FIRST ORDER NO DROP ASSESSMENT: MPUMALANGA PROVINCE

the status of water losses, water use efficiency and non-revenue water in municipalities

1. INTRODUCTION

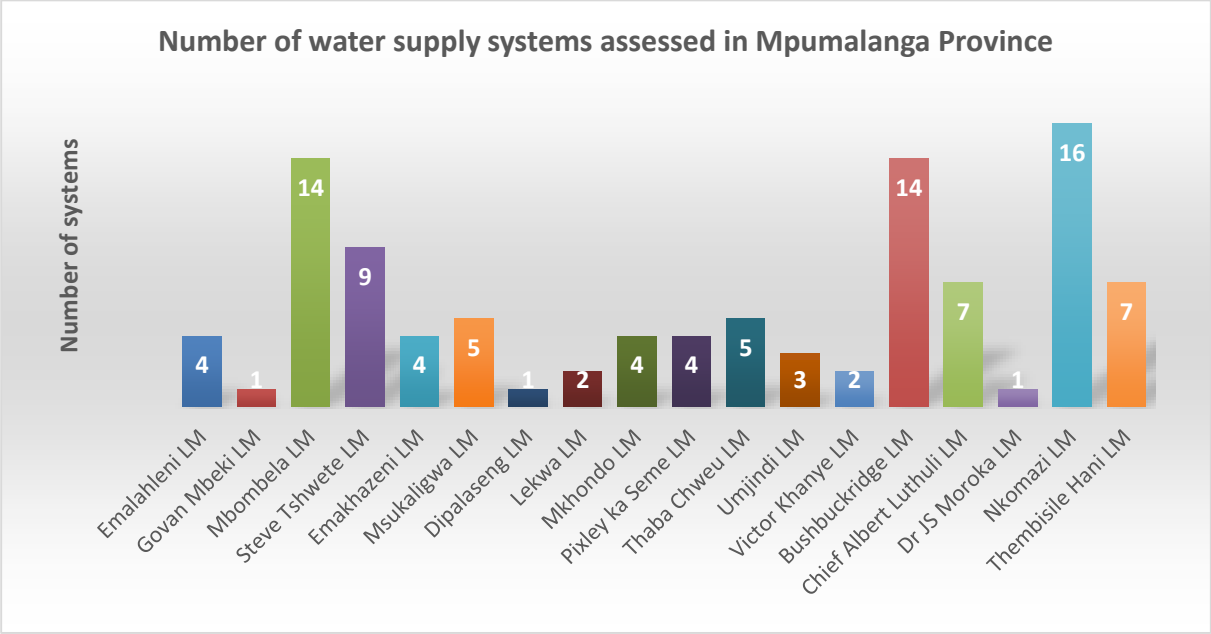
Drinking water is supplied by 18 municipalities (WSAs) in the Mpumalanga Province, made up of 18 local municipalities (4 category B1; 2 category B2; 7 category B3; 5 category B4). Data sets were received for 4 municipalities representing a total population of 743 082 and 189 434 households. These households are supplied via a total mains network of 3 347 km via 180 591 connections, with an average of 54 connections per km pipeline. A total of 165 295 (91.5%) of all connections are metered and 15 296 (8.5%) are unmetered. The average system pressure is 43 m, ranging between 34 m to 55 m reported by the various municipalities.

**Figures based on verified information only.*

Municipality Name [WSA]	Munic Category	No. of Systems	No. of credible data sets	Population and Number of Municipal Categories						
				A	B1	B2	B3	B4	C1	C2
Emalahleni LM	B1	4	x		x					
Govan Mbeki LM	B1	1	√		294 538					
Mbombela LM	B1	14	√		193 529					
Steve Tshwete LM	B1	9	√		212 000					
Emakhazeni LM	B2	4	x			x				
Msukaligwa LM	B2	5	x			x				
Dipalaseng LM	B3	1	x				x			
Lekwa LM	B3	2	x				x			
Mkhondo LM	B3	4	x				x			
Pixley ka Seme LM	B3	4	x				x			
Thaba Chweu LM	B3	5	x				x			
Umjindi LM	B3	3	x				x			
Victor Khanye LM	B3	2	√				42 995			
Bushbuckridge LM	B4	14	x					x		
Chief Albert Luthuli LM	B4	7	x					x		
Dr JS Moroka LM	B4	1	x					x		
Nkomazi LM	B4	16	x					x		
Thembisile Hani LM	B4	7	x					x		
Totals		103	4	0	700 067	0	42 995	0	0	0
				743 062						
				0	4	2	7	5	0	0
				18						

2. NO DROP RESULTS FOR 2012/13

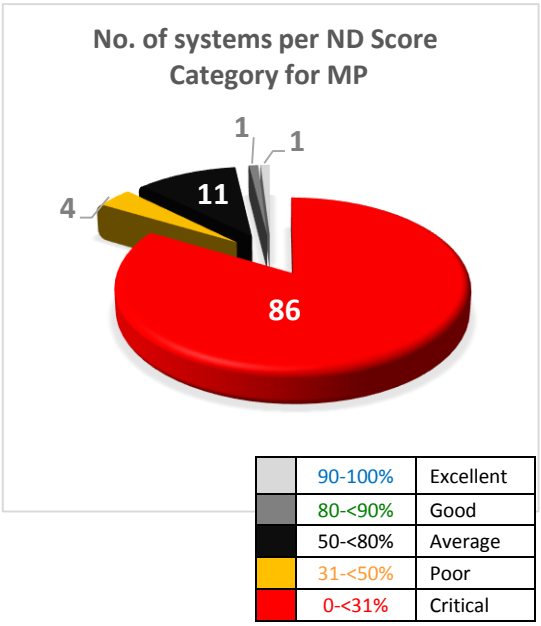
The No Drop results show that 103 water supply systems have been assessed in 18 municipalities. In some cases, DWS was necessitated to collapse some of the supply systems into one integrated system for the purposes of this No Drop Report.



A total of 2 WSAs assessed opted to provide evidence for 'one integrated system' instead of regarding each individual supply systems separately. The remaining systems were assessed as stand-alone water supply systems.

2013 MP NO DROP COMPARATIVE ANALYSIS	
Performance Category	**Performance indicators**
Number of WSAs assessed	18 (100%)
Number of systems assessed	103 (100%)
Number of integrated systems*	2 (11%)
Average No Drop score	11,7%
Number of No Drop scores ≥50%	13 (13%)
Number of No Drop scores <50%	90 (87%)
Number of No Drop awards ≥90%	1 (9.7%)
PROVINCIAL (weighted) NO DROP SCORE	**18,6%**

* Per original scorecard data



In total, 13% of the water supply systems obtained >50% No Drop score, with the balance of 87% <50%. The Provincial (weighted) No Drop Score of 18.6% fall within the No Drop category of 'Critical Performance'. This is off-performance is supported by an average No Drop score of 11.7%.

The low provincial average is weighed down by a significantly number of municipalities who could not provide evidence for assessment. These municipalities are not to be discouraged, as this is the

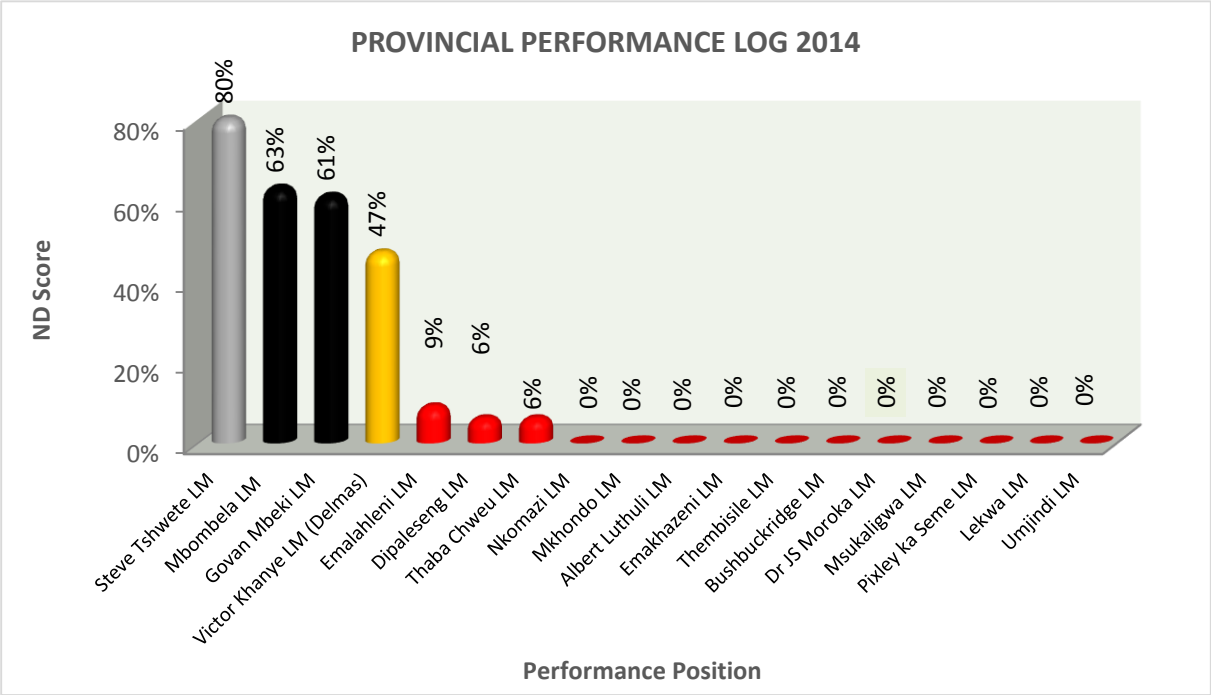
first year of No Drop assessments, and the No Drop introduction has been a learning curve and awareness raising for all stakeholders to better prepare for the next (stand-alone) No Drop assessment.

Steve Tshwete LM achieved a good status in their Water Efficiency management practice with a No Drop score of 80%.

One (1) of the 103 systems achieved No Drop status and earned a score of >90%. Three WSAs achieved No Drop scores of >50% and fourteen WSAs are in the critical state performance category with No Drop scores <31%. The gaps between the first four WSAs and the remaining fourteen WSAs are significant, measured at 38%.

Position	WSA Name	2014 No Drop Score	No. of systems with <31% No Drop score
1	Steve Tshwete LM	**80**	None
2	Mbombela LM	**63**	9 of 14
3	Govan Mbeki LM	**61**	None
4	Victor Khanye LM (Delmas)	**47**	None
5	Emalahleni LM	**9**	4 of 4
6	Dipaleseng LM	**6**	1 of 1
6	Thaba Chweu LM	**6**	5 of 5
7	Nkomazi LM	**0**	16 0f 16
7	Mkhondo LM	**0**	4 of 4
7	Albert Luthuli LM	**0**	7 of 7
7	Emakhazeni LM	**0**	4 of 4
7	Thembisile LM	**0**	7 of 7
7	Bushbuckridge LM	**0**	14 of 14
7	Dr JS Moroka LM	**0**	1 of 1
7	Msukaligwa LM	**0**	5 of 5
7	Pixley ka Seme LM	**0**	4 of 4
7	Lekwa LM	**0**	2 of 2

The Provincial Barometer for the Province with a weighted average No Drop score of 18.6% is shown in the figure below.



The following municipaliy and water supply system attained No Drop scores of >90%. The Regulator considers this municipality to be knowledgeable on the status of their water use and having the necessary strategies and plans in place to address non-conformance:

- Mbombela LM: Karino (1 system)

3. THE QUALITY OF EVIDENCE PROVIDED (KPA 1 AND 2)

Municipalities were required to present evidence to satisfy 3 sub-criteria of the 2014 Blue Drop Audit:

- *Sub-criteria 6.1 of the audit measures the consistency and credibility of the MONTHLY and ANNUAL composite IWA water balance data and diagram based on actual meter readings per system as per Regulation 509 of 2001 Clause 10 of the Water Supply Regulations.*
- *Sub-criteria 6.2 reviews the Municipality's strategies and business plans (and its inclusion in the IDP) to reduce the system input volume, water losses and NRW and evaluates the progress made with the implementation of these strategies and business plans.*
- *Sub-criteria 6.3 measures the performance of the WSI against international best practice benchmarks and the water demand management regulations, and is focussed on knowing and improving the KPI status within the WSI.*

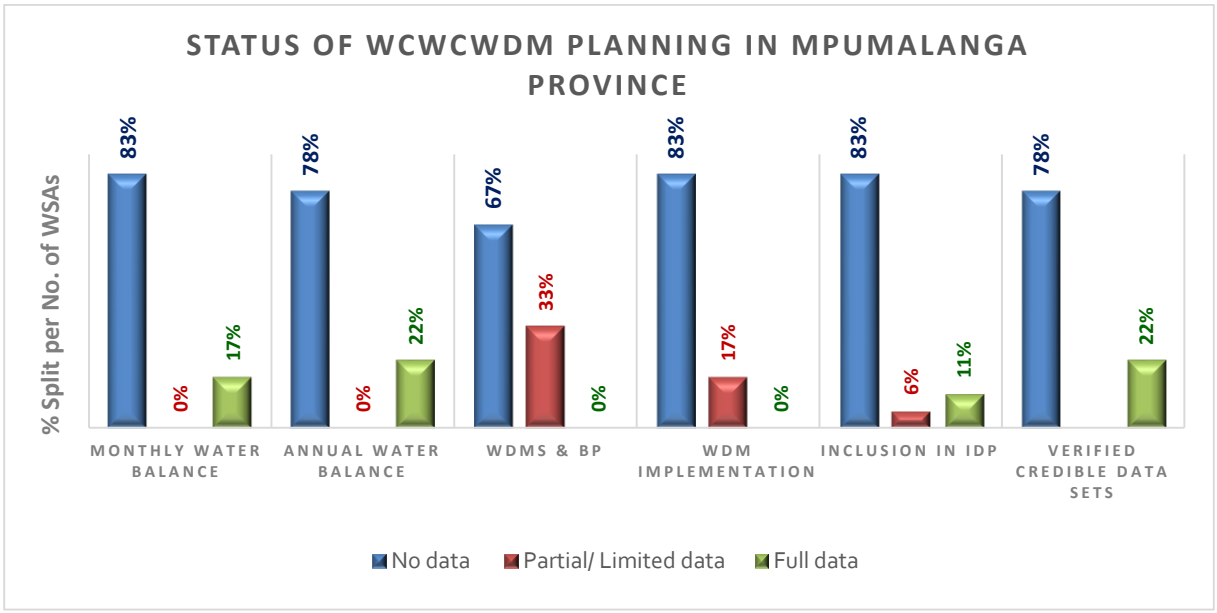
In order to derive maximum benefit from the available data, the Department has collapsed the various supply systems into one integrated system for each municipality. The results are reported accordingly:

Data Status	6.1 - Water Balance		6.2 - WCWDM Strategy and Business Plan and Implementation			6.3 - Compliance and Performance
	Monthly Water Balance	Annual Water Balance	WCWDM S & BP	WCWDM Implementation	Inclusion in IDP	Verified Credible Data Sets
No data	15 (83%)	14 (78%)	12 (67%)	15 (83%)	15 (83%)	14 (78%)
Partial data	0	0	6 (33%)	3 (17%)	1 (6%)	0
Full data	3 (17%)	4 (22%)	0	0	2 (11%)	4 (22%)
No. of WSAs	18	18	18	18	18	18

The results shows that 14 of the 18 integrated systems (83%) does not have monthly and annual Water Balances in place, and 17% has no balances in place. The following planning profile is observed:

- None of the municipalities have WCWDM strategies and plans in place, with 67% not having any plans in place;
- None of the municpalities implement WCWDM projects and have budgets and capacity to support implementation;
- None of the municpalities implement any water demand measures, whilst 17% implement some form of demand management;
- 11% of municipalities have their WCWDM plans included in the IDP in detail, and 6% are mentioned in the IDP only;
- 83% of municipalities do not have WCWDM projects included in the IDP;
- The No Drop auditors found the credibility of data and information satisfactory at 22% of the municipalities, and not satisfactory for 78% of the auditees.

The following figure shows the submissions made for No Drop assessment as pertaining to WCWDM planning:



4. THE PROVINCIAL WATER BALANCE (KPA 1 AND 2)

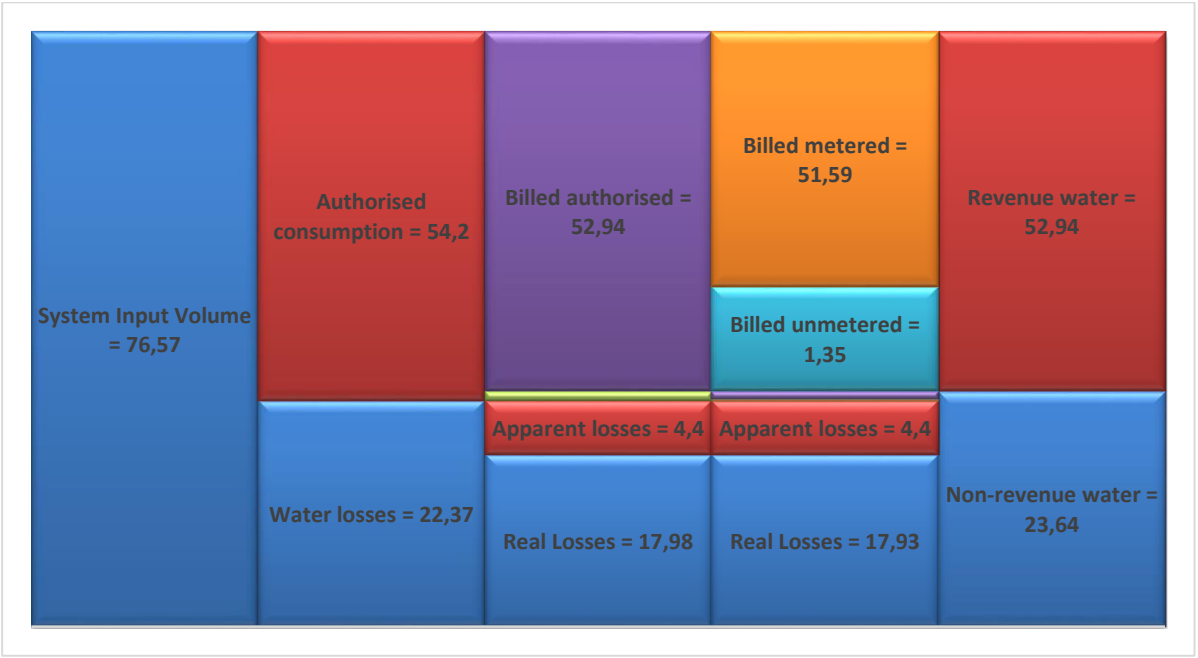
A summary of the provincial results from the 4 (of 18) credible data sets is reflected in the following Table:

2013 Provincial No Drop Score	18.6%

Key Performance Area		Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)		0.56%
No Drop Score (2013)		18.6% Critical
INPUT DATA	Population	743 062
	Households	189 434
	Metered Connections	165 295
	Unmetered Connections	15 296
	Length of mains (km)	3 347
	Average System Pressure (m)	43
	2014 Water Use Targets (Water Balance Targets)	109.28 million
	System Input Volume (kl/annum)	76.57 million
	Billed Metered Authorised Use (kl/annum)	51.59 million
	Billed Unmetered Authorised Use (kl/annum)	1.35 million
	Unbilled Authorised Use (kl/annum)	1.26 million
	Assumed Commercial Losses (%)	19.7%
WATER BALANCE DATA	Authorised Use – billed & unbilled (kl/annum)	54.20 million
	Water Losses (kl/annum)	22.37 million
	Apparent losses (kl/annum)	4.40 million
	Real Losses (kl/annum)	17.98 million
	Revenue Water (kl/annum)	52.94 million
	Non-Revenue Water (kl/annum)	23.64 million
KPIs	Infrastructure Leakage Index (ILI)	5.63 Average
	Apparent/ Commercial Losses (%)	5.7%
	Non-Revenue Water (%)	30.9% Poor
	Water Use Efficiency (l/cap/day)	282.3 Poor
OTHER	Authorised Use (l/cap/day)	199.83
	Real Losses (l/cap/day)	66.28
	% Water Losses	29.2%

The Provincial Water Balance for the 2012/13 audit year shows a total SIV 76.57 million kl/annum of which 54.2 million kl/a (70.8%) is Authorised Consumption and 22.37 million kl/a (29.2%) is Water Losses. The Water Losses is made up of 4.4 million kl/a (19.7%) Apparent Losses and 17.98 million kl/a (80.3%) Real Losses, which result in a **NRW of 23.64 million kl/annum (30.9%).**

2012/13 IWA Water Balance (million m^3/annum)



5. COMPLIANCE AND PERFORMANCE (KPA 3)

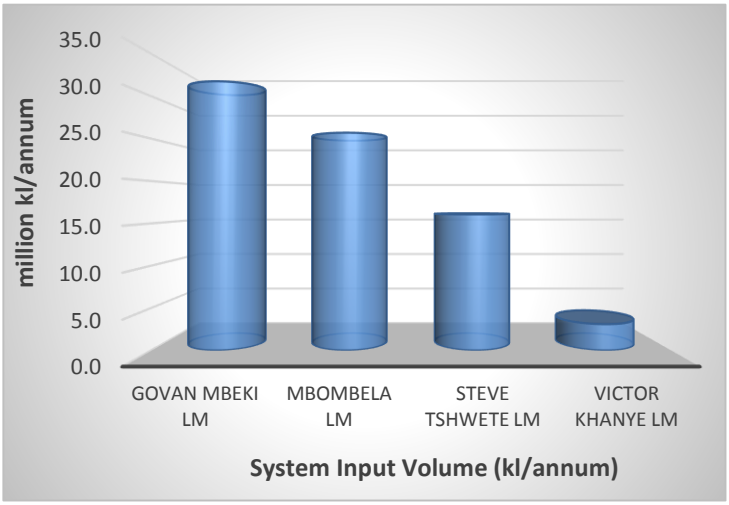
Audit Methodology

No Drop data was extracted from sub-criteria 6.3 of the Blue/No Drop assessment scorecards and the associated 2012/13 evidence/data. A secondary moderation processes ensured that the results contained in the scorecards were verified against the Water Balance historical trends. Where inconsistency and/or credibility concerns were detected, the ensuing data and results were corrected, supplemented or negated (in cases with limited data sets). Only the verified results are used in this report, and considered under the following Key Performance Indicator (KPI) headings.

5.1 System input volume (kl/a)

The System Input Volume represents the potable volume input to the water supply system from the water utility's own sources, as measured at the water treatment works (WTW) outlet, as well as any water imported from other sources.

A total consumption of 76.57 million kl/ais recorded for Mpumalanga. Govan Mbeki LM, Mbombela LM and the Steve Tshwete LM account for the majority of the total consumption.

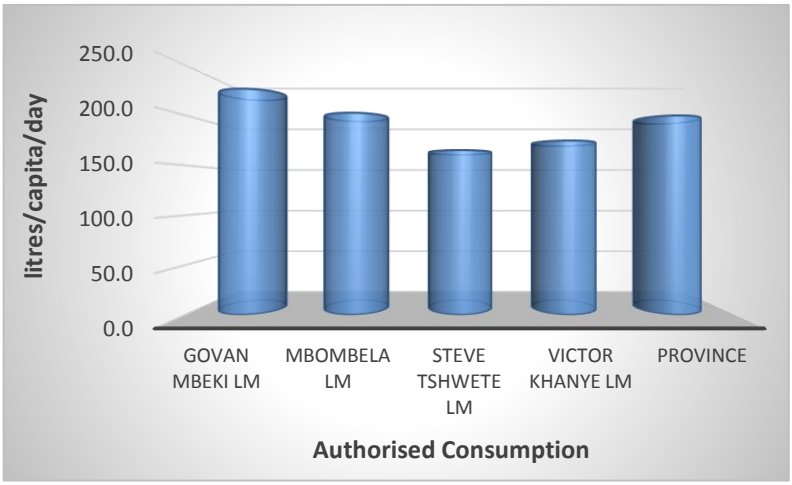


Govan Mbeki LM with 31.73 million kl/a and Mbombela LM with 25.68 million kl/a. The other 2 municipalities account for only 25% of the Province's consumption.

5.2 Authorised consumption (l/c/d)

Authorised consumption includes metered/ unmetered and billed/ unbilled consumption and provides an indication of the actual water used by the consumer.

The total water used by the collective consumer in Mpumalanga is 769 litres/capita/day with a weighted average consumption rate of 199.8 ℓ/c/d. Govan Mbeki LM displays the highest level of authorised consumption at 227 ℓ/c/d followed by Mbombela LM (203 ℓ/c/d). Authorised consumption is the lowest in Steve Tshwete LM (165 ℓ/c/d) below the benchmark figure of ≤200 ℓ/c/d.



A high authorised unit consumption could be an indication of inefficient water use, often as a result of high internal plumbing leakage or paying consumers who do not value the scarcity of water or effective metering and billing systems. A low authorised unit consumption could be an indication of unmetered consumption not included in the water balance or a large number of unauthorised consumption or theft.

5.3 Non-revenue water (%)

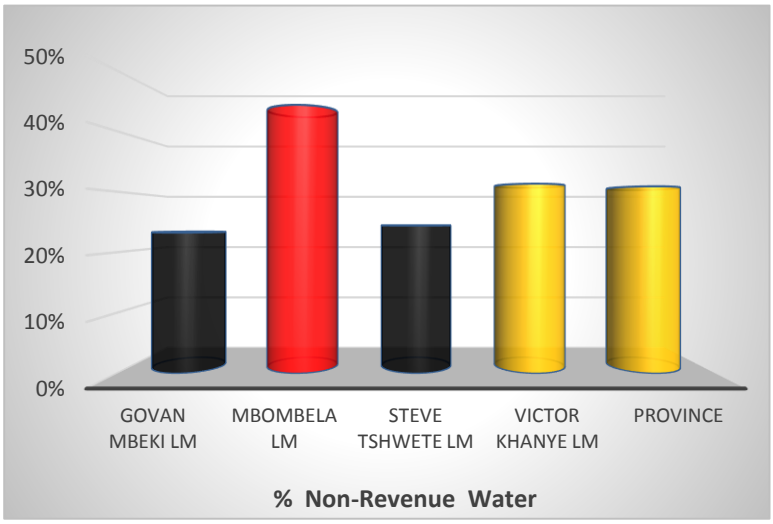
NRW is the volume of water supplied by the water utility but for which it receives no income. It should be noted that all billed water is considered revenue water, irrespective whether it is paid for or not.

- *No Drop Benchmark:* >40% = EXTREMELY POOR ; 30-40% = POOR ; 20-30% = AVERAGE ; 10-20% = GOOD ; <10% = EXCELLENT
- *Mpumalanga Weighted Average: 30.9%* = POOR

One of the 4 municipalities (25%) has NRW in excess of 33%. The weighted average NRW is 30.9%. The highest NRW is seen for Mbombela LM at 44.3% and the lowest for Govan Mbeki LM at 23.2%. The above graph exhibits collectively poor non-revenue water management.

NRW (%) performance categories

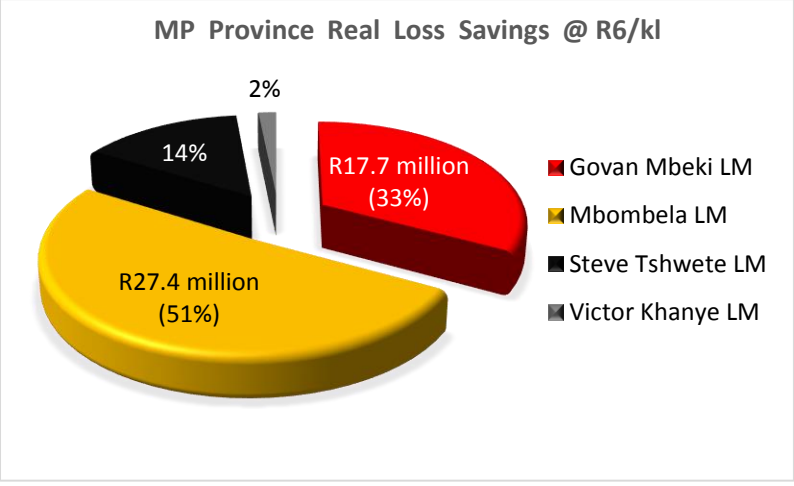
	>40%	Extremely poor performance
	30-40%	Poor performance
	20-30%	Average performance
	10-20%	Good performance
	<10%	Excellent performance



A total volume of 23.6 million kl/annum is lost as NRW which, calculated at a unit cost of R6/kl, amounts to R 141.6 million per annum for the province as a whole. The financial and potential saving, at a fixed unit cost of R6/kl is considered in the following table. By implementing Water Conservation and Demand Management projects, a potential saving of 9 million kl can be achieved per annum, which translate to R 53.9 million per year. For a province concerning itself with water conservation and economic growth based on water security, a potential **saving of R 54 million** is worth investing in. This potential saving is calculated from the 4 (22%) usable datasheets, which passed the No Drop quality assurance (credibility) checks. **Savings in excess of R200 million** can be projected if all Mpumalanga municipalities' water balances are considered and extrapolated.

Municipality Name [WSA]	Munic Category	UARL kl/annum	Current		Target			Rand value (million) @ R6.00/kl		
			CARL kl/annum	ILI	TARL kl/annum	ILI	Savings kl/annum	UARL R million	CARL R million	Savings R million
Govan Mbeki LM	B1	1 076 686	5 899 961	5.48	2 949 980	2.74	2 949 980	6.46	35.40	17.70
Mbombela LM	B1	646 640	9 144 544	14.14	4 572 272	7.07	4 572 272	3.88	54.87	27.43
Steve Tshwete LM	B1	987 844	2 613 655	2.65	1 306 828	1.32	1 306 828	5.93	15.68	7.84
Victor Khanye LM	B3	284 427	289 361	1.02	144 681	0.51	144 681	1.71	R 0.9	0.87
Provincial Totals		**3 191 217**	**17 976 759**	**5.63**	**8 988 380**	**2.82**	**8 988 380**	**19.15**	**107.86**	**53.93**

The acceptable minimum level of leakage or UARL for the available datasets is 3.19 million m^3/annum which is valued at R 19.15 million/annum based on R 6.00/kl. The current level of physical leakage or CARL, however, is 18 million m^3/annum or 5.63 times higher than the acceptable minimum level of leakage. The current level of physical leakage is valued at R 107.9 million/a based on R 6.00/kl. If the CARL could be halved to an ILI 2.82, which is an



acceptable level of leakage for developed countries, a saving of 9 million m^3/annum or R 54 million/annum could be realised.

The R 6.00/kl is considered a realistic bulk water supply tariff for 2013/14, based on the Water Services Tariffs Report for 2012/13 (DWA, 2013). Any escalation in water unit prices above the assumed average cost of water (R6/kl) would result in higher savings potential in future (i.e. >R200 million).

High %NRW could result due to customers not paying for water services, not being connected and billed by the municipality, households connected to the system through illegal connections, customers not receiving bills, incorrect billing based on estimates and difficult to understand for the average customer, the general lack of co-operation between the finance and technical departments of the municipality.

The most common causes for high physical water losses are

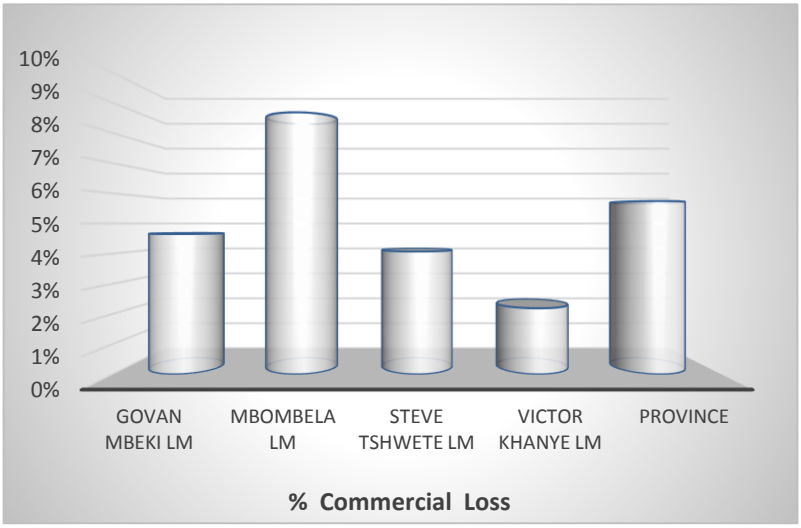
- leakage on transmission and/or distribution mains,
- leakage on service connections up to point of customer metering,
- leakage and overflows at utility's storage tanks, and

The most common causes for commercial losses are:

- unbilled unmetered consumption,
- unauthorised consumption,
- customer metering inaccuracies
- high internal plumbing leakage on private properties, and
- inefficient garden watering and household water use.

5.4 Commercial loss (%)

The commercial loss, as % of the SIV, is made up from the unauthorised consumption (theft or illegal use), plus all technical and administrative inaccuracies associated with customer metering.



The weighted average commercial loss for the Province, as % of the SIV, is 5.7%. The graph shows commercial losses in the order of 2-9%. Most WSA's find it difficult to calculate commercial losses, as its input parameters is not easy to measure illegal connections, meter accuracy and transfer errors. As result, most WSAs accept industry default values for commercial losses and there is almost no quantification of the actual percentage. A default value of 20% is used as the norm, unless a municipality can motivate a different value.

The reported commercial losses are not considered accurate and seem unusually low. The commercial losses are expected to increase once these parameters are better quantified.

High commercial losses can be a result of high unbilled and unmetered consumption, high unauthorised consumption, and customer metering inaccuracies.

5.5 Physical water loss (ILI unit)

The Infrastructure Leakage Index (ILI) is the preferred real water loss indicator of the IWA and used in the scorecard to assess real losses. The ILI provides an indication of the current physical losses versus the expected physical losses. For example, an ILI of 3 means that the current leakage in the system is 3 times the expected minimum leakage.

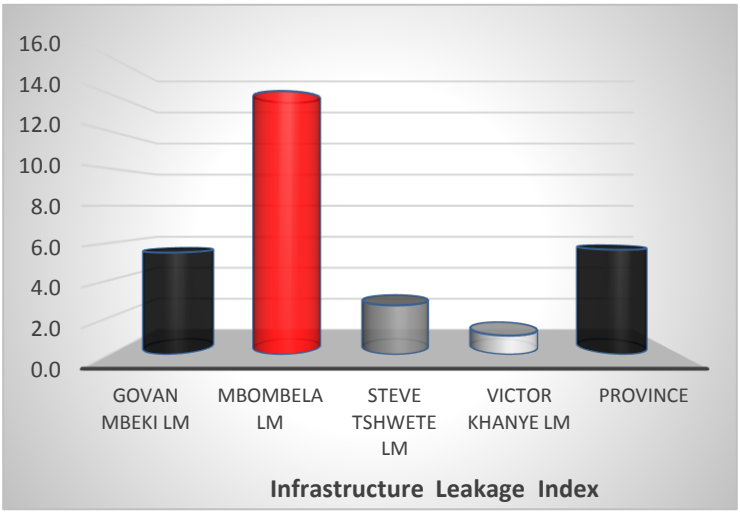
- *No Drop Benchmark:* >8 = EXTREMELY INEFFICIENT ; 6-8 = POOR ; 4-6 = AVERAGE ; 2-4 = GOOD ; <2 = EXCELLENT
- *Mpumalanga Weighted Average: 5.63* = AVERAGE

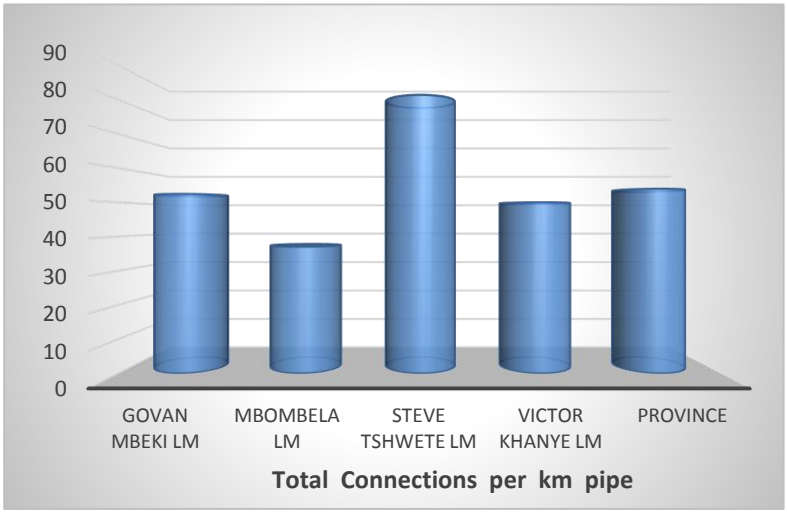
ILI performance categories

	>8	Extremely inefficient water use
	6-8	Poor leakage record
	4-6	Average
	2-4	Good
	<2	Excellent water loss management

The weighted average ILI is 5.63. Victor Khanye LM has the lowest ILI of 1.02 followed by Steve Tshwete LM (2.65). The highest ILI can be seen for Mbombela LM at 14.14 which exhibit an extremely inefficient water use and leakage record.

When considering that the length of mains and number of connections influences the ILI calculation, the following comparison can be made:





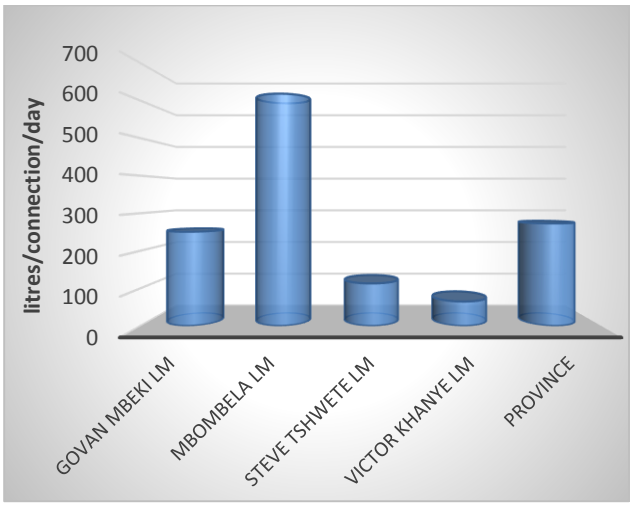
Connection density per length of pipeline is not a performance parameter, it does provide insight into the set-up of connections and meters on the existing water supply pipeline.

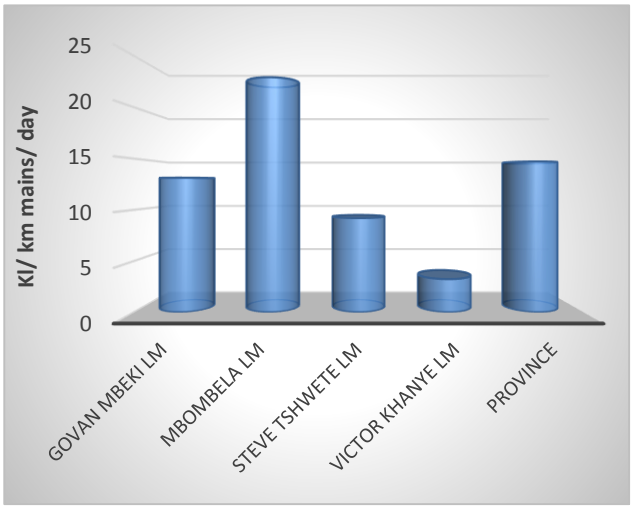
The density of connections per km mains varies from 81 connections per km in Steve Tshwete LM to 37 connections per km mains in Mbombela LM,

with an average of 55 connections per km.

Some of the metros have raised the validity of the ILI as an indicator and the Department will investigate this further.

Other real water loss indicators include litres/connection/day (1st graph) and m^3 or kl/km mains/day (2nd graph).





The 1st graph shows that Mbombela LM has the highest losses per connection per day (618 ℓ/connection/d), whereas Victor Khanye LM shows the lowest losses per connection. The 2nd graph also shows that much higher real loss per km main for Mbombela LM at 23 kl/km mains/day, whereas Victor Khanye LM shows the lowest at 3.3 kl/km mains/day.

High physical losses could indicate leakages on the transmission and/or distribution mains, leakage on service connections up to point of customer metering, leakage and overflows at utility's storage tanks.

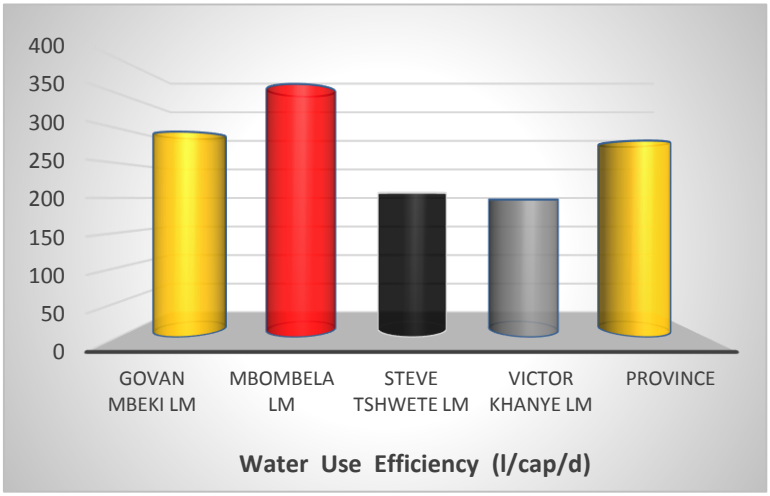
5.6 Water Use Efficiency (l/c/d)

Litres per capita per day provide an indication of the gross volume of water used per capita (person) per day. Although the calculation is based on the total system input volume (m^3/year) and not just the domestic component, it does provide a useful indicator.

- *No Drop Benchmark:* >300 ℓ//c/d = EXTREMELY HIGH ; 250-300 ℓ//c/d = POOR ; 200-250 ℓ/c/d = AVERAGE ; 150-200 ℓ/c/d = GOOD ; <150 ℓ/c/d = EXCELLENT
- *Mpumalanga Weighted Average: 282* ℓ//c/d = POOR

Water use efficiency is typically one of the key performance indicators and reported against at national level. The weighted average WUE is 282 ℓ/c/d. The average consumption is above the international benchmark of 180 ℓ/c/d and the municipalities must continue to target an average consumption of below 200 ℓ/c/d.

	>300	Extremely high per capita water use
	250-300	Poor
	200-250	Average
	150-200	Good
	<150	Excellent per capita water use



The results indicate that Mbombela LM has the highest WUE of 364 ℓ/c/d and none of the municipalities are above the benchmark of 180 ℓ/c/d with the lowest being 198 ℓ/c/d (good) for Victor Khanye LM. On average the WUE is above the international benchmark values.

A high use of water per capita could be an indication of inefficient water use due to high internal plumbing leakages or paying consumers who do not value the scarcity of water. Unmetered as well as unauthorised consumption needs to be addressed to improve this status.

Bushbuckridge Local Municipality

2013 Municipal No Drop Score	0%

Key Performance Area	Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.00%
No Drop Score (2013)	**0% Critical**

Regulatory Impression

No evidence was provided during the No Drop assessment. No 2012/13 IWA water balance diagram was provided to calculate performance parameters.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Bushbuckridge is urged to establish its Water Balance as a matter of priority.

No Drop findings

- No monthly and annual water balances in place
- No WCWDM Strategy and Business Plan are in place, no evidence of WCWDM implementation
- Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

Sustainability Pathway

The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Chief Albert Luthuli Local Municipality

2013 Municipal No Drop Score	0%

Key Performance Area	Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.00%
No Drop Score (2013)	**0% Critical**

Regulatory Impression

No evidence was provided during the No Drop assessment. No 2012/13 IWA water balance diagram was provided to calculate performance parameters.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Chief Albert Luthuli LM is urged to establish its Water Balance as a matter of priority.

No Drop findings

- No monthly and annual water balances in place
- No WCWDM Strategy and Business Plan are in place, no evidence of WCWDM implementation
- Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

Sustainability Pathway

The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Dipaleseng Local Municipality

2013 Municipal No Drop Score	6%

Key Performance Area	Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.18%
No Drop Score (2013)	**6% Critical**

Regulatory Impression

Limited evidence was provided during the No Drop assessment. No 2012/13 IWA water balance diagram was provided to calculate performance parameters. The municipality is congratulated for having a WCWDM Strategy and Plan in place, but is recommended to obtain Council approval.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Dipaliseng LM is urged to establish its Water Balance as a matter of priority.

No Drop findings

- No monthly and annual water balances in place
- WCWDM Strategy and BP in place but does not have Council approval - only PSP signature
- No evidence of WCWDM implementation
- Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

Sustainability Pathway

The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Emakhazeni Local Municipality

2013 Municipal No Drop Score	0%

Key Performance Area	Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.00%
No Drop Score (2013)	**0% Critical**

Regulatory Impression

No evidence was provided during the No Drop assessment. No 2012/13 IWA water balance diagram was provided to calculate performance parameters.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Emakhazeni LM is urged to establish its Water Balance as a matter of priority.

No Drop findings

- No monthly and annual water balances in place
- No WCWDM Strategy and Business Plan are in place, no evidence of WCWDM implementation
- Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

Sustainability Pathway

The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Emalahleni Local Municipality

2013 Municipal No Drop Score	9%

Key Performance Area	Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.27%
No Drop Score (2013)	**9% Critical**

Regulatory Impression

Limited evidence was provided during the No Drop assessment. No 2012/13 IWA water balance diagram was provided to calculate performance parameters. The existence of a WCWDM Strategy and Plan is noted with encouragement. Attention may be given to in depth detail and baseline information in the plan.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Emalahleni LM is urged to establish its Water Balance as a matter of priority.

No Drop findings

- No monthly and annual water balances in place
- WCWDM Strategy and Business Plan ar ein place, but found to be partially compliant
- No evidence of WCWDM implementation
- Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

Sustainability Pathway

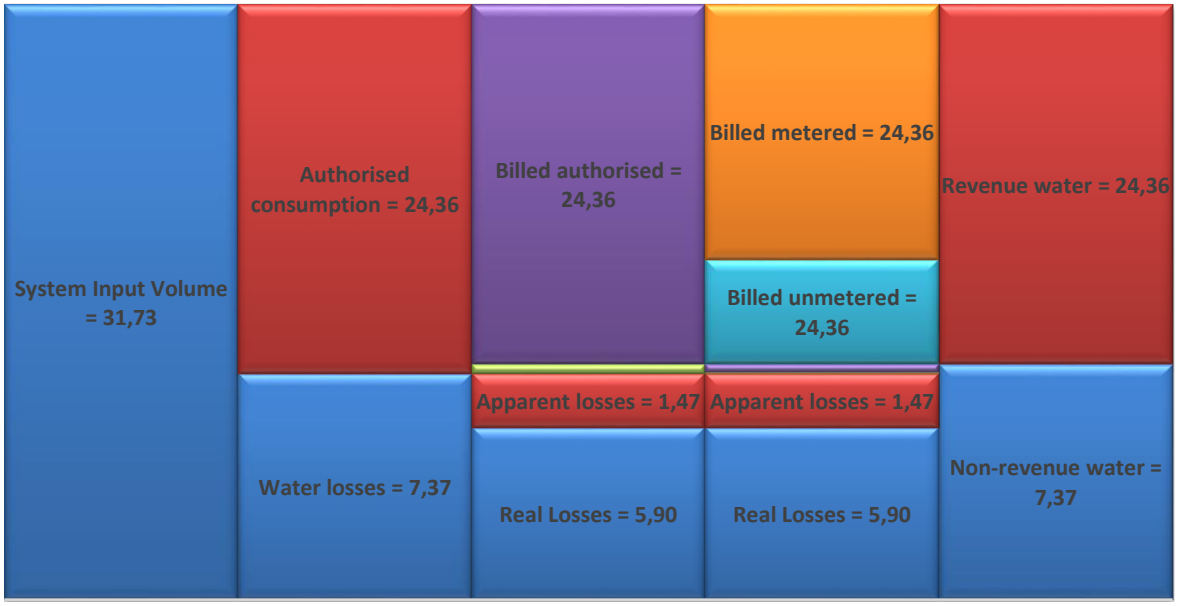
The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Govan Mbeki Local Municipality

2013 Municipal No Drop Score	61%

Key Performance Area		Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)		1.83%
No Drop Score (2013)		**61% Average**
INPUT DATA	Population	294 538
	Households	64 507
	Metered Connections	64 507
	Unmetered Connections	0
	Length of mains (km)	1 230
	Average System Pressure (m)	40
	2014 Water Use Targets (Water Balance Targets)	29.65 million
	System Input Volume (kl/annum)	31.73 million
	Billed Metered Authorised Use (kl/annum)	24.36 million
	Billed Unmetered Authorised Use (kl/annum)	0
	Unbilled Authorised Use (kl/annum)	0
	Assumed Commercial Losses (%)	20%
WATER BALANCE DATA	Authorised Use – billed & unbilled (kl/annum)	24.36 million
	Water Losses (kl/annum)	7.37 million
	Apparent losses (kl/annum)	1.47 million
	Real Losses (kl/annum)	5.90 million
	Revenue Water (kl/annum)	24.36 million
	Non-Revenue Water (kl/annum)	7.37 million
KPIs	Infrastructure Leakage Index (ILI)	5.48 Average
	Apparent/ Commercial Losses (%)	4.6%
	Non-Revenue Water (%)	23.2% Average
	Water Use Efficiency (l/cap/day)	295.2 Poor
OTHER	Authorised Use (l/cap/day)	226.56
	Real Losses (l/cap/day)	54.88
	% Water Losses	23%

2012/13 IWA Water Balance (million m^3/annum)



Regulatory Impression

The No Drop score of 61% indicates that Govan Mbeki municipality is achieving average performance. Room for improvement is identified to raise this score further. Monthly and annual water balance submitted was linked to the assessment period in question – well done. The historic water balance trend data was used to verify and adjust the data set accordingly.

The NRW (23.2%) and water losses of 7.4% demonstrates average non-revenue management with potential for marked improvement.

No Drop Findings

- WCWDM Strategy in process of being developed.
- Components listed in a WCWDM Strategy and Business Plan is not included in the IDP.
- No WCWDM implementation taking place.
- The ILI of 5.48 is demonstrating average water loss management with potential for marked improvement.
- The water use efficiency performance is poor at 295.2 l/c/d.
- The NRW (23.2%) is demonstrating average non-revenue management with potential for marked improvement.

Sustainability Pathway

The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Dr JS Moroka Local Municipality

2013 Municipal No Drop Score	0%

Key Performance Area	Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.00%
No Drop Score (2013)	**0% Critical**

Regulatory Impression

No evidence was provided during the No Drop assessment. No 2012/13 IWA water balance diagram was provided to calculate performance parameters.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Dr JS Moroka LM is urged to establish its Water Balance as a matter of priority.

No Drop findings

- No monthly and annual water balances in place
- No WCWDM Strategy and Business Plan are in place, no evidence of WCWDM implementation
- Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

Sustainability Pathway

The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Lekwa Local Municipality

2013 Municipal No Drop Score	0%

Key Performance Area	Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.00%
No Drop Score (2013)	**0% Critical**

Regulatory Impression

No evidence was provided during the No Drop assessment. No 2012/13 IWA water balance diagram was not provided to calculate performance parameters.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Lekwa LM is urged to establish its Water Balance as a matter of priority.

No Drop findings

- No monthly and annual water balances in place
- No WCWDM Strategy and Business Plan are in place, no evidence of WCWDM implementation
- Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

Sustainability Pathway

The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Mbombela Local Municipality

2013 Municipal No Drop Score	63%

Key Performance Area		Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)		1.89%
No Drop Score (2013)		**63% Average**
INPUT DATA	Population	193 529
	Households	49 361
	Metered Connections	25 222
	Unmetered Connections	15 296
	Length of mains (km)	1 094
	Average System Pressure (m)	34
	2014 Water Use Targets (Water Balance Targets)	29.10 million
	System Input Volume (kl/annum)	25.68 million
	Billed Metered Authorised Use (kl/annum)	12.96 million
	Billed Unmetered Authorised Use (kl/annum)	1.35 million
	Unbilled Authorised Use (kl/annum)	0
	Assumed Commercial Losses (%)	19.6%
WATER BALANCE DATA	Authorised Use – billed & unbilled (kl/annum)	14.31 million
	Water Losses (kl/annum)	11.37 million
	Apparent losses (kl/annum)	2.23 million
	Real Losses (kl/annum)	9.14 million
	Revenue Water (kl/annum)	14.31million
	Non-Revenue Water (kl/annum)	11.37 million
KPIs	Infrastructure Leakage Index (ILI)	14.14 Extremely poor
	Apparent/ Commercial Losses (%)	8.7%
	Non-Revenue Water (%)	44.3% Extremely poor
	Water Use Efficiency (l/cap/day)	363.6 Extremely poor
OTHER	Authorised Use (l/cap/day)	202.59
	Real Losses (l/cap/day)	129.46
	% Water Losses	44.3%

2012/13 IWA Water Balance (million m^3/annum)

Regulatory Impression

The No Drop score of 63% indicates that the municipality is achieving average performance with room for improvement. Monthly and annual water balance submitted was linked to the assessment period in question. Well done. The historic water balance trend data was used to verify and adjust the data set accordingly.

The sub-optimal performance of NRW, water use efficiency and ILI indicate that substantial interventions need to take place to improve the overall performance and good practice in Mbombela LM. The Regulator will follow the LM's progress with interest at the following No Drop assessment.

No Drop Findings

- WCWDM Strategy in place but reportedly, funding from DWS was declined and not reflected or included in the municipal budget.
- Components listed under the WCWDM Strategy and Business Plan is not clearly stated if included in the IDP or not.
- Since no funding was available the plan has not yet been implemented but Silulumanzi has been pro-active and implemented some of the required actions out of their own operating budget and has applied some of WCWDM principles.
- The ILI of 14.14 is demonstrating extremely poor water loss management.
- The water use efficiency performance is extremely poor at 363.6 l/c/d.
- The NRW (44.3%) is demonstrating extremely poor non-revenue management.

Sustainability pathway

The metro should endeavour to implement the recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Msukaligwa Local Municipality

2013 Municipal No Drop Score	0%

Key Performance Area	Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.00%
No Drop Score (2013)	**0% Critical**

Regulatory Impression

No evidence was provided during the No Drop assessment. No 2012/13 IWA water balance diagram was not provided to calculate performance parameters.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Msukaligwa LM is urged to establish its Water Balance as a matter of priority.

No Drop findings

- No monthly and annual water balances in place
- No WCWDM Strategy and Business Plan are in place, no evidence of WCWDM implementation
- Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

Sustainability Pathway

The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Nkomazi Local Municipality

2013 Municipal No Drop Score	0%

Key Performance Area	Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.00%
No Drop Score (2013)	**0% Critical**

Regulatory Impression

No evidence was provided during the No Drop assessment. No 2012/13 IWA water balance diagram was provided to calculate performance parameters.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Nkomazi LM is urged to establish its Water Balance as a matter of priority.

No Drop findings

- No monthly and annual water balances in place
- No WCWDM Strategy and Business Plan are in place, no evidence of WCWDM implementation
- Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

Sustainability Pathway

The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Pixley ka Seme Local Municipality

2013 Municipal No Drop Score	0%

Key Performance Area	Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.00%
No Drop Score (2013)	**0% Critical**

Regulatory Impression

No evidence was provided during the No Drop assessment. No 2012/13 IWA water balance diagram was not provided to calculate performance parameters.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Pixley ka Seme LM is urged to establish its Water Balance as a matter of priority.

No Drop findings

- No monthly and annual water balances in place
- No WCWDM Strategy and Business Plan are in place, no evidence of WCWDM implementation
- Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

Sustainability Pathway

The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Mkhondo Local Municipality

2013 Municipal No Drop Score	0%

Key Performance Area	Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.00%
No Drop Score (2013)	**0% Critical**

Regulatory Impression

No evidence was provided during the No Drop assessment. No 2012/13 IWA water balance diagram was provided to calculate performance parameters.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Mkhondo LM is urged to establish its Water Balance as a matter of priority.

No Drop findings

- No monthly and annual water balances in place
- No WCWDM Strategy and Business Plan are in place, no evidence of WCWDM implementation
- Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

Sustainability Pathway

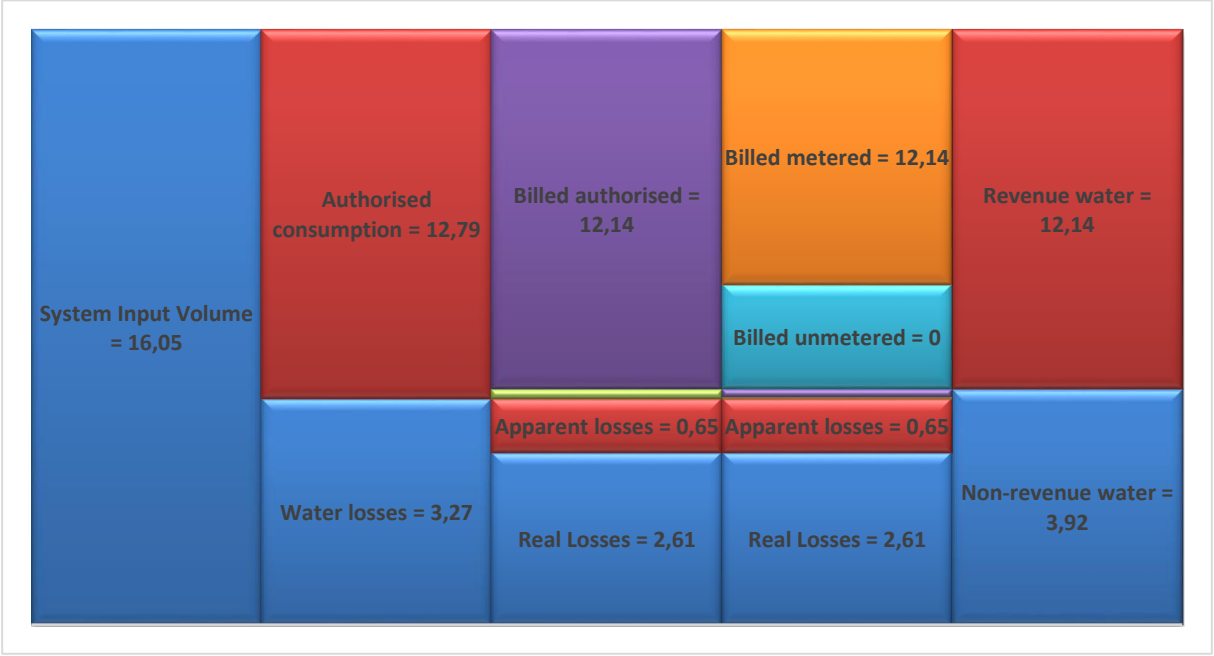
The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Steve Tshwete Local Municipality

2013 Municipal No Drop Score	79.84%

Key Performance Area		Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)		2.40%
No Drop Score (2013)		**79.84% Average**
INPUT DATA	Population	212 000
	Households	63 352
	Metered Connections	63 352
	Unmetered Connections	0
	Length of mains (km)	779
	Average System Pressure (m)	42
	2014 Water Use Targets (Water Balance Targets)	15.60 million
	System Input Volume (kl/annum)	16.05 million
	Billed Metered Authorised Use (kl/annum)	12.14 million
	Billed Unmetered Authorised Use (kl/annum)	0
	Unbilled Authorised Use (kl/annum)	0.65 million
	Assumed Commercial Losses (%)	20%
WATER BALANCE DATA	Authorised Use – billed & unbilled (kl/annum)	12.79 million
	Water Losses (kl/annum)	3.27 million
	Apparent losses (kl/annum)	0.65 million
	Real Losses (kl/annum)	2.61 million
	Revenue Water (kl/annum)	12.14 million
	Non-Revenue Water (kl/annum)	3.92 million
KPIs	Infrastructure Leakage Index (ILI)	2.65 Good
	Apparent/ Commercial Losses (%)	4.1%
	Non-Revenue Water (%)	24.4% Average
	Water Use Efficiency (l/cap/day)	207.5 Average
OTHER	Authorised Use (l/cap/day)	165.25
	Real Losses (l/cap/day)	33.78
	% Water Losses	20.3%

2012/13 IWA Water Balance (million m^3/annum)



Regulatory Impression

The No Drop score of 80% indicates that the municipality is achieving average to good performance – well done. The municipality is encouraged to put key interventions in place to further improve this status towards the next No Drop assessment cycle.

Monthly and annual water balance submitted was linked to the assessment period in question. The historic water balance trend data was used to verify and adjust the data set accordingly.

The ILI, WUE and NRW performances are pitched as 'average' and could be improved with the right type of interventions and resources. The Regulator will follow Steve Tshwete's progress with interest.

No Drop Findings

- A WCWDM Strategy is in place but requires more work to complete but there is evidence of planning taking place. Components listed under the WCWDM Strategy and Business Plan do not appear to be included in the IDP.
- WCWDM implementation in brief includes water meter replacement, AC replacement and a Green Programme with more detail given on the scorecard for each category.
- The ILI of 2.65 is demonstrating good water loss management but some improvement may be possible subject to economic benefit.
- The water use efficiency performance is average at 207.5 l/ c/ but some improvement may be possible subject to economic benefit.
- The NRW (24.4%) is demonstrating average non-revenue management with potential for marked improvement.

Sustainability Pathway

The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Thaba Chweu Local Municipality

2013 Municipal No Drop Score	6%

Key Performance Area	Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.18%
No Drop Score (2013)	**6% Critical**

Regulatory Impression

No evidence was provided during the No Drop assessment. The 2012/13 IWA water balance diagram was not provided to calculate performance parameters.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Thaba Chweu LM is urged to establish its Water Balance as a matter of priority.

No Drop findings

- No monthly and annual water balances in place
- No WCWDM Strategy and Business Plan are in place, no evidence of WCWDM implementation
- Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

Sustainability Pathway

The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Thembisile Hani Local Municipality

2013 Municipal No Drop Score	0%

Key Performance Area	Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.00%
No Drop Score (2013)	**0% Critical**

Regulatory Impression

No evidence was provided during the No Drop assessment. No 2012/13 IWA water balance diagram was provided to calculate performance parameters.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Thembisile Hani LM is urged to establish its Water Balance as a matter of priority.

No Drop findings

- No monthly and annual water balances in place
- No WCWDM Strategy and Business Plan are in place, no evidence of WCWDM implementation
- Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

Sustainability Pathway

The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Umjindi Local Municipality

2013 Municipal No Drop Score	0%

Key Performance Area	Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.00%
No Drop Score (2013)	**0% Critical**

Regulatory Impression

No evidence was provided during the No Drop assessment. No 2012/13 IWA water balance diagram was provided to calculate performance parameters.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Umjindi LM is urged to establish its Water Balance as a matter of priority.

No Drop findings

- No monthly and annual water balances in place
- No WCWDM Strategy and Business Plan are in place, no evidence of WCWDM implementation
- Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

Sustainability Pathway

The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.

Victor Khanye Local Municipality

2013 Municipal No Drop Score	46.78%

Key Performance Area		Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)		1.40%
No Drop Score (2013)		**46.78% Very poor**
INPUT DATA	Population	42 995
	Households	12 214
	Metered Connections	1 2214
	Unmetered Connections	0
	Length of mains (km)	244.28
	Average System Pressure (m)	55
	2014 Water Use Targets (Water Balance Targets)	NA
	System Input Volume (kl/annum)	3.01 million
	Billed Metered Authorised Use (kl/annum)	2.13 million
	Billed Unmetered Authorised Use (kl/annum)	0
	Unbilled Authorised Use (kl/annum)	0.61 million
	Assumed Commercial Losses (%)	19%
WATER BALANCE DATA	Authorised Use – billed & unbilled (kl/annum)	2.74 million
	Water Losses (kl/annum)	0.36 million
	Apparent losses (kl/annum)	0.07 million
	Real Losses (kl/annum)	0.29 million
	Revenue Water (kl/annum)	2.13 million
	Non-Revenue Water (kl/annum)	0.97 million
KPIs	Infrastructure Leakage Index (ILI)	1.02 Excellent
	Apparent/ Commercial Losses (%)	2.2%
	Non-Revenue Water (%)	31.3% Poor
	Water Use Efficiency (l/cap/day)	197.6 Good
OTHER	Authorised Use (l/cap/day)	174.83
	Real Losses (l/cap/day)	18.44
	% Water Losses	11.5%

2012/13 IWA Water Balance (million m^3/annum)

Regulatory Impression

The No Drop score of 47% indicates that the municipality is performing poorly, but with some key targeted interventions the current performance can shift to an average performance.

The Regulator impresses on Victor Khanye that the first step to WCWDM is the development of monthly and annual water balances – which is also a legal requirement. Historic trends were used to verify the status of the municipality, in order to calculate the performance status. The ILI of 1.02 is demonstrating excellent water loss management, but will need to be verified with in-house developed water balances during the next No Drop assessment cycle.

No Drop Findings

- Monthly and annual water balance not submitted in the prescribed format and lacking key information. However, the historic water balance trend data was used to verify and adjust the data set accordingly.
- No WCWDM Strategy in place and hence no components listed under the WCWDM Strategy and Business Plan is included in the IDP.
- No WCWDM implementation is taking place.
- The water use efficiency performance is good at 197.6 l/c/d but some improvement may be possible subject to economic benefit.
- The NRW (31.3%) is demonstrating poor non-revenue management.

Sustainability Pathway

The municipality should endeavour to implement the findings and recommendations of the No Drop assessment, which will lead to improved sustainability, and security of water services.