



CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD

# The Current Water Supply Situation Business Briefing

**Peter Flower**

Director:Water & Sanitation Department

9 May 2017

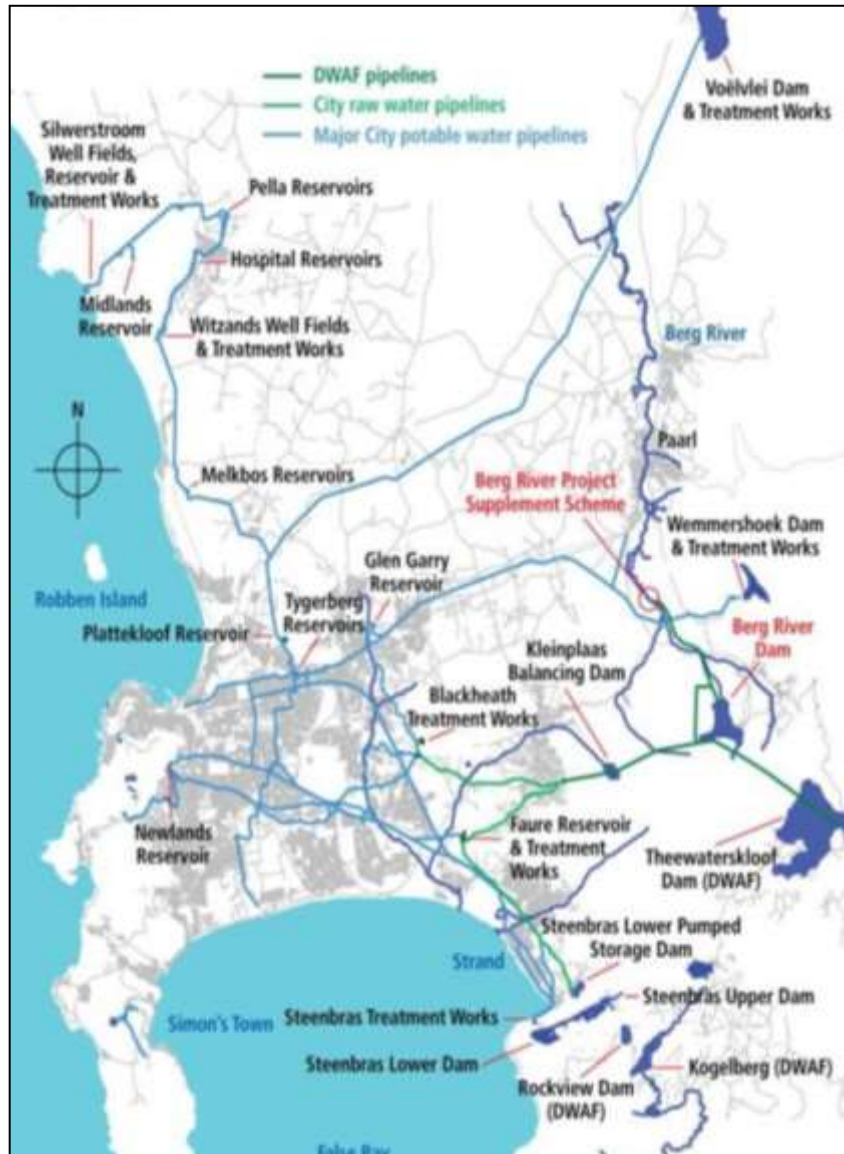
Making progress possible. **Together.**

# Presentation Outline

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1. **Overview of Bulk Water supply system**
2. **Status of water resources and water use**
3. **Water demand management**
4. **Assurance of Supply and Water Restrictions**
5. **Disaster declaration and contingency planning**
6. **Acceleration of water resource schemes**
7. **Business Sector engagement**
8. **Future outlook**

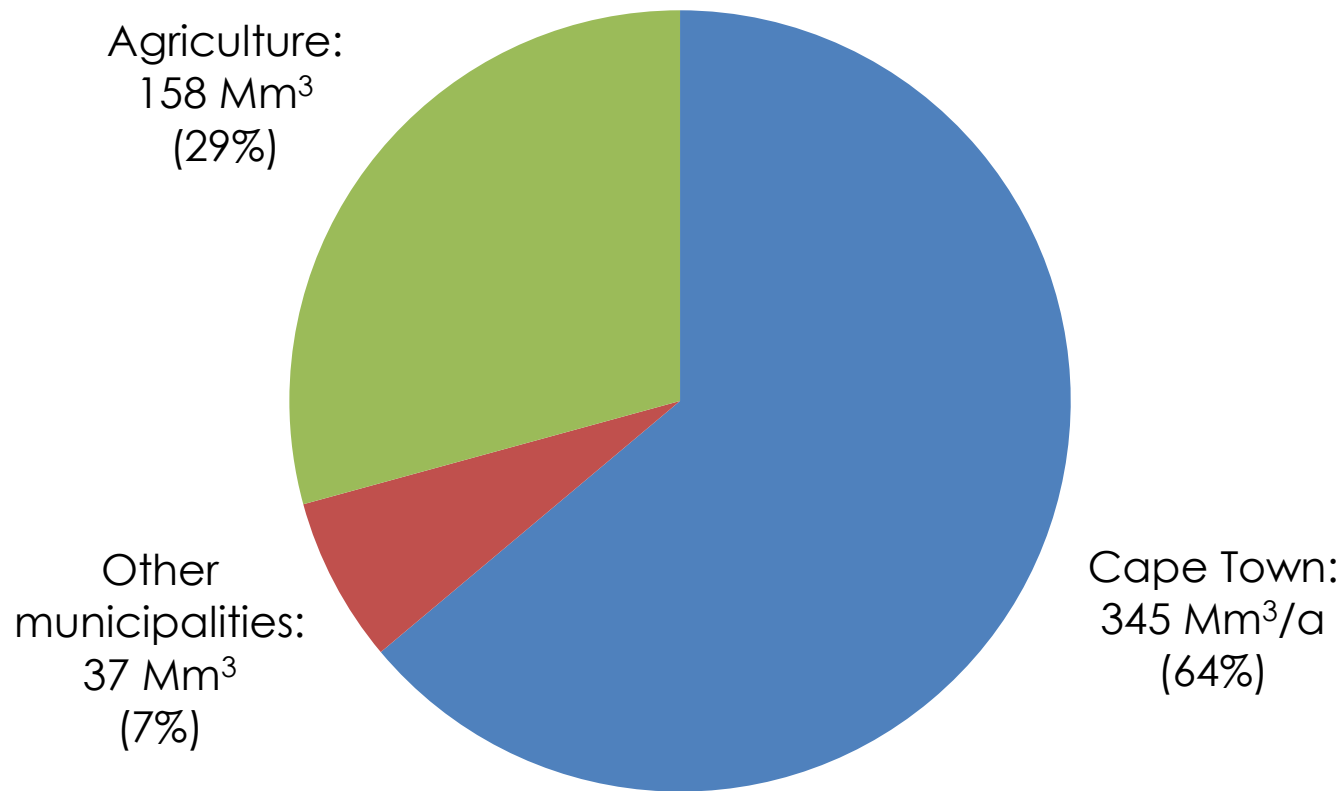
# Bulk Water Infrastructure



- **Dams (DWA & City) 15**
- **Water Treatment Plants 12**
  - Production Capacity 1650 MI/day
  - Current Capacity utilisation 45 %
- **Reservoirs 24**
  - Storage Capacity 2740 MI
  - Average demand storage 3 days
  - Peak demand storage 2.5 days
- **Pipelines 655 km**
- **Water Allocation and Demand**
  - Allocation from System 400 Mm<sup>3</sup> p.a.
  - 2014/15 Demand 345 Mm<sup>3</sup> p.a.
  - 2015/16 Demand 330 Mm<sup>3</sup> p.a.
  - Projected 2016/17 Demand 280 Mm<sup>3</sup> p.a.

# Comparative Water Use from WCWSS (2014/2015)

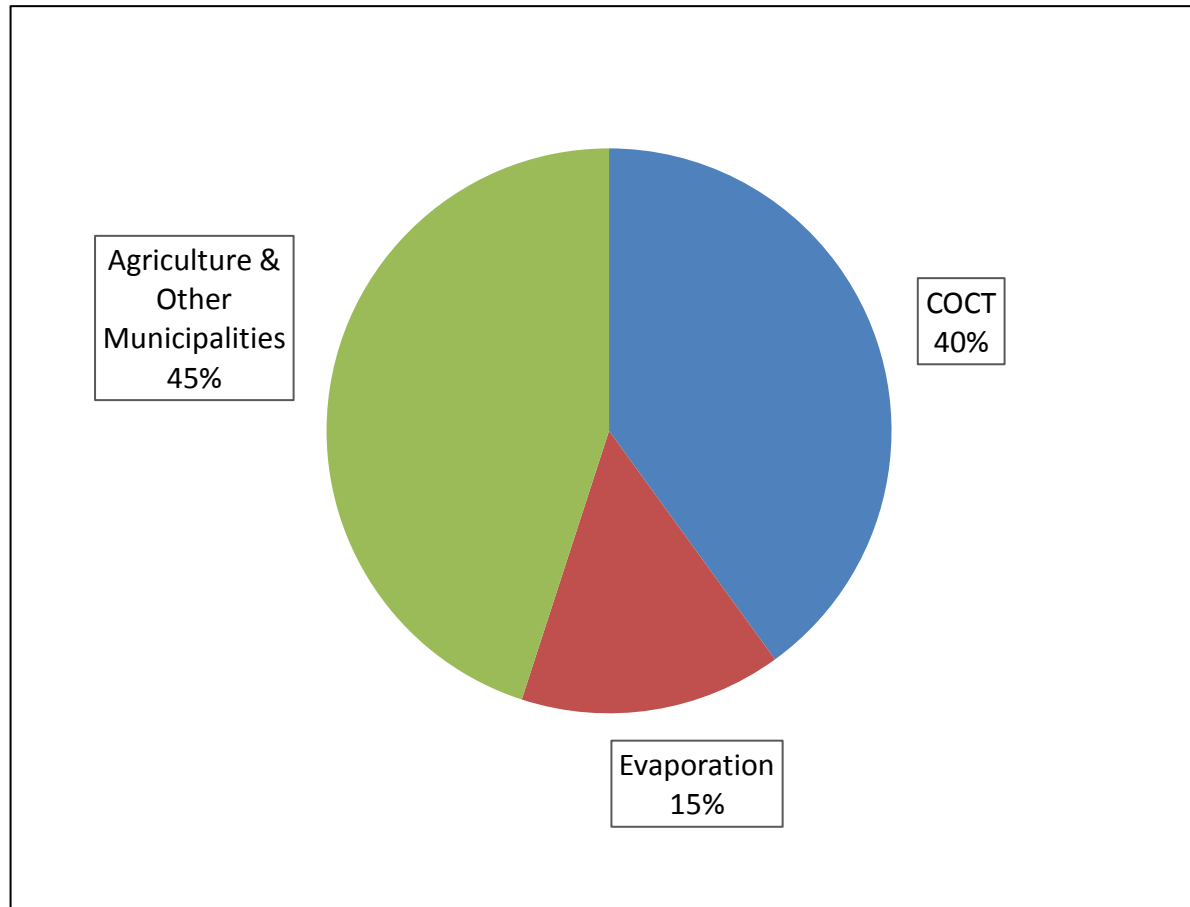
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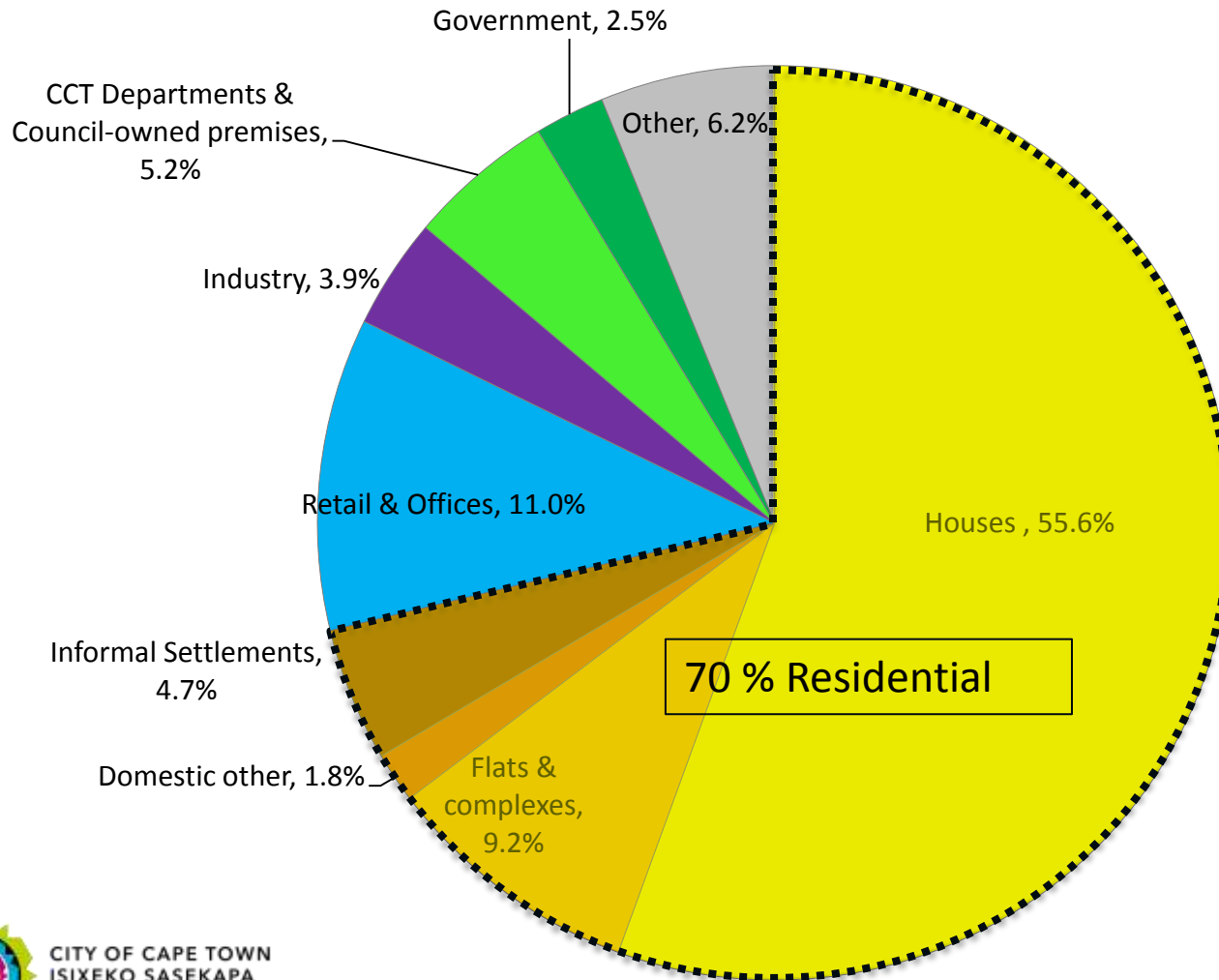
# Estimated WCWSS Summer Water Use

(1 November 2016 – 28 February 2017)

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# Water Use in Cape Town (2015 / 16)



# Dam Storage Change and WTP Production – 8 May 2017

DAM STORAGE (%)

22.0

WEEKLY DAM LEVEL CHANGE (%)

-0.7 ↓

decrease since last week

AVERAGE DAILY PRODUCTION (MI/d)

720

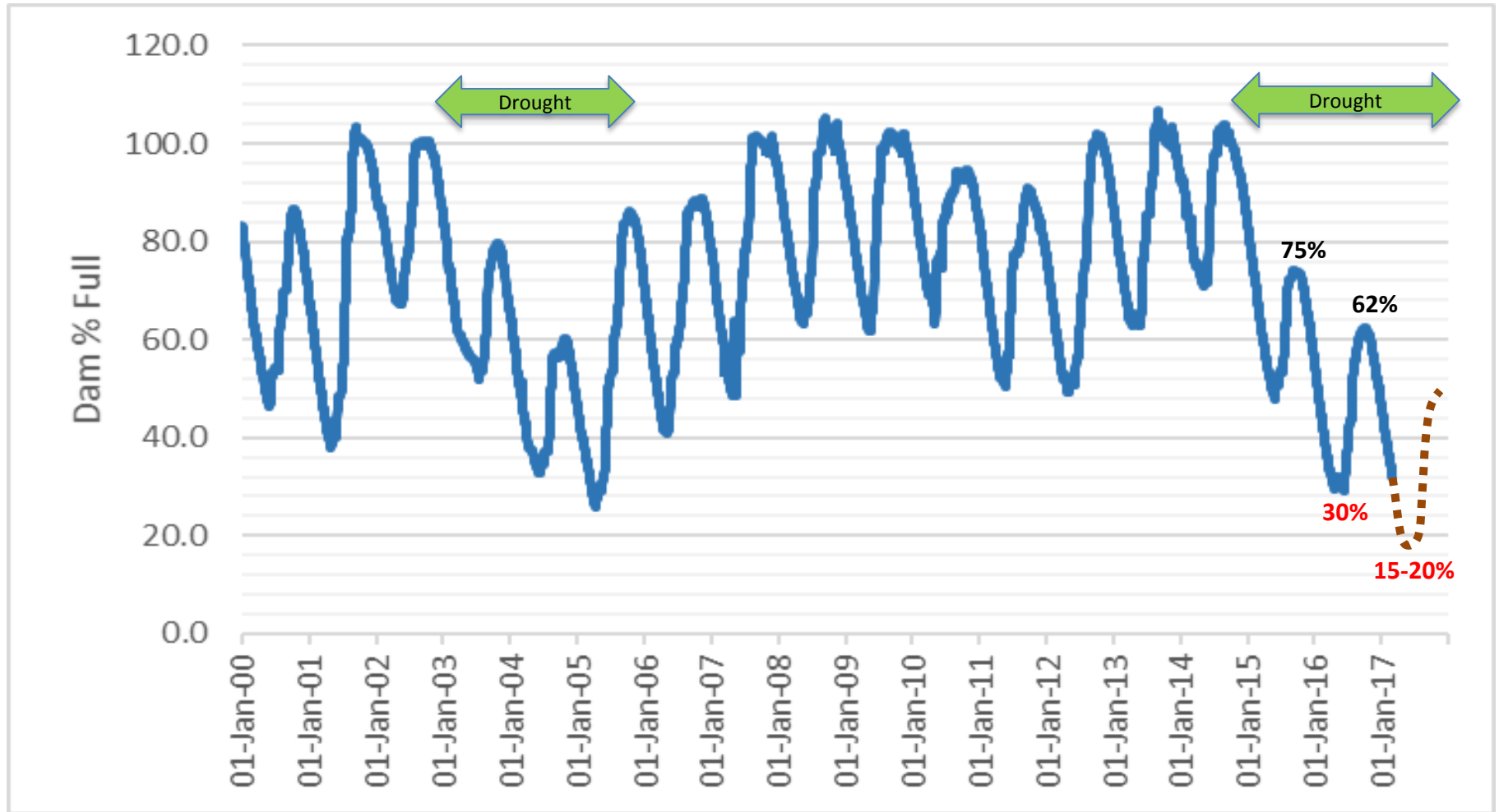
(Target 600MI/d)

## Major dam levels in Cape Town

MAJOR DAMS	STORAGE						
	CAPACITY	%	%	%	%	%	%
	MI	08 May 2017	Previous week	2016	2015	2014	2013
BERG RIVER	130 010	33.0	33.3	27.3	54.4	88.7	72.1
STEENBRAS LOWER	33 517	28.3	30.0	39.3	49.5	43.1	47.7
STEENBRAS UPPER	31 767	58.8	54.9	55.3	58.8	77.8	88.0
THEEWATERSKLOOF	480 188	15.7	17.1	32.1	52.5	73.3	88.3
VOELVLEI	164 095	18.7	18.5	21.6	44.2	58.5	52.3
WEMMER SHOEK	58 844	38.0	38.0	49.2	51.5	58.6	88.8
TOTAL STORED	898 221	197 798	204 392	284 752	481 028	838 849	575 948
% STORAGE		22.0	22.8	31.7	51.3	70.9	84.1

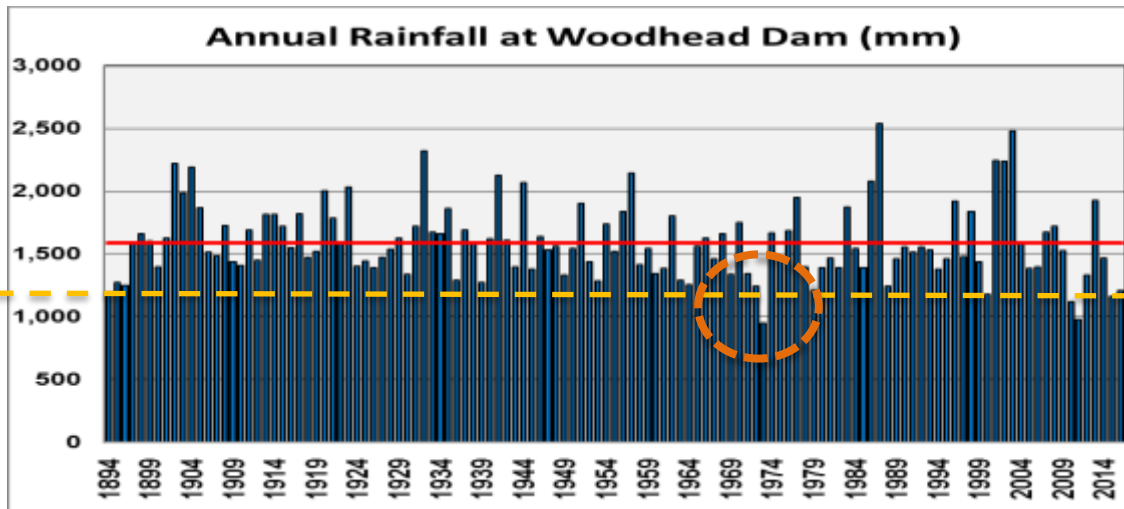
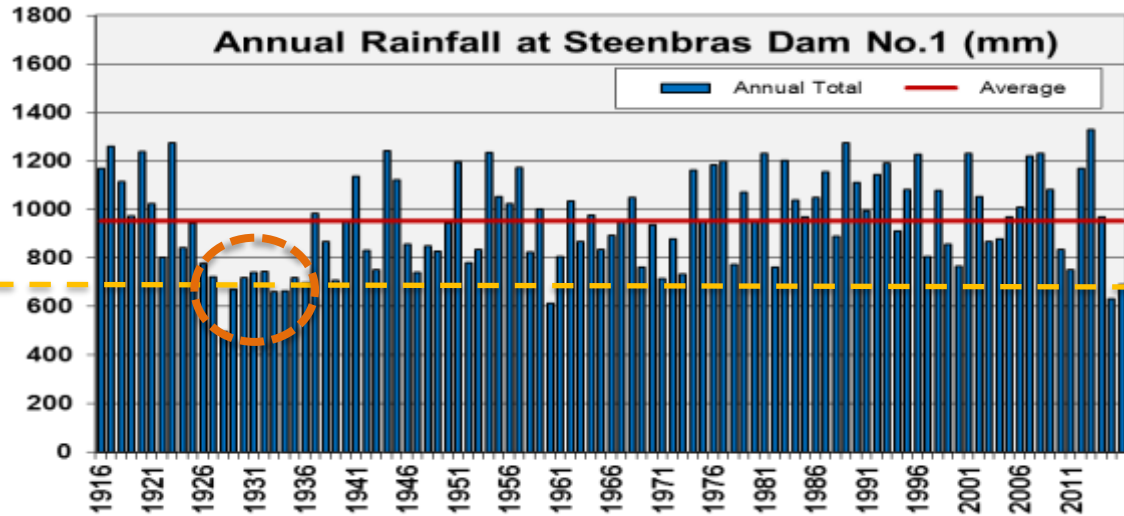
Capacity of the major dams of the Western Cape Water Supply System is 99.6% and that of the minor dams 0.4% of the combined capacity of the major and minor dams.

# Recent Drought Events





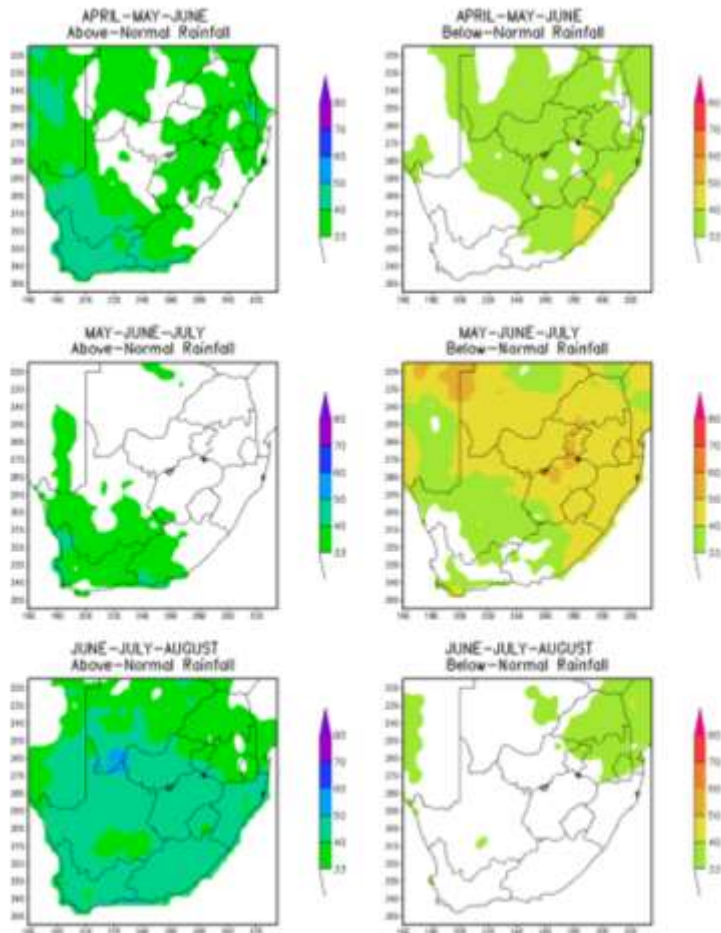
# Rainfall Record



# Rainfall Forecasts (SAWS / GFCSA)

Weather Outlook (March – May 2017) - Normal to below normal rainfall is expected over the Western-Cape for autumn and early winter.

(PDMC Drought Monitoring Situation Report No.9)



**With the possibility of a moderate El Nino event becoming more likely in the summer of 2017/18, conservative planning is advised wherever possible (SAWS 2 May 2017)**

# Voelvlei Dam (12 April 2017)

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# The waterskloof Dam (28 April 2017)

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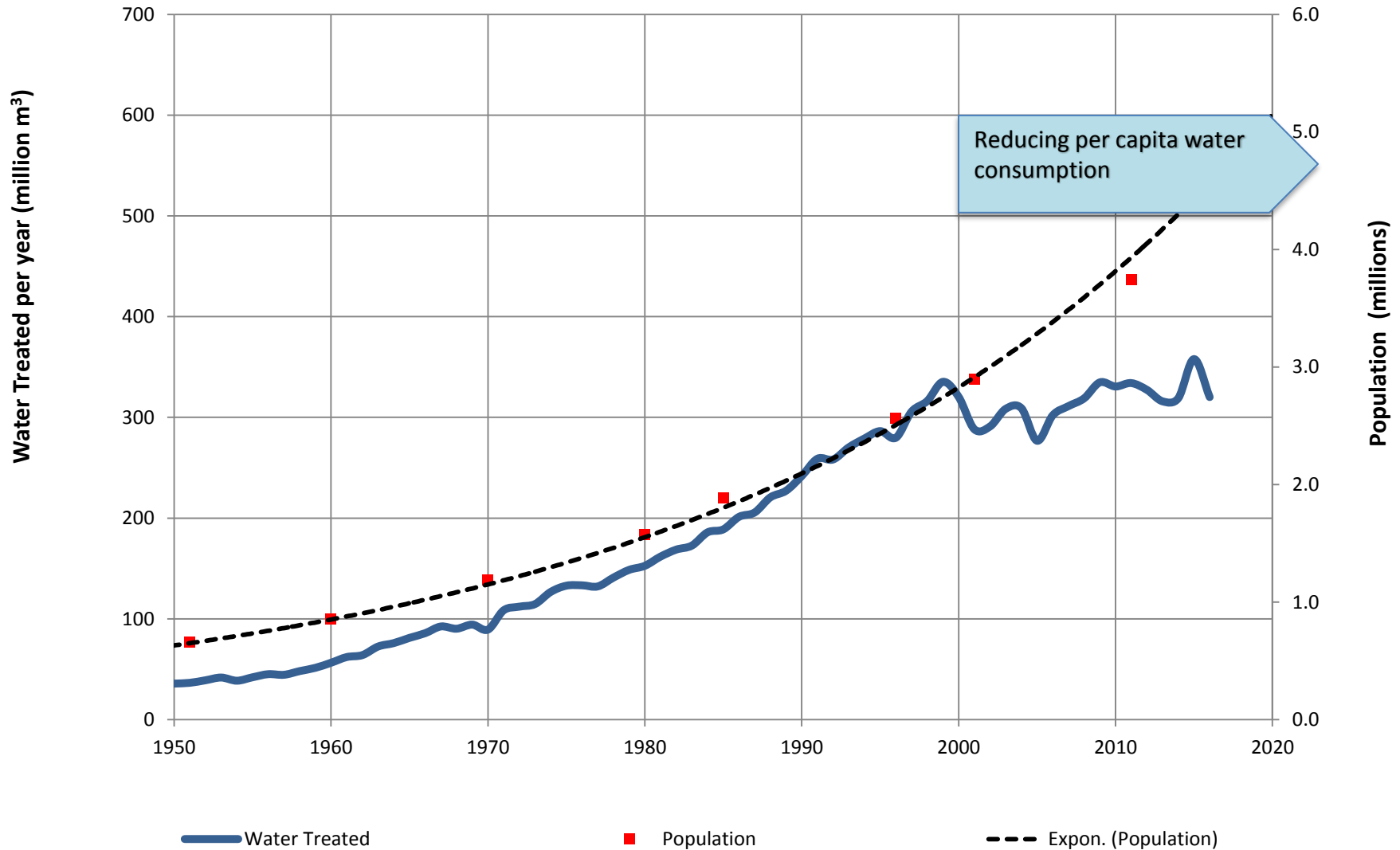


# Steenbras Lower Dam (28 April 2017)

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# Population Growth and Water Use Efficiency



# Factors that influenced demand growth after 2000

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## **Water business unusual**

Recognized need for WC and WDM

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## **Water restrictions in 2000/01 and 2004/05**

Water restrictions were implemented in 2000/01 and 2004/05, after periods of low winter rainfall.

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## **The City commits to implementing WDM as part of approval of Berg River Scheme**

The raw water supply agreement between the City and DWS was signed in 2003, for the construction of the Berg River Scheme. One of the conditions of approval of the Scheme was that the City would implement water demand management.

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## **The City approves and implements a 10 year WDM Strategy**

The City approved its 10 year water demand management strategy in 2007. A dedicated water demand management section was established in the City's water and sanitation department, responsible for implementing the strategy.

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## **Berg River Scheme completed**

The construction of the Berg River Scheme was completed in 2007.

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# Water demand management interventions

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## Technical interventions:

- Stepped tariffs
- Pressure management
- Treated effluent use
- Water pipe replacement
- Leak detection
- Water management devices (WMDs)
- Meter replacement
- Zone metering
- Building plumbing retrofit
- Plumbing repairs in indigent houses
- Springs investigation
- Reducing response times to repair bursts and leaks

## Education and awareness campaigns:

- Door to door community engagements
- Schools interventions
- Top water users engagements



# Pressure management projects (coupled with pipe replacement)

## Khayelitsha pressure management project (2001)

Estimated savings:  
9 Mm<sup>3</sup>/a



## Mitchells Plain pressure management project (2008)

Estimated savings:  
2.4 Mm<sup>3</sup>/a



## Other notable pressure management projects, with estimated savings:

- Mfuleni: 0.4 Mm<sup>3</sup>/a
- Gugulethu: 2.6 Mm<sup>3</sup>/a
- Langa: 0.5 Mm<sup>3</sup>/a
- Eersteriver: 1.2 Mm<sup>3</sup>/a
- Brentwood Park: 0.04 Mm<sup>3</sup>/a
- Browns Farm: 0.6 Mm<sup>3</sup>/a
- Wesbank: 0.3 Mm<sup>3</sup>/a
- Delft: 0.6 Mm<sup>3</sup>/a
- Grassy Park: 0.6 Mm<sup>3</sup>/a
- Crossroads: 0.2 Mm<sup>3</sup>/a
- Plumstead & Retreat: 0.6 Mm<sup>3</sup>/a
- Fisantekraal: 0.2 Mm<sup>3</sup>/a
- Marina de Gama: 0.6 Mm<sup>3</sup>/a

# Treated Effluent Re-use

- More than 250 users are connected
- Mostly used for irrigation and industrial purposes
  - Golf courses
  - City Parks
  - Schools
  - Farmers
  - Refinery
  - Currently approximately 7% of potable water treatment requirement is off-set by TE



# CITY OF CAPE TOWN WATER RETICULATION ASSETS



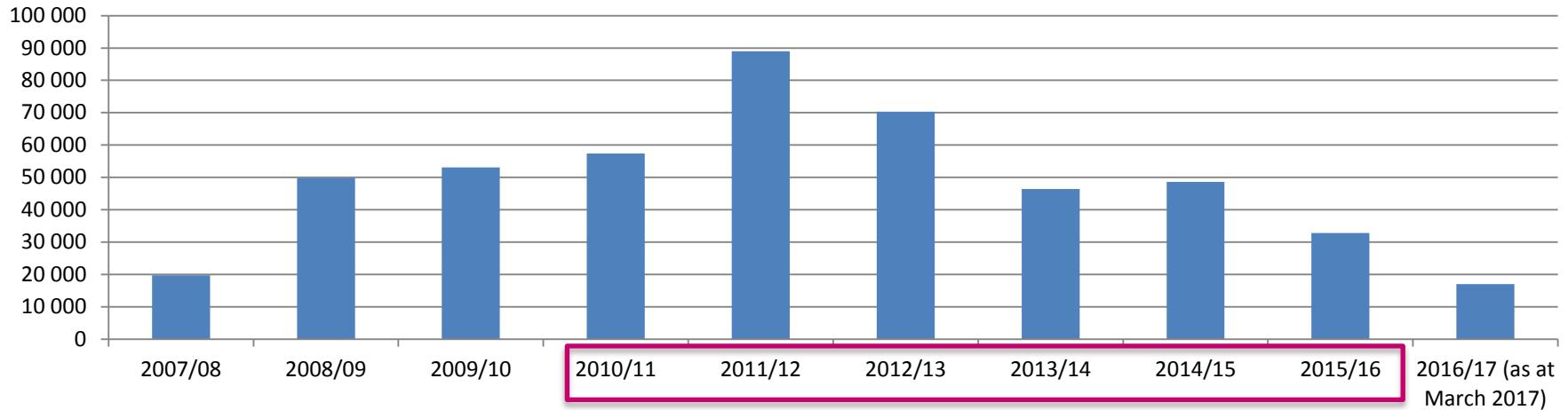
10 691.62km (03/17)  
Water Reticulation  
Pipeline

80 652 Valves  
55 580 Hydrants  
(as at 03/17)

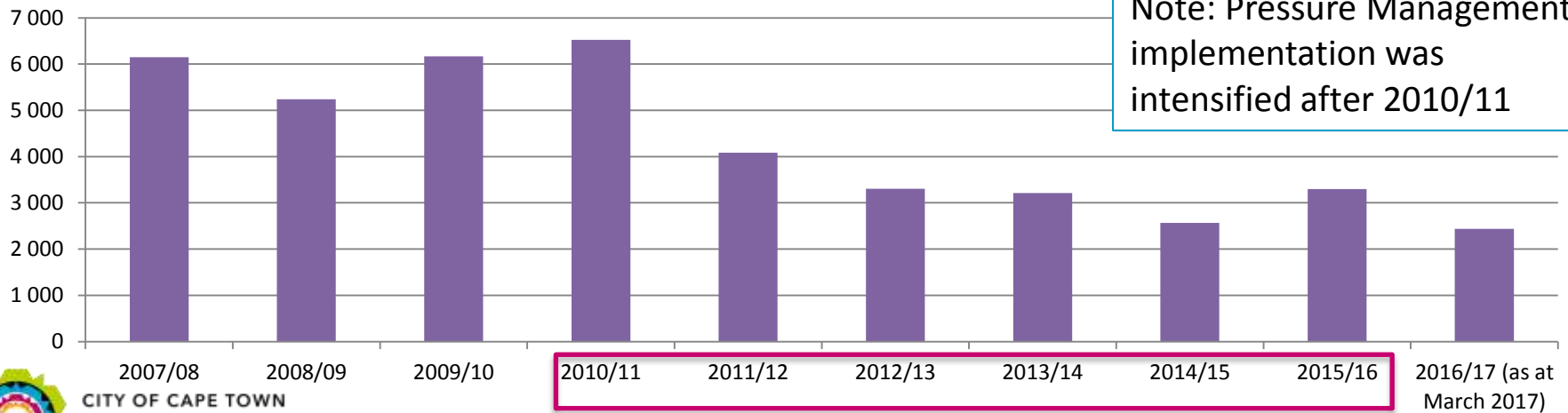
652 783 (03/17)  
Service  
Connections.

# RETICULATION ASSET PERFORMANCE: WATER

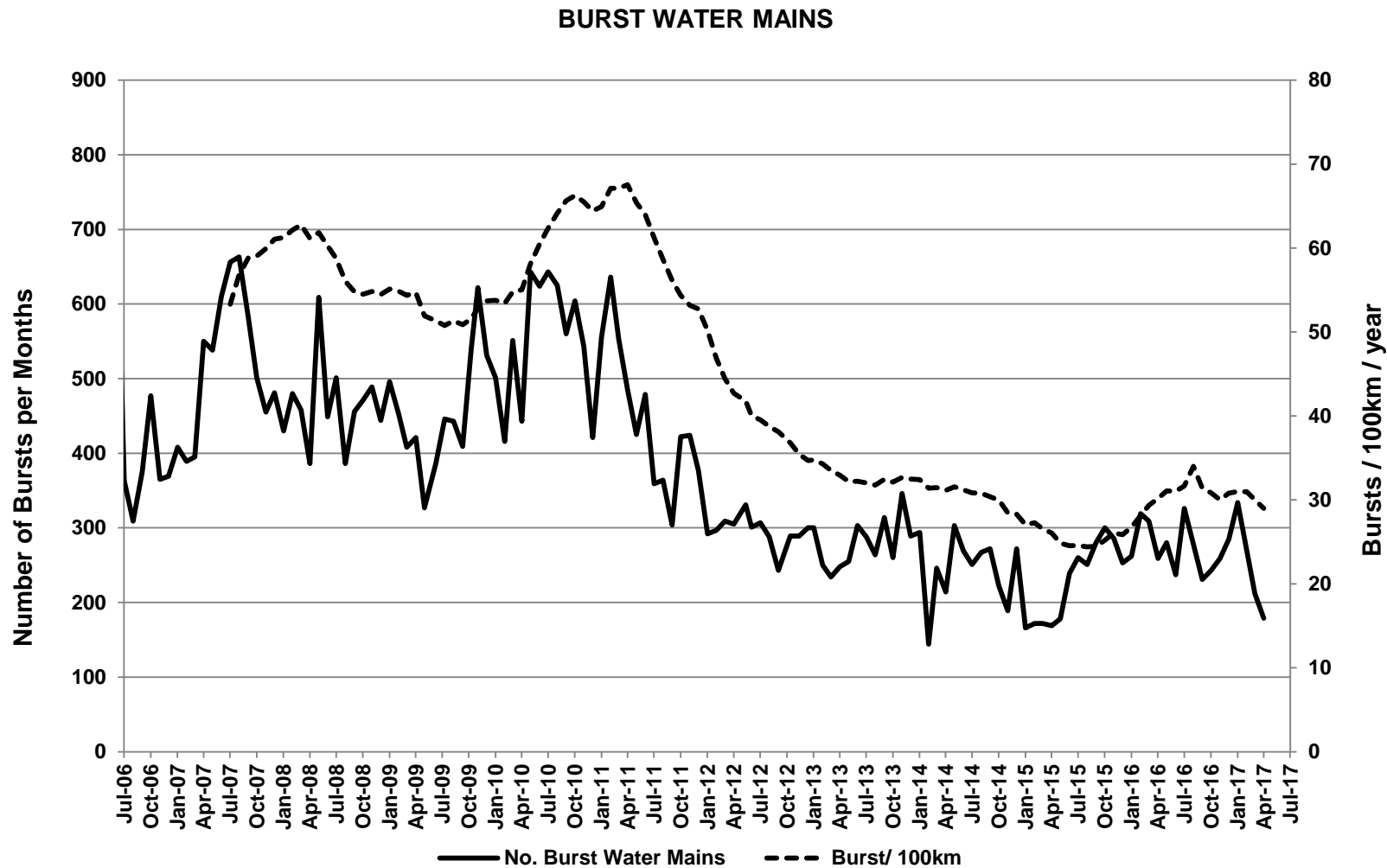
## Water Mains - Relaid (m) Annual Totals



## Repair to Burst Water Mains (No.)



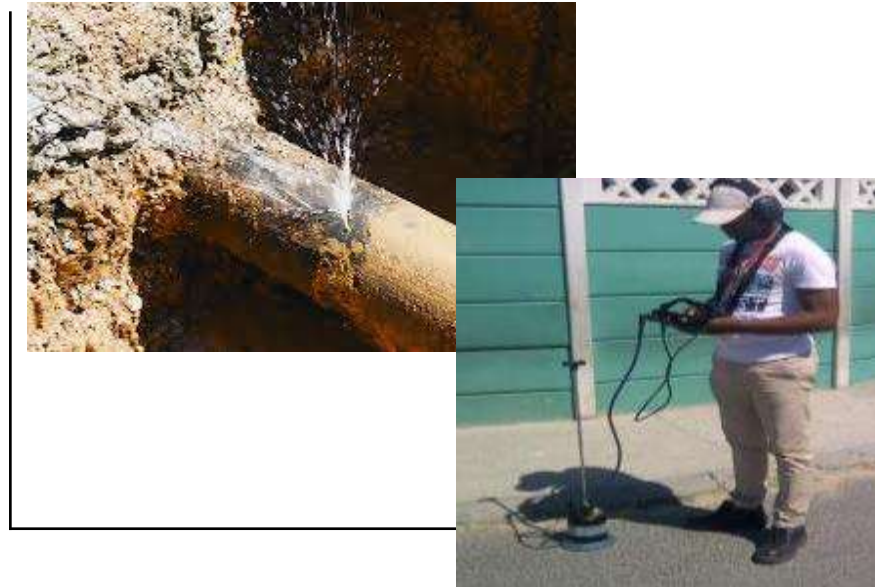
# RETICULATION WATER MAINS: PERFORMANCE



# Active Leak Detection and Repair

	2011/12	2012/13	2013/14	2014/15
<b>No. Repairs:</b>				
Connections, Meters, Sluices, Valves & Fire Hydrants	26 574	41 437	40 696	35 356
Associated Estimated Savings (kl/annum)	2 287	3 580	4 592	3 887

	2011/12	2012/13	2013/14	2014/15
No. Meters Replaced/re-fixed/relocated	8 272	5 450	5 656	6 453
No. Water Management Devices Installed	17 556	7 468	17 989	32 111
No. Repairs on connections	27 203	28 933	36 968	33 133



Description	Subzone's statistics						Totals
	Highbury	Highbury Park	Wesbank	Mfuleni	Du noon	Pella	
Zone's Statistics							
Length of watermains (km)	20.39	15.34	22.91	58.617	32.083		<b>149.34</b>
Pipeline Material	Fibre cement	Fibre cement	Fibre cement	Fibre cement	Fibre cement		<b>Fibre cement</b>
No. of properties	1259	943	3204	8441	3025		<b>16872</b>
<b>located leaks statistics</b>							
<b>Total No. leaks located</b>	<b>46</b>	<b>12</b>	<b>77</b>	<b>215</b>	<b>40</b>	<b>23</b>	<b>413</b>
Dates in Months when leaks detection was done	2013	2013	2014	2014/15	2015	2015	1.8 yrs
Dates in Months when leaks were repaired	Fixed	Fixed	Leaks fixed except leaking meters with WMD	Not fixed	Not fixed	Not fixed	generally leaks are not fixed



# Water demand management interventions

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## Technical interventions:

- Stepped tariffs
- Pressure management
- Treated effluent use
- Water pipe replacement
- Leak detection
- **Water management devices (WMDs)**
- Meter replacement
- Zone metering
- Building plumbing retrofit
- Plumbing repairs in indigent houses
- Springs investigation and utilization for non-potable uses
- **Reducing response times to repair bursts and leaks**

## Education and awareness campaigns:

- Door to door community engagements
- Schools interventions
- Top water users engagements

# Billboards and print advert





# Social Media

## WATER SAVING CAMPAIGN REPORT

CAMPAIGN DURATION: 18 AUGUST TO 4 SEPTEMBER 2015

**1 120 966**  
TOTAL OPPORTUNITIES TO SEE

**1 481**  
VOLUME OF CONVERSATION



**2,43%**  
FACEBOOK ENGAGEMENT RATE

### WHAT WE'VE LEARNED

**COMMUNITY STANDING TOGETHER:** Many residents agreed with the need to save water, and shared how they do so.

**QUERY ESCALATION:** Any fault logged or mentioned by a resident is attended to by the community managers as per usual process. As expected, there were many water-related faults being reported (leaking water meter, burst pipes etc), which were all logged as per normal.

**QUERIES AND COMPLAINTS:** There were complaints of the City not attending to water faults timely. Residents were asked for further details, and it was logged again on their behalf. There were many queries related to higher water accounts, to which residents were directed to the accounts department. There was some misunderstanding regarding the copy on "shower for 1 minute less"; some read it as "shower for a minute" and complained as such. This was clarified in the responses. There was a comment saying that the City should have been telling people for months to conserve water. We received an answer from the City advising many of the water conservation campaigns throughout the year. It might be a good idea to also highlight some of these, as it might seem like a standalone social media campaign.

**EDUCATING:** Some residents do not understand that if they are on private property they will need a plumber for certain things, whereas the City will only attend to things on council property. The community managers then educated the community. There were some queries regarding the process and testing of faulty electricity meters.

### TOP PERFORMING POSTS

Save water: shower for one minute less

1 35 317 Views | 3 439 Likes | 974 Comments | 0 367 Post clicks

Save water: stress stripping toys

1 84 819 Views | 2 909 Likes | 428 Comments | 0 913 Post clicks

Want low bills, save this winter, save drop-naps. Please visit bit.ly/07water saving for more information

1 1 543 Views | 90 Retweets | 4 Replies | 1 281 Shared/Clicked

### WORD CLOUD

SAVING WINTER DIFFERENCE  
INFORMATION SHOWER  
@CITYOFCT REPORTED CONTACT

### POSITIVE COMMENTS

- AMANDA SKREYPCZAK** "Thank you for addressing it."
- ERIC MARTINSICH** "Thanks for the initiative to save water CoCT!"
- MARY-JANE FABUNMI** "Thank you CCT for your excellent services."
- SAMENSA WILLIAMS** "Thank you CC for the speedy response. Guys came out within 3 hours of complain. I'm very impressed, water was checked out and meter was reset. Keep up the good work."
- MATILDA BRITZ** "Thank you Admin, for your good work on this page!"
- ELEANOR RIBYKOWICZ** "From what I can gather, my 'believed' city is probably one of the best functioning in the country. I am thankful not to live in KZN or Gauteng, as I hear that conditions there are far worse."

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SAVE WATER  
every drop counts.



Save water this summer.

# Promotional Material

## SAVE WATER NOW

### Recommended water-saving tips

Contact our 24-hour Technical Operations Centre:  
SMS to 31373 (max 160 characters)  
Call: 0860 103 089  
Email: waterTOC@capetown.gov.za

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## Save water: every drop counts

The City implemented level 2 water restrictions on 1 January 2016. Cut back on your water usage by 10% to ensure your bill remains similar.

### Water restriction measures include:

- Wash vehicles only with hoses/pipes fitted with automatic self-closing devices or with waterless products
- Do not wash or hose down hard-surfaced/paved areas with tap water
- Replace taps, showerheads and other plumbing components in public places with water efficient technology/parts

For more of the measures and other information, visit [www.capetown.gov.za/keepsavingwater](http://www.capetown.gov.za/keepsavingwater)

### CORPORATE SERVICES CALL CENTRE

HR Service Desk  
 HR.servicedesk@capetown.gov.za  
 T | 021 400 3434 (option 1)  
 F | 086 576 2621  
 SMS | 43566

IT Service Desk  
 IT.servicedesk@capetown.gov.za  
 T | 021 400 3434 (option 2)  
 F | 086 576 0458

SAP Service Desk  
 SAP.servicedesk@capetown.gov.za  
 T | 021 400 3434 (option 3)

Anti-corruption | 0800 32 3130

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## WATER BY-LAW

### Water Conservation and Demand Management

**Schedule 7 (Division 24) Water and Sanitation By-Law**

- The user may not allow untreated effluent to be discharged to any other ground water receiving product water, between the hours of 06:00 and 19:00.
- Water used for irrigation, for example, must be filtered through a certified filter before use.
- The maximum flow rate from any automatic tap must be 6 litres per minute.
- The maximum flow rate from any showerhead must not exceed 9 litres per minute.
- The maximum flow rate from any tap/faucet must not exceed 12 litres per minute.
- Water saving devices may not be used in a manner that causes damage to any system.
- All automatic meters or tapping valves may be used for filling a water meter.
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## WATER AND SANITATION CONSUMER CHARTER

**VISION**  
To be a leader in striving for the provision of water and sanitation services

**VALUES**  
To provide our customers with a range of water and sanitation services and to be recognized for our commitment to:

- Customer care of our customers
- Environmental friendliness
- Continuous improvement and knowledge management
- Operational excellence
- Customer satisfaction and good stakeholder relationships

**WE PLEDGE THE FOLLOWING TO OUR CUSTOMERS:**

- To provide a safe and secure water supply to all customers
- To provide a safe and secure sanitation service to all customers
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**WATER AND SANITATION SERVICES PROVIDED BY THE CITY OF CAPE TOWN**

- To provide a safe and secure water supply to all customers
- To provide a safe and secure sanitation service to all customers
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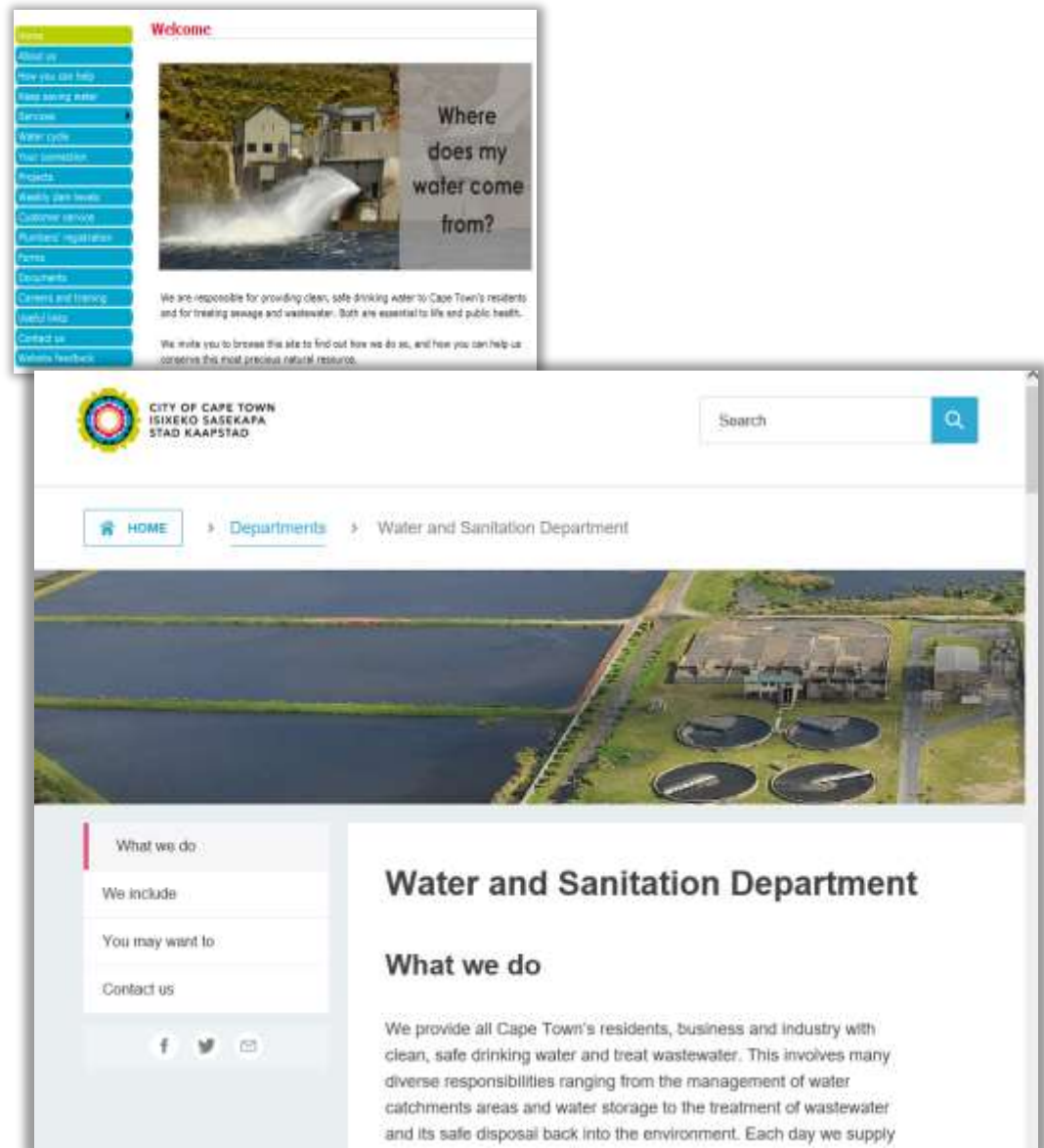
# Education and Awareness Campaigns - Schools Intervention



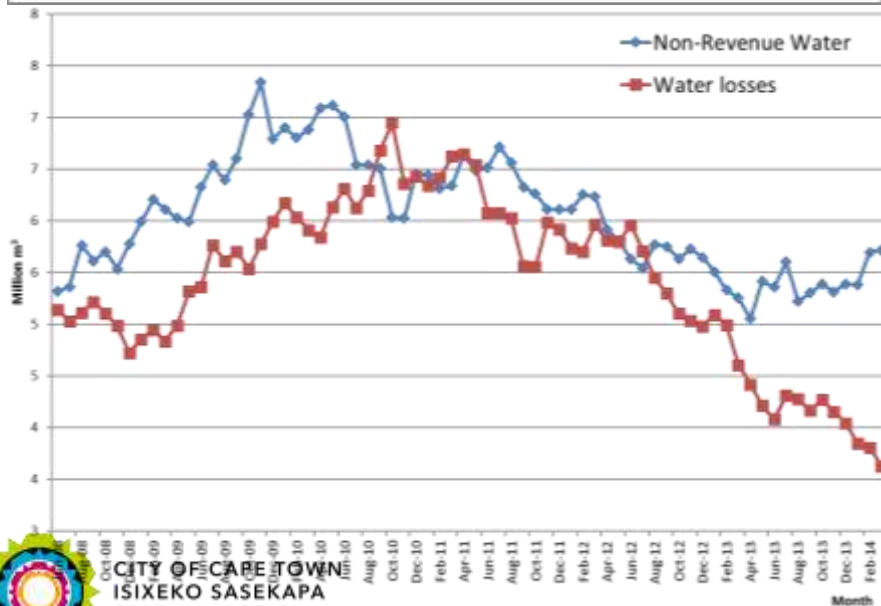
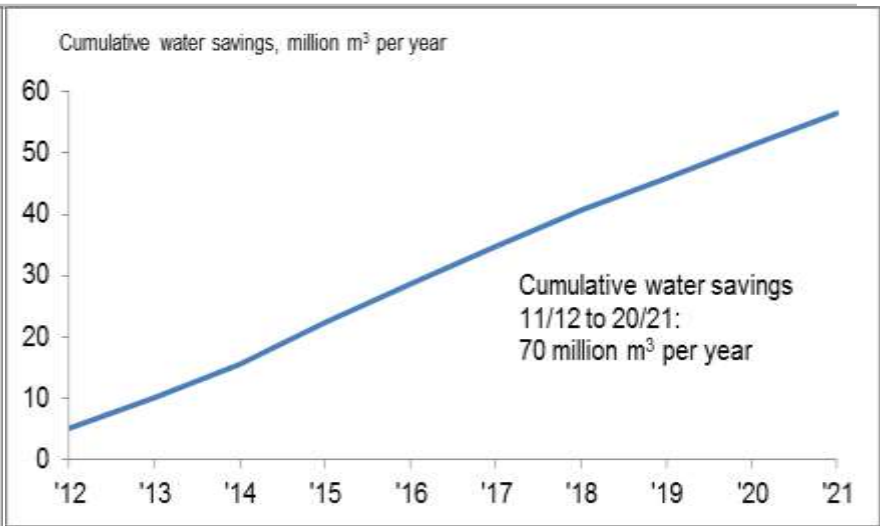
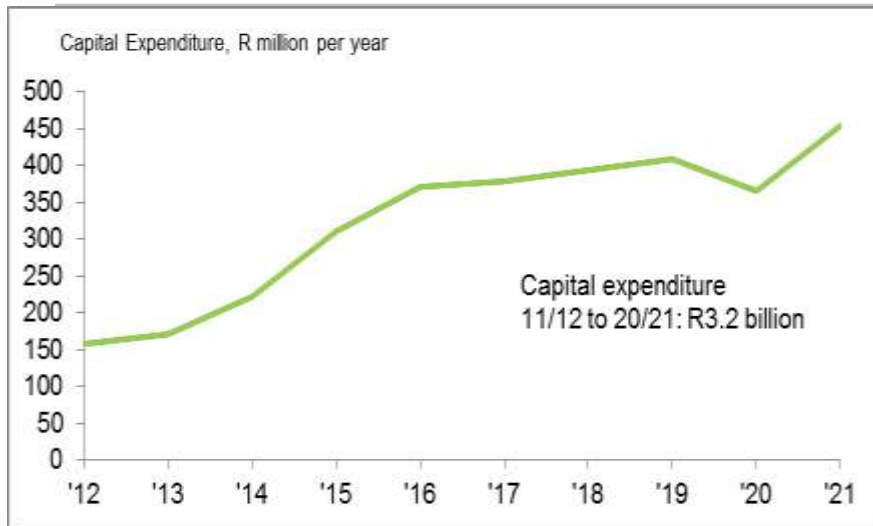
# WATER AND SANITATION WEBSITE

- Developed and improved W&S website (live April 2015)
- 58 Web pages created
- Updated regularly

Branches can contact us to update information



# Water demand management programme 2011/12 to 2020/21: capital expenditure of R3.2b and water savings of 70 million m<sup>3</sup> per annum

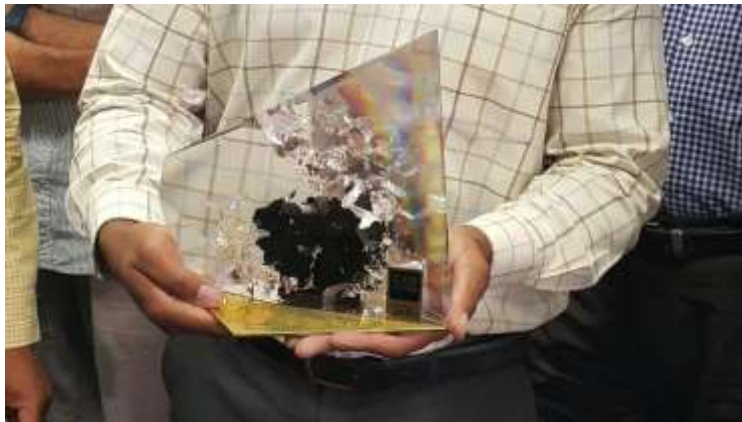


## OVERALL IWA WATER BALANCE TABLE FOR 12 MONTHS ENDING Mar-17

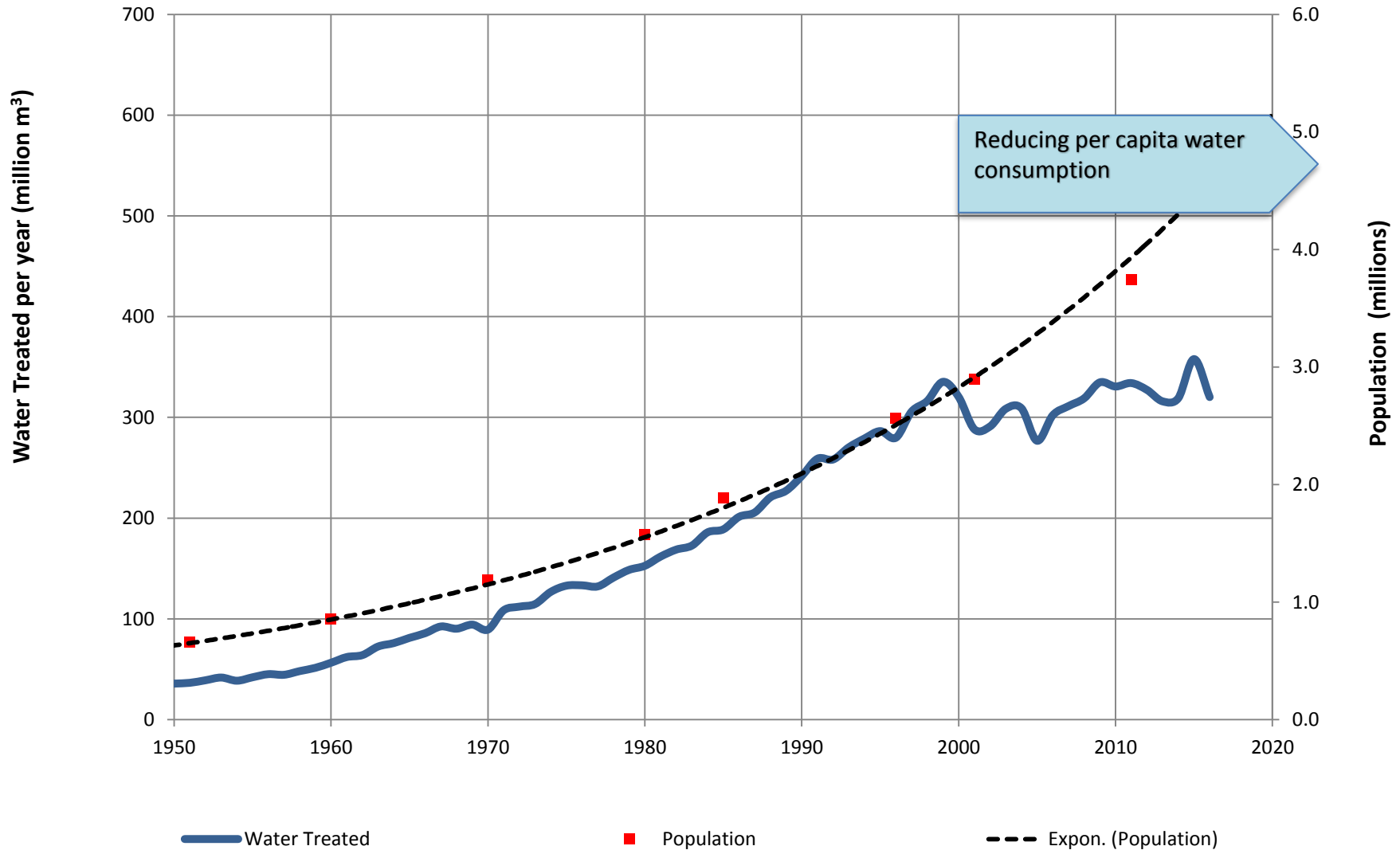
(All figures sum of 12 months in kl or % over 12 months)

(A)	System Input 295 249 092	(B) Authorised 252 004 760	(D) Billed 232 570 221	(H) metered 232 570 221	External Customers	28 097 529	(Q) Revenue Water 232 570 221
					Internal Customers	204 472 692	
100%	Losses (UAW) 43 244 332	(C) Apparent Losses 17 338 635	(E) Unbilled 19 434 539	(J) Metered 10 614 539	(I) Unmetered 0		(R) NRW 62 678 871
					(K) Unmetered 8 820 000		
14.6%	Real Losses 25 905 697	(F) Losses (UAW) 43 244 332	(G) Real Losses 25 905 697	(N) Mains 15 072 214	(L) Unauthorised 2 578 960		21.2%
					(M) Meter Inaccurac 14 759 675		
					(O) Storage 378 600		
					(P) Connections 10 454 883		

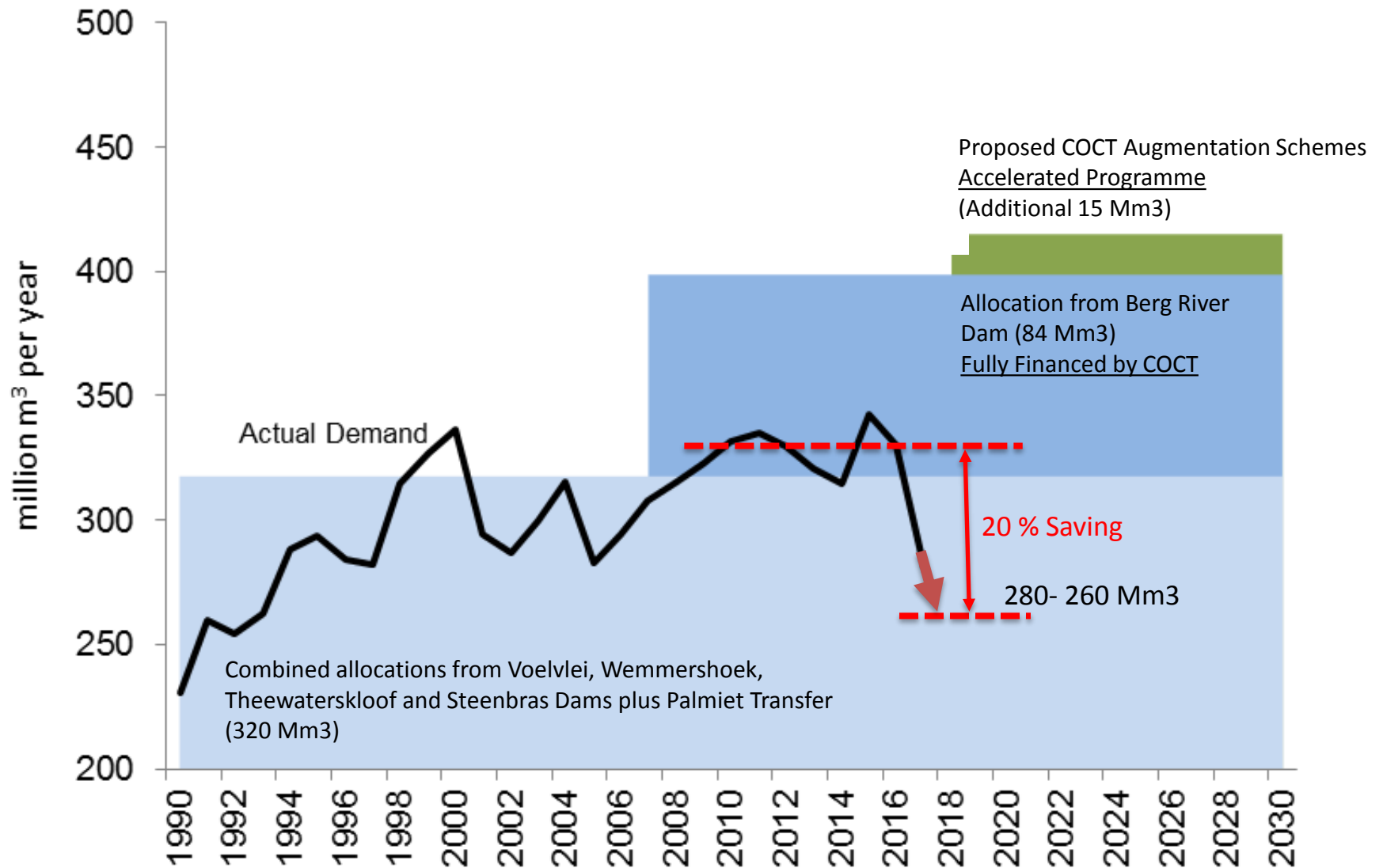
# Cape Town Scoops C40 Cities Award at COP21 Conference in Paris



# Population Growth and Water Use Efficiency



# Water Allocations and Actual Demand





# Supply Assurance and WCWSS Operating Rules (COCT / DWS Raw Water Supply Agreement)

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- **Supply Assurance**
  - Number of years out of a hundred that a water user will obtain it's allocated yield without the application of water restrictions (Urban 97%, Agriculture 91%)
  - Curtailment of abstractions required in drought years to ensure demand can be sustainably met from the supply system. This is internationally accepted water resource planning practice.
  
- **Operating Rules for System of Dams**
  - Minimize spillage: COCT demand can be shifted to dams most likely to spill to maximize system yield
  - Minimize Wastage: WC/WDM Strategies to be implemented by all users
  - Water Restrictions: DWS are responsible for determining and managing water restrictions

# Water Restriction Campaign

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- **Timeline**

- Level 1 – 2005 (10% saving)
- Level 2 – January 2016 (additional 10% voluntary saving)
- Official DWS 20 % curtailment – September 2016
- Level 3 – November 2016 (additional 20% saving)
- Level 3B – February 2017 (restriction measures amended)
- Official DWS curtailment (Urban -20%, Agriculture 30%) – March 2017
- Proposed Level 4 – May 2017



- **Water saving measures and usage tariffs**

- Tariffs designed to encourage water saving
- Curtailment of non-essential water uses required (incl Municipal)



- **Promotion of alternate water sources**

- Treated effluent
- Groundwater
- Greywater
- Rainwater harvesting

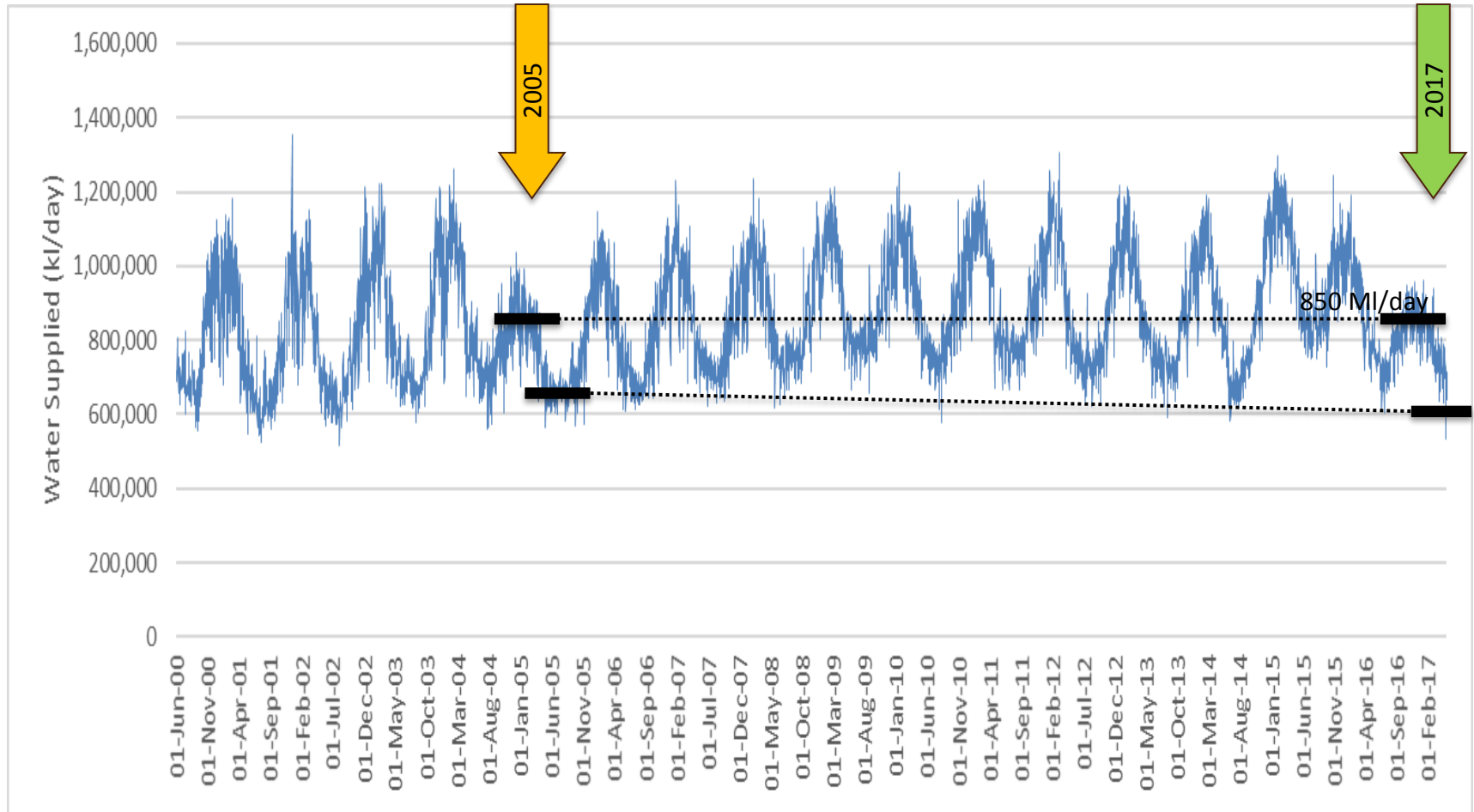
# Water Restriction Campaign (continued)

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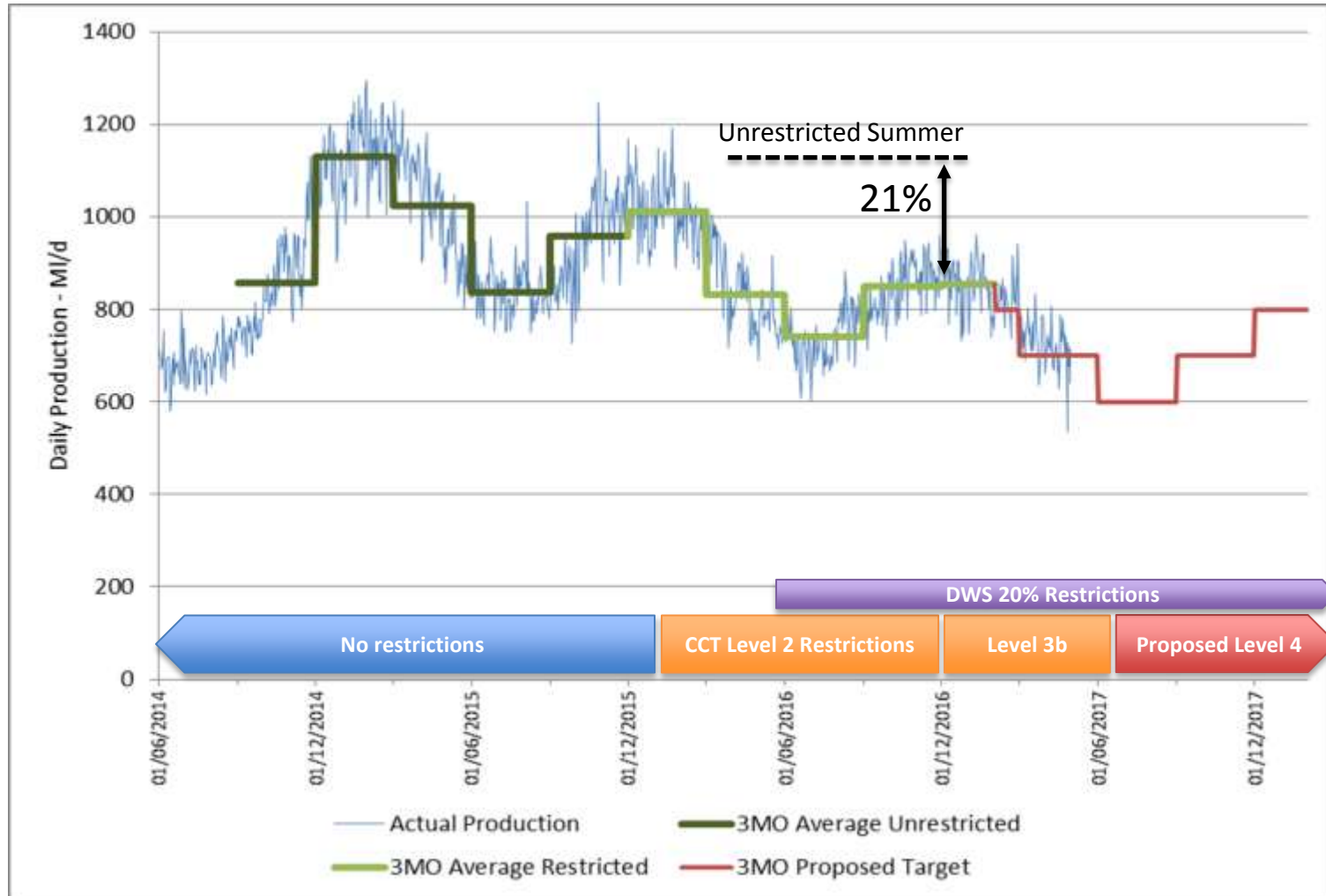


- **Communication**
  - Strong political support
  - Constant media attention and awareness campaigns
- **Enforcement**
  - Targeting high water users
  - Improved enforcement
  - Increased bylaw contravention fines
- **Minimisation of water losses**
  - Losses reduced from 25% (2009) to 15% (2017)
  - Increasing capacity to respond to leaks and bursts
  - Expanding automated and manual pressure management

# Impact of Restriction Campaigns on Water Supplied



# Actual Daily Production versus Restriction Target



# Local Drought Disaster Declaration

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- **Promulgated**
  - 3 March 2017 and valid for 3 months (can be extended)
- **Rationale**
  - Approximately 3 months water remaining (present dam draws with no early rainfall)
  - Possible failure of dam system in 2018 (below average winter rainfall)
  - 4 million people are solely dependent on COCT bulk water supply system
  - Failure of the water supply system will precipitate collapse of sanitation and other municipal services with dire human health and socio-economic implications
- **Outcomes**
  - Assistance from Provincial and National governments (technical, financial and regulatory)
  - Re-allocation of municipal resources to manage water situation
  - Shortened EIA and SCM processes
- **Drought Disaster in the Western Cape**
  - Classified as Provincial Disaster on 25 April 2017
  - Ito S23 of Disaster Management Act (57 of 2002)
  - By Head of National Disaster Management Centre



# Contingency Measures

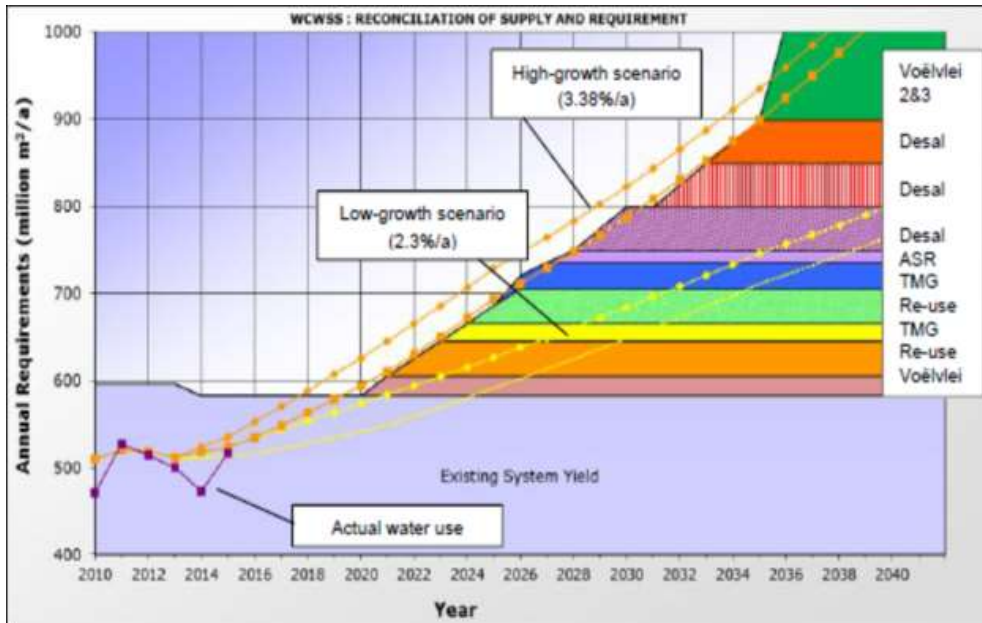
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- **15 – 20% dam storage** - Increase the water restrictions measures and decrease water pressures in the network
- **10 – 15% dam storage** - Implement intermittent supply in residential areas, with stringent restriction measures.
- **Below 10% dam storage** – Provide a 'lifeline' water supply, which would involve minimal supply pressures, intermittent supply, and very stringent restriction measures.



Steenbras Lower and Wemmershoek Dams at 10% - 1973

# WCWSS Reconciliation Strategy (2016 Update)



Driven by long-term population and water demand growth

- **Voelvlei Augmentation**

- 20 - 23 million m<sup>3</sup> p.a.
- R300m CAPEX and R0.5m OPEX
- National DWS to implement

- **TMG Aquifer**

- 20 - 40 million m<sup>3</sup> p.a. (in phases)
- Cost to be determined

- **Wastewater Reuse**

- 80 million m<sup>3</sup> p.a.
- R4.5b CAPEX and R0.5b OPEX

- **Desalination**

- 164 million m<sup>3</sup> pa (450 MI/day)
- R15 b CAPEX and R1.2b OPEX

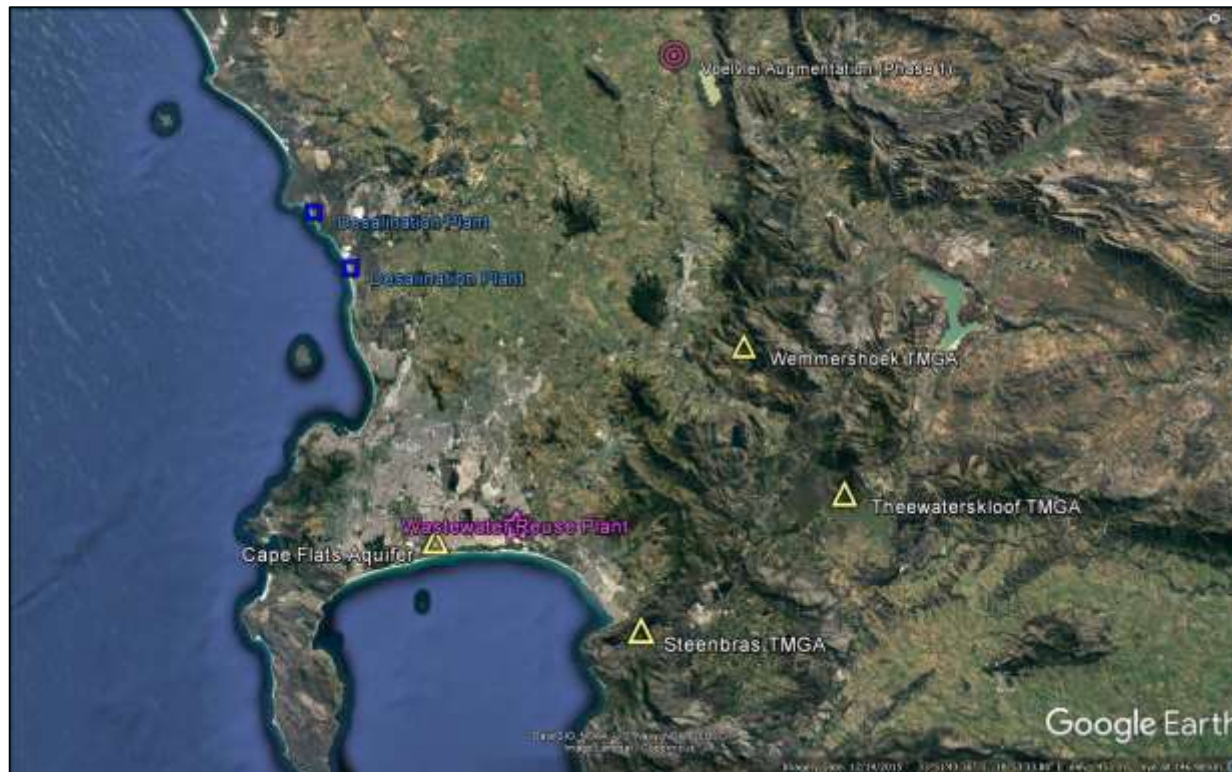




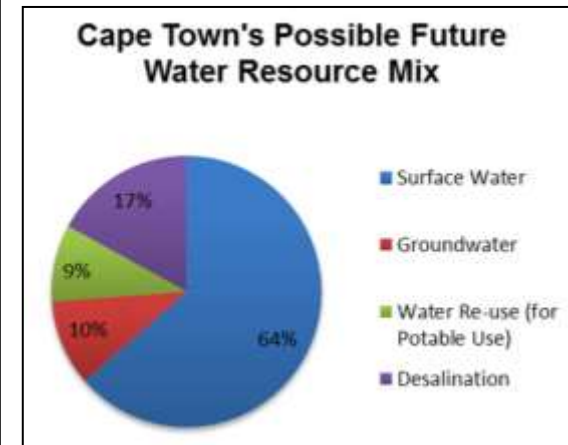
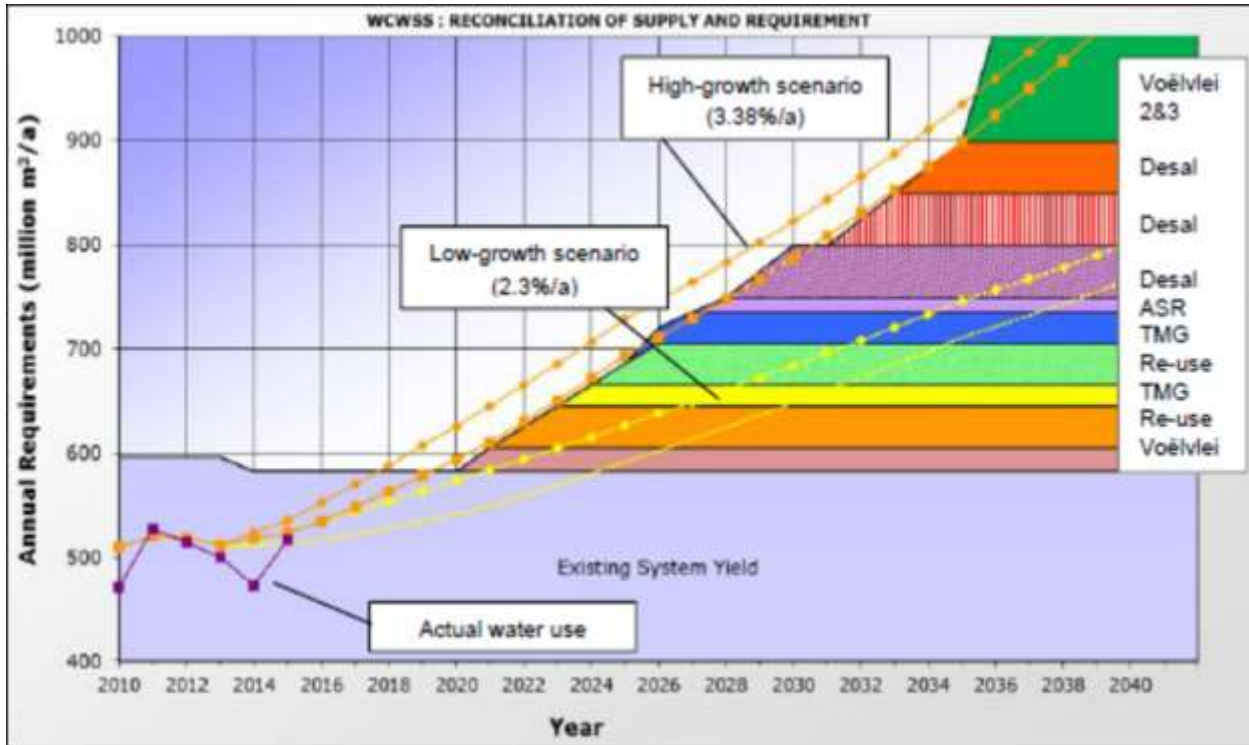
# Accelerated Water Supply Schemes

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- Increase supply in short to medium term
- Diversify water sources
- Mitigate against climate change and improve drought resilience
- Acquisition of baseline costing, yield and environmental information



# WCWSS Augmentation Plan & Acceleration of COCT Schemes



## Why accelerate water resource augmentation schemes:

- Increase supply in short to medium term
- Diversify water sources
- Mitigate against climate change and improved drought resilience
- Deal with uncertainty regarding water allocations (DWS - verification & validation)

# Accelerated Water Supply Schemes

Scheme	Yield (MI/day)	Description	Status	Estimated Cost
TMG Aquifer	10	Development of well fields into deep aquifer at Steenbras, Wemmershoek and Theewaterskloof Dams	<ul style="list-style-type: none"> <li>• Drilling tenders being evaluated</li> <li>• Contract commencement scheduled for end June 2017</li> </ul>	R 85 million
Seawater Desalination Package Plant	5	Primarily for sea water quality data acquisition as well as to improve supply security in Atlantis	<ul style="list-style-type: none"> <li>• Design underway</li> <li>• Construction tenders to advertised in July 2017</li> </ul>	R 100 million
Wastewater Re-use (drinking water)	10	Treatment of effluent from Zandvliet WWTW for direct or indirect injection into bulk water supply system.	<ul style="list-style-type: none"> <li>• Design underway</li> <li>• Construction tenders to be advertised in January 2018</li> </ul>	R 120 million
Cape Flats Aquifer & Atlantis Aquifer	5	Incremental drilling of boreholes to abstract water from the Cape Flats Aquifer in Mitchells Plain as well as expansion of well fields in Atlantis	<ul style="list-style-type: none"> <li>• Consultants to be appointed in June 2017</li> </ul>	R 50 million
WC/WDM Strategy	100	Intensification of demand management measures: <ul style="list-style-type: none"> <li>• Water restrictions</li> <li>• Pressure management</li> <li>• Water saving incentive schemes</li> <li>• Regulation of plumbing fittings and water using appliances</li> <li>• Informative water billing</li> <li>• Communication</li> </ul>	<ul style="list-style-type: none"> <li>• Level 4 restrictions to be considered by Council at end May 2016</li> <li>• Network pressures are being reduced in the Faure, Blackheath and Northern Reservoir supply zones</li> </ul>	R 10 million
Voelvlei Augmentation (Phase 1)	60	DWS Scheme – Pumped transfer of water from Berg River to Voelvlei Dam	<ul style="list-style-type: none"> <li>• Comment period for EIA closed.</li> </ul>	R 300 million

# Recommendations for Business Sector

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- **Conduct regular water audits to understand and reduce your “operational” and “supply chain” water footprints.**
- **Set water efficiency targets and gain the support of your suppliers, customers and staff.**
- **Build long term resilience and plan for climate change by implementing green building and water sensitive urban design guidelines as well as considering alternate water sources (rainwater harvesting, groundwater, treated effluent, etc)**
- **Prepare for the possibility of intermittent supply in 2017 and 2018 by ensuring sufficient onsite storage and effective operation of pumping systems.**

<b>User Category</b>	<b>Required Storage</b> (Water Bylaw – excludes fire and air conditioning systems)
Industrial	8 hours process water requirement
Commercial	70 liters per 100 square meter gross area
Hospitals, Clinics, Old Age Homes	250 liters per bed

# CITY OF CAPE TOWN WATER STAR RATING

29 NOVEMBER 2016

MEDIA RELEASE



## City launches water ratings system to promote savings

*The City has developed a ratings tool to assess commercial and industrial customers' use of water. : The first phase of this initiative culminated in an awards ceremony today, recognising those industries and companies that participated in the assessment process.*



CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD

# Water Star Rating System

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- About the Star Rating System
  - Developed a Rating Tool to encourage better on-site water management in Industries
  - The tool was designed to:
    - Monitor legal compliance
    - Encourage improvement in terms of water usage, water conservation and water discharge
  - The Tool considered green, blue and grey water management
  - Participation is voluntary.
  - Assessed 19 companies with the Rating Tool
- Purpose
  - The Management of Water must become everyone's responsibility
  - Encourage self regulation
  - Interaction with industries in the past was mostly on non-compliance issues
  - Interactive approach to highlight water conservation and water pollution issues

# Water Star Ratings

No.	Company	Star Rating	
1	In2Foods	★ ★ ★ ★	4
2	Total Garage	★	1
3	Silko Plant Hire	★	1
4	Advanced Galvanising	★	1
5	Alibaba Food	★	1
6	Coastal Casings	★	1
7	GSK	★ ★ ★ ★ ★	5
8	Sonnendal Dairy (juice)	★	1
9	Peninsula Beverages	★ ★ ★ ★	4
10	Cape Gate	★ ★	2
11	NGK Ceramics	★ ★ ★ ★ ★	5
12	Plascon	★ ★ ★ ★	4
13	Improchem	★ ★ ★ ★	4
14	Biovac	★	1
15	Johnson and Johnson	★ ★ ★ ★ ★	5
16	Marley Roofing	★	1
17	Avis Rent A Car	★ ★	2
18	Groot Constantia	★ ★ ★	3
19	Southern Canned Products	★	1

- **Benefits for Companies**

- Reduce operating costs
- Reduce consumption of raw material
- Improve efficiency
- Reduce pollution and impact to the environment
- Compliance with Legislation and Bylaws
- Improve companies image

- **Advantages for the City**

- Promotes best practices in terms of water management
- Promotes integrated water management across a wide range of industries
- Consolidates information into one document system
- Encourages companies to implement water related interventions
- Creates awareness

# Future Water Outlook

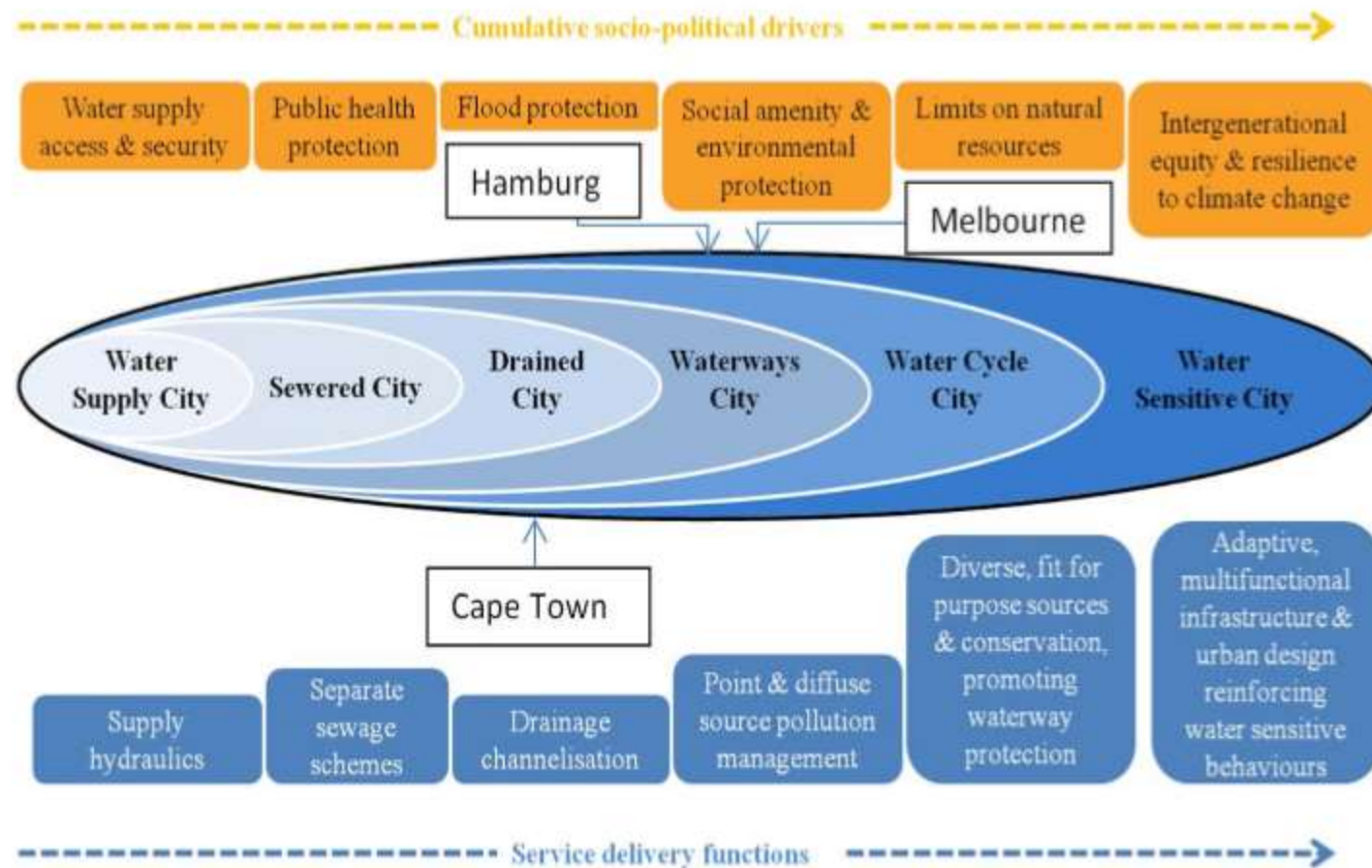
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- **Key considerations:**
  - Growing regional demand and competition for water
  - Climate change requires diversification of water sources and improved water use efficiency
  - Unit cost of water is likely to increase as more costly alternatives to surface water schemes are implemented
  - The opportunity provided by the current water crisis must be maximized to effect a “quantum leap” change to the way water is resourced and utilized in CT.
- **Reposition Cape Town as a Water Sensitive City that:**
  - Optimises and integrates the management of all available water resources (surface water, ground water, wastewater and stormwater) to improve resilience
  - Places high value on water and strives to increase water use efficiency through water sensitive urban design
  - Is a liveable city with healthy waterways and coastal waters



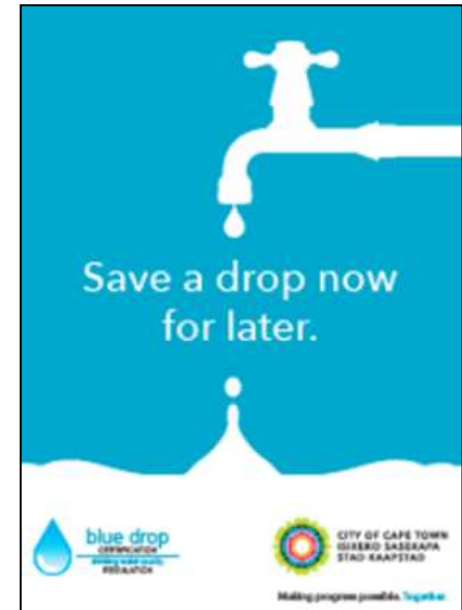
# The Future: Cape Town – a Water Sensitive City

- Alignment of Catchment and Stormwater Management Branch with Water and Sanitation – Completes the Urban Water Cycle.
- An integrated approach towards becoming a Water Sensitive City.





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Thank You

Making progress possible. Together.