



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

Making progress possible. Together.

City of Cape Town

Annual Water Services Development Plan Performance- and Water Services Audit Report

As directed by the Water Services Act (Act 108 of 1997) and the Regulations relating to Compulsory National Standards and Measures to Conserve Water.

FY 2016

Version and Approval Record

	Description	Date	Reference
Version 1	First Draft	July – 31 October 2016	
Version 2	Final report	04 November 2016	

Prepared by:

Designation	Name	Contact No.	E-mail
Senior Technician	Sivatho Nzima	021 444 0735	Sivatho.Nzima@capetown.gov.za
EPWP Graduate	Lufefe Sigenene	021 444 0737	Lufefe.Sigenene@capetown.gov.za

Foreword

This report is submitted in fulfilment of the requirements stated in the Water Services Act, 1997 (Act No. 108 of 1997), as well as the "Regulations relating to compulsory national standards and measures to conserve water", as issued in terms of sections 9 (1) and 73 (1) (j) of the Water Services Act, 1997, to report on the implementation of its water services development plan during each financial year and to include a water services audit in this annual report.

The City of Cape Town Municipality, Water and Sanitation Department, remains committed to the provision of safe and reliable basic services to all residents. The Water and Sanitation Department has made significant progress in providing water and sanitation services to all City of Cape Town (CCT) residents since the formation of one Metro administration.

Whilst all residents are adequately serviced to the national minimum standard, the services within informal settlement areas are continually being improved. Such improvement is centred on how CCT can continue to overcome where possible the unique technical, density, social, political and land challenges which mostly have legal implications. These processes are led by the Department of Human Settlements.

The principal challenge for the Department is to maintain an existing water and sanitation service for the city while also providing services for an ever-increasing number of households in a sustainable way. This has to be achieved in the context of providing basic needs, ensuring economic growth, maintaining an ageing infrastructure, limiting negative environmental impact, managing water resource scarcity and consolidating a transformed metro administrative infrastructure.

To ensure sustainable, fair, equitable, reliable and financially viable provision of water and sanitation services, the Department has developed and is implementing strategies that address the priorities reflected in the scorecard, represented by the Service Delivery and Budget Implementation Plan (SDBIP), to ensure effective water services management. The strategies also seek to ensure compliance with the National Water Act, Water Services Act and the related regulations, National and City Policies.

Abbreviations and Definitions

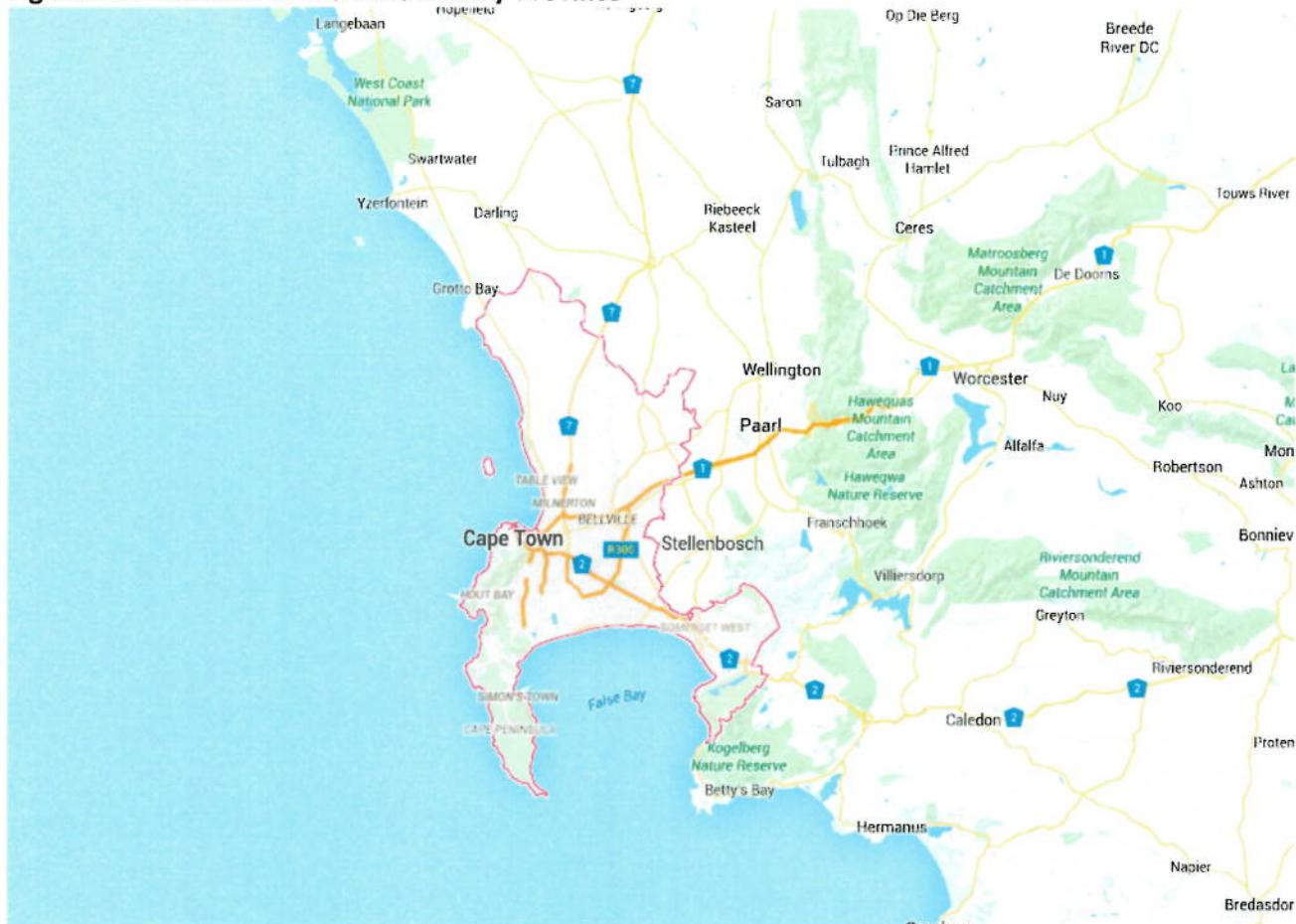
DWS	National Department of Water and Sanitation
BDS	Blue Drop Certification System
FY:	Financial Year - means in relation to – <ul style="list-style-type: none">• a national or provincial department, the year ending 31 March; or• a municipality, the year ending 30 June.
GDS	Green Drop Certification System
IDP:	Integrated Development Plan - An IDP is a legislative requirement for municipalities which identifies the municipality's key development priorities; formulates a clear vision, mission and values; formulates appropriate strategies; shows the appropriate organisational structure and systems to realise the vision and the mission and aligns resources with the development priorities.
MFMA	Local Government: Municipal Finance Management Act, 2003 (Act No. 56 of 2003)
m ³	cubic metres = 1 000 liter = 1 kiloliter
MI	Megaliter = 1 000 kiloliter = 1 000 000 liter
SDBIP:	Service Delivery Budget Implementation Plan – is a management, implementation and monitoring tool that enable the Municipal Manager to monitor the performance of senior managers, the Mayor to monitor the performance of the Municipal Manager, and for the community to monitor the performance of the municipality.
WSA:	Water Services Authority - means a municipality with the executive authority and the right to administer water services as authorised in terms of the Municipal Structures Act, 1998 (Act No. 117 of 1998)
WSDP:	Water Services Development Plan – means the plan to be developed and adopted by the WSA in terms of the Water Services Act, 1997 (Act No. 108 of 1997)
WSDP Guide Framework:	Modular tool which has been developed by the DWS to support Water Services Authorities in complying to the Water Services Act with respect to Water Services Development Framework: Planning and which is also used by the DWS to regulate such compliance
WSP:	Water Services Provider - means any person or institution who provides water services to consumers or to another water services institution, but does not include a water services intermediary

Table of Contents

Foreword	3
Abbreviations and Definitions	4
<i>Section A: Water Services Authority Profile</i>	6
A1: Map of Water Services Authority Area of Jurisdiction.....	6
A2: Water services administration and organization	8
A3: Water services overview	9
<i>Section B: WSDP Performance Report</i>	12
B1: WSDP reference and status.....	12
B2: Performance on water services objectives and strategies	13
B3: Status of water services projects	25
B4: Past financial year water services project impact declaration.....	30
<i>Section C: Water Services Audit Report</i>	34
C1. Quantity of water services provided (Water Balance).....	34
C2. Water services delivery profile.....	37
C2.1 User connection profile.....	37
C2.2 Residential water services delivery access profile	43
C2.3 Residential water services delivery adequacy profile	47
C3. Cost recovery and free basic services	52
C3.1 Tariffs.....	52
C3.2 Metering, Billing and Free Basic Services.....	56
C3.3 Revenue collection and cost recovery	58
C4. Water quality.....	60
C4.1 Sampling programme	61
C4.2 Water quality compliance	67
C4.3 Incident management	68
C5. Water conservation and demand management	70
<i>Section D: Approval and Publication Record</i>	75

Section A: Water Services Authority Profile**A1: Map of Water Services Authority Area of Jurisdiction**

The City of Cape Town Metropolitan Municipality services an area covering 2455 km² in the Western Cape. The City of Cape Town is comprised of 24 sub-councils and then further divided into 111 geographic areas called wards to effectively manage service delivery to the whole city.

Figure A1.1: Location of WSA within DM/ Province

The City of Cape Town Municipality is relatively densely populated with approximately 1600 people per km². It houses the legislative capital of South Africa and accounts for more than 50% of the Western Cape's economic activity.

Figure A1.2: Map of WSA area of jurisdiction



A2: Water services administration and organization

The relevant officials responsible for water services provision within the City of Cape Town Metropolitan Municipality are outlined below.

Table A2.1: Water services administrative structure

Accounting Officer

Designation:	City Manager
Name:	Achmat Ebrahim
Telephone Nr:	021 400 1320
Email:	achmat.ebrahim@capetown.gov.za

WSA Manager

Designation:	Executive Director
Name:	Gisela Kaiser
Telephone Nr:	021 400 2500
Email:	gisela.kaiser@capetown.gov.za

WSP Manager

Designation:	Director
Name:	Peter Flower
Telephone Nr:	021 400 4859
Fax Nr:	086 576 1021
Email:	peter.flower@capetown.gov.za

WSDP Manager

Designation:	Manager
Name:	Zolile Basholo
Telephone Nr:	021 444 3672
Fax Nr:	086 576 1186
Email:	zolile.basholo@capetown.gov.za

IDP Manager

Designation:	Director
Name:	Dr Martin van der Merwe
Telephone Nr:	021 400 5583
Email:	martin.vandermerwe@capetown.gov.za

A3: Water services overview

The City of Cape Town Municipality comprises of 921 sub-places as determined by the 2011 Census. These sub-places have been grouped into 190 suburbs for analysis purposes.

The household and population figures have been determined by applying the projected STATS SA growth rates to the 2011 baseline figures as follows:

Projected Population growth rate: 5 years (2020)	=	0.96
Projected Population growth rate: 10 years (2025)	=	0.71

*Source: WCG and CCT Population Projections 2011 to 2040

Estimated Number of households (2016): = 1 134 925

Estimated Population: = 3 972 238

Average number of people per household: = 3.5

*Source: Statistics South Africa 2016 Community Survey (check the title)

There seems to be a trend towards smaller household units across all population groups: Cape Town's household size is below that of developing countries' average household size of five members, and is moving closer to the average of two to three members noted in many developed countries. Challenges associated with this trend include the increased demand for housing supply to accommodate the trend.

The resulting household and population figures are aligned with the DWS National Geo-referenced Database which forms the baseline for the WSDP Guide Framework.

The tables below provide an overview of the settlements types within the WSA area of jurisdiction. It includes the population and household numbers as per the water services planning baseline figures.

The water services levels of the respective settlements are illustrated in the context of its adequacy (as per the WSDP Guide Framework definitions) and further summarised in section C2 of this report.

Table A3.1: Water services overview (water)

Settlement Type	2015/16		2014/15		Water category								
	Households	Population	Households	Population	Adequate: Formal	Adequate: Informal	Adequate: Shared Services	Water resources needs only	O&M needs only	Infrastructure needs only	Infrastructure & O&M needs	No Services: Informal	No Services: Formal
URBAN													
Formal & Informal households													
Cape town	1 134 925	3 972 238	1 122 328	3 928 148	✓	✓							
Sub-Total	1 134 925	3 972 238	1 122 328	3 928 148	1	1	0	0	0	0	0	0	0
Water : Profile of consumers as at June 2016													
None or inadequate(Target)	0	0	0	0									
Communal water supply	156 755	0	155 015	0		✓							
Controlled volume supply	-	0	138 605	0	✓								
Uncontrolled volume supply	-	0	828 708	0		✓							
Total	1 134 925	3 972 238	1 122 328	3 928 148									
RURAL													
Rural Small Village													
Example: Rural small village 1													
Dense rural													
Rural Village													
Sub-Total	0	0	0	0									
Rural Scattered													
	0		0	0									
Sub-Total	0		0	0									
Working towns & service centres													
	0	0	0	0									
Sub-Total	0	0	0	0									
Farming													
	0	0	0	0									
Sub-Total	0	0	0	0									
Sub-Total (Rural)	0	0	0	0									
TOTAL	1 134 925	3 972 238	1 122 328	3 928 148	1	1	0	0	0	0	0	0	0

Table A3.2: Water services overview (sanitation)

Settlement Type	2015/16		2014/15		Sanitation category								
	Households	Population	Households	Population	Adequate: Formal	Adequate: Informal	Adequate: Shared Services	Water resources needs only	O&M needs only	Infrastructure needs only	Infrastructure & O&M needs	Infrastructure, O&M & Resource need	No Services: Informal
URBAN													
Formal & Informal households													
Cape town	1 134 925	3 972 238	1 122 328	3 928 148	✓	✓							
Sub-Total	1 134 925	3 972 238	1 122 328	3 928 148	1	1	0	0	0	0	0	0	0
Sanitation: Profile of consumers as at June 2016													
None or inadequate	0												
Communal toilets / Portable flush	156 755	0	155 015	0	✓	✓							
Full flush	78 170	0	967 313	0	✓	✓							
Total	1 264 849	0	1 122 328	0	0	0	0	0	0	0	0	0	0
Sub-Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub-Total: (Urban)	1 134 925	3 972 238	1 122 328	3 928 148	1	1	0	0	0	0	0	0	0
RURAL													
Rural Small Village													
Example: Rural small village 1													
Dense rural													
Rural Village													
Sub-Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Rural Scattered													
	0		0	0									
Sub-Total	0		0	0	0	0	0	0	0	0	0	0	0
Working towns & service centres													
	0	0	0	0									
Sub-Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Farming													
	0	0	0	0									
Sub-Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub-Total (Rural)	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1 134 925	3 972 238	1 122 328	3 928 148	1	1	0	0	0	0	0	0	0

Section B: WSDP Performance Report

B1: WSDP reference and status

The City of Cape Town Metropolitan Municipality developed its current Water Services Development Plan in February 2012. It was then approved and finally published in October 2012. Its development and approval process is outlined in Table B1.1.

Table B1.1: WSDP- and reporting reference

Nr	WSDP Title and Reference	Status	Date	WSDP Year	Financial Year	Reporting year
1	Water Services 1 Departmental Sector Plan for City of Cape Town	Drafted:	2/23/2012	Year 1	2012/13	Y-1
		Comment submit:	5/12/2012	Year 2	2013/14	Y-2
		Finalised:	7/13/2012	Year 3	2014/15	Y-3
		Adopted:	10/30/2012	Year 4	2015/16	Y-4
		Published:	10/30/2012	Year 5	2016/17	

B2: Performance on water services objectives and strategies

The table below presents performance against the water services related objectives and strategies as extracted from the City of Cape Town Integrated Development Plan as well as the strategies compiled as part of the WSDP Guide Framework.

Indicators included in the WSDP and IDP make up the Department SDBIP and it provides a departmental overview of the service delivery by the core branches within the Department. These strategies and objectives mentioned above are categorised into the WSDP topics in Table B2.1

Table B2.1: Performance on water services objectives and strategies per WSDP topic as at June 2016

sheet 1 of 9

Nr	Objective Strategy	Key Performance Indicator	Inclusion (yes/no)	WSDP Year 1		WSDP Year 2		WSDP Year 3		WSDP Year 4		WSDP Year 5				
				WSDP	IDP	FY	2012/13	FY	2013/14	FY	2014/15	FY	2016/17			
WSDP Topic 1: Administration																
<i>Ensure proactive water services development planning and regulatory compliance *Included in the Branch SDBIP Scorecard</i>																
1.1	Develop and adopt a new WSDP every 5 years	New WSDP every 5 years	none			none		none		none		none	100%			
1.2	Compile and submit annual WSDP implementation- and water services audit report	Date submitted *		October every year	Submitted	October every year	Submitted	October every year	Submitted	January 2015	October every year	April 2016	October every year			
1.3	Extract and incorporate WSDP objectives and projects into IDP / SDBIP	Date completed *		September every year	achieved	September every year	September every year									
1.4	Review and submit the WSDP Guide Framework on annual basis	Date submitted *		March every year	achieved	March every year	Achieved									
WSDP Topic 2: Demographics																
2.1	Extent of the City of Cape Town urban sprawl is calculated to be.	None established		n/a		n/a		n/a		38408 ha	n/a	n/a				

Table B2.1: Performance on water services objectives and strategies per WSDP topic

sheet 2 of 9

Table B2.1: Performance on water services objectives and strategies per WSDP topic

WSDP Topic 4: Socio economic									
4.1	SFA1 - The Opportunity City Obj 1.2 - IDP 1.2 (d) Expanded Public Works Programme (EPWP)	Number of Expanded Public Works Programme (EPWP) opportunities created	✓	✓	Mainstream: 3 500 MSICP: 675	n/a	4 500	4 934	5100
4.2	FA 1 - The Opportunity City Obj 1.6 IDP 1.6 (a) Seta and EPWP funding used to train apprentices and create other external training opportunities. Training apprentices for vacant posts in the administration and the city.	Number of external trainee and bursary opportunities (excluding apprentices)	✓	✓	91	90	92	124	95
4.3		Number of apprentices	✓	✓	94	52	60	71	20
WSDP Topic 5.1: Water Services Infrastructure management									
Infrastructure of Water and Sanitation Services		Percentage spend on repairs and maintenance	✓	✓	n/a	100%	109.81%	95%	105.8%
5.1.2		Metres of water reticulation mains replaced this year	✓	✓	56,000	70,279	58 800	55 418	36000
5.1.3	Annual Maintenance required *	Metres of sewer reticulation mains replaced this year	✓	✓	27,010	32,515	28 360	29 836	48622
5.1.4			✓	✓			23500	25046	30 000
							12 000	25975	32814

sheet 3 of 9

Table B2.1: Performance on water services objectives and strategies per WSDP topic

WSDP Topic 5.2: Water Services Infrastructure management									
		Capital expenditure on development and Maintenance of its extensive infrastructure							
5.2.1	SFA1 - The Opportunity City Obj 1.2 IDP 1.2 (c) Investment in Infrastructure	1.C Rand value of capital invested in engineering infrastructure (growth, refurbishment and replacement of Water & Sanitation infrastructure)	✓	✓	90% of R617.0M (R555.3M)	89.3%	R770 Million Adj. Budget: R750 Million	R720 171 812 reported as: R720.17 M	R1285.46m 1260.77m
5.2.2		1.E Number of outstanding valid applications for water services expressed as a percentage of total number of billings for the service	✓	✓	< 1%	0.65%	<1%	1.01%	< 0.9% 0.61% < 0.8%
5.2.3		1.F Number of outstanding valid applications for sewerage services expressed as a percentage of total number of billings for the service	✓	✓	< 1%	0.57%	<1%	0.62% 0.54% < 0.8%	0.24% 0.29%
WSDP Topic 6: Associated services									
		Maintain existing status quo on water and sanitation for associated services							
6.1	To maintain the status quo of on water and sanitation provision for all hospitals and health centres and schools	None established (see 5.2)		n/a	n/a	n/a	n/a	n/a	n/a

sheet 4 of 9

Table B2.1: Performance on water services objectives and strategies per WSDP topic

WSDP Topic 7.1: Conservation and Demand management (Water Resource Management)									
	Continued Implementation of the Water Conservation and Demand Management Strategy	Direct indicators not established but are linked to Topic 7.2 Conservation and Demand Management (Water Balance)	✓	✓	n/a	n/a	n/a	n/a	n/a
WSDP Topic 7.2: Conservation and Demand management (Water Balance)									
	Water awareness and education								
7.2.1	EPWP employment projects including consumer satisfaction surveys, job seeker registration	Established in Topic 4	✓	✓	n/a	n/a	n/a	500	1280
	Non-Revenue Water							n/a	n/a
7.2.2		1.J Percentage of treated potable water not billed	✓	✓	20.0%	20.0%	20.2%	21.84%	19.70%
		Percentage of potable water reused as treated effluent	✓	✓	-	-	4.50%	4.56%	4.7%
7.2.3	SFA1 - The Opportunity City Obj 1.3 - IDP 1.3 (b)	Water Conservation and Water Demand Management Strategy							
7.2.4		Volume of potable water reused as treated effluent	✓	✓	1 150 Ml/month	1 183 Ml/month	replaced with percentage potable water reused	replaced with percentage potable water reused	replaced with percentage potable water reused

Table B2.1: Performance on water services objectives and strategies per WSDDP topic

sheet 6 of 9

WSDP Topic 8: Water Resources									
	Water use efficiency								
8.1	Volume water treated	Megalitres of water supplied to meet demand management targets	✓	✓	350,381	320,922	337,254	314,774	330 000
8.2	Volume water supplied	Water supplied to reticulation network	✓	✓	not established	not established	not established	not established	342,696
Water and Wastewater Quality Compliance									
8.3	SFA 3 - The Caring City Obj 3.5 IDP 3.5 (a) Environmental Health Care Programme	Number of WWTWs with >= 95% compliance with DWA water quality requirements	✓	✓	not established	not established	6	7	9
		Percentage compliance with 4 critical DWA effluent standards (e-coli count, Ammonia content, Oxygen demanding substances, total suspended solids)	✓	✓	82%	85%	n/a	n/a	n/a
		3.G Percentage compliance with drinking water quality standards	✓	✓	98%	99.3%	98%	99.76%	98%
									99.67% (May Prelim was 99.68%)

Table B2.1: Performance on water services objectives and strategies per WSDP topic

WSDP Topic 9: Financial profile									
		Capital and Operating Expenditure							
		Percentage spend of capital budget		90% of Planned YTD		86.6%		92%	
9.1	SFA 5 - The Well Run City IDP 5.3 (a) Financial management programme	1.C Rand value of capital invested in engineering infrastructure (growth, refurbishment and replacement of Water & Sanitation infrastructure)	✓	✓	R596.642M	91%	88.3%	94.0%	90%
9.2	Operating Expenditure	90.60%							
9.3	SFA 5 - The Well Run City IDP 5.3 (a) Financial management programme	Percentage of Operating Budget spent	✓	✓	95% of YTD	99.6%	95.0%	93.3%	99.6%
9.4	SFA 5 - The Well Run City IDP 5.3 (a) Financial management programme	Revenue collected as a percentage of billed amount (Water)	✓	✓	91.50%	90.56%	92.5%	90.8%	86%
9.5	9.6	Revenue collected as a percentage of billed amount (Sewerage)	✓	✓	91.5%	89.85%	92.5%	90.7%	89%
		Percentage of water meters read on a monthly basis	✓	✓	88%	83.6%	88%	82.52%	88%
9.7	SFA 5 - The Well Run City IDP 5.3 (a) Financial management programme	General	✓	✓	100% asset register verified	92.46%	100% asset register verified by directorate/ department	82.17%	100% asset register verified
9.8		Percentage Internal Audit findings resolved	✓	✓	70%	43%	No follow-up audits	70%	54%
									43%

Table B2.1: Performance on water services objectives and strategies per WSDP topic**sheet 8 of 9**

WSDP Topic 10: Institutional Arrangements profile									
10.1	Percentage incidence of overtime hours in excess of 43hrs	v	v	100%	not established	≤9%	3.51%	≤ 21%	0.075
10.2	Percentage adherence to EE target in all appointments (internal & external)	v	v	100%	112.96%	100%	113.85%	80%	97.82%
10.3	Percentage adherence to 2% of people with disabilities (PWD)	v	v	not established	not established	not established	2%	1.37%	2%
10.4	Percentage of absenteeism	v	v	not established	not established	not established	not established	≤ 5%	5.80%
10.5	Percentage vacancy rate	v	v	not established	not established	not established	not established	≤ 7%	11.90%
10.6	Obj 5.2 IDP 5.2 (a) HR, Talent Management, Skills Development programme (Integrated Talent management Approach)	v	v	100%	99.11%	99.1%	100.0%	Replaced with Percentage vacancy rate and Percentage of absenteeism	n/a
10.7	Percentage budget spent on implementation of WSP	v	v	not established	not established	not established	not established	95%	68.72%
10.8	Percentage adherence to employee talent target (composite indicator)	v	v	100%	84.59%	84.59%	100%	Replaced with Percentage budget spent on implementation of WSP	n/a
10.9	Percentage adherence to OHS target (composite Indicator)	v	v	New	New	New	95%	tbc	n/a
10.10	Percentage OHS incidents reported	v	v	New	New	New	New	New	≤ 5%
									1.80%

		Percentage OHS investigations completed	New	New	New	New	New	Not reported on due to SAP evidence shortcomings
10.11							100%	

Table B2.1: Performance on water services objectives and strategies per WSDP topic

WSDP Topic 11: Social and Customer service requirements		Community satisfaction survey (score 1-5) for residents	Community satisfaction survey (score 1-5) for business	not established	not established	2.9	3.2	2.9	3.43	2.9	3.17
11.1	SFA 5 - The Well Run City IDP 5.2 (c)	✓	✓								
11.2	Annual Community Satisfaction Survey	✓	✓	not established	not established	2.9	3.6	2.9	3.22	2.9	3.41
11.3	SFA 4 - The Inclusive City Obj 4.1 IDP 4.1 (a) Managing service delivery through the service management process	Percentage adherence to Citywide service standard based on all external notifications	✓	100%	not established	100%	85.33%	100%	95.40%	100%	93.29%

Legend:

- | |
|---|
| Past Financial Years |
| Previous Financial Year (financial year of reporting) |
| Future Years |

The following performance highlights indicated in Table B2.1 above from the SDBIP are further highlighted below for the previous financial year:

Service levels

- The number of water service points (taps) for 2015/16 past financial year targeted was 600 and the actual taps provided were 919
- There were 2800 targeted number of Sanitation service points (toilets) and 3058 were actually provided in 2015/16 past financial year

Socio economic:

- The Department has created 6 034 job opportunities against the target of 5 100 EPWP opportunities .
- Number of external trainee and bursary opportunities (excluding apprentices) created were 158 against the target of 90.

Water services infrastructure management:

- A total of 32 814m of water reticulation mains have been replaced against the target of 30 000.
- A total of 25 975m of sewerage reticulation mains have been replaced against the target of 12 000
- A new closed-circuit television (CCTV) pipe inspection technology – the robotic crawler – was introduced to help monitor the City's water and sanitation infrastructure.
- Northern area sewer line to increase capacity is completed as part of a multi-year project from Thornton to Langa pump station via Epping Industrial, at a total cost of R150 million. An updated integrated master plan for the water and sanitation infrastructure was last produced in 2014/15 financial year as a planning tool and it is still relevant currently. This included all planned future infrastructure investments.
- Harnessing technology to deliver sustainable services
- The City recently completed the upgrade of the historic Langa interceptor sewer. This sewer line runs below a traditional initiation site. In order to accommodate the needs of initiates, the City made use of less disruptive technology to rehabilitate the pipeline.
- The R9, 1 million upgrade has already made a noticeable difference to operations in the area by reducing maintenance time and costs. The infrastructure serves approximately 65 000 residents and had experienced severe siltation since the mid-1980s, which required regular, intensive mechanical cleaning.

Conservation and demand management:

- The Water Conservation and Water Demand Management Programme (WCWDM) was announced as the international winner in the Adaptation Implementation Category in the 2015 C40 Cities Awards in Paris.
- A significant reduction has been identified in the number of water management devices installed from 32111 - 24 997 during 2014/15 and 2015/16 respectively.
- The tender has been advertised to retrofit all municipal building and facilities to replace all automatic urinals with water efficiency asset in ablution facilities such as water less urinals, demand taps and flushing units and metered flushing units to minimise water wastage in all council toilets or ablution facilities.

Water resources:

- Driving sustainable water security

The first of two reservoirs of 35 Million litres each, planned for at Spes Bona outside Durbanville is completed, which will eventually provide water to an estimated 18 000 subsidised housing units. It is a requirement for the Garden Cities Greenville development at Fisantekraal, the future Bella Riva development and other future housing projects along the Darwin development corridor.

- Ensuring water quality

• The City consistently excels in the DWS's Blue Drop awards programme. As in June 2016, the City's

most recent score was an impressive 95,86%, again achieving Blue Drop status. The City remains in the top-performing group of water service authorities in South Africa.

Financial profile:

- Various significant financial process improvements were achieved, including movable asset verification of 100%.
- The meter replacement programme continued.

Social and customer service requirements:

- A new and improved website was created and populated with useful information to assist residents, learners, students, educators and visitors.
- ISO 9001:2008 certification was awarded to the Department's Reticulation Branch, the Water Demand Management and Strategy Branch, as well as the Finance and Commercial Branch (Administration) and Support services branch. EAM went through an ISO 9001, ISO 14001 and OSHAS 18001 audit and awaiting the Certification Body approval.
- The annual water service quality survey was conducted from November to January 2016, forming part of the Department's customer service charter to ensure top-quality service and products.
- The Department developed and implemented an e-portal application enabling customers to capture their own meter readings. This forms part of a meter-reading campaign initiated to request customers to SMS their reading or provide it via the e-portal.

B3: Status of water services projects

The table below presents the projects status or records related to Water Service Authority (City of Cape Town) with allocated budget and specifically focussing on Water and Sanitation Department.

These projects were implemented in 2015/16 financial year and are categorised according to departmental Branches in table B3.1 below:

Table B3.1: Water Services projects status and performance

Nr	Project Title and Description	Inclusion		Total Project Cost (R'000)	Year 2016 Performance - FY2015/16			Funding Source(s)	Project Category / Type	Planned Period		Project Status
		WSDP	IDP		FY Budget (R'000)	Spent (R'000)	%			From FY	To FY	
C11.86077-F1	Bulk Water Augmentation Scheme	Yes	Yes	2 707	350		100%	1EFF	Bulk Water	2006/07	June 2022	In progress
C11.86077-F2	Bulk Water Augmentation Scheme	Yes	Yes	2 707	27 800	18 506	67%	CRR	Bulk Water	2006/07	June 2022	In progress
C11.86077-F4	Bulk Water Augmentation Scheme	Yes	Yes	2 707	24 561	24 539	100%	CGD	Bulk Water	2006/07	June 2022	In progress
C14.86055-F2	Development of Additional Infrastructure	Yes	Yes	62	62		100%	CRR	Bulk Water	July 2015	June 2016	Completed
C15.86041-F1	BW Infrastructure Replacement 14/15	Yes	Yes	0	0	-1	0%	1 EFF	Bulk Water	2015/16	2016/17	Completed
C16.86004-F1	Replacement of Plant & Equipment 15/16	Yes	Yes	250	250		100%	1 EFF	Bulk Water	July 2015	June 2016	Completed
C16.86005-F1	Plant & Equipment Additional 15/16	Yes	Yes	751	752	747	99%	1 EFF	Bulk Water	July 2015	June 2016	Completed
C16.86009-F1	Development of Add Infrastructure 15/16	Yes	Yes	5 148	5 148		94%	1 EFF	Bulk Water	July 2015	June 2016	Almost completed
C16.86010-F1	BW Infrastructure Replace/Refurb 15/16	Yes	Yes	58 024	58 024	57 418	97%	1 EFF	Bulk Water	July 2015	June 2016	Almost completed
CPX.0003851-F2	Contermanskloof Reservoir	Yes	Yes	214	1 101	1 101	100%	CGD	Bulk Water	July 2013	June 2020	In progress
CPX.0003893-F1	OSEC (Electrolytic Chlorination Infr)	Yes	Yes	91	8 211	8 210	101%	1 EFF	Bulk Water	July 2013	July 2025	In progress
CPX.0003893-F2	OSEC (Electrolytic Chlorination Infr)	Yes	Yes	91	500	500	100%	CGD	Bulk Water	July 2013	July 2025	In progress
C12.86079-F1	EAM Depot Realignment - 5 Nodal System	Yes	Yes	44 529	44 528	44 528	106%	1 EFF	EAM	July 2015	June 2016	In progress
CPX.0005992-F1	Acquisition & Commissioning of large Gen	Yes	Yes	157 000	157 000	42 836	27%	CRR	EAM	July 2015	June 2017	In progress
C16.86023-F1	Specialised Equipment: Additional	Yes	Yes	7 286	7 163	7 285	102%	1 EFF	EAM	July 2015	June 2016	In progress
C16.86024-F1	Vehicles,Plant Equip: Additional Fit Man	Yes	Yes	19 965	20 000	19 950	100%	1 EFF	EAM	July 2015	June 2016	Completed
CPX.0002122-F1	Telemetry Automation (Retic)	Yes	Yes	2 698	2 698	2 698	95%	1 EFF	EAM	July 2015	June 2016	Almost in completion
C12.86074-F1	Construction of new Head Office	Yes	Yes	18 276	18 276		100%	1 EFF	EAM	July 2014	Aug 2018	Completed
CPX.0006502-F1	Replacement Vehicles - FY 15/16	Yes	Yes	10 000	10 000	9 961	100%	1 EFF	EAM	July 2015	June 2016	Completed
C15.86056-F1	Meter Replacement Program	Yes	Yes	0	0	-92	0%	1 EFF	F & C	July 2015	June 2016	Completed
C16.86006-F1	WS contingency provision - Insurance	Yes	Yes	200	200	0	0%	2 REVENUE: INSURANCE	F & C	July 2015	June 2016	Completed
C15.86031-F4	Water Meters New Connections	Yes	Yes	0	0	-3	0%	EFF	F & C	July 2015	June 2016	Completed
C16.86044-F1	Water Meters New Connections	Yes	Yes	11 000	11 000	8 342	76%	4 Private Sector Fin	F & C	July 2015	June 2016	Completed

		Water Meters New Connections	Yes	Yes	5 725	5 725	3 533	54%	4 NT USDG	F & C		July 2015	June 2016	Completed
C16.86044-F3				Yes	0	0	0					July 2015	June 2016	Completed
C16.86030-F2	Meter Replacement Program	Yes	Yes	70 000	70 000	69 997	100%	3 CRR: General	F & C			July 2015	June 2016	Completed
C16.86030-F1	Meter Replacement Program	Yes	Yes	206 400	208 000	205 910	99%	1 EFF	F & C			July 2015	June 2016	Completed
C07.00407-F1	Northern Area Sewer Thornton	Yes	Yes	6 247	6 247	6 247	100%	1 EFF	Reticulation			July 2013	June 2016	Completed
C08.86027-F1	Somerset West Bus. Park Main sewer	Yes	Yes	26 500	26 500	26 500	99%	1 EFF	Reticulation			July 2015	June 2017	In progress
C08.86027-F2	Somerset West Bus. Park Main sewer	Yes	Yes	5 000	5 000	5 000	100%	3 BiCL	Reticulation			July 2015	June 2017	In progress
C08.86038-F1	Main Rd Upgrade M/Berg to Clovelly Rehab	Yes	Yes	18 325	18 325	18 325	100%	1 EFF	Reticulation			Jul 2010	On going	In progress
C09.86008-F1	Ruyterwacht Midblock water Pipes	Yes	Yes	152	152	152	100%	1 EFF	Reticulation			July 2009	Sep 2015	Completed
C09.86015-F1	Rehab Outfall Sewers Penitz Sandrift m/qu	Yes	Yes	35 105	35 105	35 105	100%	1 EFF	Reticulation			July 2015	June 2016	Completed
C10.86130-F1	Regional resources development	Yes	Yes	4 029	4 029	3 481	86%	1 EFF	Reticulation			July 2015	June 2016	Completed
C12.86083-F1	New Rest Reticulation Rectification	Yes	Yes	3 122	3 122	3 075	114%	4 NT USDG	Reticulation			July 2012	June 2016	Completed
C13.86053-F1	Completion of Cape Flats III Bulk Sewer	Yes	Yes	72 108	72 108	72 108	100%	4 NT USDG	Reticulation			July 2015	Aug 2017	In progress
C13.86053-F2	Completion of Cape Flats III Bulk Sewer	Yes	Yes	50 282	50 282	50 251	100%	1 EFF	Reticulation			July 2015	Aug 2017	In progress
C13.86053-F3	Completion of Cape Flats III Bulk Sewer	Yes	Yes	10 000	10 000	10 000	100%	3 CRR: Water	Reticulation			July 2015	Aug 2017	In progress
C14.86001-F1	Pennhill Sewer Installation	Yes	Yes	2 935	2 935	1 881	50%	1 EFF	Reticulation			July 2013	June 2018	In progress
C14.86053-F1	Informal Settlements water installations	Yes	Yes	0	0	-11	0%	1 EFF	Reticulation			July 2015	June 2016	N/A
C14.86056-F1	Spes Bona Reservoir 35 ML	Yes	Yes	14 000	14 000	13 985	100%	4 NT USDG	Reticulation			July 2014	July 2017	Completed
C14.86056-F2	Spes Bona Reservoir 35 ML	Yes	Yes	7 600	7 600	7 600	152%	1 EFF	Reticulation			July 2014	July 2017	In progress
C14.86059-F1	Zevenwacht Reservoir and Network	Yes	Yes	227	227	226	100%	1 EFF	Reticulation			July 2014	Unknown land acquisition	Completed
C14.86073-F1	Fisantekraal Housing Garden City - Water	Yes	Yes	9 697	9 697	9 602	99%	4 NT USDG	Reticulation			July 2014	June 2017	Completed
C14.86074-F1	Fisantekraal Housing Garden City - Sewer	Yes	Yes	1 150	1 150	1 123	98%	4 NT USDG	Reticulation			July 2014	June 2017	Completed
C15.86023-F1	Informal Settlements Sanitation Installation	Yes	Yes	0	0	-1	0%	1 EFF	Reticulation			July 2015	June 2016	In progress
C15.86046-F1	West Beach S/Pumpstation and rising Main	Yes	Yes	3 000	3 000	0	0%	3 BiCL	Reticulation			July 2015	Aug 2017	In progress
C16.86031-F1	Sewer Projects as per Master Plan 15/16	Yes	Yes	170	170	121	71%	1 EFF	Reticulation			July 2015	June 2016	In progress
C16.86033-F1	TOC Infrastructure Development	Yes	Yes	213	213	165	78%	1 EFF	Reticulation			July 2015	June 2016	In progress
C16.86034-F1	Bulk Water (Housing Projects)	Yes	Yes	968	968	942	45%	4 NT USDG	Reticulation			July 2015	June 2016	In progress
C16.86037-F1	Informal Settlements Sanitation Installa	Yes	Yes	21 266	21 266	18 811	88%	1 EFF	Reticulation			July 2015	June 2016	In progress
C16.86037-F2	Informal Settlements Sanitation Installa	Yes	Yes	4 900	4 900	4 031	82%	4 NT USDG	Reticulation			July 2015	June 2016	In progress
C16.86038-F1	Replace & Upgr Sewer Network (Citywide)	Yes	Yes	50 764	50 764	50 233	98%	1 EFF	Reticulation			July 2015	June 2016	In progress
C16.86038-F2	Replace & Upgr Network (Citywide)	Yes	Yes	5 000	5 000	4 990	100%	4 NT USDG	Reticulation			July 2015	June 2016	Completed
C16.86039-F1	Replace & Upgr Water Network (City Wide)	Yes	Yes	48 204	48 204	45 835	92%	1 EFF	Reticulation			July 2015	June 2016	In progress

C16.86039-F2	Replace & Upgr Water Network (City Wide)	Yes	Yes	4 000	4 000	3 998	100%	4 NT USDG	Reticulation	July 2015	June 2016	In progress
C16.86041-F1	Informal settlements water installations	Yes	Yes	1 085	1 085	979	90%	1 EFF	Reticulation	July 2015	June 2016	In progress
C16.86046-F1	Small Plant & Equip: Additional (Retic)	Yes	Yes	3 248	3 248	2 980	92%	1 EFF	Reticulation	July 2015	June 2016	Completed
CPX.001843-F1	Mitchell's Plain depot	Yes	Yes	5 870	5 870	5 827	99%	1 EFF	Reticulation	July 2015	June 2016	In progress
CPX.002489-F1	Bulk Sewer (Housing Projects)	Yes	Yes	3 432	3 432	1 581	33%	4 NT USDG	Reticulation	July 2015	June 2016	In progress
CPX.002760-F1	Repl & Upgr Sew Pump Station	Yes	Yes	8 640	8 640	8 607	100%	1 EFF	Reticulation	July 2015	June 2016	In progress
CPX.002760-F2	Repl & Upgr Sew Pump Station	Yes	Yes	11 987	11 987	11 983	100%	4 NT USDG	Reticulation	July 2015	June 2016	Completed
CPX.003866-F1	Replace & Upgr Water Network FY2015	Yes	Yes	0	0	-1	0%	1 EFF	Reticulation	July 2015	June 2016	In progress
CPX.004708-F1	Cape Flats Rehabilitation 15/16	Yes	Yes	321	321	321	100%	1 EFF	Reticulation	July 2015	June 2016	Completed
CPX.005791-F1	Upgrade Reservoirs City Wide	Yes	Yes	4 632	4 632	4 631	100%	1 EFF	Reticulation	July 2015	June 2016	Completed
CPX.006477-F1	Acquisition & Registration & servitude	Yes	Yes	695	695	447	64%	1 EFF	Reticulation	July 2015	June 2016	In progress
CPX.006480-F1	Bloekombos Water P/S & Reservoir	Yes	Yes	2 700	2 700	2 700	100%	4 NT USDG	Reticulation	July 2015	June 2016	Completed
C16.86018-F1	Laboratory Equipment: Additional	Yes	Yes	5 961	5 961	5 944	100%	1 EFF	Scientific Services	July 2015	June 2016	Completed
	Refurbishment of Labs	Yes	Yes	558	558	544	97%	1 EFF	Scientific Services	July 2015	June 2016	Almost Completed
C16.86012-F1	Furniture & Equipment: Additional	Yes	Yes	1 500	1 500	1 226	82%	1 EFF	Support Services	July 2015	June 2016	In progress
C16.86013-F1	IT: System, Infra. Equipment: Additional	Yes	Yes	14 500	14 500	14 313	99%	1 EFF	Support Services	July 2015	June 2016	Completed
C13.95014-F1	Treated Effluent: Infrastructure Upgrade	Yes	Yes	0	0	0	0%	1 EFF	WDM & S	July 2015	June 2016	N/A
C16.86007-F1	Pressure Management: 15/16	Yes	Yes	16 000	16 000	15 750	98%	1 EFF	WDM & S	July 2015	June 2016	Almost Completed
C16.86016-F1	Treated Effluent: Reuse & Inf Upgrades	Yes	Yes	20 000	20 000	19 955	100%	1 EFF	WDM & S	July 2015	June 2016	Completed
C16.86017-F1	Zone Metering & Valves	Yes	Yes	4 000	4 000	3 999	100%	1 EFF	WDM & S	July 2015	June 2016	Completed
C06.30148-F1	Mitchells Plain Wastewater Treatment Works	Yes	Yes	19 100	19 100	19 100	100%	1 EFF	WWTW	July 2006	June 2018	In Progress
C06.30148-F3	Mitchells Plain Wastewater Treatment Works	Yes	Yes	45 910	45 910	45 910	100%	4 NT USDG	WWTW	July 2006	June 2018-	In progress
C06.30170-F3	Bellville Wastewater Treatment Works	Yes	Yes	300	300	300	100%	4 NT USDG	WWTW	July 2006	July 2019	In progress
C10.86018-F1	Gordons Bay WWTW-Improvements	Yes	Yes	17 120	17 120	17 120	101%	1 EFF	WWTW	July 2015	July 2017	In progress
C10.86033-F3	Zandvliet WWTW-Extension	Yes	Yes	36 304	36 304	36 304	100%	4 NT USDG	WWTW	July 2014	June 2022	In progress
C11.86063-F1	Potsdam WWTW - Extension	Yes	Yes	828	828	98%	1 EFF	WWTW	Jan 2017	June 2021	In progress	
C12.86091-F1	Borchards Quarry WWTW	Yes	Yes	48 516	48 516	47 865	101%	4 NT USDG	WWTW	July 2011	June 2020	In progress

C12.86094-F1	Scottsdene WWTW	Yes	Yes	232	232	232	100%	4 NT USDG	WWWTW	July 2014	June 2018	In progress
C12.86094-F2	Scottsdene WWTW	Yes	Yes	3 550	3 550	3 550	100%	1 EFF	WWWTW	July 2014	June 2018	In progress
C13.86005-F1	Cape Flats WWTW-Refurbish various structures	Yes	Yes	18 487	18 487	18 357	99%	1 EFF	WWWTW	July 2013	June 2020	In progress
C13.86010-F1	Mitchells Plain WWTW-Improvements Phase2	Yes	Yes	775	775	775	100%	1 EFF	WWWTW	July 2014	June 2018	In progress
C13.86010-F2	Mitchells Plain WWTW-Improvements Phase2	Yes	Yes	35 966	35 966	35 966	104%	4 NT USDG	WWWTW	July 2014	June 2018	In progress
C13.86081-F2	Athlone WWTW-Capacity Extension-phase 1	Yes	Yes	500	500	499	100%	4 NT USDG	WWWTW	July 2015	June 2020	In progress
C14.86043-F1	Meikbos WWTW-Effluent Disinfection	Yes	Yes	1 400	1 400	1 400	93%	1 EFF	WWWTW	July 2015	June 2018	In progress
C14.86044-F2	Wesfleur WWTW-Capacity Extension USDG	Yes	Yes	2 500	2 500	2 500	100%	4 NT USDG	WWWTW	July 2015	June 2019	In progress
C16.86036-F1	Sundry Equip: Additional various WWTW	Yes	Yes	259	259	259	86%	1 EFF	WWWTW	July 2015	June 2016	Completed
C16.86040-F1	Infrastructure Replace/Refurbish - WWTW	Yes	Yes	39 278	39 278	38 703	99%	1 EFF	WWWTW	July 2015	June 2016	Completed
C16.86040-F2	Infrastructure Replace/Refurbish - WWTW	Yes	Yes	73 111	73 111	73 073	100%	4 NT USDG	WWWTW	July 2015	June 2016	Completed
CPX.0004870-F1	Hout Bay Refurbishment	Yes	Yes	7 997	7 997	7 997	105%	1 EFF	WWWTW	July 2015	June 2016	In progress
CPX.0004962-F1	Admin,storage and mess upgrading	Yes	Yes	3 431	3 431	3 431	100%	1 EFF	WWWTW	July 2015	June 2017	In progress

B4: Past financial year water services project impact declaration

The table below presents the projects completed within the departmental Branches with settlement together with number of households and population benefitted. These projects mentioned above are highlighted in table B4.1 below:

Table B4.1: Past financial year project impact declaration

Nr	Project Title and Description	Project Category	Settlements which benefitted	Nr Beneficiaries		Impact Declaration
				HH's	Pop	
C07.00407-F1	Northern Area Sewer Thornton	Reticulation	Northern Areas - The whole of the Voortrekker Rd corridor will benefit from this upgrade as well as areas of Pinelands, Factretton, Thornton, Goodwood, Parow, Vasco, Churchill, Ruyterwacht, Richmond, Beaconsvale, De Duin, Plattekloof, Panorama, Sonnendal, De Tiger and Epping Industria. It should also be noted that the existing bulk sewer was on the verge of collapse and this rehab avoided a crises.	108 291	379 019	Northern area sewer line to increase capacity is completed as part of a multi-year project from Thornton to Langa pump station via Epping Industrial, at a total cost of R150 million. This project impact is heightened by virtue of the size of the catchment and that the existing bulk sewer was in a very poor condition. The new Northern area sewer line will convey the sewer from all the Northern area suburb as listed in the settlements column to Athlone.
C08.85027-F2	Somerset West Bus. Park Main sewer	Reticulation	Somerset West business park sewer main affects the catchment of Lourens river pump station as well as Dennehof pump station	50 389	176 362	Somerset West business park sewer main will divert flow to Sir Lowry's pass outfall to create relief on the Trappies outfall and Lourens River PS.
C08.85038-F1	Main Rd Upgrade M/Berg to Clovelly Rehab	Reticulation	Main Rd Upgrade M/Berg to Clovelly rehabilitation affects Clovelly and Dalebrook pump station catchment as well as their suburbs.	872	3052	The upgrade was useful in order to accommodate some other development that may appear in future.
C14.85059-F1	Zevenwacht Reservoir and Network	Reticulation	The Zeevenwacht Heights Reservoir and subsequent network supplies the Klein Zevenwacht; Zevenwacht retirement Village; Zeevenwacht Country Estate and Stellenbosch Farms (Kuilsriver). No informal settlements are supplied by this reservoir.	602	2107	The Zeevenwacht Heights Reservoir upgrade would be useful in future to accommodate some other development that may appear in future.
C16.85038-F2	Replace & Upgr Sewer Network (Citywide)	Reticulation	City wide impact	-	-	-Constantly rehabilitating or replacing the aging Sanitation network infrastructure
C16.85039-F2	Replace & Upgr Water Network (City Wide)	Reticulation	City wide impact	-	-	Constantly rehabilitating or replacing the aging Water network infrastructure
CPX.0002760-F1	Repl & Upgr Sew Pump Station	Reticulation	City wide impact	-	-	Constantly rehabilitating or replacing the aging Water and Sanitation pump station infrastructure
CPX.0002760-F2	Repl & Upgr Sew Pump Station	Reticulation	City wide impact	-	-	Constantly rehabilitating or replacing the aging Water and Sanitation pump station infrastructure

N ^r	Project Title and Description	Project Category	Settlements which benefitted		Impact Declaration	
			Nr Beneficiaries	HH	Population	-
C16.805016-F1	Treated Effluent: Reuse & Infrastructure	WDM & S	Citywide Impact in terms of a reduction in demand for potable water	-	-	-
C14.805056-F1	Spes Bona Reservoir 35 Ml	Reticulation	Garden Cities Greenville development at Fisantekraal, the future Bella Riva development and other, future housing projects along the Darwin development corridor	18 000	63 000	Once completed it will provide water to an estimated 18 000 subsidised housing units and is a requirement for the Garden Cities Greenville development at Fisantekraal, the future Bella Riva development and other, future housing projects along the Darwin development corridor
C13.805053-F2	Completion of Cape Flats III Bulk Sewer	Reticulation	As above	As above	As above	As above
C13.805053-F3	Completion of Cape Flats III Bulk Sewer	Reticulation	As above	As above	As above	As above
C13.805053-F1	Completion of Cape Flats III Bulk Sewer	Reticulation	As above	As above	As above	The Cape Flats 3 enables transfer of sewer from Athlone WWTW to Cape Flats WWTW. This will increase the capacity of the network to transfer sewer and sludge. The latest Cape Flats 3 final section to be constructed will be a rising main instead of gravity thus speeding up and simplifying the construction process in a relatively built up area.
C12.805015-F1	Completion of Cape Flats II Bulk Sewer	Reticulation	100 285	350 998	14718	This collector sewer was collapsing and the rehabilitation minimised environmental impact of sewer spillage
C09.805008-F1	Ruyterwacht Midblock water Pipes	Reticulation	3 171	11 097	The project will provide access to sewer network for improved operational and maintenance as well allow property owners to make more efficient use of their properties and allow densification.	
C09.805015-F1	Rehab Outfall Sewers Pentz, Sanddrift Montague Gardens	Reticulation	4 205	14718	The project will provide access to sewer network for improved operational and maintenance as well allow property owners to make more efficient use of their properties and allow densification.	
C13.805053-F1	Completion of Cape Flats III Bulk Sewer	Reticulation	As above	As above	As above	The project will provide access to sewer network for improved operational and maintenance as well allow property owners to make more efficient use of their properties and allow densification.
CPX.0004708-F1	Cape Flats Rehabilitation 15/16	Reticulation	There were lots of suburb draining to Retreat main such as Steenberg, Lavender hills, Retreat, Heathfield, Elfindale, Kirstenhof and Seewinds	36 129	126 452	This makes the sewer to flow easily with no obstructions to the pump station. Need more explanation R320 000
CPX.0005791-F1	Upgrade Reservoirs City Wide	Reticulation	City wide impact	-	-	-Constantly rehabilitating or replacing the aging Water reservoirs infrastructure
CPX.0006480-F1	Bloekombos Water P/S & Reservoir	Reticulation	The Bloekombos reservoir and pump station supplies water to Bloekombos, Wallacedene and Bottfontein Small Holdings. There are approximately 12 informal settlements within the above mentioned suburbs that are supplied from the Bloekombos water distribution zones. These settlements include, Miles Street, Ntlotshane Street Khwababa Street, Swelleni Street, 4 In 1, Wallacedene TRA William & Dorris Street, Sam Njiokozeila Avenue Wallacedene 2, Pietersen Road, Simanga Streetand Boesak Road.	14501	50754	The Bloekombos water pump station and reservoir will keep supplying Bloekombos, Wallacedene and Bottfontein Small Holdings.

Upgrades					
Nr	Project Title and Description	Project Category	Settlements which benefitted	Nr Beneficiaries	Population
				Impact Declaration	
C16.86017-F1	Zone Metering & Valves	WDM &S	-	-	More accurately measuring water losses throughout the City by reconfiguring the existing zones and to create new zones.
C06.30148-F1, F3	Mitchells Plain Wastewater Treatment Works	WWTVW	This upgrade will affect the catchment of the treatment works which includes the areas of Mitchells Plain, Pelican Heights, Strandfontein, Ikwazi Park and Southern part of Philippi.	77 454	271 089
C13.86010-F1, F2	Mitchells Plain WWTW- Improvements Phase2	WWTVW	Catchment described as above Bellville WWTW was just recently expanded with an additional 20 ML with the development of a membrane technology treatment component. There is intention to rehabilitate older sections of the plant. Areas that will benefit are Kenridge, Eversdal, Brakenfell, Bellville and parts of Vredekloof.	77 454	271 089
C06.30170-F1	Bellville Wastewater Treatment Works	WWTVW	Currently this WWTW is running over capacity by approximately 16 ML. This catchment is large and includes the areas of Delft, Blue Downs, Khayelitsha, Kuiti River, Eersterivier, Blackheath and the Eastern side of CPT International Airport.	136 000	476 000
C10.86033-F3	Zandvliet WWTW- Extension	WWTVW	This catchment is large and includes the areas of Belhar, Bishop Llevis, Valhalha park and western side of CPT International Airport.	171 801	601 304
C12.86091-F1	Borchards Quarry WWTW	WWTVW	This catchment includes the areas of Atlantis, West Coast farms and Mamre.	33431	117009
C14.86044-F2	Westfleur WWTW Capacity Extension USDG	WWTVW	-	16 367	57285
C16.86040-F2	Infrastructure Replace/Refurbish - WWTW	WWTVW	-	-	-
C12.86094- F1,F2	Scottsdene WWTW	WWTVW	There are a couple of large developments that will be able to drain to this WWTW and take additional pressure off Bellville	19537-	-68380
CPX.0004870-F1	Hout Bay Refurbishment	WWTVW	The refurbishment will affect all the suburb areas within the catchment.	5722	20027
C13.86081-F2	Athlone WWTW- -			91624	320684

Nr	Project Title and Description	Project Category	Settlements which benefitted	Impact Declaration	
				Nr Beneficiaries	Population
C14.86055-F2	Development of Additional Infrastructure	BW	City wide impact	-	-
C16.86004-F1	Replacement of Plant & Equipment 15/16	BW	City wide impact	-	-
CPX.0003893-F1	OSEC (Electrolytic Chlorination Infr)	BW	City wide impact	-	-
CPX.0003893-F2	OSEC (Electrolytic Chlorination Infr)	BW	City wide impact	-	-

Population is derived from the average persons per house of 3.5

This will improve the treatment performance and increase the load taking into account the existing and future development areas.

Section C: Water Services Audit Report

This Section C: Water Services Audit Report represents the requirements as established in the 'Regulations relating to compulsory national standards and measures to conserve water', as issued in terms of sections 9 (1) and 73 (1) (j) of the Water Services Act, 1997.

C1. Quantity of water services provided (Water Balance)

The 'Regulations relating to compulsory national standards and measures to conserve water', requires in section 10 (2) (a), that the water services authority should report on the quantity of water services provided, including at least:

- (i) The quantity of raw water abstracted
- (ii) the quantity of water used by each user sector
- (iii) the quantity of water provided to the water services institution by another water services institution
- (iv) the quantity of waste received at WWTP; and
- (v) the quantity of effluent discharged from WWTP and approved for use by the water services institution.

In addition, the regulations require in section 10 (2) (g), the WSA to report:

- (i) the results of the water balance as set out in regulation 11;
- (ii) the total quantity of water unaccounted for

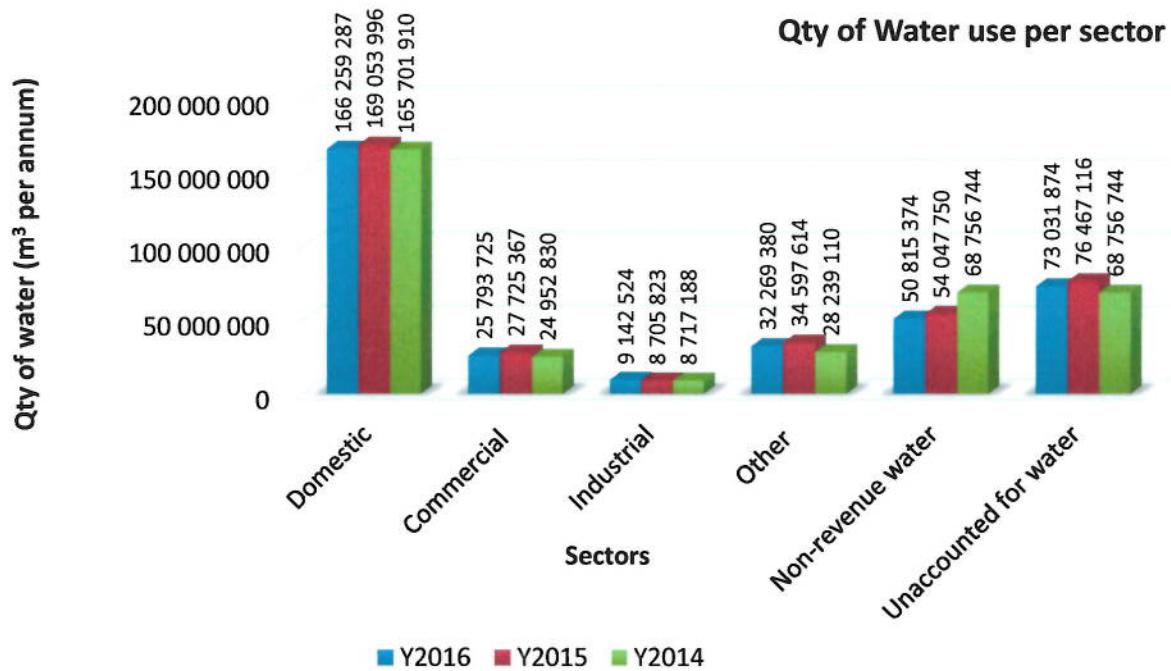
Table C1.1a: Quantity of water services provided / water balance (m³ per annum) as at June 2016

WSDP Ref. #	Regulations Ref. #	Description	m ³ per annum			Ml/d		
			Year 2016	Year - 2015	Year - 2014	Year 2016	Year - 2015	Year - 2014
			FY2015/16	FY2014/15	FY2013/14	FY2015/16	FY2014/15	FY2013/14
RAW WATER								
7.2.1		Surface water purchased	228 472 634	250,273,421	198,913,629	626	686	545
7.1 / 7.2.2		Surface water abstracted	93 518 803	93,198,389	114,232,666	256	255	313
7.1 / 7.2.3		Ground water abstracted	1 606 064	1,006,715	1,454,660	4	3	4
7.2.14		Effluent recycled		0	0	52	0	0
7.2.4		less Raw water supplied to others	0	0	0	0	0	0
7.2.5		Sub-Total: Raw Water supplied	342 716 999	344,478,525	314,600,955	939	944	862
10.2 (g) (i)		BULK WATER SUPPLY						
7.2.6		Volume of water treated	329 003 715	342,696,439	314,600,955	901	939	862
7.2.7	10.2 (a) (ii)	Purchased treated water	0				0	0
7.2.7A		Ground water not treated	0				0	0
7.2.6A		of which Treated water supplied to others	33 556 585	37,764,262	32,573,237	92	103	89
		Sub-Total: System Input Volume	362 560 300	380 460 701	347 174 192	993	1042	951
WATER CONSUMPTION								
7.2.8.1		Billed Metered:	255 971 841	266,229,322	246,017,052	701	729	674
	10.2 (a) (i)	External Customers	33 556 585	37,764,262	32,573,237	92	103	89
	10.2 (a) (i)	Internal customers	222 415 256	228,465,060	213,443,815	609	626	585
7.2.8.2		Billed Unmetered	0	0	0	0	0	0
7.2.8.3		Unbilled Metered	13 396 500	13,345,632	13,630,733	37	37	37
		Informal Settlement	11 049 660	10,998,792	11,283,893	30	30	31
		Formal metered unbilled	2 346 840	2,346,840	2,346,840	6	6	6
7.2.8.4		Unbilled Unmetered				0	0	0
		Formal unmetered	8,820,000	8,820,000	8,820,000	24	24	24
10.2 (g) (i)		Sub-Total: Authorized consumption	278 188 341	288,394,954	268,467,785	762	790	736
UNACCOUNTED FOR WATER								
7.3.1		Raw water bulk loss	n/a	n/a	n/a	0		
7.2.3/7.2.4		Billing losses	22 216 500	22,165,632	22,450,733	61	61	62
7.2.5		Apparent losses	19 509 978	22,897,637	21,734,923	53	63	60
7.2.5.1		Unauthorised	2 906 686	2,790,210	2,685,121	8	8	7
7.2.5.2		Meter inaccuracies	16 603 292	20,107,427	19,049,802	45	55	52
7.2.6		Real losses	31 305 396	31,403,847	24,571,088	86	86	67
		Mains	20 520 569	20 834 871	13,743,334	56	57	38
		Storage	403 800	300 100	665,100	1	1	2
		Connections	10 381 027	10 268 876	10,162,654	28	28	28
10.2 (g) (ii)		Sub-Total: Unaccounted for water	73 031 874	76,467,116	68,756,744	200	209	188
WASTEWATER TREATMENT								
7.2.9	10.2 (a) (iii)	Total received at WWTW	226 757 200	241,810,200	240,861,300	621	662	660
7.2.11		Total discharged	226 757 200	241,810,200	240,861,300	621	662	
7.2.13		Returned to environment						
7.2.14		Recycled						
	10.2 (a) (iv)	Quantity of water supplied not discharged to WWTW's	-	46,584,754	27,606,485		128	76

*Note: **Unaccounted Water** is equivalent to Non-Revenue Water (Real losses plus Apparent losses plus Unbilled Authorised Consumption) ** **Billing losses** are defined as Unbilled Authorised Consumption (Metered and unmetered)
Need to report on losses between raw water and treated water (Shamile and Willem input)

Table C1.1b: IWA Water Balance for the Overall Water System (CCT WSA boundary only) as at June 2016

(A) System Input 329 003 715	(B) Authorised 278 188 341 84.6%	(D) Billed 255 971 841	(H) Metered 255 971 841	External Customers	33 556 585	(Q) Revenue Water 255 971 841 77.8%	
				Internal Customers	222 415 256		
					Free Basic 50 064 802		
					Non-Free Basic 172 350 454		
		(E) Unbilled 22 216 500	(I) Unmetered 0				
				Informal Settlements	11 049 660		
				Formal Metered Unbilled	2 346 840		
		(K) Unmetered 8 820 000	(J) Metered 13 396 500	Formal Unmetered	8 820 000	(R) NRW 73 031 874 22.2%	
		(C) Losses (UAW) 19 509 978	(F) Apparent Losses	(L) Unauthorised 2 906 686			
				(M) Meter Inaccuracies 16 603 292			
		(G) Real Losses 31 305 396	(N) Mains (O) Storage (P) Connections	20 520 569			
				403 800			
				10 381 027			

Figure C1.1: Quantity of water services provided / water balance

C2. Water services delivery profile

The 'Regulations relating to compulsory national standards and measures to conserve water', requires in section 10 (2) (b), that the water services authority should report on the levels of services rendered, including at least:

- (i) the number of user connections in each user sector;
- (ii) the number of households provided with water through communal water services works
- (iii) the number of consumers connected to a water reticulation system where pressures rise above 900 kPa at the consumer connection;
- (iv) the number of households with access to basic sanitation services;
- (v) the number of new water supply connections made; and
- (vi) the number of new sanitation connections made.

In turn, section 10 (2) (c) requires that the number provided above, must also be expressed as a percentage of total number connections or households.

The required information is presented in the following sections:

- User connections: addressing regulation item (i), (v) and (vi)
- Residential water services delivery access profile: addressing regulation item (ii) and (iv)
- Residential water services delivery adequacy profile: to align with the WSDP Guide Framework services profile

C2.1 User connection profile

The user connection profile presented in Table C2.1.a and Table C2.1.b below represents the estimated number of residential- and other consumers which are deemed to be provided with levels of services which can potentially be regulated and billed by the municipality (i.e. house- and yard connections). The number of non-residential users has been determined from the billing records of the municipality.

According to the municipality's billing system, 1740 new residential water connections were made in the past financial year.

Table C2.1.a: User Connection Profile Water

WSDP Ref. #	Category of users	Water Services						
		Year 2016 FY2015/16		Year 2015 FY2014/15		Year - 2014 FY2013/14		New Connections Year 0
		Nr	%	Nr	%	Nr	%	
-	-	-	-	-	-	-	-	-
3.3	<u>RESIDENTIAL (DOMESTIC)</u>	-	-	-	-	-	-	-
3.3	Metered: Uncontrolled	421 197	64.78%	463 669	72.05%	513 572	80.69%	-42 472
	Metered: Controlled*= WDM	187 754	28.88%	138 605	21.54%	84 482	13.27%	49 149
	Unmetered (flat rate)	0	0.00%	0	0.00%	0	0.00%	0
	Communal water supply(Bulk meters)	320		320		319		
	Sub-Total: Residential	609 271	93.71%	602 594	93.64%	598 373	94.01%	6 677
3.3	<u>EDUCATION</u>	-	-	-	-	-	-	-
	Schools	1834	0.28%	1819	0.28%	1739	0.27%	
	Tertiary education facilities						0	
	Sub-Total: Education	1834	0.28%	1819	0.28%	1739	0.27%	
3.3	<u>HEALTH</u>	-	-	-	-	-	-	-
3.3	Clinics	106	0.02%	106	0.02%	106	0.02%	
3.3	Hospitals	11	0.00%	11	0.00%	11	0.00%	
	Health Centres	47	0.01%	47	0.01%	47	0.01%	
	Sub-Total: Health	164	0.03%	164	0.03%	164	0.03%	
	<u>INSTITUTIONAL</u>	-	-	-	-	-	-	-
3.3	Public Institutions							
3.3	Magistrate Offices	11	0.13%	11		11	0.00%	
3.3	Police Stations	61	0.01%	61	0.01%	61	0.01%	
	Prisons							
	Municipal	12433	1.91%	12431	1.93%	9748	1.53%	2
	Departmental	146	0.02%	126	0.02%	89	0.01%	20
3.3	Government	327	0.05%	311	0.05%	313	0.05%	16
3.3	Sub-Total: Institutional	12978	2.00%	12940	2.01%	10222	1.61%	38
	<u>INDUSTRIAL</u>	-	-	-	-	-	-	-
	Dry industries							
3.3	Wet industries							
3.3	Sub-Total: Industrial	4462	0.69%	4466	0.69%	4460	0.70%	-4
	<u>COMMERCIAL</u>	-	-	-	-	-	-	-
	Businesses							
	Office Buildings							
	Sub-Total: Commercial	12972	2.00%	13134	2.04%	13094	2.06%	-162
	<u>MINING</u>	-	-	-	-	-	-	-
	Sub-Total: Mining							
	<u>OTHER</u>	-	-	-	-	-	-	-
	Agriculture							
	Churches	1 567	0.24%	1 567	0.24%	1 542	0.24%	0
	Effluent	676	0.10%	676	0.11%	624	0.10%	0
	Other	6236	0.96%	6196	0.96%	6253	0.98%	40
	Unknown		0.00%		0.00%		0.00%	
	Sub- Total: Other	8479	1.30%	8439	1.31%	8419	1.32%	40
	Total	650 160	100.00%	643 556	100.00%	636 471	100.00%	6 672

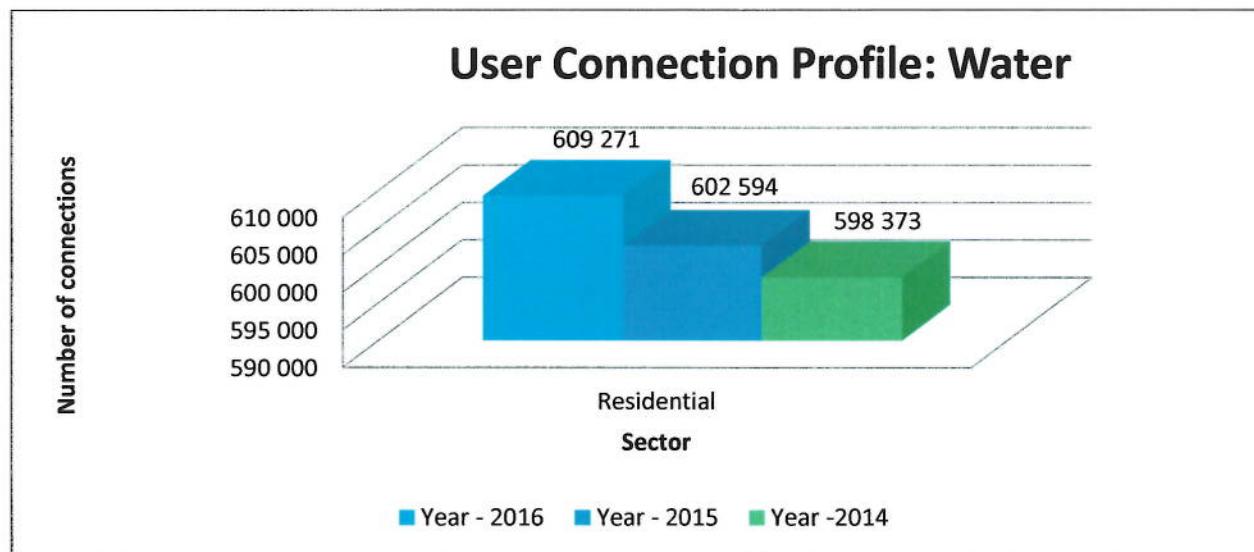
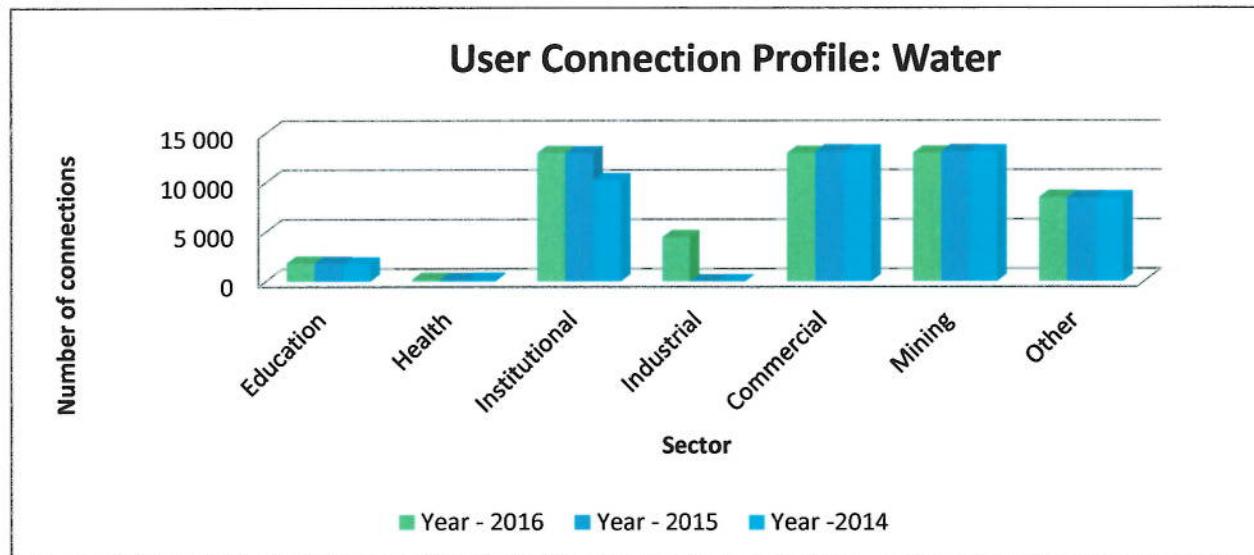
Figure C2.1.1: User connection profile for water

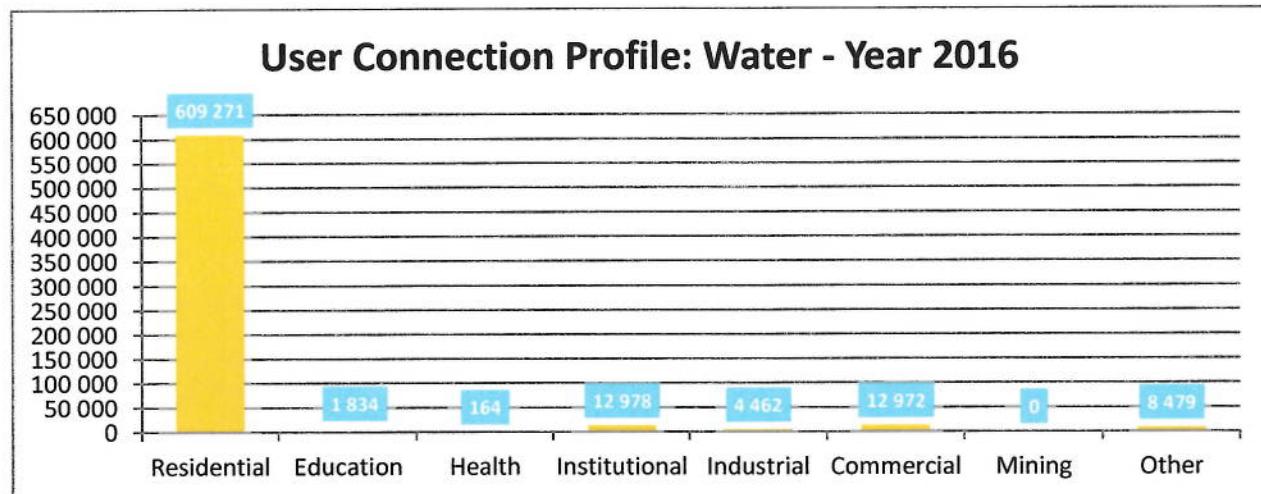
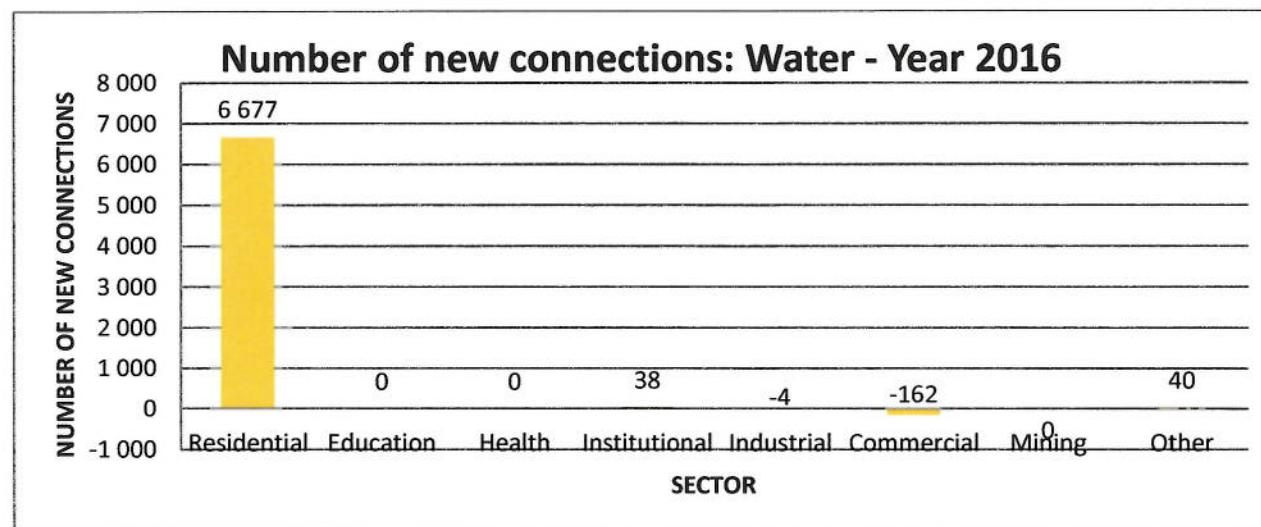
Figure C2.1.2: User connection distribution for water - Year 2016**Figure C2.1.3: New connections for water**

Table C2.1.b: User Connection Profile Wastewater

WSDP Ref. #	Category of users	Wastewater Services					
		Year 2015 FY2015/16		Year 2015 FY2014/15		Year - 2014 FY2013/14	
		Nr	%	Nr	%	Nr	%
-	-	-	-	-	-	-	-
3.3	RESIDENTIAL (DOMESTIC)						
3.3	Metered: Uncontrolled	598 800	94.4%	593 318	94.4%	587 943	94.77%
	Metered: Controlled*	0		0		0	
	Unmetered (flat rate)	0		0		-0	
	Sub-Total: Residential	598 800	94.4%	593 318	94.4%	587 943	94.77%
3.3	EDUCATION						-
	Schools	1 353	0.2%	1 353	0.2%	1 353	0.22%
	Tertiary education facilities						
	Sub-Total: Education	1 353	0.2%	1 353	0.2%	1 353	0.22%
3.3	HEALTH	-	-	-	-	-	-
3.3	Clinics	106	0.0%	106	0%	106	0.02%
3.3	Hospitals	11	0.0%	11	0%	11	0.00%
	Health Centres	47	0.0%	47	0%	47	0.01%
	Sub-Total: Health	164	0.0%	164	0.0%	164	0.03%
	INSTITUTIONAL	-	-	-	-	-	-
3.3	Public Institutions						
3.3	Magistrate Offices	11	0.0%	11	0%	11	0.00%
3.3	Police Stations	61	0.0%	61	0%	61	0.01%
	Prisons						
	Municipal	9 813	1.5%	9 488	1.5%	6 713	1.08%
	Departmental	36	0.0%	33	0.0%	0	0.00%
3.3	Government	945	0.1%	966	0.2%	985	0.16%
3.3	Sub-Total: Institutional		1.7%	10 559	1.7%	7 770	1.25%
	INDUSTRIAL	-	-	-	-	-	-
	Dry industries						
3.3	Wet industries						
3.3	Sub-Total: Industrial	4 230	0.7%	4 242	0.7%	4 230	0.68%
	COMMERCIAL	-	-	-	-	-	-
	Businesses						
	Office Buildings						
	Sub-Total: Commercial	12 179	1.9%	12 370	2.0%	12 288	1.98%
	MINING	-	-	-	-	-	-
	Sub-Total: Mining						
	OTHER	-	-	-	-	-	-
	Agriculture						
	Churches	1 566	0.2%	1 567	0.2%	1 542	0.25%
	Effluent	669	0.1%	676	0.1%	324	0.10%
	Other	4 286	0.7%	4 371	0.7%	4 359	0.70%
	Unknown						
	Sub- Total: Other	6 521	1.0%	6 614	1.0%	6 225	1.07%
	Total	634 113	100%	628 527	100%	620 357	100%

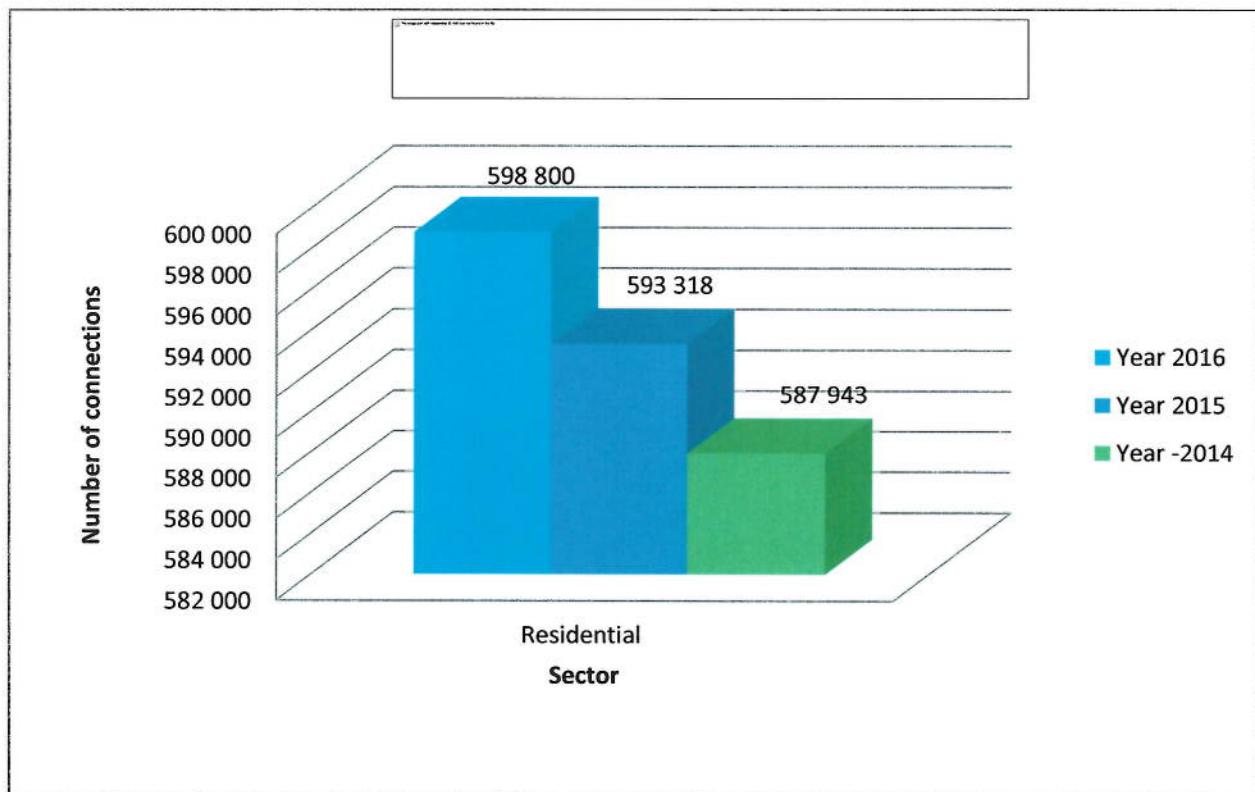
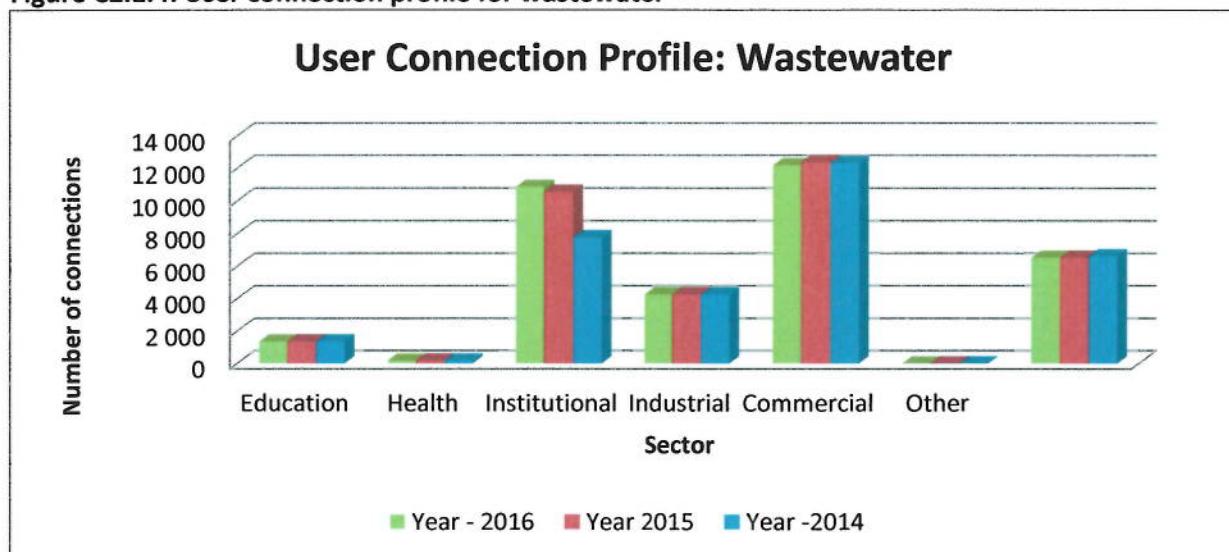
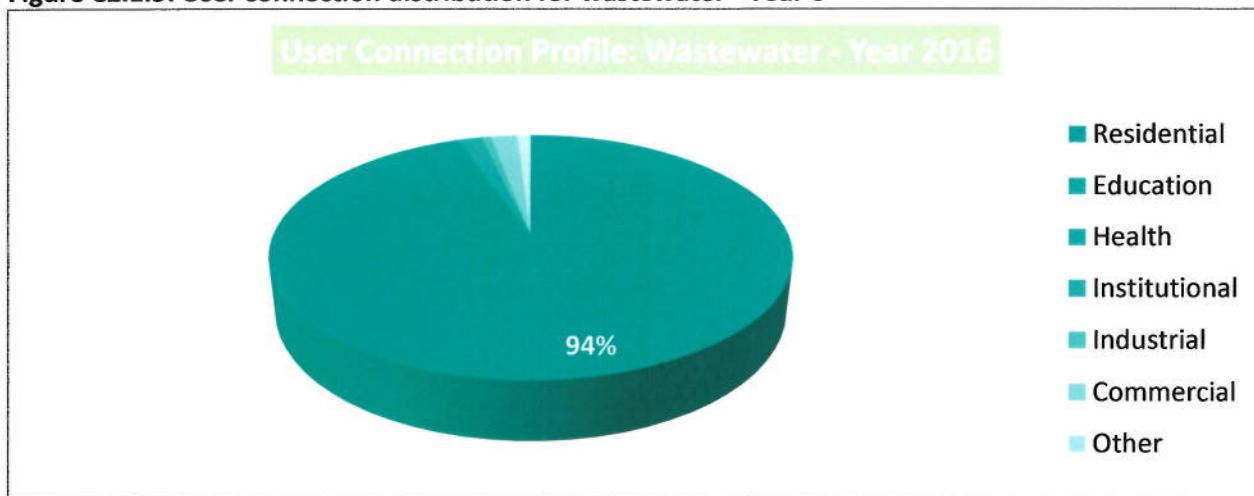
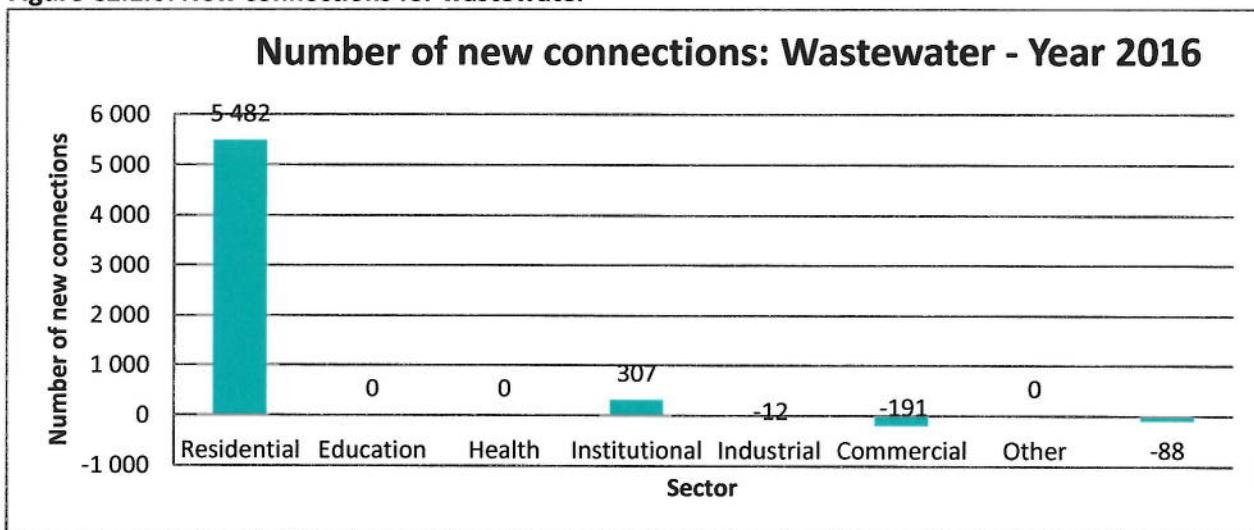
Figure C2.1.4: User connection profile for wastewater

Figure C2.1.5: User connection distribution for wastewater - Year 0**Figure C2.1.6: New connections for wastewater**

C2.2 Residential water services delivery access profile

The entire population of Cape Town, both in formal and informal settlements, receives potable water service levels that meet the National minimum standards as required by the Water Services Act 108 (of 1997).

Whilst the City provides full flush toilets to informal settlements where possible, it also provides various types of alternative sanitation technologies. This is done in order to address the challenges described in the Introduction. Some of these alternative sanitation options are seen as a top up service, or a 1-on-1 provision and some can service more than one household. In terms of meeting the National Guidelines of adequate sanitation the City fully complies. In order to improve service delivery to the Departments' own internal higher standard, and maintain standard in line with additional influx of informal settlement customers, the City continues to provide the various alternative sanitation options.

The maintenance of these sanitation services often carries high cost due to frequent cleaning, servicing and repair or replacement due to vandalism. It places a heavy burden on the department's finance and requires a national initiative to be implemented such as a significant improvement in the level of funding received from the Equitable Share. In the case of the City of Cape Town, the cost of these services is to a large extent being cross-subsidised by tariff income from other customers.

As a caring city that ensures service delivery to its most vulnerable residents, the Water and Sanitation Department planned R503,7 million directly on services to informal settlements in the 2015/16 previous financial year.

The money has mainly been earmarked for:

- increasing the toilet and tap provisions;
- maintenance of sanitation and water facilities;
- cleaning and emptying of alternative sanitation;
- the janitorial programme;
- provision of water to informal settlements (which is free); and

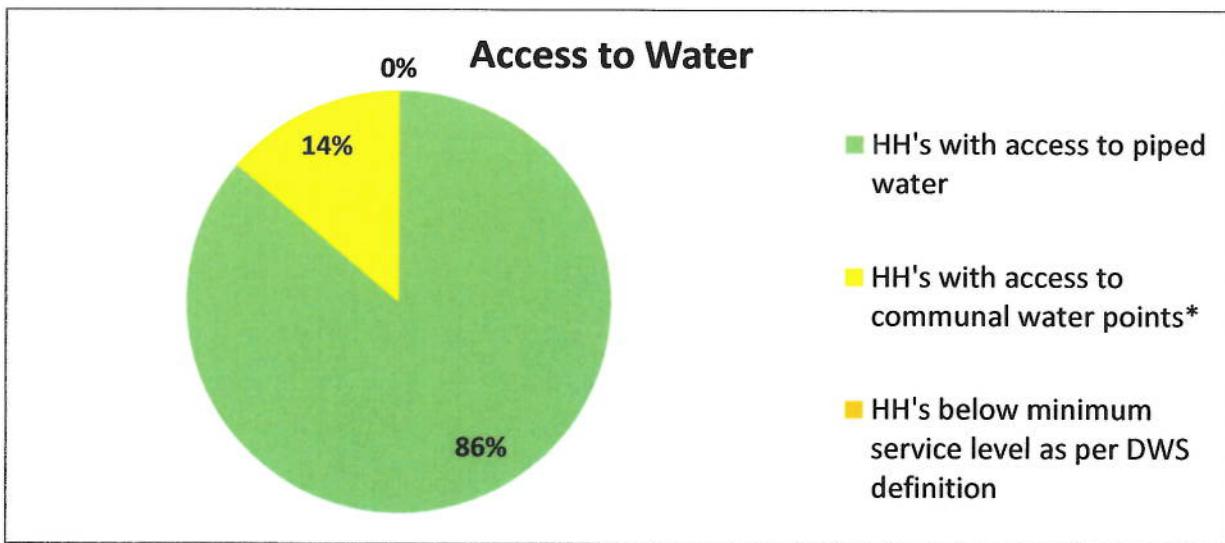
Importantly, the R503, 7 million is targeted solely at primary costs to informal settlements. Thus, it does not include support services charges and enhancements, repairs, or new bulk infrastructure to service informal settlements. .

Due to a substantial increase in the budget for informal-settlement water and sanitation since 2006/7, the City had increased toilet provision from 14 591 to around 48 900 across Cape Town by the end of June 2015. In addition, more than 10 000 taps were provided by June 2015.

Table C2.2 (a): Residential water services delivery access profile: Water

Census Category	Description	Year 2016		Year 2015		Year - 2014	
		FY2015/16		FY2014/15		FY2013/14	
		Nr	%	Nr	%	Nr	%
	WATER (ABOVE MIN LEVEL)						
Piped (tap) water inside dwelling/institution	House connections	898 557	86.2%	967 313	86.2%	965 018	86.2%
Piped (tap) water inside yard	Yard connections	0	0.0%	0	0.0%	0	0.0%
Piped (tap) water on community stand: distance less than 200m from dwelling/institution	Standpipe connection < 200 m	156 755	13.8%	155 015	13.8%	154 648	13.8%
Sub-Total: Minimum Service Level and Above		1 055 312	100%	1 122 328	100%	1 119 666	100%
Piped (tap) water on community stand: distance between 200m and 500m from dwelling/institution	Standpipe connection: > 200 m < 500 m	0	0%	0	0%	0	0%
Piped (tap) water on community stand: distance between 500m and 1000m (1km) from dwelling /institution	Standpipe connection: > 500 m < 1 000 m	0	0%	0	0%	0	0%

Piped (tap) water on community stand: distance greater than 1000m (1km) from dwelling/institution	Standpipe connection: > 1 000 m	0	0%	0	0%	0	0%
No access to piped (tap) water	No services	0	0%	0	0%	0	0%
Sub-Total: Below Minimum Service Level		0	0%	0	0%	0	0%
	Total number of households	1 134 925	100%	1 122 328	100%	1 119 666	100%

Figure C2.2.1: Household water access profile

*Means access to 25 liters of potable water per day supplied within 200m of a household with a minimum flow of 10 liters per minute

Toilets provision in Informal Settlements of which households estimated to have access to (communal) full flush: 60 695 (13/14); 73 940 (14/15); 78 140 (15/16) at 1 toilet to 5 households. Full flush and chemical and container toilets are equal to communal. Portable flush sanitation is one provided per individual per household.

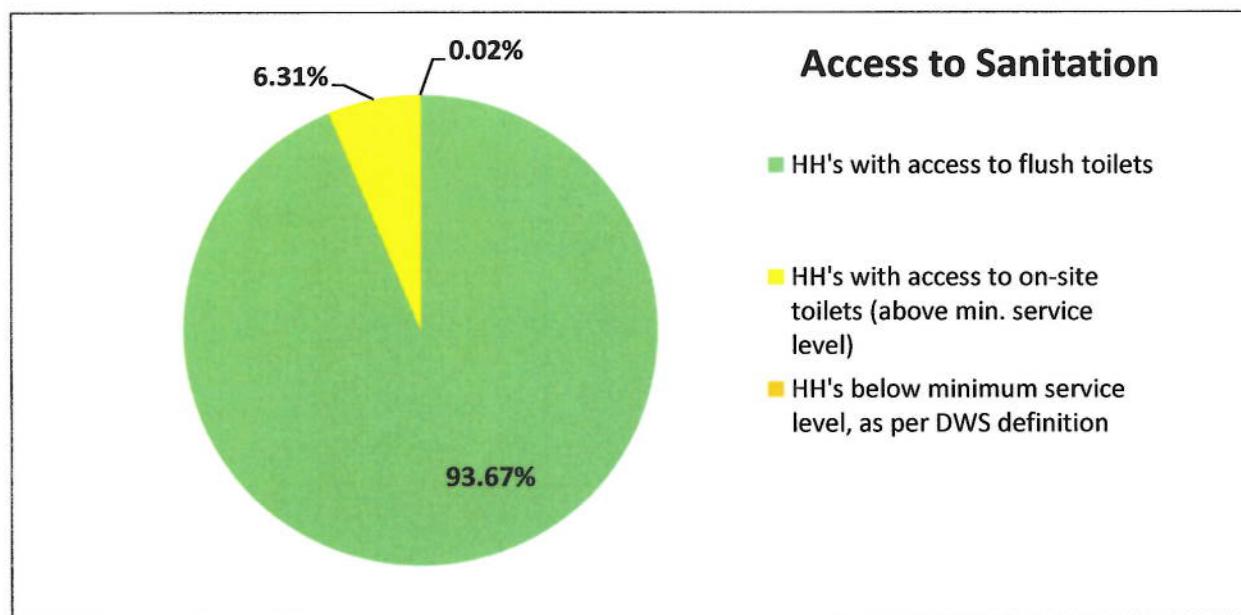
Table C2.2 (b): Residential water services delivery access profile: Sanitation

Census Category	Description	Year 2016		Year 2015		Year - 2014	
		FY2015/16		FY2014/15		FY2013/14	
		Nr	%	Nr	%	Nr	%
SANITATION (ABOVE MIN LEVEL AS DEFINED BY DWS IN THIS TEMPLATE)							
Flush toilet (connected to sewerage system)	Waterborne	1 059 560	93.36%	1 041 253	92.78%	1 027 292	91.69%
	Waterborne: Low Flush	0	0	0	0	0	0.00%
Flush toilet (with septic tank)	Septic tanks / Conservancy	3 561	0.31%	3 561	0.32%	3 561	0.32%
Chemical toilet	Non-waterborne (above min. service level)	29 585	2.61%	29 955	2.67%	29 080	2.60%
Pit toilet with ventilation (VIP)		1 435	0.13%	65	0.01%	0	0.00%
Other		40 567	3.57%	46 266	4.12%	59 733	5.33%

Sub-Total: Minimum Service Level and Above	1 134 708	99.98	1 121 100	99.89%	1 119 666	99.94%	
SANITATION (BELOW MIN LEVEL AS DEFINED BY DWS IN THIS TEMPLATE)							
Pit toilet without ventilation	Pit toilet	0	0	1005	0.09%	312	0.03%
Bucket toilet	Bucket toilet	217	0.02%	223	0.02%	377	0.03%
Other toilet provision (below min. service level)	Other	0	0.00%	0	0.00%	0	0.00%
No toilet provisions	No services	0	0.00%	0	0.00%	0	0.00%
Sub-Total: Below Minimum Service Level	217	0.02	1 228	0.11%	689	0.06%	
Total number of households	1 122 328	100%	1 120 355	100%	1 134 925	100%	

The City, as at June 2016, is servicing around 217 'buckets' in the City. These are all in the Boys Town and KTC area. All the residents who are using these 217 'bucket system' toilets have been offered a portable flush toilet, despite the City wanting to eradicate these remaining 'bucket system toilets'. The City does not want to force anyone to not use it. These areas are currently part of a Human Settlements development and therefore these buckets will be eradicated as the residents are absorbed into new development projects. Despite the increase in households within informal settlements, the City sanitation services access profile shows a steadily decreasing percentage in the number of households serviced in these two categories.

Figure C2.2.2: Household sanitation access profile qualify



C2.3 Residential water services delivery adequacy profile

All residents, both formal and informal receive services that meet and/ or exceed the basic minimum levels of service.

The Integrated Planning, Strategy and Information Management Unit within the Water Demand Management and Strategy Branch has and is responsible for the development and updating of a master plan for water and sanitation infrastructure which covers a forward plan, for at least the following 20 years, assessing infrastructure needs for the future.

The first set of city-wide master plans were finalised in February 2011. Before then, several master plans were in use for towns or districts within the city, such as Bellville, Helderberg or Blaauwberg. The following comprehensive update was completed at the end of November 2014. The main focus of the master planning process was to highlight infrastructure upgrades and new requirements in order to cater for densification and future developments.

Table C2.3 (a): Residential water services delivery adequacy profile (Water)

Sheet 1 of 2

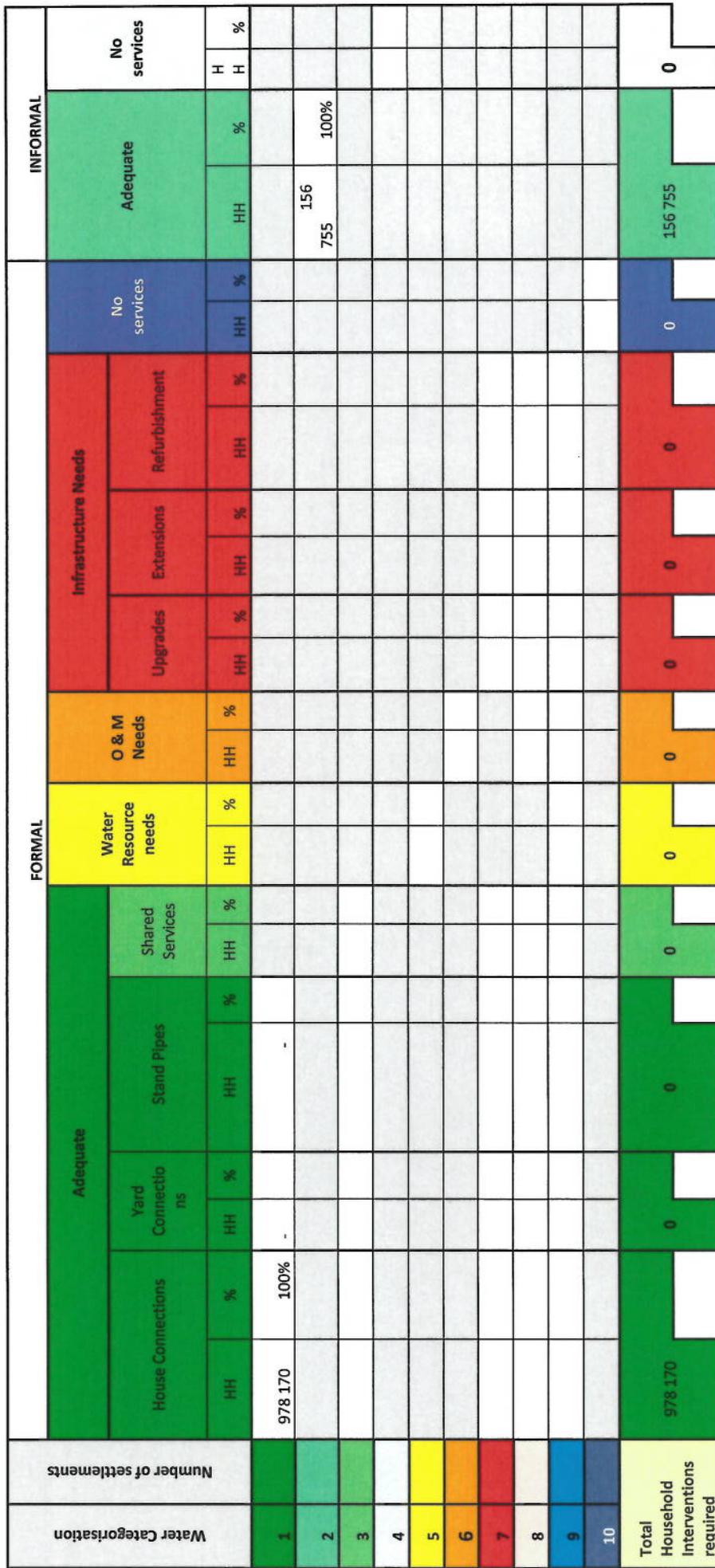
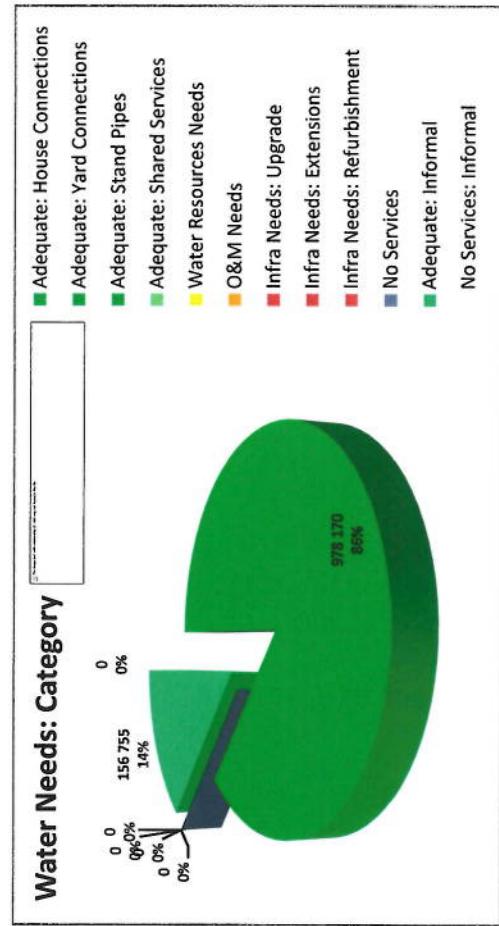
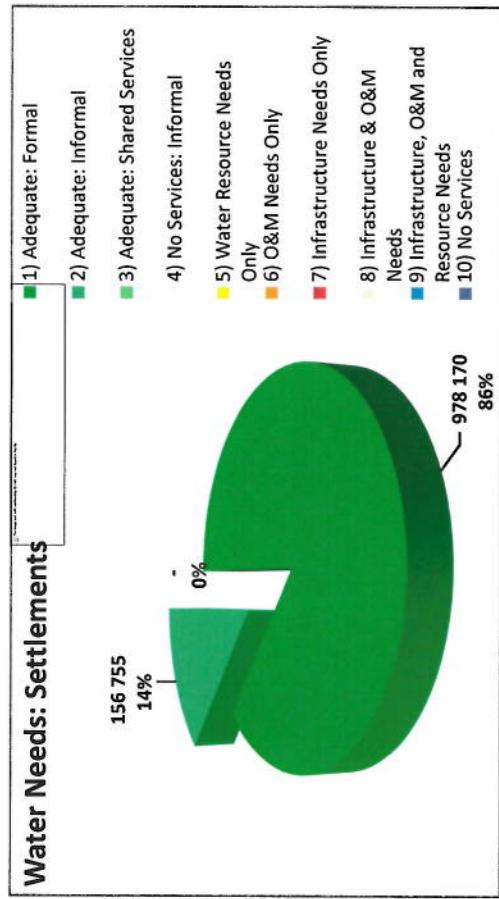
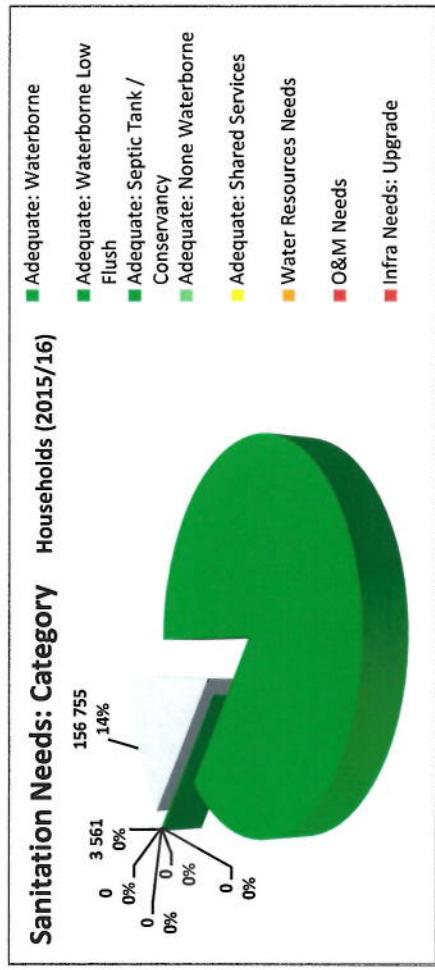
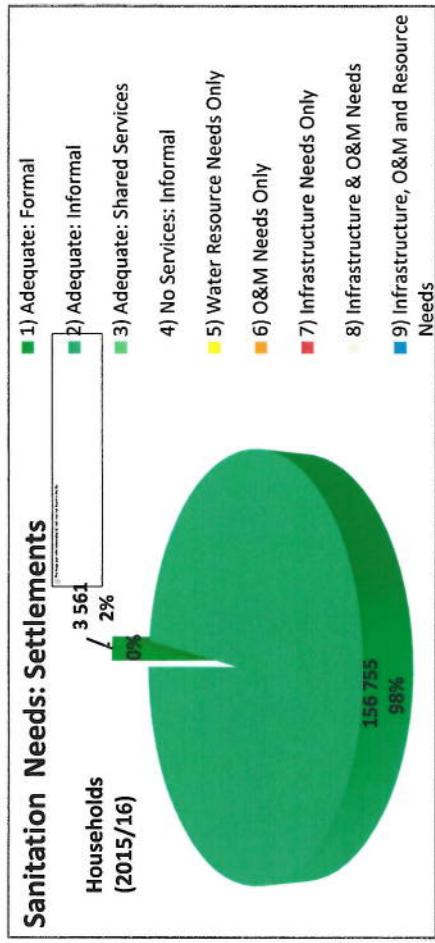


Table C2.3 (a): Residential water services delivery adequacy profile (Water)**Sheet 2 of 2**

	Adequate	Adequate: Shared services	Water Resources Needs Only	Infrastructure, O&M & Resource Needs	
				9	10
1	Adequate	Adequate: Shared services	Water Resources Needs Only	9	10
2	Adequate: Informal	No Services: Formal	O & M Needs Only	No Services	No Services

Table C2.3 (b): Residential water services delivery adequacy profile (Sanitation)

Sheet 1 of 2

Table C2.3 (b): Residential water services delivery adequacy profile (Sanitation)

1	Adequate	3	Adequate: Shared services	5	Water Resources Needs <u>Only</u>	7	Infrastructure Needs <u>Only</u>	9	Infrastructure, O&M & Resource Needs
2	Adequate: Informal	4	No Services: Formal	6	O & M Needs <u>Only</u>	8	Infrastructure& O&M needs	10	No Services

C3. Cost recovery and free basic services

The 'Regulations relating to compulsory national standards and measures to conserve water', requires in section 10 (2) (d), that the water services authority should report on cost recovery, including at least:

- (i) the tariff structures for each user sector;
- (ii) the income collected expressed as a percentage of total costs for water services provided; and
- (iii) unrecovered charges expressed as a percentage of total costs for water services provided.

In turn, section 10 (2) (e) requires the water services authority to report on meter installation and meter testing, including at least:

- (i) the number of new meters installed at consumer installations; and
- (ii) the number of meters tested and the number of meters replaced as expressed as a percentage of the total number of meters installed at consumer connections.

The Regulations, furthermore specifies in section 10 (2) (b) that the number of households with access to free basic sanitation services should be recorded. A requirement of the MFMA Municipal Annual Report is that municipalities should also report the number of customers, receiving Free Basic services. In order to provide this figure to the Municipal Annual Report, this section has been expanded to include reference to the number of households receiving access to free basic water.

The information as required above, is presented in the following sub-sections:

- Tariffs: addressing regulation item 10 (2) (d) (i)
- Metering, Billing and Free Basic Services: addressing regulation items 10(2) (e) (i) and (ii) as well as regulation item 10(2) (b) (v)
- Revenue collection and cost recovery: addressing regulation items 10 (2) (d) (ii) and (iii)

The details for each of these sub-sections are further discussed below.

C3.1 Tariffs

Tariff increases implemented have been set higher than inflation during the last number of years due to the escalated focus on repairs and maintenance of current infrastructure as well as the growth in the capacity requirement in the capital infrastructure programme. City of Cape Town's block tariff structure for the various financial years is presented within the tables below.

As Water and Sanitation department get closer to requiring an augmentation scheme, the tariffs will have to be reviewed in order to cover costs of augmentation. This means that constantly faced with a decision of when, what method and cost of any scheme that will be implemented.

During the 2015/16 financial year, Water and Sanitation department implemented normal reduction of 10 % from July-December 2015 and 20% reduction (during restrictions only) from January- June 2016 for both Water and Sanitation services.

Table C3.1.a: Tariffs for water from July – December 2015 with 10% reduction (normally applied)

Nr	Category	Sector	Unit	Tariff (VAT excluded)			% Increase Year 2016
				Year 2016	Year 2015	Year - 2014	
				FY2015/16 (R)	FY2014/15 (R)	FY2013/14 (R)	
1.1	<u>BASIC CHARGES</u>						
	Not Applicable						
2	<u>VOLUME CHARGES</u>						
	Step 1 (0-6 kℓ)	Domestic Full	R/kl		-	-	
	Step 2 (+6-10.5 kℓ)			9.71	8.75	7.60	10.97%
	Step 3 (+10.5-20 kℓ)			13.92	12.54	11.61	11.00%
	Step 4 (+20-35 kℓ)			20.62	18.58	17.20	10.98%
	Step 5 (+35-50 kℓ)			25.47	22.94	21.24	11.03%
	Step 6 (+50 kℓ)			33.59	30.27	28.02	10.97%
	Step 1 (0-6 kℓ)	Domestic cluster	R/kl		-	-	
	Step 2 (+6-10.5 kℓ)			11.90	10.72	9.93	11.01%
	Step 3 (+10.5-20 kℓ)			13.92	12.54	11.61	11.00%
	Step 4 (+20-35 kℓ)			20.62	18.58	17.20	10.98%
	Step 5 (+35-50 kℓ)			25.47	22.94	21.24	11.03%
	Step 6 (+50 kℓ)			33.59	30.27	28.02	10.97%
	Step 1 (0-6 kℓ)	Domestic Backyarders	R/kl		-	-	
	Step 2 (+6-10.5 kℓ)			9.71	8.75	7.60	10.97%
	Commercial	Commercial	R/kl	15	13.51	12.51	11.03%
	Industrial	Industrial	R/kl	15	13.51	12.51	11.03%
	OTHER						
	Schools/sport	Schools/sport	R/kl	13.26	11.94	11.06	11.06%
	Government	Government	R/kl	14.24	12.83	11.88	10.99%
	Municipality	Municipality	R/kl	13.26	11.94	11.06	11.06%
	Miscellaneous	Miscellaneous	R/kl	14.24	12.83	11.88	10.99%
	Homeless people shelters / Homes catering for the health of physically or mentally challenged individuals						
	Step 1 (0 ≤ 0.75 kl per person)			0.00	0.00	0.00	
	Step 2 (0.75 kl per person)			13.26	11.94	11.06	11.06%
	Vulnerable Groups (Subsistence farming)						
	Step 1 (0 ≤ 10 kl)			0.00	0.00	0.00	
	Step 2 (>10 kl)			0.00	0.00	0.00	
	Misc. (external)	Miscellaneous (external)	R/kl	17.01	R 15.33	14.19	10.96%
	Bulk Tariff		R/kl	3.70	R 3.49	3.42	6.02%
	OTHER CHARGES (DEFINE CATEGORY)						
	15mm-20mm	Fixed Service Charge (All consumer groups other than domestic, including all Spring water and Treated Effluent Users)	per mon th	13.77	13.07	12.37	5.36%
	25mm-40mm			48.60	45.96	43.42	5.74%
	50mm-90mm			123.42	116.75	110.35	5.71%
	100mm-140mm			148.42	140.44	132.72	5.68%
	150mm			255.18	241.40	228.16	5.71%
	>150mm			342.63	324.12	306.32	5.71%
	Temporary Connections			6379.00	6 035.00	5 704.00	5.70%
	New Connections						
	25mm complete (stop cock+meter box+ meter)			5984.91	R 5 662.19	5 351.75	5.70%
	40mm complete (stop cock+meter box+ meter)			9995.18	R 9 456.14	8 937.72	5.70%
	50 mm complete (stop cock+meter box+ meter)			15503.25	R 14 667.19	13 863.16	5.70%

*Above Tariffs and additional Tariffs can be sourced via the following link Water and Sanitation Tariffs

Table C3.1.b: Tariffs for water from January – June 2016 with 20% reduction (during restrictions only)

Nr	Category	Sector	Unit	Tariff (VAT excluded)			% Increase Year 2016
				Year 2016	Year 2015	Year - 2014	
				FY2015/16 (R)	FY2014/15 (R)	FY2013/14 (R)	
1.1	BASIC CHARGES						
	Not Applicable						
2	VOLUME CHARGES						
	Step 1 (0-6 kℓ)	Domestic Full	R/kl			-	
	Step 2 (+6-10.5 kℓ)			10.22	9.71	8.75	5.25%
	Step 3 (+10.5-20 kℓ)			16.00	13.92	12.54	14.94%
	Step 4 (+20-35 kℓ)			26.09	20.62	18.58	26.53%
	Step 5 (+35-50 kℓ)			39.82	25.47	22.94	56.34%
	Step 6 (+50 kℓ)			74.64	33.59	30.27	1.22.%
	Step 1 (0-6 kℓ)	Domestic cluster	R/kl			-	
	Step 2 (+6-10.5 kℓ)			12.53	11.90	10.72	5.29%
	Step 3 (+10.5-20 kℓ)			16.00	13.92	12.54	14.94%
	Step 4 (+20-35 kℓ)			26.09	20.62	18.58	26.53%
	Step 5 (+35-50 kℓ)			39.82	25.47	22.94	56.34%
	Step 6 (+50 kℓ)			74.64	33.59	30.27	1.22.%
	Step 1 (0-6 kℓ)	Domestic Backyarders	R/kl			-	
	Step 2 (+6-10.5 kℓ)			10.22	9.71	13.51	5.25%
	Commercial	Commercial	R/kl	17.44	15	13.51	16.27%
	Industrial	Industrial	R/kl	17.44	15	13.51	16.27%
	OTHER						
	Schools/sport	Schools/sport	R/kl	15.42	13.26	11.94	16.29%
	Government	Government	R/kl	16.56	14.24	12.83	16.29%
	Municipality	Municipality	R/kl	15.42	13.26	11.94	16.29%
	Miscellaneous	Miscellaneous	R/kl	16.56	14.24	12.83	16.29%
	Homeless people shelters / Homes catering for the health of physically or mentally challenged individuals						
	Step 1 (0 <= 0.75 kl per person)			0.00	0.00	0.00	
	Step 2 (0.75 kl per person)			15.42	13.26	0.00	16.29%
	Vulnerable Groups (Subsistence farming)						
	Step 1 (0 <= 10 kl)			0.00	0.00	0.00	
	Step 2 (>10 kl)			0.00	0.00	0.00	
	Misc. (external)	Miscellaneous (external)	R/kl	19.78	17.01	15.33	16.28%
	Bulk Tariff		R/kl	4.30	3.70	3.49	16.22%
	OTHER CHARGES (DEFINE CATEGORY)						
	15mm-20mm	Fixed Service Charge (All consumer groups other than domestic, including all Spring water and	per mont h	13.77	13.77	13.07	
	25mm-40mm			48.60	48.60	45.96	
	50mm-90mm			123.42	123.42	116.75	
	100mm-140mm			148.42	148.42	140.44	

150mm	Treated Effluent Users)		255.18	255.18	214.40	
>150mm			342.63	342.63	324.12	
Temporary Connections			6379.00	6035.00	5704.00	5.70%
New Connections						
25mm complete (stop cock+meter box+ meter)			5 984.91	5 662.19	5 351.75	5.70%
40mm complete (stop cock+meter box+ meter)			9 995.18	9 456.14	8 937.72	5.70%
50 mm complete (stop cock+meter box+ meter)			15 503.25	14 667.19	13 863.16	5.70%

*Above Tariffs and additional Tariffs can be sourced via the following link [Water and Sanitation Tariffs](#)

Table C3.1.c: Tariffs for Sanitation from July – December 2015 with 10% reduction (normally applied)

Nr	Category	Sector	Unit	Tariff (VAT excluded)			% increase Year 2016
				Year 2016	Year 2015	Year - 2014	
				FY2015/16 (R)	FY2014/15 (R)	FY2013/14 (R)	
1 BASIC CHARGES							
2 VOLUME CHARGES		Domestic Full	R/kℓ				
				-	-	-	
				9.16	8.25	7.20	11.03%
				16.25	14.64	13.56	11.00%
				17.77	16.01	14.83	10.99%
				18.66	16.81	15.56	11.01%
Commercial -Standard	Commercial	Commercial	R/kℓ				
				11.53	10.39	9.62	10.97%
				10.84	9.77	9.04	10.95%
Industrial-Standard	Industrial						
				11.53	10.39	9.62	10.97%
Industrial- COCT Oxidation dams							
				10.84	9.77	9.04	10.95%
Departmental/Municipal	Departmental/Municipal	R/kℓ					
				10.61	9.56	8.85	10.98%
3 OTHER CHARGES		Domestic Cluster	R/kℓ				
				0.00	0.00	0.00	
				10.05	9.05	9.05	11.05%
				16.25	14.64	13.56	11.00%
				17.77	16.01	14.82	10.99%
				18.66	16.81	15.56	11.01%
New Connection							
100mm connections		R/kℓ		1 133.95	1 072.81	1 014.04	5.70%
150mm connections		R/kℓ		1 358.60	1 285.35	1 214.91	5.70%
Clearing domestic sewerage blockages (office Hours)		R/kℓ		398.25	376.75	356.14	5.71%
Testing Sewers		R/test		704.30	666.32	629.82	5.70%

*Above Tariffs and additional Tariffs can be sourced via the following link [Water and Sanitation Tariffs](#)

Table C3.1.d: Tariffs for Sanitation from January – June 2016 with 20% reduction (during restrictions only)

Nr	Category	Sector	Unit	Tariff (VAT excluded)			% increase Year 2016
				Year 2016	Year 2015	Year - 2014	
				FY2015/16 (R)	FY2014/15 (R)	FY2013/14 (R)	
1	BASIC CHARGES						
2	VOLUME CHARGES						
	0-4.2 kℓ	Domestic Full	R/kℓ			-	-
	+4.2-7.35 kℓ			9.64	9.16	8.25	5.24%
	+7.35-14 kℓ			18.69	16.25	14.64	15.02%
	+14-24.5 kℓ			22.49	17.77	16.01	26.56%
	+24.5-35 kℓ			29.16	18.66	16.81	56.27%
	Commercial -Standard	Commercial	R/kℓ	13.39	11.53	10.39	16.13%
	Commercial –COCT Oxidation dams			12.61	10.84	9.77	16.33%
	Industrial-Standard	Industrial	R/kℓ	13.39	11.53	10.39	16.13%
	Industrial- COCT Oxidation dams			12.61	10.84	9.77	16.33%
	Departmental/Municipal	Departmental/Municipal	R/kℓ	12.34	10.61	9.56	16.31%
	0-4.2 kℓ	Domestic Cluster	R/kℓ	0.00	0.00	0.00	
	+4.2-7.35 kℓ			10.58	10.05	9.05	5.27%
	+7.35-14 kℓ			18.68	16.25	14.64	14.95%
	+14-24.5 kℓ			22.50	17.77	16.01	26.62%
	+24.5-35 kℓ			29.16	18.66	16.81	56.27%
3							
	New Connection						
	100mm connections		R/kℓ	1 133.95	1072.81	1014.04	5.70%
	150mm connections		R/kℓ	1 358.60	1285.35	1214.91	5.70%
	Clearing domestic sewerage blockages (office Hours)		R/kℓ	398.25	376.75	356.14	5.71%
	Testing Sewers		R/test	704.30	66.32	629.82	9.62%
	*Above Tariffs and additional Tariffs can be sourced via the following link Water and Sanitation Tariffs						

C3.2 Metering, Billing and Free Basic Services

The first 6 kilolitres of water supplied to all residential dwellings in the municipal area and the first 4.2 kilolitres of sewage removed from all residential dwellings in the municipal area is free. Fixed charges do not apply to dwellings occupied by domestic households.

The Indigent Grant is applicable to the water and sanitation tariff for qualifying households. The net result is that an Indigent household can consume additional 4.5kℓ water per month and can discharge an

additional 3.15kℓ wastewater per month (with sewerage disposal 70% of water consumption) without attracting any charges.

This subsidy would be ineffective without the ongoing Water Management Device installations and associated indigent household leak Repairs, which is aimed at reducing consumption, reducing monthly bills and eliminating arrears of properties occupied by Indigent households.

Table C3.2: Overview of metering, billing and Free Basic Services

Regulations Ref. #	Description	Unit	Year 2016	Year 2015	Year -2014
			FY2015/16	FY2014/15	FY2013/14
	UNITS SUPPLIED (as per water services access profile)	-			
10.2 (b) (i)	Household water connections (house and yard connections)	Nr	609 294	602 594	598 373
10.2 (b) (iv)	Household sewerage connections	Nr	598 836	593 318	587 943
	METERING	-			
	Metered Water Connections (aligned with Billing System)				
	Residential	Nr	609 294	602 594	598 373
	Commercial / Business	Nr	12 972	13 134	13 094
	Industrial	Nr	4 462	4 466	4 460
	Government / Institutional	Nr	12 862	12 781	10 150
	Bulk		224	287	285
	Schools		1 834	1 819	1 739
	Other	Nr	6 018	5 911	5 970
	Sub-Total: Metered Water Connections	Nr	647 666	640 992	634 071
10.2 (b) (vi)	Proportion of metered connections (residential)	%	100%	100%	100%
10.2 (e) (i)	Total number of meters	Nr	647 666	640 992	634 071
	Total number of new connections (aligned with Table C.2.1)	Nr	6 700	5 375	3 958
	Total number of new meters installed	Nr	6 674	6 921	5 315
10.2 (e) (ii)	Proportion of new connections, metered	%	100 %	100%	100%
	Number of meters tested	Nr	0	0	0
10.2 (e) (ii)	Proportion of meters tested to total number of meters	%			
	Number of meters replaced	Nr	51 869	38 564	33 188
	Proportion of meters replaced to total number of meters	%	8%	6%	5%
	BILLING	-			
	Customer billing (water and sewerage)		Nr	Nr	Nr
	Residential	Nr	609 294	602 594	598 373
	Commercial / Business	Nr	12 972	13 134	13 094
	Industrial	Nr	4 462	4 466	4 460
	Government / Institutional	Nr	12 862	12 781	10 150
	Bulk	Nr	224	287	285
	Schools	Nr	1 834	1 819	1 739
	Other	Nr	6 018	5 911	5 970
	Sub-Total: Customers billed	Nr	647 666	640 992	634 071
	Proportion of bills to metered connections	%	100.0%	100.0%	100.0%
	Residential	%	100.0%	100.0%	100.0%
	Commercial / Business	%	100.0%	100.0%	100.0%
	Industrial	%	100.0%	100.0%	100.0%
	Government / Institutional	%	100.0%	100.0%	100.0%
10.2 (b) (v)	Bulk	%	100.0%	100.0%	100.0%
	Schools	%	100.0%	100.0%	100.0%
	Other	%	100.0%	100.0%	100.0%
	FREE BASIC SERVICES	-			
	Nr customers receiving:				
	Free Basic Water	Nr	609 294	602 594	598 373

	Free Basic Sanitation	Nr	598 836	593 318	587 943
	Proportion of Free Basic Services				
	Water	%	100.0%	100%	100%
	Sewerage	%	100.0%	100%	100%

C3.3 Revenue collection and cost recovery

The City of Cape Town's revenue collection and cost recovery on water services rendered by the municipality is summarized in the table below.

Various significant financial process improvements were achieved, including movable asset verification of 100% for 2015/16 financial year.

The FY2015/16 collection rate was 78.52% for water and 86.35% for sanitation

Risks to achieving Utility Services revenue projections:

- Security and quality of supply
- Certain aspects of the economic slowdown are still evident
- The increase in the indigent register

Capital budget: The high requirement for necessary infrastructure is driven largely by capacity requirements due to growth and economic development, the refurbishment of current infrastructure as well as projects related to system efficiency which places severe pressure on the City's Capital Budget.

To achieve the required Capital Budget, it is necessary to maximise the use of Grant funding and to make optimal use of the Capital Replacement Reserve (CRR) within the financial constraints.

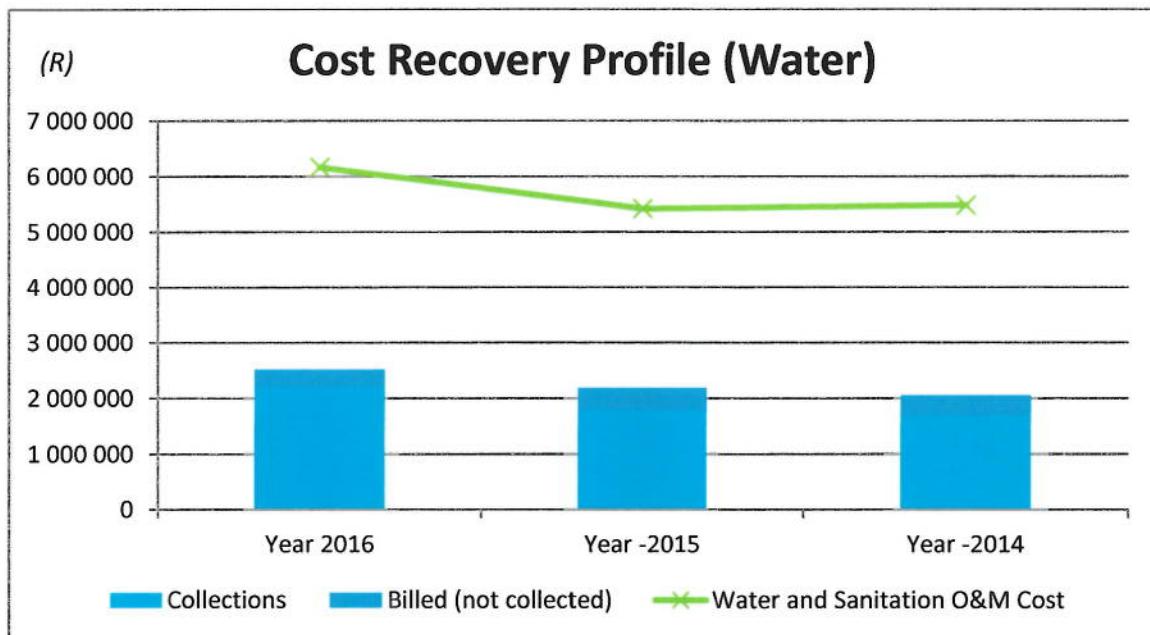
Operating budget: It is difficult to reach optimum levels of staff, maintain acceptable levels of infrastructure maintenance and carry the impact of the capital programme within the financial constraints during difficult economic conditions.

The pressure on the operating budget needs to be addressed via possible above-inflation tariff increases and initiatives to ensure that money due to the City is collected. There is a benefit envisaged from the current debt action and projects related to metering efficiency gains and data purification.

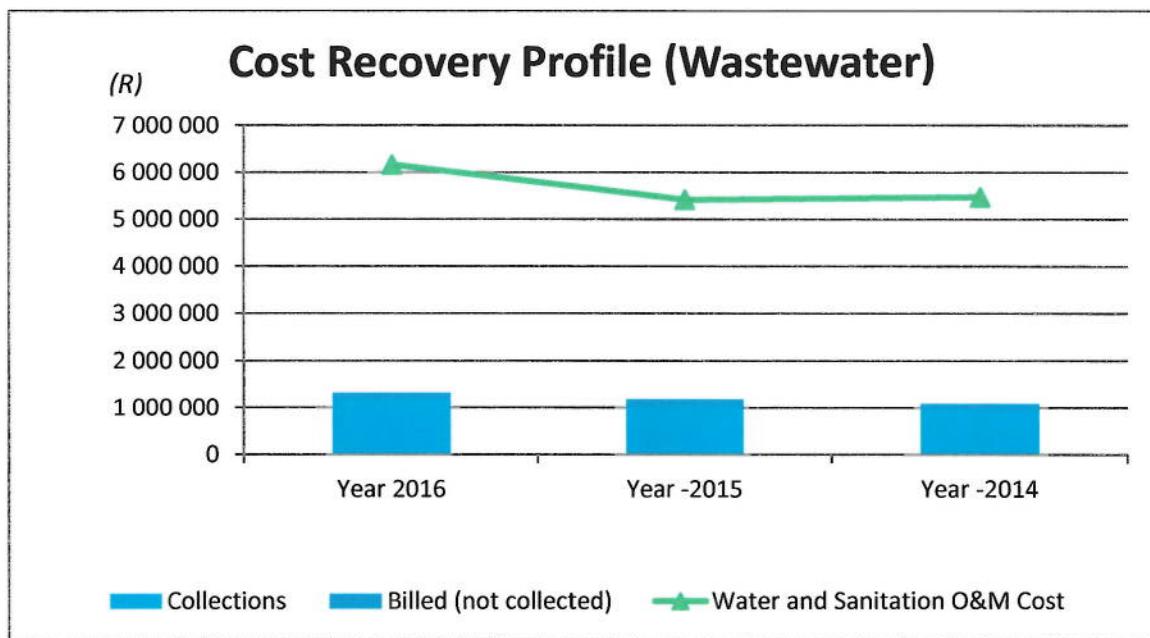
Table C3.3: Overview of water services revenue collection and cost recovery

Regulations Ref. #	Description	Year 2016	Year 2015	Year -2014
		FY2015/16	FY2014/15	FY2013/14
	<u>INCOME</u>	R'000	R'000	R'000
	Billed			
	Water reticulation / provision	2 985	2 514	2 186
	Sewerage / wastewater	1 535	1 319	1 188
	Sub-Total: Billed	4 520	3 834	3 374
	Collections	0	0	0
	Water reticulation / provision	2 406	2 210	1 799
	Sewerage / wastewater	1 354	1 202	1 025
	Sub-Total: Collections	3 760	3 411	2 823
	Equitable share income			
	Water reticulation / provision			
	Sewerage / wastewater			
	Sub-Total: Equitable share income	134	163	118
	<u>EXPENDITURE (O & M)</u>	R'000	R'000	R'000
	Water services		-	-
	Sewerage / wastewater services		-	-
	Total: Water Services O&M	7 359	6 168	5 416
	<u>COST RECOVERY ANALYSIS / RATIO</u>			
10.2 (d) (ii)	Unrecovered as % of Revenue Billed			
	Water	19.41%	12.11%	17.72%
	Sewerage	11.78%	8.94%	13.76%
	Total	16.82%	11.02%	16.32%
10.2 (d) (iii)	Unrecovered as % of Cost			
	Water services	-	-	-
	Sewerage / wastewater services	-	-	-
	Total	10.33%	6.85%	10.17%

*Note: the above table does not reflect the internal income streams between Bulk Water Branch, Wastewater Branch and other streams.

Figure C3.3.1: Revenue collection and cost recovery profile (water)

*Note O&M costs include both water and sanitation

Figure C3.3.2: Revenue collection and cost recovery profile (wastewater)

*Note O&M costs include both water and sanitation

C4. Water quality

The 'Regulations relating to Compulsory National Standards and Measures to Conserve Water' (April 2001) determines that the water services audit to be included in the annual report on the implementation of its water services development plan, should include:

"10. (f) the water quality sampling programme contemplated in regulation 5(1), the results of the comparison set out in regulation 5(3) and any occurrence reported in compliance with regulation 5(4)"

The required information is presented in the following sections:

- Sampling programme
- Water quality compliance
- Incident management

It should be recognized that the above information is reported in terms of the National Department of Water and Sanitation Blue- and Green Drop Systems.

The City consistently excels in the DWS's Blue Drop awards programme. As in June 2016, the City's most recent score was an impressive 95,86%, again achieving Blue Drop status. The City remains in the top-performing group of water service authorities in South Africa.

Since 2013 there have been no further assessment with regards to Green Drop status which measures the quality of the City's wastewater treatment works (WWTW)s.

C4.1 Sampling programme

The quality of water produced at the CCT's water treatment plants is strictly monitored on a continual operational basis by the Bulk Water Branch to ensure compliance with the South African National Standard (SANS 241:2011) on drinking water quality. The Scientific Services Branch also conducts routine sampling and analysis of potable water produced at all water treatment plants, as well as inspection of treatment processes.

Table C4.1.1: Sampling programme for potable water quality

Treated Water Schemes								
Registered Sites per Scheme		Active (yes/no)			Determinants per Category	Frequency (days)		
		Year 2016	Year -2015	Year - 2014		Year 2016	Year -2015	Year - 2014
#	Name	FY2015/16	FY2014/15	FY2013/14		FY2015/16	FY2014/15	FY2013/14
1	Water Treatment Plants	yes	yes	yes	Microbiological (Health) (as per SANS 241)	7	7	7
					Chemical (Health) (as per SANS 241)	7	7	7
					Physical, Organoleptic (Non Health) (as per SANS 241)	7	7	7
					SANS 241 Operational Tests	7	7	7
2	Reservoir	yes	yes	yes	Microbiological (Health) (as per SANS 241)	7	7	7
					Chemical (Health) (as per SANS 241)	7	7	7
					Physical, Organoleptic (Non Health) (as per SANS 241)	7	7	7
					SANS 241 Operational Tests	7	7	7
3	Distribution	yes	yes	yes	Microbiological (Health) (as per SANS 241)	14	14	14
					Chemical (Health) (as per SANS 241)	14	14	14
					Physical, Organoleptic (Non Health) (as per SANS 241)	14	14	14
					SANS 241 Operational Tests	14	14	14

*Sampling done every seven days

**Sampling done every fourteen days

Table C4.1.2: Sampling programme for wastewater effluent quality

Registered Sites		Active			Determinants per Category	Frequency (days)		
		Year 2016	Year -2015	Year - 2014		Year 2016	Year -2015	Year - 2014
#	Name	FY2015/16	FY2014/15	FY2013/14		FY2015/16	FY2014/15	FY2013/14
1	Athlone	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
2	Bellville	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
3	Borchards Quarry	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
4	Camps Bay Outfall	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
5	Cape Flats	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
6	Fisantekraal	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
7	Gordons Bay	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
8	Green Point Outfall	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
9	Groot Springfontein	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
10	Hout Bay	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
11	Klipheuwel	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
12	Kraifontein	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7

13	Llandudno	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
14	Oudekraal	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
15	Macassar	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
16	Melkbosstrand	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
17	Millers Point	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
18	Mitchells Plain	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
19	Parow	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
20	Philadelphia	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
21	Potsdam	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
22	Scottsdene	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
23	Simons Town	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
24	Wesfleur	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
25	Wildevoelvlei	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7
26	Zandvliet	Active	Active	Active	Microbiological	7	7	7
					Chemical	7	7	7
					Operational	7	7	7
					Physical	7	7	7

*sampling done every seven days

An overview of the City of Cape Town's compliance to its water- and wastewater sampling programmes is presented in the tables which follow.

Table C4.1.3: Compliance to the sampling programme (s)

Measurable / Enabling Factor	Unit	Year 2016				Year 2015				Year -2014			
		FY2015/16				FY2014/15				FY2013/14			
		M	C	P	O	M	C	P	O	M	C	P	O
Potable Water Quality													
Supply system submissions	Nr registered	1	1			1	1			1	1		
	Nr submitted*	1	1			1	1			1	1		
	Annual %	100	100			100	100			100	100		
Monitoring compliance	Average %	87.73	86.16			83.73	92.39			96.66	90.98		
Data Credibility	Average %	99.9	99.72			99.9	99.9			99.9	99.9		
BDS In-Time Submission	Annual %	99.8	99.9			91.58	97.78			99.9	99.9		
Wastewater Quality													
Monitoring compliance	Average %	-				78.72				73.03			
*Operational monitoring compliance	Average %	-				-				-			

Legend M: Microbiological; C: Chemical; P: Physical; O: Operational

*The Operational monitoring are tests performed on site e.g. Imhoff cone tests (Settleability), Chlorine (Free and Total), Dissolved Oxygen (DO), NH₃,

Table C4.1.4: Water quality monitoring overview from WSDP Guide Framework perspective

WSDP Ref #	Measurable / Enabling Factor	Unit	Year 2016	Year - 2015	Year - 2014
			FY2015/16	FY2014/15	FY2013/14
6.3	Water Supply and Quality				
6.3.2	Process Control in place	yes/total WTW in %	100%	100%	100
6.3.3	Monitoring Programme in place	yes/total schemes in %	100%	100%	100
6.3.4	Sample Analysis Credibility	Average %	100%	100%	100%
9.2	Monitoring				
9.2.1	% of water abstracted monitored: Surface water	Q monitored / Q abstracted in %	100%	100%	100
9.2.2	% of water abstracted monitored: Ground water	Q monitored / Q abstracted in %	100%	100%	100
9.2.3	% of water abstracted monitored: External Sources (Bulk purchase)	Q monitored own / Q purchased in %	N/A	N/A	N/A
9.2.6	Water quality for formal schemes? (1: daily, 2: weekly, 3: monthly, 4: annually, 5: never)	frequency	1	1	1
9.2.7	Water quality for rudimentary schemes? (1: daily, 2: weekly, 3: monthly, 4: annually, 5: never)	frequency	N/A	N/A	N/A
9.2.9	Is the number sufficient in accordance to the SANS241 requirements?	yes/no	Yes	Yes	Yes
9.3	Water Quality				
	Is there a water quality plan in place?	yes/no	Yes	Yes	Yes
9.3.1	Reporting on quality of water taken from source: urban & rural	yes/total schemes in %	100%	100%	100
9.3.5	Quality of water taken from source: urban - % monitored by WSA self?	monitored by WSA / total schemes in %	N/A	N/A	N/A
9.3.6	Quality of water taken from source: rural - % monitored by WSA self?	monitored by WSA / total schemes in %	100%	100%	100
9.3.9	Are these results available in electronic format?	yes/no	Yes	Yes	Yes

Table C4.1.5: Wastewater quality monitoring overview from WSDP Guide Framework perspective

WSDP Ref #	Measurable / Enabling Factor	Unit	Year 2016	Year 2015	Year -2014
			FY2015/16	FY2014/15	FY2013/14
5.3.1	Monitoring and Sample Failure				
5.3.1.1	<u>Monitoring:</u> % of tests performed as required by general limits /special limits/ license requirements (Average % over previous 12 months)	Annual %	99%	99%	99%
5.3.1.2	<u>Operational:</u> % of tests performed as required by general limits /special limits/ license requirements (Average % over previous 12 months)	Annual %	-	-	-
6.4	Wastewater Supply and Quality				
6.4.2	Process Control in place	yes/total WWTW in %	yes (100%)	yes (100%)	yes (100%)
6.4.3	Monitoring Programme in place	yes/total WWTW in %	yes (100%)	yes (100%)	yes (100%)
6.4.4	Sample Analysis Credibility	Average %	100%	100%	100%
9.2	Monitoring				
9.2.10	Is the number sufficient in accordance to licences?	yes/no	yes	yes	yes
9.3	Water Quality				
	Is there a water quality plan in place?	yes/no	yes	yes	yes
9.3.2	Quality of water returned to the resource: urban	yes/total WWTW in %	100%	100%	100%
9.3.3	Quality of water returned to the resource: rural	yes/total WWTW in %	NA	NA	NA
9.3.7	Quality of water returned to resource: urban - % monitored by WSA self?	monitored by WSA / urban WWTW in %	100%	100%	100%
9.3.8	Quality of water returned to resource: rural - % monitored by WSA self?	monitored by WSA / rural WWTW in %	NA	NA	NA
9.3.9	Are these results available in electronic format?	yes/no	yes	yes	yes

C4.2 Water quality compliance

Table C4.2.1: Overview of water quality compliance

WSDP Ref #	Measurable / Enabling Factor	Unit	Year 2016			Year 2015				Year-2014			
			FY2015/16			FY2014/15				FY2013/14			
			M	C	P	M	C	P	O	M	C	P	O
Results per the Blue Drop System													
n/a	Analysis compliance	Total	9161	64583		9077	14284	17279		7922	12722	15702	39666
n/a		Nr Failures	52	297		21	15	21		30	1	23	1600
n/a		Compliance %	99.4	99.5		99.8%	99.9%	99.9%		99.6%	99.9%	99.8%	95.9%
n/a	Samples frequency	Total	9160	2754		9061	1307	8621		7922	1145	7595	8055
n/a		Nr Failures	52	119		21	14	20		30	1	20	1436
n/a		Compliance %	99.4	95.9		99.8%	99.9%	99.8%		99.6%	99.9%	99.8%	82.3%
n/a	Sites compliance	Total	2899	2146		2647	923	2645		1860	752	1855	1862
n/a		Nr Failures	47	106		21	9	17		23	1	15	808
n/a		Compliance %	98.4	95.1		99.2%	98.9%	99.4%		90.4%	99.9%	99.2%	56.7%
6.3	Water Supply and Quality												
6.3.6	Blue Drop Status	certified per BDS	The City's most recent score was an impressive 95,86% as at June 2016			No new score released. Had Blue Drop status based on 2012 score.				No new score released. Had Blue Drop status based on 2012 score.			
9.3	Water Quality												
9.3.10	% Time (days) within SANS 241 standards per year	Average of sites compliance %	96.75			99%				87%			

Legend M: Microbiological; C: Chemical; P: Physical; O: Operational *tbd = to be determined

Table C4.2.2: Overview of wastewater quality compliance

WSDP Ref #	Measurable / Enabling Factor	Unit	Year 2016				Year 2015				Year-2014			
			FY2015/16				FY2014/15				FY2013/14			
			M	C	P	O	M	C	P	O	M	C	P	O
Results per the Green Drop System														
n/a	Regulatory compliance	Total	N/A	N/A	N/A		100%	100%	100%		100%	100 %	100 %	
n/a		Nr Failures	N/A	N/A	N/A		39%	37%	42%		38%	36%	42%	
n/a		Compliance %	N/A	N/A	N/A		61%	63%	58%		62%	64%	58%	
n/a	Operational compliance	Total												
n/a		Nr Failures												
n/a		Compliance %	N/A	N/A	N/A		tbd	tbd	tbd		tbd	tbd	tbd	
5.3.1	Monitoring and Sample Failure													
5.3.1.3 5.3.1.4 5.3.1.5	Average % of sample failure	Failure %	N/A			39.3%				39.0%				
6.3	Water Supply and Quality													
6.4.6	Green Drop Status	certified per GDS	No later report available			Green Drop Report 2013 89.7%				Green Drop Report 2011 86.8%				

C4.3 Incident management

Another aspect to water quality is the level of institutional response to water quality failure incidents – herein presented as incident management.

Table C4.3.1: Incident management and reporting overview

WSDP Ref #	Measurable / Enabling Factor	Unit	Year 2016		Year 2015		Year - 2014	
			FY2015/16	FY2014/15	FY2014/15	FY2013/14		
6.3 Water Supply and Quality								
6.3.1	Incident Management Protocol in place	yes/total schemes in %		100%		100%		100%
6.3.5	Failure Response Management in place	yes/total schemes in %		100%		100%		100%
6.4 Waste Water Supply and Quality								
6.4.1	Incident Management Protocol in place	yes/total schemes in %		100%		100%		100%
6.4.5	Failure Response Management in place	yes/total schemes in %		100%		100%		100%

Table C4.3.2: Water quality incident reporting compliance (health oriented)

Measurable / Enabling Factor	Unit	Year 2016				Year 2015				Year-2014			
		FY2015/16				FY2014/15				FY2013/14			
		Acute Health - 1 Microbiological	Acute Health - 1 Chemical	Acute Health - 2 Microbiological	Chronic Health	Acute Health - 1 Microbiological	Acute Health - 1 Chemical	Acute Health - 2 Microbiological	Chronic Health	Acute Health - 1 Microbiological	Acute Health - 1 Chemical	Acute Health - 2 Microbiological	Chronic Health
Failures in terms of Analysis	Total nr	9161	64583			9072	3029	158	23761		2408	218	20823
	Nr of failures	52	297			19	0	0	32		0	0	24
	Failure %	6.79%	5.75 %			0%	0%	0%	0%		0%	0%	0%
	Nr reported	52	297			100	100	100	100		100	100	100
	Reported % of failure	100 %	100 %			100%	100%	100%	100%		100%	100%	100%
*Failures in terms of Samples	Total	9160	2754										
	Nr of failures	52	119										
	Failure %	6.79%	48.94%										
	Nr reported	52	119										
	Reported % of failure	100 %	100 %										
**Failures in terms of Sites	Total	2899	2146										
	Nr of failures	47	106										
	Failure %	19.39%	58.33%										
	Nr reported	47	106										
	Reported % of failure	100 %	100 %										

*Samples failures not reported in terms of number of samples. **The entire Water Distribution System is reported on as one site.

C5. Water conservation and demand management

The 'Regulations relating to compulsory national standards and measures to conserve water', requires in section 10 (2) (g), that the water services authority should report on water conservation and demand management, including at least:

- (i) the results of the water balance as set out in regulation 11;
- (ii) the total quantity of water unaccounted for
- (iii) the demand management activities undertaken; and
- (iv) the progress made in the installation of water efficient devices

Items (i) and (ii) above has been addressed as part of Section C1 of this report.

The Department is applying the resources required to implement water demand management interventions, including: (a) reduction of high pressure, minimum night flow for residential consumers, (b) education programmes, (c) plumbing leak and meter repair programmes, (d) pipe replacement, treated effluent re-use, water restrictions and stepped tariffs.

The City of Cape Town has already started implementing the water balance as per the International Water Association (IWA standard). CCT is in the process of defining various District Metered Areas (DMA's). Once the proposed DMA's have been finalised and implemented, the water balance model will be rolled down to the zone (DMA) level.

Water demand management is an essential core requirement for sustainability of water supply to the City. In circumstance where water consumption is controlled to the levels expected in the Water Conservation and Water Demand Management strategy, deferment of the next water resource scheme to approximately 2022 can be achieved.

The department utilizes the internet as an additional tool to promote the saving of water: [Keep Saving Water link](#)

Table C5: Overview of water conservation and demand management activities

WS DP Ref. #	Regulations Ref. #	Description	Urban Settlements						Rural Settlements					
			Year 2016		Year 2015		Year - 2014		Year 2016		Year 2015		Year - 2014	
			FY2015/16		FY2014/15		FY2013/14		FY2015/1 6		FY2014/1 5		FY2013/ 14	
7.1. 1	10.2.g.iii	REDUCING UNACCOUNTED FOR WATER AND WATER INEFFICIENCIES												
		Number of customers where the following activities have been pursued:	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total
7.1. 1.1		Night flow metering	>50-		>50-		-				n/a		n/a	
7.1. 1.2		Day flow metering	>50		>50-		-				n/a		n/a	
7.1. 1.3		Reticulation leaks fixed on connections	30890		33 133		36 96 8				n/a		n/a	
7.1. 1.4		Illegal connections formalized	-		-						n/a		n/a	
7.1. 1.5		Un-metered connections, metered	647 666		21 000		21 00 0				n/a		n/a	
7.1. 2	10.2.g.iii	*REDUCING HIGH PRESSURES FOR RESIDENTIAL CONSUMERS												
		Number of residential consumers with water supply pressure of:	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total
7.1. 2.1		≤ 300 kPa (30m)	80700	11%	206	0.03%	0	0%			n/a	0%	n/a	0%
7.1. 2.2		>300 kPa(30m) ≤ 600kPa (60m)	523097	72%	563 113	78.63 %	0	0%			n/a	0%	n/a	0%
7.1. 2.3		>600 kPa (60m) ≤ 900 kPa(90m)	117200	16%	151 234	21.12 %	0	0%			n/a	0%	n/a	0%
7.1. 2.4	10.2.b.iii	> 900 kPa(90m)	6200	0.9%	1 627	0.23%	0	0%			n/a	0%	n/a	0%
7.1. 3	10.2.g.iii	LEAK AND METER REPAIR PROGRAMMES												
		Number of consumer units targeted by:	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total
7.1. 3.1		Leak repair assistance programme (WMD)	24997	-	32 11 1	-	17 98 9	n/a			-		-	
7.1. 3.2	10.2.g.iv	Retro-fitting of water inefficient toilets WDM	250 (It has been delayed due to SCM process)	-	25 0	-	0	0%			-	0%	-	0%
7.1. 3.3		Meter repair programme USPC	14058 (increase for 2015/16 as		6 45 3		5 65 6							

			a result of more services orders issued											
7.1.4	10.2.g.iii	CONSUMER / END-USE DEMAND MANAGEMENT: PUBLIC INFO AND EDUCATION PROGRAMMES												
7.1.4.1	No. schools targeted by education programmes	184		420					-		-			
7.1.4.2	No consumers (people) targeted by public information programmes	-		-		-		-		-				

The following table shows projects in more detail and over a longer implementation period for the programme as a whole.

Table C5.1: Summary of Interventions implemented and associated impact (million m³/annum)

Intervention	2015/16	2014/15	2013/14	2012/13	2011/12	Cumulative
	FY2016	FY2015	FY2014	FY2013	FY2012	
Pressure Management Areas	8.24	6.73	5.79	3.55	2.91	27.22
Plumstead/ Retreat	0.96	0.96	0.96	0.96	0.96	4.8
Marina Da Gama	0.33	0.33	0.33	0.33	0.33	1.65
Grassy Park	1.07	1.07	1.07	1.07	1.07	5.35
Bishop Lavis	0.55	0.55	0.55	0.55	0.55	2.75
Thornton	0.53	0.53	0.53	0.53		2.12
Kalkfontein	0.11	0.11	0.11	0.11		0.44
Melkbos	0.88	0.88	0.88			2.64
Brakloof	0.31	0.31	0.31			0.93
Dennehoek	0.15	0.15	0.15			0.45
Mountainside	0.65	0.65	0.65			1.95
Lynns View	0.18	0.18	0.18			0.54
Pelican Park	0.07	0.07	0.07			0.21
Ottery	0.11	0.11				0.22
Bothasig	0.40	0.40				0.8
Jagtershof	0.02	0.02				0.04
Kenridge	0.00	0.00				0
Harrington	0.03	0.03				0.06
Princess	0.04	0.04				0.08
New Horizons	0.06	0.06				0.12
Park Rd	0.05	0.05				0.1
Altydgedacht	0.01	0.01				0.02
Vredekloof	0.01	0.01				0.02
Kenridge	0.01	0.01				0.02
Lochner St/Owen Rd	0.06	0.06				0.12
Greenfield/Silverhurst	0.06	0.06				0.12
Melkbos	0.04	0.04				0.08
Helderzicht/De Beers Av	0.02	0.02				0.04
Firgrove	0.02	0.02				0.04
Sunningdale	0.92					0.92
Imhoff's Gift	0.03					0.03
Wynberg 3 Zone B	0.01					0.01
Vrygrond	0.23					0.23
Masiphumelele	0.14					0.14
Therina	0.04					0.04
Helderzicht	0.13					0.13
Silverboom	0.01					0.01
Potable Water Offset (conservative estimate)	5.81	5.44	5.52	5.68	5.2	27.65
Estimated Savings based on reduced burst rate	0	0.21	0.03	0.25	0.79	1.28
Citywide leak repair on leadings, meters, sluices, valves	2.84	3.89	4.59	3.58	2.29	17.19
Other						
No. Meters Replaced/ re-fixed/relocated	7 131	6 453	5 656	5 450	8 272	20 175
No. Water Management Devices Installed	24 997	31 11	17 989	7 468	17 556	68 010
No. Repairs on connections	30 890	33 133	36 968	28 933	27 203	157 127

Table C5.2 below reflects the continued planned investment in demand management activities in order to reduce the level of non-revenue water

Table C5.2: Further Capital Investment allocated to demand management activities

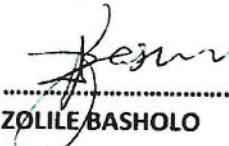
Project Description	FY2018 (R'000)	FY2019 (R'000)	FY2020 (R'000)	FY2021 (R'000)	FY2022 R'000)
Treated Effluent	R 20 000	R 20 000	R 25 000	R 35 800	R25 000
Pressure Management	R 20 000	R 23 430	R 15 000	R 40 700	R15 000
Zone Metering & Valves	R 4 760	R 0	R 0	R 0	R0
Water Meters New Connections	R 20 500	R 24 000	R 23 000	R 23 000	R18 000
Meter Replacement Programme	R 190 000	R 190 000	R190 000	R 231 000	R 230 000
Replace & Upgrade Water Network (City Wide)	R 11 260	R 22 639	R 50 000	R 63 900	R 85 000
	R 266 520	R 302 708	R 353 000	R 394 400	R 373 000

Section D: Approval and Publication Record

- D1. This Annual Water Services Development Plan Performance- and Water Services Audit Report for the Financial Year ending June 2016 is hereby approved for submission to the Minister of the Department of Water and Sanitation, the Minister for Department of Cooperative Governance, the Province and to SALGA, as required by the Water Services Act, 1997.
- D2. The municipality endeavours to summarise this report on the Department's website at <http://www.capetown.gov.za/water>.
- D3. This report will be available for inspection at the offices of the municipality as of 1 February 2017 and is available as a downloadable file on the Department's website. A printed copy is obtainable against payment of a nominal fee of R 425.15 (incl. VAT), collectable from the Water and Sanitation office at Durbanville municipal building.

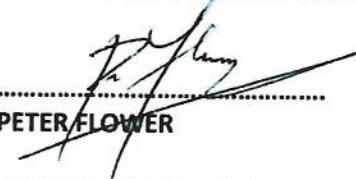
RECOMMENDED BY:

Manager: Water Demand Management & Strategy


..... Date 04/11/2016
ZOLILE BASHOLO

APPROVED BY:

Director: Water and Sanitation


..... Date 2016-11-07
PETER FLOWER

RECOMMENDED BY:

Executive Director: Utility Services


..... Date 7 November 2016
GISELA KAISER

APPROVED BY:

City Manager: City of Cape Town


..... Date 09.11.2016
ACHMAT EBRAHIM