

Water Demand Management

Overview

The Water Demand Management Subdivision (WDM) impacts on all water and sanitation services which are needed to transform the **Mangaung** Local Municipality's water services into a world class water services provider which is customer friendly, efficient and sustainable. The implementation of WC/WDM will meet a lot of the requirements to make MLM into an efficient and effective water services provider.

The Subdivision focuses on reduction of water wastages or inefficient water use within the municipality and the promotion of water conservation and water demand management within the municipality. Through WC/WDM, the environment can be protected by limiting the water abstracted from rivers and also reducing the pollution discharged through the wastewater system and reducing the pollution from contaminating the water supply.

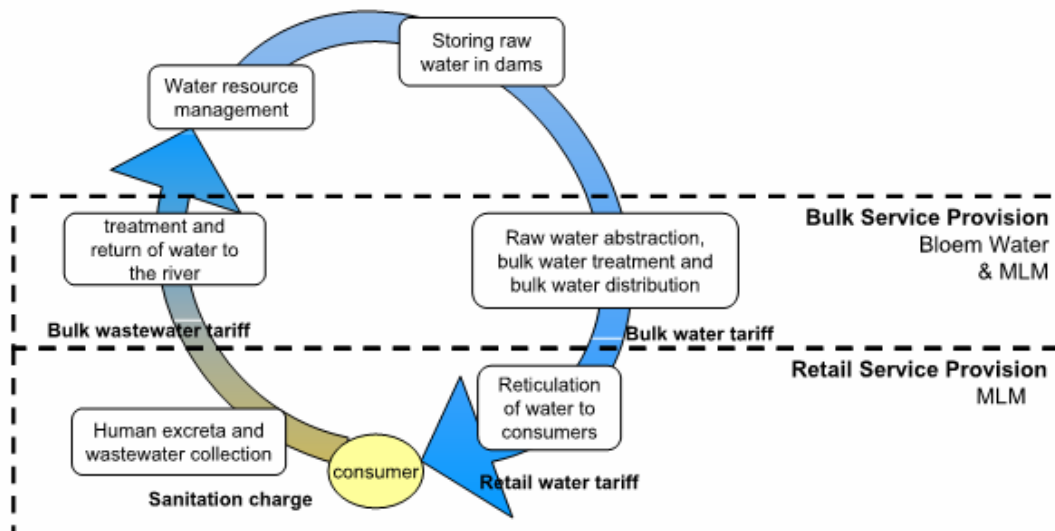


Figure 1: Water and Sanitation Service Provision within MLM.

WC/WDM contributes significantly to ensuring the financial viability of water service delivery in MLM in the following ways:

- 🔧 Reducing the direct operating costs by reducing non-revenue demand.
- 🔧 Reducing the operating cost of revenue demand.
- 🔧 Increasing income from consumers through more equitable tariffs.

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- Increasing income by capacitating non-paying consumers to pay for water.
- Postponing capital infrastructure requirements.

The estimated financial benefit of implementing WC/WDM over the next five years is estimated at approximately R450 million in savings alone.

The WDM team will assist in alleviating the current problems of the wastewater system. The wastewater treatment in MLM is currently under severe stress due to lack of capacity. There are number of treatment plants where hydraulic loading is the key constraint and WC/WDM can play a significant role in alleviating problems and reducing costs.

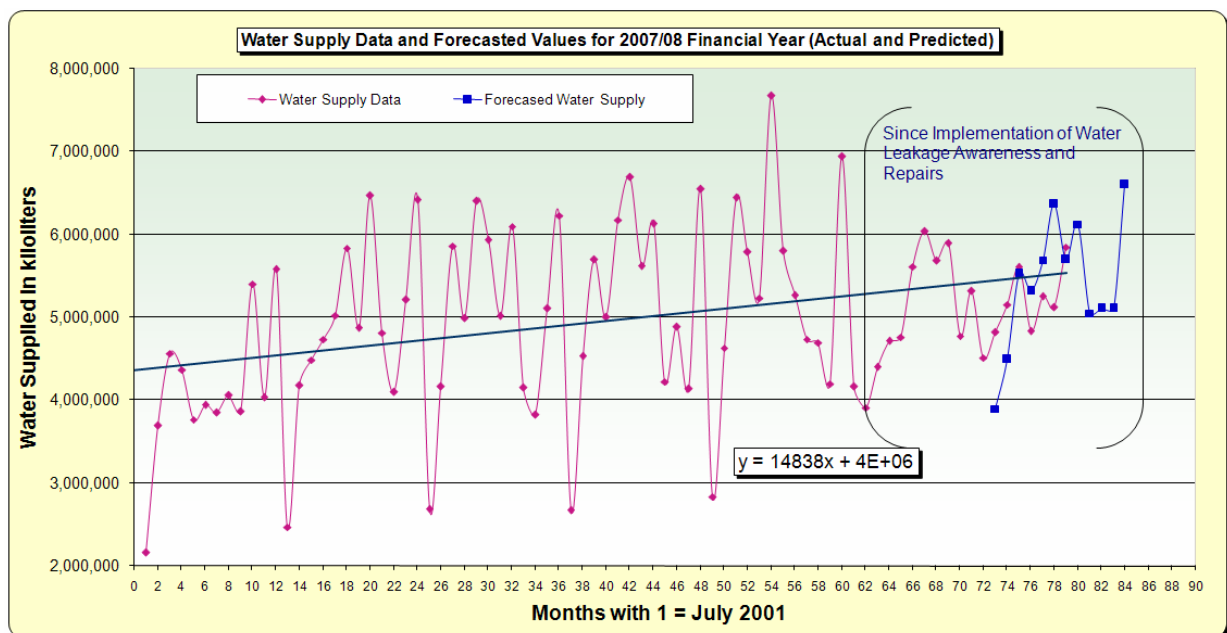


Figure 2: Water Supply Data for Mangaung Local Municipality since July 2001

Consequences of not implementing WC/WDM

The consequences of not implementing the entire WC/WDM strategy can be significant and will depend on the extent of implementation. Some of the important consequences are as follows:

- Premature development of the next water augmentation scheme at significant cost.
- The aim of achieving sustainable and affordable service delivery to low-income areas could be threatened.

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✚ The existing loss of income to the Council will continue to increase. Current levels of loss of income could be as high as R90 million per annum (49% of total demand at an average selling price of R6.43/kl or R38.57 of FBW (6 kiloliters/month).

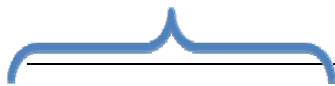
✚ The existing direct cost of distribution losses will continue to increase. Current financial losses due to distribution losses are estimated as R 15 million per annum.

The availability of water resources and adequate bulk water and wastewater infrastructure to meet the growing water demand in the **Mangaung** Local Municipality is a limiting constraint to the social upliftment and economic prosperity of the city. As early as 2001, the **Mangaung** Local Municipality committed itself to at least 10% saving on the historical demand growth of 4% per annum. A detailed study conducted in 2003, the Water Loss Management Strategy Master Plan indicated that various Water Demand Management and Water Conservation (WC/WDM) initiatives are the most feasible water augmentation options to meet the growing water demand for the municipality.

In 2003, the **Mangaung** Local Municipality developed a WC/WDM strategy based on the outcome of the Water Loss Management Strategy Master Plan study. A number of WC/WDM projects were implemented and some of the projects such as the Mangaung Pressure management project were very successful and received wide recognition in 2003 and on-site retrofitting in Freedom Square, Wards 1,2,16 and 17 in 2005 and later Rocklands and Phahameng in 2006.

The purpose of the WC/WDM strategy is to ensure the long-term balance between available water resources and water demand, to postpone the need for expensive capital infrastructure projects for as long as it is economically viable and to minimise water wastage.

- ✚ Network Losses (Unavoidable Infrastructural leakages like mains leaks, service connection leaks and reservoir overflows)
- ✚ Unaccounted System Losses (Faulty meters, illegal connections, unmetered connections, wrong meter readings, etc.)
- ✚ Wastage Downstream meters (Losses on private properties)
- ✚ Unwillingness to pay



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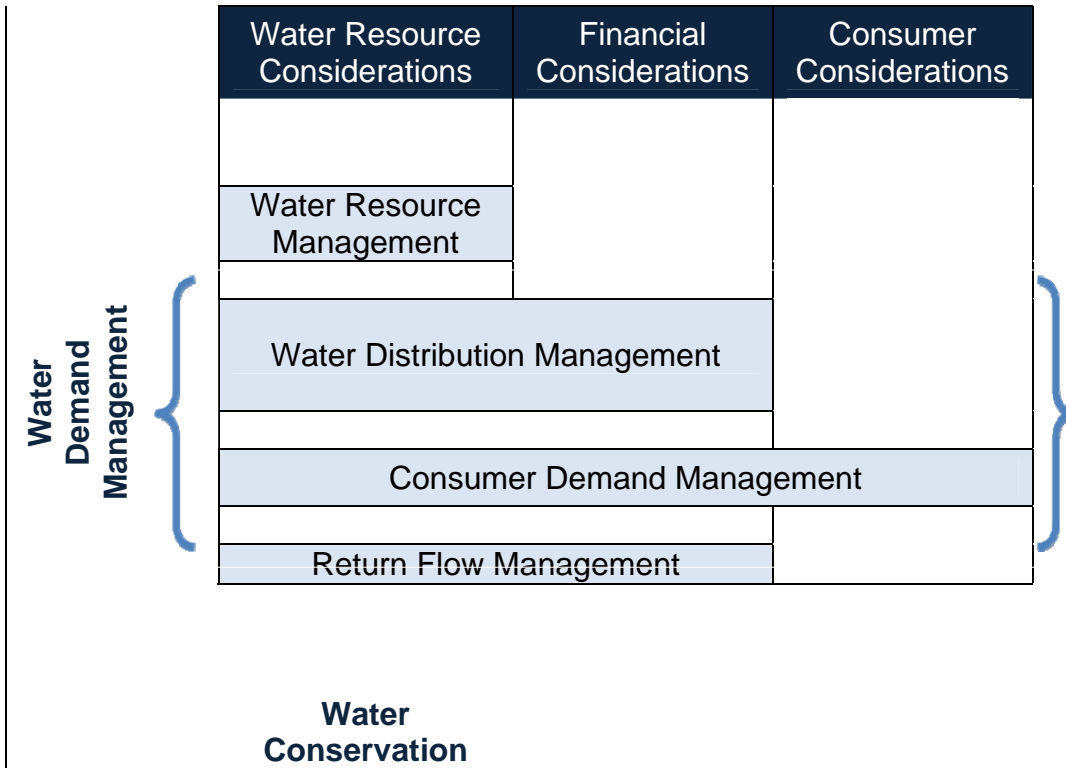


Figure 3: Comparison between Water Conservation and Water Demand Management

Special projects

- 🌿 Water Leakage Awareness and Repairs 2005
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- 🌿 National Water Conservation and Water Demand Management Pilot 2007/08
- 🌿 National Water Conservation and Water Deman Management 2008/09



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Figure 4: Award Won by MLM in the Domestic Sector for WC/WDM in 2007.

Services to the public

- ✚ Assessment of the existing area of supply from bulk conveyance to reservoir supply zones;
- ✚ System infrastructure improvements to be carried out on a reservoir supply zone basis to create water supply districts and/or sub-districts;
- ✚ The preparation of an IWA benchmark water balance carried out on both a supply system and reservoir supply zone basis;
- ✚ The implementation for a bulk/reservoir outlet/district metering strategy and the determination of baseline flow measurements;
- ✚ Real losses reduction strategy per reservoir supply zone;
- ✚ Apparent losses reduction strategy per reservoir supply zone;
- ✚ Actions necessary to reduce levels of non-payment;
- ✚ Development of water Network Performance Improvement Objectives to reduce network losses;
- ✚ Development of Key Performance Indicators and Measurement Baselines to measure improvements in the reduction of network losses;
- ✚ Preparation of a generic 3-5 year implementation programme/roll-out plan for interventions - activities carried out across planning, intervention and monitoring phases of WC/WDM initiative.

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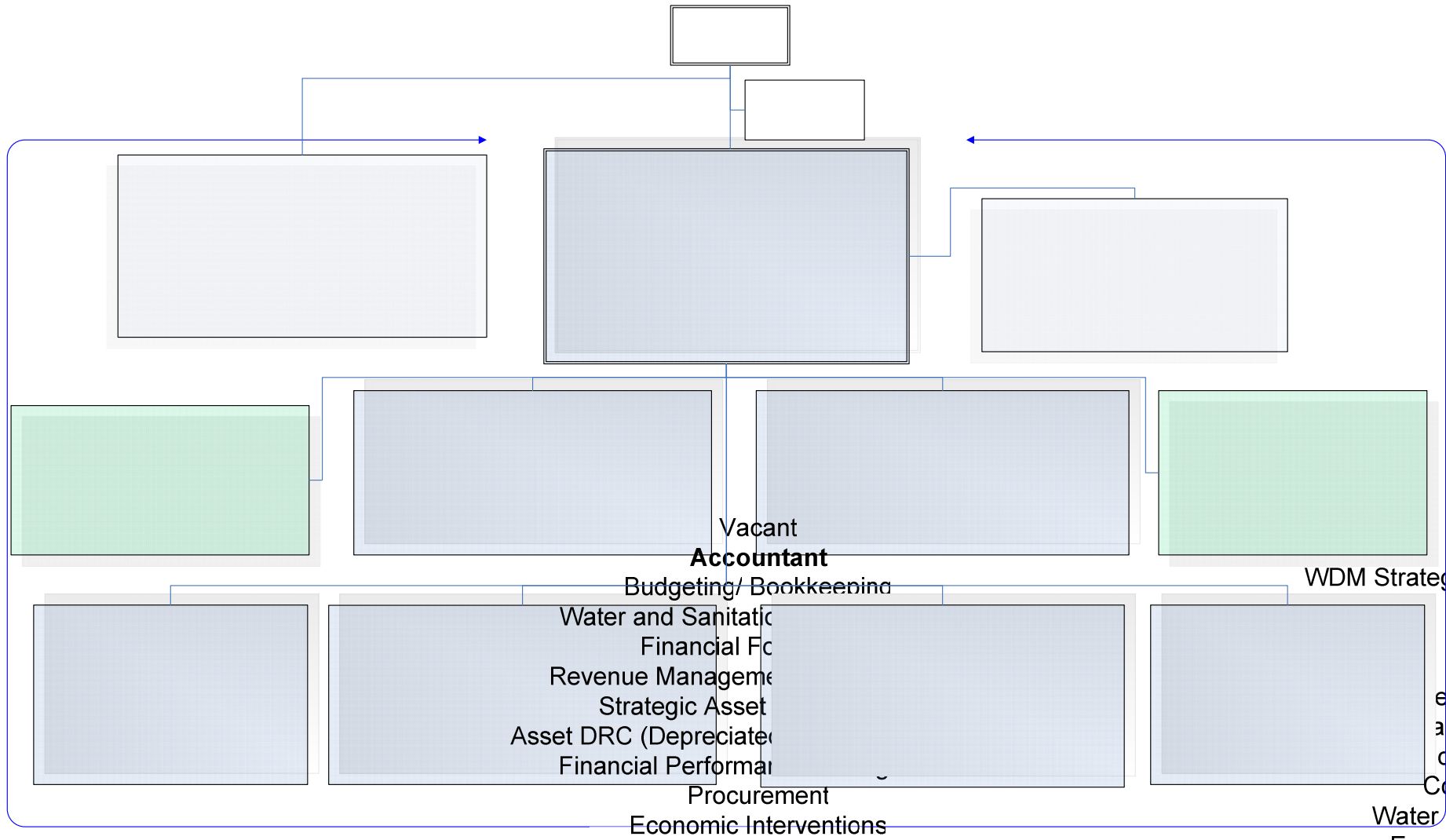
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