

IVRS Strategy Steering Committee

WCWDM Project 15% Progress Report

WCWDM Presentation by Rand Water
October 2011



1. Introduction

- Rand Water was established in 1904 with the purpose to supply water to the mines and the related businesses and urban communities
- In 1997 Rand Water was reconstituted in terms of the Water Services Act
- Rand Water is a state owned enterprise reporting to the Minister of Water Affairs



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2. Supply area overview

- Area of Supply
 - Rand Water supplies water to most of Gauteng and to parts of Mpumalanga, Free State and North West Province
 - Rand Water's Area of Service has over the years been changed to accommodate new areas in need of its services:
 - Western Highveld – 2003
 - Delmas - 2010
- Map of Area of Supply– see next slide





3. Status Quo

- 1. Total System Input in 2010/11 was 1 557 million kl per annum (= 4 266 Ml/day)
 - Rand Water abstraction from Vaal River System is 99% of Total System Input
 - 1% of Input is purchased from Magalies
 - 0% of Input is abstracted from Zuurbekom aquifers

2. Supply area overview (2)

- Key infrastructure components
 - Abstraction from the Vaal River System from
 - Vaal Dam
 - Barrage
 - 2 purification works with primary pump stations
 - 4 booster pump stations to lift water over the continental divide
 - 3 470 km pipelines
 - 70 reservoirs with 6 200 Ml storage
 - Average pipeline pressure 140m
 - 1790 Consumer meters

3. Status Quo (2)

- 2. Customer profile
 - Population served 13.5 million people
 - Municipal supply 85% of system input
 - Raw water supply 6%
 - Mines supply 5%
 - Direct supply 1%

3. Status quo (3)

➤ 3. Current IWA Standard water balance (NRW)

2010/2011 ACTUALS			
HIGH LEVEL		Volumes (MI/annum)	
IWA TERM	RW TERM	SYSTEM INPUT	SYSTEM OUTPUT
SYSTEM INPUT	RW SYSTEM INPUT	1,557,025	
REVENUE WATER	RW REVENUE WATER		1,494,696
NON-REVENUE WATER	RW NRW (4.0%)		62,329

• See Graph 1.1 on next slide



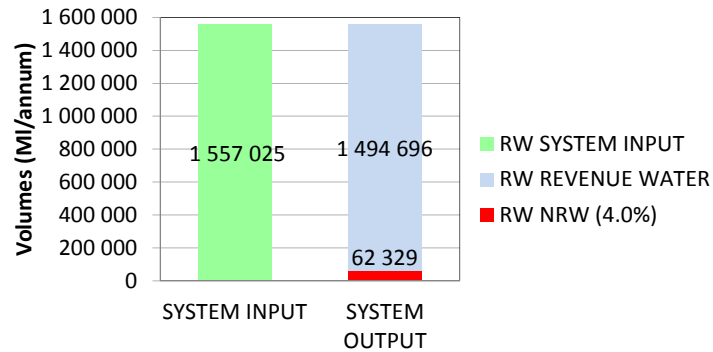
3. Status quo (4)

➤ 4. Demand projection (Total consumption)

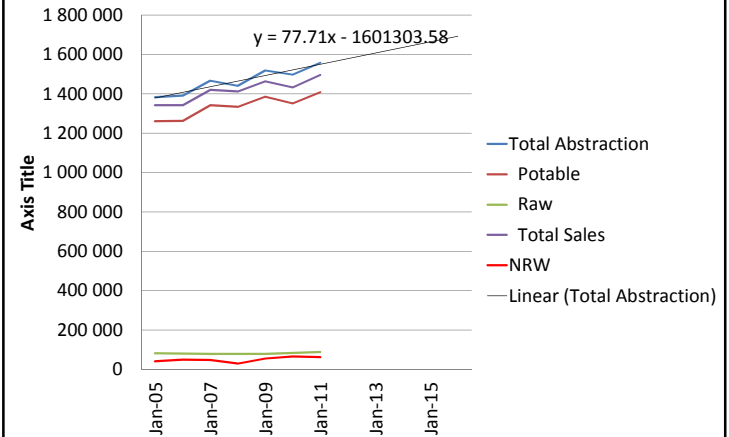
	Projected 2011 (MI/a)	Annual Growth (MI/a)	% Linear Growth (%/annum)
Total Abstraction	1,549,287	28,379	1.83%
Potable Sales	1,405,214	23,695	1.69%
Raw Sales	82,883	800	0.97%
Total Sales	1,488,096	24,495	1.65%
NRW	61,190	3,884	6.35%



GRAPH 1.1. RAND WATER IWA WATER BALANCE MODEL 2010/2011 ACTUALS HIGH LEVEL



RAND WATER DEMAND PROJECTIONS



3. Status quo (5)

- 5. Comments on growth, trends, targets, etc
 - Growth of Total Abstraction is higher than provided for by DWA (1.4% pa)
 - No observable effect of WDC/WDM
 - Growth of Rand Water's NRW is higher than other components



4. WCWDM Action plan summary

- Risks and mitigation measures
 - The demand is already exceeding the yield
 - The risk of high and growing demands lies in the increasing vulnerability of the system to cope in times of drought
 - The yield of the VRS system will remain nearly constant over the next 10 years until the new dam has been built
 - This increasing demand and constant yield will cause the assurance of supply to be less than the agreed upon probability
 - This will lead to restrictions to be imposed on all demand
 - The most effective measure to ensure reduced demand will be to increase sales tariffs at all stages (raw, bulk and retail). This will have the effect of reducing the demand of paying customers
 - Unfortunately certain aspects of the demand will not easily respond to calls for reduction in demand, i.e. leaks and wasteful demand



4. WCWDM Action plan summary

- Rand Water's NRW of 4% is reasonable compared to international benchmarks. However, the growth in NRW is high and needs to be addressed
- Rand Water is currently investigating its internal NRW to verify its correctness and to determine the causes, nature, extent and remedies
- The study should be completed by 30 June 2012 and implementation of interventions will commence on 1 July 2012
- Rand Water will incorporate the budget requirements for these interventions into its annual infrastructure development plan and capital budgets



4. WCWDM Action plan summary (2)

- Contingency plans if water restrictions are imposed
 - The best counter action against the drought will be to reduce unnecessary demand, such as leaks and wasteful consumption, even before the drought happens
 - In addition, raw, bulk and retail water tariffs will have to be imposed when the water shortage occurs
 - The other counter measure would be for Rand Water to increase its peak purification, pumping and distribution capacity to keep up with the additional increase in peak demand caused by dry and hot weather which is normally experienced during a drought



Growth per Rand Water User Groups

- The following slide shows the growth in volume vs % growth of major consumer groups since 2005
- Some consumers have a high volume and % growth – they are of most concern from a water scarcity point of view
- Other consumers have grown less and some have even reduced
- Only Metsimaholo (Sasolburg) have reduced consumption as required by Project 15% (5 YEARS @ 1.4% MINUS 15% = -1.6% pa after 5 years

