

## Proactive cost savings



In reducing water loss during the 2009 financial year, Ethekwini Water & Sanitation:

- conducted leak-detection surveys on 13 286 km of pipes;
- repaired 11 104 leaks;
- designed 207 new pressure-reducing valve (PRV) zones;
- installed 98 PRV failure-detection devices;
- commissioned 30 advanced PRV controllers; and
- replaced 562 km of AC pipes.

In the current financial year to June 2010, Ethekwini Water & Sanitation will:

- install 350 PRVs;
- commission a total of 100 advanced pressure-control devices;
- conduct leak detection and repair activities on 18 000 km of reticulation;
- replace 700 km of AC pipelines; and
- upgrade all custody-transfer meters that are used to purchase water in bulk.

The long-term goals for the programme:

- ensure standpipes, water dispensers and electronic water-bailiff units are metered;
- reduce average zone pressure in Ethekwini from 550 kPa to 400 kPa;
- continue replacing consumer meters older than 20 years (about 21 000 m/year);
- meter all water consumption in informal areas and reduce wastage; and
- regularise all illegal connections (estimated at 34 000).

when people connect into the system illegally and insufficient budget allocated to maintenance in the past," says Shepherd. "But age is the big driver for us. The older something is, the faster it deteriorates. We try and maintain an asset in order to prevent leaks and delay the date of replacement of infrastructure. We have a strict monitoring system in place so we know how much water is sold, how much is going into an area and how much is leaking. That water balance is a guide to where we work."

Management is undertaken via four mechanisms:

1. Reducing pressure is the easiest and most immediate way of reducing leaks – less pressure; fewer leaks.
2. Active Leakage Control relies on Ethekwini Water & Sanitation to detect and fix leaks and on the public to report leaks. The intention is to conduct active leak detection in the entire Durban system one and a half times per year.
3. Fixing leaks immediately and well to avoid wasting water.
4. Replacing pipes as a last resort. The Asbestos-Cement Pipe Replacement Project has cost R1,9-billion to date and the new pipes are expected to provide at least 50 years of leak-free service to the municipality.

### R1-billion worth of funding

Neil Macleod, head of Ethekwini Water & Sanitation, says: "We have a capital budget for water and sanitation infrastructure of approximately R1-billion a year. Capital projects are prioritised according to cost benefit, addressing infrastructure backlogs, providing infrastructure for economic development and responding to adverse environmental impacts. Operating budgets are set to minimise tariff increases to affordable levels

while maintaining infrastructure and customer services to acceptable levels. Pressure management has proved to be one of the most effective interventions. By reducing the water pressure, we can reduce water loss by 70 Ml/day. Every R1-million invested in pressure management translates into a R3-million saving in water losses."

Simon Scruton, of the Ethekwini Water & Sanitation Non-Revenue Water Branch, says: "Fortunately, Ethekwini is a well-run municipality so, typically, budgets are made available for viable interventions. Water is highly prioritised because we make very good returns on what we spend. Our budget has ramped up almost exponentially over the past few years as we gain in strength and momentum. But the overriding issue is the amount of water available to Ethekwini. We rely on good rainfall and, if this doesn't happen for two years consecutively, we will go into water restrictions. The cost of new infrastructure is very expensive and this cost is, ultimately, passed on to the consumer. So operations and maintenance of existing infrastructure have a key impact on available bulk supply."

The growth in demand about five years ago came about unexpectedly due to unprecedented urbanisation, Shepherd adds. Growth that used to be 1,8% now stands at 4%.

Macleod says: "Although too early to confirm a trend, we are delighted to see the benefits and are encouraged that our work is reaping rewards. This is not a quick fix but, in 18 to 36 months, we should see the cumulative benefit of the work being done."

The municipality predicts that, through these planned interventions, bulk water purchased over the next five years should hold steady despite a 2% annual growth in actual consumption. ❖