

Sebokeng/Evaton Leakage Reduction Public Private Partnership: Phase 1 Advanced Pressure Control

LOCATION: Emfuleni, ±50 km south of Johannesburg, South Africa

PROJECT TITLE: Sebokeng/Evaton Leakage Reduction Public Private Partnership: Phase 1 : Advanced Pressure Control

CUSTOMER: Metsi-a-Lekoa, the Water Services Unit of the Emfuleni Local Municipality.

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STATUS: Ongoing **DURATION:** November 2004 to June 2010

OBJECTIVE: To reduce water leakage and levels of wastage in the water distribution system.

CHALLENGE: This is an area supporting ±500 000 residents that was in dire need of leakage reduction due to major water losses in the municipal system which in turn were causing major spillages of untreated sewage into local rivers.

DESCRIPTION

The combination of low income, coupled with high unemployment, has resulted in a general deterioration of the internal plumbing fittings in the Sebokeng/Evaton area over a period of many years causing high levels of internal plumbing leakage. The leakage at the start of the project was known to be extremely high as indicated by a Minimum Night Flow of ±2 800 m³/hr. This is one of the highest Minimum Night Flows recorded anywhere in the world (75% of the Average Daily Flow) for an area of this size.

It was estimated that the wastage in the area before the project was commissioned was in the order of 80% of the water supplied to the area which in turn resulted in an annual water bill of approximately R 150 million (\$20 million).

In 2004, the Municipality appointed WRP – a Miya Group Company – to design and commission what is understood to be one of the largest advanced pressure management installations in the world as the first phase of a long term strategy to reduce wastage in the area.

COMMERCIAL CONSIDERATIONS

The project involved no financial input from the Municipality and even the initial capital costs were borne in total by the Project Team. WRP is responsible for the operation and maintenance of the installation for a period of 5 years. Payment to the company, during this period, is based upon approximately 15% of savings with the remaining 85% returning directly to the Municipality in the form of reduced water purchases.



RESULTS

Benefits to the Municipality - Water, Wastewater and Energy Savings:

- The project saved almost 30 million m³ in water purchases during the first 36 months of operation which translates to a saving of more than R90 million (\$12 million).
- Sewer flows entering the treatment plant reduced from 2500 m³/h (July 2003) to 1800 m³/h (July 2005).
- The project provides annual energy savings in excess of 14 000 MWh, equivalent to reduced CO₂ emissions of 12 000 Tons per annum.

Expanding the Lifespan of the Network:

- The reduced pressures have also resulted in a significant reduction in the number of bursts experienced in the area.
- A portion of the savings was reinvested in new infrastructure and upgrades of old infrastructure which is the first major investment in new infrastructure for many years.

Health Implications:

- Continuous flow of water to the residents reduced the risks of typhoid and cholera.
- Reduction in internal plumbing leakage has improved the sanitary situation in and around many residential premises.

Benefits to the Community:

- Continuous water supply and reduced water bills.
- Creation of many local employment opportunities.

The project received many national awards for technical excellence