

Ekurhuleni Metropolitan Municipality

**PRESENTATIONS BY GAUTENG METROS / MUNICIPALITIES
ON
WATER CONSERVATION / WATER DEMAND MANAGEMENT**

Vaal River System
Strategy Steering Committee
19 October 2011



a partnership that works
Ekurhuleni

Ekurhuleni Water Balances



a partnership that works
Ekurhuleni

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⇒ Ekurhuleni Service Delivery Areas (SDA)



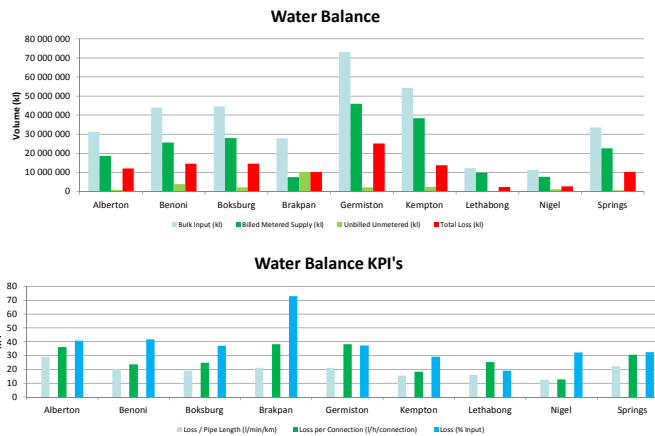
➔ Ekurhuleni Water Balance – June 2011

SDA	System Input Volume (kl/annum)	Billed Authorised Consumption (kl/annum)	NRW (kl/annum)	NRW %
Alberton	31,432,964	18,605,800	12,827,164	40.8%
Benoni	43,967,596	25,598,536	18,369,060	41.8%
Boksburg	44,601,148	28,051,802	16,549,346	37.1%
Brakpan	27,880,296	7,487,935	20,392,361	73.1%
Germiston	73,202,976	45,948,724	27,254,252	37.2%
Kempton Park	54,339,368	38,438,696	15,900,672	29.3%
Lethabong	12,212,980	9,883,726	2,329,254	19.1%
Nigel	11,416,576	7,731,300	3,685,276	32.3%
Springs	33,501,760	22,649,886	10,851,874	32.4%
Ekurhuleni (Jun 2011)	332,555,664	204,396,405	128,159,259	38.5%
Ekurhuleni (Jun 2010)	322,821,747	193,973,397	128,848,350	39.9%
Ekurhuleni (Jun 2009)	329,424,656	201,338,050	128,086,606	38.9%

➔ Water Supply District Water Balances (Total = 82 DMA's)

SDA	WATER DISTRICT DMA	SALES (kl/annum)	NRW (kl/annum)	NRW (% System Input)	SYSTEM INPUT VOLUME (kl/annum)
Alberton	TOTAL SYSTEM (ALBERTON)	12,862,295	17,268,869	57.3%	30,131,164
Alberton Total		12,862,295	17,268,869	57.3%	30,131,164
Benoni	2486 (2486_5693)	8,173,137	8,992,763	52.4%	17,165,900
Benoni	BENONI CENTRAL (Benoni_Central)	3,664,854	6,165,692	62.7%	9,830,546
Benoni	1848	3,473,607	3,759,893	52.0%	7,233,500
Benoni	ACTIONVILLE (RW0031) (31)	535,631	969,029	64.4%	1,504,660
Benoni	1849_2628	2,394,774	914,426	27.6%	3,309,200
Benoni	MODDER B (214_383_824)	0	892,522	100.0%	892,522
Benoni	KINGSWAY (RW4149) (4149)	334,780	313,970	48.4%	648,750
Benoni	RYNSOORD/NEWMODDER (RW0052) (52_5596)	201,354	320,088	61.4%	521,442
Benoni	VAN RYN DEEP FIRE (1657)	0	165,391	100.0%	165,391
Benoni	RYNGLEN (2467)	68,051	107,429	61.2%	175,480
Benoni	POWER CRUSHERS NEW MODDER (1836)	0	42,086	100.0%	42,086
Benoni	VLAKFONTEIN (3939_3971)	0	14,117	100.0%	14,117
Benoni	MODDERFONTEIN (33)	0	3,188	100.0%	3,188
Benoni	0036 (36)	507,816	-432,836	-577.3%	74,980
Benoni Total		19,354,004	22,227,758	53.8%	41,581,762
Boksburg	JET-MADELEY_IMPALA (Bok_North)	7,129,123	10,256,821	59.0%	17,385,944
Boksburg	VOSLOORUS (RW2622) (2622)	7,384,688	4,446,312	37.6%	11,831,000
Boksburg	DAWN PARK+ SUNWARD PARK (Bok_South)	3,004,652	4,788,193	61.4%	7,792,845
Boksburg	VOGELFONTEINRW (3976) (Bok_Cen)	2,577,483	5,033,911	66.1%	7,611,394
Boksburg	MAPLETON (FROM GERMISTON)	194,037	0	0.0%	0
Boksburg Total		20,289,982	24,625,238	55.0%	44,621,183
Brakpan	TSAKANE_LANGAVILLE_LABORE_GELUKSDAL (3510)	785,346	13,915,354	94.8%	14,680,700

➔ Water Balance KPI's (June 2011)

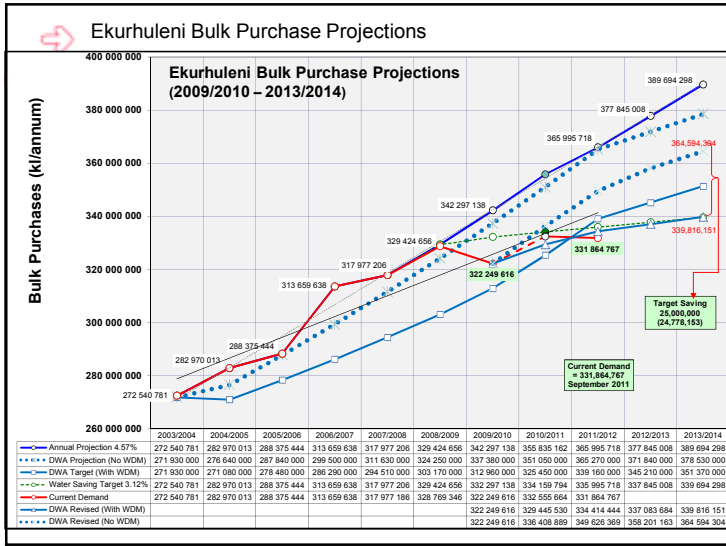


➔ Prioritisation of – Sort zones from highest to lowest NRW

Priority	SDA	WATER DISTRICT DMA	SALES (kl/annum)	NRW (kl/annum)	NRW (% System Input)	SYSTEM INPUT VOLUME (kl/annum)	Cumulative NRW	Accumulated (% of total)
1	Brakpan	TSAKANE_LANGAVILLE_LABORE_GELUKSDAL (3510)	869,821	13,810,879	94.1%	14,680,700	13,810,879	10.8%
2	Germiston	CENTRAL AREAS (GemCentral)	12,576,835	9,224,685	42.3%	21,801,520	23,035,564	18.0%
3			9,200,085	7,965,815	47.2%	17,465,900	31,001,530	24.3%
4			13,630,844	7,624,876	33.2%	40,636,376	38,626,406	30.2%
5			10,117,981	7,267,963	42.1%	23,318,415	45,894,369	35.9%
6			10,117,981	7,267,963	42.1%	23,318,415	69,113,332	39.4%
7	Springs	PAM BRANK (1746_1880) (1746_1880)	5,927,740	4,417,760	42.7%	10,345,500	54,738,611	42.8%
8	Kempton	LEWISIA (RW1744) (1744)	5,000,380	4,332,000	39.9%	10,345,500	59,070,611	46.2%
9	Germiston	CREDI RESERVOIR AND TOWER (259)	6,681,114	4,327,256	39.3%	11,008,370	63,398,672	49.6%
10	Boksburg	VOSLOORUS (RW2622) (2622)	7,552,848	4,278,152	36.2%	11,831,000	67,676,824	53.0%
11	Boksburg	DAWN PARK+ SUNWARD PARK (Bok_South)	3,926,202	3,866,643	49.6%	7,792,845	71,543,467	56.0%
12	Benoni	BENONI CENTRAL (Benoni_Central)	6,055,699	3,774,947	38.4%	9,830,546	75,318,314	58.9%
13	Nigel	NGEL EASTERN (RW2636_RW2646) (2636_2646_5589)	2,984,070	2,997,570	50.1%	5,982,400	78,316,284	61.3%
14			4,258,751	2,974,749	41.1%	7,233,500	81,291,033	63.6%
15			4,758,935	2,852,459	37.5%	7,611,394	84,143,492	65.8%
16			4,472,974	2,633,226	37.1%	7,106,200	86,776,718	67.9%
17	Germiston	ZONE 110 (winstar head) (1389)	2,225,675	2,621,525	54.1%	4,847,200	89,398,243	69.8%
18	Germiston	BERGHOEFVUE FIRE (17)	0	2,571,000	100.0%	2,571,000	91,969,243	72.0%
19	Kempton	KEMPTON WEST RESERVOIRS (1632)	5,332,614	2,002,786	27.3%	7,335,400	93,972,119	73.5%
20	Germiston	RW2107 (2107)	1,047,036	1,879,734	64.2%	2,926,770	95,851,853	75.0%
21	Brakpan	SALLIES TOWER (Combined)	1,373,773	1,874,387	57.7%	3,248,160	97,726,240	76.5%
22	Kempton	CLAYVILLE (1900)	5,466,885	1,346,115	19.8%	6,813,000	99,072,355	77.5%
23	Kempton	UMTAMBEKA RESERVOIR (2744)	1,854,317	1,205,043	42.1%	2,859,360	100,277,368	78.5%
24	Lethabong	ISANDOVALE (RW1643) (1643)	2,742,921	1,193,379	30.3%	3,936,300	101,470,777	79.4%
25	Germiston	ZONE 150 (Roodokop Township) (1208)	1,289,416	1,155,374	47.3%	2,444,790	102,626,151	80.3%
26	Springs	PAPER FACTORIES (988)	6,048,430	1,052,180	14.8%	7,100,610	103,678,331	81.1%
27	Kempton	CHLODKOP (3862)	1,625,715	979,172	37.6%	2,604,887	104,657,503	81.9%
28	Springs	SELFCOURT (1496) (1496)	3,851,176	972,124	20.2%	4,823,300	105,628,627	82.6%
29			1,427,749	954,277	40.1%	2,382,026	106,583,904	83.4%
30			913,347	915,323	50.1%	1,828,670	107,498,227	84.1%
31	Benoni	ACTIONVILLE (RW0031) (31)	781,437	743,223	49.4%	1,504,660	108,242,490	84.7%
32	Germiston	ZONE 160 (Elsark) (936_4313)	777,787	738,727	48.7%	1,516,514	108,981,177	85.3%
33	Nigel	DUDUZA (RW4019) (4019_2624)	3,496,933	723,267	17.1%	4,220,200	109,704,444	85.8%

Bulk Purchases and Projections (2009/2010 -2013/2014)


WDM Projects & Anticipated Savings (2011/2012 – 2013/2014)



WDM Related Projects & Anticipated Savings (2011/12 - 2013/14)

No	Main Project Names	Estimates (Rand)			Anticipated Savings (Kiloliter/Annum)		
		2011/12	2012/13	2012/14	2011/12	2012/13	2012/14
1	Replacement of Mid-Block Mains	18,000,000	12,700,000	8,200,000	900,000	1,200,000	2,000,000
2	WDM Projects (strategic)	7,500,000	5,500,000	3,500,000	300,000	600,000	1,200,000
3	Pipeline Upgrading	30,000,000	57,000,000	26,000,000	1,400,000	2,000,000	2,500,000
4	Install combination meters in Industrial areas	10,000,000	40,000,000	43,000,000	600,000	1,200,000	1,600,000
6	Consolidation of Water Meters in Industrial Areas - Waderville	3,000,000	8,000,000	9,000,000		1,200,000	1,400,000
8	Pressure Management	500,000	2,000,000	1,500,000	500,000	1,600,000	2,500,000
9	Tsakane/Langaville/Geluksdal leak Repair Project	3,000,000	35,000,000	56,000,000	300,000	2,000,000	5,000,000
TOTALS:		72,000,000	160,200,000	147,200,000	4,000,000	9,800,000	16,200,000
ACCUMULATIVE TOTALS:		72,000,000	232,200,000	379,400,000	4,000,000	13,800,000	30,000,000

Top 4 WDM Projects



⇒ Top 4 WDM Projects (Cont.)

Tsakane/Langaville/Geluksdal Leak Repair Project

Based on the prioritization / sorting of zones from the highest to the lowest NRW, Tsakane/Langaville/Geluksdal was identified as the area within Ekurhuleni with the highest losses and therefore as the area with the biggest potential to reduce water losses.

Suburb	No of Stands	Input volume (Kl/stand/month)			Potential Savings			Project Cost			Return on investment period (years)	
		Pre-intervention	Post intervention	Anticipated savings	Kl / annum	Rand / annum	% Savings	Contractor	Consultant	Total	Without meters	With meters
Tsakane East	17,522	48	12	36	7,569,113	R34,421,064	75%	R21,0m	R3,4m	R24,4m	0.7	1.7
Tsakane West	8,081	31	12	19	1,861,745	R8,466,415	62%	R9,7m	R1,6m	R11,2m	1.3	3.1
Langaville	10,751	20	12	8	1,083,599	R4,927,740	41%	R12,9m	R2,1m	R15,0	3.0	7.2
Geluksdal	4,213	22	12	10	485,295	R2,206,914	44%	R5,0m	0,85m	R5,9m	2.7	6.3
TOTALS:	40,567	35	12	23	10,999,752	R50,022,132	65%	R48,7m	R7,9m	R56,6m	1.1	2.7

⇒ Top 4 WDM Projects

Replacement of Mid-Block Mains
 Mid-block mains remain a problem, and is one of the biggest contributors towards water losses. Ekurhuleni has a definite plan to eradicate the mid-blocks over the next couple of years. R39m has been budgeted over the next 3 years for this purpose.

Pipeline Upgrading
 The upgrading of municipal water mains is an ongoing pipeline rehabilitation process, and R113m has been budgeted over the next 3 years to attend to the older pipelines which have served their useful lifespan, and which are no longer economical to maintain.

Pressure Management
 Pressure management is regarded as a quick-win initiative to reduce water losses, and the setting up of pressure management zones in Ekurhuleni is well advanced. However, the management of the installations needs to be outsourced until sufficient internal capacity has been created, and an as-and-when contractor needs to be put in place to effect the required day to maintenance activities associated with the proper and effective functioning of each installation.

Thank You

