

### WATER CONSERVATION & WATER DEMAND MANAGEMENT IN KWAZULU-NATAL

3<sup>rd</sup> African Water Leakage Summit  
Cape Town, 23 August 2013

Department of Water Affairs  
KwaZulu-Natal Region

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*"Make every drop count: Eradicate water leaks, Conserve water for Socio-economic development"*



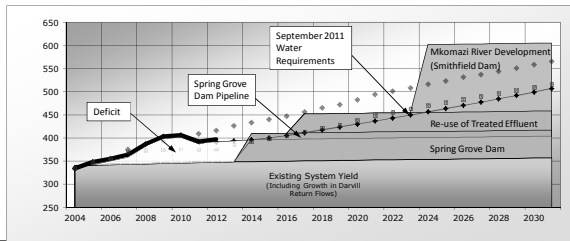
### National Problem Statement

The **Honourable President Jacob Zuma** statement during the State of the Nation address said -

**"We are not a water rich country. Yet we still lose a lot of water through leaking pipes and inadequate infrastructure. We will be putting in place measures to reduce our water loss by half by 2014".**



### Mgeni River System



### Objectives of WC/WDM

- To make **more effective and efficient** use of the existing and available water resources by all water use sectors in the area under consideration;
- To develop **realistic water saving targets** for the respective water use sectors and quantify the impact on current and future water requirements in the study area;
- To enable the Catchment Management Agency (CMA) and the Department of Water Affairs (DWA) to **"free-up"** additional **water**, which can be put to beneficial use in the public interest;

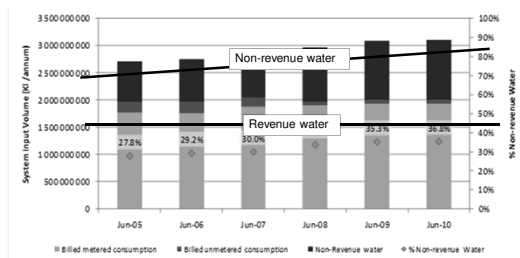


### Objectives...

- To conserve water and avoid or delay the implementation of further **expensive schemes** for transfers and storage which may not be necessary if water is used efficiently; and
- To provide necessary **information to support** the implementation of **compulsory licensing** and related water allocation reforms.

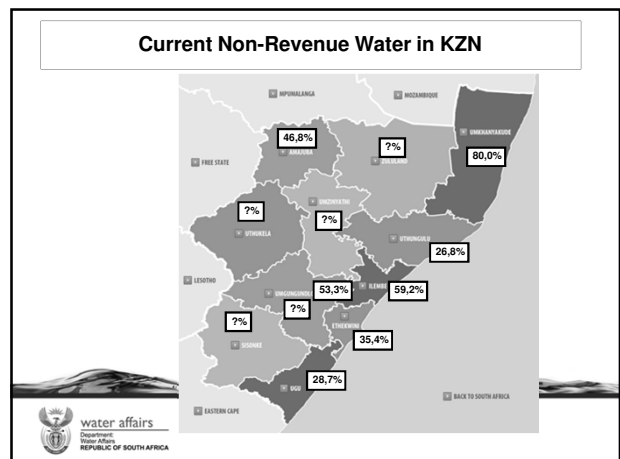
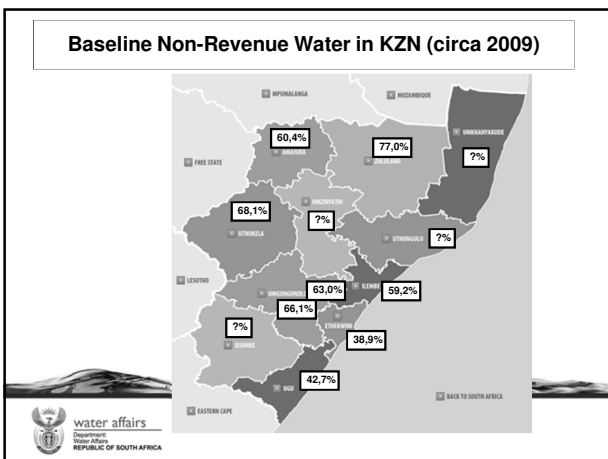
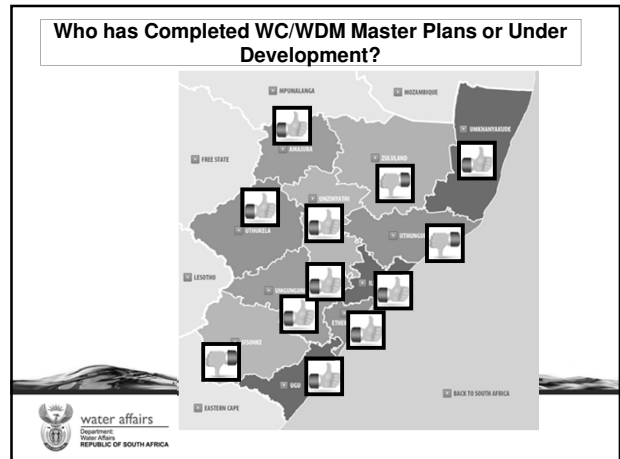
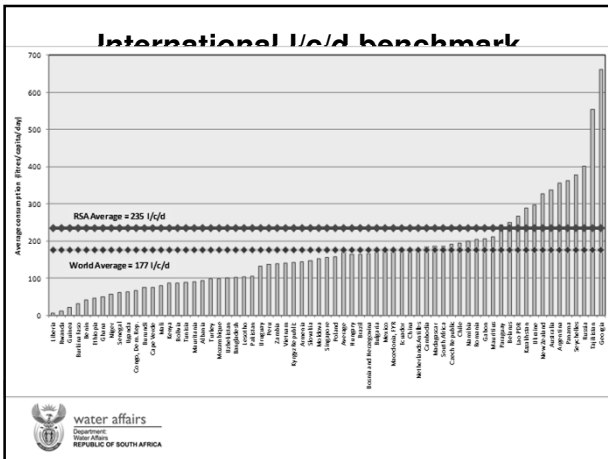
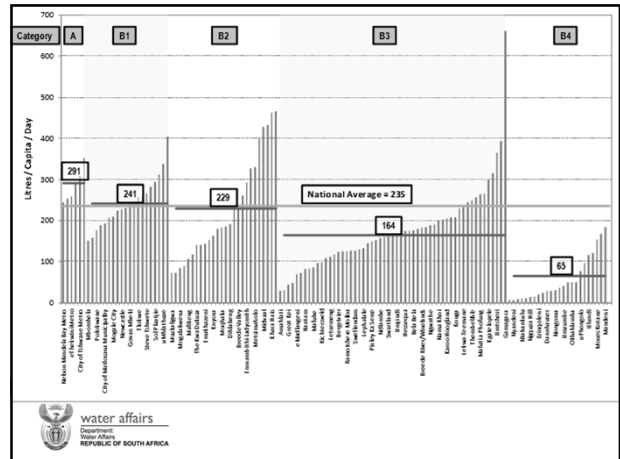
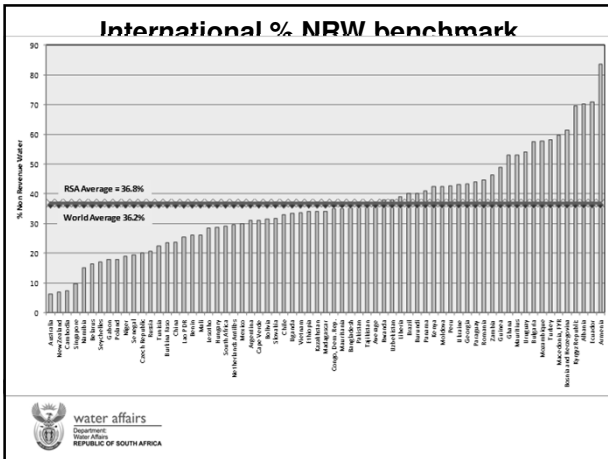


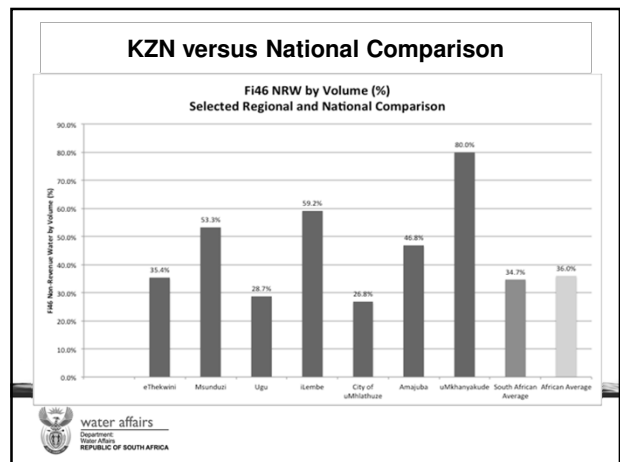
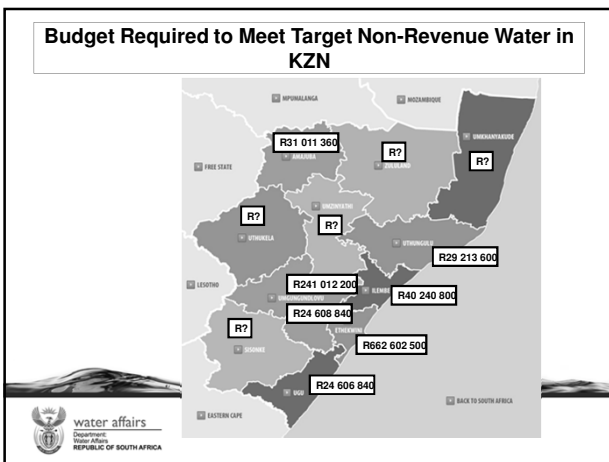
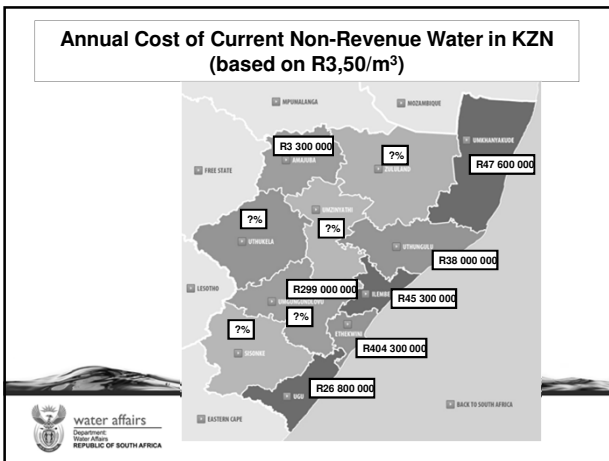
### National Non-revenue Water Assessment 2012



Based on 132 data sets of a potential 237 municipalities







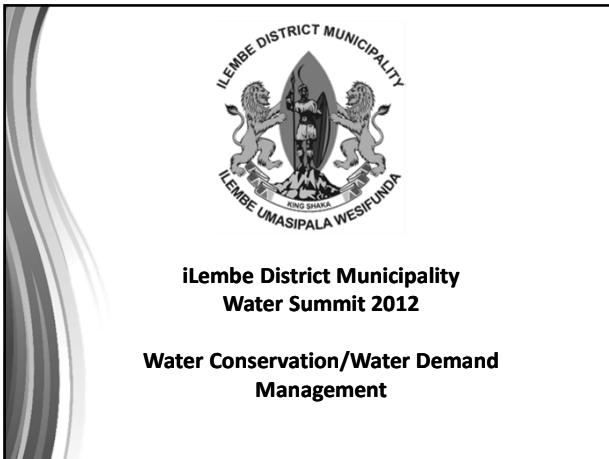
### What's happening in KZN?

- DWA WC/WDM and NRW Initiatives:
  - Provincial NRW Workshop – national
  - KZN Water Conservation Indaba and signing of KZN WC/WDM Pledge (Deputy Minister and Mayors)
  - Launched the Domestic Sector WC/WDM Forum
  - WSAs develop and implement 5-year NRW Reduction Strategic Plan
  - Progressive implementation of Regulations related to reporting of Water Balances

Funding: ACIP, MWIG, MIG and RBIG (in future)

### MWIG Funded WC/WDM & Related Projects

Project Name	WSA	Project Status	Total Cost	Approved Funding
Buffalo Flats WCDM Phase 2	Amajuba DM	Planning	52 000 000	13 000 000
District Wide WCDM	Imembe DM	Planning	140 000 000	120 000 000
Water Pipeline Replacements	Ugu DM	Planning	200 000 000	50 000 000
District Wide WCDM	uMkhanyakude DM	Planning	168 500 000	42 125 000
Ezakeni / Emnambithi WCDM	Uthukela DM	Awaiting Funding	200 000 000	20 000 000
Water Demand and Conservation management strategy	Uthungulu DM	Conceptual	4 252 000	4 252 000
Enseleni Pipe Replacement & Pressure M management	City of Umhlatuze LM	Feasibility	42 000 000	21 000 000
Empangeni Pipe Replacement & Pressure M management	City of Umhlatuze LM	Feasibility	60 000 000	18 000 000
Ngwelenze Pipe Replacement & Pressure M management	City of Umhlatuze LM	Feasibility	10 000 000	10 000 000
Reduction of Non Revenue Water for City of uMhlabutha	City of Umhlabutha LM	Conceptual	25 936 000	7 000 000
Water demand management (rural water meter installation, GIS,)	City of Umhlabutha LM	Tender	5 000 000	4 000 000
<b>TOTAL</b>			<b>907 668 000</b>	<b>309 377 000</b>



### System Characteristics

- total served population - 600 000
- total number of connections – 32 437
- total length of mains - 2 205km
- average operating pressure - 57m
- average System Input Volume – 62 MI/day
- average Billed Metered Consumption - 24 MI/day
- service connection density - 15 conns/km
- total number of storage reservoirs - 460
- total number of water schemes - 111

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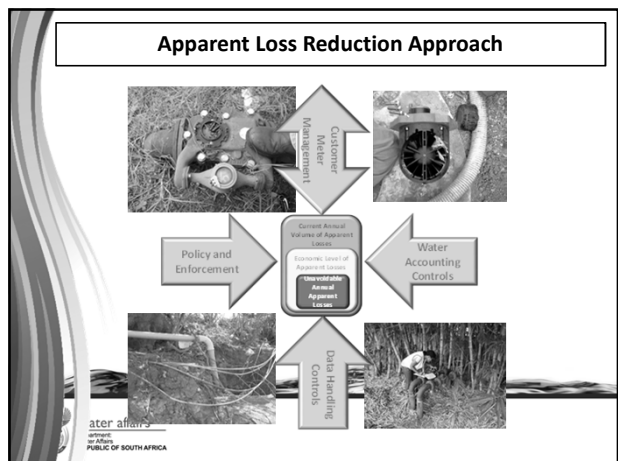
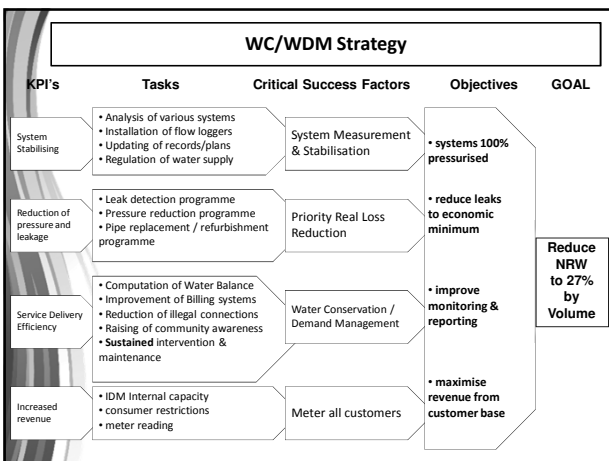
### Master Plan Executive Summary

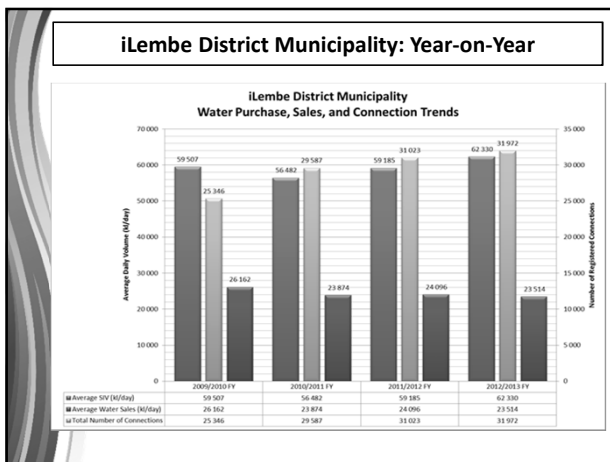
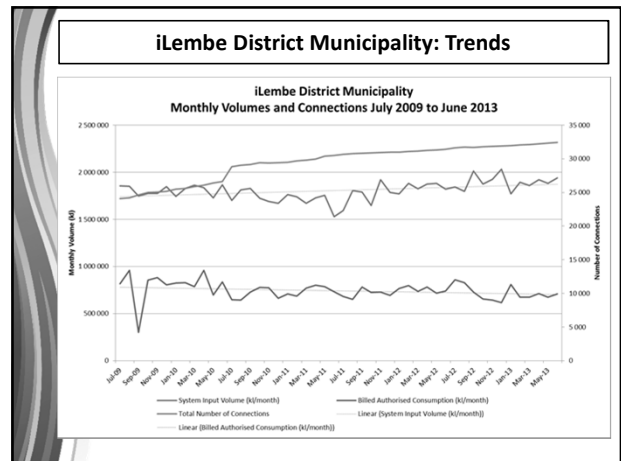
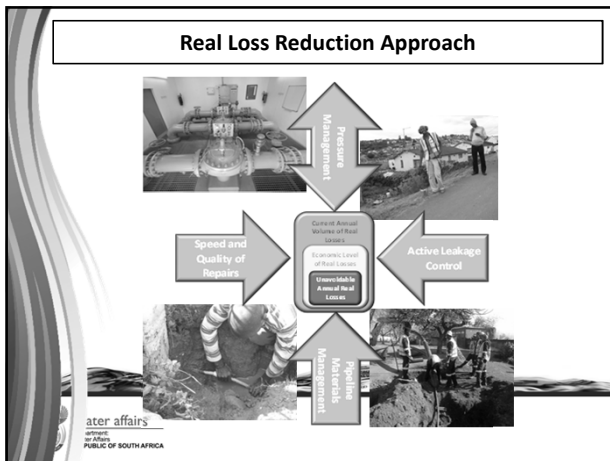
- Objective to move from NRW by Volume from approximately 50% to 27% by 2014 (part of President’s directive to halve water losses by 2014)
- Reduce water leaks from approximately 30% to 17% of all water purchased/produced

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### INTERNATIONAL WATER ASSOCIATION WATER BALANCE

System Input Volume m <sup>3</sup> /year	Authorized Consumption m <sup>3</sup> /year	Billed Authorized Consumption m <sup>3</sup> /year	Billed Metered Consumption	Free Basic Water
		Unbilled Authorized Consumption m <sup>3</sup> /year	Billed Unmetered Consumption	Recovered Water
	Water Losses m <sup>3</sup> /year	Apparent Losses m <sup>3</sup> /year	Unbilled Metered Consumption	Non-Revenue Water m <sup>3</sup> /year
		Real Losses m <sup>3</sup> /year	Unbilled Unmetered Consumption	
		Illegal Connections		
		Metering Inaccuracy		
		Mains Leaks		
		Service Connection Leaks		
		Reservoirs Overflows		





### iLembe District Municipality: District Breakdown

Key Performance Indicator	KwaDukuza	Mandini	Maphumulo	Ndwedwe	iLembe
Number of registered Connections	17 360	5 071	1 042	8 694	31 972
NRW by Volume (%)	62	56	87	66	62
Total Water Losses (%)	58	47	41	51	52
Inefficiency of Use (%)	35	35	31	40	36
Unbilled Authorised Consumption (%)	4	9	45	15	10
Total Water Losses per Connection (l/conn.day)	936	1 998	1 470	573	1 022
Real Losses per Connection (l/conn.day)	569	1 478	1 088	447	696
Apparent Losses per Connection (l/conn.day)	367	520	382	126	326
Real Losses per Length of Main (m <sup>3</sup> /km/day)	23,46	0,37	3,99	3,40	10,12

### iLembe District Municipality Performance

	2009/10	2010/11	2011/12	2012/13
Number of registered connections	26 610	30 475	31 410	32 437 ↑
Average System Input Volume (kl/day)	59 507	56 482	59 064	62 330 ↑
Average Consumer Sales (kl/day)	26 162	23 874	24 096	23 514 ↓
NRW by Volume %	56,0%	57,7%	59,2%	62,3% ↑
Inefficiency of Use %	31,8%	36,3%	36,7%	35,8% ↓

### “Poor Results...?”

- Billing of consumers remains a challenge
- Leakage has remained steady, not worse
- The wrong indicator is being used (NRW%) – this doesn’t take into account improved service delivery and increased area of supply (“empty pipe syndrome”)
- In spite of growth in the system (new connections and more pipes), only using 3Ml/day more
- Leakage is only 5 times higher than best possible levels – better than all other Municipalities in KZN apart from Ugu)

### Way Forward for KwaZulu-Natal

- Adopt a programmatic approach to WC/WDM in KZN;
- Established and functioning KZN Water Conservation Forum;
- Detailed assessment for WC/WDM potential, and identification of appropriate WC/WDM projects;
- Facilitate WC/WDM Master/Strategic Plan (5-years); all WSAs should have, also part of WSDP and IDP;
- Progressive implementation of WC/WDM Regulations (consultation);
- Setting , implementing and achieving WC/WDM targets, and reporting;
- Prioritisation and funding of WC/WDM by role players.



### THANK YOU

#### CONTACT DETAILS:

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