

# **SISONKE DISTRICT MUNICIPALITY**



## **WATER SERVICES DEVELOPMENT PLAN EXECUTIVE SUMMARY**

## **EXECUTIVE SUMMARY**

### **1 INTRODUCTION**

A Water Services Development Plan is required in terms of the Water Services Act (108 of 1997), and forms part of input to the Integrated Development Plan of a Municipality, as required by the Municipal Systems Amendment Act, (Act No. 32 of 2000).

Section 84(i) of the Municipal Systems Amendment Act (Act 32 of 2000) allocates the function of Water Services (i.e. Potable water supply systems (84(i) (b)) and Domestic wastewater and sewage disposal systems (84(i) (d)) to a district council. Subsequent Government Notices did not change Sisonke District Municipalities function or powers related to Water Services and Sisonke District Municipality therefore retained their Water Services Authority function within its area of jurisdiction.

### **2 PARTICIPATION**

The Sisonke WSDP has been prepared on a participatory basis with extensive involvement of key role players in the District, particularly Local Municipalities, Government Departments; Non-Governmental Organisations and Local Government Association. The original WSDP included extensive participation, a principle which were continued during the review process, through stakeholder workshops.

Information dissemination on progress with the WSDP has taken place at Task Team meetings involving Management staff and political representatives from the District and Local Municipalities. Furthermore a participation workshop was convened in May 2005 where the content of the WSDP at that time was work-shopped extensively by participants from a wide range of organisations and stakeholders with reference to matters pertaining to the review and participation in the WSDP process and a follow up workshop that took place on June 14, 2005 and was well attended by stakeholders.

### **3 VISION AND GOALS**

The WSDP vision is:

*“To overcome current services backlogs and ensure the provision of cost effective potable water and sanitation services for all residents of Sisonke to meet the national targets by ensuring that everyone has access to potable water regardless of the level of service. Planning for the provision of water and sanitation services should take place within the context of the IDP”*

The overall goal is:

*“The provision of sustainable, cost effective water and sanitation services to all consumers in the District”*

### **4 GUIDING PRINCIPLES**

In terms of the above vision statement the emphasis in the Sisonke District is to ensure equitable access to water and sanitation services for all residents. Goals include striving for sustainability involving the upgrading of existing services in the District through use of readily available sources (e.g. springs, boreholes etc.) to ensure access of all residents to potable water supplies. In the longer term these stand alone rural schemes and projects need to be linked into bulk networks. The aim of opting for bulk is to ensure sustainability in services provision and to improve the quality of water while at the same time attempting to reduce operational costs.

### **5 PHYSICAL AND SOCIO-ECONOMIC PROFILE**

The Sisonke District Municipality covers some 10109 sq kms with an estimated population of 298 396 persons of which (15.5%) are in Urban areas, and in Rural areas split between Farmland (20.9%) and Ingonyama land (63.6%).

The population in the rural areas is characterised by:

**Table with population growth**- backlog study document

- a youthful age distribution with the majority of the population under the age of 19.

This is more marked in the Ingonyama Trust areas (KZ5a1 and KZ5a5) and less so in the commercial farming areas of the remaining LMs;

- a greater proportion of the population in the working age categories are located in KZ5a 2, 3, 4 than those located in KZ5a 1 and 5.
- a predominance of women in the DM with Ingwe and uBuhlebezwe showing the greatest proportion of females in relation to males which is linked closely with population mobility;
- a more balanced male/female ratio in the remaining LMs with KwaSani having a balanced male/female population which may be attributed to lower populations and improved access to limited employment opportunities in the area.

#### Employment and Contribution to GGP (Economic Profile)

Based on 1996 Census and Demarcation Commission's data the following economic trends are noted:

- The economy of the Sisonke District Municipality has been growing slowly, in the order of 1.56% pa;
- There has been a decrease in employment in the formal sector and substantial growth in the informal and unemployed sectors within the District Municipality;
- Unemployment appears to have more than doubled from 12.10% to 25.15%;
- A large percentage of the population are either too young or too old to work (dormitory area);
- There is a high death rate among the sexually and economically active age groups,
- This results in high levels of dependency (financial burden) on those who are employed and will limit household's ability to pay for municipal services;
- The percentage of the population employed within the Sisonke DM is highest in the more urbanised Municipalities (i.e. KwaSani, Matatiele and Greater Kokstad). These Municipalities have smaller populations and are dominated by commercial agriculture and the retail and services sectors;
- Unemployment levels are the highest in the tribal and rural settlements in Ingwe and uBuhlebezwe.

The Sisonke DM economy is dominated by the commercial sector including forestry. The most prominent employment sectors are Agriculture followed by Community Services, Trade and Domestic Employment. Up to 9% of the working population in the District are involved in construction and small scale manufacturing. It is interesting to

note that in spite of male migrantcy, males are dominant in local employment. (56% male 44% female).

Based on the above, the following key issues are likely to impact on the future of the water and sanitation services provision in Sisonke. These include:

- A moderate population growth rate of 2,2 percent for the District;
- Continued out-migration by the economically active to regional metro areas;
- Imbalanced male-female age-sex ratios due to migration patterns;
- High levels of unemployment particularly in the densely settled areas of the District;
- Low affordability levels for services particularly among the majority of rural households in the District;
- High levels of service continuing to be a feature of the urban areas, depending upon economic growth and development in the District.

## **6 APPROACH**

The WSDP is based on the principles contained within the Strategic Framework for Water Services published through the collaborative efforts of DWAF, SALGA, DPLG and the Association of Water Utilities. It also considered strategies concerning Water and Sanitation Services developed by Sisonke District Municipality to date. The original WSDP was compiled in September 2003, followed by the review in September 2005.

The aim of the planning process is to ensure that all consumers in the District have access to a secure supply of potable water and sanitation facilities at an RDP level of service. In rural areas this would involve construction and upgrading of stand alone projects in defined planning areas where residents do not have access to adequate services. The identification of planning areas is intended to enable the integration of these reticulated footprints into bulk networks (water only) at a later stage.

The aim in urban areas is to initiate a programme of capital upgrading of all water and sanitation infrastructure (water and sewerage) where the condition of infrastructure are compromising service levels, and to address services backlogs. This is necessary to prevent service interruptions and to ensure the continued provision of a high level of water and sanitation services in the economic hubs and service centres of the District.

In the medium to longer term the approach would be to implement bulk water distribution in rural and urban areas of the District. The aim being the rationalisation of the number of abstraction and treatment works as well as stand alone schemes to improve efficiency and reduction in the unit cost of operation and maintenance. In this process all existing rural planning areas and certain of the towns would be incorporated into the bulk infrastructure through a system of take offs, bulk storage reservoirs and meters.

## **7 WATER RESOURCES**

The Water Situation Assessment Model (developed by DWAF), was used to determine surpluses and deficits in the Sisonke District Municipality on a quaternary catchment basis. The results show that, with the exception of the area to the north of Himeville and west of Impendle, the entire District enjoys a water surplus in excess of 5 Million m<sup>3</sup>/annum. It should be noted, however, that the natural environment is the largest consumer of water in the region, with alien vegetation making up a large portion of this. Reduction of alien vegetation in the District would make a positive impact on surpluses, particularly in the southern Drakensberg.

Sisonke is in the unique position of having access to surplus water sources. A number of Sisonke's neighbours experience water deficits (uMgungundlovu District, Msunduzi Metro and eThekweni Metro) and consequently raw water could, in due course, become a tradable item with positive implications for the gross geographic product of Sisonke. It is against this background that the following key issues are noted:

- Despite the abundance of potable water in the District, the majority of rural communities continue to depend upon unreliable and untreated ground water supplies;
- There are no major impoundments providing water to rural areas of the District other than for those used for agricultural production;
- The major impoundments in the District are located at Kokstad and Matatiele;
- It appears that there is sufficient volume in the major rivers in the District to implement bulk water footprints to service both urban and rural areas. However, this is likely to require the construction of impoundments to provide for low flow period storage capacity;

- Current levels of consumption and pollution by non-domestic users (businesses, agriculture, government and industry) requires further investigation.

## 8 INFRASTRUCTURE AND SERVICE LEVEL PROFILE

### Urban

The urban centres of Sisonke District Municipality with the exception of Ixopo are all served by conventional schemes. Bulk water for Ixopo is purchased from Umgeni Water. There are 13971 consumer units located in urban areas of Sisonke. 87% of these consumers have access to an uncontrolled supply based on a direct connection or yard connection. A further 12% have access to communal standpipes.

The following key findings are noted:

- All towns in Sisonke have self contained:
  - water abstraction systems from rivers, dams and boreholes;
  - water and sanitation treatment works; and
  - fully reticulated supply systems at a high level of service;
- Bulk water is mainly abstracted from rivers or dams dedicated to each of the towns with springs and boreholes mainly being used as back-up;
- A total of 65 kms of bulk pipeline were identified in the District's urban areas;
- **Number of rural schemes**
- The average total design capacity of the 8 urban Water Purification Plants amounts to 22MI per day providing water to 35 reservoirs with a total capacity of 34MI per day;
- It would appear that there is a small surplus capacity in the existing works in urban areas which could be considered for use in neighbouring rural areas;
- The actual volume of water treated is 4ml/day less than the design capacity;
- Additional capacity is required in at least one of the District's towns namely Kokstad owing to rapid growth in demand accompanying low income housing and the new C-Max Prison;
- The majority of the water infrastructure in the urban areas of Sisonke is in excess of 30 years of age with some of it dating back to 1910;
- The annual (04/05), operation and maintenance costs associated with the provision of water and sanitation services (excluding salaries and wages) amounts to an estimated R 5,191,588,00 (excluding Matatiele).

- The urban water and sanitation infrastructure appears to be in a reasonable condition for day to day operations. However, some capital investment will be required for refurbishment of existing infrastructure to ensure that service levels are not compromised.

On the basis of the above findings further detailed investigation is required to accurately quantify the scope of work and costs for infrastructure refurbishment/replacement in these towns. This will allow for the identification of a phased replacement programme over the short to medium term, subject to the availability of capital funding, on a grant basis, to the District.

### Rural Water

In Phase 1 of the WSDP a theoretical level of service was applied to rural areas in the absence of on the ground information. In Phase 2 an extensive scan has been undertaken of all current and planned rural water schemes in the rural settlements and Ingonyama areas of Sisonke. Commercial farming areas were excluded from the WSDP, but will need to be addressed in due course.

For the purposes of rationalising the future provision of services in rural areas, individual settlements in Sisonke have been grouped together in what has been termed planning areas. Level of service in rural areas has been identified on the basis of these planning areas.

Despite research into all available data sources there are still gaps in technical information on rural projects and areas that will need to be collected in the annual reviews of the WSDP. The backlog study currently in progress, and due for completion in October 2005, would enhance the level of information significantly.

The Municipality furthermore commenced with initiatives towards the implementation of Regional Water Schemes to gain the associated advantages of sustainability, rationalisation and economies of scale.



## 9 WATER LOSSES

### Urban:

On the basis of information provided by Local Municipalities during 2003, for the urban areas, it would appear that water losses are currently of the order of 13% of water abstracted from source (Preparation Guide, Table 8.5). This is believed not to be a reliable statistic, considering the lack of information it was based on. Owing to the fact that there is very little recorded data available on water losses this estimate is likely to be conservative considering the advanced age of the bulk and reticulation infrastructure.

The WSA needs to consider a planned annual water loss management programme in the urban areas, aimed at achieving a savings in operational costs through the introduction of an effective leakage management strategy. Current demand management programmes in the towns of Kokstad and Ixopo include for pressure control and infrastructure replacement initiatives, respectively. The latter initiatives are over and above routine maintenance initiatives and general repair programmes conducted by the municipality on a continuous basis. All of which contributing to reducing water losses.

### Rural:

Virtually no information is available on the quantum of water losses on rural schemes in Sisonke. Similarly data is not available for the smaller community based low pressure systems. This is largely due to the absence of consumer/dispensing meters.

It is only once bulk mains have been introduced and rural schemes are upgraded to supply individual households, that leakage management will become viable. In the interim theoretical estimates could be applied usefully. Water loss management needs to be included as one of the key performance areas associated with Operation and Maintenance of all schemes.

## 10 INSTITUTIONAL PROFILE

As a result of the proclamation of the Division of Powers and Functions (January 2003), the Sisonke DM is responsible from July 1 2003 for water and sanitation services provision in the entire District inclusive of urban and rural areas.

The municipality furthermore completed a Section 78 assessment during October 2004, and based on the latter decided to assume the responsibility for Water Services Provision – internally.

The WSA is required to promulgate tariffs, but due to the establishment of Administrative Units in the Local Municipalities, the current tariff structures have been adopted in the interim

The WSA is required, during the course of the current financial year to institute a monitoring and evaluation system for the water services providers (bulk and reticulation: urban and rural). This will involve the preparation of both key performance areas and key performance indicators, and development of capacity to manage Water Services effectively..

The project implementation function (PIA) for water and sanitation infrastructure is currently being managed by the Technical Division of the Sisonke District Municipality. Project planning and implementation is outsourced to consultants and contractors

The customer care and communications functions which are the responsibility of the WSA is in a developmental phase, and will receive continued attention following the establishment of the WSP functions on a regional basis. Sisonke District Municipality are performing the Customer Care function for urban areas and rural areas. Transfer of the WSP function to Sisonke from LM's was affected - i.e. uBuhlebezwe from Sept 2003, Greater Kokstad from Dec 2004, Ingwe from April 2005, KwaSani from May 2005 & Matatiele since 01 July 2005. Considerable development of more sophisticated customer care systems can be expected in due course, following the recent take-over by Sisonke

### The Water Services Authority

The Sisonke WSA function is located in the Technical division of the Municipality. The WSA is responsible for the following water and sanitation services provision including:

- Sector planning;
- Regulation (tariffs and by-laws);
- Monitoring and Evaluation of Project Implementation and Operations functions;
- Customer Care and communications;
- Contracts Management;

#### Water Services Providers: Urban Areas

Water and Sanitation Services in the urban areas are provided by Sisonke District Municipality. The transfer of staff is complete and the municipality is in the process of development of appropriate systems and procedures. Umgeni Water is responsible for providing bulk water to Ixopo.

The present level of human resources applied includes for a WSP Director, Infrastructure Manager, 3 technicians and support staff.

#### Water Services Providers: Rural Areas

The Sisonke District Municipality has been the water services provider in rural areas, except in the situation of Jolivet water scheme. The latter presently only involves bulk water supply. The Sisonke DM has established a CBO WSP in one of its isolated water schemes, this CBO functions under Sisonke DM with major repairs, stipences and electricity costs being carried out by Sisonke District Municipality.

## **11 FINANCIAL PROFILE**

### Operational Expenditure

The operating expenditure for the Local Municipalities in Sisonke indicates that, with the exception of Ingwe, KwaSani and Greater Kokstad, the balance of the Municipalities, are operating on a deficit. The surpluses generated by Ingwe, KwaSani and Greater Kokstad arise from the water and sanitation trading account. It must, however, be noted that these surpluses are moderate and there is very limited scope for cross subsidisation between urban and rural areas. Overall, the schemes operated at a deficit in previous financial years.

The Sisonke rural budget allocation for operational costs on existing schemes is relatively low during the current financial year. This is unrealistic in relation to the number of rural projects which require financial support.

It should be noted that the operational costs are likely to escalate in future, particularly as capital roll out programmes are completed and projects become operational. As a result the anticipated deficit is likely to increase on an exponential basis due to the addition of new rural schemes and additional non-paying consumers.

### Free Basic Water (FBW)

Sisonke District Municipality's has adopted to provide free basic water by means of protected springs and boreholes equipped with hand pumps in rural areas, and a 3kl per household per month in cross border schemes. In urban areas the FBW status as per the ex WSA's has been adopted. Implementation of FBW has been different from one municipality to another. Present funding is insufficient to support FBW and funding is required to support FBW in the short and longer term. Various short to medium term interventions are however being implemented to achieve FBW.

### Tariffs

One of the mechanisms at the disposal of the District to offset operational deficits is the tariff for water and sanitation services provision and associated tariffs including connections and disconnection fees.

An appropriate tariff mechanism have been developed (but still at draft stage) by the municipality which takes into account the different levels of service associated with user and income groups in the tariffing process and the actual revenue stream accruing to Council from billings related to services provision. The tariff model will be implemented over the next 5 years.

The present tariff structure for each local municipality area is not consistent, with varying tariffs for alternative ranges of consumption. It is only in those areas where Sisonke DM has always been a WSA that a flat rate is charged monthly.

Income flows from the water services consumers are relatively small and there is very limited opportunity for cross subsidisation from the urban sector. Rural areas will not generate any income during the current financial year and rural deficits are likely to increase in future as new projects are brought into operation. As a result Sisonke will be

dependant on grants from government, such as the equitable share, to offset the deficit arising from the operation of the water services.

## **12 PLANNING, INTEGRATION AND BUDGETING**

The Sisonke District Municipality has embarked on a water sector planning process in the preparation of the WSDP. The objective being to develop strategies to address services backlogs while at the same time ensuring sustainable and affordable service provision in the District. These strategies are presented in the form of 'master plans' (bulk, reticulation and sanitation) and associated capital and operational budgets.

The WSDP is intended to support the transformation of the sector promoted by the recent legislative reforms to Local Government in South Africa. This section of the Water Services Development Plan, for Sisonke, integrates all the different aspects of water and sanitation services provision in the form of:

- a preliminary draft bulk water plan;
- a reticulation plan for rural and urban areas;
- a sanitation plan for rural and urban areas; and
- a municipal budget dealing with capital and operational costs over the short, medium and longer term.

### Issues to be Addressed

A brief review of findings in each of the Sections of the WSDP indicates that the following strategic issues should be addressed by the newly established WSA to enable the District to realize its vision and goals in the water and sanitation sector to:

- Build strong Local Government capacity in the District Municipality to enable it to ensure the following;
  - elimination of all water and sanitation services backlogs;
  - rendering of good quality water and sanitation services to all consumers;
- Develop the concept of centralisation of water and sanitation services provision in the District involving the following key elements:

- Finalising assets and responsibility take-over from the local municipalities.
- investigate the feasibility of introducing bulk infrastructure to rationalise rural and urban services provision;
- Rural services backlogs need continued attention following the prioritisation and programming contained in this WSDP;
- Final project selection in the water and sanitation sectors should adhere to the planning areas identified in the WSDP to ensure rationalisation of services provision and allow for bulk services provision in future;
- The WSA are presently implementing the recommendations of the Section 78 Assessment to develop appropriate tariff mechanisms and structures to ensure equitable cost recovery and sustainability of the water and sanitation sectors in the District.

The strategic planning component of the WSDP is intended to enable the WSA and associated WSP structures in the District to progressively address the above issues in the water and sanitation sector in the short, medium term and longer term.

### Planning Approach

The process of planning for the progressive delivery of sustainable water and sanitation services to the people of Sisonke depends upon the establishment of a process which can be used to determine prioritisation of projects and the phasing of capital expenditure.

The centralised approach to services provision was adopted by Sisonke, and is aimed at overcoming many of the limitations of the community based approach through the following:

- Progressive bulk services provision to the major concentrations of settlement in the District to ensure sustainability of supply and to minimise excessive operation and maintenance costs associated with providing support to large numbers of stand alone community schemes;

- Rationalising the number of treatment works, bulk storage reservoirs and associated staff and costs;
- Ensuring the provision of water and sanitation services at a defined standard throughout the District;
- Rationalising operation and maintenance costs;

In order to give effect to the centralised approach all rural settlements have been included into logical planning footprints for project implementation and operation purposes. Both rural planning footprints and urban areas will in turn be linked into a bulk services network outlined in a bulk services master plan. One of the most useful lessons in the fragmentation versus centralisation debate arises from the Uthukela Water initiative where the initial indications are that centralisation of the provider function for all urban and rural areas in that District Municipality could lead to a savings of two thirds of current operational costs.

Implementation of the centralised approach would imply the following for Sisonke:

- proceeding in the current financial year with the implementation of capital works identified in the recently approved Sisonke DM budget;
- meeting immediate water and sanitation services backlogs in the short term (up to 5 years, zero level of service), but at a level that ensures that any stand alone rural projects constructed during this period (water) can be connected to bulks at a later stage;
- addressing survival levels of need in the medium term (6-10 years, rudimentary) and upgrading these to an intermediary or RDP level. Depending upon availability of grant funding to the district progressive implementation of bulk infrastructure should be initiated in the medium term;
- backlogs should be resolved within 11-15 years, and the emphasis should be on the completion of bulk works and the connection of stand alone schemes in to the bulk system. This should also be inclusive of towns where it is possible to rationalise the number of existing treatment works.

In order to properly co-ordinate the provision of services in rural and urban areas of the District planned, services footprints have been identified. The notion is for settlements located within the planned footprints to be included in schemes in each of these areas. These should be implemented over the short and medium term such that they can be connected into the bulk infrastructure. The process of planning for the gradual and

progressive delivery of sustainable water and sanitation services to the people of Sisonke necessitates the establishment of a project prioritization process.

The costs associated with the roll out of this programme in the short medium and long term are:

Table: Cost of Roll out Programme: Water and Sanitation Services (to be revised, pending the completion of water and sanitation backlog studies). These figures are for stand alone schemes they do not include bulk requirements.

<b>COSTS</b>	<b>IMMEDIATE</b>	<b>SHORT TERM</b>	<b>MEDIUM TERM</b>	<b>LONG TERM</b>	<b>TOTAL</b>
<b>CAPEX</b>	R41 776 385	R405 498 896	R257 986 463	R67 068 588	R772 330 332
<b>OPEX</b>	R26 340 969	R38 300 420	R54 093 656	R86 450 893	R205 185 938
<b>TOTAL</b>	R68 117 354	R443 799 316	R312 080 119	R153 519 481	R977 516 270

#### Provision of funding for Operation and Maintenance

In implementing the roll out of water services, cognizance must be taken of the need for financial provision for the operation and maintenance (OPEX) of the infrastructure. Operational costs of both water and sanitation escalate on a cumulative basis as additional projects are operationalised. It is therefore important, in planning the roll out programme, that funding for the OPEX of the new water services has been secured in advance.

Where funding for operations and maintenance for new water services is limited the WSA should consider limiting the expansion to remain within the availability of funding for OPEX. In such cases a phased development should be considered. The WSA should also pursue the generation of income from the current water services through tariff structures and improved bad debt collection.

### **13 CONCLUSIONS AND RECOMMENDATIONS**

#### Conclusions

The responsibility for water services in the Sisonke District Municipality has, from the 1<sup>st</sup> July 2003, become the overall responsibility of the Sisonke WSA.



While the urban areas enjoy a high standard of water services it needs to be noted that much of the infrastructure in the urban areas is old (in excess of 30 yrs) and is in need of refurbishment and upgrading to accommodate housing development and to ensure continued economic growth in these centres. Water services to rural areas require expansion to accommodate communities that are currently outside the service foot prints of existing supply areas.

The cost of upgrading, expanding and maintaining water services is high . As a result the Municipality will, for the foreseeable future, remain dependant on the State for capital grants for development purposes and indigent grants for low income consumers.

### Recommendations

- The WSA will need to develop a capital roll out programme which results in operational costs which fit within the current revenue generating ability of the District Municipality.
- Considerations that should be taken into account by the District in order to reduce operational costs and address deficits include:
  - extension of the proposed capital roll out programme;
  - adjustment of tariffs;
  - water demand management;
  - introduction of cost recovery in rural areas;
  - improve bad debt recovery;
  - raising grant funding to avoid the municipality having to meet loan repayments;
  - introduction of a bulk distribution as a means of minimising operational costs and securing reliable potable water for the majority of consumers in the Sisonke District.