



# Water and Sanitation Challenge

## Challenge Statement

*Water security is defined here as the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability - UNESCO-IHP, 2012a*



The City of Tshwane Water and Sanitation Department seeks innovative solutions to assist it with addressing challenges related to the provision of water and sanitation services to various communities in the City.

## Background

The Water and Sanitation Department is responsible for the bulk water supply, sanitation services and the infrastructure planning and development in the city. The Bulk Water and Waste Water Services Division is responsible for the provision of bulk water to the city and water treatment plants which ensure that raw sewage is treated before the water is released back into the rivers. The Planning and Development Division is responsible for the infrastructure planning and capital projects (development) in the department.

The Department currently experiences several critical challenges affecting water security for the City of Tshwane and seeks innovative solutions to assist the City of Tshwane or its residents contribute positive to the city's water security.

High water usage in many Tshwane households has resulted in Rand Water putting strict measures in place to ensure that the allowable existing water abstraction limit from the Vaal dam is not exceeded. As recent as 18 Jan 2018, Rand Water was forced to apply water restrictions to municipalities to remain within abstraction limits. This has resulted in numerous knock-on effects such as City of Tshwane currently cannot approve new developments in some regions due to limited water availability.



It has been noted that one of the major challenges towards the implementation of water conservation and demand management mostly at a local level generally is lack of social awareness and understanding that exists among both the consumers and water service institutions and authorities; in this case the government, water managers and end user - IRENE A. OCHIENG (2016). This presents a requirement for solutions that can assist consumers and managers of residential buildings to reduce water consumption and become self-reliant for water needs. Consumer awareness of the need and measures available for water conservation is a further area of intervention solutions are required for.

City of Tshwane bulk water infrastructure is aging with pipes and plant older than 30 years a common occurrence. While projects to replace old infrastructure continue to execute, inadequate budget hampers pace of replacement projects. The impact of old infrastructure is a high occurrence of water leaks. While better than some of its metro peers, the City of Tshwane loses up to 28% of water consumption to leaks. The city seeks solutions that would reduce water leaks in aging bulk infrastructure or reduce the amount of water lost when a leak occurs before repairs are effected.

The provision of water and sanitation services in the country is a national obligation. Section 27(1) (b) (Chapter 2 of Bill of Rights) of the Constitution provides that “everyone has the right to have access to sufficient food and water”. This obligation is extended in section 27 (2), which stipulate that “the state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of these rights”. This creates another challenge, the provision of water, electricity and sanitation in the informal settlements. The provision of water and sanitation to informal settlements is particularly challenging as these settlements do not have planned development patterns or infrastructure to support delivery of these services. The City seeks solutions to improve or accelerate the provision of water and sanitation services to informal settlements.



### Key attributes of preferred solutions

- Financially achievable – solutions must be capable of self-sustaining or within reasonable cost parameters when compared to current options available to the City.
- Community enhancing – solutions that provide positive impact to communities currently affected by these challenges or provide opportunities for communities to effect their own solutions are preferred.
- Job creating – solutions that create employment opportunities with emphasis on designated groups are preferred.
- Environmentally neutral – solutions must not negatively affect the environment within the city.
- Limited scope – challenge areas discussed are broad and preference will be given to solutions that are focused and can be implemented within a limited and manageable scope.
- Process or product – the solution can be a product or process that will contribute to addressing any of the challenges listed above.
- Collaborative – solutions that enable other stakeholders such as communities or private entities to contribute to addressing the challenges above are preferred.