

CAPE TOWN | WATER SECURITY

Defeating Day Zero

Cape Town became the first major city to nearly run out of drinkable water in 2018, an almost apocalyptic scenario caused by persistent drought and water mismanagement. Within a few years, it successfully reversed this national emergency, turning this water crisis into an opportunity to secure a water-confident future.



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Dangerously low water levels at Theewaterskloof dam, one of Cape Town's six major supply dams, at the height of the crisis.
Image: Bruce Sutherland, City of Cape Town

The Challenge

When Day Zero was announced in January 2018, it seemed like doomsday for Cape Town. The city of 4 million people was running dangerously low on its water supply, having endured a devastating three-year drought—the worst on record.

Day Zero, predicted to be on April 12, 2018, was a shorthand reference for when the city's dam levels would plummet below 13.5% and taps would be turned off. At the height of the crisis, the dams supplying the city had shrunk to one-fifth their capacity in March that year.

But besides climate change, poor planning, political inertia and complacency contributed to the water shortage.

As early as 2007, the national Department of Water and Sanitation had flagged the acute need for Cape Town to boost its water supply with other sources, due to projected overpopulation and climate change risks.

These concerns were dismissed in the face of bountiful rains from 2013 to 2014. The city's six reservoirs brimmed at almost 97% capacity. Previous water conservation measures in place since the 2000s were also deemed to be sufficient.

By the time Day Zero was announced, South Africa's second most populous city realised it was in trouble.



Residents queue to fill water containers with spring water in Cape Town in February 2018.
Image: Bram Janssen / AP Images

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The Solution

This sense of impending doom led officials and residents to take aggressive steps to avert potential catastrophe.

In its immediate response, the local government temporarily diverted water stored for agricultural purposes to supply the city, buying it time to formulate a water management plan.

Water usage limits were revised downwards and enforced. People were urged to adopt new habits, such as slashing their water consumption from around 200 litres per person per day before the drought to 50 litres at the height of the crisis. Activities requiring large amounts of water—such as watering gardens, washing cars or filling swimming pools—were banned.

High tariffs were imposed to deter users while officials rolled out around 250,000 water management

devices to shut off water supply to properties that had reached their daily water limit. High-usage households which flouted the rules were slapped with hefty fines. Enforcement officers patrolled neighbourhoods to shut down informal car wash businesses and fine errant users.

Technological solutions were also crucial. Under a collaboration with the University of Cape Town, city authorities rolled out a water map which made homes publicly accountable for their water use. It was colour coded with green dots indicating properties within the water restriction limit, which aimed to highlight exemplary households and to encourage others that water saving was a combined effort.

Devices such as Count Dropula, a smart water meter developed by Thinus Booysen, also helped the city manage its water use by monitoring water usage per minute in real time. Users could receive instant alerts on the exact time and place of water usage spikes, which allowed maintenance to be carried out quickly and effectively.

Businesses including Shoprite, Africa's largest food retailer, and Cape Talk radio station partnered with the Western Cape Education Department to install these meters in 350 schools. Coupled with water-saving campaigns in schools to

encourage students to save water, the schools saved almost 550 million litres of water in 17 months.

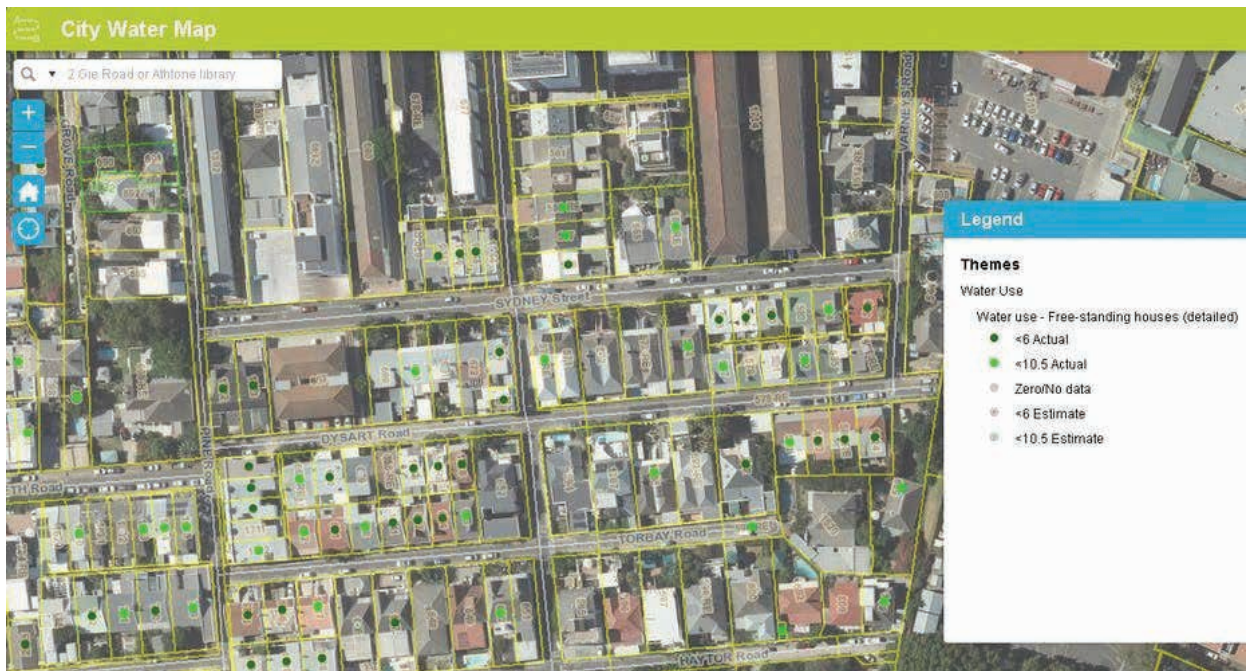
The city also sought to make behavioural change positive and fun, with creative initiatives including two-minute shower songs, catchy toilet slogans like "if it's yellow, let it mellow", and campaigns sharing water-saving tips. Start-ups even held dirty shirt contests to see who could go the longest without washing their work shirts. These light-hearted approaches imbued the campaigns with a sense of positivity and collective action.



Creative campaigns and slogans provided practical advice on how Capetonians could use water within allotted personal limits.

Images: City of Cape Town





Cape Town's city water map aimed to highlight exemplary water usage.
Images: City of Cape Town



In October 2020, Cape Town's reservoirs topped 100% capacity for the first time in six years.
Images: Bruce Sutherland, City of Cape Town

In October 2020, Capetonians celebrated the historic moment when dam levels topped the 100% mark.

The Outcome

Through the enormous whole-of-society effort and combination of interventions, Cape Town pulled off the impressive feat of having reduced water demand by more than half to just over 500 million litres between 2015 and 2018. Rains also brought some relief, and Cape Town managed to avert Day Zero. In October 2020, Capetonians celebrated the historic moment when dam levels topped the 100% mark. The city also developed “Our Shared Water Future”, its roadmap to provide sufficient water for all, and for Cape Town to become more resilient to future water-related disruptions.

Cape Town’s experience shows that multi-prong interventions at the city and community levels, together with

enforcement, technological and ground-up efforts, are required to inspire people towards long-term behavioural change.

As the world grows hotter and drier, Cape Town’s story serves as a cautionary tale to other cities. Policymakers should prioritise long-term strategies, early action and factor in uncertainties for effective management of water in the long run. But the onus also lies with citizens to protect this life-giving source. As Cape Town has shown, communities have demonstrated tremendous resilience and resourcefulness—offering hope that the human spirit can triumph amid adversity, if they act early. 📌