

THE DASHBOARD FOR A WATER SECURE GAUTENG

Gauteng has been experiencing frequent and widespread water outages. This is most pronounced in early summer, when water consumption increases with higher temperatures.

There is currently an imbalance in supply and demand which will prevail until the completion of Phase two of the Lesotho Highlands Water Project, the Polihali Dam, scheduled for 2028. Over the past decade, there has also been underinvestment in municipal infrastructure resulting in services decline. There is little redundancy in the system, with no reserve supply capacity, with loadshedding, theft and vandalism all increasing the problem. Municipal water losses (both non-revenue and revenue water) are excessive, accelerating rapid demand growth due to population increase. At the same time many individuals, households and businesses use more water than is necessary during this water shortage, and reducing consumption at all levels is necessary to bring supply and demand back into balance.

The National Department of Water and Sanitation (DWS) has been coordinating a response with Rand Water (RW) and the Gauteng municipalities (three metropolitan municipalities – Johannesburg, Tshwane and Ekurhuleni and also the smaller municipalities) since 2022 that aims to ensure more reliable water supply. In June 2024, the multi-stakeholder Platform for a Water Secure Gauteng (PWSG) was established. This draws the public sector, private sector and civil society together in this effort to strengthen water security.

The PWSG initiatives are in development. They will largely centre on improving communication and awareness.

This dashboard is the first of such initiatives. It was developed by the PWSG Dashboard Working Group. The dashboard will enable all sectors to get a common understanding of the state of the water system and progress in strengthening the system. The intention is to host the dashboard on the DWS website and develop it over time.

Links to other sources of information and explanatory notes are included at the end.

We hope you will find this useful, and look forward to feedback on its contents. Any comments or feedback can be sent to: pwsg@dws.gov.za

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1. OVERALL WATER CONSUMPTION

	Total RW	Joburg	CoE	CoT	Emfuleni	Lesedi	Midvaal	Rand West	Merafong	Mogale City
Actual Daily Use (MLD)	4,029	1,675	984	759	306	23	38	79	68	97
WUE target use (MLD)	3,604	1,356	1,022	666	239	23	28	91	86	93
DIFFERENCE (MLD)	425	319	38	93	67	0	10	12	18	4
% From target use	12%	24%	-4%	14%	28%	-2%	36%	-13%	-21%	4%
Gross Per capita use (lcd)	285	275	242	239	424	227	399	303	344	268
Population	14,149,748	6,094,057	4,066,691	3,989,000	721,663	99,520	95,300	261,053	197,521	362,420

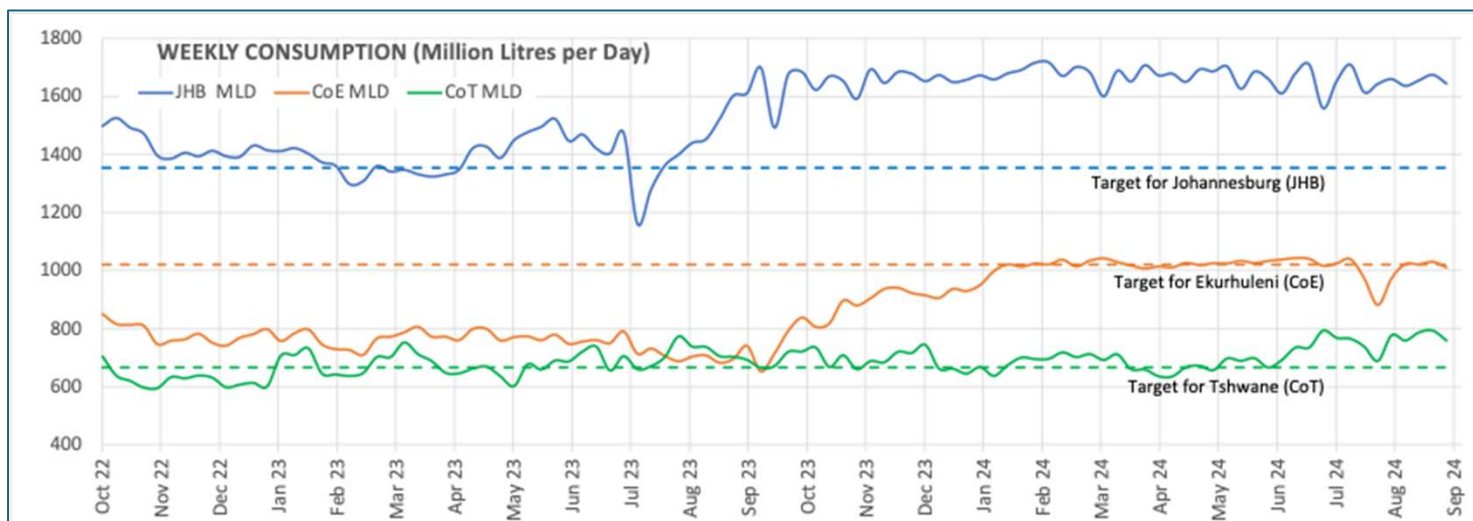
Source: Rand Water weekly Metro data published on their website.

Notes: Metros use $\pm 77\%$ of water produced by Rand Water; Smaller municipalities water demand data is provided monthly, last recorded for July 2024

WUE = Water use efficiency targets is the target demand as calculated by Rand Water for Project 1600. The difference is reflected both in millions of litres per day (MLD) and % over or under target use. Total water use is shown in millions of litres per day (MLD).

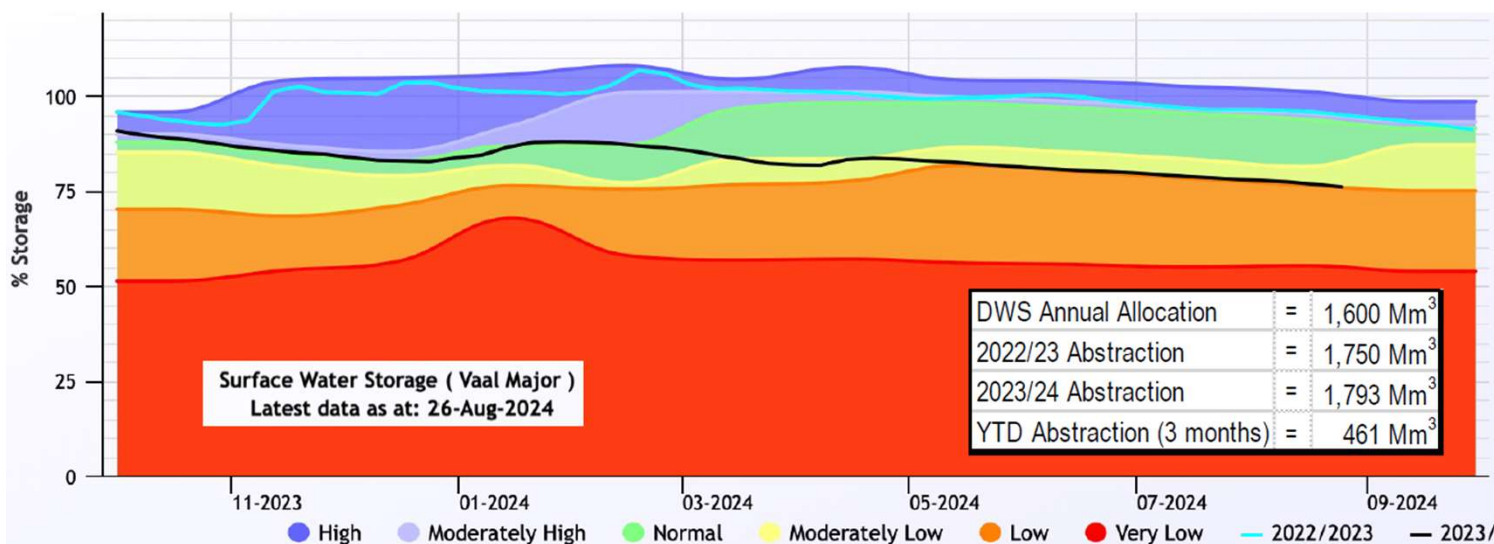
2. TRENDS for OVERALL WEEKLY CONSUMPTION OR WATER USED FOR JOHANNESBURG, TSHWANE & EKURHULENI

METROS The dotted line shows the water use efficiency (WUE) target of each metro that matches the licence conditions of Rand Water.



Source: Rand Water weekly publication.

3. IVRS SYSTEM STATUS: Observed storage is 15% less than a year ago and is tracking in the worst sequence projection. Restrictions are implemented on the IVRS when dam levels are below 60% at the beginning of the hydrological year starting in May of each year. Should over-abstraction continue in rainfall be lower than normal, the DWS model is likely to indicate that restrictions be imposed in May 2025. Source: <https://www.dws.gov.za/niwis2/SurfaceWaterStorage>



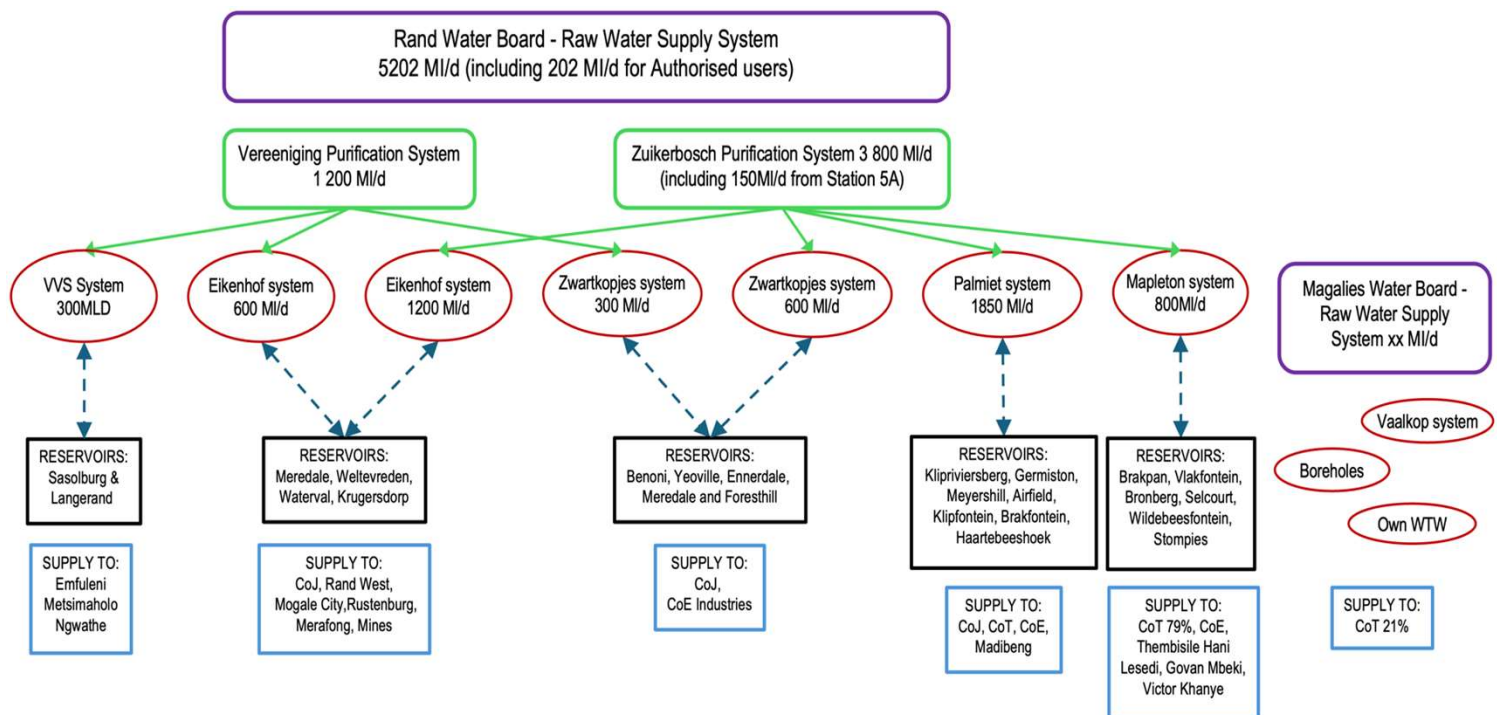
WATER LEAKS AND OUTAGES

4. LEAKS REPORTED AND/OR REPAIRED by end August 2024. Annually reported leaks vary between about 40,000 in Tshwane and Ekurhuleni and 100,000 in JHB, translating to ± 500 leaks reported in the Gauteng metros daily. A back-office process is required to confirm that work has been done satisfactorily prior to closing works orders.

28-Aug-24	JHB	CoE	CoT
Leaks reported this week	893	*	*
Leaks repaired this week	501	*	*
Current leaks backlog	343	*	*

Note: The current system used for leak reporting and repair needs to be made more robust, with many duplicate entries and open jobs that have already been completed. System improvements are required before the information can be shared.

5. WATER DISTRIBUTION: Rand Water provides water through two purification systems, feeding various supply systems through numerous water towers and more than 430 reservoirs.

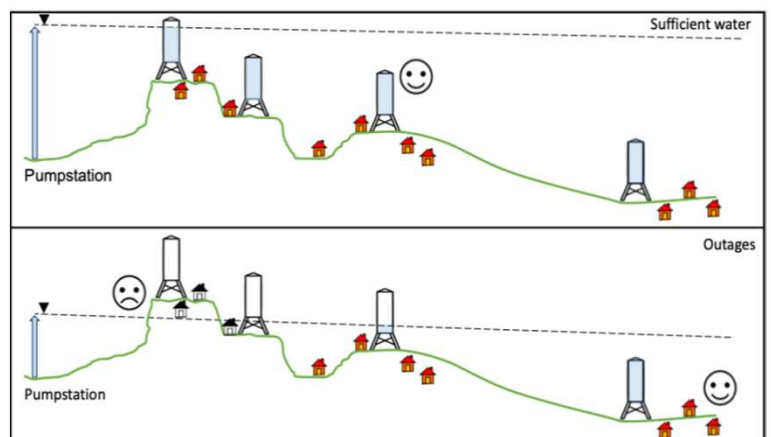


6. WATER OUTAGES: Water is distributed through a complex system of reservoirs, towers and networks. Outages are usually reported by reservoir.

When a sufficient volume of water is pumped into the system, all reservoirs can be filled, and all households have water. When there are breakdowns, and there is too little water in the system, low pressure and intermittent supply is sometimes experienced, especially in high-lying suburbs.

Often, it is a struggle to stabilise reservoir levels as water demand from the reservoir is higher than the volume that can be supplied to the reservoir by the bulk supply. Usually, levels recover overnight when demand is lower, but responsible water use by everybody will lessen the burden on high-lying areas.

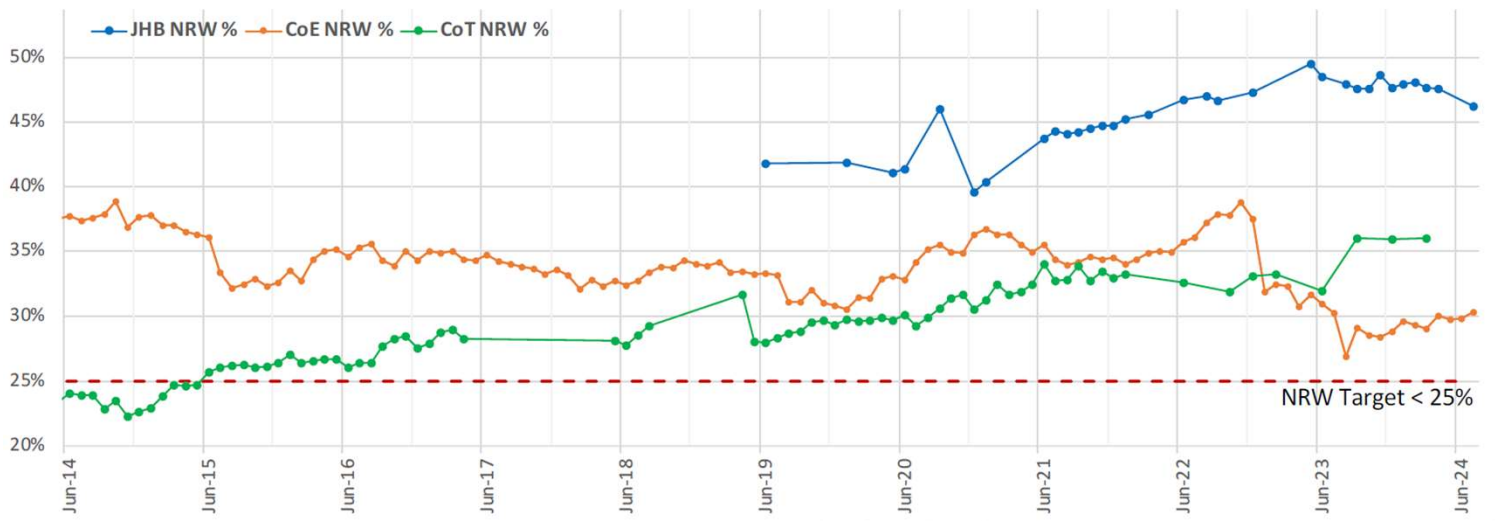
To find out which reservoir supplies your area, click on your city:



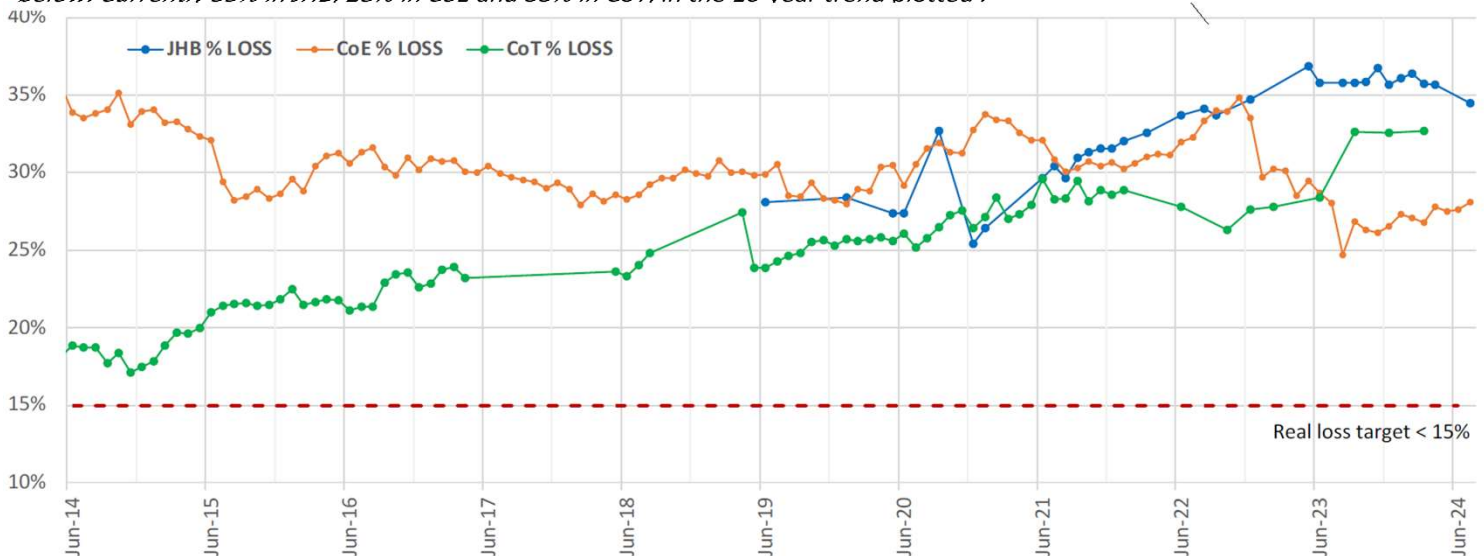
<https://www.johannesburgwater.co.za/johannesburg-water-reservoirs-3/>
link for CoE to be shared as soon as available
link for CoT to be shared as soon as available

METROS WATER MANAGEMENT

7. NON-REVENUE WATER (NRW) is the volume of water that is pumped but for which the municipality receives no income. The target for municipalities in SA is less than 25% but the actual NRW is much higher – currently 46% in JHB, 30% in CoE and 36% in CoT. (see explanation below)



8. REAL OR PHYSICAL LOSSES is the volume of water that runs to waste without any user using it. This includes leaks on mains, leaks and overflows on storage infrastructure and on service connections *outside private property boundaries*. While NRW management includes financial losses, Real losses impact directly on the volume of water that is used. The target is < 15%, shown below. Currently 35% in JHB, 28% in CoE and 33% in CoT, in the 10-year trend plotted :



9. PROGRESS ON METRO NRW REDUCTION INTERVENTIONS: Each of the metros have strategies how to reduce NRW and losses. Expected savings are for the current year. Performance based contracts can reduce NRW more rapidly as savings in non-revenue water can be applied to cover the cost of such contracts. Metros are currently doing feasibility studies to quantify the long term investment required to reduce NRW and the water loss savings that could be achieved.

Current NRW Reducing Initiatives	JHB	CoE	CoT
Leaking reservoir / tower infrastructure repair	x		
Repair / replacement of Zonal bulk meters	x		
Active/Passive leak detection	x		x
New pressure management zones and MNF	x		x
Retrofitting and removal of wasteful devices	x		
By-Law enforcement	x		
Water pipe replacement	x		x
Meter replacement	x		x
EXPECTED SAVING (MLD)	102		5

NRW = Unbilled authorised use + Water losses

Where Unbilled authorised use, includes:

- Unbilled metered use (e.g. municipal own use, supply to communal taps in informal settlements) and
- Unbilled, unmetered use (e.g. fire-fighting, flushing of mains and sewers, deemed/flat-rate consumption)

And Water losses = Apparent losses + Real losses

Where Apparent losses include:

- Metering inaccuracies (old meters under-read actual use)
- Unauthorised consumption (illegal connections and water theft)

<p>For information on water outages and to report leaks:</p> <p>JHB: https://www.johannesburgwater.co.za/emergencies/ CoE: https://www.ekurhuleni.gov.za/for-me/report-it/ CoT: https://www.tshwane.gov.za/?page_id=953</p> <p>Or call: JHB: 0860-JOBURG CoE: 0860 543 000 Or Via My CoE App CoT: 080 111 1556 or whatsapp 087 153 1001</p> <p>Or find outage updates on X: JHB: https://x.com/JHBWater CoE: https://x.com/CoE_Call_Centre CoT: https://x.com/CityTshwane</p>	<p>Resources for how to use water sparingly:</p> <p>https://waterwise.co.za/site/home.html https://www.dws.gov.za/campaigns/WaterUseEfficiency/ToolKit.aspx https://joburg.org.za/Campaigns/Pages/Campaigns/Savewater/Savewater.aspx https://www.ekurhuleni.gov.za/press-releases/service-delivery/water-sanitation/be-the-change-adopt-water-saving-measures-daily/ https://www.tshwane.gov.za/?p=52404</p>
<p>Check for underground leaks by reading your meter regularly:</p> <p>JHB: https://joburg.org.za/services/Pages/City%20Services/Water%20and%20Sanitation/Water%20and%20Sanitation%20Links/Reading-your-own-meter.aspx</p> <p>CoE: https://www.ekurhuleni.gov.za/wp-content/uploads/2022/10/A3-Step-By-Step-Guide-To-Submitting-Your-Meter-Readings.pdf or https://www.ekurhuleni.gov.za/press-releases/utility-services/protect-your-water-meter-you-will-pay-for-negligent-damage-or-tampering/</p>	<p>Reading your utility bill and compare to water meter reading</p> <p>JHB: https://joburg.org.za/services/Documents/Customer%20Service%202020/How%20To%20Read%20Your%20Municipal%20Bill%20Explained.pdf</p>
<p>Seasonal weather forecast: South African Weather Services publishes quarterly climate outlook reports https://www.weathersa.co.za/Documents/SeasonalForecast/SCOLF202408_31082024224741.pdf</p>	