

# THEME 5: DETECTION AND PREVENTION OF WATER LEAKS, INCLUDING NO DROP

## MINISTERIAL INTERACTIVE SESSION WITH WATER & SANITATION SECTOR

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WATER IS LIFE - SANITATION IS DIGNITY



**water & sanitation**

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA



## **THEME 5: DETECTION AND PREVENTION OF WATER LEAKS, INCLUDING NO DROP**

### **1. Background**

- The Department of Water and Sanitation has a vision of a South Africa that has embedded and actively applied a culture of a Water Conservation and Water Demand Management based on the understanding that the country is ranked amongst the top thirty (30) driest countries in the world. It is imperative that this scarce resource is utilised efficiently by all water sector stakeholders to ensure that everyone has access to sufficient water as guaranteed in our Constitution.
- The municipal sector utilizes over 29% (domestic and industrial use supplied by Municipalities) of South Africa's water resources. The study on State of Non-Revenue Water in South Africa by Water Research Commission (2010) estimated the Non-Revenue Water at 36.8% and 25.4 % of this is considered to be losses in through physical leakages (real losses).
- The Department, as the custodian of all the water resources, is concerned about the risk regarding the country's water security and the knowledge that large volumes of water (and revenue) are lost at municipal level and seeks to sought ways to collaborate and work in partnership with stakeholders to "close the water gap by 2030".
- The Department and the Water Resource Group launched a partnership with private partners at the World Economic Forum in 2011, called Strategic Water Partners Network-SA (SWPN-SA). One of the first projects conceptualised under this partnership, was the No Drop Programme. The No Drop Programme is an incentive based regulatory programme to assess and improve the water use efficiency, water losses and non-revenue water
- Underlying the "No Drop" philosophy, is the requirement for measurement and, more importantly, revealing performance with regard to the achievement of water use targets, water losses, non-revenue water and water use efficiency, which Water Services Authorities (WSA) are obligated to comply with through legislation. The No Drop assessment enables the Regulator to measure the performance of WSAs, and subsequently to reward (or penalise) the institution upon evidence of their excellence (or failures) according to the minimum standards or requirements that have been defined.

### **2. Objectives of the No Drop Certification Programme**

- To encourage and acknowledge continuous improvement and performance excellence in water use efficiency, water loss and non-revenue Water management in South Africa
  - Improve service delivery and water security, whilst reducing water losses and non revenue water
  - Provides a guideline to water services institutions on what is required to achieve WCWDM objectives.
3. For an improved water use efficiency and water loss management, the domestic/municipal water use sector does consider a few building blocks for Real/Physical loss interventions, which includes:

I) **Active leakage control (ALC) and passive leakage control** ensures that all leaks and bursts are located, reported and repaired as soon as possible. ALC involves sending maintenance teams to actively identify leaks, while passive leakage control relies on the public to report leaks through call centres. Continuous monitoring enables the WSI to timeously identify and repair leaks. Active and passive leakage control programmes result in:

- Reduced real losses
- Improved Municipal image and lead by example
- Call centres being the single point of contact; available 24/7; improved commitment to service; increased service/quality of service
- Positive public image,
- The number of complaints logged is an indication of performance. If no calls are received, does it indicate that all leaks have been fixed or that people have lost confidence and interest in the call centre

II) **Pressure Management.** The purpose of pressure management is to reduce

the pressures in a distribution system to between 25 and 50 m, or lower, with the installation of pressure reducing valves (PRV). Depending on the topography and layout of the zone, advanced pressure control could be considered. Advanced pressure control is complex and should only be considered if the WSI has the necessary technical expertise.

Pressure management is a very effective measure to quickly reduce water losses and should be the focal point in the initial stages of the project to gain quick wins. Benefits include, reduced number of burst and background leakage, prolong the design life of the infrastructure and improved level of service and reduced disruption in supply.

III) **Mains Replacement.** All pipelines have a limited design life and should be replaced on an on-going and regular basis to prevent backlogs. The WSI

would be expected to implement a water mains replacement or repair programme as part of their asset renewal and replacement programme. The replacement priority should be based on sound engineering principles and case specific historical data.

Care must be taken to distinguish between mains leaks and connection leaks. Often the pipe is still in a good condition and it is only necessary to replace the connections.

IV) **Speed and Quality of Repairs.** Regulation R509 states that a water services institution must repair any major, visible or reported leak in its water services system within 48 hours of becoming aware thereof. The quantity (volume) of water loss from a leak depends on the time it takes to be detected, located and repaired. Mains bursts are often visible and disruptive, with the result that they are fixed quickly, whereas connection leaks tend to be invisible and could take months before they are detected, located and fixed.