

# VAAL RIVER SYSTEM RECONCILIATION STRATEGY

## STRATEGY STEERING COMMITTEE

### Gauteng Municipalities Water Conservation and Water Demand Management Progress Report

19 October 2011



**water affairs**

Department:  
Water Affairs  
REPUBLIC OF SOUTH AFRICA

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## Introduction

The Large Bulk Water Supply Reconciliation Strategy Study for the Vaal River System Study (DWAf, 2006) has the purpose to develop a strategy for meeting the growing water requirements of the industrial and urban sectors that are served by the Integrated Vaal River System (IVRS). Water conservation and water demand management (WCWDM) have a major potential impact on the future water requirements which were assessed and documented in the report on the **Potential Savings through Water Conservation / Water Demand Management (WC/WDM) in the Upper and Middle Vaal Water Management Areas** (DWAf, 2006b).

The purpose of this report is to provide feedback on the progress made by Gauteng municipalities on the Water Conservation and Water Demand Management (WC/WDM) in order to meet the 15% reduction in urban water demand by 2013.

## Strategic Progress

### Meetings

The following workshops and meetings have been held:

Name	Date	Purpose	Outcomes
Collaboration meetings with municipalities	Various	Review business plans and target setting.	Progress meetings held with : CoJ, EMM, CoT, EMF, Mogale City and Randfontein
Collaboration meetings with National Treasury	Various	Unlock funding in municipalities to implement WDM Understand and provide input on SCOA (Standard Chart of Account) for obtaining information	Better understanding of funding Support from NT to implement WDM.

### Milestones and outcomes

- All municipalities have a much better understanding of the targets, urgency, expected deliverables and feedback required. Implementation is still a concern.
- Support from NT to implement WDM.

### Data updates

The following major updates and changes have been made since the Vaal River WCWDM Potential Assessment completion report submitted in 2006.

- 2008 Refinement and update of projected savings, costs and unit reference values as part of the Vaal River Second Stage Reconciliation Strategy.
- 2009, Update of current water demand and NRW figures.
- 2009, Update of project budgets to 2009 baseline. Project costs inflated by CPIX plus 1%.
- 2009, Inclusion of remaining municipalities not included in the original study. Baseline based on Rand Water study completed for these municipalities in 2006.

- 2010, Update of current water demand and NRW figures.
- 2010, Update of water demand projections to 2009-10 base year incorporating water reduction to date.
- 2011, Update of NRW figures. Only the big four municipalities' have submitted actual data. The figures for the remaining municipalities are based on demand figures obtained from Rand Water.

## Municipal Progress

### Active programmes

Municipality	Key WC/WDM programmes																				
City of Johannesburg	<ul style="list-style-type: none"> <li>• Soweto upgrade project has restarted.</li> <li>• Key performance indicators <table border="1"> <thead> <tr> <th>Year</th> <th>2008/09</th> <th>2009/10</th> <th>2010/11</th> </tr> </thead> <tbody> <tr> <td>Input volume (million m<sup>3</sup>/annum)</td> <td>505.35</td> <td>502.96</td> <td>522.56</td> </tr> <tr> <td>NRW volume (million m<sup>3</sup>/annum)</td> <td>191.53</td> <td>192.28</td> <td>186.51</td> </tr> <tr> <td>% NRW</td> <td>37.9%</td> <td>38.2%</td> <td>36%</td> </tr> <tr> <td>Gross litres/capita/day</td> <td>359</td> <td>319</td> <td>328</td> </tr> </tbody> </table> </li> <li>• Total demand has decreased but losses have increased.</li> <li>• Expected to improve once Soweto Upgrade (former Operation Gcin'amanzi) resumes</li> </ul>	Year	2008/09	2009/10	2010/11	Input volume (million m <sup>3</sup> /annum)	505.35	502.96	522.56	NRW volume (million m <sup>3</sup> /annum)	191.53	192.28	186.51	% NRW	37.9%	38.2%	36%	Gross litres/capita/day	359	319	328
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City of Tshwane	<ul style="list-style-type: none"> <li>• Various interventions</li> <li>• Inclusion of Kungwini and Nokeng will influence figures.</li> <li>• Key performance indicators <table border="1"> <thead> <tr> <th>Year</th> <th>2008/09</th> <th>2009/10</th> <th>2010/11</th> </tr> </thead> <tbody> <tr> <td>Input volume (million m<sup>3</sup>/annum)</td> <td>274.45</td> <td>265.85</td> <td>271.21</td> </tr> <tr> <td>NRW volume (million m<sup>3</sup>/annum)</td> <td>78.27</td> <td>70.42</td> <td>70.17</td> </tr> <tr> <td>% NRW</td> <td>28.5%</td> <td>26.5%</td> <td>25.9%</td> </tr> <tr> <td>Gross litres/capita/day</td> <td>329</td> <td>294</td> <td>276</td> </tr> </tbody> </table> </li> <li>• Total demand has increased and losses have remained constant.</li> </ul>	Year	2008/09	2009/10	2010/11	Input volume (million m <sup>3</sup> /annum)	274.45	265.85	271.21	NRW volume (million m <sup>3</sup> /annum)	78.27	70.42	70.17	% NRW	28.5%	26.5%	25.9%	Gross litres/capita/day	329	294	276
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Ekurhuleni	<ul style="list-style-type: none"> <li>• Major consumer meter audit and retrofitting programme. This programme is also focusing on the top 500 bulk consumers</li> <li>• Key performance indicators <table border="1"> <thead> <tr> <th>Year</th> <th>2008/09</th> <th>2009/10</th> <th>2010/11</th> </tr> </thead> <tbody> <tr> <td>Input volume (million m<sup>3</sup>/annum)</td> <td>327.89</td> <td>319.75</td> <td>334.95</td> </tr> <tr> <td>NRW volume (million m<sup>3</sup>/annum)</td> <td>126.55</td> <td>123.46</td> <td>130.55</td> </tr> <tr> <td>% NRW</td> <td>38.6%</td> <td>38.6%</td> <td>39.0%</td> </tr> <tr> <td>Gross litres/capita/day</td> <td>302</td> <td>263</td> <td>300</td> </tr> </tbody> </table> </li> <li>• Total demand has increased but losses have remained the same.</li> </ul>	Year	2008/09	2009/10	2010/11	Input volume (million m <sup>3</sup> /annum)	327.89	319.75	334.95	NRW volume (million m <sup>3</sup> /annum)	126.55	123.46	130.55	% NRW	38.6%	38.6%	39.0%	Gross litres/capita/day	302	263	300
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Municipality	Key WC/WDM programmes				
Emfuleni	<ul style="list-style-type: none"> <li>Limited progress</li> <li>Key performance indicators</li> </ul>				
		<b>Year</b>	<b>2008/09</b>	<b>2009/10</b>	<b>2010/11</b>
		Input volume (million m <sup>3</sup> /annum)	79.32	79.56	82.02
		NRW volume (million m <sup>3</sup> /annum)	32.27	35.31	40.60
		% NRW	40.7%	44.4%	49.5%
		Gross litres/capita/day	285	256	286
	<ul style="list-style-type: none"> <li>Total demand has increased and losses have increased considerably.</li> </ul>				

The other smaller municipalities are also busy with various WCWDM programmes which include :

- Consumer metering and billing
- Customer awareness
- Training and capacity building

### Updated targets (2010 to 2015)

Figure 1 shows the revised target reduction in water demand versus the actual demand. The actual demand follows exactly the high population no WDM projection.

**In essence, a zero percentage growth in water demand is required over the next 5 years to avoid possible water restrictions.**

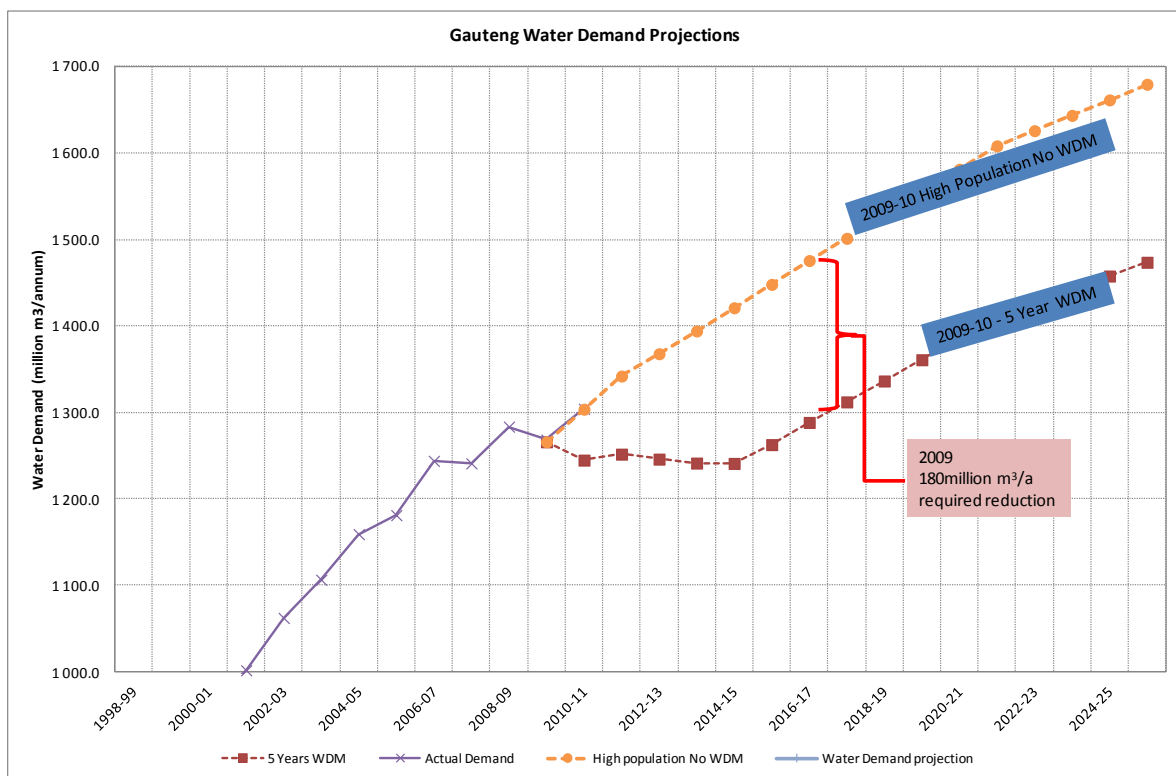


Figure 1: Projected annual reduction

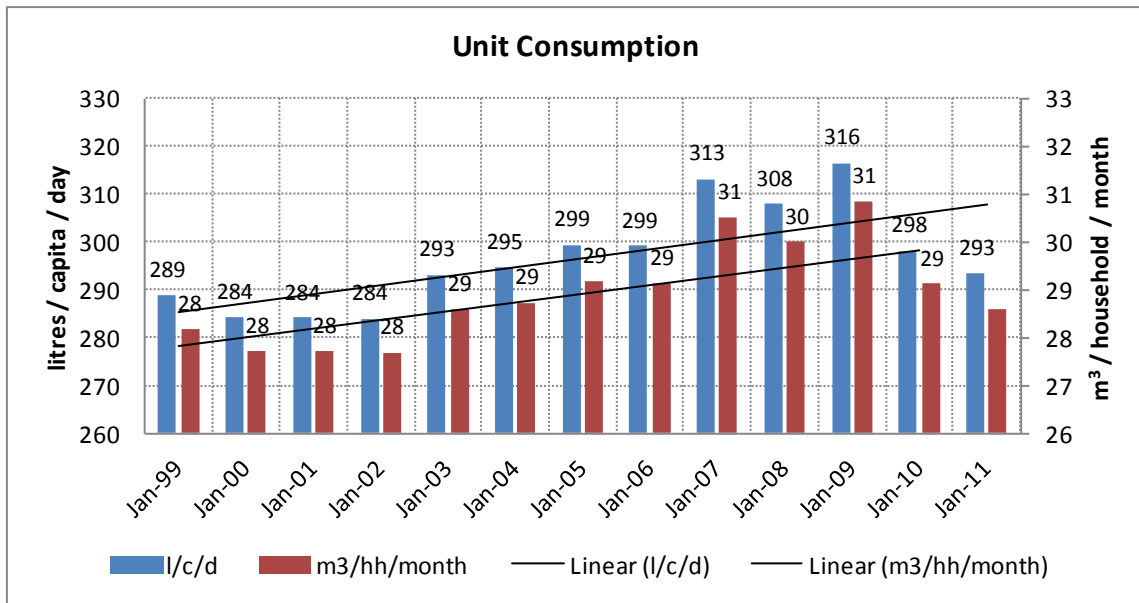


Figure 2: Average unit consumption for Gauteng municipalities

The unit consumption above is based on the total municipal water consumption divided by the total population and number of households as obtained from the DWA: National Information System. There is a reduction in the average litres/capita / day over the past year which is attributed to major population increase.

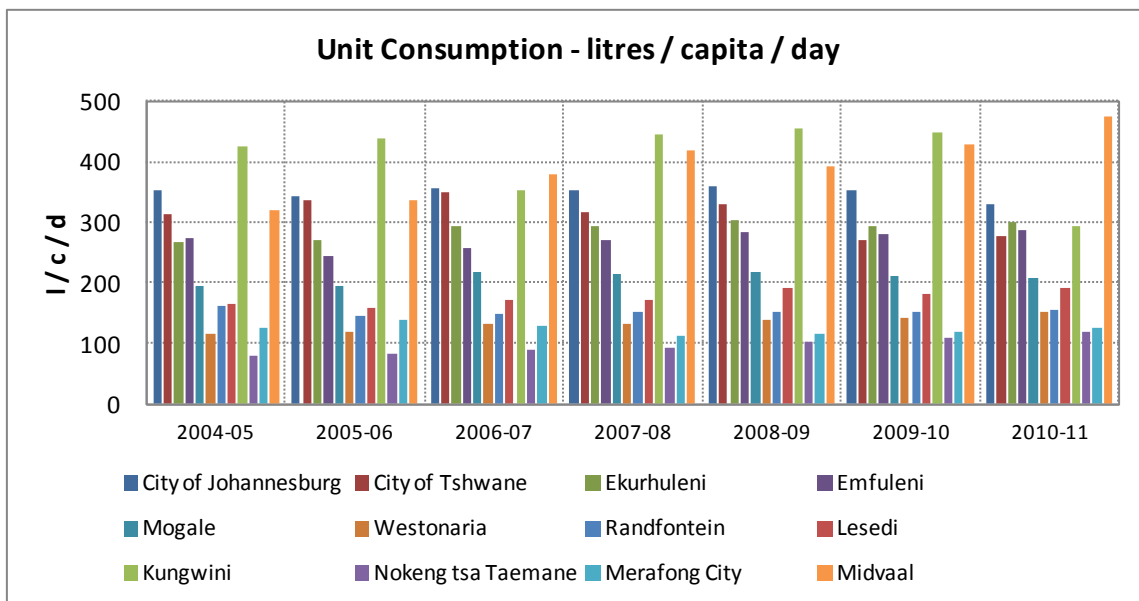


Figure 3: Litres / capita / day unit consumption per municipality

The average consumption in the four big municipalities is 297l/c/d whereas the average for the other municipalities is only 215l/c/d. Johannesburg has the highest average consumption of 328l/c/d for the metros although the municipality has very few wet industries. Ekurhuleni has the most wet industries of the three metros but the lowest average consumption of 300l/c/d. The average consumption for Kungwini is very high but their number still need verification and Midvaal is high due to the Heineken beer factory.

The non-revenue water remains high at 35.3% as shown in Figures 4 and 5.

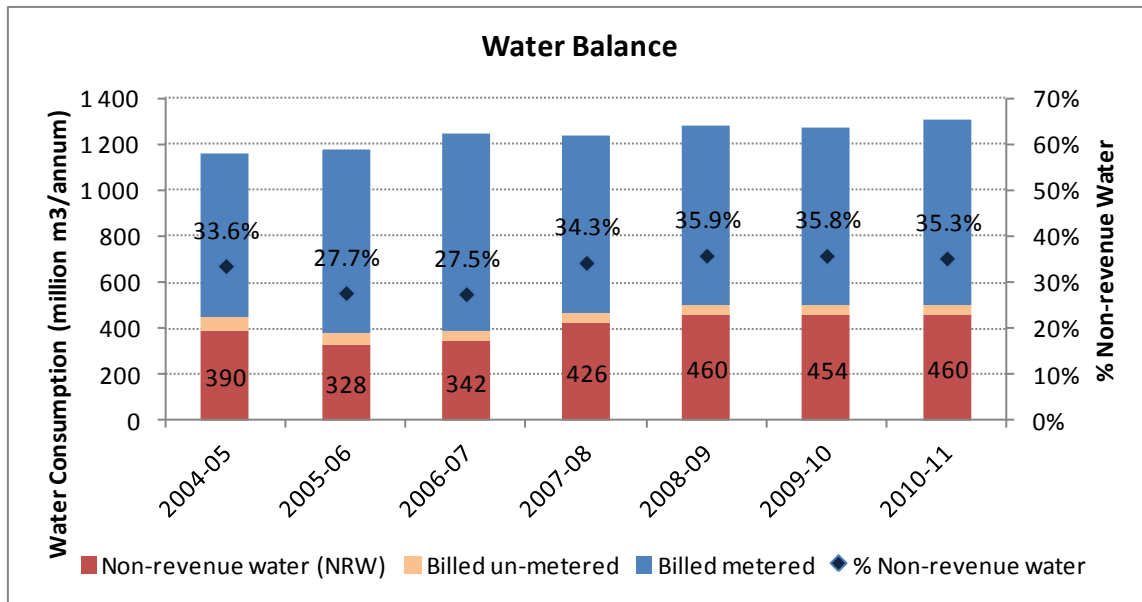


Figure 4: Gauteng Water Balance

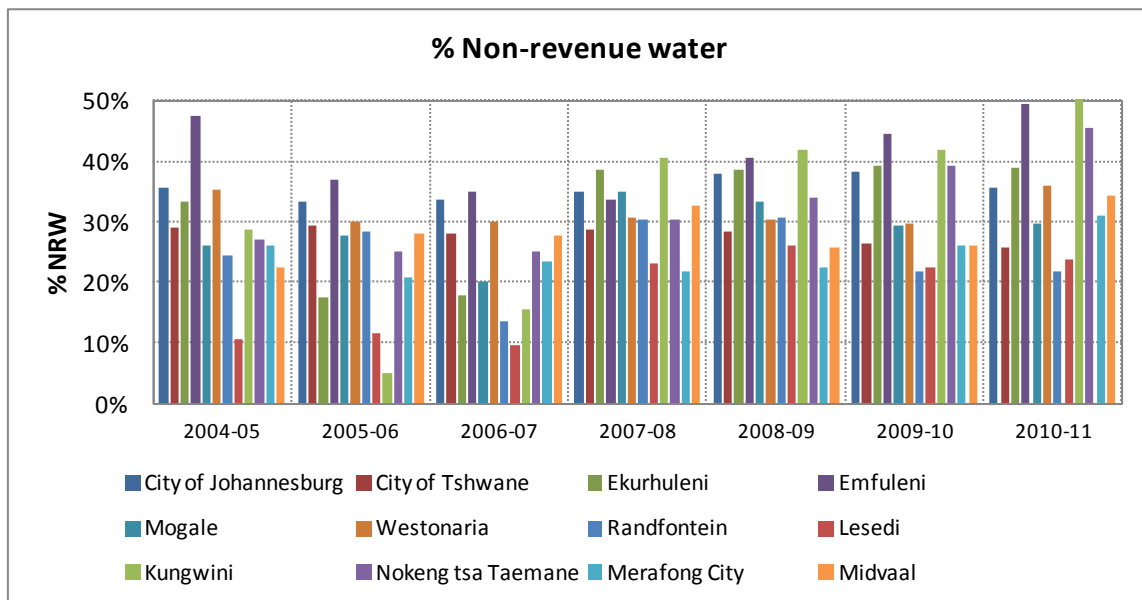


Figure 5: NRW per municipality

## Funding

- According to municipalities, funding remains the main key stumbling block for implementation

Possible funding sources

- Discussions are in place with National Treasury to unlock and prioritise funding.

## Conclusions

- The total water demand for the Gauteng municipalities has increased and follows the projected demand with no WCWDM interventions.
- The non-revenue water has remained constant.
- City of Tshwane is the only municipality that is on track with Project 15%.

## Planned actions and way forward

- Municipalities must increase their drive on the implementation of Project 15%
- Regular meetings with municipalities to monitor progress and performance – municipalities to report regularly
- Update progress on total consumption and reduction of non-revenue water.