INVEST CAPE TOWN
WATER CRISIS DEBRIEF

Presented by Lance Greyling
Director: Enterprise & Investment
NEAR CAPACITY IN 2014

THEEWATERSKLOOF DAM - 20 JAN 2014
HOW DID WE GET HERE?

THEEWATERSKLOOF DAM - 20 JAN 2017
ANNUAL MAJOR DAM LEVELS

All figures are for 25 September for each year

- 2014: 100.8%
- 2015: 73.7%
- 2016: 61.9%
- 2017: 37.4%

THINK WATER
THINK LESS THAN 87 L A DAY
BETWEEN 2010 AND 2015, 130 MEGACITIES WERE HIT BY DROUGHT DISASTERS
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Getting through it in 2018 requires that water use be greatly reduced by households, agriculture, commerce and industry alike.
THIS IS WHAT WE WANT TO AVOID

WE CAN ONLY AVOID IT IF WE ALL WORK TOGETHER.

#ThinkWaterCT
PHASES OF THE DISASTER PLAN

We are currently in Phase 1 with Level 6b in effect from 1 February 2018. Day Zero is set for 12 April 2018, unless water use drastically reduces across the City.

PHASE 1  
Preservation Restrictions (rationing)

PHASE 2  
Disaster Restrictions “Day Zero”

PHASE 3  
Full-scale disaster implementation

We are currently in Phase 1 with Level 6b in effect from 1 February 2018. Day Zero is set for 9 July 2018, unless water use drastically reduces across the City.
DAY ZERO

WHAT WILL HAPPEN ON DAY ZERO?

From this point onwards most taps will be shut off so that the last available water in our dams can be preserved for basic use.

200 sites have been confirmed and we will be erecting signage at these points within the coming weeks so that persons in these communities are aware of where their collection point will be situated.

Water tankers will be used to deliver water to vulnerable groups such as old age homes and care facilities.

We are also engaging retailers and the bottled water association to ramp up their distribution networks to increase bottled water supply, so that those who do not want to use the water collection points can purchase water.

We will use the reticulation network to supply approximately 200 water collection sites with water.

We are committed to working with industry to avoid day zero and to keep our economy functioning.

The water at the collection points will be fed through a core reticulation system that has been isolated from the rest of the network to supply critical infrastructure and the water collection points.

Residents should be aware that the Day Zero phase is an extreme disaster scenario, and significant disruption of daily life is to be expected.
WATER DASHBOARD

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

DAY ZERO 09 | 07 | 2018
THE DAY WE MAY HAVE TO QUEUE FOR WATER

Day Zero is based on the previous week's daily consumption average of 523ML/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.

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

CAPETONIANS
Percentage of residents using 87l or less per day.
WHAT ARE WE DOING TO ADDRESS IT?
PRESSURE MANAGEMENT

- 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

- This will lead to outages in certain areas for approximately 10 hours a day
ONE OF THE LOWEST WATER LEAKAGE RATES IN THE WORLD

Cape Town Municipality: 16%
National Average: 36%

DWS Strategic Overview of the Water Sector in South Africa 2017
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 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 10,500kl/m to be fitted
TREATED EFFLUENT RE-USE FOR INDUSTRY

• More than 200 users have permanent connections

• More than 70 Industries are collecting treated effluent at WWTW and standpipe points

• Mostly used for irrigation and industrial purposes:
  - Golf courses
  - City Parks
  - Schools
  - Farmers
  - City Departments
  - Industries etc.
"The project management of Cape Town’s new water supply is impressive. This was confirmed in November by World Bank consultants who spent time with the City to look at their plan.

They agreed that the plan was excellent and one of the most detailed they had ever seen. The project management team has put in place a range of measures to speed up procurement time lines that are in line with private sector procurement, seldom seen within government."

Gina Ziervogel, associate professor in the Department of Environmental and Geographical Science and Research Chair at the African Climate and Development Initiative, University of Cape Town.
AUGMENTATION

The City of Cape Town has been working towards a diversified supply for some time, but due to the expense of options other than surface water, the projects have progressed to pilot stage, rather than production. The full augmentation plan runs until June 2022.

• Short-term, temporary desalination (16 MLD)
• Groundwater abstraction (peak at 150 MLD)
• Springs
• Water re-use
• Water transfers
• Permanent desalination
<table>
<thead>
<tr>
<th>TYPE</th>
<th>LOCATION</th>
<th>MLD</th>
<th>FIRST WATER</th>
<th>FULL PRODUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term, temporary desalination</td>
<td>Strandfontein</td>
<td>7</td>
<td>March 2018</td>
<td>May 2018</td>
</tr>
<tr>
<td></td>
<td>Monwabisi</td>
<td>7</td>
<td>March 2018</td>
<td>May 2018</td>
</tr>
<tr>
<td></td>
<td>V&amp;A Waterfront</td>
<td>12</td>
<td>March 2018</td>
<td>May 2018</td>
</tr>
<tr>
<td>Groundwater abstraction</td>
<td>Cape Flats aquifer</td>
<td>80</td>
<td>May 2018</td>
<td>June 2018</td>
</tr>
<tr>
<td></td>
<td>Atlantis aquifer</td>
<td>20</td>
<td>May 2018</td>
<td>October 2018</td>
</tr>
<tr>
<td></td>
<td>TMG aquifer</td>
<td>40</td>
<td>February 2018</td>
<td>June 2019</td>
</tr>
<tr>
<td>Springs</td>
<td>Newlands Albion spring</td>
<td>3</td>
<td>In operation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oranjezicht</td>
<td>1</td>
<td>In operation</td>
<td></td>
</tr>
<tr>
<td>Water re-use</td>
<td>Zandvliet</td>
<td>10-50</td>
<td>June 2018</td>
<td>December 2021</td>
</tr>
<tr>
<td></td>
<td>Cape Flats</td>
<td>10-75</td>
<td>June 2018</td>
<td>December 2021</td>
</tr>
<tr>
<td></td>
<td>Macassar</td>
<td>20</td>
<td>June 2019</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Potsdam</td>
<td>10</td>
<td>June 2019</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ahtlone</td>
<td>75</td>
<td>December 2021</td>
<td></td>
</tr>
<tr>
<td>Permanent desalination</td>
<td>Koeberg</td>
<td></td>
<td>(pilot underway)</td>
<td></td>
</tr>
</tbody>
</table>
FUTURE PROJECTS

Providing water from diverse sources in the region of 300 to 450 MLD will increase the city’s resilience to periods of drought at the same time as provide for future growth.

The impact of climate variability will be continuously assessed and the planned augmentation volume may be increased in future years, in consultation with DWS.

Work is proceeding on a number of water re-use options including Cape Flats (75 MLD), Athlone (75 MLD), Zandvliet (50 MLD) and Macassar (20 MLD). Options for recharge of the Cape Flats aquifer are also being explored.

The optimum site for a 120-150 MLD permanent desalination plant is being explored and a pilot plant at Koeberg (20 MLD) is being constructed which will inform the design for a larger desalination plant at that site in the future.
ENFORCEMENT

The water inspectorate continues to issue fines for all water restriction contraventions.
RESOURCES & CAMPAIGNS

CITY WEBSITE,
VIDEOS,
FAQ’S,
CITY WATER MAP,
TOOLKIT,
RESOURCES ON INVEST CT

THINK WATER
THINK LESS THAN 87L A DAY

For more information visit our website
www.capetown.gov.za/thinkwater

CAPE TOWN DAM LEVELS ARE CRITICALLY LOW
PLEASE SAVE WATER WHILE THERE’S STILL WATER TO SAVE.

THINK WATER
CARE A LITTLE. SAVE A LOT.

INDLELA EZIPHAMBI
EZINGOKULONDOLOZA AMANZI NGAPHAKATHI EZINDLINI

CINGA NGAMANZI
WATER CONSERVATION TIPS HARDER

INVEST CAPE TOWN
COLLABORATE | ENABLE | PROMOTE
LET'S BEAT DAY ZERO
WITH 50L OR LESS PER DAY

YOUR GUIDE TO 50L

9L
DISH WASHING
1 sink wash a day or
1 economy load (25?) every 3 days = 9L/day.

10L
SHOWER
Stop shower (with hair wash).
No hair wash = 5L
Sponge bath = 3L

1L
PETS
Small to medium sized pets.

1L
COOKING
Food prep and cooking.

3L
DRINKING
Water, tea, coffee.

2L
TEETH AND HANDS
Wash hands with waterless sanitizer = 0L

5L
LAUNDRY
1 machine load (70?/)
per week = 10L/day
1 handwash basin = 9L

10L
FLUSHES
One flush,
Use greywater = 0L
If it's yellow, let it settle.

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
www.capetown.gov.za/thinkwater
www.defeatdayzero.co.za
www.greencape.co.za
www.wwf.org.za
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
If we all use 50 litres for 150 days, we have a chance of making it to the next rainy season, without having to turn off the taps.

Don’t wait for Level 6b water restrictions, to reduce your use.
LEVEL 6B WATER RESTRICTIONS:
WHAT DOES IT MEAN FOR BUSINESS?
# WATER TARIFFS – LEVEL 6B

<table>
<thead>
<tr>
<th>Water Steps (1kl = 1 000 litres)</th>
<th>Level 4 (2017/18) Until 31/1/2018 Rands (incl VAT)</th>
<th>Level 6 (2017/18) From 1/2/2018 Rands (incl VAT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>R27, 97</td>
<td>R57</td>
</tr>
<tr>
<td>Sanitation (standard)</td>
<td>R21, 50</td>
<td>R44, 18</td>
</tr>
</tbody>
</table>
EXCESSIVE WATER USE - PENALTIES

• The City will impose harsh penalties on commercial and agricultural users who do not adequately reduce water use.

• Level 6B restrictions state that all commercial and agricultural users must reduce their water usage by 45% and 60% respectively compared with the corresponding period in 2015 (pre-drought).

• Commercial and agricultural users who do not reduce their water usage will be fined or have water management devices installed on their properties, in line with the City’s Water By-law.

• If you can provide the City with adequate motivation to justify higher monthly water consumption, apply to increase your current quota of water.
WHAT CAN INDUSTRY DO?
INNOVATE

More than 70 Industries are collecting treated effluent at WWTW and standpipe points.
INDUSTRY DOING ITS BIT

THESE COMPANIES ARE LOOKING AT ALTERNATIVE SOLUTIONS, IMPLEMENTING WATER SAVING MEASURES, GOING OFF THE GRID:

• Old Mutual
• Rabie
• Vineyard Hotel
• WWF
• EVENTS
WE CAN STILL AVOID DAY ZERO
THANK YOU