal waste in a properly designed and authorised facility with subsequent energy recovery through, e.g. power generation, etc.

Meeting this objective is an on-going activity with medium to long term time scale implications.

OBJECTIVE 13
REVIEW OF THE AQMP

This AQMP is only a plan according to which the EDM will address air quality management in the municipal district. It will not, however, function in an ideal world where all forecasts and expectations meet the initial goals.

The AQMP will operate in an ever-changing environment as infrastructure, legislation, industrial development, tourism trends, etc., vary over time. As a result the plan must be adapted over time to meet the ever-changing air quality management requirements.

The objectives stated above are aimed at the initial setup and commencement of air quality management actions in the EDM. Some can be met quite rapidly while others will take some time to be completed. It is also conceivable that meeting one objective may lead to the formulation of another.

In addition, the Western Cape Provincial Government is in the process of compiling a Provincial regional development framework as well as a draft provincial policy on climate change. Both of these processes may influence the way that air quality is managed in Eden and must be taken into account in future reviews of the AQMP.

This AQMP will, therefore, be reviewed initially on an annual basis as the EDM finds its feet in air quality management. Once the function is operating smoothly the review period will be extended, but that decision should be taken when deemed appropriate by the EDM Council.

THE WAY FORWARD

Meeting the objectives described above is not a one-man task. From the discussions of the various objectives it will be seen that an enormous amount of work is involved. Maintaining an emissions inventory is a time consuming task. Ambient air quality monitoring stations require close supervision if reliable data is to be generated. Operating a network of particulate samplers in George is a manual activity. Comprehensive dispersion modelling activities absorb time. Law enforcement, dissemination of information, providing input in town and regional planning activities are all manual activities and consume time.

While the Air Quality Act states that the EDM must appoint an air quality officer, and two have been appointed, it is clear that these officer will require a substantial support base if they are to carry out the responsibilities of their positions effectively.

Fortunately the two largest towns in the region, i.e. Mossel Bay and George, appointed their own air quality officers and a substantial level of interest exists at municipal level at two other towns in the region, i.e. Oudtshoorn and Knysna. It is recommended, therefore, that a task team consisting of representatives of the EDM, Mossel Bay, George, Oudtshoorn and Knysna is formed.

This task team will form the core of the development work that is required to set up a functional air quality management activity and execute its duties effectively and responsibly.

CONCLUSION

The contents of the AQMP and supporting information as described in the Introduction have been tested against the general requirements for AQMPs as described in the AQA and National Framework and found to comply with both official documents. Pursuing the objectives defined in the AQMP will, therefore, result in an air quality management that meets the requirements of Government and the public in general.