



WATER CONSERVATION & WATER DEMAND MANAGEMENT STRATEGY

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1. GOAL

The goal of this strategy is to reduce non-revenue water losses and increase revenue water in all water supply systems of Uthukela District Municipality

2. LEGAL FRAMEWORK

The legal documents used in the compilation of this strategy document are as follows:-

- National Water Act No. 36 of 1998
- Water Services Act No.108 of 1997
- Regulations Relating to Compulsory National Standards and Measures to Conserve Water
- National Water Conservation and Water Demand Management Strategy,2004

3. BACKGROUND

The Uthukela District Municipality recognized the need to focus on the reduction of Non-Revenue Water Losses as part of its overall Water Conservation and Demand Management strategy as well as its contribution towards the objectives of the National Water Conservation and Demand Management (WC/WDM) initiatives currently underway throughout the country in support of the protection of a scarce water supply resource.

During 2010/11 financial AB Projects Consultants conducted water balance for all water supply systems in Uthukela district and determined that non-revenue water loss is estimated at 60%. This means that only 40% of the District Municipality's water is revenue water. The 60% non- revenue water is made up of real water loss and apparent water loss.

The Water Services Act requires municipalities that have been given Water Services Provider status such as Uthukela District Municipality to provide measures to promote water conservation and demand management which should be included in the Water Conservation and Water Demand Management (WC/WDM) strategy.

In his 2010 State of the Nation Address, His Excellency JG Zuma, President of the Republic of South Africa, stated, 'We are not a water rich country. Yet we still lose a lot of water through leaking pipes and inadequate infrastructure. We will be putting in place measures to reduce our water loss by half by 2014'.

Although the target for reducing water losses has been set by the President, activities at our municipal level to reach this goal have been limited due to the lack of proper planning and not realising the consequences and potential benefits of WC/WDM.

4. DEFINITION TERMS

Some of the more fundamental definitions used in this strategy document have been included below for ease of reference and understanding:

- Leakage (volume): that part of unaccounted-for water that escapes or leaks from a water system over a specified period.
- Loss: the volume of water that flows through a given section of a pipe during a specified time interval and that is not consumed or used
- Unaccounted-for Water (Volume) is the difference between the measured volume of water put into the supply and distribution system and the total volume of water measured to authorised consumers whose fixed property address appears on the official list of the WSA.

- Water Balance: the difference between the measured volume of potable water put into a water distribution system and the total volume of potable water measured at any intermediate point in the water distribution system. Effectively, a statement setting out the amount of water flowing in and water flowing out on an area-by-area basis.
- System Input Volume is the volume of water input to a distribution system.
- Authorised Consumption is the volume of metered and/or unmetered water taken by registered consumers from the water supplier or others who are authorised to do so, for domestic, commercial and industrial purposes (authorised consumption includes items such as fire - fighting and training, flushing of mains and sewers, street cleaning, watering of municipal gardens, public fountains and water used in building construction. These may be billed or unbilled, metered or unmetered according to local practice).
- Water Losses = System Input Volume – Authorised Consumption
- Water losses can be considered as a total volume of water lost in the whole system, or for partial systems such as bulk or reticulation. In each case the components of the calculation would be adjusted accordingly. Water Losses consist of Real and Apparent losses, and are effectively identical to Unaccounted-for Water.
- Real Losses are physical water losses from the distribution system, up to the point of the consumer premises. The volume lost through all types of leaks, bursts and overflow depends on frequencies, flow rates and average durations of individual leaks.
- Apparent Losses consist of unauthorised consumption (theft or illegal use) and all types of inaccuracies associated with bulk and consumer metering. For example, under-registration of bulk meters and over-registration of consumer meters leads to under-estimation of losses.
- Conversely, over-registration of bulk meters and under-registration of consumer meters leads to over-estimation of real losses.
- Unauthorised Consumption is generally associated with the misuse of fire hydrants and fire service connections, and illegal connections.
- Non-Revenue Water (NRW) is the difference between the System Input Volume and Billed Authorised Consumption.

5. OBJECTIVES

The main objectives of this Water Conservation and Demand Management Strategy are as follows:-

- To inculcate a culture of water conservation to the consumers.
- To reduce non-revenue water losses to below 40% during 2016/2017 financial year.
- To reduce non-revenue water to below 30% during 2019/2020 financial year
- To increase revenue water.
- To identify and register indigent consumers and provide them with free basic water supply.
- To identify business consumers that do not pay for water and make them pay for water supplied.
- To identify households that can afford to pay for water but do not pay for water and make them pay water supplied to them.
- To measure water balance in order to quantify water supply input volume, revenue water and separate non – revenue water into real water losses and apparent water losses.
- To ultimately reduce real water loss to below 20% over five years.

6. INTERVENTIONS

The strategic interventions for this strategic document are categorised as follows:-

- TECHNICAL INTERVENTION
- SOCIAL INTERVENTION
- ECONOMIC INTERVENTION
- REGULATIVE INTERVENTION

6.1 TECHNICAL INTERVENTION

6.1.1 Separation of pipeline infrastructure into zones and physical repair of leaking infrastructure

- Separation of water reticulation supply systems into zones.
 - Pressure management through servicing and installation of pressure reduction
 - Procuring remote loggers and PRV controllers to monitor flows and pressures.
 - Installation of prepaid meters to all domestic consumers, preferably smart meters.
 - Implementation of Leak Detection and Repair Program
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- Encouragement of all consumers to repair leaks at their homes.

6.2 SOCIAL INTERVENTIONS

As part of the broader empowerment plan for all stakeholders in the Uthukela district, the sharing of knowledge, information and skills will form a significant component of this public awareness initiative to address the wasteful use of water and make consumers understand the benefits of water conservation. Through the empowerment approach, the community will start to accept ownership and responsibility for their water use and manage the demand at a household level and address problems such as leaks in the yard, cisterns etc. In line with the principles of water demand management specifically sustainability of water resources and the enhancement of human dignity, the following objectives are intrinsic to the water awareness initiative:

- Creating an informed public regarding water conservation
- Establishing and reinforcing a partnership and soliciting communication between the community and the municipality
- Promoting the municipality and its activities in the community
- Promoting and enforcing water wise behaviour
- Empowering the public with basic knowledge and skills related to WC/WDM
- Encouraging ownership and responsibility for positive progress through identification of existing assets and skills in the community

The end goal of these objectives is ultimately to move towards improved service delivery through the participation and communication between all water service role players in Uthukela District Municipality. Further it is to increase the sustainability of the water that is currently available.

- Regular water conservation road shows to be conducted within the district.
- Preparation of educational material for all categories of water users, domestic, commercial and industrial and dissemination of water conservation information to relevant consumers.
- Schools awareness programme and competitions to be conducted.
- Community awareness programme at various social, religious, ward committees, war rooms and sports and recreation events.

The media is a powerful tool and will play a vital role in reaching the masses with the message of water conservation and will be extensively involved in engaging the different role players and sectors and involving them in dialogue regarding Water Demand Management, conservation and service delivery. Ukhozi radio station and the local community radio station will be used for this purpose which will target both young and old in imparting water conservation information. Monthly newspaper articles in local newspaper publications such as the Ladysmith Herald, Times and Eyethu of Ladysmith etc on the various water conservation issues would also go a long way in spreading the word. It is anticipated that the articles will be linked to relevant and topical monthly themes, the work done by the schools and the competition aspects will create enthusiasm. The initiative will make use of visual materials to cover the following topical issues:

- Irrigation
- Efficient use of water in the home
- Basic maintenance of household fittings
- Vandalism

The visual material will be available in these languages English and Zulu to cater for the diverse population present in the area. In addition to the pamphlets, other municipal brochures will be used to get the message across to a wider audience. It is anticipated that the following deliverables will form part of the end result:

- Pamphlets and posters: efficient home use of water, garden irrigation, fixing leaks in the home, vandalism, the importance of water and sanitation
- Bill board will be used subject to sponsorships from companies.
- Workshop presentations (monthly theme) for schools and community
- Informative Billing through the use of appropriate technology such as Geo-Reality and Geo- Water

6.2.1 Schools Awareness programme

During this programme, the schools will be intensively engaged in order to begin changing perceptions around water conservation at an early age. The CLO's will liaise with the schools in their area. The educators will be the first to be introduced to the basic concepts of water demand management and conservation. A schools competition is also a great way to encourage active participation from the learners and will be held during the course of the awareness programme. Students will be asked to monitor their bills over a three month period and reduce the water use to see who can achieve the greatest water reduction for that period. Certificates and prizes will be awarded to the schools and individuals. Practical workshops will also be held for the high school learners specifically for fixing basic leaks in the home.

6.2.2 Community Awareness Programme

The community awareness will to a large extent rely on the visibility of the community liaison officers and public participation officers. Ward committee members and Operation Sukuma Sakhe cadres will be requested to impart water conservation campaign messages to consumers during their door to door visits to households. During the implementation of the initial stages of water conservation awareness intervention, ward committee members will be thoroughly workshopped regarding water conservation. They will further be required to provide information regarding the general functioning of their different areas in terms of Leadership structures, the problems related to water and sanitation services and will be involved in designing the strategies for water conservation to be implemented in their respective communities. Churches, youth groups and other recognised structures will be engaged on the promotion of water conservation in their areas.

6.2.3 Water Wise Gardening

Water wise gardening will be promoted through the CLO's and promotional material. Use of existing educational material on tips to save water will be promoted by sending it in the monthly bills of consumers.

Operation Sukuma Sakhe structures will be used to impart water wise messages to consumers, especially in tandem with one home one garden project.

6.3 ECONOMIC INTERVENTION

6.3.1 Tariff Policy and Structure review

It is important that a tariff model is used to determine the tariff structure of water and sanitation services. The tariff model will assist the municipality to charge the acceptable charges for water and sanitation services to the consumers. The tariff will be reviewed annually.

6.3.2 Existing Debt: Amnesty for Defaulters

Interest and penalties will be considered for wavering subject to customers agreeing to settle outstanding debt through a soft payment plan. The amnesty plan will be prepared in detail and then approved by the Council. It will be implemented for a fixed period after the public participation process is completed and there is sufficient notices placed informing all customers of their options to settle outstanding debt. A flat rate will be determined for consumers that do not have meters fitted to their water supply pipelines.

6.3.3 Free Basic Services Policy

The free basic services policy will be applied so that only qualified consumers receive free basic water and sanitation services as provided for in the Free Basic Services Policy. Other consumers have to pay for water and sanitation services provided to them by the municipality.

6.4 LEGISLATIVE INTERVENTION

6.4.1. Water Services By-laws

The existing water services bylaws will be reviewed with a view of updating it and make it to support water conservation and demand management strategy.

- Illegal connections will be dealt with as an unauthorised connections and be subjected to legal proceedings as provided for in the Water Services By-laws.
- Spot fines will be issued for tampering with water supply infrastructure and as well sanitation reticulation infrastructure.

7. CRITICAL SUCCESS FACTORS

In order to ensure the success of this water conservation programme and to meet the proposed targets contained in this strategy document, there are a number of critical success factors which need to be addressed. These were identified as being:

- Recognition of Water Conservation/Water Demand Management and NRW reduction as a major focus area of the Water Service Provider and Water Service Authority by all Client Departments, including and especially the Finance Department.
- Recognition of the need to have sufficient motivated internal human resources available to be focused on ensuring the implementation, sustaining, monitoring and evaluation of NRW reduction interventions.
- Embracing the principles and objectives of Water Conservation/Water Demand Management.
- Securing the required funding over the next five financial years (Capital Cost for refurbishment and Maintenance). Support from the National Department of Water and Sanitation as well as COGTA will be required.
- Implementing accepted best practice in all aspects of NRW reduction, including data/information management.
- Not falling into the trap of treating the NRW reduction interventions proposed in this strategy as a once-off capital investment – any intervention has to be sustained and the ongoing operations and maintenance must be budgeted for annually and carried out accordingly.
- Focus must be on high impact interventions.
- Budget for this financial year (2015/2016) is R26 000 000.00(R25 500 000.00 MWIG and R500 000.00 UTM).

8. MONITORING AND EVALUATION

Monitoring of the implementation of the strategy will be done monthly and quarterly and the evaluation of the impact of the strategy will be done after 12 months and after 5 years.

9. REVIEW

The strategy will be reviewed annually