

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

### 1. INTRODUCTION

Drinking water is supplied by 11 municipalities (WSAs) in the North West Province, made up of 2 district municipalities (Category C2) and 9 local municipalities (4 category B1; 3 category B3; 2 category B4). Data sets were received for 3 municipalities representing a total population of 1 075 652 and 333 634 households. These households are supplied via a total mains network of 4 523 km via 194 023 connections, with an average of 43 connections per km pipeline. A total of 175 025 (90.2%) of all connections are metered and 18 998 (9.8%) are unmetered. The average system pressure is 36 m, ranging between 19 m to 60 m reported by the various municipalities.

Municipality Name	Munic	No. of	No. of Population and Number of Municipal Categories					s		
[WSA]	Category	Systems	credible data sets	А	B1	B2	B3	B4	C1	C2
Madibeng LM	B1	2	х		х					
Matlosana LM	B1	1	٧		356 408					
Rustenburg LM	B1	4	٧		562 577					
Tlokwe LM	B1	1	٧		156 667					
Kgetleng Rivier LM	B3	3	x				х			
Maquassi Hills LM	В3	3	х				х			
Ventersdorp LM	B3	7	х				х			
Moses Kotane LM	B4	5	x					х		
Moretele LM	B4	1	х					х		
Dr Ruth S Mompati DM	C2	10	х							x
Ngaka Modiri Molema DM	C2	13	х							х
				0	1 075 652	0	0	0	0	0
Totals		50	3	1 075 652						
		50		0	4	0	3	2	0	2
				11						

\*Figures based on verified information only.

## 2. NO DROP RESULTS FOR 2012/13

The No Drop results show that 50 water supply systems have been assessed in 11 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 3 WSAs opted to provide evidence for 'one integrated system' instead of regarding each individual supply systems separately. This accounted for 6 systems being integrated into 3 systems. The remaining 47 systems were assessed as stand-alone water supply systems. (Note: the 3 systems were allocated with individual No Drop scores to ensure counting of No Drop Certifications).

2013 NW NO DROP COMPARATIVE ANALYSIS				
Performance Category	Performance indicators			
Number of WSAs assessed	11 (100%)			
Number of systems assessed	50 (100%)			
Number of integrated systems*	3 (27%)			
Average No Drop score	9,3%			
Number of No Drop scores ≥50%	4 (8%)			
Number of No Drop scores <50%	46 (92%)			
Number of No Drop awards ≥90%	4 (8%)			
PROVINCIAL (weighted) NO DROP SCORE	22,6%			



\* Per original scorecard data

In total, 8% of the water supply systems obtained >50% No Drop score, with the balance of 92% <50%.

The Provincial (weighted) No Drop Score of 22.6% fall within the No Drop category of 'Critical Performance'. However, this is the first No Drop assessment for the North West municipalities and present a valuable learning opportunity. The Tlokwe LM and Rustenburg LM achieved excellence in their Water Efficiency management practice with No Drop scores of 100% and 95% respectively. These scores indicate that the municipalities KNOW their systems and have credible baseline from where to plan improvement measures.

The average No Drop score of 9.3% further support the weighted ND score, indicating an overall critical status for WCWDM for municipalities in North West, on average. This '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.

Four (4) of the 50 systems achieved No Drop scores of >90%, signifying good knowledge of their systems. Two WSAs achieved No Drop scores of >50% and eight WSAs are in the critical state performance category with No Drop scores <31%. The gaps between the first 2 WSAs and the lower ten WSAs are significant, measured at 80% and above.

Position	WSA Name	2014 No Drop Score	No. of systems with <31% No Drop score
1	Tlokwe LM	100%	2 of 2
2	Rustenberg LM	95%	13 of 13
3	Matlosana LM	37%	1 of 1
4	Moretele LM	15%	None
5	Dr Ruth S Mompati DM	0%	10 of 10
	Kgetlengrivier LM	0%	1 of 4
	Madibeng LM	0%	5 of 5
	Maquassi Hills	0%	None
	Moses Kotane LM	0%	7 of 7
	Ngaka Modiri Molema DM	0%	3 of 3
	Ventersdorp LM	0%	3 of 3

The Provincial Barometer for the Province with a weighted average No Drop score of 22.6% is shown in the figure below.



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



- Tlokwe LM: Tlokwe (1 system)
- Rustenburg LM: Marikana, Rustenburg, Vaalkop (3 systems)

## 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 Bala	ince	6.2 - WC Plan and I	6.3 - Compliance and Performance		
Data Status	Monthly Water Balance	Annual Water Balance	WCWDM S & BP	WCWDM Implementation	Inclusion in IDP	Verified Credible Data Sets
No data	8 (73%)	9 (82%)	8 (73%)	9 (82%)	10 (91%)	8 (73%)
Partial data	1 (9%)	1 (9%)	1 (9%)	0	0	
Full data	2 (18%)	1 (9%)	2 (18%)	2 (18%)	1 (9%)	3 (27%)
No. of WSAs	11	11	11	11	11	11

The results shows that almost 9 of the 11 integrated systems (82%) does not have monthly and annual Water Balances in place, and 9% has partial balances in place. The following planning profile is observed:

- 18% of the municipalities have WCWDM strategies and plans in place, with 73% not having any plans in place;
- 18% of municpalities implement WCWDM projects and have budgets and capacity to support implementation;
- 82% of municpalities do not implement any water demand measures;
- 9% of municipalities have their WCWDM plans included in the IDP in detail;
- 91% of municipalities do not have WCWDM projects included in the IDP;
- The No Drop auditors found the credibility of data and information satisfactory at 27% of the municipalities, and not satisfactory for 73% 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 3 (of 11) credible data sets is reflected in the following Table:

201	3 Provincial No Drop Score	22.6%
Key	Performance Area	Status and Performance
WAT	ER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.68%
No I	Drop Score (2013)	22.6% Critical
	Population	1 075 652
	Households	333 634
	Metered Connections	175 025
	Unmetered Connections	18 998
	Length of mains (km)	4 523
	Average System Pressure (m)	36
	2014 Water Use Targets (Water Balance Targets)	81.99 million
	System Input Volume (kl/annum)	94.22 million
	Billed Metered Authorised Use (kl/annum)	41.64 million
ATA	Billed Unmetered Authorised Use (kl/annum)	7.20 million
1 1	Unbilled Authorised Use (kl/annum)	20.83 million
AN I	Assumed Commercial Losses (%)	17.3%
ΓA	Authorised Use – billed & unbilled (kl/annum)	69.67 million
DAT	Water Losses (kl/annum)	24.54 million
ANCE	Apparent losses (kl/annum)	4.25 million
BAL	Real Losses (kl/annum)	20.29 million
TER	Revenue Water (kl/annum)	48.84 million
M M	Non-Revenue Water (kl/annum)	45.39 million
	Infrastructure Leakage Index (ILI)	6.47 Poor
	Apparent/ Commercial Losses (%)	4.5%
s	Non-Revenue Water (%)	48.2% Extremely poor
KPI	Water Use Efficiency (I/cap/day)	240 Average
	Authorised Use (I/cap/day)	239.97
HER	Real Losses (I/cap/day)	51.68
OT	% Water Losses	26.1%

The Provincial Water Balance for the 2012/13 audit year shows a total SIV 94.22 million kl/annum of which 69.67 million kl/a (73.9%) is Authorised Consumption and 24.54 million kl/a (26.1%) is Water Losses. The Water Losses is made up of 4.25 million kl/a (17.3%) Apparent Losses and 20.29 million kl/a (82.7%) Real Losses, which result in a **NRW of 45.39 million kl/annum (48.2%).** 





# 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 94.22 million kl/a is recorded for the North West, the Rustenburg LM accounts for the highest total consumption of 46.26 million kl/a followed by the Matlosana LM with 30.81 million kl/a and the Tlokwe LM with 17.15 million kl/a.



### 5.2 Authorised consumption (I/c/d)

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

The per capita total authorised water used by the collective consumer in North West is 594.3 litres/capita/day, with a weighted average per capita consumption of 177  $\ell/c/d$ . The Tlokwe LM displays the highest level of per capita authorised consumption at 263  $\ell/c/d$  followed by Matlosana LM (177  $\ell/c/d$ ) and Rustenburg LM (154  $\ell/c/d$ ).

Only one of the municipalities has a higher Authorised Consumption than the benchmark of  $\leq 200 \ \ell/c/d$ .





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</li>
- North West Weighted Average: 48.2%
  = EXTREMELY POOR

NRW(%) performance categori
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>40%	Extremely poor
30-40%	Poor
20-30%	Average
10-20%	Good
<10%	Excellent



2 of the 3 municipalities (67%) have NRW in excess of 33%. The weighted average NRW is 48.2%. The highest NRW is seen for Matlosana LM at 85.5% followed by Rustenburg LM at 36.6% and Tlokwe LM at 12.2%. The graph below exhibits overall extremely poor non-revenue water management.

A total volume of 45.39 million kl/annum is lost as NRW which, calculated at a unit cost of R6/kl, amounts to R 272.34 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 10.2 million kl can be achieved per annum, which translate to R 60.9 million per year. For a province concerning itself with water conservation and economic growth based on water security, a potential **saving of R 61 million** is worth investing in. This potential saving is calculated from the 3 (27%) usable datasheets, which passed the No Drop quality assurance (credibility) checks. **Savings in excess of R200 million** can be projected if all North West municipalities' water balances are considered and extrapolated.

Municipality	Municipality Munic UARL		Current		Target			Rand val	Rand value (million) @ R6.00/kl		
[WSA]	ory	kl/annum	CARL kl/annum	ILI	TARL kl/annum	ILI	Savings kl/annum	UARL R million	CARL R million	Savings R million	
Matlosana LM	B1	713 906	6 185 845	8.66	3 092 922	4.33	3 092 922	4.28	37.12	18.56	
Rustenburg LM	B1	2 064 820	11 781 434	5.71	5 890 717	2.85	5 890 717	12.39	70.69	35.34	
Tlokwe LM	B1	431 496	1 835 470	4.25	917 735	2.13	917 735	2.59	11.01	5.51	
Provincial To	tals	3 138 140	20 290 418	6.47	10 145 209	3.23	10 145 209	19.26	121.74	60.87	

The acceptable minimum level of leakage or UARL for the available datasets is 3.2 million m<sup>3</sup>/annum which is valued at R 19.3 million/annum based on R 6.00/kl. The current level of physical leakage or CARL, however, is 20.3 million m<sup>3</sup>/annum or 6.5 times higher than the acceptable minimum level of leakage. The



current level of physical leakage is valued at R 121.7 million/a based on R 6.00/kl. If the CARL could be halved to an ILI 3.23, which is an acceptable level of leakage for developed countries, a saving of 10.2 million m<sup>3</sup>/annum or R 60.9 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, and 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 4.5%. The graphs above show commercial losses in the order of 1-6%. 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.





The weighted average ILI is 6.47. The Tlokwe LM has the lowest ILI of 4.25, followed by Rustenburg LM (6.4) and Tlokwe LM (1.5) and on average exhibit a poor leakage record. When considering that the length of mains and number of connections influences the ILI calculation, the following comparison can be made in the graph below right.

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 50 connections per km in Matlosana LM to 34 connections per km mains in Tlokwe LM, with an average of 41 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 and m<sup>3</sup> or kl/km mains/day.



The 1<sup>st</sup> graph shows that the Rustenburg LM has the highest losses per connection per day (425.9) and the Tlokwe LM has the lowest losses per connection per day (169.8). The 2<sup>nd</sup> graph also shows that the Rustenburg LM has the higher real loss per km mains and the Tlokwe LM has the lower real loss per km mains.

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 (I/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</p>
- North West Weighted Average: 240 &//c/d = AVERAGE



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

Water use efficiency is typically one of the key performance indicators and reported against at national level. The weighted average WUE is 240  $\ell/c/d$ . The average consumption for all the municipalities is above the international benchmark of 180  $\ell/c/d$  and the municipalities must continue to target an average consumption of below 200  $\ell/c/d$ . The results indicate that Tlokwe LM has the highest WUE of 300  $\ell/c/d$  and the lowest is the Rustenburg LM at 225  $\ell/c/d$ .



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.

# Dr Ruth S Mompati District 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. As result, no performance parameters could be established for the year under assessment. No 2012/13 IWA water balance diagram was reflected, which is a crucial element for Dr Ruth S Mompati DM to know its status and also a legal requirement.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to <u>know your status</u>. Dr Ruth S Mompati 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 in place
- > No evidence of WCWDM implementation
- > Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

#### Sustainability Pathway

# **Kgetleng Rivier 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. As result, no performance parameters could be established for the year under assessment. No 2012/13 IWA water balance diagram was reflected, which is a crucial element for Kgetleng River LM to know its status. The need for water balances are also a legal requirement.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Kgetleng 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 in place
- > No evidence of WCWDM implementation
- > Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

#### **Sustainability Pathway**

# Madibeng 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. As result, no performance parameters could be established for the year under assessment. No 2012/13 IWA water balance diagram was reflected, which is a crucial element for Madibeng LM to know its status. The need for water balances are also a legal requirement.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to <u>know your status</u>. Madibeng 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 in place
- > No evidence of WCWDM implementation
- > Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

#### Sustainability Pathway

## Maquassi Hills 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. As result, no performance parameters could be established for the year under assessment. No 2012/13 IWA water balance diagram was reflected, which is a crucial element for Maquassi Hills LM to know its status. The need for water balances are also a legal requirement.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. Maquassi Hills 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 in place
- > No evidence of WCWDM implementation
- > Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

#### **Sustainability Pathway**

# Matlosana Local Municipality

2013 Municipal No Drop Score		37%	
Key Performance Area		Status and Performance	
WATI	ER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	1.11%	
No	Drop Score (2013)	37% Very poor	
	Population	356 408	
	Households	88 762	
	Metered Connections	84 628	
	Unmetered Connections	4 000	
	Length of mains (km)	1 780	
	Average System Pressure (m)	19	
	2014 Water Use Targets (Water Balance Targets)	28.55 million	
	System Input Volume (kl/annum)	30.81 million	
A	Billed Metered Authorised Use (kl/annum)	0	
DAT	Billed Unmetered Authorised Use (kl/annum)	4.47 million	
PUT	Unbilled Authorised Use (kl/annum)	18.61 million	
Z	Assumed Commercial Losses (%)	20%	
Ë	Authorised Use – billed & unbilled (kl/annum)	23.08 million	
TAN	Water Losses (kl/annum)	7.73 million	
BA	Apparent losses (kl/annum)	1.55 million	
~	Real Losses (kl/annum)	6.19 million	
ATEF	Revenue Water (kl/annum)	4.47 million	
N 0	Non-Revenue Water (kl/annum)	26.34 million	
	Infrastructure Leakage Index (ILI)	8.66 Extremely poor	
	Apparent/ Commercial Losses (%)	5.00%	
s	Non-Revenue Water (%)	85.5% Extremely poor	
КР	Water Use Efficiency (I/cap/day)	236.8% Average	
	Authorised Use (I/cap/day)	177.38	
HER	Real Losses (I/cap/day)	47.55	
Ю	% Water Losses	25.1%	





### **Regulatory Impression**

The No Drop score of 37% indicates that the municipality is performing poorly and requires targeted interventions towards improving on the status quo. Monthly and annual water balance submitted was linked to the assessment period in question but were only partially compliant. Hence, the historic water balance trend data was used to verify and adjust the data set accordingly.

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

#### **No Drop Findings**

- No WCWDM Strategy in place.
- > Components listed under the WCWDM Strategy and Business Plan is not included in the IDP.
- > No WCWDM implementation taking place.
- > The ILI of 8.66 is demonstrating very poor water loss management.
- > The water use efficiency performance is average at 236.8 l/c/d with potential for improvement.
- > The NRW (26.3%) is demonstrating poor non-revenue management.

#### **Sustainability Pathway**

# **Moretele Local Municipality**

2013 Municipal No Drop Score	15%
Key Performance Area	Status and Performance
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)	0.45%
No Drop Score (2013)	15% Critical

#### **Regulatory Impression**

Limited evidence was provided during the No Drop assessment. No 2012/13 IWA water balance diagram was reflected, which is a crucial element for Moretele LM to know its status. The need for water balances are also a legal requirement. The Department is encouraged by the existence of a first order WCWDM strategy and plan, and look forward to assess the further revision.

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

#### **No Drop findings**

- > No monthly and annual water balances in place
- Some indication of a WCWDM Strategy and Business Plan in place, but require more data and information to inform the plan and strategic measures.
- > No evidence of WCWDM implementation
- Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

#### **Sustainability Pathway**

## **Moses Kotane 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. As result, no performance parameters could be established for the year under assessment. No 2012/13 IWA water balance diagram was reflected, which is a crucial element for Moses Kotane LM to know its status. The need for water balances are also a legal requirement.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. The 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 in place
- > No evidence of WCWDM implementation
- > Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

#### **Sustainability Pathway**

# Ngaka Modiri Molema District 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. As result, no performance parameters could be established for the year under assessment. No 2012/13 IWA water balance diagram was reflected, which is a crucial element for Ngaka Modiri Molema DM to know its status. The need for water balances are also a legal requirement.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. The DM 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 in place
- > No evidence of WCWDM implementation
- > Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

#### **Sustainability Pathway**

# **Rustenburg Local Municipality**

201	3 Municipal No Drop Score		95%
Kev	Performance Area	Status and Per	formance
WATE	WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)		
No [	Drop Score (2013)	95% Excellent	t
	Population	562 577	
	Households	20 3753	
	Metered Connections	60 782	
	Unmetered Connections	14 998	
	Length of mains (km)	1870	
	Average System Pressure (m)	60	
	2014 Water Use Targets (Water Balance Targets)	35.58 million	
	System Input Volume (kl/annum)	46.26 million	
∢	Billed Metered Authorised Use (kl/annum)	26.58 million	
DAT	Billed Unmetered Authorised Use (kl/annum)	2.73 million	
PUT	Unbilled Authorised Use (kl/annum)	2.23 million	
Z	Assumed Commercial Losses (%)	20%	
CE	Authorised Use – billed & unbilled (kl/annum)	31.54 million	
LAN	Water Losses (kl/annum)	14.73 million	
BA	Apparent losses (kl/annum)	2.95 million	
~	Real Losses (kl/annum)	11.78 million	
ATEF	Revenue Water (kl/annum)	29.31 million	
N N	Non-Revenue Water (kl/annum)	16.95 million	
	Infrastructure Leakage Index (ILI)	5.71 Average	
	Apparent/ Commercial Losses (%)	6.4%	
s	Non-Revenue Water (%)	36.6% Poor	
КР	Water Use Efficiency (I/cap/day)	225.3% Average	
	Authorised Use (I/cap/day)	225.30	
HER.	Real Losses (I/cap/day)	57.38	
Ю	% Water Losses	31.8%	





#### **Regulatory Impression**

The No Drop score of 95% indicates that Rustenburg municipality has an excellent knowledge of its NRW and water loss position. The presentation of only one combined water balance may detract from this good position, and the LM is advised to present monthly balances with verified data, at the next No Drop assessment cycle. It is also encouraging to note the existence of a WCWDM Strategy. Well done. Take note of the concern listed under the ND Findings re inclusion in the IDP.

The LM is urged to pay attention and allocated resources to address the high NRW of 36.6% and water losses of 14.7%. The Regulator will follow the municipality's progress towards the next No Drop audit with interest.

#### **No Drop Findings**

- Only one combined 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.
- WCWDM Strategy is in place. Components listed under the WCWDM Strategy and Business Plan not clear as to whether included in the IDP or not.
- WCWDM implementation includes R13 million from internal and R2.1 million from ACIP provided for the financial year in question.
- > The ILI of 5.71 is demonstrating average water loss management with potential for marked improvement.
- > The water use efficiency performance is average at 225.3 l/c/d with potential for further improvement.
- > The NRW (36.6%) is demonstrating poor non-revenue management.

#### **Sustainability Pathway**

# **Tlokwe Local Municipality**

2013 Municipal No Drop Score		100%	
Key Performance Area		Status and Performance	
WATER USE EFFICIENCY & WATER LOSS MANAGEMENT (3% weight)		3.00%	
No	Drop Score (2013)	100% Excellent	
	Population	156 667	
	Households	41 119	
	Metered Connections	29 615	
	Unmetered Connections	0	
	Length of mains (km)	873	
	Average System Pressure (m)	30	
	2014 Water Use Targets (Water Balance Targets)	17.85 million	
	System Input Volume (kl/annum)	17.15 million	
∢	Billed Metered Authorised Use (kl/annum)	15.06 million	
DAT	Billed Unmetered Authorised Use (kl/annum)	0	
ŮT	Unbilled Authorised Use (kl/annum)	0	
Z	Assumed Commercial Losses (%)	12%	
CE	Authorised Use – billed & unbilled (kl/annum)	17.15 million	
ILAN	Water Losses (kl/annum)	2.09 million	
BA	Apparent losses (kl/annum)	0.25 million	
~	Real Losses (kl/annum)	1.84 million	
ATEF TA	Revenue Water (kl/annum)	15.06 million	
N V	Non-Revenue Water (kl/annum)	2.09 million	
	Infrastructure Leakage Index (ILI)	4.25 Average	
	Apparent/ Commercial Losses (%)	1.5%	
s	Non-Revenue Water (%)	12.2% Good	
КР	Water Use Efficiency (I/cap/day)	299.8% Poor	
	Authorised Use (I/cap/day)	299.84	
HER.	Real Losses (I/cap/day)	32.10	
Ю	% Water Losses	12.2%	





## **Regulatory Impression**

The No Drop score of 100% indicates that the municipality is displaying an excellent knowledge of its systems and losses. 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.

A WCWDM Strategy is in place and components of the Strategy and Business Plan is included in the IDP. A good portfolio of WCWDM implementation evidence was provided, complete with photos. The following exemplary tasks are noted: Upgrade of telemetry, bulk flow meters; and water reticulation. Budgets were allocated to each intervention and the timelines were provided for (between 2013-14 and 2015-16). Well done.

#### **No Drop Findings**

- > The ILI of 4.25 is demonstrating average water loss management with potential for marked improvement.
- The water use efficiency performance is poor at 299.8 l/c/d.
- The NRW (12.2%) is demonstrating good non-revenue management but some improvement may be possible subject to economic benefit.

#### **Sustainability Pathway**

# Ventersdorp 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. As result, no performance parameters could be established for the year under assessment. No 2012/13 IWA water balance diagram was reflected, which is a crucial element for Ventersdorp LM to know its status. The need for water balances are also a legal requirement.

The Regulator impresses on the municipality that the first and most important step to ensure water security is to know your status. The 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 in place
- > No evidence of WCWDM implementation
- > Compliance and performance evidence could not be provided
- Insufficient evidence to award a bonus.

#### **Sustainability Pathway**