



# Water Loss Management in the City of Tshwane: updated up to end March 2012

Presented by  
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Water and Sanitation Division  
Public Works and Infrastructure Development



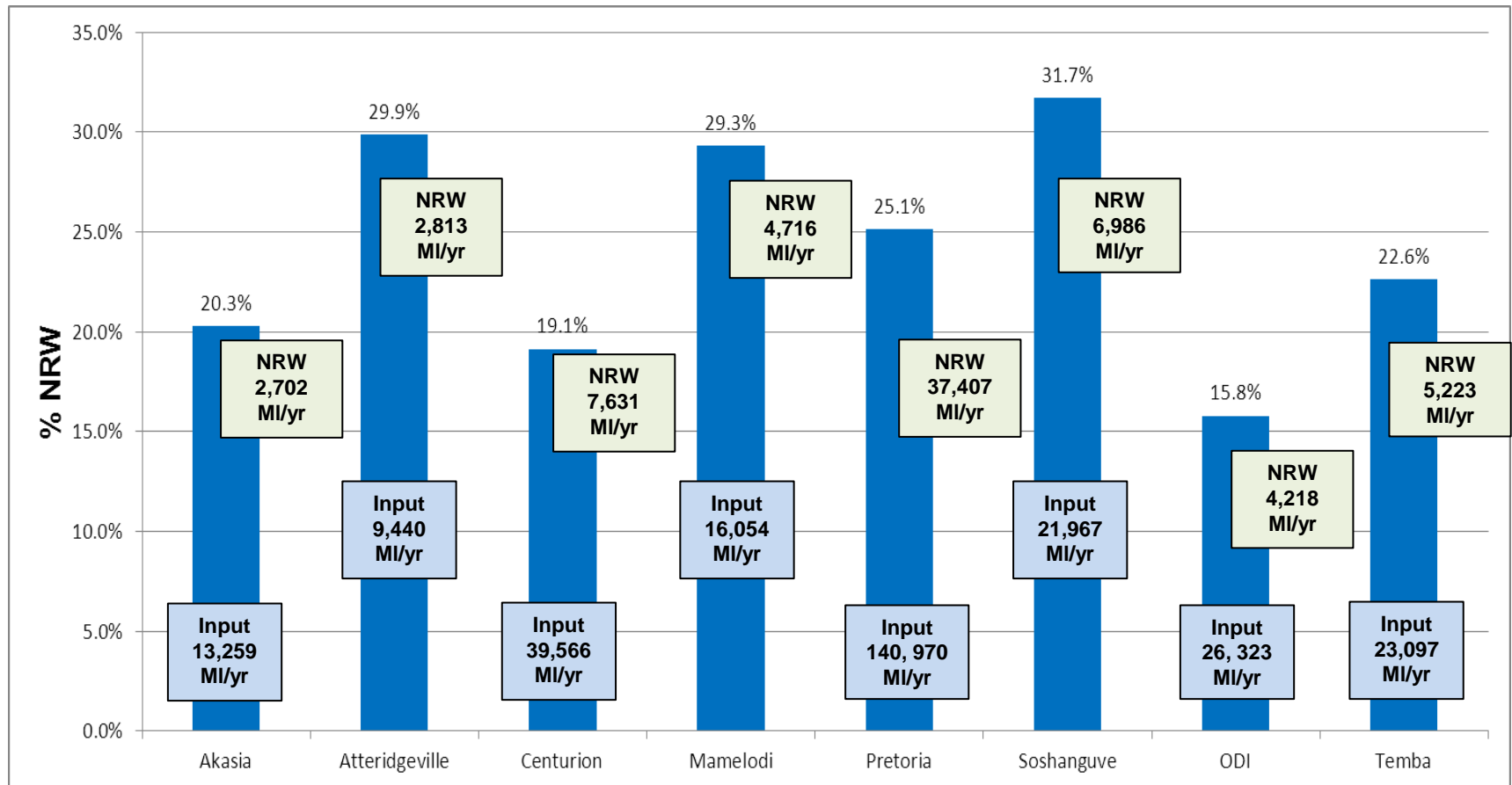
# CoT STATISTICS



- **10 727 327 km of bulk and distribution mains**
- **163 storage reservoirs with 1 843 MI storage**
- **39 water towers with 13,156 MI storage**
- **420 Control Valves (PRV's, Flow control etc)**
- **240 Bulk Management Meters**
- **415 000 Consumer connections**

# NRW FOR CoT SUPPLY AREAS

(12 Month Period Ending March 2012)



# NRW FOR CoT SUPPLY AREAS



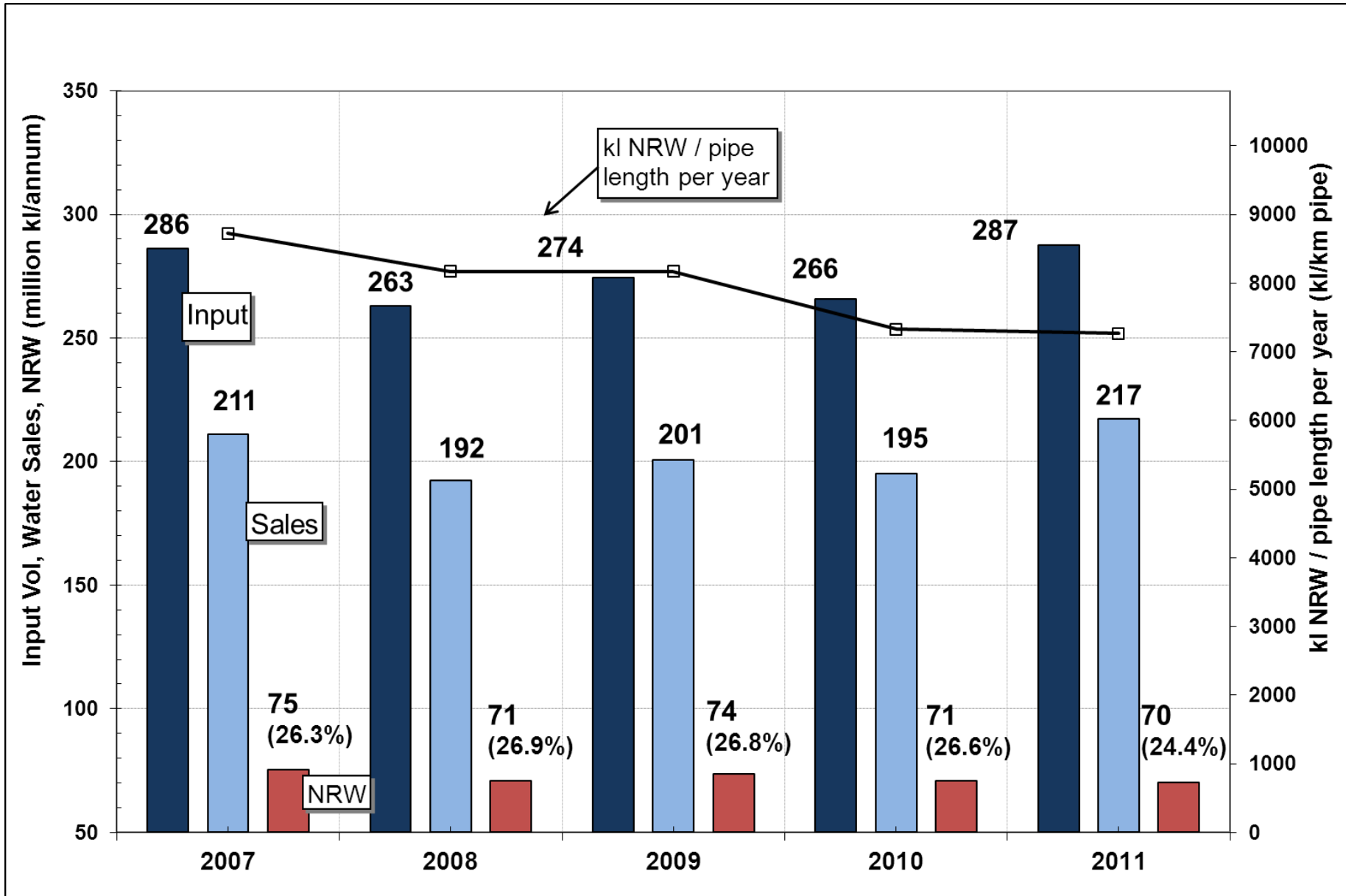
Entire Tshwane (ALL Regions) - All values based on 12 month totals

Month	Billed Authorised				NRW		Unbilled Authorised		Water Loss					Water Loss KPI's			
	Bulk Input		Billed Metered						Unbilled Metered	Unbilled Unmetered	Total Loss: Net Input - Billed Metered - Unbilled Authorised	Unavoidable losses (UARL)	Avoidable Losses: (Total Loss - UARL)	Avoidable Losses: (Total Loss - UARL)	Length of Pipe (Bulk + Reticulation/ Auth Consumption Zones)	No. Connections (Meters) (Formal sales areas only)	Total Losses/ pipe length
	Total Bulk Input	Billed Metered: Formal Water Sales	Billed Metered: Metered supply to authorised consumption zones	Estimated Consumption for authorised areas	Total Input -Billed Metered	Total Input -Billed Metered	kl/y	kl/y									
2010-07	279,688,639	182,046,844	23,576,252	4,202,344	69,863,199	25.0%	0	0	69,863,199	25.0%	10,963,693	58,899,506	21.1%	8,163.9	399,453	16	0.333
2010-08	280,199,335	182,465,615	24,388,718	4,190,928	69,154,074	24.7%	0	0	69,154,074	24.7%	10,923,010	58,231,064	20.8%	8,163.9	395,849	16	0.332
2010-09	280,318,715	182,973,369	24,555,988	4,200,966	68,588,392	24.5%	0	0	68,588,392	24.5%	10,963,880	57,624,512	20.6%	8,250.3	396,286	16	0.329
2010-10	283,680,545	185,142,797	25,039,146	4,219,068	69,279,534	24.4%	0	0	69,279,534	24.4%	10,970,230	58,309,304	20.6%	8,250.3	396,695	16	0.332
2010-11	286,570,122	185,851,672	25,371,149	4,227,428	71,119,873	24.8%	0	0	71,119,873	24.8%	10,975,002	60,144,871	21.0%	8,250.3	397,029	16	0.341
2010-12	287,633,087	186,712,440	25,401,712	4,096,790	71,422,145	24.8%	0	0	71,422,145	24.8%	10,975,002	60,447,143	21.0%	8,250.3	397,029	16	0.342
2011-01	286,485,886	186,019,254	25,260,994	4,553,784	70,651,854	24.7%	0	0	70,651,854	24.7%	11,038,581	59,613,273	20.8%	8,250.3	401,088	16	0.335
2011-02	286,410,600	186,956,959	25,377,741	4,628,252	69,447,648	24.2%	0	0	69,447,648	24.2%	11,085,441	58,362,207	20.4%	8,434.1	399,135	16	0.331
2011-03	285,908,223	187,350,124	24,578,156	4,664,652	69,315,291	24.2%	0	0	69,315,291	24.2%	11,193,789	58,121,502	20.3%	8,434.1	406,931	16	0.324
2011-04	286,400,846	186,236,080	25,325,594	4,721,754	70,117,418	24.5%	0	0	70,117,418	24.5%	11,124,150	58,993,269	20.6%	8,434.1	401,189	16	0.333
2011-05	287,074,361	187,235,075	25,711,620	4,734,324	69,393,342	24.2%	0	0	69,393,342	24.2%	11,135,263	58,258,079	20.3%	8,434.1	401,914	16	0.328
2011-06	287,397,001	186,179,767	26,285,422	4,764,540	70,167,272	24.4%	0	0	70,167,272	24.4%	11,142,793	59,024,479	20.5%	8,434.1	402,308	16	0.332
2011-07	287,402,132	187,008,120	25,580,637	4,766,072	70,047,303	24.4%	0	0	70,047,303	24.4%	11,235,411	58,811,892	20.5%	8,438.8	409,452	16	0.325
2011-08	286,661,700	187,508,611	25,736,278	4,733,973	68,682,838	24.0%	0	0	68,682,838	24.0%	11,247,001	57,435,837	20.0%	8,438.8	410,092	15	0.319
→ Regions 5, 6 & 7 incorporated																	
2011-09	305,754,372	195,873,373	27,145,738	4,750,737	77,984,524	25.5%	0	3,439,544	74,544,980	24.4%	12,530,233	62,014,746	20.3%	9,559.5	445,073	15	0.319
2011-10	304,731,530	196,123,873	26,973,699	4,811,401	76,822,557	25.2%	0	3,429,114	73,393,443	24.1%	12,532,303	60,861,140	20.0%	9,559.5	445,187	15	0.314
2011-11	305,210,450	196,160,555	26,871,312	4,806,166	77,372,417	25.4%	0	3,413,103	73,959,314	24.2%	12,536,187	61,423,127	20.1%	9,559.5	445,404	15	0.316
2011-12	305,198,306	197,162,014	27,100,078	4,840,149	76,096,065	24.9%	0	3,413,103	72,682,962	23.8%	12,532,906	60,150,056	19.7%	9,545.5	445,567	14	0.310
2012-01	307,888,980	197,659,074	26,758,182	5,006,372	78,465,352	25.5%	0	3,509,044	74,956,308	24.3%	12,628,087	62,328,221	20.2%	9,545.5	452,581	15	0.315
2012-02	309,529,557	197,760,904	27,610,951	4,991,580	79,166,122	25.6%	0	3,509,044	75,657,078	24.4%	12,551,079	63,105,999	20.4%	9,545.5	446,358	15	0.322
2012-03	310,221,080	198,899,368	28,021,240	4,984,134	78,316,339	25.2%	0	3,509,043	74,807,296	24.1%	12,551,366	62,255,930	20.1%	9,545.5	446,409	15	0.319

# CoT NRW

Source: NRW figures from W&S

figures ending June for each financial year



# **ACTIONS UNDERTAKEN BY WATER AND SANITATION TO REDUCE NRW AND DEMAND**

# PIPE REPLACEMENT PROJECTS



TABLE OF PIPE NETWORK REPLACEMENT BUDGETS			
YEAR	AMOUNT	M OF PIPE REPLACED	ACTUAL/PLANNED
2006/2007	R 19 604 000	27,962	ACTUAL
2007/2008	R 23 058 000	37,525	ACTUAL
2008/2009	R 32 500 000	36,500	ACTUAL
2009/2010	R 15 000 000	15,739	ACTUAL
2010/2011	R 43 000 000	41,143	ACTUAL
2011/2012	R37 246 342	37,836	ACTUAL
2012/2013	R 45 000 000	42,000	PLANNED
2013/2014	R 45 000 000	40,000	PLANNED

# INCREASED LEAK REPORTING AND REPAIRS



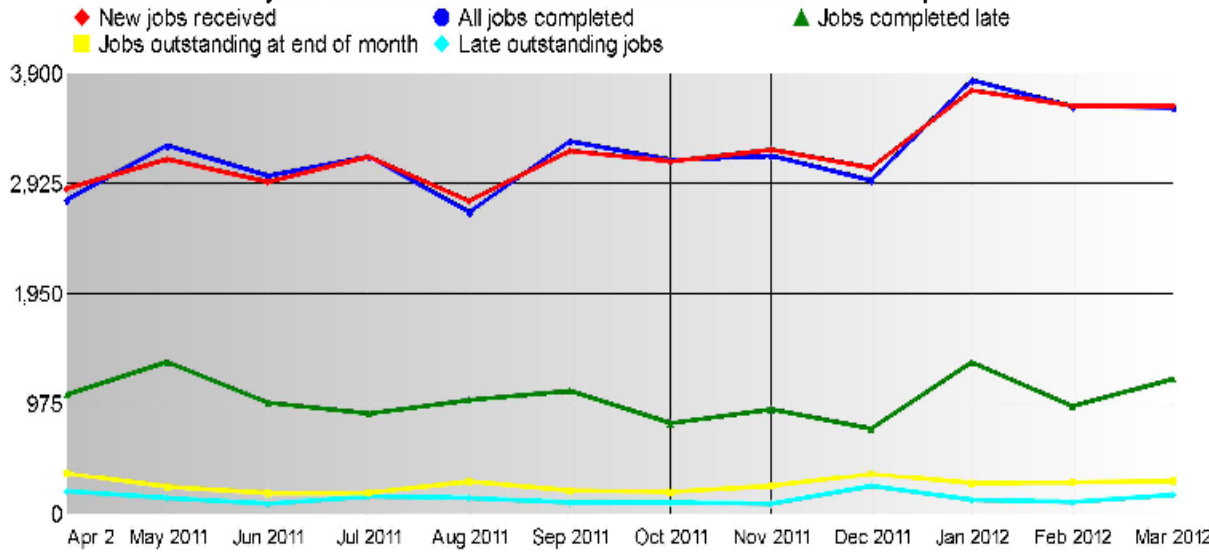
TSHWANE SERVICE DELIVERY: WATER SUPPLY

MONTHLY ANALYSIS OF TASKS FOR TASK GROUP: WATER LEAKS (TARGET: 75% IN 48 HOURS): ALL WORK (PLANNED AND UNPLANNED): ALL SUPERVISORS: ALL WORKMEN: ALL PROJECTS: ALL SUBURBS: ALL AREAS: ALL IDP WARDS: ALL INFRASTRUCTURE ELEMENTS ALL DEPOTS: ALL REGIONS: ALL FUNCTIONAL ZONES: ALL DEPARTMENTS: ALL OPERATORS

over the period 1/04/2011 up to and including 31/03/2012  
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Totals	April 2011	May 2011	June 2011	July 2011	August 2011	September 2011	October 2011	November 2011	December 2011	January 2012	February 2012	March 2012
New jobs received	2877	3137	2934	3160	2770	3212	3117	3224	3058	3747	3612	3612
All jobs completed	2775	3257	2991	3159	2666	3295	3129	3170	2947	3835	3605	3597
Jobs completed late	1055	1346	985	888	1006	1089	803	927	751	1340	951	1193
Jobs outstanding at end of month	355	235	178	179	283	200	188	242	353	265	272	287
Late outstanding jobs	196	132	82	148	133	97	97	83	244	120	100	163

Analysis of task code trends over a twelve-month period





# Operation & Maintenance

## Re-active Leak Repair and Meter Replacement

<b>Year</b>	<b>Consumer meter replace /yr</b>	<b>Consumer meter replace /day</b>	<b>Leaks repaired /yr</b>	<b>Leaks repaired /day</b>
<b>09/10</b>	<b>59 031</b>	<b>162</b>	<b>32 758</b>	<b>90</b>
<b>10/11</b>	<b>44 669</b>	<b>122</b>	<b>36 049</b>	<b>99</b>
<b>11/12</b>	<b>48 630</b>	<b>133</b>	<b>38 842</b>	<b>106</b>

# **SUMMARY OF WDM INTERVENTIONS BY CoT OVER LAST FIVE YEARS**

- **Preparing detailed monthly water balance (few municipalities in RSA prepare monthly water balances)**
- **Meter Audits in 15 Industrial Areas (2500 connections audited) 128 unmetered connections located, 250 existing meters required replacement. Increase in Revenue for CoT for 4 areas = R8.5mil/yr.**
- **Meter Audits for all irrigated road islands (290 connections):  
7 unmetered connections located, 66 meters require replacement.  
Impact to be determined by mid 2012.**

# SUMMARY OF WDM INTERVENTIONS BY CoT OVER LAST FEW YEARS



- 109 School workshops held to promote water conservation reaching 14014 learners with the view of ‘EDUCATE THE YOUTH TO EDUCATE THE NATION’
- 88 Community workshops to promote water conservation to householders.
- Water conservation competition to 50 schools where 10 winning schools received a 5000 Litre Jojo tank for the harvesting of rain water to save the City at least 50 000L of potable water. All 50 participating schools were given 10 x 25 Litre tap-filled Jerry cans to be used in class rooms to curb water wastage that occurs when learners drink out of hand from the school taps.
- 81 leakages were reported as feedback from the education of the communities.



***Thank You***