



Guideline Document

Study to Identify and Assess the Resource and Operational System Requirements for the Delivery of an Effective Air Quality Management Service to the Sedibeng Region By the Sedibeng District Municipality



By:



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List of Abbreviations

APPA:	Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965)
AQA:	National Environmental Management: Air Quality Act, 2004 (Act No.39 of 2004)
AQMP:	Air Quality Management Plan
CAPEX:	Capital Expenditure
DBSA:	Development Bank of South Africa
DEAT:	Department of Environmental Affairs and Tourism (replaced by DWEA)
DME:	Department of Minerals and Energy
DWEA:	Department of Water and Environmental Affairs
EMI:	Environmental Management Inspector
GES:	Gondwana Environmental Solutions (Pty) Ltd.
GDACE:	Gauteng Department of Agriculture Conservation and Environment
GPS:	Global Positioning System
IDP:	Integrated Development Plan
JD's:	Job Descriptions
KPI:	Key Performance Indicator
LM:	Local Municipality
NEMA:	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NGO:	Non-Governmental Organisation
OPEX:	Operational Expenditure
PC:	Personal Computer (desktop)
PMT:	A mathematical function which allows for the calculation of a loan/debt/ payable fee based on constant payments at a constant interest rate
PPE:	Personal Protective Equipment
PSC:	Project Steering Committee
RC:	Registration Certificates
SAAQIS:	South African Air Quality Information System
SAWS:	South African Weather Service
SDM AQM:	Sedibeng District Municipality Sub-directorate of Air Quality Management
SDM:	Sedibeng District Municipality
VTAPA:	Vaal Triangle Airshed Priority Area

Executive Summary

In terms of air quality management, the main responsibility for municipalities is the implementation of the National Environmental Management: Air Quality Act, 2004 (Act No.39 of 2004) (AQA). The Sedibeng District Municipality (SDM) thus embarked on a project to establish a sub-directorate for air quality management to fulfil its mandate (as a District municipality) in terms of the AQA.

As part of the project, consideration had to be given to the section 77 and 78 processes as covered in the Municipal Systems Act, 2000 (Act no. 32 of 2000) as compliance therewith is mandatory. The various project activities and processes undertaken during the project fulfil many of the requirements of these mandated processes, thus allowing the SDM to be in compliance with the Municipal Systems Act in this regard.

The development of a guideline document was undertaken to provide a brief overview of the SDM project, as a whole and to lay out the SDM's implementation plans and procedures (as the SDM municipality is the first district municipality to undertake such a study) so that other municipalities who undertake similar studies may follow the SDM's example.

Note:

- This document is to be used as a guideline document only and not as a template for the formation of air quality management units.
- This document must be read in conjunction with the *Final Report - Study to Identify and Assess the Resource and Operational System Requirements for the Delivery of an Effective Air Quality Management Service to the Sedibeng Region By the Sedibeng District Municipality- Report number SDM-RN_09004*

1. Introduction

1.1 Why develop a guideline document

The development of a guideline document was undertaken to:

- Provide a brief overview of the SDM's project, as a whole; and
- Lay out the implementation plans and procedures so that other municipalities who undertake similar studies may follow the SDM's example as the SDM is the first district municipality to undertake such a study.

1.2 Usage of the guideline document

The guideline document is intended to be used in the following manner:

- As a guideline document only and not as a template for the formation of air quality management units.
- Must be read in conjunction with the *Final Report - Study to Identify and Assess the Resource and Operational System Requirements for the Delivery of an Effective Air Quality Management Service to the Sedibeng Region By the Sedibeng District Municipality- Report number SDM-RN_09004*.

1.3 Project process flow diagram

The following flow diagram highlights the project process used in summary form (Figure 1).

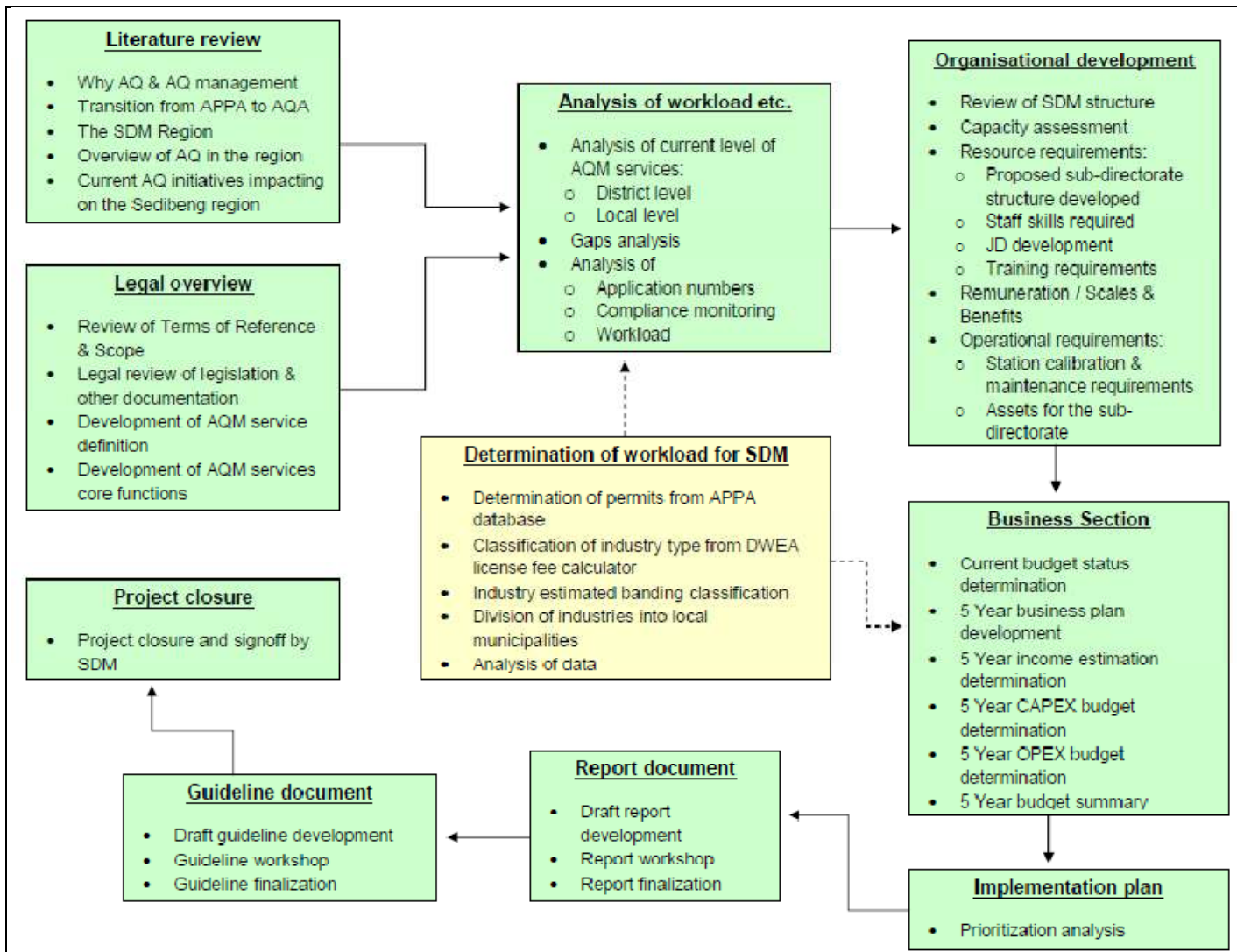


Figure 1: Summary project process flow diagram.

2. Background

2.1 The Sedibeng region

In order to place the project into a regional context, brief discussions on the Sedibeng regions locality, populations and local municipality distributions was provided through a literature review process.

The following sources provided useful information:

- SDM 2007 - 2011 IDP

- SDM 2008 – 2009 IDP
- Statistics SA Census 2001 projections
- www.demarcation.org.za

2.2 Overview of Air Quality in the Sedibeng Region

In order to place the project into a regional air quality context a brief discussion on the Sedibeng regions air quality was provided through a literature review process.

The following sources provided useful information:

- Vaal Triangle Airshed Priority Area Air Quality Management Plan

2.3 A review of the Current Air Quality Initiatives in or impacting on the Sedibeng Region

In order to understand the current air quality initiatives in or impacting on the Sedibeng region a literature review was conducted. As part of this process, a meeting was established with DWEA to discuss the various projects encountered and to verify the potential impacts on the SDM project. The purpose of the meeting was also to identify new projects that may have an impact which were not encountered as part of the literature review.

The projects listed below are those which were found to impact on the SDM project.

- APPA Review Project
- Vaal Triangle Airshed Priority Area AQMP Development Project
- National Listing of Activities and its Associated Minimum Emission Standards Setting Project
- Project Refinery and the Ferro Alloys Project
- Model Air Quality Management By-Law Project
- Manual for Air Quality Management Planning in South Africa Project
- Air Quality Monitoring Project in the VTAPA with DWEA
- South African Air Quality Information System (SAAQIS)
- Mintech Working Group II Meetings

- VTAPA AQMP Implementation Committee
- Integrated Action Plan to Address Air Quality in Dense, Low-income Communities - Development Project
- Gauteng AQMP
- Management and maintenance of two Air Quality Monitoring Stations donated by GDACE

Any municipality undertaking such a study will thus have to undertake a similar literature review specific to their region and establish meetings with DWEA to confirm the air quality initiatives which may impact on their region. Furthermore, all municipalities undertaking these literature reviews will have to include quality initiatives and projects from a national and local level (specific to their municipality and region).

In order to assist these municipalities this guideline document includes a bullet point summary (below) of specific projects and initiatives which have implications on all municipalities.

- APPA Review Project
- Air Quality Management Plans and Planning
 - Air quality management plans (AQMP's) and Declared Priority Areas
 - AQMP's and Non-Priority Areas
 - AQMP's Aims
- Air Quality Management Plans and Planning
- National Listing of Activities and its Associated Minimum Emission Standards Setting Project
- Project Refinery and the Ferro Alloys Project
- Model Air Quality Management By-Law Project
- Manual for Air Quality Management Planning in South Africa Project
- Air Quality Monitoring Projects
- South African Air Quality Information System (SAAQIS)
- Mintech Working Group II Meetings
- Integrated Action Plan to Address Air Quality in Dense, Low-income Communities - Development Project

3. Legal overview

3.1 SDM Legal Review - Terms of Reference & Scope of Review

The legal review was required to clarify the mandates for the various spheres of government. The legal review was to specific focus on the following:

- The identity and nature of the district and local municipalities and their roles and functions. In this regard particular advice was required in relation to:
 - The two services to be introduced, which should as a matter of law, properly fall within areas of competence of district and local municipalities respectively; and
 - How a district municipality may be empowered to render all the services that will make up an air quality management service as “air pollution” is constitutionally and legislatively an exclusive local municipality area of competence.
- Guidance on how, district and local municipalities should comply with Part 2 of Chapter 8 of the Municipal Systems Act and in particular with sections 76 to 80. Reasons for undertaking this review are because there are compelling reasons why the district municipality may be required to render municipal services on behalf of its constituent local municipalities that are within local municipalities’ exclusive areas of competence.
- Advice as how the provision of the Municipal Systems Act may be applied to empower and enable a district municipality to render an effective air quality management service.
- What a district municipality will be required to do in order to fulfil its role as an atmospheric emissions licensing authority.

- What constitutes and makes up an efficient air quality management service.
- How may an efficient air quality management service be rendered.

From the original written terms of reference from SDM, several deliverables in terms of the legal review were also stipulated. These include the following:

- A discussion of the requirements of sections 77 and 78 of the Municipal Systems Act as compliance therewith is mandatory.
- Clear identification of what at law an optimal air quality management service offered by a district municipality should be. This identification is directed based on:
 - Legislation and other sources (the Constitution, the National Framework for Air Quality Management in the Republic of South Africa, the SAAQIS project etc); and
 - Other activities and initiatives being implemented in the region etc.
- A clear identification and legal definition of what an air quality management service for the Sedibeng region would be.

3.2 Legally reviewed documentation

The constitutional authority and legal obligations analysis conducted, in terms of accurately identifying the scope of the air quality management service the SDM should be providing to the Sedibeng region was a fairly complex process. The process was complicated further due to several projects within the Sedibeng region (i.e. the VTAPA AQMP and Gauteng AQMP etc. Refer to Section 2.3 above), some of which also have legal requirements which must be met by the SDM in terms of providing air quality management services.

In terms of the SDM project the following legislation and documentation was reviewed and or consulted with:

- Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965)
- Constitution of the Republic of South Africa Act, 1996 (Act No. 108 of 1996)
- Common law practices
- Criminal Procedures Act, 1977 (Act No. 51 of 1977)
- Gauteng AQMP
- Municipal bylaws
- Municipal Structures Act, 1998 (Act No. 107 of 1998)
- Municipal Systems Act, 2000 (Act No. 32 of 2000)
- National Environmental Management: Air Quality Act, 2004 (Act No.39 of 2004)
- National Environmental Management Act, 1998 (Act No. 107 of 1998)
- National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
- National Framework for Air quality Management in South Africa, 2007
- National Health Act, 2003 (Act No. 61 of 2003)
- SAAQIS project documentation
- Sedibeng District Municipality Integrated Development Plan 2008/2009
- Vaal Triangle Airshed Priority Area Draft Air Quality Management Plan, 2008

For any municipality undertaking such a project it is recommended that they review the SDM legal review as this document will provide a good basis of understanding prior to undertaking the municipalities own specific legal review.

3.3 Optimal AQM Services Definition

Once this legislation was reviewed a formal definition of what an optimal air quality service would entail was developed.

3.4 Optimal AQM Service Core Functions

Following the development of the definition the optimal air quality service, the core functions in terms of the legal review and the definition were then drawn into an “Optimal AQM Service Core Functions” organogramme.

This organogramme is/was required to inform the development of the various unit organogramme options later in the process.

4. Technical overview

4.1 Analysis of current level of air quality management services

4.1.1 District Municipal Level

The analysis and determination of the current level of air quality management services at the district municipal level was conducted via discussions held at the project steering committee meetings and by the submission of various documents to GES for review (e.g. Job descriptions displaying the functions which the personnel must/are required to undertake).

All information received and determined was thus collated to determine the full scope of services currently provided at the district level. This process also highlighted the gaps in terms of the mandates services which are not currently being provided.

4.1.2 Local Municipal Level

As for the district municipal level, the analysis and determination of the current level of air quality management services at the local municipal level was conducted via discussions held at the project steering committee meetings and by the submission of various documents to GES for review (e.g. Job descriptions displaying the functions which the personnel must/are required to undertake).

All information received and determined was thus collated to determine the full scope of services currently provided at the local municipal level. This process also highlighted the gaps in terms of the mandates services which are not currently being provided.

4.2 Gap analysis in terms of the AQ services SDM is to provide from the legal review

Determination of the gaps in terms of the services that the SDM should be providing was determined through the following process:

1. From the legal review process a definition of what an optimum air quality management service for the Sedibeng region was developed.
2. The analysis and determination of the current level of air quality management services provided by the SDM was then compared to the optimum air quality management service definition.
3. From the above comparative analysis, the gaps in terms of what mandated functions the SDM should be undertaking over and above those being currently undertaken were highlighted.
4. Following the above process, a secondary analysis process was undertaken to determine if there were any gaps in terms of procedures, studies and/or agreements which need to be undertaken and or established so that the mandated functions under the optimum air quality management service definition may or could be undertaken. This analysis focused mainly on the requirements of the Municipal Structures and Municipal Systems Acts as both these acts have sections which stipulate how a municipality may make or come to an informed decision through the undertaking of structured decision making processed.

4.3 Analysis of application numbers, compliance monitoring and workload

In order to determine the number of applications, compliance monitoring and workload the following process was used:

1. Industries that will have to be managed or permitted by SDM are limited to those that are currently referred to as scheduled processes with APPA registration

certificates. This statement forms the basis for the determination of the workload below.

2. Access to the APPA database was then sort from DWEA (GES had current access permissions)
3. The number of industries with APPA permits in the SDM were determined by counting the permits. A total of 51 industries were found. An assumption was made that the data on the data base was valid and current.
4. All 51 industries APPA permit numbers and industry names were then captured in an Excel spreadsheet system.
5. The DWEA license fee calculator document was then used to classify the industry type in alignment with the DWEA estimated banding (Refer to the DWEA license fee calculator – DWEA’s estimate of the numbers of facilities throughout South Africa that will fall into the various licensing fee bands, Table 6)
6. The industries estimated banding classification was then determined in alignment with DWEA’s estimated banding (Refer to the DWEA license fee calculator – DWEA’s estimate of the numbers of facilities throughout South Africa that will fall into the various licensing fee bands, Table 6. Note the “Band” was used and not the “Nominal Band” as this would allow for higher income generation figures furthermore the higher the band, it represents industries expecting to have higher emission levels thus the precautionary principal was used as we assumed the worst impact).
7. The completed SDM permit spreadsheet was then copied into another three Excel worksheets, each named with one of the local municipalities names (Emfuleni, Midvaal and Lesedi).
8. Data in these three worksheets was then sorted so that only data relevant to the specific local municipality spreadsheets remained. All irrelevant data was deleted. The outcome of this process was that four unique spreadsheets were completed (One SDM spreadsheet with 51 industries, one Emfuleni spreadsheet with 28 industries, one Midvaal spreadsheet with 17 industries and one Lesedi spreadsheet with six industries).
9. The spreadsheet data was then analysed and conclusions were drawn.

Please note the following:

- Not all industries with atmospheric emissions are scheduled processes. These non-scheduled process industries will have to be permitted as part of a holistic reduction strategy (section 23 & 26 AQA as controlled emitters).
- Within the SDM there is/was no quantification of the number of industries which fall into this category. For this reason the exact workload could not be calculated.
- In consideration of the numbers of possible applications (specifically application renewals), and compliance monitoring activities, it is unlikely that there would be a viable workload for each individual municipality to have their own full air quality unit. Rather it was envisaged that the workload would be sufficient to support one consolidated unit serving all three local municipalities and the SDM itself.
- Part of the envisaged workload would also include appeals to the issued Atmospheric Emission Licenses. The following recommendations dealing with appeals and the appeals process were made:
 - The appeals and the appeals process will need to be handled by an appeals board, panel or committee as the SDM cannot regulate itself in terms of these appeals processes (conflict of interest).
 - The board will need to be established only as and when needed.
 - It is envisaged that this board will be established by the Manager for Air Quality Management who will be responsible for calling various levels of government and various departments (National: DWEA, DME etc., District: SDM, Local: three municipalities within SDM etc.) and private specialists together to review the relevant documentation.
 - Once the board has reviewed the application and all other relevant supporting documentation a report on the outcomes should be drafted and sent through to DWEA for review and further action.

4.4 Review of Sedibeng's organisation structure

The process of reviewing the SDM's organisational structure was undertaken as follows:

- Collation of information including the SDM organisation charts, the organisation charts from the local municipalities, the output from the legal review, the salary scales for SDM for 2008, profile of SDM including the latest IDP, profile of the local authorities.
- The organisation structure for SDM was reviewed and cognisance was taken of the levels of seniority and grades across the departments.
- The salary levels given by SDM was matched against the grading levels.
- A sample of job descriptions was obtained from SDM and these reviewed against the grading and salary levels.

4.5 Capacity assessment

Determination of the capacity of the SDM to absorb the new mandated functions was undertaken in the following manner:

1. The capacity assessment was conducted concurrently with the gaps analysis and focused on the human resources available for undertaking the new functions.
2. The assessment of the district and local municipal level was thus conducted via discussions held at the project steering committee meetings to determine the current human resources capacity available.
3. Furthermore the SDM organogramme was consulted to determine if there were any filled posts which could have their job description expanded to fulfill the new mandated functions.

4.6 Resource requirements assessment

4.6.1 Proposed sub-directorate structure

The process undertaken to determine the proposed sub-directorate structure included the following:

- The review and documentation (the legal review) was analysed to determine the functions that legally have to be performed by a fully fledged AQM Unit and a comprehensive list of functions were drawn up.
- From the determination of the legally mandated functions, it became apparent that a number of other administrative and support functions were required. These functions were added to the function list.
- The defined functions were analysed and similar functions were grouped.
- Functional charts were then prepared detailing all the grouped functions.
- The functional chart was transferred into an outline organogram (without human resources) giving an initial picture of the potential AQM sub-directorate structure.
- The initial structure was compared to those from DWEA, SDM and the local municipalities to ensure consistency.
- The initial structure, together with the job functional areas and the existing organogram from SDM, was analysed further to determine the grades of the various components of the proposed structure. These looked at posts functional content, level of responsibility and experience required to perform the function.
- An organogram was revised to include the staff grades (levels) as identified. To determine the number of staff in each functional area an analysis of the number of current and potential licences was carried out (Undertaken in alignment with section 4.3 above). From this the number of potential staff was determined and added to the organogram.
- Once the organogram was finalised the cost of the new sub-directorate was determined using the 2008/2009 salary levels. Where possible attempts were made to reduce the numbers of potential staff to make the proposed structure more affordable. This was done by the slight rationalisation of the support function and multi-skilling where feasible.

4.6.2 Staff skills levels required

The process undertaken to determine the skills levels required was as follows:

- The post functions set out in the job description were analysed and interpreted for the skill set required to perform the specified functions.
- Comparison of the skill set to tertiary education was completed and qualifications added.
- Generic skill sets such as computer literacy and communication skills were added.

4.6.3 JD's

The process undertaken for the phase of the project was as follows:

- A sample of job descriptions was obtained from SDM and the three local authorities.
- A review of each format was completed and it was decided to use the format of the SDM for consistency.
- The job descriptions were developed for each post on the organogram using the post content identified from the functional areas. The KPI (Key performance indicator) measurements were not completed as these are to be discussed by the incumbent and their superior once the person has been appointed. The job descriptions were completed with all job functions defined and the reporting requirements.
- In conjunction with the preparation of the job descriptions the staff skills levels required were determined and documented.

4.6.4 Training requirements

The process undertaken to determine the training requirements was as follows:

- Review of the skill requirements together with the job function that person is to perform.
- To determine the training an individual must have undertaken for the position. (Note: It is not necessarily the training to be provided by SDM as some of the staff will already be trained as required from previous work experience).

- The training requirements were determined by matching the skill requirements for the position.

4.6.5 Remuneration / salary scales and benefits

Remuneration and salary scales were determined via consulting with the current SDM organogram and allocated salary bands per post. This salary banding was then transferred to the developed three organogram options to determine each posts expected salary scale and banding. The addition of all the posts salaries allowed for the determination of the cumulative salary burden of having the functions fulfilled by each of the three organogram options.

The process undertaken to determine the remuneration levels was as follows:

- Remuneration and salary scales were determined via consulting with the current SDM organogram and allocated salary bands per post. The project team had been provided with the salary scales for the remainder of the SDM. This salary banding was then transferred to the developed organogram to determine each posts expected salary scale and banding.
- The addition of all the posts salaries allowed for the determination of the cumulative salary burden of having the functions fulfilled by each of the three organogram options.
- It should be noted that there is a shortage of suitable skilled staff in South Africa with air quality management qualifications. This could lead to the requirement of a special skills allowance in order to attract suitable candidates. With the creation of many air quality management directorates throughout South Africa these skills are going to become very desirable.

4.7 Operational requirements

4.7.1 Station maintenance and calibrations

SDM will be taking over the operation, maintenance and calibration of six air quality monitoring stations in the near future. In order for SDM to be able to operate, maintain and calibrate these six stations they will need to have capacitated human resources and assets specific for undertaking the calibration and maintenance of the air quality monitoring network.

GES provides operation, maintenance and calibration services to a wide range of clients. Based on our experience, a list of assets and human resources were recommended which would be sufficient to operate, maintain and calibrate the monitoring stations in alignment with standard air quality station maintenance and calibration practices in South Africa (Refer to SANAS R 07-01).

4.7.2 Assets for the Sub-directorate

Assets lists and quantities of assets required for the new SDM sub-directorate were determined bases on the following:

- GES's experience on what equipment is required to work in the environmental field (i.e. cameras, GPS's, cellular phones etc.)
- General office stationary requirements bases on a per employee basis (i.e. general office stationary, PC requirements, seating space.
- Personal protective equipment requirements for those working in the field in alignment with the requirements of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)
- Mandatory required office space on a per employee basis
- Assets required for the operation, maintenance and calibration of the air quality monitoring stations.

For any municipality undertaking such a study, the following list of equipment may be used as a template for the required assets:

- *Personal protective equipment (PPE) (including Hard hats, safety boots, ear protection, eye protection, respiratory protection (dust masks) field hats, warm jackets, raincoat, highly visible jacket, carry bags for all PPE;*
- *Emergency medical kits;*
- *GPS;*
- *Camera;*
- *Cellular phones;*
- *Office printers (colour and black & white);*
- *Laptops with remote access and connectivity;*
- *Desktop PC's;*
- *Office chairs and desks;*
- *White board;*
- *Notice board;*
- *Filing cabinets;*
- *Lockable storage cabinets;*
- *Mobile flash chart;*
- *Normal office/business stationery;*
- *Applicable PC software for project management, word processing and data capturing;*
- *Offices;*
- *Archiving storage room;*
- *4x4 double cab vehicles - pool vehicles;*
- *Passenger vehicles - pool vehicles;*
- *Monitoring station calibrations vehicle;*
- *Trace gas analyser calibrator;*
- *Set of meteorological sensor calibrators;*
- *Gardening equipment for station surrounding maintenance (Spades, forks, brush cutters etc...); and*
- *Full toolset (including both metric and English sized tools).*

5. Business section

5.1 Current budget status

The current budget status was determined by the following process:

1. Firstly the national budget was examined to determine if funds had been allocated for fulfilling these functions as under discussion. This process revealed that funds have not been allocated or budgeted for fulfilling these functions.

2. The question of funding these new mandated functions was then raised at the project steering committee meetings to determine how the municipalities intend to fund these functions.
3. The outcome of this process revealed that there was no surplus budget for use, furthermore funds had not been allocated or budgeted for as the municipality was under the impression that the license fees would cover the costs for the new services. It became clear that the new services would have to be funded via mechanisms other than the license fee calculator.

5.2 Five year Business Plan

In order for any business to be successful a business plan is required. Furthermore the company's business plan must be implemented in a rigorous manner.

In order to determine what should be included in the SDM Air Quality Management unit (SDM AQM) business plan a prioritization analysis was conducted. This analysis (Section 6.1 in the report) focussed on the steps required to get the SDM AQM operational and fully functional.

The envisaged main prioritized tasks are listed below for ease of reference:

- Task 1: Project initiation and management
- Task 2: Legal mandate resolutions and negotiations
- Task 3 : SDM restructuring
- Task 4 : Funding securing for 2010 to 2014
- Task 5 : Recruitment
- Task 6 : Staff capacity training
- Task 7 : Provision of optimal air quality management services for the Sedibeng region for 2010 to 2014

The SDM AQM business plan was then developed in alignment with the above list of priorities in the format required by the SDM (SDM provided GES with a formatted template for use, which matched the SDM's requirements of a business plan).

5.3 Five year Income Estimate

In order to determine the cost implications of the three options, a costing exercise was undertaken. This exercise focused on and considered the following:

- What a typical district municipality may spend to establish and run an atmospheric emission licensing service/authority for its district,
- What a typical municipality may spend to establish and run an effective air quality management service, and
- What a combined atmospheric emission licensing and air quality management service would cost to establish and operate.
- Salary costs as per the developed draft organogrames
- Estimate on the scarce skills allowance

Considering the above five points, an estimate of the potential income was calculated via the application of the DWEA license fee calculator with the current available information.

The process below details how the income generated was calculated:

1. The four spreadsheets developed during the analysis of the application numbers were further used to determine the possible income of the three proposed organogram options.
2. License fee bands, application fees, periods of renewal etc were determined through the extraction of information out of the DWEA license fee calculator document. The extracted information was placed in a table for ease of use (Please refer to table 1 below).

Table 1: License fee bands

APPLICATION BANDS	APPLICATION FEE	DESCRIPTION		
BAND 1	R 15,000.00	Simple and routine application with low ongoing monitoring implications and applicant falls into categories supported by government policy		
BAND 2	R 60,000.00	Relatively routine application with relatively low ongoing monitoring and compliance responsibilities		
BAND 3	R 150,000.00	Moderately complex application or moderately onerous ongoing monitoring and compliance responsibilities		
BAND 4	R 275,000.00	Highly complex application with high ongoing monitoring and compliance responsibilities		
BAND 5	R 650,000.00	Very high complexity and non routine application with high workload and high ongoing compliance and monitoring responsibilities		
	Period Payable	% of New	Rands	
	Yrs	Application	Fee	Annual Fee
NEW APPLICATION	5	100.00%		
RENEWAL	5	40.00%		
TRANSFER	1	10.00%		
VARIATION	1	20.00%		
TRADE	1	1.00%		
Annual interest rate	15%	Interest rate to be applied established by DEAT annually (Benchmark: SA Reserve Bank - current prime rate)		

3. In order to determine the best situation with the highest income (best case scenario) it was assumed that all applications will be new applications thus the 100% new application fee would be mandatory. (A further reason supporting this approach was that the breakdown of whether the application is new, a renewal, a transfer for example cannot be determined at this stage. This will only be done during the actual licensing process.)
4. Under each of the four spreadsheets tables containing the APPA permit information a secondary table was developed (Table 2)

Table 2: Fees calculation table

Band	Number of industries in band	Application fee (100% of application fee)	Annual fees (paid over 5 years)
Band 1			
Band 2			
Band 3			
Band 4			
Band 5			
Totals			

5. The number of industries per band were then counted and captured in the table for each of the municipalities.
6. The application band fees (refer to table 1 above) were then brought into the table and multiplied by the number of industries per band.
7. Legislation allows for the fees to be paid either once off or over 5 years. It was assumed that most industries would decide on the latter approach.
8. The annual fees were then calculated via the Excel PMT function. The PMT function allows for the calculation of a loan/debt/payable fee based on constant payments at a constant interest rate [-PMT (rate,nper,pv,fv,type)]:
 - *Rate* is the interest rate for the loan, **(15% used)**
 - *Nper* is the total number of payments for the loan, **(5)**
 - *Pv* is the present value, or the total amount that a series of future payments is worth now; also known as the principal. **(100% value of the application fee X)**
 - *Fv* is the future value, or a cash balance you want to attain after the last payment is made. If fv is omitted, it is assumed to be 0 (zero), that is, the future value of a loan is 0. **(0)**

- *Type* is the number 0 (zero) or 1 and indicates when payments are due, **(1)**

Note the following:

- *the interest rate to be applied is to established by DWEA annually (Benchmark: SA Reserve Bank - current prime rate)*
 - *information above highlighted in bold and italics is what is entered into the PMT function to calculate the annualized annual fee.*
 - Calculations of the renewal, transfer, variation and trade annual fees may/must also done with the PMT.
9. The PMT function value was then multiplied by the total number of industries per band to determine the total band fee.
10. The five band fees were then cumulatively added to determine the total expected income from the license fees per municipality.

5.4 Five year Capex Budget

A detailed budgetary costing was undertaken to reflect the estimated total CAPEX budget costs for the various unit options for the financial period of 2010 to 2014. The table below details the items considered in broad setup cost groupings for each of the three proposed organogramme options (Table 3).

Table 3: CAPEX budget template for the three options for a financial year

Financial year	Year							
	SDM Unit (licencing only)			Four separate units (SDM+3x LM's)			Multi Jurisdictional unit (SDM AQ sub-directorate)	
	DR	CR		DR	CR		DR	CR
Setup costs								
Computer Expenses								
Vehicle purchases/replacements								
Furniture & office equipment								
Purchase office & archiving space								
Compliance monitoring equipment								
Budget totals	0.00	0.00		0.00	0.00		0.00	0.00
Budget shortfall	0.00			0.00			0.00	

The actual rand value of expenditure was linked to:

- the asset requirements of the sub-directorate; and
- GES experience in estimating expenditure and costing.

Note: vehicles were assumed to require replacement every three years, thus the year 2013 vehicle costs were escalated by 30% from current estimated prices.

5.5 Five Year Opex budget

Once the CAPEX estimated budgets were developed, detailed budgetary costing was undertaken to reflect the estimated total OPEX budget costs for the various unit options for the financial period of 2010 to 2014. The table below details the items considered for each of the three proposed organogramme options (Table 4).

An annual OPEX cost increase of 10% (across the board) was used to determine the costs escalation from 2010 to 2014.

Table 4: OPEX budget template for the three options for a financial year

Financial year	Year							Justification
	SDM Unit (licencing only)		Four separate units (SDM+3x LM's)			Multi Jurisdictional unit (SDM AQ sub-directorate)		
	DR	CR	DR	CR	DR	CR		
General Expenses								
Data maps literature								
Refreshments, snacks for meetings								
Reimbursable								
Office decor								
Advertising for staff								
Security								
Staff Training								Based on R15000 per person
Telephone & Fax								
Travel & Accommodation (incl. S&T)								
Insurance								
Legal Fees								
Printing & Stationery								
Levies								
Accounting & Audit Fees								
Bank Charges								
Cleaning								
Computer Expenses								
Furniture & office equipment								
Courier & Postage								
Electricity & Water Rates								
Finance Charges								
Fixed Assets < R5000								
Interest Paid								
Repairs & Maintenance								
Monitoring stations Maint. & Cal.								
Compliance monitoring equipment Maint. & Cal.								
External consulting fees								
Motor Vehicle Expenses								
Fuel/Oil and toll fees								
Repairs & Maint.								
Insurance & Licence								
Parking								
Salaries & Wages								
Permant Staff Salary	Based on salary scales		Based on salary scales		Based on salary scales			Total Cost to Company salary less PAYE
PAYE								Based on 25% of total salaries
SDL								CTC salary*.01 (1%)
UIF								R115000 (max value)*X people*.01 (1%)
Pension Fund								Cost to Company salary *.18%
Medical Aid contributions								R2000*.75 (two thirds)*X people*12
Special Skills allowance (Based on 20% of permanent staff salarie and PAYE)	0.00		0.00		0.00			
Budget totals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Budget shortfall	0.00		0.00		0.00		0.00	

5.6 Five Year budget summary

Once the income, CAPEX and OPEX estimated budgets were developed, a budget summary was formulated to reflect the estimated total budget costs for the various unit options for the financial period of 2010 to 2014 (Table 5).

Table 5: Summary budget template for the three options for a financial year

Financial year	Year							
	SDM Unit (licencing only)			Four separate units (SDM+3x LM's)			Multi Jurisdictional unit (SDM AQ sub-directorate)	
	DR	CR		DR	CR		DR	CR
Income								
Emissions licencing fees (Annual application fees over 5 years)		0.00			0.00			0.00
Budget allocated from central treasury		0.00			0.00			0.00
Interest received		0.00			0.00			0.00
CAPEX Budget	0.00	0.00			0.00			0.00
OPEX Budget	0.00	0.00			0.00			0.00
Budget totals	0.00	0.00		0.00	0.00		0.00	0.00
Budget shortfall	0.00			0.00			0.00	

Note:

- Income from the license fees will only become available in 2013 hence income is zero until 2013.
- Income passed 2013 remains constant as the income was calculate via the annualized method with the PMT Excel function as discussed in Section 5.3 above.

6. Implementation plan

6.1 Prioritisation analysis

The prioritization analysis was conducted via a simple process of observing where the SDM is currently standing in terms of providing the new mandated air quality services and developing a tasks list (in order of priority) which once implemented would result in the SDM AQM being operational and fully functional. From the analysis the following seven tasks were developed:

- Task 1: Project initiation and management
- Task 2: Legal mandate resolutions and negotiations
- Task 3 : SDM restructuring
- Task 4 : Funding securing for 2010 to 2014

- Task 5 : Recruitment
- Task 6 : Staff capacity training
- Task 7 : Provision of optimal air quality management services for the Sedibeng region for 2010 to 2014

7. Conclusion

With reading this document, the reader will be informed as to how the SDM project was undertaken by GES, furthermore the document will assist other municipalities who undertake similar studies as it may be used as a guideline document.

This document provides a brief overview of the SDM project as a whole and lays out the SDM's implementation plans and procedures. Other municipalities who undertake similar studies may follow SDM's example. This document may thus be used as a guideline document for the formation of air quality management units.

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