

## Ugu District Municipality Water Conservation/Demand Management

### Update on Non-Revenue Water Reduction Programme: 2010/11 Financial Year

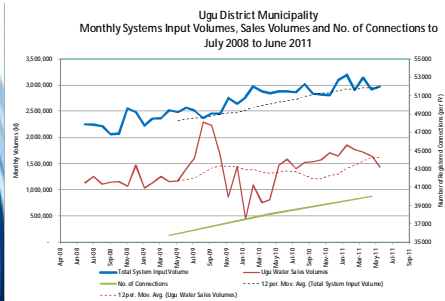
## 2010/11 Financial Year Overview

| Indicator                                     | Financial Year |         |         |         | Difference |
|---|----------------|---------|---------|---------|------------|
|   | 2007/08*       | 2008/09 | 2009/10 | 2010/11 |            |
| Total No of connections in the Municipality   | 38,990         | 38,990  | 42,867  | 44,970  | 2,103      |
| F46 NRW by Volume (%)                         | 36.9%          | 42.0%   | 35.7%   | 32.8%   | -3.0%      |
| WR1 Inefficiency of Use (%)                   | 26.3%          | 33.2%   | 22.9%   | 20.8%   | -2.1%      |
| Infrastructure Leakage Index (ILI)            | 5.1            | 6.1     | 3.85    | 3.81    | -0.04      |
| Total Water Losses per Connection (lconn/day) | 674            | 812     | 670     | 647     | -23        |
| Average SW (k/day)                            | 79,773         | 76,227  | 87,925  | 97,068  | 9,143      |
| Average Water Sales (k/day)                   | 50,569         | 44,200  | 56,495  | 65,254  | 8,759      |
| Real Loss Volume (k/day)                      | 21,014         | 25,332  | 20,109  | 20,203  | 94         |
| Real Loss Volume (lconn/day)                  | 539            | 650     | 469     | 449     | -20        |
| Unbilled Authorised (k/day)                   | 3,136          | 363     | 2,702   | 2,696   | -6         |
| Total Water Losses (k/day)                    | 26,268         | 31,665  | 28,727  | 29,118  | 391        |
| Non-Revenue Water Volume (k/day)              | 29,404         | 32,027  | 31,429  | 31,814  | 385        |
| Meter Inaccuracies (k/day)                    | 1,763          | 1,560   | 1,977   | 2,284   | 307        |
| Illegal Consumption (k/day)                   | 3,491          | 4,773   | 6,641   | 6,631   | -10        |

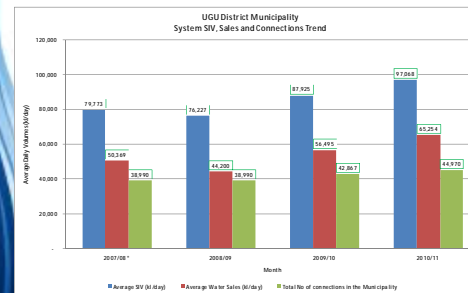
## 2010/11 Financial Year Key Statistics

- The number of registered connections increased by 2 103
- Average daily purchases from Umgeni Water/Ugu production of water increased by 9 143 kl
- Average daily sales to customers increased by 8 759 kl
- Non-Revenue Water volumes increased by an average of 385 kl/day
- Unbilled Authorised and Illegal Connection Consumption decreased by an average of 16 kl/day
- Non-Revenue Water improved by 3,0%
- Inefficiency of Use of Water Resources, which essentially measures the physical leak or real loss volume, improved by 2,1%
- Total Water Losses per Connection improved by 23 litres/connection/day

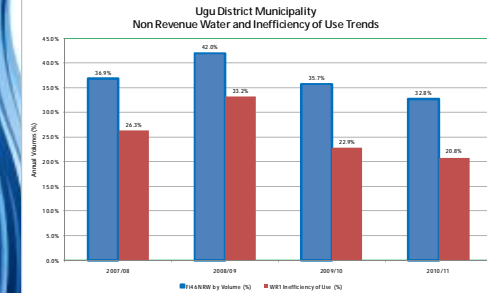
## Key Trends

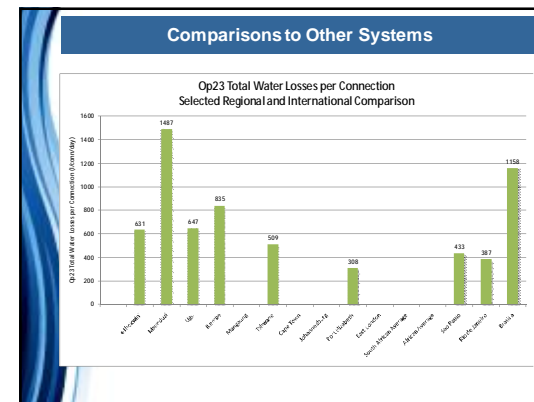
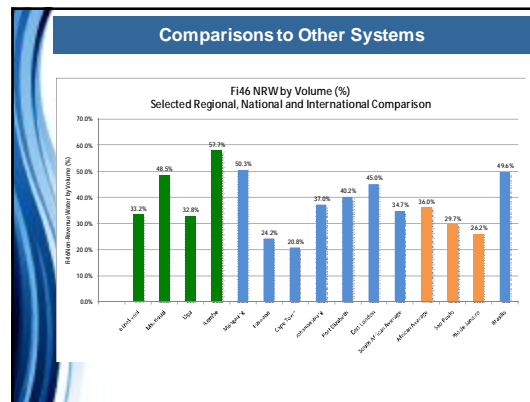
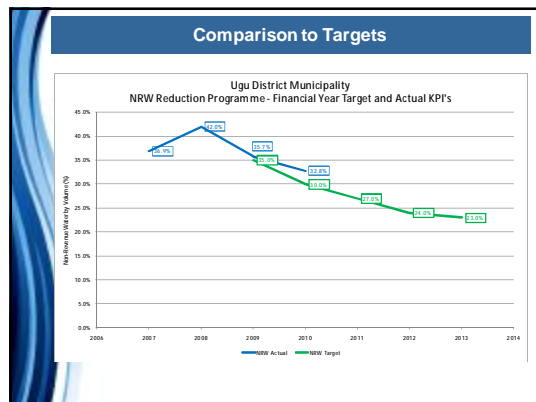


## Key Trends per Financial Year



## Key Trends per Financial Year





### Comparisons to Other Systems

| System/Town | Number of Registered Connections | ILI  | Real Losses per Connection (l/c/day) |
|-------------|----------------------------------|------|--------------------------------------|
| eThekweni   | 460 723                          | 6,8  | 448                                  |
| Msunduzi    | 55 167                           | 10,7 | 1 086                                |
| Ugu         | 44 970                           | 3,8  | 449                                  |
| iLembe      | 30 475                           | 5,7  | 672                                  |

- ### Approach to Reducing NRW Volumes
- Following 5-year Strategic Master Plan
  - Supply system based approach:
    - Umtamvuna (2008/09 and 2009/10)
    - Umzimkulu (2009/10, 2010/11 & 2011/12)
    - Mtswalume (2011/12)
    - Umzinto (2011/12 & 2012/13)
  - Primary intervention reduction of real losses (and therefore SIV)
  - Joint Venture approach between PSP and Ugu with shared responsibility
  - Shift in approach to ensure continued supply in some areas

- ### Financial Year Achievements: Real Losses
- 46 out of targeted 93 PRV's installed
  - 3 out of targeted 18 PRV controllers installed
  - 887km of reticulation and trunk mains surveyed for leaks
  - 326 leaks located and repaired

| Determination of Verified Savings    |                                  |
|--------------------------------------|----------------------------------|
| Intervention Description             | Verifiable Impact on NRW (M/day) |
| Real Loss Reduction:                 |                                  |
| Leak Detection and Repair            | -1.5                             |
| Pressure Reduction                   | -2.9                             |
| Advanced Pressure Management         | -0.2                             |
| <b>Sub-Total Real Loss Reduction</b> | <b>-4.6</b>                      |
| Billing Improvement:                 |                                  |
| New/Incomplete connections           | 7.1                              |
| Meter replacements                   | 1.3                              |
| Standpipe metering                   | 0                                |
| Regularizing illegal connections     | 0                                |
| <b>Sub-Total Billing Improvement</b> | <b>8.4</b>                       |

| Challenges  |
|---|
| <ul style="list-style-type: none"> <li>• Billing database and billing</li> <li>• Staff constraints</li> <li>• Procurement approach</li> <li>• Leak repair lag time</li> <li>• Availability of budget</li> </ul> |

| Success Stories  |
|--|
| <ul style="list-style-type: none"> <li>• Student mentorship program</li> <li>• Burst frequency reduction</li> <li>• Advanced controller installations</li> </ul> |

| 2011/12 Action Plan  |
|--|
| <ul style="list-style-type: none"> <li>• Complete all outstanding activities in the Umtamvuma system (pressure management, leak detection and free basic water monitoring)</li> <li>• Complete all outstanding activities in the Umtamvuma system (pressure management, leak detection and free basic water monitoring)</li> <li>• Move into the Mtwalume system as a matter of urgency (pressure management, leak detection and free basic water monitoring)</li> </ul> |

| 2011/12 Action Plan  |
|--|
| <ul style="list-style-type: none"> <li>• Move into the Umzinto system after commencing in the Mtwalume system (pressure management and free basic water monitoring)</li> <li>• Construct and commission leak detection training rig</li> <li>• Complete and extend all UDM staff training, support and mentorship</li> </ul> |