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A close-up, high-speed photograph of water splashing, with numerous droplets suspended in the air, creating a dynamic and textured background for the text.

**The good, the  
bad, and the  
government:  
political  
response to the  
water crisis in  
Cape Town**

Dr. P. Kim Sturgess  
CM, P.Eng., FCAE  
CEO

June 4, 2018

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## COUNTING DOWN TO DAY ZERO IN CAPE TOWN

By Rosa Lyster March 1, 2018



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### 'It's not impossible': Western Canada's risk of water shortages rising

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### Will Cape Town be the first city to run out of water?

By Gabriella Mulligan  
Technology of Business reporter

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LIVE EVENT 7 mins ago WATCH LIVE: Alberta Premier Notley speaks after feds ink deal to buy Trans Mo

ENVIRONMENT March 7, 2018 11:17 am

### Cape Town may not run out of water after all – but these other cities might

By Adam Frisk  
National Online Journalist, Breaking News Global News

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## In less than 3 months, a major international city will likely run out of water

By Paul P. Murphy, CNN  
Updated 2:35 PM ET, Wed January 31, 2018

THE GLOBE AND MAIL

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OPINION

### As 'Day Zero' approaches, Cape Town faces a waterless future

art.com

# Tale of two cities



Source: <http://www.spsevents.org/city/CapeTown>



Source: Primelocation.com



Source: Johnny Miller

[www.albertawatersmart.com](http://www.albertawatersmart.com)

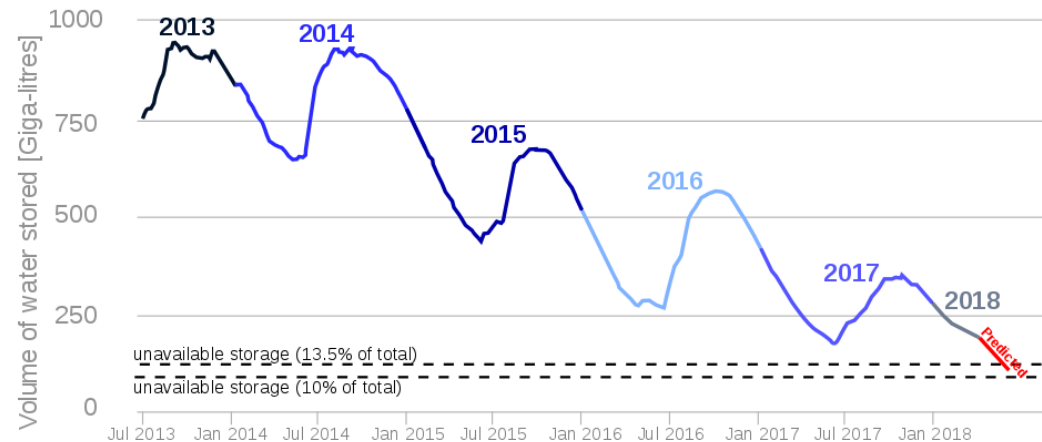
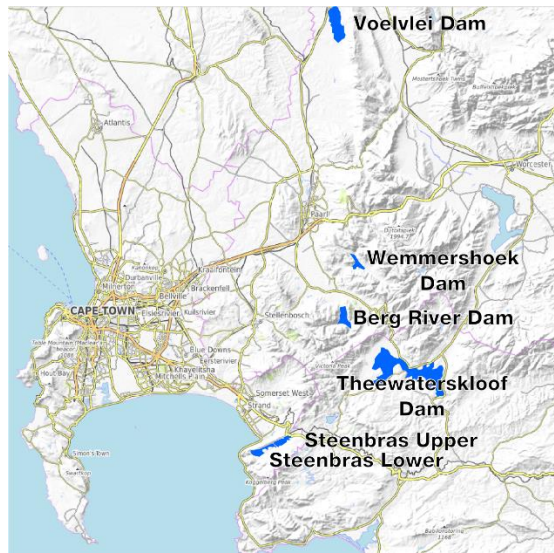


Source: Business Insider

# What caused the crisis?

Obvious blame goes to climate change

- Cape Town's water supply is from 5 dammed reservoirs filled by surface water
- Past 3 years driest since 1930s



Images sourced from: Wikimedia commons

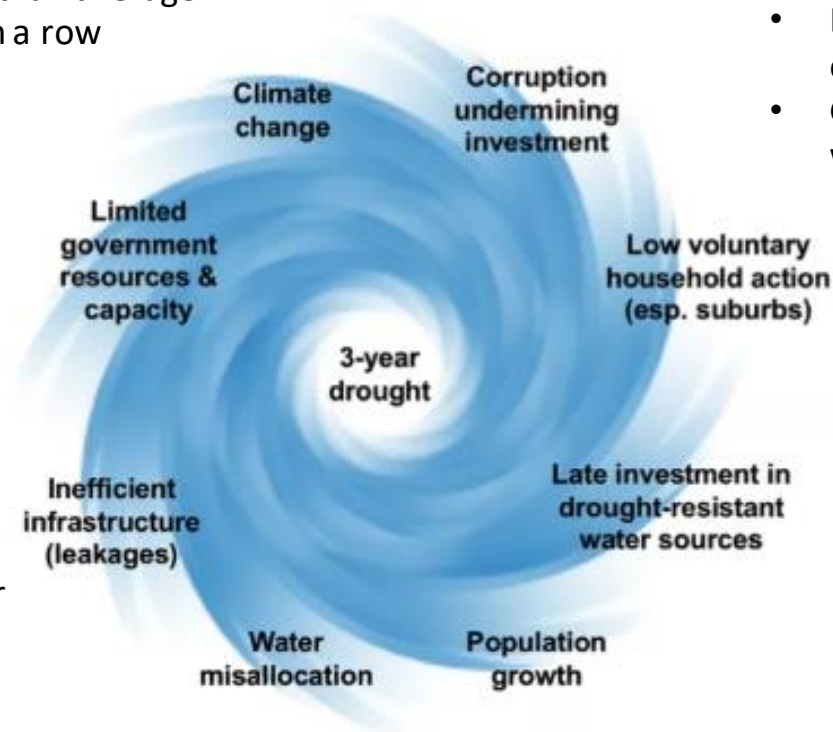
# A 'perfect storm' of drivers of the Cape Town water crisis

## Multi-year drought

- Considerably lower than average rainfall for 3 years in a row

## Water demand increase

- Population growth
- Lack of water meters or enforcement mechanisms
- General public not reducing water consumption



## South African Politics

- National, provincial and municipal governments disputed responsibility for growing water crisis for years
- Corruption and partisan politics

## Infrastructure breakdown

- Water treatment and distribution infrastructure leaking and break-downs
- Insufficient investment in new or existing water infrastructure

# South Africa water management

- South Africa is a **dry country**, average annual rainfall 465 mm
- Rainfall variable, future predictions indicate **drier and more variable**
- **4,395 dams** currently, limited opportunity areas remain for future dams
- National government ➔ water allocations and major infrastructure
- Provincial governments ➔ support and oversight
- Municipal governments ➔ water treatment and delivery systems
- Ambitious legislation is in place but **has not been well implemented**

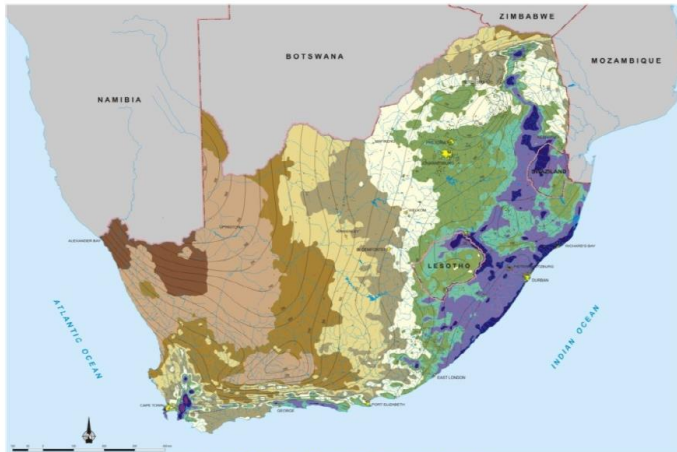
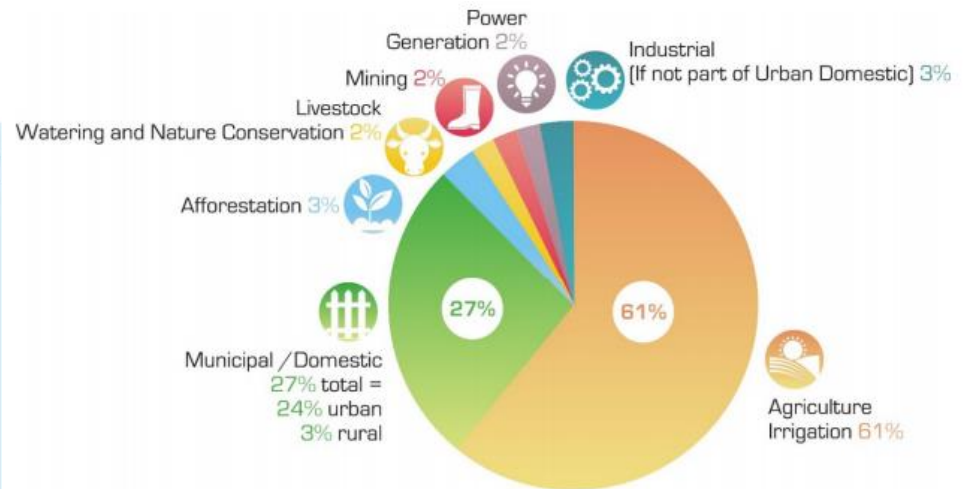


Figure 3-1: South Africa's hydrological situation



How we use our water resources in South Africa

Figure 3-5: Water Use by Sector

# What was done on the ground

- Implement water restrictions.  
Level 6b is 50 lt per person per day, and steep tariffs (but very few water meters)
- Graduated tariffs on water and sewage increased astronomically. Level 6b tariffs range from equivalent of ~\$10 to \$100 per m<sup>3</sup>
- Restrictions on agricultural and commercial/industrial use
- Reducing leaks and losses
- Farmers released water from private reservoirs
- Emergency water desalination plant contracted for 24 months
- Groundwater accessed

## Education campaign

- Website/app to view water use by neighbourhood
- Household water reuse encouraged
- Collective attitude toward conserving water transformed



# Action has been successful

- Demand reduced
- Rain has started early in the 'rainy season' (flash flooding)
- Dam levels increasing, now up to 24% of total volume

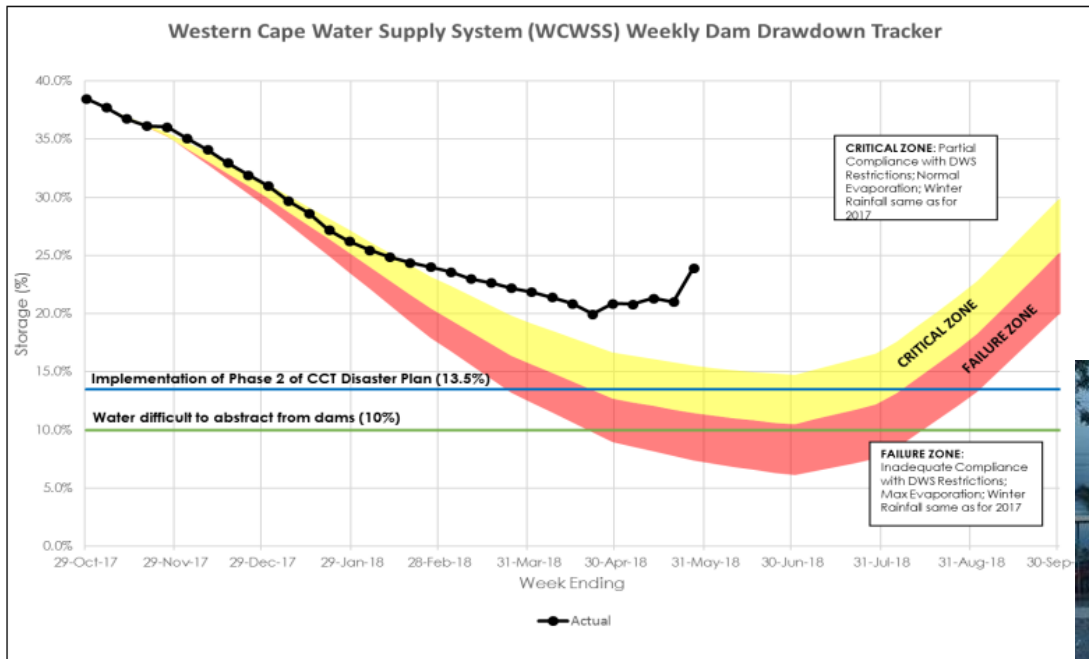


Image source: <https://www.enca.com/south-africa/floods-cause-chaos-in-cape-town>

Image and information source: <http://www.capetown.gov.za/Family%20and%20home/residential-utility-services/residential-water-and-sanitation-services/this-weeks-dam-levels>



# Political response

**Years disputing responsibility and blaming climate change**



**Declare a national disaster**



**Declare #dayzero, a specific day when the taps would turn off and water be rationed by truck delivery**



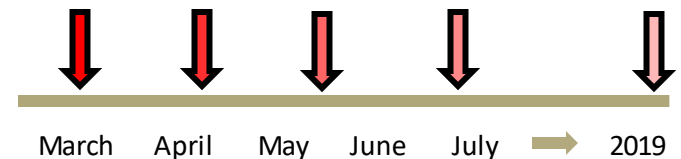
Image source: [www.capetown.gov.za](http://www.capetown.gov.za)

**Provincial and Municipal Government of Cape Town is run by the main opposition to the governing party of the rest of the country**

**President Jacob Zuma forced to resign** (not related to water crisis)



**Move Day Zero date multiple times**



# Was announcing #dayzero a good thing?

## Pros

- International awareness of water supply, water demand management and drought
- Cultural shift in Cape Town
  - Wealthy residents competition to use less water
  - Wealthy residents understand standard living conditions in townships
- Water demand reduced significantly/mobilized action
- Boost in water innovation (through necessity)
- Demonstrated possible scale of change

## Cons

- Significant economic impact
  - Tourism
  - Agriculture
  - Water reliant business
- Drilling bore holes
  - Increased draw on aquifers by individual homes,
  - Unregulated and unquantified water use,
  - Reduce in wealthy rate-payers for municipal water service.
- Private companies purchasing desalination plants
- Unplanned and uncoordinated infrastructure



# Watch out for unintended consequences

- Drilling and pumping bore holes without regulation will draw-down aquifer, leading to a future water crisis (as seen in California)



Images sourced from: <https://e360.yale.edu/features/awaiting-day-zero-cape-town-faces-an-uncertain-water-future>

# Not just Cape Town: 11 other cities most likely to run out of water

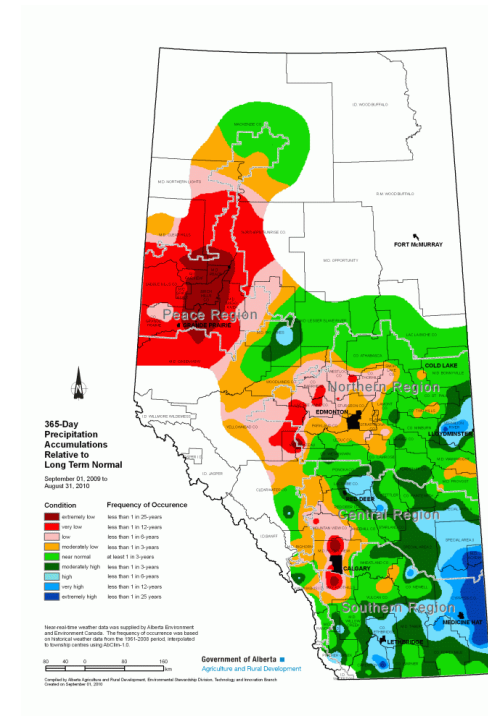


Map images sourced from: <https://irlen.com/world-map/>

Data sourced from journal "Water desalination and reuse", March 2018

# What are the lessons for Alberta?

- Act NOW
  - Drought management tools, policies and actions must be deliberated and designed before crises hit
- Engage those that know the watershed best
  - Involve informed water stakeholders in the design of drought management and mitigation programs
- Educate and build awareness
  - Educate citizens about their water risks, responsibilities and options
  - Resources on conservation and reuse available at [www.albertawater.com](http://www.albertawater.com)
- Don't cry WOLF
  - Politics should not govern water management decisions through a crisis (or ever)



# Water: The key to our sustainable future



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