Progress report: City of Johannesburg

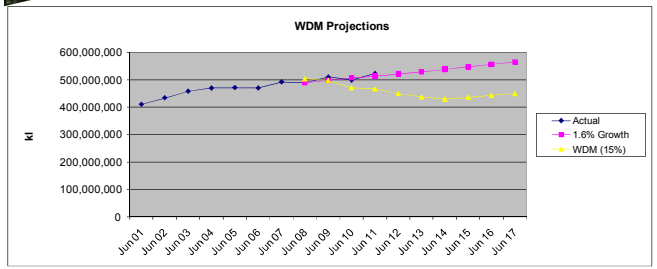
Water Conservation and Water Demand Management

Introduction

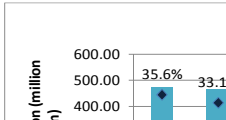
- There is growing realization that the water resources are under severe threat and a concerted effort needs to be made if resources are going to be preserved for the future.
- The City of Johannesburg recognizes water as key to winning the battle against poverty and that its scarcity could be a limiting factor to economic growth.
- DWA highlighted the critical need to reduce water demand in Gauteng Province in order to ensure that there is sufficient water available for future needs. (Project 15%)
- In response, the City has accelerated the WC/WDM strategy in support of 15% targets by June 2014. i.e. 110,000 Ml reduction in demand

WC/WDM Strategy

Demand Projections



Water balance



Target = 25.7%

Summary of Interventions

- Pressure Management
- Active Leakage Control
- Water Mains Replacement
- Soweto Infrastructure Upgrade
- Educational and awareness campaigns
- Effluent Reuse

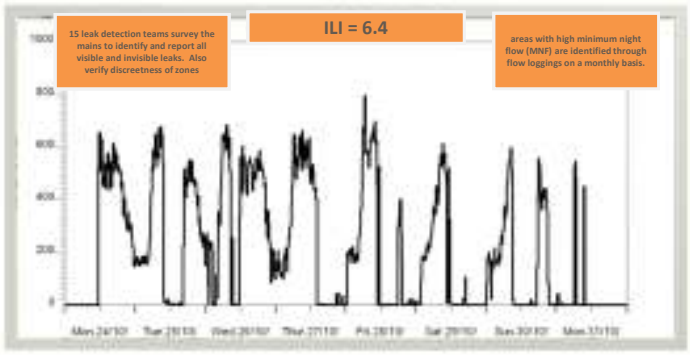
5

Pressure Management

- 491 Pressure Reducing Valves - fixed outlet
- 33 Advanced pressure installations (smart-controllers) are used to minimize fluctuations in pressure – flow and time modulated
- Areas with high static pressures (excess of 90m) identified through hydraulic modeling for future pressure reduction projects.
- Compiling a contract for the Maintenance of all PRV's to ensure complete functionality of all installations.

6

Leakage Management



1,668,298kl unreported/invisible leaks repaired this quarter

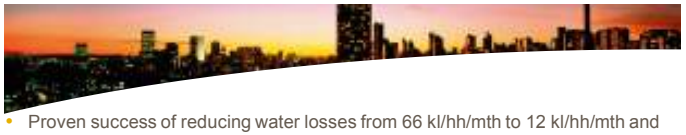
7

Water Mains Replacement

- 31suburbs were identified as priority:
  - Phase1: FY08/09, 8 suburbs done at R82.5M for 72km
  - Phase2: FY09/10,10 suburbs at R100M for 96km
  - Phase3: FY10/11,3 suburbs at R25m for >18km
- 42% of the originally identified suburbs have been completed with 75% reduction in bursts
- Burst frequency per km per suburb is used as criteria
- The effectiveness of this method is currently under review.

8

Soweto Infrastructure Upgrade

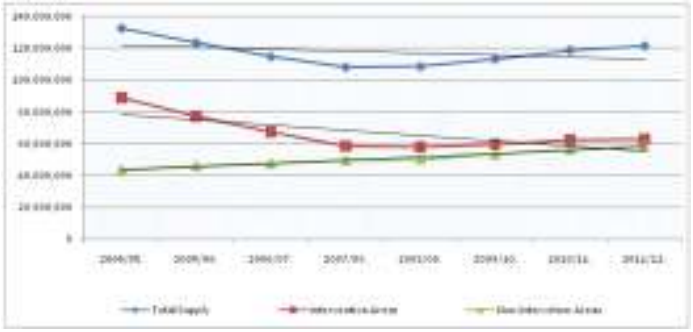


- Proven success of reducing water losses from 66 kl/hh/mth to 12 kl/hh/mth and significantly decreasing NRW.
- The 2-year suspension has impacted negatively on the achieved reduction in water loses due to most of the households **by-passing** the meters. Current consumption = 17kl/hh/mth
- The project resumed again in September 2010 – revisiting 98,807 properties:
  - Pre-intervention surveys
  - Retrofitting
  - Meter upgrades (to include AMR and trickle flow functions)
- Decommissioning of midblocks and installing secondary mains

9

Soweto supply

Potential of saving 65,000,000kl/annum



10

Education and Awareness Campaigns

- Medial campaigns including print, radio and TV media
- Development of promotional material such as broachers, leaflets
- Establish partnerships with corporate major water users
- Extend awareness campaigns in areas of high water losses and usage
- Design and implement innovative programmes to enhance behavior change

11

Cost Implications

INTERVENTION	2012/13 Budget allocated	2012/13 Required funding	2013/14 Required funding	Overall Potential savings
Mains Replacement	R27m	R360m	R360m	922,738
Soweto Infrastructure Upgrade	R153m	R91.5m	R91.5m	69,929,924
Leakage Management	R64.2m	R64.2m	R64.2m	3,741,452
Pressure Management	R0	R6.6m	R6.6m	5,672,932
Education and awareness campaign	R0	R79.6m	R79.6m	2,530,369
Total	**R244.2m**	**R601.8m**	**R601.8m**	**82,797,415 kℓ**

40% shortfall

12

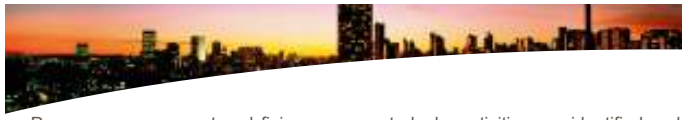
Indirectly measurable interventions

- Management meters – *new/replacement of bulk meters*
- Consumer metering – *all connections to distribution system*
- Meter reading, billing and cost recovery
- Water Audits – *major customers, schools and government buildings*

Potential savings = 27,203 Ml/annum

13

Conclusion



- Pressure management and fixing on-property leaks activities are identified and targeted as a cost-effective demand management intervention that can yield significant reductions in demand.
- Budget allocation is still a problem and the required funding for WDM is not available which will negatively impact on achieving Project 15% targets.
- Efforts to reduce deemed areas in Johannesburg should be priority incase water restrictions are enforced.
- All programmes should be linked with an education campaign and maintenance plan to ensure sustainability.

14

15