



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

DROUGHT CRISIS UPDATE

19 February 2018

TOGETHER WE CAN
AVOID DAY
ZERO 

Making progress possible. **Together.**

BETWEEN 2010 AND 2015,
130 MEGACITIES WERE HIT BY
DROUGHT DISASTERS



Source: Institute of Water Policy at Lee Kuan Yew School of Public Policy, Singapore

ANNUAL MAJOR DAM LEVELS

All figures are for 25 September for each year



2014



2015



2016



2017

THINK WATER
THINK LESS THAN 87¢ A DAY

2013



2017



The current drought is an unprecedented situation.

Getting through it in 2018 requires that water use be greatly reduced by households, agriculture, commerce and industry alike.

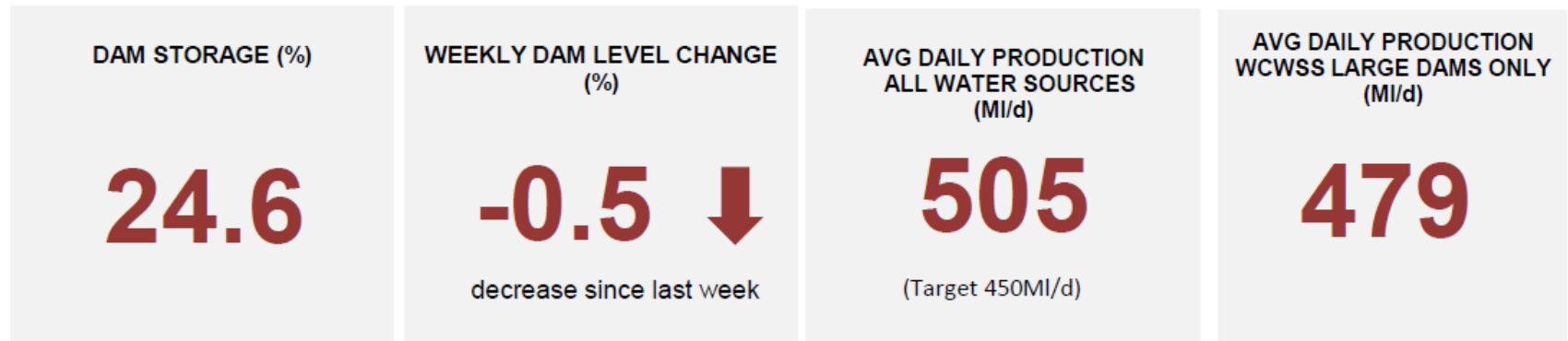
DAM LEVELS – FEBRUARY 2018



CITY OF CAPE TOWN
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City of Cape Town: Water Dashboard

16 February 2018



Water Usage From Large Dams Comprising The Western Cape Water Supply System (WCWSS)

Download the Water Dashboard Report at

www.capetown.gov.za/damlevels

DAY ZERO DASHBOARD – FEBRUARY 2018

DAY ZERO 04 | 06 | 2018

THE DAY WE MAY
HAVE TO QUEUE FOR
WATER

Day Zero is based on the previous week's daily consumption average of 526Ml/day.

NOTE: Level 6b water restrictions are in effect from 1 February, which requires all to drop their daily use to 50 litres pp/day or less. To find out what you can do, visit www.capetown.gov.za/thinkwater

THE CITY

The City's progress on securing alternative water sources.



<u>Cape Town Harbour (Desalination)</u>	50%
<u>Strandfontein (Desalination)</u>	71%
<u>Monwabisi (Desalination)</u>	70%
<u>V&A Waterfront (Desalination)</u>	57%
<u>Cape Flats (Ground Water)</u>	67%
<u>Atlantis (Ground Water)</u>	64%
<u>Zandvliet (Recycled)</u>	55%

Behind Schedule - On Schedule - Ahead of Schedule

THE DAMS

Combined level of dams supplying the city.
For more info click here.



WEEKLY TREND - 0.6% ▼

CAPETONIANS

Percentage of residents using 87l or less per day.

Under review due to new water use targets.

TOGETHER, WE CAN
AVOID DAY ZERO

STATS AS AT WEEK 12 FEBRUARY 2018

Updated weekly – every Monday

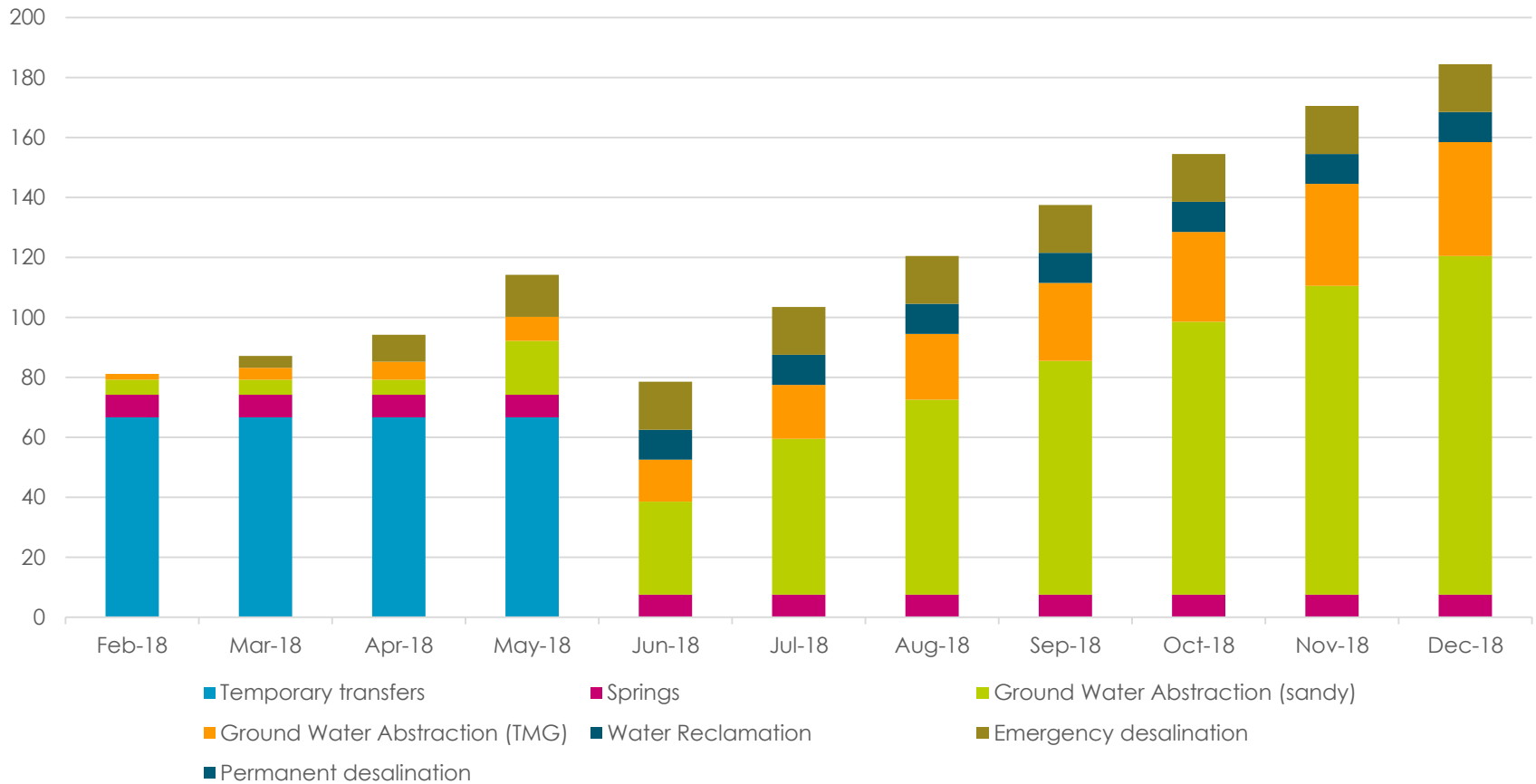
NEW SUPPLY AUGMENTATION

AUGMENTATION

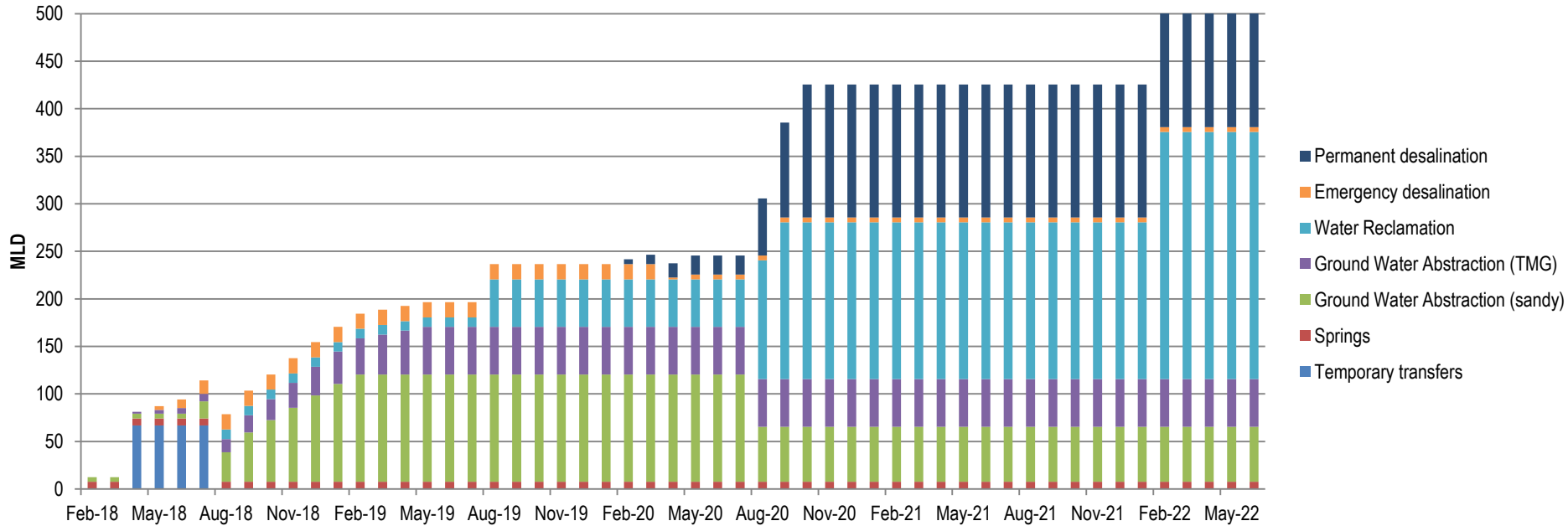
TYPE	LOCATION	MLD	FIRST WATER	FULL PRODUCTION
Short-term, temporary desalination	Strandfontein	7	March 2018	May 2018
	Monwabisi	7	March 2018	May 2018
Groundwater abstraction	V&A Waterfront	12	March 2018	May 2018
	Cape Flats aquifer	80	May 2018	June 2018
	Atlantis aquifer	20	May 2018	October 2018
	TMG aquifer	40	February 2018	June 2019
Springs	Newlands Albion spring	3	In operation	
	Oranjezicht	1	In operation	
Water re-use	Zandvliet	10-50	June 2018	December 2021
	Cape Flats	10-75	June 2018	December 2021
	Macassar	20	June 2019	
	Potsdam	10	June 2019	
Permanent desalination	Ahtlone	75	December 2021	
	Koeberg		(pilot underway)	

AUGMENTATION – ANTICIPATED YIELDS, TBC

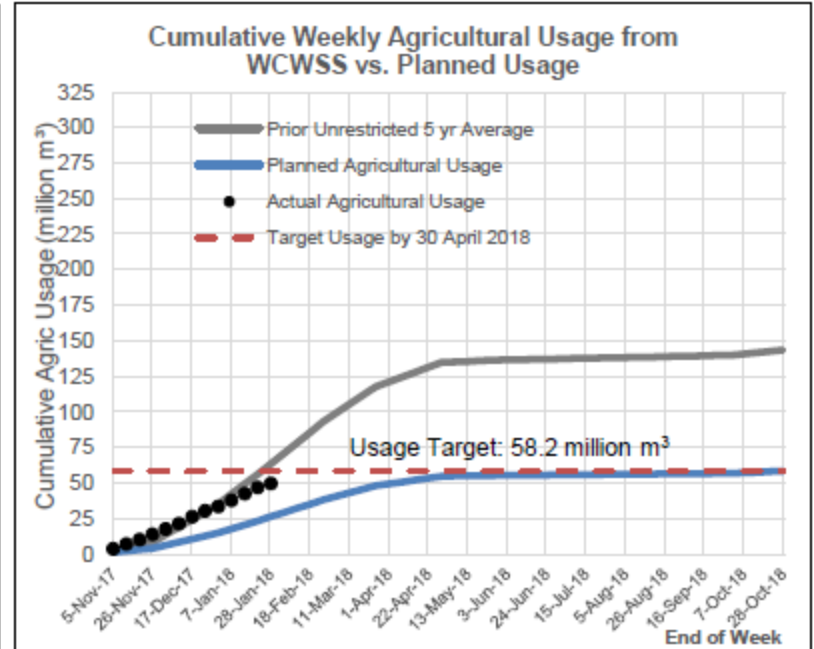
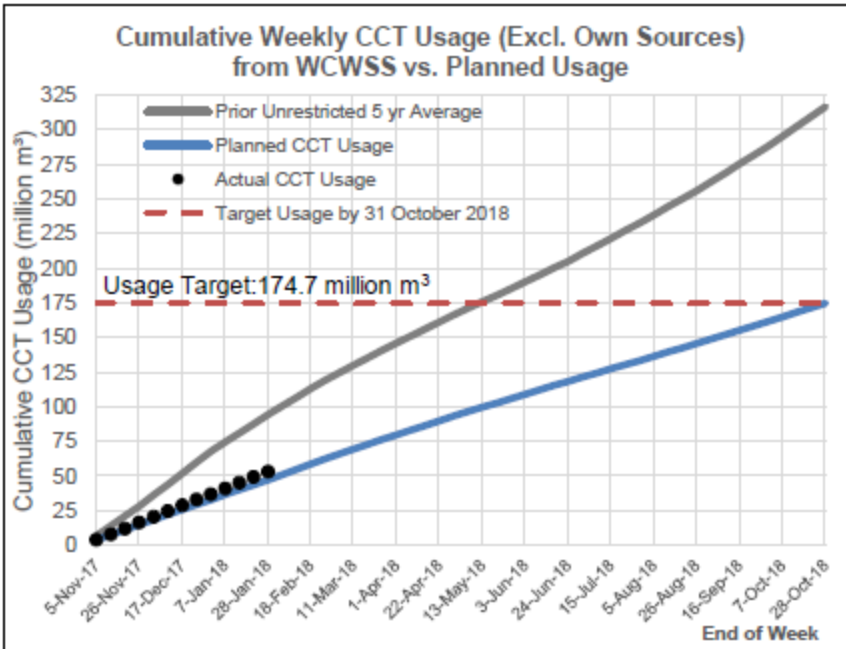
Augmentation 2018 MLD



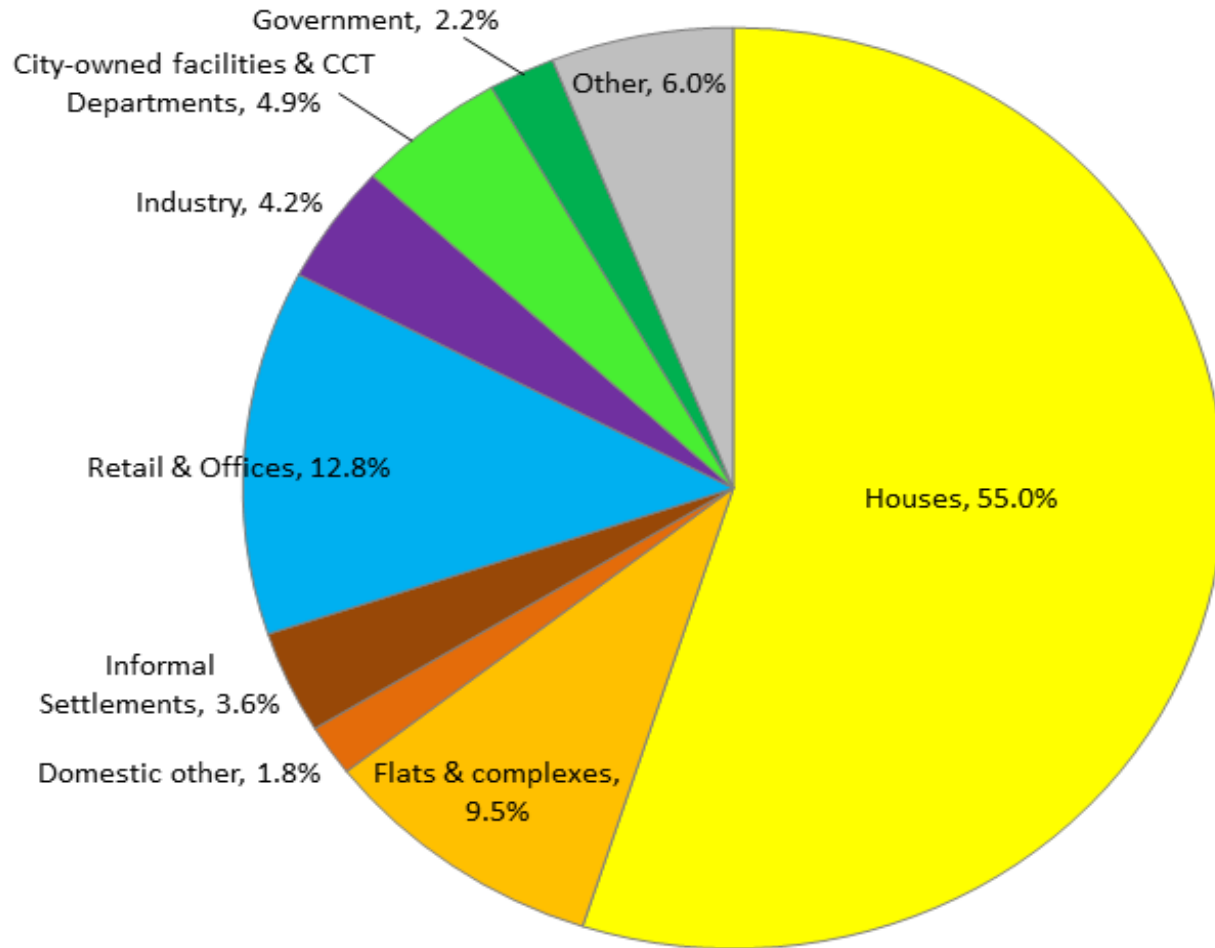
AUGMENTATION – ANTICIPATED YIELDS, TBC



CITY & AGRICULTURE MUST BOTH RESTRICT USAGE

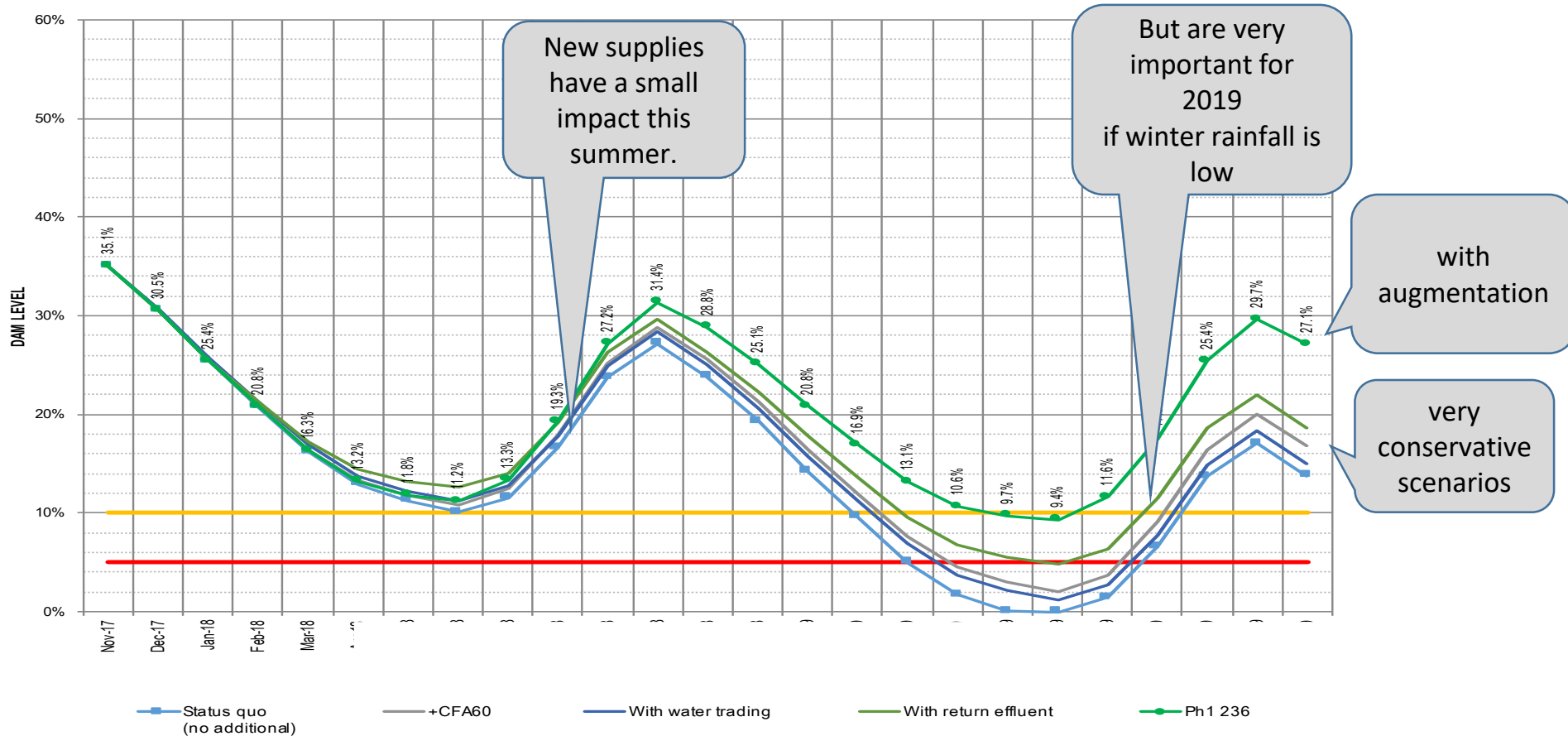


WATER CONSUMPTION 2016/17



Formal homes use 65% of Cape Town's water.

IMPACT OF NEW SUPPLY NEXT SUMMER



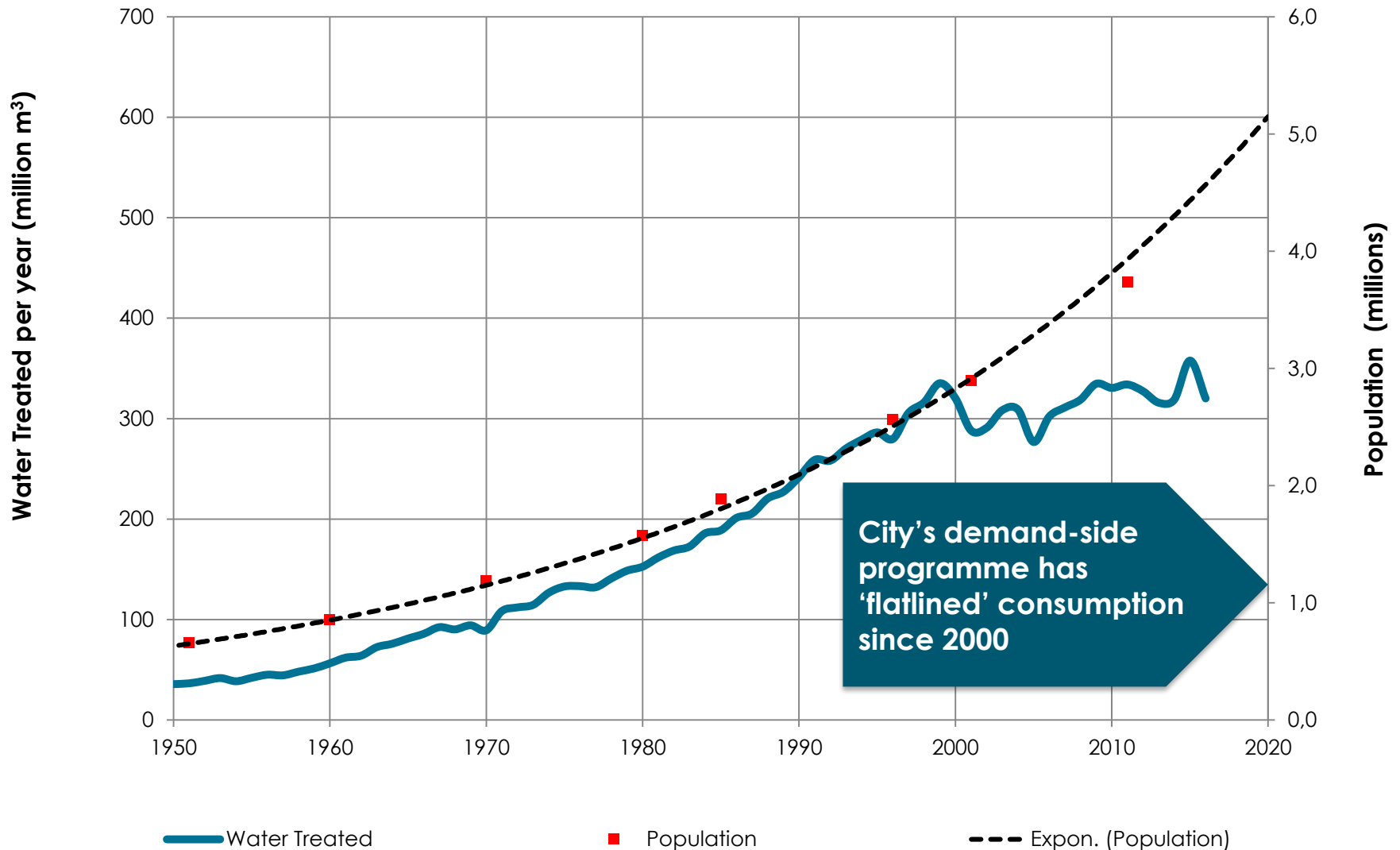
New water supplies are important for water security going forward but these will have little impact this summer

DEMAND MANAGEMENT



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POPULATION GROWTH & WATER USE



DEMAND MANAGEMENT

- **Water restrictions & punitive tariffs: Level 6b, target of 450 MLD, with maximum of 50 litres pp/day.**
- **Water conservation**
 - **Leak management: response times & repair, including repair for indigent households**
 - **Pipe replacement**
- **District metering and zoning**
- **Pressure reduction**
- **Water Management Devices and meter management**
- **Education, awareness and behaviour change**
- **Communication campaigns**
- **Household & business adaptation**

**Awarded C40 Award for
Adaptation in 2015 for Water
Conservation and Demand
Management**

**C40
CITIES**

RESTRICTIONS

LEVEL	DATE	RESTRICTION	TARGET
Level 1	2005	<ul style="list-style-type: none"> No irrigation 10:00-16:00 Spray nozzles for hosepipes No hosing down hard surfaces No dampening of building sand 	10% savings
Level 2	1 January 2016	<ul style="list-style-type: none"> Irrigation for 1 hour on Tue, Wed, Thur No irrigation 9:00-16:00 	20% savings
Level 3	1 November 2016	<ul style="list-style-type: none"> Buckets only for watering gardens Pool covers 	30% savings
Level 3B	1 February 2017	<ul style="list-style-type: none"> No private car washing 	30% savings
Level 4	1 June 2017	<ul style="list-style-type: none"> No irrigation No topping up of private pools 	100 Litres pp/day
Level 4B	1 July 2017	<ul style="list-style-type: none"> No topping up of public pools 	87 Litres pp/day
Level 5	3 September 2017	Fines: <ul style="list-style-type: none"> Residential > 20kl/m Commercial: 20% less than same month previous year 	87 Litres pp/day
Level 6	1 January 2018	<ul style="list-style-type: none"> Households consuming more 10.5kl/m prioritised for WMD Non-residential properties reduce by 45% less than pre-drought consumption (2015) Agriculture to reduce by 60% 	87 Litres unless targets continue to be missed in which case this will be reduced
Level 6b	1 February 2018	<ul style="list-style-type: none"> Households consuming more than 6 kl/m prioritised for WMD Punitive tariffs for >10.5kl/m 	50 Litres pp/day

50 FOR 150

If we all use 50 litres for 150 days, we have a chance of making it to the next rainy season, without having to queue for water.

HOUSEHOLD WATER USAGE GUIDE

MAXIMUM MONTHLY HOUSEHOLD QUOTA PER PERSON

Based on 50 litres per person / day



1 = 1 500ℓ
per month



2 = 3 000ℓ
per month



3 = 4 500ℓ
per month



4 = 6 000ℓ
per month



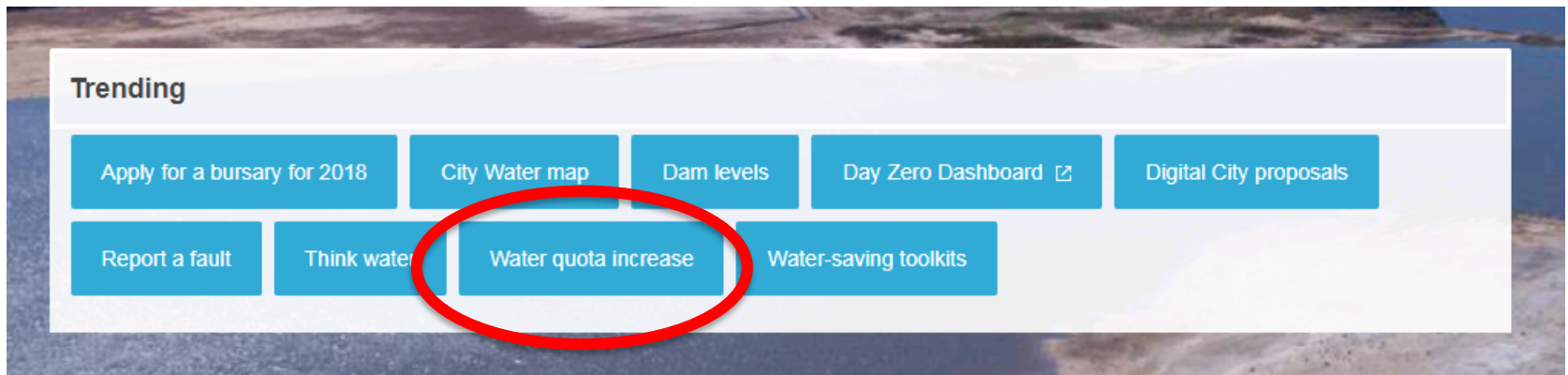
*** 5 = 7 500ℓ**
per month

* Apply for a monthly quota increase if there are more than **FOUR** people living in your home.

APPLY FOR AN INCREASE IN YOUR MONTHLY WATER QUOTA

If there are more than four persons living full-time in a household or on a property, an application needs to be made to the City to have the monthly water quota increases accordingly. Households that exceed limits prescribed by Level 6b water restrictions, will be fined and have WMD (Water Management Devices) fitted at their cost.

- Submit your application online at www.capetown.gov.za/servicerequests
- Full guide and step-by-step instructions available on website.



ALTERNATIVE WATER PRINCIPLES

- **Quality required for different uses** – as per 1996 national guidelines.
- **Applications & licensing required** for groundwater, surface water & treated effluent.
- **Imperative to prevent potentially dangerous alternative water from contaminating drinking water system** on the premises and surrounding area. Reduced Pressure Zone (RPZ) valve back-flow preventer is mandatory.
- **Discharge to correct place** – overflow to stormwater or to sewer if harmful chemicals or substances
- **Colour code the pipes**
- **Put up the official ‘Do not drink’ warning signage** – on City’s website

For **Summary Guidelines for Installing Alternative Water Systems** and application info see: <http://cct.gov.za/bC2nV>



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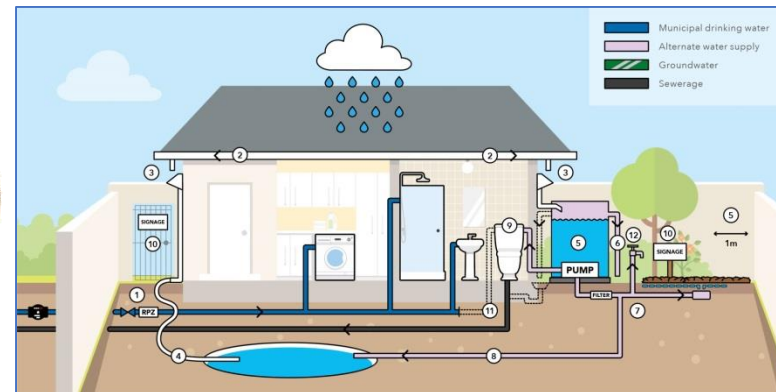


**NON-DRINKING WATER IN USE.
DO NOT DRINK!**

**KUSETYENZISWA AMANZI ANGASELWAYO.
MUSA IKUWASELA LA MANZI!**

**NIEDRINKBARE WATER IN GEBRUIK.
MOENIE DRINK NIE!**

Making progress possible. Together.



RESOURCES

Available from www.capetown.gov.za/thinkwater

Resources include:

- Posters & videos
- Print ready material |
 - 50 litre life
 - Water saving checklist
 - How to safely use greywater
 - How to find and fix leaks
 - Permission cubicle for toilets
 - Water management device and water rationing leaflets
- **Extensive FAQs:** How the City manages leaks, disaster plans for Day Zero
- **Guides:** e.g. installation of alternative water systems
- **Day Zero Dashboard**
www.capetown.gov.za/dayzerodashboard
- **Dam Levels** www.capetown.gov.za/damlevels
- **Cape Town Water Map** www.capetown.gov.za/watermap



Resource packs are updated as new material is being made available.

LET'S BEAT DAY ZERO WITH 50ℓ OR LESS PER DAY



This is a guide for 50ℓ per person per day. Your actual usage will depend on your appliances and personal preferences.

FOR MORE VISIT CAPETOWN.GOV.ZA/THINKWATER

FOLLOW @CITYOFCT ON FACEBOOK AND TWITTER



CITY OF CAPE TOWN
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Making progress possible. Together.

City and other campaigns:

www.capetown.gov.za/thinkwater

www.wwf.org.za – campaigns & info for residents and businesses

www.greencape.co.za – drought support to business

<https://www.westerncape.gov.za/110green/reduce-water-consumption> – 110% Green website, including list of reputable suppliers

www.flow.org.za

www.wcedp.co.za



Water-saving tips to help avoid Day Zero

Day Zero is when the dam levels reach 13,5% and when almost all of the taps in the city will be turned off and we will have to queue for water.

The more you save, the better our chances to avoid running out of water.

Toilet flushing and sanitation



Only flush the toilet everywhere when necessary. Let the 'yellow overflow' at home, work, school, gym, shops, etc.



Place a full glass bottle in your cistern to reduce each flush to a maximum of 6 litres (if you have no choice but to use municipal drinking water).



Flush with greywater only (laundry, bath and shower water) or with rain, borehole or well-point water.



Use less toilet paper to minimise the risk of sewer blockages and do not use your toilet as a ductbin.



Close toilet stopcock (angle valve). You will save municipal drinking water.



Use bleach or disinfectant to regularly sanitise toilets and surrounding areas and keep hands sanitised to prevent health risks.

Please note: The use of water from alternative sources has some health and hygiene risks you must avoid. Keep hands and surface areas sanitised and disinfected. Don't keep greywater for longer than 24 hours. Keep water containers in a safe place as children can drown in them.

Body washing and personal hygiene



Take very short, stop-start showers. Wet your body. Turn off the tap. Soap. Rinse quickly.



Don't let taps run for too long or at full flow. Use a cup for shaving, brushing teeth, etc.



No shower? Take a sponge bath. Use minimal water in a basin, bowl or washub ('waskom').

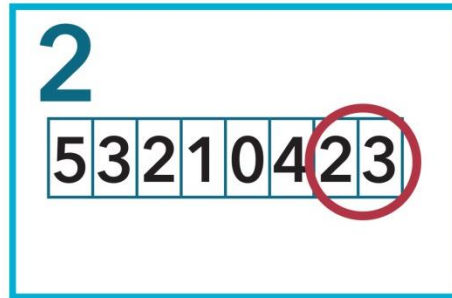


Use waterless hand sanitiser instead of washing your hands.

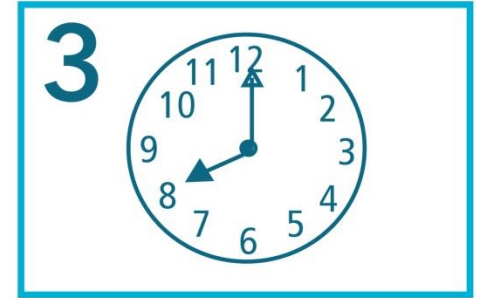
HOW TO CHECK FOR LEAKS ON YOUR PROPERTY



STOP ALL WATER USE.



CHECK AND RECORD YOUR METER READING.



WAIT 15 MINUTES AND TAKE ANOTHER READING.



IF THERE IS A DIFFERENCE, YOU HAVE A LEAK TO FIX.



CALL A PLUMBER TO HELP FIX THE LEAK.

<http://www.capetown.gov.za/thinkwater>

THINKWATER
CARE A LITTLE. SAVE A LOT.

3 SIMPLE TESTS FOR A TOILET LEAK

One leaking toilet wastes between about 2600 and 13 000 litres per month, depending on the flow rate of the leak. A leaking tap wastes between about 400 and 2600 litres per month.



Listen for water trickling into the toilet bowl.



Press a piece of toilet paper against the inside back surface of the bowl. If it gets wet, you probably have a leak.



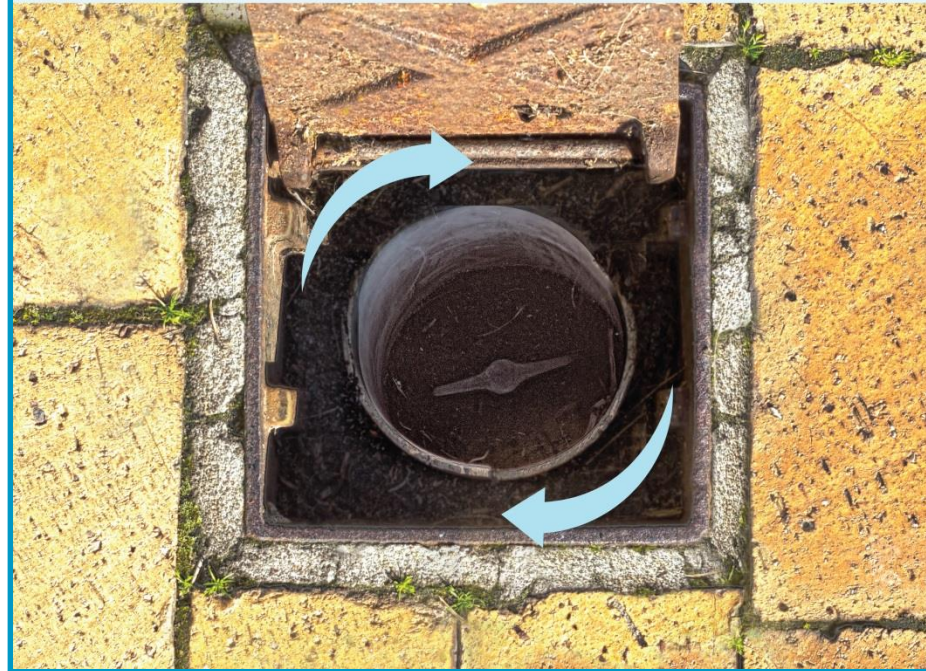
Put 15 drops of food colouring into the toilet cistern. If after 15 minutes the water in the toilet bowl has changed colour, there is a leak.

Reduce your water flow. Please **SAVE** where you can.

**YOUR STOPCOCK WILL BE $\pm 1.5\text{M}$
FROM YOUR WATER METER.**



**TO CLOSE, TURN THE STOPCOCK IN A
CLOCKWISE DIRECTION.**



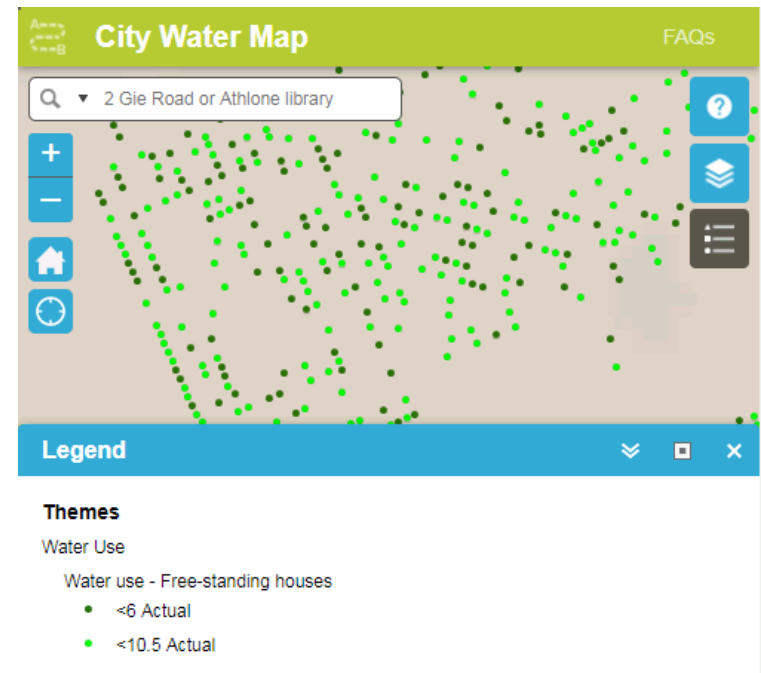
The stopcock on your property

CITY WATER MAP

- The water map indicates water use for free-standing households only (no complexes, flats etc. are indicated)
- The data is for the previous month and might not correspond to your billing period.
- If there is no dot for your *free-standing* household, it means that your water use is more than 10 500 litres per month. This could be due to:
 - Undetected leaks
 - High number of occupants
 - Business run from the home
 - Recently completed building work
 - Etc.

Full FAQs available online

www.capetown.gov.za/watermap



CID AREA MOBILIZATION

- City sending out info mailers – please share
- Community/Precinct Water Plans and engagement
- Best ways to engage and mobilize- for discussion

WATER AND SANITATION TARIFFS – 1 FEBRUARY 2018

Residential Water Tariffs (Domestic Full and Domestic Cluster)

Water Steps (1kl = 1 000 litres)	Level 4 (2017/18) Until 31/1/2018 Rands (incl VAT)	Level 6 (2017/18) From 1/2/2018 Rands (incl VAT)
Step 1 (>0 ≤ 6kl)	R4, 56 (free for indigent households)	R29, 93 (free for indigent households)
Step 2 (>6 ≤ 10.5kl)	R17, 75	R52, 44 (R 17, 75 for indigent households)
Step 3 (>10.5 ≤ 20kl)	R25, 97	R114
Step 4 (>20 ≤ 35kl)	R43, 69	R342
Step 5 (>35 ≤ 50kl)	R113, 99	R912
Step 6 (>50kl)	R302, 24	R912

*Sanitation charged to a maximum of 35kl

Domestic Full = Stand-alone houses

Domestic Cluster = Flats, sectional title units, cluster developments and gated villages

WATER AND SANITATION TARIFFS – 1 FEBRUARY 2018

Residential Sanitation Tariffs (Domestic Full and Domestic Cluster)

Water Steps (1kl = 1 000 litres)	Level 4 (2017/18) Until 31/1/2018 Rands (incl VAT)	Level 6 (2017/18) From 1/2/2018 Rands (incl VAT)
Step 1 (>0 ≤ 4,2 kl)	R4, 39 (free for indigent households)	R 25, 65 (free for indigent households)
Step 2 (>4.2 ≤ 7.3 kl)	R14, 98	R44, 46 (R14, 98 for indigent households)
Step 3 (>7.35 ≤ 14 kl)	R30, 31	R98, 04
Step 4 (>14 ≤ 24.5 kl)	R49, 04	R119, 70
Step 5 (>24.5 ≤ 35 kl)	R59, 30	R119, 70

*Sanitation charged to a maximum of 35kl

Domestic Full = Stand-alone houses

Domestic Cluster = Flats, sectional title units, cluster developments and gated villages

WATER AND SANITATION TARIFFS – 1 FEBRUARY 2018

Commercial / Industrial Tariffs

Water Steps (1kl = 1 000 litres)	Level 4 (2017/18) Until 31/1/2018 Rands (incl VAT)	Level 6 (2017/18) From 1/2/2018 Rands (incl VAT)
Water	R27, 97	R57
Sanitation (standard)	R21, 50	R44, 18

*Sanitation charged to a maximum of 35kl

Domestic Full = Stand-alone houses

Domestic Cluster = Flats, sectional title units, cluster developments and gated villages

WATER AND SANITATION TARIFFS – 1 FEBRUARY 2018

Schools / Sport Bodies / Religious Institutions / Charities Tariffs

Water Steps (1kl = 1 000 litres)	Level 4 (2017/18) Until 31/1/2018 Rands (incl VAT)	Level 6 (2017/18) From 1/2/2018 Rands (incl VAT)
Water	R24, 72	R57
Sanitation (standard)	R21, 50	R44, 18

*Sanitation charged to a maximum of 35kl

Domestic Full = Stand-alone houses

Domestic Cluster = Flats, sectional title units, cluster developments and gated villages

ACTIVE DETECTION & REPAIRS

- Dedicated leak detection team (Includes EPWP and Rand Water graduates)
- Creation of 75 new positions to reduce response times to burst pipes and meter faults / leaks.
- Injection of R22m into this programme this year to improve response time

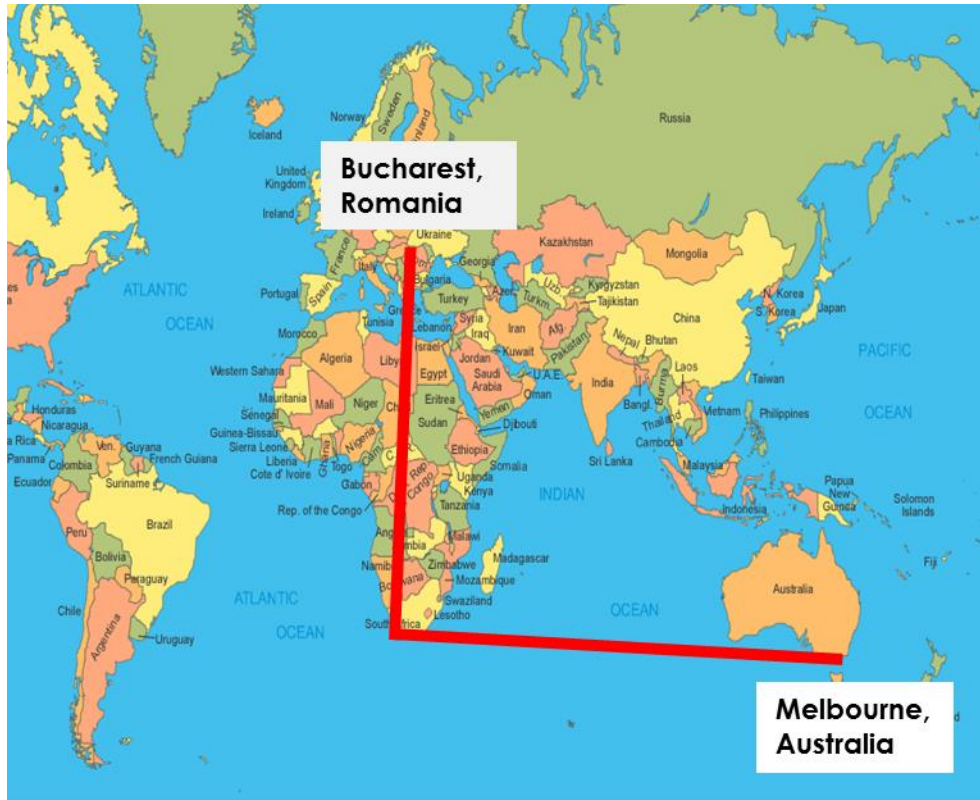


Vandalized hydrants and dumping in chambers



Leak Detection in progress

WATER RETICULATION SYSTEM



- **9,300km** of sewer pipeline
- **11,000km** of water pipeline
- **650,000** service connections
- **821** staff fixing leaks daily
- **800+** service requests daily

COMPARATIVE WATER LOSSES

METRO	DWS REPORT (2013)		SALGA's MBI (2015)	
	Water Loss %		Water Loss %	
City of Cape Town	16 *		14.7	
City of Johannesburg	36.5		24.8	
eThekweni	35.3		38.2	
Ekurhuleni	31.8		33.9	
Tshwane	22.9		22.4	
Nelson Mandela Bay	32.4		38.2	
Buffalo City	37.1		38	
Mangaung	35.7		28.3	
Msunduzi			32.9	
Average of above	30.9		30.2	
DWS & MBI Average	29.7		27.9	

National average for water losses as per the DWS "Strategic Overview of the Water Sector in South Africa 2017" puts national average for water loss across municipalities at 36%.

*Cape Town water loss currently at 16%

PRESSURE MANAGEMENT



- Decreasing water pressure **slows the rate at which water runs** from taps, **protects the system from pipe bursts**, and **reduces water losses due to leaks**
- The **City has gradually been reducing water pressure** in a synchronised manner over the past few months
- Switching water on and off is not an easy task, as when the pipes are empty **it takes time to fill them up again** and the **risks of pipe bursts increases**

- More than 116 pressure management zones have been created
- Design underway for further 29 pressures management zones
- Throttling of bulk water valves is being done where benefits are identified
- These zones are being optimised during this current drought
- They are spread throughout the City and no specific areas are targeted
- High lying areas likely to experience most reduced pressure

WATER MANAGEMENT DEVICES

A WMD replaces a standard water meter and is programmed to provide a daily allocation to use on your property.

- Switches on at a fixed time each morning e.g. 4 am.
- Restricts to 350 litres a day (10.5 kilolitres a month) – although a different amount can be agreed with City.
- Switches off when the household has used its daily water quota.
- Resets next morning to release daily amount.
- Any amount not used is carried over to the next day during that calendar month.

Currently being installed on a mass scale



WATER MANAGEMENT DEVICES

- Up until end of 2016/2017 220 000 WMDs had been installed
- Approximately 22 000 WMDs installed since mid-September 2017 focused on high water users
- Now being installed at rate of more than 2000 per week
- As of January all domestic properties using more than 10500kl/m to be fitted



ENFORCEMENT

The water inspectorate continues to issue fines for all water restriction contraventions

Most common contraventions:

- Washing of vehicles

- Wasting of water

- Hosing down of paved surfaces

- Dampening of building materials



18 permanent water inspectors
20 EPWP law enforcement officers
Additional staff being recruited

TREATED EFFLUENT RE-USE FOR LARGE USERS

- More than 200 users have permanent connections
- More than 70 Industries are collecting treated effluent at wastewater treatment works & standpipe points
- Mostly used for irrigation and industrial purposes
 - Golf courses
 - City Parks
 - Schools
 - Farmers
 - Industries etc.
 - City Departments



WHAT WE WANT TO AVOID



See City's website for updated FAQs and media releases for latest information

WHAT WE WANT TO AVOID





CAPE TIMES

Wednesday August 23 2017

**DAY ZERO
FOR WATER
EARLY
2018**

with BUSINESS REPORT

**TOGETHER WE
CAN AVOID
DAY ZERO**

Let's push it out
further, together.



CITY OF CAPE TOWN
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STAD KAAPSTAD

THANK YOU

Sarah.Rushmere@capetown.gov.za - 082-771-5137

Making progress possible. **Together.**