



ELIAS MOTSOLEDI LOCAL MUNICIPALITY

WATER AND SANITATION SECTORAL PLAN



2007/2008



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ABBREVIATIONS AND DEFINITIONS

DWAF	Department of Water Affairs and Forestry
DPLG	Department of Provincial and Local Government
SALGA	South African Local Government Association
GSDM	Greater Sekhukhune District Municipality
EMLM	Elias Motsoaledi Local Municipality
WSA	Water Service Authority
WSP	Water Service Provider
IDP	Integrated Development Plan
WSDP	Water Services Development Plan
WSSP	Water and Sanitation Sector Plan
WSA	Water Services Act
WTW	Water Treatment Works
WWTW	Waste Water Treatment Works
SLA	Service Level Agreement
NSDP	National Spatial Development Perspective
NWA	National Water Act
PGDS	Provincial Growth and Development Strategies
LTDF	Long Term Development Framework
RDP	Reconstruction and Development Programme
MDA	Municipal Demarcation Act
VIP	Ventilated Improved Pit
WC/DM	Water Conservation and Demand Management
UFW	Unaccounted-for Water

KEY TERMS

TERM	INTERPRETATION
Basic Water Supply Facility	The infrastructure necessary to supply 25 litres of potable water per person per day supplied within 200 metres of a household and with a minimum flow of 10 litres per minute (in the case of communal water points) or 6 000 litres of potable water supplied per formal connection per month (in the case of yard or house connections)
Basic Water Supply Service	The provision of a basic water supply facility, the sustainable operation of the facility, the sustainable operation of the facility (available for at least 350 days per year and not interrupted for more than 48 consecutive hours per incident) and the communication of good water-use, hygiene and related practices
Basic Sanitation Facility	The infrastructure necessary to provide a sanitation facility which is safe, reliable, private, protected from the weather and ventilated, keeps smells to the minimum, is easy to keep clean, minimizes the risk of the spread of sanitation-related diseases carrying flies and pests, and enables safe and appropriate treatment and/or removal of human waste and wastewater in an environmentally sound manner.
IDP	A municipal plan as defined in the Municipal Systems Act
WSA	A water authority is any municipality that has the executive authority to provide water services within its area of jurisdiction in terms of the Municipal Structures Act 118 of 1998 or the ministerial authorizations made in terms of this Act. There can only be one water services authority in any specific area. Water services authority area boundaries cannot overlap. Water services authorities are metropolitan municipalities, district municipalities and authorized local municipalities.
WSP	Any person who has a contract with a water service authority or another water services provider to sell water to, and/or accept wastewater for the purpose of treatment from, that authority or provider (bulk water services provider); and/or Any person who has a contract with a water service authority to assume operational responsibility for providing water services to one or more consumers (end users) within a specific geographic area (retail water services provider); or

	A water service authority which provides either both of the above services itself
WSDP	A plan for water and sanitation services in terms of the Water Services Act prepared by the Water Service Authority
WSSP	A plan for water and sanitation services in terms of the Water Services Act prepared by the Water Service Provider
CATEGORY C MUNICIPALITY	A Municipality that has municipal executive and legislative authority in an area that includes more than one municipalities
CATEGORY B MUNICIPALITY	A Municipality that shares municipal executive and legislative authority in its area of jurisdiction together with the Category C Municipality in whose area it is falling

VISION, MISSION AND GOALS

VISION

A better life for all through service excellence

MISSION

- Provide democratic and accountable government for local communities
- Ensure provision services to communities in a sustainable manner
- Promote social and economic development

GOALS

- Implementing a system of Integrated Development Planning based on priority needs of the community identified through community consultation processes;
- Ensuring the effective performance of all service providers in the municipal area;
- Supporting sustainable infrastructure development and maintenance, as well as service delivery, through a fair allocation of resources;
- Promoting a safe and healthy environment; and
- Facilitating economic development and job creation

1. Background

1.1 Overview

Elias Motsoaledi Local Municipality (EMLM) formerly known as the Greater Groblersdal Local Municipality is located partly in Mpumalanga and partly in Limpopo, approximately 100 km north of Bronkhorstspuit and the N4, 110 km North West of Witbank and 25 km south of Marble Hall. The accessibility is mainly through R25 which links the area with O.R Tambo International Airport; N11 with Witbank N1 north is approximately 80km west of the area. EMLM is located on the southwestern portion of the Sekhukhune District Municipality, on the western banks of the Olifants River. The town of Groblersdal lies north east of Pretoria and is situated approximately 32km from Loskop Dam.

EMLM was previously demarcated as a cross boundary municipality with the concurrence of the legislatures of both the Limpopo and Mpumalanga provinces. However in 2005 the boundaries were re-demarcated and now the municipality falls within Limpopo Province.

Elias Motsoaledi: Born on July 26, 1924 in Nebo, Sekhukhune and, Motsoaledi came to Johannesburg at the age of 17 in search of work. He soon joined the Leather Workers' Union, served on the Committee of Non-European Trade Unions, and later played an active role in the establishment of the South African Congress of Trade Unions.

A lifelong member of the SACP and the ANC, he played a central role in many campaigns, including the Defiance Campaign of 1952, the year in which he was first banned. Detained in terms of the 1960 State of Emergency, Elias was imprisoned for four months. On his release, he went underground and served on the Johannesburg Regional Command of Umkhonto we Sizwe.

Arrested in 1963 under the notorious 90-day detention laws, Motsoaledi was one of the Rivonia Trialists and was sentenced to life imprisonment on Robben Island, a sentence he served until his release in 1989 – 26 years later. On his release, Motsoaledi was elected to the National Executive Committee of the ANC, and fulfilled his tasks in exemplary fashion.

of the WSDP by the WSA. WSSP forms a part of the sectoral planning requirements of the *Integration Phase* of the IDP Process. There are two main purposes for preparing a WSSP:

- To ensure that water and sanitation requirements arising from local development priorities are integrated within the IDP, WSDP and at a local municipal level
- To communicate these requirements to the District Municipality so that they can be included in the District's WSDP (and IDP)

The District Municipality may request further information from a Local Municipality for the District WSDP. This is particularly the case if the Local Municipality is also a Water Services Provider (WSP). The additional information which the District Municipality may request can also be included in the WSSP. It is important that Local Municipalities do not duplicate data collection and planning processes that are undertaken at the district level.

Water Service Authority (WSA): is a local Government structure mandated to provide consumers with access to water services in a specific area. Its responsibility is to make sure that communities get water services that:

- ***They can afford***
- ***Are efficient***
- ***Are economical***
- ***Are sustainable***

Water Services Provider (WSP): is an organization that has a contract with a WSA to provide water and collect wastewater from one or more consumers within their area of jurisdiction with responsibility to collect or not collect fees that may be due.

Targets for water and sanitation for the entire district are part of the WSDP planning process and therefore local municipalities must be part of this process. Part of this participation is communicating local water and sanitation priorities and proposed projects as well as the implications on water and sanitation of other local development priorities and projects.

The Local Municipality WSSP feeds into the District Municipality WSDP to ensure that all local priorities and requirements are taken into account. The linkages between a WSSP and a WSDP also represent co-operative governance between District and Local Municipalities, as described in Chapter 7 of the Constitution of South Africa.

The WSDP Process of a District Municipality requires participation of Local Municipalities and thus the process itself facilitates integration of water services issues between the District and Local Municipalities.

2.1 *Link to IDP and WSDP*

The table below explains the most prominent differences between a WSDP and a Water and Sanitation Sectoral Plan:

WSDP	Water and Sanitation Sectoral Plan
A WSDP is a legal requirement of WSA's in terms of the Water Services Act.	A WSSP is part of a Local Municipality's IDP Process.
A WSDP is a comprehensive sectoral plan that addresses all components related to water and sanitation, including social, economic, financial, technical, institutional and environmental issues.	A WSSP summarizes local priorities that impact upon water and sanitation requirements and associated projects.
Metro and District Municipalities develop a WSDP with input from Local Municipalities and other water services institutions within the Metro/ District area.	Local municipalities, who are not WSA's, with input from local stakeholders, develop a WSSP.

The primary purpose of the Water Services Development Plan is to assist Greater Sekhukhune District Municipality as a Water Services Authority to carry out their mandate effectively.

IDP VISION

“Elias Motsoaledi Local Municipality, aspire for the better life for all through service excellence”

As a Water Service Provider, Elias Motsoaledi Local Municipality must report on progress in relation to the WSSP at least annually and provide any information required by Greater Sekhukhune District Municipality.

The WSSP will inform the Greater Sekhukhune District Municipality (GSDM) WSDP to develop a realistic long-term investment plan which prioritizes the provision of basic water services, promotes economic development and affordable and sustainable over time.

To comply with the Water Services Act, the WSSP should be prepared as part of the GSDM's WSDP and IDP processes (see *diagram 1.2.1*). The WSSP is a sectoral plan that falls within the inter-sectoral umbrella plan of the IDP.

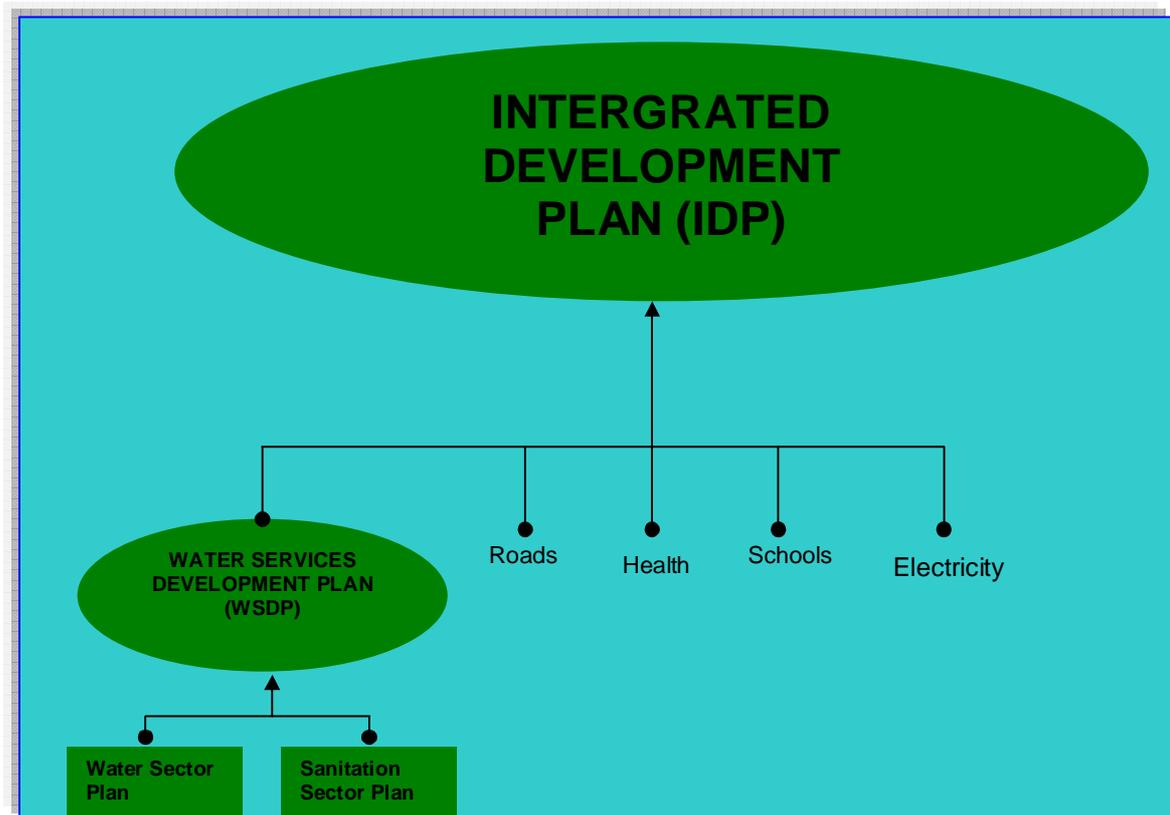


Diagram 1.2.1: Link to IDP and WSDP

It is indicated in the EMLM IDP that one of the EMLM strategic priorities is that the planned projects include both infrastructure development and those aimed at increasing access to basic services. As the projects are implemented to achieve the strategic

priorities, EMLM has taken cognizance of the following National Millennium goals for service delivery:

- Access to basic water for all by 2008
- Access to basic sanitation at RDP level by 2010
- All schools and clinics have access to water and sanitation by 2007
- Bucket toilet system be eradicated by 2006 (It must however be noted that the bucket toilet system does not exist in Elias Motsoaledi Local Municipality.)
- Electricity to all households by 2012
- Half unemployment by 2014
- Economic growth of 6% by 2010

3. Setting the Scene

3.1 Demographics

According to the Demarcation Board and the Development Bank (1996-2001), the total population of the EMLM was 220 708 in 2001 with a 0.4% annual growth rate. In the year 2001 the population increased to approximately 221 638, a percentage increase of from the Demarcation and DBSA Census. The projected growth rate from 2001 to 2010 is 1% per annum which is half than the national growth rate of 2%. The table below illustrates the population growth in years (using straight calculations at percentage growth rate of 1%).

YEARS	POPULATION
2001	221,638.000
2002	223,854.380
2003	226,092.924
2004	228,353.853
2005	230,637.392
2006	232,943.765
2007	235,273.203
2008	237,625.935
2009	240,002.195
2010	242,402.216

Table 3.1.1: Population Projected Growth Rate

Black Africans constitute the 99% of the total population followed by Whites (1%) (Table 3.1.2). The proportion of females is marginally higher (55%) than that of males (45%) (Table 3.1.3).

Group	Total Number	Total Percentage
Black	233,381.00	98.41
Couloured	661.00	0.28
Asian	153.00	0.06
White	2,968.00	1.25
TOTAL	237,163.00	100.00

Table 3.1.2: Population Groups: Census 2001

Most households are headed by a female (Table 3.1.3), while only 15.9% of households consist of a single person, slightly more than half (50.3%) of the properties are owned and fully paid for by their owners.

Description	2001
Female	130,822.00
Male	106,292.00

Table 3.1.3: Gender: Census 2001

Insufficient numbers of 5-24 year olds attending education institutions limits the required market supply of skills (Table 3.1.4), the educational challenges are characterized as follows:

- The highest level of education attained by 5-24 year olds attending education institutions is very low
- Only a quarter (22.4%) completed some secondary schooling; and
- Almost half (45.7%) of adult population reported having had no schooling

3.2 Socio-economic perspective

Based on the Demarcation Board and 2001 Census Data, the following trends are noted:

- There is lack of economic growth in EMLM and that has worsened the plight of the majority in the area.
- The majority (54%) of the economically active population is unemployed, only 46% of the adult population is employed, more than two thirds of employable persons are unemployed; and
- The level of unemployment is more prevalent in the youth groups (18-35 year olds)

A quarter (24.1%) of all households reported an average household income of between R4 801 and R9 600 per month. A third (37.9%) of all households reported having no monthly income (*Table 3.2.1*).

Commercial agriculture, trade and government service sector are the main source of employment. The government service sector as one of the main sources of the majority of formal job opportunities in the municipal area has shrunk over the past few years.

Agriculture contributes 25.2% of the local economy. The trade sector (21.2%) is the second highest contributor and government services makes 20.6% of the local economy. Thus the area can be described as a rural agricultural area, where the town mainly services the needs of the farming communities around them. Little to no industrial development has taken place in any of the towns, and thus no employment generated activities have been created.

4. Institutional Arrangements

As a result of the proclamation of the division of Powers and Functions in terms of Water Services White Paper, the EMLM is also responsible for water and sanitation services as a Water Services Provider (WSP) for Globlersdal, Rossenekal and Motetema as per agreement signed with the GSDM.

In order to understand the framework within which a WSA and WSP operates, it is necessary to define the legal and institutional arrangements between various governmental organizations, as discussed below:

4.1. Roles and Responsibilities in Water Sector

Constitution of South Africa (i.e. Provincial, Local and Municipal Government)

- Set national norms and standards
- Fill the role of Water Service Authority if service at local level fails
- Provide support to local government in relation to water services
- Legislate with regard to municipal functions (including minimum procurement rules)
- Monitor performance
- Be responsible for the provision of basic level to all South Africans

4.2. Regulator (i.e. DWAF)

- Set minimum levels of service
- Set minimum reporting requirements
- Set tariff policy
- Monitor performance
- Encourage regionalization to achieve economies of scale

4.3. Water Services Authority (WSA) (i.e. Municipal Government)

- Achieve requirements set by regulators
- Balance the needs of stakeholders
- Enter into contracts with WSP(s) best able to achieve these requirements
- Monitor performance of the WSP in terms of the contract with the WSA
- Report to regulators

4.4. Water Services Provider (WSP) (i.e. Public, Private, mixed entities or municipal government)

Provide the services and perform the duties as required in the contract with the WSA and in the Constitution

The contract shall require the water services provider to:

- Maintain an open bookkeeping system and the WSA shall have access to all books of account, financial records and statements reasonably required for the monitoring and regulation of the contract;
- Ensure that the preparation and retention of all books of account, financial records and statements are according with the General Accepted Accounting Practice publication adopted in the Republic of South Africa or, in the case of a sphere of government, in accordance with the relevant financial management legislation

The contract shall require a WSP to keep and retain for the duration of the contract a full and accurate record of all:

- Existing, past and potential consumers of water services dealt with in terms of the contract;
- Working conditions and geographic locations of all water services works, extensions, improvements and any other infrastructural improvements or alterations affected by the water services provider during the term of the contract; and
- Maintenance, inspections and technical auditing for an agreed period prior to termination

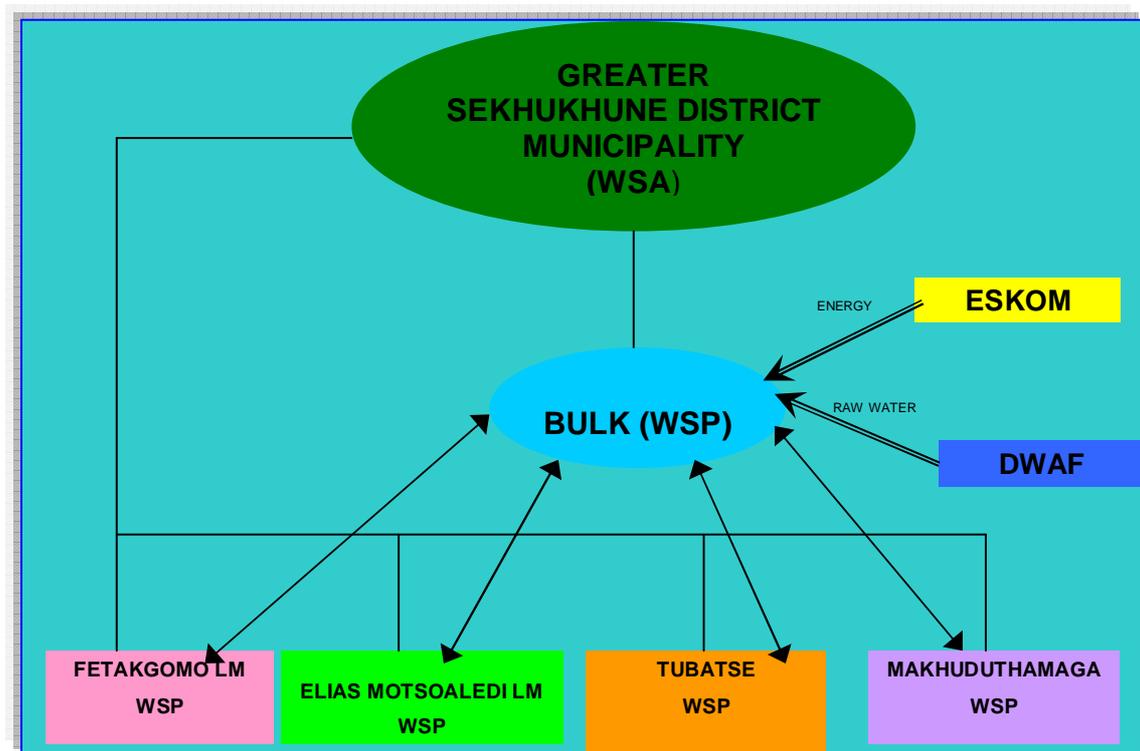


Diagram 4.1: Institutional Arrangement

4.5. EMLM Water Services Structure

Figure 2 depicts the current administrative structure of EMLM. There is a need to continuously reconfigure the current administrative arrangements in order to give effect to the changing administrative responsibility. Such reconfiguration will allow the organisational to outline the administrative structures to respond to the municipal strategy.

There are currently four departments that perform the technical, financial and administrative functions assigned to the municipality, while an LED and Planning Unit sits in the office of the Municipal Manager. These include the following:

1. Corporate Services
2. Infrastructure
3. Social Development
4. Finance

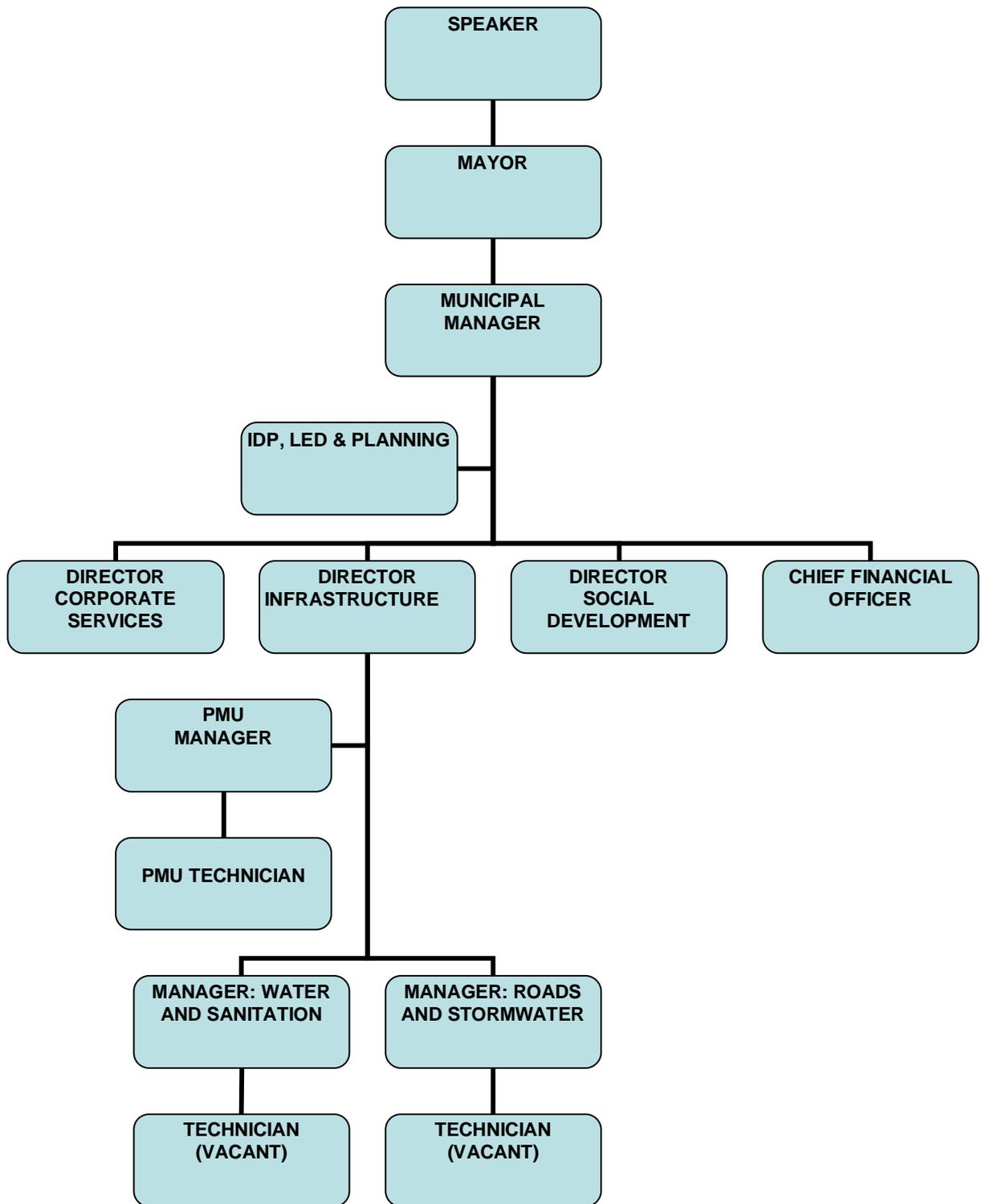


Diagram 4.5.1: Present EMLM Water Services Structure

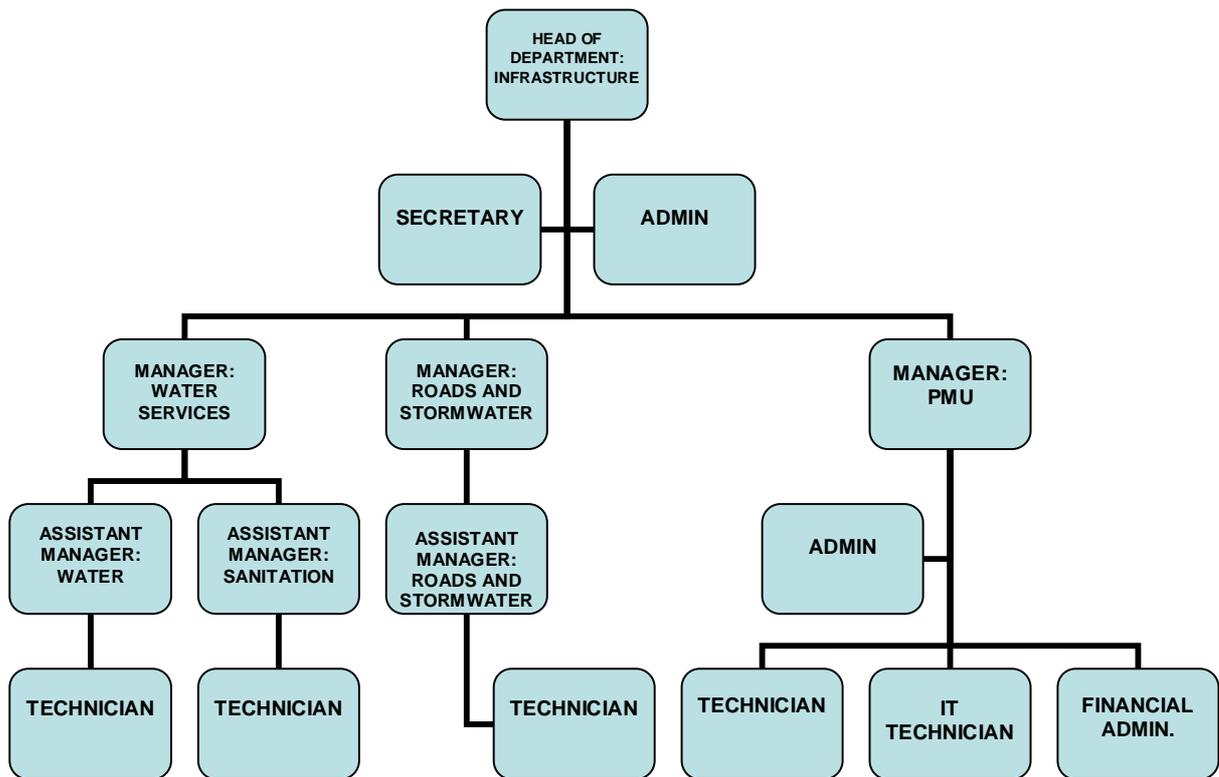


Diagram 4.5.2: Ideal Water Services Provider Structure

5. Water Services Customer

5.1 Level of Services

Water

As defined by the Water Services Act 108 of 1997, the regulations publicised in terms of Section 9 (1) and section 73 (1) (j) of the Act specifies national norms and standards for water services. The minimum standard for basic water supply services to which GSDM Water Services Policy subscribes is:

- The provision of appropriate education in respect of effective water use; and
- A minimum quantity of potable water of 25 litres per person per day or 6 kilolitres per household per month:
 - ✓ At a minimum flow rate of not less than 10 litres per minute

- ✓ Within 200 metres of a household; and
- ✓ With effectiveness such that no consumer is without a supply for more than seven full days in any year.

In order to comply with the WSA's (GSDM) Policy the EMLM as the WSP offers the following levels of services for potable water:

- In-house connections
- Yard connections
- Communal standpipes
- Water Truck Tankers
- Boreholes

Base on the study done by BC Gildenhuys Associates in May 2008 on the water services for EMLM, 61.81% of population is below the basic water supply; which is defined as in table 5.1.1.

Description	Total No	Total Percentage (%)
In-house	6,104.00	3.87
Yard connections	32,254.00	20.45
Communal Standpipes	21,875.00	13.87
Below basic	97,498.00	61.81
TOTAL	157,731.00	100.00

Table 5.1.1: Water Services Status in EMLM: Study by BC Gildenhuys Associates

Sanitation

As defined by Water Services Act 108 of 1997, regulations publicized in terms of Section 9 (1) and Section 73 (1)(j) of the Act specifies national norms and standards for sanitation services.

The minimum standard for basic sanitation services to which GSDM Water Services Policy subscribes is:

- The provision of appropriate health and hygiene education; and
- A toilet which is safe, reliable, environmentally sound, easy to keep clean, provides privacy and protection against the weather, well ventilated, keeps smells to a minimum and prevents the entry and exit of flies and other disease-carrying pests

The GSDM Free Basic Sanitation Policy states the following purposes, to:

- Provide a strategic approach to the implementation of free basic sanitation in GSDM;
- Provide Free Basic Sanitation to protect human health and the environment;
- Create a platform for community awareness and training in sanitation; and
- improve social and psychological problem associated with poor sanitation in GSDM

The following three types of levels of service are offered to the customers by the EMLM:

- Waterborne
- Septic Tanks
- VIP systems

Based on the study done by BC Gildenhuys Associates in May 2008 on the sanitation status for the EMLM, 81.26% of population served is below the basic sanitation which is defined as in table 5.1.2.

Description	Total No	Total Percentage (%)
Waterborne	10,137.00	6.43
Septic tanks	4,619.00	2.93
VIP	14,796.00	9.38
Below basic	128,179.00	81.26
TOTAL	157,731.00	100.00

Table 5.1.2: Sanitation Services Status in EMLM: study done by BC Gildenhuys Associates

Many schools in EMLM use pit latrines that are inadequate, dirty and unsafe. Both the WSA and the WSP need to support communities and households to eradicate the sanitation backlog by 2010. EMLM as the WSP will have to improve community knowledge of health matters; improve hygiene and community participation in sanitation programmes.

The responsibility of EMLM as WSP on Sanitation

Planning should take place through the Integrated Development Plan (IDP) of which the Water Service Development Plan (WSDP) is a component. To implement sanitation improvement programmes. EMLM must also plan and budget for the operation and maintenance of sanitation systems. It is also responsible for assisting households to provide their own sanitation and to build their own toilet facilities.

Specific responsibilities include but not limited to the following:

- Providing access to sanitation;
- Making communities aware of the importance of sanitation in terms of health;
- Launching, together with the communities, health and hygiene promotion programmes;
- Monitoring the health of communities; and
- Assisting households to operate and maintain sanitation facilities

Ensuring Water Services to Residents on Private Owned Land

*“ Water services authorities have a responsibility to ensure that all people living within their jurisdiction are progressively provided with at least basic water and sanitation services. This includes people living **on privately owned land** such as farm dwellers and others who are provided by intermediates”*

With reference to guide for Municipalities, Water Service Authorities / Providers have a responsibility to ensure that all people living within their area of jurisdiction are progressively provided with at least basic water and sanitation services. This includes people living on private land (for example, farm dwellers). Water services on private land refer to a range of contexts, including:

- Commercial farms
- Mining land
- Industrial owned land
- Sectional title / residential complexes & estates
- Game parks

The WSA can decide to provide the service itself through an internal mechanism, or through an external provider, or through a combination of internal and external mechanisms.

Given that the WSP provides the primary interface between the municipality, the consumer and the intermediary, this is a key decision in relation to water services provision on private land.

For more information on Services on Private owned Land refer to the DWAF for the Strategic Framework for Water Service, 2003.

5.2 Backlogs

Water

The data available from Statistics SA shows a significant growth, since 2001, in the number of households with water backlogs, this correlates directly with the significant growth in the number and population of informal settlements since 2001. The data available from the study done by BC Gildenhuys and Associates in the Table below, for the implementation of the GSDM Water Services Policy in the EMLM shows that service backlogs in informal settlements are more severe. As can be seen from the Table below that the provision of Free Basic Services has been introduced, and in the majority of the cases the provision of Free Basic Services to the indigent is below basic.

FREE BASIC WATER: 6000 ℓ (6kℓ) of water that is provided for every household by Government per month at no cost. This is calculated at 25 litres per person per day for a family of eight.

RESIDENTIAL

WATER

VILLAGES/SUBURBS	NO OF RES.	NO OF RES WITH IN-HOUSE CONNECTION	NO OF RES WITH YARD CONNECTION	NO OF RES WITH COMMUNAL TAPS	NO OF RES BELOW RDP STANDARD LEVEL OF SERVICE
Groblersdal NU	4,101	234	2159	422	1286
Lydenburg NU	33	0	0	9	24
Moutse NU	6	0	0	0	6
Groblersdal SP	897	804	66	8	19
Aquaville	261	9	183	27	42
Mathula SP	15	0	3	9	3
Elandslaagte	159	6	6	27	120
Mathula	205	0	3	3	199
Sehlakwane	3,262	30	87	640	2505
Moutse 3 Part 2 SP	2,537	224	597	522	1194
Dennilton	695	40	161	279	216
Elandsdoorn	2,116	45	1689	141	241
Dennilton	442	0	59	26	356
Ga-Matlala	717	6	3	379	329
Kgobokwane	1,776	21	233	179	1343
Lusaka	139	0	0	3	136
Malaeneng	362	10	44	159	150
Marapong	629	0	32	183	414
Moteti	2,005	149	1262	431	163
Moteti B	565	18	395	58	94
Mpheleng	2,206	24	652	391	1139
Naganeng	387	3	12	25	347
Ntwane	2,381	15	61	362	1943
Phookwane	586	24	72	188	302
Phukukane	2,476	81	1546	669	180
Ramaphosa	586	9	221	0	31
Small Phooko	2,476	12	27	124	365
Stompo	530	0	21	9	500
Tambo Square	1,004	14	391	108	491
Ten Morgan	809	7	78	75	648
Thabakhubedu	739	6	9	21	703
Theareng	245	6	3	3	233
Uitspanning A	206	0	77	58	71
Uitspanning B	182	9	24	92	57
Walkraal	59	0	0	18	41
Witfontein	660	24	367	158	111
Morwaneng	182	13	0	137	32
Tafelkop	156	3	18	86	49
Tafelkop	169	0	139	0	30
Groblersdal NU	12	6	0	0	6
Nebo NU	416	0	0	0	416

Nkadimeng	155	0	0	9	146
Sterkfontein	69	0	0	0	69
Motetema Part 1 SP	951	37	843	48	23
Tafelkop	175	0	45	50	79
Ndebele SP	0	0	0	0	0
Dindela	682	8	104	29	542
Frisgewaght	815	3	12	21	779
Ga-Pamadi	704	0	6	3	695
Hlogotlou	356	0	12	0	344
Jerusalem	143	3	107	6	27
Kgaphamadi	431	6	9	9	407
Kwa-Dlaulale	0	0	0	0	0
Legolaneng	472	0	15	12	445
Luckau	1,565	27	107	182	1249
Magukubjane	162	0	0	0	162
Makgophong	121	0	0	0	121
Manyanga	264	0	6	16	242
Mapudule	237	0	36	3	198
Mareleng	108	6	3	0	99
Mathula	576	6	9	36	525
Paardeplaats	0	0	0	0	0
Ramogwerane	306	0	9	0	297
Sephaku	1,040	15	81	98	846
Sterkfontein	450	0	3	0	447
Syferfontein-B	727	3	15	0	709
Nebo SP	9	0	3	0	6
Dikgalaopeng	176	0	0	0	176
Ga-Mamphokgo	134	0	80	27	27
Nkadimeng	109	0	0	3	106
Stadium View	863	3	143	87	629
Tafelkop	5,347	42	1266	175	3864
TOTAL	157,731.00	6,104	32,254	21,875	97,498

Table 5.2.1: Water backlog in EMLM: study done by BC Gildenhuys Associates

The above information indicates that the water backlog in EMLM is 61.73%. The National Target set date for eradication of water backlog is set as 2008 thus the info above indicates that EMLM will not be able to meet the National Target on water backlog eradication.

PUBLIC INSTITUTIONS

SCHOOLS

The Table below shows the water backlog in EMLM schools, for locality of these schools refers to Annexure A.

School	Number of schools	Number of Pupils	Water provided at RDP standards	Water Shortage No. of Schools
Early Learning Centres	70	4045	7	63
Primary	78	27951	23	55
Secondary	51	22544	21	30

CLINICS

There are 11 clinics in the EMLM of which eight are served with water through the boreholes system and three are serviced through reticulation and one is serviced through a water tanker. See Annexure B for locality of these clinics.

HOSPITALS

There are two hospitals in EMLM area of jurisdiction, namely Groblersdal Hospital and Philadelphia Hospital which are located at Groblersdal Town and Dennilton Village (Moutse 3) respectively. Both these hospitals are provided with full water services, for their locality see Annexure B.

COMMUNITY HALLS

There are 12 community halls in EMLM of which four are serviced through reticulation and the rest through water tankers.

POLICE STATIONS

There are six police stations in EMLM of which all are serviced through reticulation. See Annexure C for locality map.

NAME	LOCATION
Groblersdal Police Station	Groblersdal Town
Dennilton Police Station	Moutse 3
Motetema Police Station	Motetema
Hlogotlou Police Station	Hlogotlou
Roosenekal Police Station	Roosenekal
Zaaiplaas Police Station	Zaaiplaas

EMLM Police Stations

INDUSTRIAL/COMMERCIAL CONSUMERS

In general within the EMLM study area there are very few industries, but the area does have commercial area to service the needs of the surrounding farming areas. The majority of business takes place in a form of informal trading, vehicle repairs and hawking. Local commerce and trading industries are as follows:

Spaza	Shebeen	Super Market	Bottle Store	Fast Food	Clothing	Electrical Goods	Butchery	Bakery	Garage
375	135	59	40	102	13	2	11	8	15

Sanitation

Existing formal developed areas such as Groblersdal (excluding rural and informal areas) are generally provided with on-site water and waterborne sewerage connections and therefore meet the basic service level requirement as defined by the Water Services Act 108 (of 1997) as well the communal standpipe within 200 m walking distance and a ventilated improved pit latrine (VIP) or equivalent. The service level backlog therefore only pertains to the informal and rural areas as further discussed in the document.

It has been assumed that informal households with communal tap / standpipes or tanker services have inadequate sanitation services, while informal households with yard tap or full water services have adequate sanitation services, i.e. mainly VIP toilets.

The data available on the table below is the backlog study done by BC Gildenhuys and Associates. The information on the table below indicates that in EMLM sanitation backlog is rated at 81.16% thus 81.16% of the households' sanitation facilities are below RDP standards.

The National Target set date for eradication of sanitation backlog is set as 2010 thus the sanitation backlog % above indicates that EMLM will not be able to meet the National Target on sanitation backlog eradication.

RESIDENTIAL

SANITATION

VILLAGES/SUBURBS	NO OF RES.	NO OF RES WITH WATERBORNE	NO OF RES WITH SEPTIC TANK	NO OF RES WITH VIP	NO OF RES BELOW RDP STANDARD LEVEL OF SERVICE
Groblersdal NU	4,101	461	176	505	2959
Lydenburg NU	33	0	0	0	33
Moutse NU	6	0	0	0	6
Groblersdal SP	897	874	4	0	19
Aquaville	261	54	4	50	153
Mathula SP	15	0	3	0	12
Elandslaagte	159	0	0	0	159
Mathula	205	0	0	0	205
Sehlakwane	3,262	42	24	294	2902
Moutse 3 Part 2 SP	2,537	0	448	448	1642
Dennilton	695	58	18	62	557
Elandsdoorn	2,116	73	34	256	1753
Dennilton	442	7	7	7	422
Ga-Matlala	717	6	3	59	649
Kgobokwane	1,776	12	15	433	1316
Lusaka	139	0	0	15	124
Malaeneng	362	10	2	2	347
Marapong	629	0	0	16	613
Moteti	2,005	15	157	148	1685
Moteti B	565	15	15	9	526
Mpheleng	2,206	21	93	122	1970
Naganeng	387	6	6	30	345
Ntwane	2,381	12	21	123	2225
Phookwane	586	6	6	18	556
Phukukane	2,476	62	31	238	2144
Ramaphosa	586	0	0	3	258
Small Phooko	2,476	6	3	73	446
Stompo	530	6	3	132	389

Tambo Square	1,004	14	17	116	857
Ten Morgan	809	4	7	0	798
Thabakhubedu	739	3	61	6	669
Theareng	245	3	0	37	205
Uitspanning A	206	18	3	6	179
Uitspanning B	182	0	3	66	113
Walkraal	59	0	3	3	53
Witfontein	660	6	3	18	633
Morwaneng	182	0	0	0	182
Tafelkop	156	3	3	27	123
Tafelkop	169	0	0	9	160
Groblersdal NU	12	6	0	0	6
Nebo NU	416	0	4	165	247
Nkadimeng	155	0	3	3	149
Sterkfontein	69	0	0	21	48
Motetema Part 1 SP	951	882	3	11	55
Tafelkop	175	3	0	0	172
Ndebele SP	0	0	0	0	0
Dindela	682	0	12	0	670
Frisgewaght	815	6	12	24	773
Ga-Pamadi	704	3	3	3	695
Hlogotlou	356	0	6	6	344
Jerusalem	143	0	0	9	134
Kgaphamadi	431	6	6	3	416
Kwa-Dlaulale	0	0	0	0	0
Legolaneng	472	6	3	0	463
Luckau	1,565	48	27	253	1237
Magukubjane	162	0	0	0	162
Makgophong	121	0	3	100	18
Manyanga	264	9	3	15	237
Mapudule	237	3	210	3	21
Mareleng	108	3	0	0	105
Mathula	576	9	12	15	540
Paardeplaats	0	0	0	0	0
Ramogwerane	306	3	0	34	269
Sephaku	1,040	33	24	138	845
Sterkfontein	450	0	3	0	447
Syferfontein-B	727	0	6	6	715
Nebo SP	9	3	0	0	6
Dikgalaopeng	176	3	0	6	167
Ga-Mamphokgo	134	0	0	0	134
Nkadimeng	109	0	3	0	106
Stadium View	863	0	24	17	823
Tafelkop	5,347	78	84	404	4781
TOTAL	157 731.00	10 137	4 619	14 796	128 179

Table 5.2.2: Sanitation backlog in EMLM: study done by BC Gildenhuys Associates

PUBLIC INSTITUTIONS

SCHOOLS

At primary level 14 toilets should be erected per school whereby seven will be for girls and seven for boys. At secondary level 18 toilets should be erected per school whereby 9 will be for girls and the remaining 9 for boys.

School	Number	Pupils	Toilets	Toilets Shortage
Early Learning Centre	70	4045	167	0
Primary	78	27951	292	800
High	51	22544	273	441

CLINICS

There are 11 clinics in the EMLM of which are serviced with VIP system except for three clinics which are serviced by waterborne system.

HOSPITALS

Both hospitals in EMLM are using waterborne system.

COMMUNITY HALLS

There are 12 community halls in EMLM of which four are serviced through waterborne system and the rest are using VIP system.

POLICE STATIONS

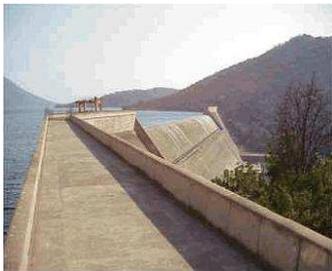
There are six Police stations in EMLM of which three are using waterborne system and the rest are serviced through VIP system.

6. Water Services Resources

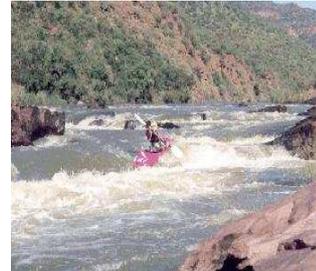
6.1 Surface Water

The surface water resources in EMLM are comprised of two rivers, namely, Olifants and Tonteldos rivers. No dams have been constructed within the EMLM area of jurisdiction. The EMLM make use of a number of sources which are listed below:

Loskop Dam – The Loskop Dam wall was built in the 1930's across a nearby gorge. In the 1970's the dam wall was raised, flooding more of the valley. The dam is approximately 30km long with a full capacity of 348.1 million m³ and supplies water to a vast irrigation scheme in the areas of Loskop, Groblersdal (67 000 ha) and Marble Hall.



Loskop Dam



Mahlangu Dam – it serves Monsterlus (Hlogotlou) Water Treatment Works (WTW). This WTW is currently not working due to vandalism.

Nkosini Weir – this weir is currently not working due to the vandalism occurred at Nkosini Water Treatment Works.

Spitzkop Dam – the dam is full to its capacity but currently is not in use, it was intended to serve Spitzkop Water Treatment Works which is vandalised.

Olifants River – it supplies water to Groblersdal Water Treatment Works

Tonteldos River – it supplies water to Rossenekal Water Treatment Works

Rooikraal Dam - is situated in Rooikraal farm and most of the time the dam is empty.

The following rivers supply water to Flag Boshielo Dam:

- Sterkontein River
- Ramogwerane River
- Mmakgatle River
- Tsweneng River



Flag Boshielo Dam, Department of Water Affairs and Forestry



Flag Boshielo Dam, Department of Water Affairs and Forestry

Flag Boshielo Dam

Where there is no means of water supply especially in farm areas, EMLM supplies these areas with five water tanker trucks of which four has a capacity of 5 000 ℓ and one with a 8 000 ℓ per day.

Potable water is analysed on a regular basis to ensure that it complies with the minimum standards as set out in the legislation. Water taken from the source for urban and rural areas is monitored by EMLM and the surface water quality is monitored according to DWAF guidelines/standards.

All water supplied to the customers intended to be used for drinking and domestic purposes must be of a quality consistent with SABS 241 (Specification for Drinking Water). EMLM must be in a position to give their customers the guarantee that the water they supply is safe and of high quality and comply with SABS 241.

The compulsory National Standards (Regulations, section 9, Water Services Act) on quality of potable water state that a WSP must include a suitable programme for sampling the quality of potable water provided by the municipality to consumers in its WSSP. EMLM should perform sampling of potable water at various off-takes. The intention of this regulation is to ensure that the water supplied to the consumers is safe

for human consumption, suitable for drinking, for preparation of food, for personal hygiene and not harmful to water supply installations and domestic appliances.

6.2 Groundwater

Groundwater plays a major role as a water resource for the most of the EMLM communities. EMLM consists of Minor Aquifer Types, which can generally supply communities of 1 800 people from a single borehole at 30ℓ/c/day.

There is no formal or regular groundwater monitoring and testing of water quality from the boreholes. Nearly 50% of the boreholes are not in operation as indicated on table 6.2.1.

Total Boreholes	Boreholes in use	Boreholes not in use
71	27	44

Table 6.2.1: Summary of Boreholes in Elias Motsoaledi Local Municipality

As indicated on the above table 44 boreholes are not in operation for various reasons indicated below.

Villages	Boreholes	Reason
Ntwane	3	Transformer vandalized
Thabakhubedu	3	2 pumps with Cylinder not working and 1 awaiting the cable installation
Elandsdooring C	3	2 pumps with Cylinder not working and 1 transformer stolen
Magakadimeng	1	Transformer vandalised
Marapong	3	Transformer vandalized and 2 need motors
Jabulani	1	Vandalism reported
Kgobokwane	3	Cable reported stolen and 2 has electric problems
Matlala	4	3 pumps need a new cylinder of which 1 of needs a transformer as well and the last 1 has an electrical problem
Stompo	3	1 needs cylinder and the other 2 has electrical

		problem
Oorlog	1	No electricity
Villages	Boreholes	Reason
Holneck	1	Electrical problems
Masoing	1	Electrical problems
Kerom	3	Electrical problems
Keromvlak	1	Electrical problems
Mabande	1	Electrical problems
Sephaku	1	Electrical problems
Luckau A	3	Electrical problems
Luckau B	5	Electrical problems
Bosa	1	Electrical problems
Thabaleboto	1	Electrical problems
Monsterlus RDP	1	Electrical problems
Total	44	

Table 6.2.2: Boreholes not in use in EMLM

Ground water information is sadly lacking in EMLM and attention should be given immediately to the establishment of a system to monitor quality, tracking and management of groundwater.

As was previously indicated that EMLM is largely rural and provision of water over long distances is not economical viable, thus the use of local sources close to residents is viable. But the boreholes must be properly maintained and monitored.

6.3 Water Balance

EMLM as the Water Service Provider (WSP) should put in place a process which will reduce system losses to a minimum. The first priority is to find the magnitude of the problem, isolate those areas with the highest losses and then locate and repair them.

Determination of the Unaccounted-for Water (UFW) can be achieved via a water balance. However, for a whole reticulation system, the system should be broken into districts or zones. District/Zone meters or data loggers are installed to record the flow into each area.

To contribute to the water balance, water losses by means of stop testing can be done. Accurate meter readings when determining water balance is very important. Errors with meter readings can lead to inaccurate results with respect to the water balance and hence the UFW. Errors should be eliminated as far as possible by using proper electronic meter reading systems such as hand-held meters; touch readers; drive-by systems; automatic readers and pre-payment meters.

Below are monthly consumers meter readings:

Consumers water consumption per month (Groblersdal Town and Motetema areas)

Month	Description	Consumption (Kl)
2008-March	Rawwater to water treatment plant (WTP)	310,651
	Water to Groblersdal Reservoir from WTP	200,480
	Water to Motetema Reservoir from WTP	106,630
	Water to consumers from Groblersdal Reservoir (10MI and 4.4MI)	204,021
	Water to consumers from Motetema Reservoir	106,240
	Losses for March	390

Month	Description	Consumption (Kl)
2008-April	Rawwater to water treatment plant (WTP)	192,760
	Water to Groblersdal Reservoir from WTP	145,480
	Water to Motetema Reservoir from WTP	90,100
	Water to consumers from Groblersdal Reservoir (10MI and 4.4MI)	102,660
	Water to consumers from Motetema Reservoir	84,580
	Losses for April	5,520

Month	Description	Consumption (Kl)
2008-May	Rawwater to water treatment plant (WTP)	288,990
	Water to Groblersdal Reservoir from WTP	211,320
	Water to Motetema Reservoir from WTP	139,850
	Water to consumers from Groblersdal Reservoir (10MI and 4.4MI)	149,140
	Water to consumers from Motetema Reservoir	94,050
	Losses for May	45,800

Month	Description	Consumption (Kl)
2008-June	Rawwater to water treatment plant (WTP)	283,950
	Water to Groblersdal Reservoir from WTP	141,790
	Water to Motetema Reservoir from WTP	114,440

	Water to consumers from Groblersdal Reservoirs (10MI and 4.4MI)	169,510
	Water to consumers from Motetema Reservoir (4 MI)	88,770
	Losses for June	25,670
Month	Description	Consumption (Kl)
2008-July	Rawwater to water treatment plant (WTP)	233,660
	Water to Groblersdal Reservoir from WTP	147,420
	Water to Motetema Reservoir from WTP	104,490
	Water to consumers from Groblersdal Reservoir (10MI and 4.4MI)	129,170
	Water to consumers from Motetema Reservoir	86,360
	Losses for July	18,130
Month	Description	Consumption (Kl)
2008-August	Rawwater to water treatment plant (WTP)	221,150
	Water to Groblersdal Reservoir from WTP	126,300
	Water to Motetema Reservoir from WTP	111,380
	Water to consumers from Groblersdal Reservoir (10MI and 4.4MI)	109,770
	Water to consumers from Motetema Reservoir	88,540
	Losses for August	22,840

From the table above, the losses incurred by the municipality in Groblersdal and Motetema areas varies from 390 kl to 22,840 kl a month.

There are three Water Purification Plants in Mosterlus area. The following two mentioned below are not operational due to the broken motor pumps and there are no record keeping systems in place for both of these plants. It is thus not feasible to be able to estimate the losses that the Municipalities acquire.

- Hlogotlou Purification Works
- Nkosini Purification Works

The following are areas that are affected by none functioning of the Hlogotlou Water Treatment Plant

- Jerusalem Village
- Rondebosch Village
- Mmutwaneng Village

- Sephaku Vilage

The following are areas that are affected by the none functioning of Nkosini Water Treatment Plant

- Nkosini Village
- Matula Village

Magukubane Purification Plant is a newly constructed plant and recently started operating thus there are no flow records kept as yet. This plant pumps water to Magukubane Reservoir which serves Magukubane area and also pumps water to Makgopeng Elevated Steel Tank which in-turn serves Makgopeng area. Magukubane Purifiaction Plant also pumps water to Talane Reservoir which serves Talane community and also pumps water to Syverfontein Reservoir which serves Syverfontein area.

The following is the water customer consumption for Rossenekal Town

Consumers water consumption per month (Rossenekal)

Month	Description	Consumption (KI)
2008-February	Rawwater to water treatment plant (WTP)	17,381
	Water to Groblersdal Reservoir from WTP	16,010
	Losses for February	1,371

Month	Description	Consumption (KI)
2008-March	Rawwater to water treatment plant (WTP)	19,662
	Water to Groblersdal Reservoir from WTP	19,005
	Losses for April	657

Month	Description	Consumption (KI)
2008-April	Rawwater to water treatment plant (WTP)	18,398
	Water to Groblersdal Reservoir from WTP	17,974
	Losses for April	424

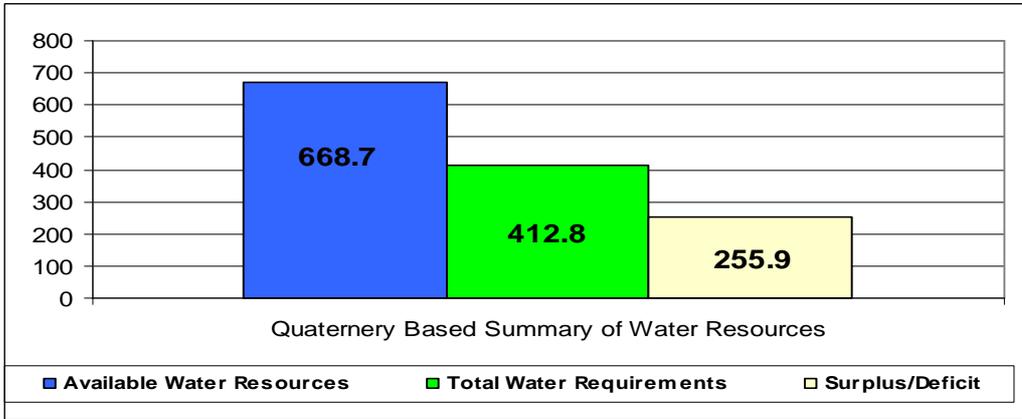
Month	Description	Consumption (KI)
2008-July	Rawwater to water treatment plant (WTP)	12,563
	Water to Groblersdal Reservoir from WTP	11,862
	Losses for April	701

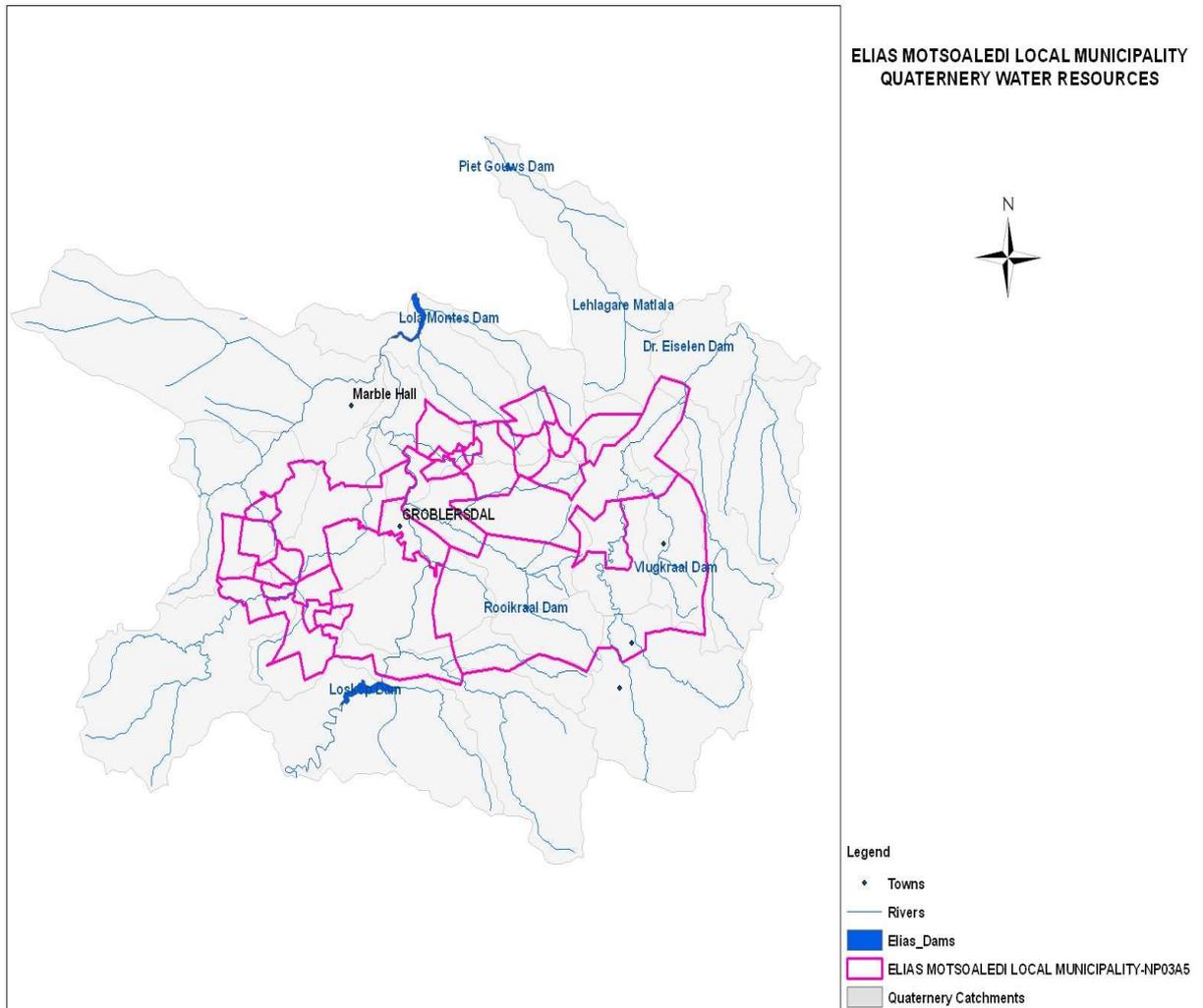
The table above indicates that there is an interception or losses on the main line from Rossenekal Water Purification Plant to Rossenekal Reservoir. The amount of the unaccounted water varies from 657 kl to 1371 kl per month.

Water Services Assessment Model

The table below shows the outcome of Water Services Assessment Model done by DWAF. Base on the QUATERNERY of Water Resources summary they don't conform to the municipality. The outcome of WSAM **QUATERNERY WATER RESOURCES** shows total of 255, 9 m³/a surplus in and out EMLM. For **QUATERNERY WATER RESOURCES** in and out EMLM the requirement do not exceed the available resource hence they are in surplus, therefore there's a potential of exporting and developing water resource.

ELIAS MOTSOLEDI LOCAL MUNICIPALITY -QUATERNERY WATER RESOURCES		
Quaternery Based Summary of Water Resources		
		million m³/a
WATER RESOURCES	Surface	545
	Groundwater	54.6
	Return Flows	18.2
	Irrigation	
	Urban	
	Mining & Bulk Industrial	
	Transfers IN	50.9
	TOTAL	668.7
WATER REQUIREMENTS	Irrigation	199.1
	Urban	10.6
	Rural	23.3
	Mining & Bulk Industrial	5.3
	Power Generation	
	Afforestation	
	Ecological Reserve	123.6
	River Losses	
	Transfers OUT	50.9
	TOTAL	412.8
	SURPLUS / DEFICIT	255.9





7. Infrastructure Profile

7.1 Water Infrastructure

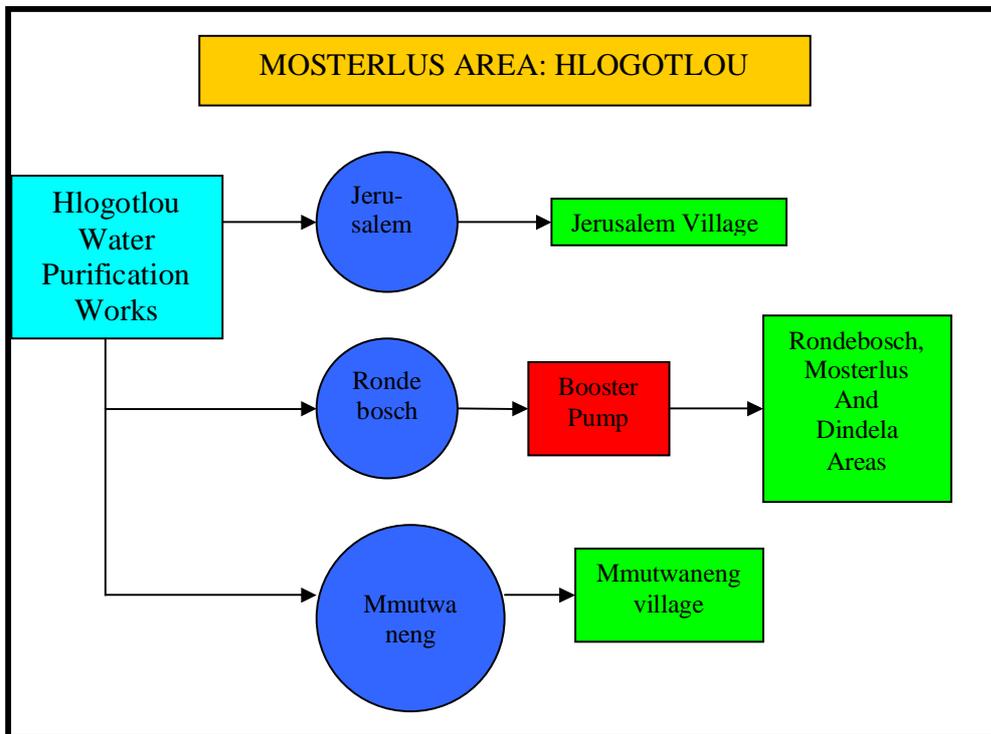
Existing Bulk Infrastructure

MOSTERLUS WATER SCHEMES

Mosterlus area has three Water Purification Plants namely; Hlogotlou, Magukubane and Nkosini. The following are schematic plans for these three purification plants.

HLOGOTLOU WTW (S 25°00,298' ; E 029°42,530')

Hlogotlou WTW abstracts water from Mahlangu Dam with the flow capacity of 85 000 l/h for 24 hrs. This purification plant pumps water to Jerusalem, Rondebosch and Mmutwaneng Reservoirs with outflow capacity of 140 000 l/h. These three reservoirs do not have inflow and outflow water meters. There is a fourth reservoir, Sephaku Reservoir, which abstracts water from the borehole and serves Sephaku village. The sketch below indicates the areas/villages that the three previously mentioned reservoirs supply water to:

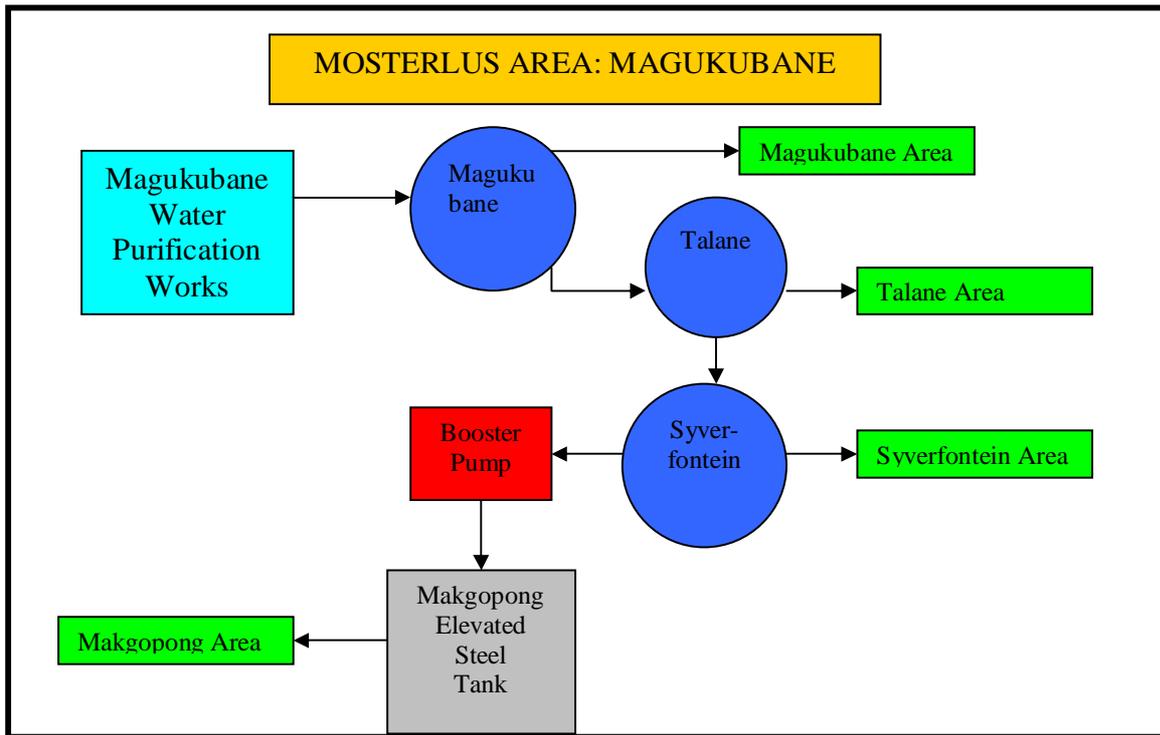


The following table should illustrate the possibility of additional stands in Hlogotlou area but could not be determined due to the outstanding household data and reservoir capacities in Jerusalem, Rondesch and Mmutwaneng villages.

Water Infrastructure	Villages	Current Stands	Reservoir Capacity in litres	Possible litres per stand based on (25 ℓ/p/d) 8 people per stand	Current Demand per day in litres	Possible additional stands
HLOGOTLOU						
Jerusalem Res	Jerusalem	143		200	28600	Could not be determined due to the unavailability of households data
Rondebosch Res	Rondebosch	?		200	Could not be determined due to the unavailability of households data	Could not be determined due to the unavailability of households data in Rondebosch & Mosterlus
	Mosterlus	?				
	Dindela	682				
Mmutwaneng Res	Mmutwaneng	?		200	Could not be determined due to the unavailability of households data	

MAGUKUBANE WTW (S 24°59,973' ; E 029°48,314')

This purification works abstracts water from Magukubane dam, the Plant is newly constructed therefore, the in and out flow capacity is unknown. It supplies water to Magukubane, Talane, and Syverfontein Reservoirs. Syverfontein pumps water through the booster pump to Makgopo.ng Elevated Steel Tank. The sketch below indicates the areas/villages that these three reservoirs supply water to:

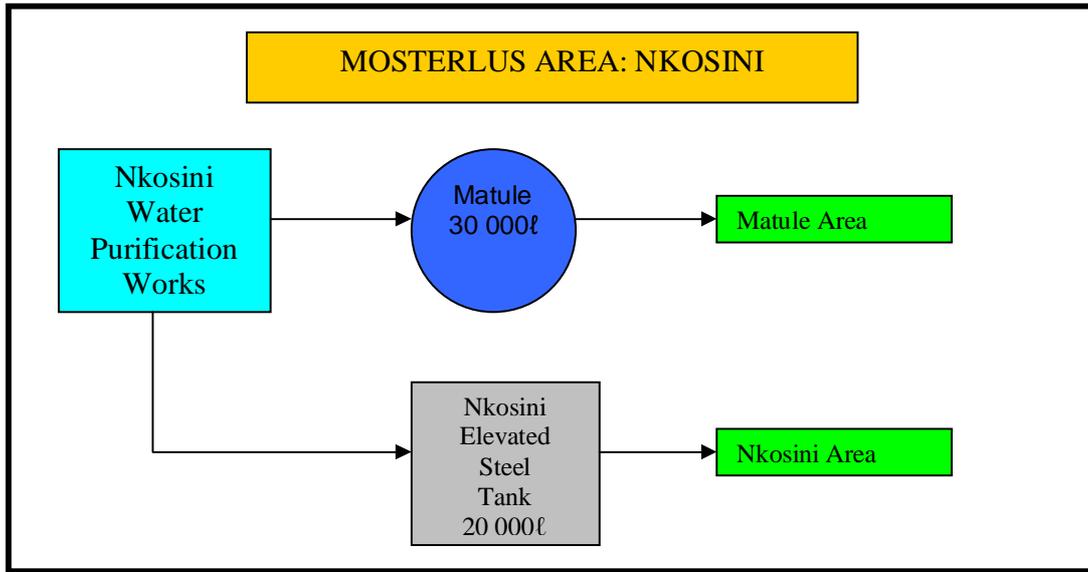


The following table should illustrate the possible additional stands in Magukubane Area but could not be determined due to the unavailability of the reservoir capacity.

Water Infrastructure	Villages	Current Stands	Reservoir Capacity in litres	Possible litres per stand based on (25 ℓ/p/d) 8 people per stand	Current Demand per day in litres	Possible additional stands
MAGUKUBANE						
Magukubane Res	Magukubane	162	?	200	32400	Could not be determined due to the unavailability of the reservoir capacity
	Talane	100				
	Syverfontein	727				
	Makgopeng	121				

NKOSINI WTW (S 25°04,356' ; E 029°41,991')

This purification works abstracts water from Nkosini dam. It supplies water to Nkosini Elevated Steel Tank and Matula Reservoir. The sketch below indicates the areas/villages that these reservoirs supply water to:



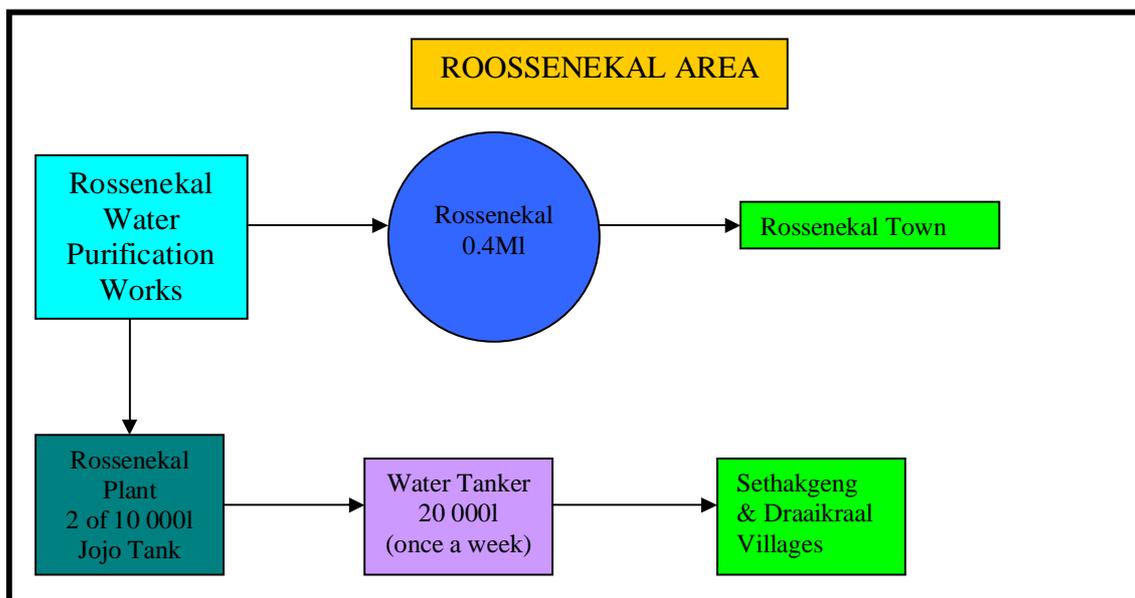
The following table should illustrate that in Mathula village the reservoir does not supply sufficient water and that 55 households are do not receive enough water or minimum required amount of water. In Nkosin village there is a possibility of 85 additional stands.

Water Infrastructure	Villages	Current Stands	Reservoir Capacity in litres	Possible litres per stand based on (25 ℓ/p/d) 8 people per stand	Current Demand per day in litres	Possible additional stands
NKOSINI						
Matule Res	Mathula	205	30000	200	41000	-55
Nkosini Elevated Steel Tank	Nkosini	15	20000	200	3000	85

ROSSENEKAL WTW (S 25°11,312'; E 029°55,851')

This purification works abstracts water from Tonteldoos River with the flow capacity of 500 to 700 kl per day. It supplies water to Rossenekal Reservoir with a design capacity of 0.4 ml/day and to two Rossenekal plant Jojo Tanks with the capacity of 20 000 l. The demand is presently very high (because of the new DWAF Infrastructure development happening in Rossenekal town) in such away that the reservoir is supplying in its full capacity. Based on the assumption made there is a need to upgrade the plant to 0.8MI/day and construct a new reservoir to 1.0MI/day.

The Schematic Plan below shows the Rossenekal Water Scheme



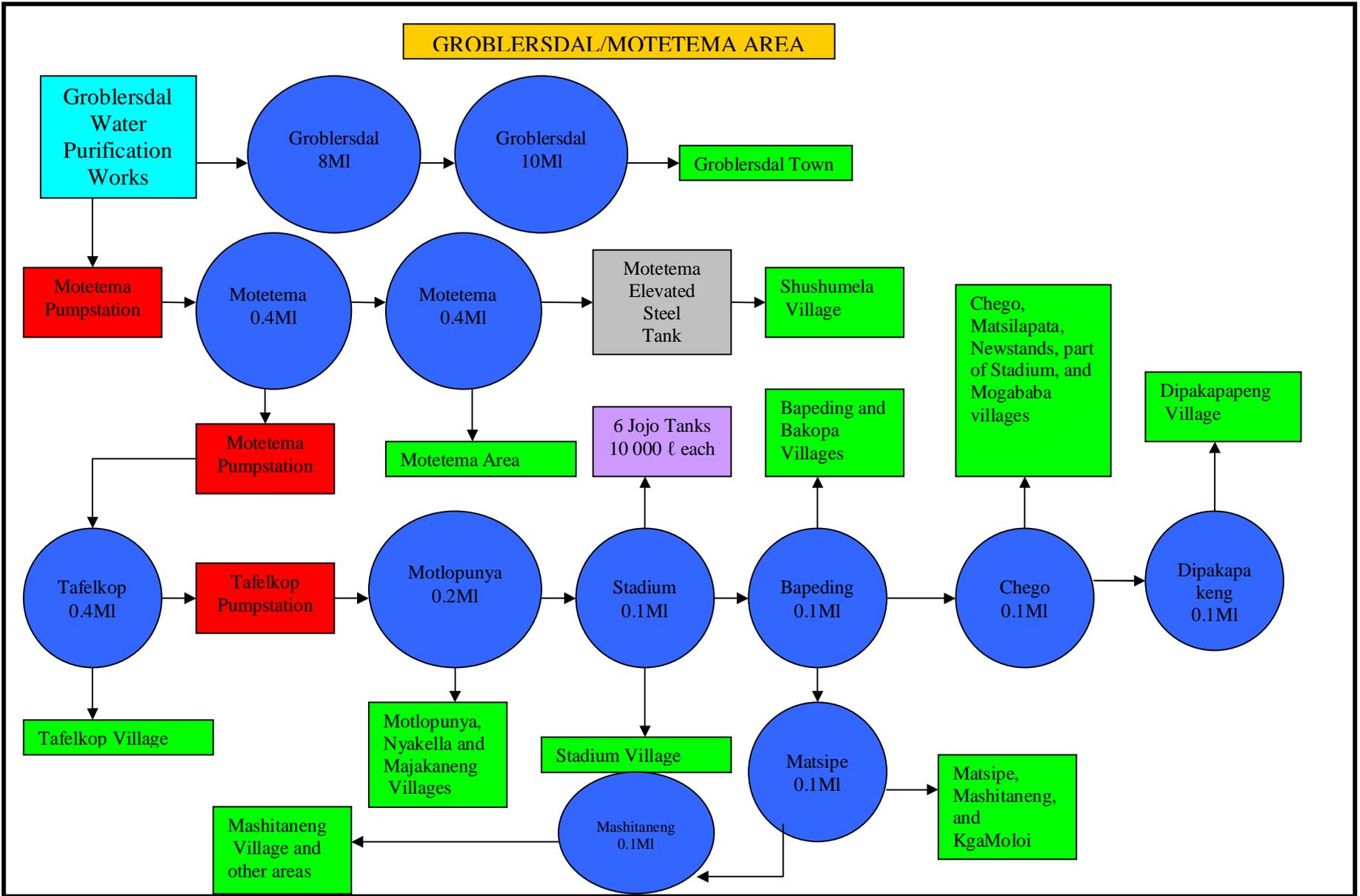
The following table should illustrate the possibility of additional stands in Rossenekal Area but could not be determined due to the unavailability of households data in Rossenekal Town, Sethakgeng and Draaikraal.

Water Infrastructure	Villages	Current Stands	Reservoir Capacity in litres	Possible litres per stand based on (25 ℓ/p/d) 8 people per stand	Current Demand per day in litres	Possible additional stands
ROSSENEKAL AREA						
Rossenekal	Rossenekal Town	?	400000	600	Could not be determined due to the unavailability of households data	Could not be determined due to the unavailability of households data
Water Tanker (once a week)	Sethakgeng	?	20000	200	Could not be determined due to the unavailability of households data in both Sethakgeng & Draaikraal	Could not be determined due to the unavailability of households data in both Sethakgeng & Draaikraal
	Draaikraal	?				

GROBLERSDAL WTW (S 25°09,699'; E 029°24,734') AND MOTETEMA (S 25°05,597'; E 029°27,940')

Groblersdal WTW abstracts water from Olifants River and it supplies water to Groblersdal, Motetema and Tafelkop Reservoirs. The plant design capacity is 12 ml/day currently being upgraded to 23 ml/day; these reservoirs supply water to Groblersdal town. There are two reservoirs in Groblersdal town with 10 MI/day and 4.4MI/day capacities. These reservoirs are suppose to supplement each other if either of them is full but because of telemetry system problems and the control valve that is not functional they do not. The raw water flow rate from Olifants River is 166.63 ℓ/s and clean water flow rate to the reservoirs is 113.31 ℓ/s.

The following is the Groblersdal/Motetema Schematic Plan:

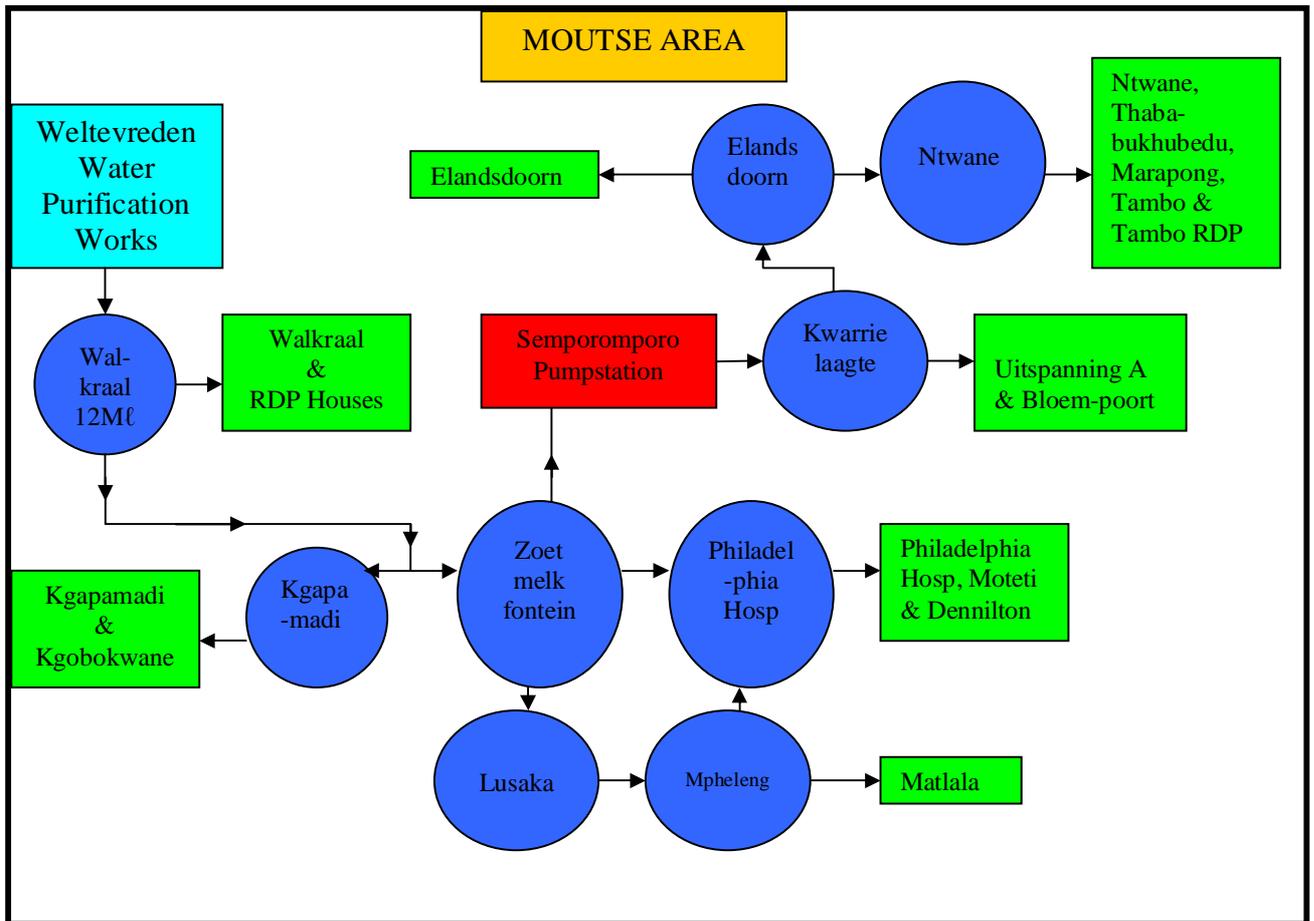


The following table illustrates the possibility of additional stands in Groblersdal Area and should also illustrate Motetema Area. The table below indicates that in Groblersdal Town there is a possibility of additional stands estimated to 12 566. In Motetema Area the possible additional stand could not be determined due to the outstanding household data for Motloponya, Nyakella, Majakaneng, Bapeding, Bakopa, Chego, Matsilapata, Newstands, Mogababa, Dipakapakeng, Matsipe, Mashitaneng & KgaMoloi or possibly the verification of change in village names.

Water Infrastructure	Villages	Current Stands	Reservoir Capacity in litres	Possible litres per stand based on (25 l/p/d) 8 people per stand	Current Demand per day in litres	Possible additional stands
GROBLERSDAL/MOTETEMA AREA						
Groblersdal Res	Groblersdal Town	4101	10000000	600	2460600	12566
Motetema Res	Motetema	951	400000	200	190200	Could not be determined due to unavailability of the households data in Motloponya, Nyakella, Majakaneng, Bapeding, Bakopa, Chego, Matsilapata, Newstands, Mogababa, Dipakapakeng, Matsipe, Mashitaneng & KgaMoloi
	Shushumela	60				
	Tafelkop	5847				
	Motloponya	?				
	Nyakella	?				
	Majakaneng	?				
	Stadium area	863				
	Bapeding	?				
	Bakopa	?				
	Chego	?				
	Matsilapata	?				
	Newstands	?				
	Mogababa	?				
	Dipakapakeng	?				
	Matsipe	?				
Mashitaneng	?					
KgaMoloi	?					

Moutse Reservoirs

There are ±10 reservoirs within the Moutse area, they get water from the Weltevreden Water Purification Works which is situated at Dr JS Moroka Local Municipality, Mpumalanga. Then following is the schematic layout of reservoirs in Moutse Area.



The following table should illustrates the possible water demand in Moutse Area but due to outstanding household data for Bloempoot the water demand is not possible to be determined.

The capacity of the reservoirs in Moutse area were not available but the capacity of the supply reservoir (Walkraal Reservoir with 12Mℓ capacity) will then be used to determine the water demand for this whole area.

Water Infrastructure	Villages	Current Stands	Reservoir Capacity in litres	Possible litres per stand based on (25 l/ p/d) 8 people per stand	Current Demand per day in litres	Possible additional stands
MOUTSE AREA						
Walkraal Res	Elandsdoorn	2116	12000000	200	2614000	Cannot be determined due to insufficient data on no of households in Bloempoot
	Ntwane	2381				
	Thababukhubedu	739				
	Marapong	629				
	Tambo & Tambo RDP	1004				
	Uitspanning A	206				
	Bloempoot	?				
	Walkraal	59				
	Kgapamadi	431				
	Kgobokwane	1776				
	Moteti	2570				
	Dennilton	442				
	Matlala	717				

7.2 Sanitation Infrastructure

Existing Infrastructure

Groblersdal Waste Water Treatment Works (GWWTW)

Waste Water Treatment Plant: Groblersdal Town

Capacity: 5MI per day

Type: Conventional plant

Roosenekal Waste Water Treatment Works (RWWTW) (S 25°11,296'; E 029°55,895')

Waste Water Treatment Plant:	Roosenekal Town
Capacity:	0.4MI per day to be upgraded to 5MI/day
Type:	Conventional plant

Motetema Ponds (S 25°06,010'; E 029°28,068')

Waste Water Treatment Plant:	Motetema
Capacity:	0.4MI per day
Type:	Pond system

Dennilton Ponds (S 25°11,896'; E 029°54,902')

Waste Water Treatment Plant:	Motetema
Capacity:	0.2MI per day
Type:	Pond system

These ponds (see pictures below) are located at Dennilton area next to Philadelphia Hospital, these ponds are in a very bad condition, the waste water including the sewage water from the hospital is discharging to the nearby Mokgebetsi River and even to the nearby houses which creates a very hazards condition for the communities. There is an ongoing project to refurbish these ponds funded by Greater Sekhukhune District Municipality; this project will be completed by the 01 March 2009.



Dennilton oxidation ponds



There is a pump-station across the river which is suppose to pump to the pond system is not operating because of vandalism i.e. transformer, valves, steel pipes are stolen. The waste water for instance from Moutse Mall and Moutse RDP houses flow directly to Mokgebetsi river thus contaminating the river, see the pictures below:



Dennilton Sewerage Pump Station



8. Environmental Aspects

8.1. Water Conservation and Demand Management

Most of the reservoirs never fill up as a result of illegal house-holds connections to the rising main pipelines. 30% of households have house connections with meters. These meters are not read and do not form part of water consumption monitoring or cost recovery processes.

Limited metering does not allow for water loss management statistics and strategies to be implemented. No strategy for Water Conservation or Water Demand Management exists at present. It is not possible to plan for future water requirements if there are no measurements for present water consumption pattern.

8.1 Health and Hygiene Programmes

In order to establish sound environmental principles and to create an environmental ethic among communities, emphasis must be placed on formal as well non-formal environmental education activities. This education must form part of the “information transfer” that is to accompany, or even precede, all sanitation projects. To accompany this, EMLM will encourage communities to get involved in monitoring the quality of their own water resources in order to increase the incidence of monitoring and heighten awareness through identifying and pressurizing polluters. This approach has proven highly effective in other part of the world.

EMLM responsibilities in respect of sanitation include:

- The provision of communal infrastructure (planning, programming and financing)
- Operation and maintenance of infrastructure
- Relations with consumers (agreeing standards, setting tariffs and collecting revenues)

The maintenance of public health (health education, pollution prevention and control)

- The promotion of development (facilitating community involvement)
- Technical assistance for upgrading on-site systems
- Assisting the setting up and capacity building of local water and sanitation committees (in rural areas)
- Co-operation with others to pool experience and generate consistent approaches

Improved sanitation facilities will only achieve a parallel reduction in diarrhoeal diseases if they are developed alongside hygiene programmes. Hygiene aims at the prevention of the transmission of excreta-related diseases. It seeks to promote measures whereby barriers can be created between the sources of pathogens, the intermediate hosts and people.

Hygiene messages: hygiene information, education and awareness programmes will be developed hand in hand with toilet-building projects, and will be targeted at all levels.

Personal Hygiene: such as washing hands after going to the toilet or changing the nappies of babies and before the preparation of food

Household Hygiene: keeping the home clean, particularly those areas where food is stored and prepared and ensuring that food and drinking water is kept covered and uncontaminated

Community Hygiene: vectors do not respect household boundaries. To achieve improved public health, the whole community must be mobilized to work together for better health and a cleaner environment

Dialogue

Hygiene promotion requires far more than message-giving and demonstration. The starting point is to understand current beliefs, perceptions and practices within any particular community. Based on these, relevant messages can be developed so that desirable behavior change is understood, through dialogue, within the context of people's everyday lives. Hygiene problems can then be identified by the community and remedial actions be designed by them.

The education programme

The Education Programme will proceed on many different levels- national and provincial, with strong media coverage and publicity, and most importantly at a local level, through existing structures such as a Development Committees. The use of participatory training materials will be promoted and encouraged wherever appropriate. Traditional channels for information will be employed where suitable, particularly communal forms such as

drama and song. Schools in particular can be targeted, as children are often the most direct route for information to enter households.

It is important to ensure that the programme is very high profile and maintains its momentum- achieving mass behavior change is a very slow process and immediate results cannot be expected. It is anticipated that the programme will be phased over several years, depending on the initial capacity found in any given area. Sanitation-related educational material should be developed for use in pre-primary classes and in adult basic education (ABE) programmes.

9. CUSTOMER CARE

According to the Municipal System Act, 32 OF 2000, Chapter 4, municipalities should develop the community participation system whereby the municipality will be able to provide effective service delivery to their customers effectively.

EMLM has the communication policy in place and presently uses the following communication methods:

- Suggestion box method
- Direct visit to municipal offices
- Ward councilors
- Community meetings
- Project meetings
- Media
- Flyers

It is also recommended that the customer care centre be established in the EMLM which will have the following advantages:

- Improves service delivery
- Customers queries and complaints are properly and promptly addressed, and action is taken to solve queries and eliminate complaints
- It ensures that standards are set for key activities related to the call centre that can then be measured

- It will enable forecasting and business planning to manage the effect of activity on the operations

The call centre can be structured as follows:

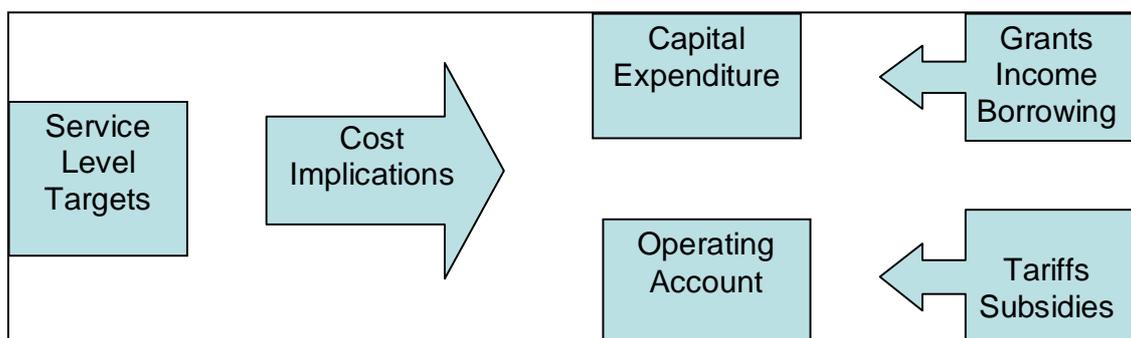
Emergency Connect: this should be a 24-hour emergency services call centre where appropriately qualified call centre agents calls relating to all life-threatening emergencies and from where dispatchers send out appropriate response vehicles, namely ambulances, fire engines, rescue vehicles and metro police

Care Connect: this line deals primarily with all general inquiries for public service providers such as querying accounts, billing, meter readings, water, electricity, roads, refuse, etc.

Track and Trace: the track and trace team deals purely with speeding up of all queries lodged with EMLM. On daily basis the team traces the logged query or complaint and liaises directly, either by telephone, email and or fax with the specific person responsible for the query or complaint.

10. Financial Management

This part of the planning process is critical to the final WSSP. By associated with service level targets and sources to meet the costs, The EMLM will be able to see how financially viable their plan.



As illustrated on the diagram above, service level targets are what drive costs. On the one hand there are capital costs and on the other side there are ongoing operating costs. If the projected operating costs associated with capital expenditure are not

factored in right from the beginning (i.e. when service levels are being considered). There is a danger that the EMLM will not be able to afford the running cost of the services because according to EMLM IDP, EMLM Current Operational Cost is **R90 078 696.00** and EMLM Capital budget is **R84 701 627.00** for 2007/2008 financial year.

10.1 Capital Budget

The capital budget as indicated above is **R84 701 627.00** for the 2007/2008 financial year. The graph below indicates the budget allocation:

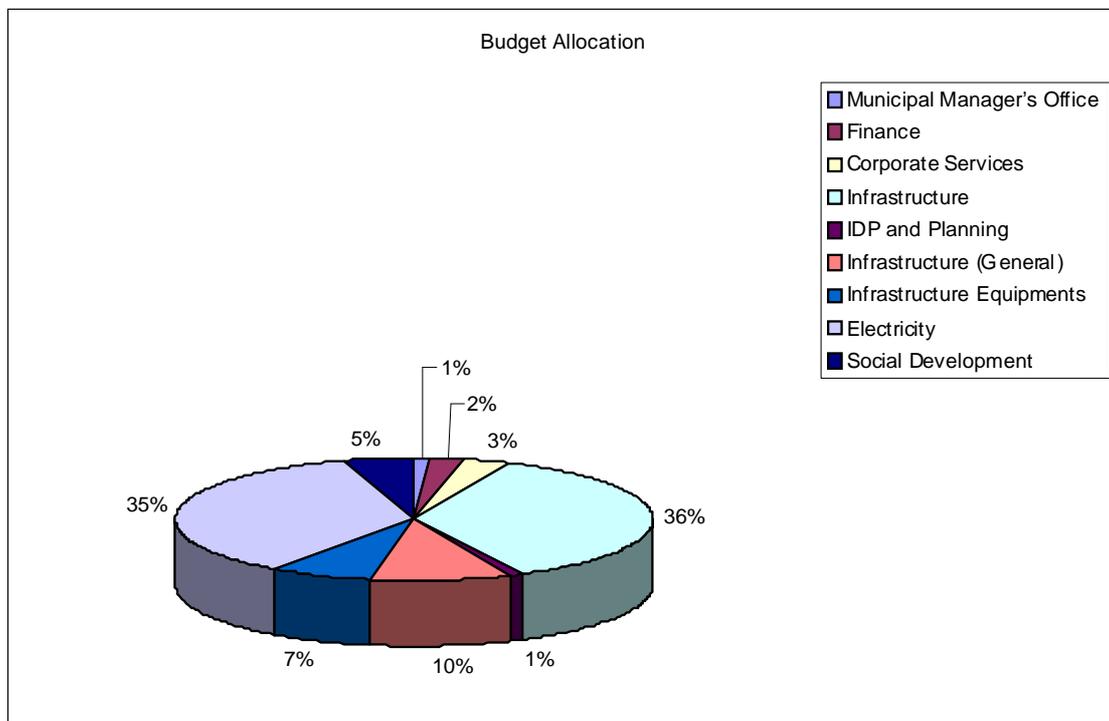


Figure 3

10.2 Operational Budget

Current Operational Cost is **R90 078 696.00** which is **R5 377 069.00** more than the Capital Budget. Additional funding should be in place in order for the EMLM to afford the running cost for rendering of services.

10.3 Customer Debt

The EMLM has the Credit Control By-law with the following principles;

- Human dignity must be upheld at all times.
- The By-Law must be implemented with equity, fairness, transparency and consistency.
- Details related to the debt and the account of the debtor should be correct at all times.
- Debts and arrangements to repay debts shall be treated holistically, but different repayment periods or methods may be determined for different types of service, debtors or areas within the general rule that the repayment period should be in sympathy with the installments that the debtor can afford.
- The implementation of this By-Law should be based on sound business practices. This includes credit worthiness checks when application for services is made, as well as debt collection through sanctions of warnings, disconnections, evictions and other legal processes.
- New services will only be provided if a clearance certificate has been issued indicating that all amounts due in respect of municipal services, surcharge on fees, property rates and other municipal taxes, levies and duties at the debtor's previous address have been paid.
- New applications for services will be subject to prescribed credit information. In determining the applicants credit worthiness, all information furnished on the application form may be verified by the Council with any or all data information institutions, credit information bureau and/or any financial institutions.
- Where alternatives are available, Council may provide reduced levels of service to manage the debt growth.
- Debtors may be referred to third party debt collection agencies and may be placed on the National Credit Rating list.
- All recoverable costs incurred by Council relating to the collection process shall be recovered from the debtor.
- Interest charges on overdue accounts will be levied from the due date if not paid by the following due date and will be calculated for a full month irrespective of when payment is made. The interest charged will appear in the following month's account.

- As part of the arrangements made to repay debt, debtors may be required to co-operate with any reasonable measures that might be required to reduce their level of use of consumptive services to affordable levels.
- At all times, the most financially beneficial arrangement to Council must be entered into whilst still retaining the principles of this By-Law.
- Successful credit control is dependent upon a reliable billing system, an accurate municipal data base and the implementation and enforcement of Credit Control in all areas.
- New services will only be provided once the recipient of services has signed a service agreement contract clearly setting out terms and conditions related to the delivery of such services and the obligations of the consumer related to safeguarding Councils equipment, payment of bills for services rendered and costs that Council may deem necessary from time to time.

10.4 Tariffs

Two White Papers – the Water Supply and Sanitation White Paper of 1994 and the National Water Policy White Paper of 1997 – set out government's broad policy intentions with respect to the water sector in South Africa. The key elements of these white papers, as they pertain to urban water pricing, are as follows;

- **Basic Services:** There should be a concentrated effort to ensure universal access to basic services. This is defined (in the national context) as 25 litres per person per day within 200 meters of the home
- **Affordability:** Poor households should not be required to contribute to the capital costs of water service provision.
- **Full cost-recovery:** Aside from the affordability provision, water tariffs should recover the full costs of service delivery from consumers

The Municipal Systems Act (Act 32 of 2000) and Water Service Act (Act 108 of 1997) are the two Acts that govern the development of a water pricing policy.

In terms of the Municipal Systems Act, local government must give priority to meeting the basic needs of residents, promote economic development and ensure universal access to at least a minimum level of basic municipal services. Furthermore, local

government must develop and implement a tariff policy which complies with the Act. The Act sets out principles to which a tariff policy must be aligned.

The Water Services Act provides for the regulation of water tariffs. The national “norms and standards in respect of tariffs for water services” (developed in terms of Section 10(1) of the Water Services Act) are in place.

EMLM WATER TARIFFS

		TARIFF 2007/2008	%INCREASE 2007/2008	TARIFF 2008/2009	%INCREASE 2008/2009
Metered					
Basic Charge		R 49.43	6.6%	R 53.55	8.3%
Unit Charge					
	First 6 Units	Free	0.0%	R 2.26	100.0%
	7 to 10 Units	R 1.90	5.5%	R 2.91	34.7%
	11 to 30 Units	R 1.90	5.5%	R 3.35	43.3%
	Above 30 Units	R 2.02	5.9%	R 3.63	44.4%
Unmetered					
Monthly Flat Rate		-	0.0%	R 47.52	100.0%
Pre-Paid					
Basic Charge		-	0.0%	-	0.0%
Unit Charge		-	0.0%	R 4.26	100.0%
Communal Stand Pipes (Above RDP)					
Monthly Flat Rate		-	0.0%	R 25.99	100.0%
Communal Stand Pipes (Pre-Paid)					
	First 6 Units	-	0.0%	R 4.24	100.0%
	Above 30 Units	-	0.0%	R 4.53	100.0%
Commercial/ Industry					
Basic Charge					
	First 6 Units	R 2.03	6.2%	R 2.60	21.9%
	7 to 30 Units	R 2.03	6.2%	R 3.24	37.3%
	Above 30 Units	R 2.03	6.2%	R 4.06	50.0%
Departmental Connection Fee		R 1.71	5.5%	R 4.26	59.9%
Water Tankers (per tank)		R 29.61	5.5%	R 36.40	22.9%
		R 200.00	100.0%	R 200.00	0.0%

EMLM SEWERAGE TARIFFS

Sewerage Points					
Residential	First two points There after per point	R 4.45	6.0%	R 4.73	6.3%
		R 4.45	6.0%	R 4.73	6.3%
Commercial		R 17.76	6.0%	R 18.88	6.3%
Departmental		R 4.19	6.0%	R 4.45	6.3%

GREATER SEKHUKHUNE DISTRICT MUNICIPALITY TARIFFS (WATER)

CONSUMER CATEGORY	DESCRIPTION	YEAR 1	YEAR 2		YEAR 3		YEAR 4		YEAR 5		
		RATE	% INCREASE	RATE	% INCREASE	RATE	% INCREASE	RATE	% INCREASE	RATE	
Residential Consumers Metered	Monthly Basic Charge	R 30.86	5%	R 32.40	5%	R 34.02	5%	R 35.72	5%	R 37.51	
	Tariff Block	0-6 (kl)	R 1.95	5%	R 2.05	5%	R 2.15	5%	R 2.26	5%	R 2.37
		7-10 (kl)	R 2.62	5%	R 2.75	5%	R 2.89	5%	R 3.03	5%	R 3.18
		11-30 (kl)	R 2.90	5%	R 3.05	5%	R 3.20	5%	R 3.36	5%	R 3.52
		Over 30 (kl)	R 3.30	5%	R 3.47	5%	R 3.64	5%	R 3.82	5%	R 4.01
Residential Consumers Unmetered	Monthly Flat Rate	R 41.15	5%	R 43.21	5%	R 45.37	5%	R 47.64	5%	R 50.02	
Residential Consumers Pre-paid	No Monthly Basic Charge	nil	nil	nil	nil	nil	nil	nil	nil	nil	
	Rate per kl	R 3.69	5%	R 3.87	5%	R 4.07	5%	R 4.27	5%	R 4.49	
Communal Stand Pipes (Above RDP supply)	Monthly Flat Rate	R 22.50	5%	R 23.63	5%	R 24.81	5%	R 26.05	5%	R 27.35	
Communal Stand Pipes (Pre-Paid Metered)	0-6 kl	R 3.67	5%	R 3.85	5%	R 4.05	5%	R 4.25	5%	R 4.46	
	Rate per kl above 6 kl	R 3.92	5%	R 4.12	5%	R 4.32	5%	R 4.54	5%	R 4.76	
Non Residential Consumers Metered	Monthly Basic Charge	R 51.44	5%	R 54.01	5%	R 56.71	5%	R 59.55	5%	R 62.53	
	Tariff Block	0-6 (kl)	R 2.25	5%	R 2.36	5%	R 2.48	5%	R 2.60	5%	R 2.73
		7-30 (kl)	R 2.81	5%	R 2.95	5%	R 3.10	5%	R 3.25	5%	R 3.42
		Over 30 (kl)	R 3.52	5%	R 3.70	5%	R 3.88	5%	R 4.07	5%	R 4.28

Water Tariff Comparison

		EMLM (2007/08)	Sekhukhune DM (2)
Metered			
Basic Charge		R 49.43	R 30.86
Unit Charge			
	First 6 Units	Free	R 1.95
	7 to 10 Units	R 1.90	R 2.62
	11 to 30 Units	R 1.90	R 2.90
	Above 30 Units	R 2.02	R 3.30
Unmetered			
Monthly Flat Rate		-	R 41.15
Pre-Paid			
Basic Charge		-	-
Unit Charge		-	R 3.69
Communal Stand Pipes (Above RDP)			
Monthly Flat Rate		-	R 22.50
Communal Stand Pipes (Pre-Paid)			
	First 6 Units	-	R 3.67
	Above 30 Units	-	R 3.92
Commercial/ Industry			
Monthly Flat Rate		-	R 51.44
Basic Charge			
	First 6 Units	R 2.03	R 2.25
	7 to 30 Units	R 2.03	R 2.81
	Above 30 Units	R 2.03	R 3.52
Departmental Connection Fee		R 1.71	-
			-
Water Tankers (per tank)		R 29.61	-
Departmental Connection Fee		R 200.00	-

11. WAY FORWARD (STRATEGIES TO ADDRESS SUSTAINABLE SERVICE DELIVERY)

11.1 *Proposed future trends and goals*

- The goal of the EMLM is to provide adequate and reliable supply of water and to manage the water supply services in an affordable and sustainable manner.
- The water target is to eliminate that 40% of the backlog by Dec 2008. 100% coverage should be achieved in 2012.
- The sanitation target is to eliminate 60% of the backlog by 2010, and 100% by 2012
- VIP latrines (properly designed and constructed including fly-screens) should be the standard solution to sanitation for most consumers outside the defined Growth Points, including low cost housing schemes.
- On-site monitoring of Groundwater is to be instituted on all Groundwater Supply Schemes.

11.2 *Proposed strategies to address backlog*

- Improve Integrated Development Planning (IDP);
- Ensure effective communication with the district and other stakeholders
- Ensure improvement in financial management – Improve and coordinate revenue measures and mechanisms;
- Local community representatives need to be well informed about local problems and opportunities that could be addressed ;
- An appropriate financial support program will be able to give advice and training on financial planning;
- Develop Information Management Systems so that problem areas of water provision can be timeously be identified;
- Develop a national system for monitoring, evaluating and reporting on all poverty eradication interventions.

11.3 Water Conservation and Demand Management

According to the Water Conservation and Demand Management National Strategy Framework, Draft, May 1999, South Africa is a dry country and current demands exceed water availability in some area. With the current growth of demand it is estimated that water conservation and sustainable development policies are implemented.

There is no strategy for Water Conservation and Demand Management that exists for EMLM at present. It is not possible to plan for future water requirements if there are no measurements for present water consumption pattern. The following are priorities for Water Conservation and Demand Management:

- Formulate policy of water charges and tariffs, incorporating the free basic water policy of GSDM
- Install bulk meters on all reservoirs and outlets of water treatment plant
- Install local meters
- Register all existing bulk water supply organization
- Legalize all consumers with individual yard connections
- Develop policies and guidelines for water institutions that will allow for the funding of water WC/DM initiatives

Demand management is the process whereby the known consumption of a particular area is managed downwards by means of any of the following:

Water restrictions to force the person to utilise a reasonable quantity of water

This will typically be implemented in areas where people do not pay for water and willful wastage occurs. Methods such as restricted flows or controlled volume consumption can be implemented. Where possible, all connections must be metered even when it is not intended for payment purposes. It will help to track excessive consumption and will allow measures to be taken against those wasting water.

By pressure management

The quantity of water that can be abstracted from a reticulation system is proportional to the pressure and by managing pressures one can reduce the physical quantity of water that can be abstracted from a system. This is typically a method can be implemented to control demand in areas served by stand pipes where willful wastage occurs.

By pricing policies

This is one of the most powerful tools available to control water demands. If areas are identified where the consumption per stand is unacceptably high, a sliding scale tariff system can be implemented with high punitive tariffs for excessive water consumption. This will automatically force people to use water with much more caution and more effectively.

Elimination of leaks

Obviously all known leaks that can be repaired economically should be fixed.

11.4 Requirements to implement WC & DM

Before a fully developed demand management programme can be developed, it is essential to obtain reliable flow measurements and flow data.

After this has been done, a full demand management and water loss control exercise can be implemented. It should start off by targeting individual zones and to do night flow analysis. A night flow analysis is a first indication of possible leakages and it measures the flows during the periods of the night when in theory very little flow should occur. If the night flow is sufficiently high, it indicates that leakages occur either in the system or within the plumbing fittings inside the yard.

Once the areas with high night flows have been identified, a leakage detection exercise can be undertaken to identify whether there are significant reticulation leaks or not. If no significant leaks are identified, a house to house survey of the plumbing fittings should be undertaken and these should be fixed. The key to implement demand management will be to provide water meters for every household irrespective of whether they actually

pay for the water or not. By reading these meters regularly, the people abusing the water system and utilising more than the 6 kl/month free basic water can spotted.

12. 2007/2008 CAPITAL PROJECTS

12.1 *Water Projects*

The municipality has identified a number of projects aimed at implementing the carefully selected strategies. The municipality has resolved to:

- Improve local infrastructure planning to capture planning needs of other stakeholders in a most coordinated ways that benefits from economies of scale.
- Upgrade the current infrastructure network to ensure sustainability and certainty to build business confidence in municipal services.
- Encourage the use of labour intensive technology to increase employment opportunities for the majority of municipal residents and extensively contribute to eliminating poverty and unemployment.
- Promote the sourcing of local materials to build a thriving local contracting capacity.
- Accelerate infrastructure development in order to ensure that capital expenditure allocation is fully spent.

The following water projects are funded by GSDM:

PROJECT	2006/7	2007/8	2008/9
Magukubjane Water Reticulation	R2,000,000	R2,100,000	
Moteti Reticulation and Cost recovery		R2,650,000	
Magakadimeng Water Supply		R2,000,000	R2,000,000
Kgapamadi Water Supply	R3,000,000		
Tafelkop Water Supply		R6,000,000	R4,000,000
Sterfontein Water Supply	R2,000,000		
Luckau Water Supply	R3,000,000	R5,000,000	R10,000,000
Sephaku Water Reticulation and Construction	R3,411,735	R7,000,000	R5,000,000
Talane WS-PHASE 11	R500,000		

PROJECT	2006/7	2007/8	2008/9
Marapong WS – PHASE 11	R2,000,000		
Water Bulk line Augmentation	R2,000,000		
Elansdoorn Water Reticulation	R2,700,000		
Blompoot Reticulation	R1,500,000		
Groblersdal/Luckau RWS Refurb.	R3,855,647	R3,000,000	R3,000,000
Dindela Water Reticulation	R 703,860		
Syferfontein B Reticulation – Cost recovery	R1,895,666		
Matlala ward 14/Stompo ward 4 R		R3,500,000	
Upgrade of WTW	R5,100,000	R2,000,000	R2,000,000
Augmentation			R5,000,000
Walkraal A		R2,000,000	
Waalkraal B		R2,000,000	
Kuilsrevier		R1,000,000	
Gaphetla	R1,870,545		
Legolaneng BWS Phase 2		R3,000,000	
Spitskop Dam and Water Works	R3,000,000		
Tafelkop WS and Storage Augmentation		R2,200,000	
Stompo Water Supply (bulk and cost recovery)	R2,000,000	R2,000,000	
Dennilton Water		R2,600,000	
Sephaku Water		R3,832,101	
Globblersdal Water		R 765,052	
Bloempoot Reticulation		R2,300,000	
Lekgolaneng BWS phs 2 (Leckau WS)		R13,964,000	
Luckau		R3,000,000	

Table 11.5.1: Water Projects: EMLM IDP 2007/08

12.2 Sanitation Projects

The following water projects are funded by GSDM:

PROJECT	2006/7	2007/8	2008/9
Syferfontein VIP Allocation			R2,100,000
Talane VIP Toilets		R650,000	
magukubjane VIP Toilets			R1,000,000
Groblersdal STW phase 2			R2,000,000
Groblersdal STW phase 3		R2,000,000	R2,000,000
Elandsdoorn Town sanitation		R7,500,000	
Waalkraal Sanitation		R6,000,000	
Thambo Sanitation		R8,000,000	
Elansdoorn RDP Sanitation		R5,500,000	
Naganeng VIP		R3,500,000	
Mpheleng VIP		R8,000,000	
Magakadimeng VIP		R5,000,000	
Blompoort VIP		R3,000,000	
Uitspanning vip		R4,000,000	
Marapong VIP			R5,000,000
Nkosini VIP			R3,000,000
Mathula VIP		R4,000,000	
Dikgalaopeng VIP		R4,500,000	
Dindela VIP		R2,500,000	
Hlogotlou Unit C Sanitation		R5,500,000	

Table 11.6.1...: Sanitation Projects: EMLM IDP 2007/08

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ANNEXURES

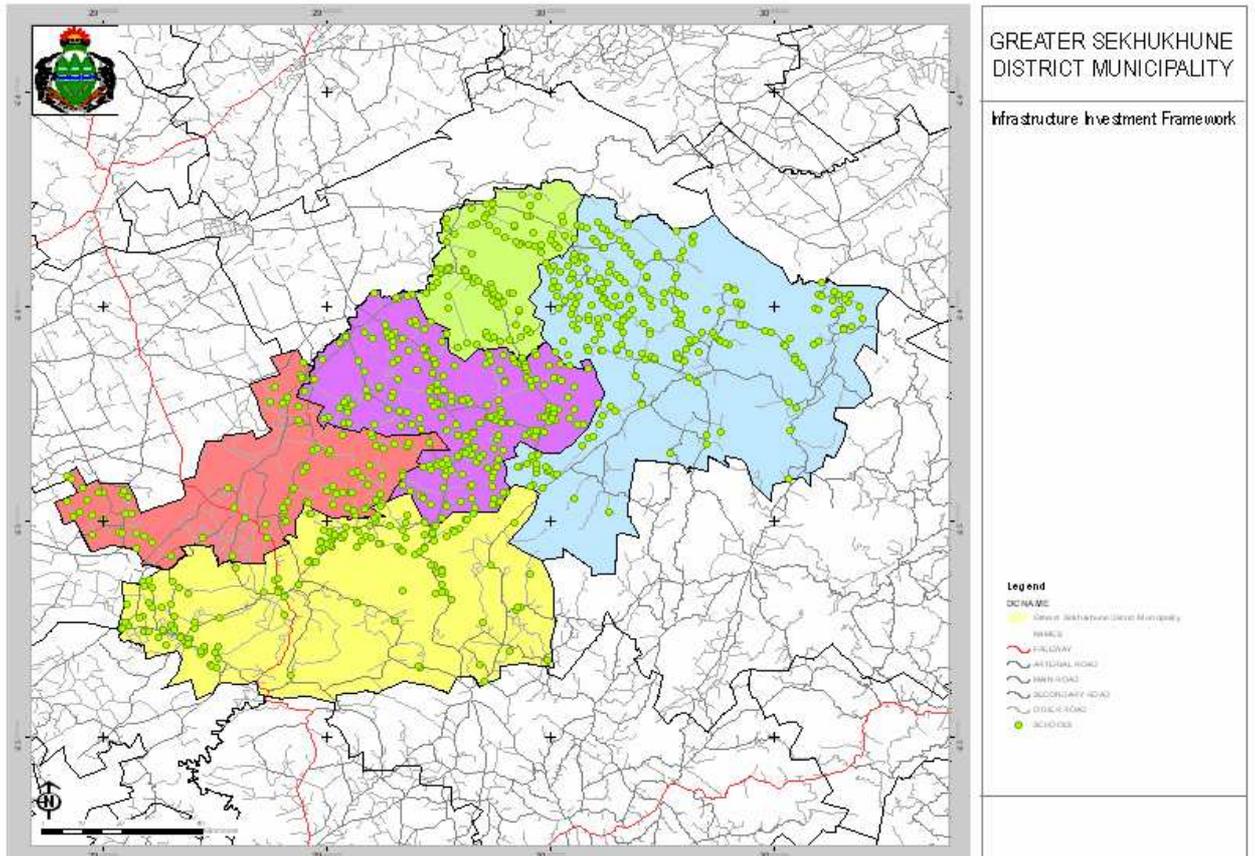


Figure A: Public Institutions: Schools in GSDM: study done by BC Gildenhuys Associates

Legend

	Elias Motsoaledi LM
	Fetakgomo LM
	Greater Marble LM
	Greater Tubatse LM
	Makhuduthamaga LM

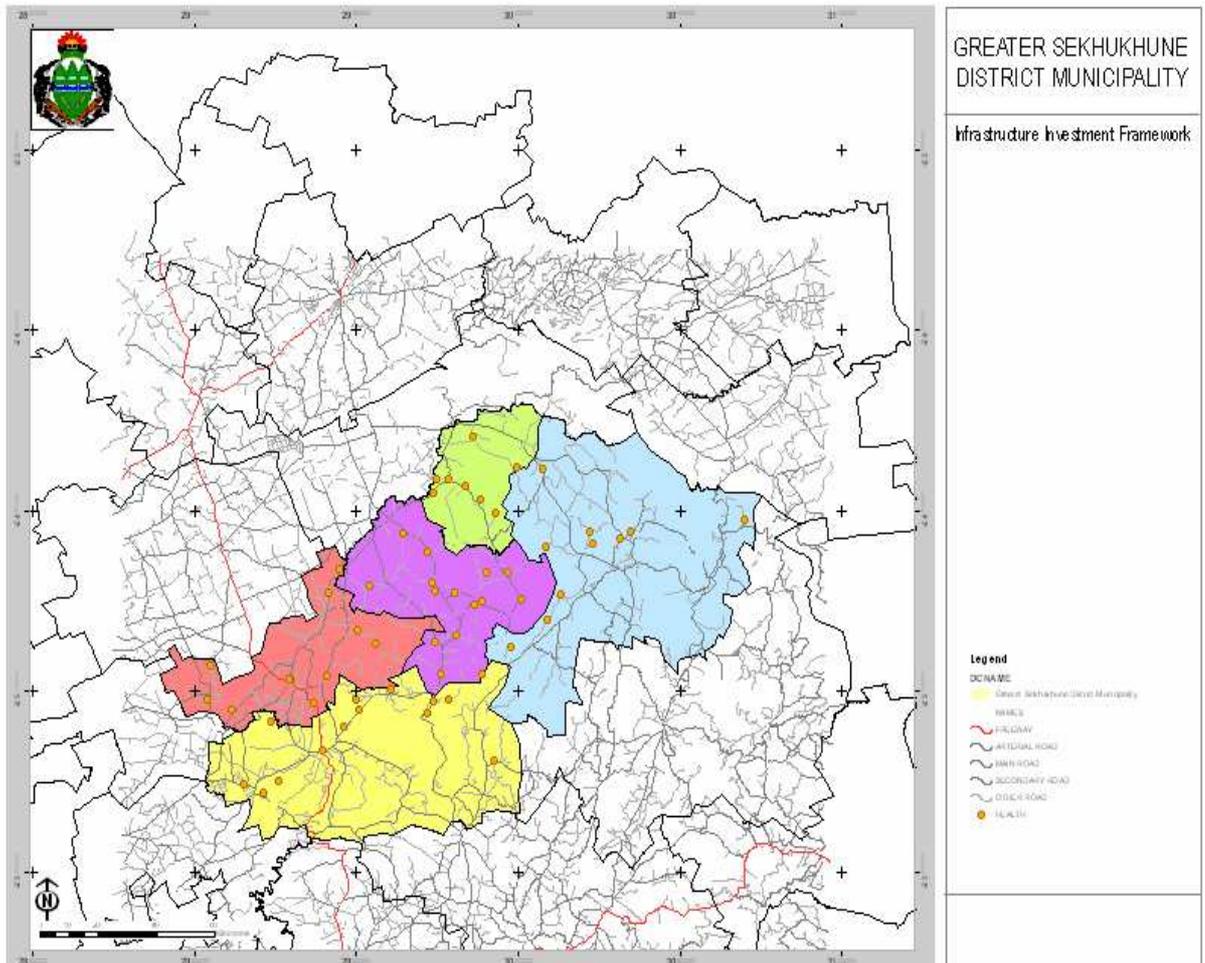


Figure B: Public Institutions: Health facilities in GSDM: study done by BC Gildenhuys Associates

Legend

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	Greater Tubatse LM
	Makhuduthamaga LM

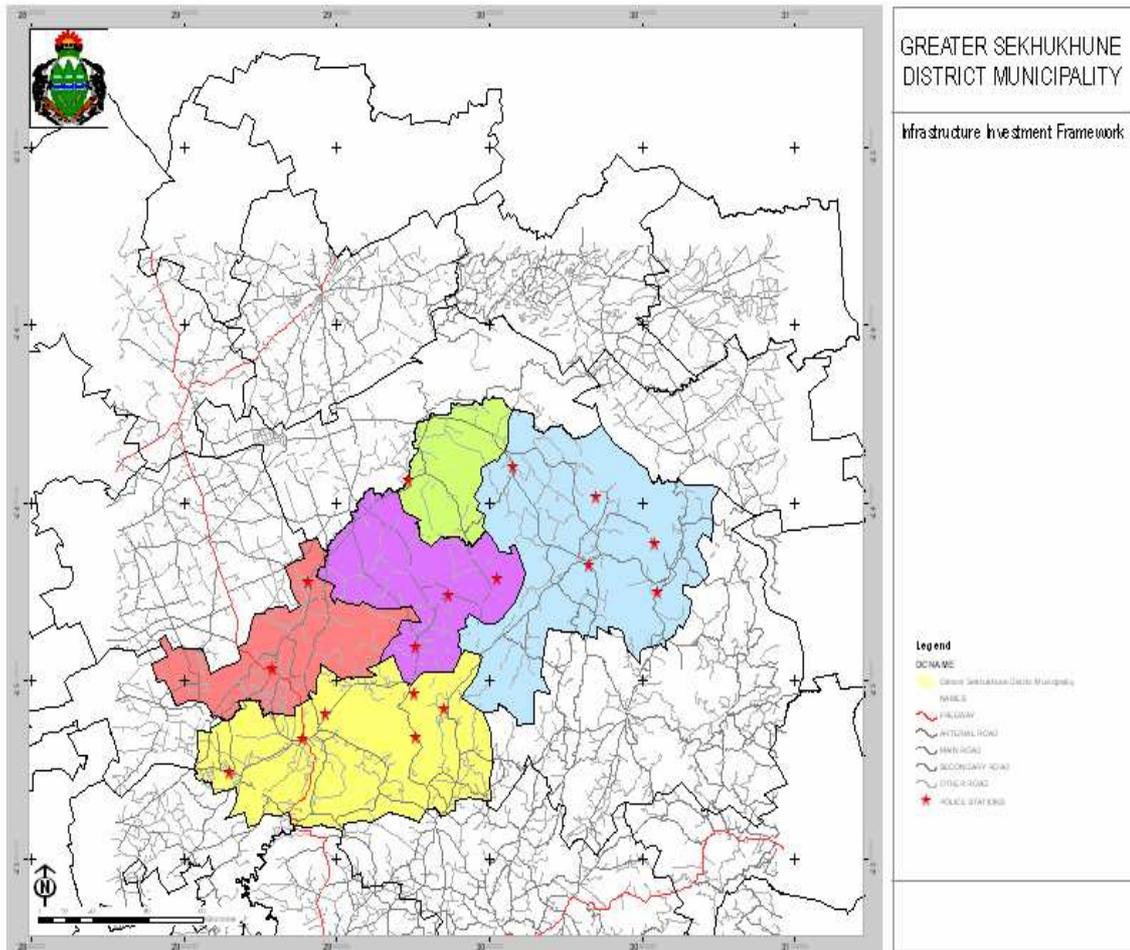


Figure C: Public Institutions: Police Stations in GSDM: study done by BC Gildenhuys Associates

Legend

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	Fetakgomo LM
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	Greater Tubatse LM
	Makhuduthamaga LM