



# **WATER SERVICES DEVELOPMENT PLAN (WSDP)**

**FOR**

**THE CITY OF CAPE TOWN  
2010/11 – 2013/14**

## **EXECUTIVE SUMMARY**

*The guiding document for the service is the WSDP of which this is the Executive Summary and which is updated annually. It is a product of the current IDP process and will become a Sector Plan of the IDP 2010/11 document.*

FINAL 1.5

16 April 2010

## C. EXECUTIVE SUMMARY

### Introduction

The Water and Sanitation Department has made significant progress in the provision of services since the formation of one City administration for Cape Town (CCT), but some critical challenges remain, as summarised below.

Institutional arrangements and strategies have been put in place to overcome the challenges and to meet key policy as well as legislative requirements. Progress on the objectives as set out in DWA's critical policy document, the National Strategic Framework for Water Services (September 2003), are measured in Table 1:

**TABLE 1: Water and sanitation service provision achievements for the City of Cape Town measured against DWA National Strategic Framework**

<b>1. All people are to have access to functioning basic water supply by 2008: Achieved in CCT in 2005/06</b>						
OBJECTIVE	Performance Indicators	Actuals		Target 30-Jun-09	Change	
		30-Jun-08	30-Jun-09		Year-on-year	Actual-to-target
<b>(a) Access to basic level of water</b>						
(i) % of households	-	100.0%	100.0%	100.0%	0.0%	0.0%
(ii) % of poor households	-	100.0%	100.0%	100.0%	0.0%	0.0%
<b>2. All people are to have access to effective basic sanitation by 2010: CCT is aiming for 2013/14 due the magnitude of the requirement</b>						
OBJECTIVE	Performance Indicators	Actuals		Target 30-Jun-09	Change	
		30-Jun-08	30-Jun-09		Year-on-year	Actual-to-target
<b>(a) Access to basic levels of sanitation</b>						
(i) % of households	↑	97.1%	100.0%	97.5%	3.0%	2.6%
(ii) % of poor households	↑	92.5%	100.0%	89.7%	8.1%	11.5%
<b>(b). Informal households ratios</b>						
(i) The number of informal households		116 883	116 883	<i>best estimate as from 1 July 2009 is 142 783</i>		
(ii) Households-to-working taps	↑	11.5	10.8	11.7	6.5%	8.3%
(iii) Households-to-working toilets	↑	6.4	4.7	6.6	36.2%	40.4%
(iv) Approximate number of working taps	↑	10 188	10 768	9 061	5.7%	18.8%
(v) Approximate number of working toilets	↑	18 280	24 594	16 234	34.5%	51.5%
<b>3. Investment in water services infrastructure should total &gt;0.75% of GDP</b>						
OBJECTIVE	Performance Indicators	Actuals		Target 30-Jun-09	Change	
		30-Jun-08	30-Jun-09		Year-on-year	Actual-to-target
<b>(a) Level of investment</b>						
(i) CCT's GDP (R'bn) - at basic prices (2007)		219.26	219.26			
(ii) Water and Sanitation actual capital expenditure (R'm)		475.90	696.94	100.0%		
(iii) Capital investment as % of GDP	↓	0.22%	0.32%	0.75%	46.4%	-57.6%

Source: GDP figures were provided by the Department of Economic Development. The Department of Economic Development sourced the numbers from Quantec's Western Cape Macro-economic Outlook Report

To ensure and to measure the level of progress, internal service level targets for the City of Cape Town had also been set:

- The target for providing access to basic water supply in the CCT was met in 2005/06 with further taps being installed to reduce the Household-to-Tap ratio, hence access to basic water supply exceeds 100%.
- By 2010, about 70% of CCT's population were to have access to basic sanitation services. This target has already been exceeded in 2007/08. By June 2009 this figure has reached 100% coverage, based on the minimum standard of at least 1 toilet per 5 households.

### Vision

TO BE A BEACON IN AFRICA FOR THE PROVISION OF WATER AND SANITATION SERVICES

## Mission Statement

WE PLEDGE TO ACHIEVE OUR VISION BY CREATING A CENTRE OF EXCELLENCE IN WATER AND SANITATION DEPARTMENT THROUGH:

- ✓ Optimizing resources
- ✓ Implementing environmentally-sustainable interventions
- ✓ Continuous improvement and knowledge management
- ✓ Good governance
- ✓ Customer satisfaction and good stakeholder relationships

## Values

- ✓ **Integrity:** We maintain the highest level of ethics and fairness in our interaction with each other, our customers and other stakeholders.
- ✓ **Respect:** We respect all our employees, customers and stakeholders. We have the highest regard for the dignity of all people.
- ✓ **Customer focus:** We meet customers' needs by providing excellent service, optimal product performance and efficient support system.
- ✓ **Trust:** Our business model is based on trust and integrity as perceived by our stakeholders and customers.
- ✓ **Transparency:** We operate safely, openly, honestly and with care for the environment and the community.
- ✓ **Professional:** We encourage innovation, teamwork and openness among our employees and reward performance excellence.

## STRATEGIC OBJECTIVES

- To implement ISO 9001 for all our services in the next five years(2015/16);
- To achieve Green Drop status for 60% of the waste water treatment plants by(2015/16);
- To achieve 95% waste water effluent quality;
- To ensure the presence and dominance in Africa of the water, wastewater and air pollution testing services;
- To reduce unaccounted for water to 15% in the next five years;
- To provide basic or emergency sanitation services to all residents of Cape town City by 2015/16;
- To provide basic water to all residents in the city by 2015/16;
- To increase productivity levels by 15% by 2015/16;
- To achieve 90% customer satisfaction levels in all our services by 2015/16;
- To establish an efficient and effective asset management program for the Department 2011/12;
- To be the reference City for water matters in the country;
- To grow the training school and achieve SETA accreditation for the training modules(eg process controllers, artisans) by 2012/13;
- To minimise river systems pollution by reducing sewage overflows by 20% by 2015/16;

- To improve revenue collection to 96% by 2015/16;
- To construct an office block for the department by 2015/16;
- To be information efficient by 2012/13;
- To improve security of supply for water systems to 120% of average demand by 2016/17 in all areas;
- To increase the effluent re-use by 15% in 2015/16;
- To roll out automation and remote control pilots on treatments and pump stations.

### **Critical challenges**

Cape Town Water Services faces a number of critical challenges which can be clustered into four categories:

- (a) Financial perspective
  - a. Sustainability of the service
  - b. Cost recovery
  - c. High financial requirements
  - d. High debt due to non-payment
- (b) Customer perspective
  - a. Provide basic services expansion
  - b. Eradicate sanitation backlogs
  - c. Provide affordable service
- (c) Business process perspective
  - a. Achieve water demand targets through intensified WDM strategy
  - b. Meet wastewater effluent standards
  - c. Provide infrastructure to meet City development/growth needs
  - d. Maintenance of infrastructure to sustain operation
- (d) Organisation and Learning perspective (internal)
  - a. Establish effective institutional arrangement
  - b. Sufficient staff resourcing, skills retention and development
  - c. Increase performance and efficiency

The strategies to face these challenges are dealt with where appropriate under the following sections.

## **C.1 ESSENTIAL QUESTIONS**

### **C.1.1 What is the backlog of water services?**

The majority of Cape Town's population, both in formal and informal settlements, receives service levels that generally meet the National minimum standards as required by the Water Services Act 108 (of 1997). As shown in Table 1, at the minimum standard of at most 5 households per toilet on average, all households can be expected to have access to a service point. The % households with access to sanitation as monitored on a quarterly basis along with other Key Performance Indicators for the Departmental Scorecard, exceeded 100% at June 2009.

At 31 June 2009, 4.7 informal households shared one toilet. Table 1 shows the large number of toilets installed during the 2008/09 financial year which made this possible. The growing density in many informal settlements constrains Water and Sanitation's ability to adequately provide further sanitation services.

However it is acknowledged that many of the toilet types cannot comfortably sustain use by more than 3 households while others work best for only 1 household. Taking these variable servicing ratios and the variation in density of service points from settlement to settlement into account, it is estimated that approximately 36 000 households need to be serviced better with the addition of up to 6 500 toilets.

At 31 June 2009, 10.8 informal households shared a tap. The maximum ratio is 25 informal households per tap (a standard set by the City of Cape Town).

The maintenance of these temporary services often carry high maintenance cost due to frequent cleaning and frequent repair or replacement due to vandalism. It is not financially sustainable and requires a National initiative or at the very least an order of magnitude improvement in the level of funding from the Equitable Share grant. The cost of these services is to a large extent being subsidised by the formal sector.

### **C.1.2 What is the status of supply to higher levels of service?**

Service levels to all formal developed areas are, as far as can be determined, at the highest level of service: a flush toilet and water connection in-house or on-site.

### **C1.3 Cost of eradicating backlogs**

To eradicate the sanitation backlog and service the influx in informal settlements, the programme to service Informal Settlements originally started by the City's Housing Department to support the City's Housing Development programme, has been taken over by the Water and Sanitation Department to great success.

The total capital requirement over the 5 years from 2009/10 to 2013/14 of the informal settlements servicing programme is estimated at R236 million of which 53% needs to be directed to the replacement of buckets, 29% to sanitation backlog eradication and 18% to cater for in-migration (influx).

The City's Housing programme is funded through National grants. Servicing of the informal settlements is funded by the Water and Sanitation department with partial recovery of cost from the national Equitable Share. Depending on the speed of implementing this programme, as for in-situ upgrading or the "decanting" of such settlements to developed formal areas, the informal settlement programme needs to adapt.

#### **C1.4 What is the strategy to eradicate backlogs?**

Up to and including 2009, the strategy has been to provide a basic level of service such that at most 5 informal households on average share one toilet. This target has now been achieved with a ratio of 4.7 households per toilet by June 2009. The strategy has been intensified during 2010 to achieve the minimum ratio for each type of toilet. For example, some toilet types can only sustainably support 1 household each, while others can service more.

Water and Sanitation Services are ideally opting for dehydration or flush toilets. A promising new prefabricated unit which can serve up to 17 households is being piloted. The use of pour-flush alternative technology is being discontinued due to operational problems. “Greenfields” housing projects are undertaken by the Housing Department to receive residents moved from land that cannot be developed.

The City subscribes to “the water ladder” concept (as proposed in DWA’s “Strategic Framework for Water Services, September 2003”). So while the City’s priority is to first provide an emergency level of service to all households in all settlements, it is also extending the coverage and density of services in each settlement beyond the basic level as funds allow.

**TABLE C1.4: Profile of all consumers**

	Consumers with:		No of households
1	Bucket system (Informal settlements)		3 915
2	Consumer installations: Wet (Septic tank, digester or tanker desludge or effluent discharge to an oxidation pond at Works. Also pitliners, chemical toilets, container toilets or porta-potties)		66 688
	Consumer installations: Dry (including VIP toilets, Urine Diversion, composting systems)		918
3	Intermediate or Full waterborne (Informal Settlements)		28 855
4	Full waterborne (Formal developments)		759 496
5	<b>Total serviced</b>		<b>859 872</b>
6	Total population		902 279

## **C1.5 What is the status of all water infrastructure?**

The existing infrastructure condition, particularly the sewer system, is deteriorating due to under-provision for essential maintenance/ replacement of aging infrastructure over several years in the past. Major pipe collapses have occurred over the past years where such pipes are in urgent need of extensive repair or even replacement.

Increased investment during 2008/09 on water and sewer reticulation replacement (12km of sewer mains and 46km of water mains) has led to an approximate 10% reduction in both sewer blockages and water main bursts. Sustained financing to enable such Asset Management programmes will be required to keep the services operating at current levels.

The replacement cost of the water and wastewater pipe network (2008/09 values) is estimated at R19.5 billion. If all other plants, works, dams, reservoirs and pump stations are included, the figure is R27.1 billion.

Key components of existing infrastructure in rapidly-developing regions of the City do operate at peak level during periods of high demand. Capacity improvements will be required to enable development.

The bulk water system in the northern areas of the City is under increasing stress during peak periods due to the rapid growth in that area.

### **C.1.6 Effective management**

The Bulk Water branch previously set the standard by achieving full ISO certification on ISO 9001:2000 and thereafter maintaining it as certified by independent audits. This certification was lost due to a minor technicality which is being addressed.

There is also an ISO certification evaluation being undertaken to quantify the status quo, define standard operating procedures and prepare for the ultimate achievement of ISO certification across the department.

This, together with the ISO 14001 of Wastewater Treatment and the Risk Management programmes being implemented, will ensure quality and minimise risks.

Scientific Services have embarked on a plan to achieve the ISO 17025 certification by 2010/11: a legal requirement for testing and calibration of the laboratory. Standard Operating Procedures (SOP's) have been defined and a process of auditing and refinement has commenced. In the meantime, national inter-laboratory comparisons where the lab is consistently scoring in the top 5 ensures that standards are raised and maintained.

The following areas are receiving focused attention;

- Integration of Information Management Systems through development of a Data Integration and Monitoring System.
- Integration and standardisation of Automation control and monitoring of plants via Scada-telemetry.
- GIS geodatabase development for effective management and planning of the infrastructure.
- Water quality management through the Laboratory Information Management System (LIMS) .
- Maintenance and life-cycle of equipment.
- Capacity building and training of staff.
- Testing the viability of Automatic Metering Reading of consumer meters (AMR): the Pilot installation on 1 900 consumer meters was finalised and tested during 2009 and a recommendation report will be published in 2010.
- An Integrated Asset Management Plan is being developed on a coordinated basis across directorates in the City, based on establishing an accurate infrastructure asset register, geodatabase and master data.
- Integrated Risk Management.

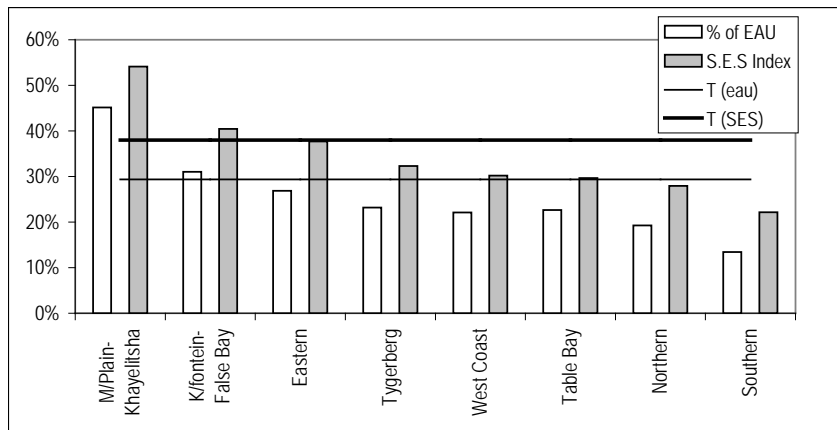
## C.2 WATER SERVICES BUSINESS ELEMENT SUMMARY

### C.2.1 Socio-economic profile

#### Situation Assessment

At present the population of the CCT is estimated at 3,6 million. The City's population growth rate is expected to decline because of HIV/AIDS. It is estimated that the previous growth rate of 2.6% will reduce to 1.2% by 2010. Approximately 30% of households (almost 1 million people) in Cape Town live in inadequate housing and depressed physical environments.

**Figure C.2.1: The Socio-Economic Status Index profile of Cape Town, by Health Department districts**



Notes:

% of EAU - % of economically active unemployed

S.E.S - Socio-Economic Status Index

T (eau) - Total of unemployed = 29.38%

T (SES) - Total S.E.S

% of economically active unemployed		Socio-Economic Status Index (S.E.S)	
M/Plain-Khayelitsha	45.16%	M/Plain-Khayelitsha	54.12%
K/fontein-False Bay	31.05%	K/fontein-False Bay	40.43%
Eastern	26.85%	Eastern	37.71%
Tygerberg	23.19%	Tygerberg	32.28%
West Coast	22.11%	West Coast	30.22%
Table Bay	22.67%	Table Bay	29.67%
Northern	19.26%	Northern	27.94%
Southern	13.43%	Southern	22.16%
<b>AVERAGE</b>	<b>29.38%</b>	<b>AVERAGE</b>	<b>37.97%</b>

Source: Strategic Development Information and GIS Department

Figure C.2.1 shows Cape Town's socio-economic status (S.E.S) index, a tool used to measure social and economic well-being. It incorporates the following indicators: (a) the % of households earnings less than R19 200 per annum (2001), (b) the % of adults (20+ years) with the highest educational level below matric, (c) the % of the economically active population that was employed, and (d) the % of the labour force employed in elementary/unskilled occupations.

The Mitchell's Plain/Khayelitsha Health Department district has the highest score at the index level of 54.12 (worst off), while the Southern Health district has the lowest at 22.16 (best off). According to the Planning District's Socio-Economic Analysis Report of 2007, programmes to change poor socio-economic status should focus on districts which are "worst off" in terms of the S.E.S index.

## **Future trends, strategic gaps and implementation strategies**

### **Strategic gaps:**

There is a need for national guidelines on the provision of water and sanitation in the informal settlements but also to additional dwellings in backyards, for the want of which the the City has developed its own.

Water and Sanitation Services aim to provide an affordable service to poor households. A free basic service is provided, in the form of the first 6 kℓ/month water supply and the first 4,2kℓ of sewerage conveyance and treatment free of charge to all consumers per month.

The City's Indigent policy allows for a R30 grant in account reduction per month to qualifying ratepayers. Approximately 248 000 formal households currently qualify based on a property value less than R199 000 (2006 General Valuation).

The Water Demand Management Integrated Leaks Repair Projects, initiated at the end of 2005 and rolled out on a phased basis since then, are major initiatives to ensure that these household's plumbing leaks are minimized and hence ensure that monthly bills for these services become affordable.

With the implementation of a policy to install Water Management Devices on a prioritised basis, households defined as indigent now have a mechanism to prevent water consumption reaching unaffordable levels and also prevents leaks causing high water losses. It is being installed across a range of households income groups to the same end goal. More than 40 000 have been installed as at the end of 2009.

In order to improve and maintain the condition of the infrastructure, there will be pressure on tariffs to increase at or above inflation over the short- to medium-term. This coupled with the extraordinary burden of very high national electricity tariff increases, is making it extremely difficult for the City to address all needs.

## C2.2 Service level profile

### Situation Assessment

The City of Cape Town has approximately 902 279 households of which 785 396 (including approximately 150 000 backyard dwellers) are on formal erven and 116 883 households on informal sites (although mid 2009 estimates have indicated the figure to likely be nearer to 142 783, to be verified). According to the City's billing systems (SAP), there are 604 248 registered water consumers with another 242 external to the City boundary, bringing the total of registered consumer units to 604 490 (refer to TABLE C2.2a).

**TABLE C2.2a: Demographics and Customer Profile**

	<u>As at 2009</u>
Population	3,572,221
Households	902,279
<b>Household categories</b>	
Formal including 150,000 backyard households	785,396
Informal	<u>116,883</u>
<b>CCT Consumer units</b>	
Commercial	12,537
Government	278
Industrial	4,205
Miscellaneous	5,547
School-Sportfields	1,447
Domestic Cluster	6,968
Domestic single residential	563,297
Departmental Cluster	2,970
Municipal Water	<u>6,999</u>
	604,248
<b>External consumer units</b>	
Bulk	<u>242</u>
<b>Total consumer units</b>	604,490

Source of Consumer Unit breakdown: Billing system (SAP)

Water and sanitation services cover 100% of the City's population, subject to the explanation on level of basic sanitation service described earlier.

The formal households all have a metered water connection to the house or yard, with almost all households (excepting a few with septic tank facilities) having flush sanitation on site. The first 6 kilolitres of water per month are supplied at no charge (free basic). Informal areas have communal standpipes and water is provided free.

## **Future Trends and goals**

### **Residential consumer units**

**Grey water management:** Testing of appropriate solutions to grey water run-off in each informal settlement is continually being implemented. Wherever collection conduits are available, communal standpipes are equipped with catchpits and gullies in order to prevent ponding.

**Public institutions and 'dry' industries; wet industries; industrial consumer units:** all have connections on-site.

### **Strategic gaps**

- Though the 2011/12 target in terms of a basic sanitation to all at a service ratio of 5 households per toilet in informal settlements has been surpassed, there remains a gap for convenient sanitation to be covered of around 40 000 households.
- With respect to the effluent discharged from Industrial sites, non-complying and polluting trade effluent occasionally impacts heavily on the wastewater treatment process serving the catchment. The size and efficiency of the inspectorate has been increased over the past few years, while Water, Sanitation and Effluent By-laws have been consolidated and rewritten for the City. Nevertheless the challenge to obtain cooperation from consumers remains high.

### **Implementation strategies**

- Residential consumer units: Water & Sanitation's informal settlement programme aims to eradicate the sanitation backlogs and maintain a minimum level of service to poor households.
- Industrial consumer units: The inspectorate is using an engaging, cooperative approach with consumers, more comprehensive integrated by-laws as well as more frequent inspections and measurements to improve the quality of industrial effluent, prevent pollution in a pro-active manner and reduce water wastage.

## C2.3 Water resource profile

### Situation Assessment

#### The Western Cape Water Supply System

The Western Cape Water Supply System (WCWSS), comprising raw water storage and conveyance infrastructure, supplies water to Cape Town, surrounding towns and urban areas and agriculture. The various components of the WCWSS are owned and operated by the CCT, DWA and Eskom.

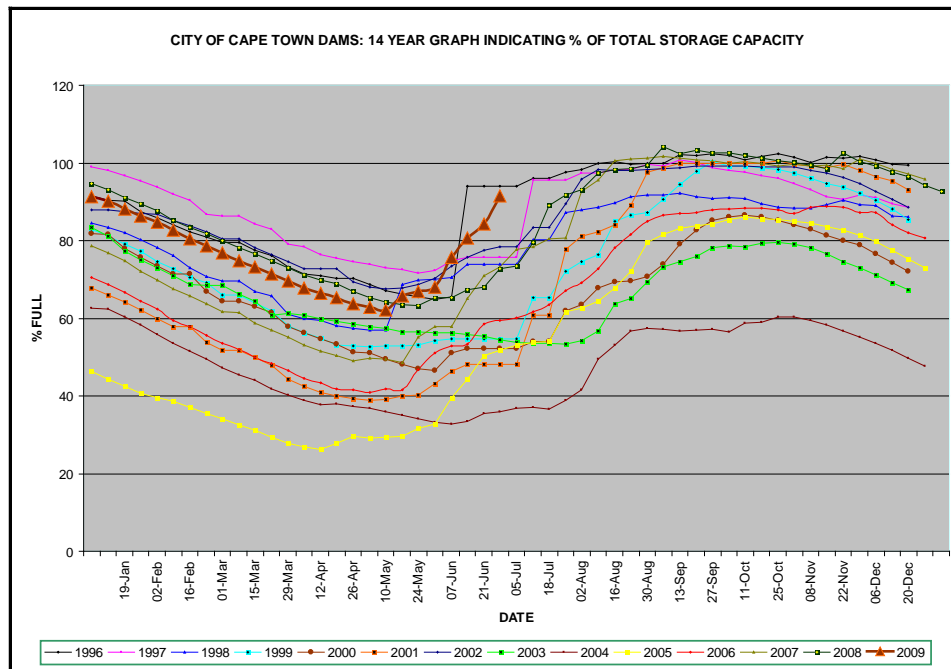
The CCT and DWA operate the WCWSS in an integrated manner to ensure that the storage of water is maximized during current and future hydrological years.

The annual yield of the WCWSS, including the recently completed Berg River scheme, is 556 million m<sup>3</sup> per annum.

The major raw water supply schemes of the WCWSS are the Riviersonderend, Voelvllei and Berg River Schemes, owned and operated by the DWA, and the Wemmershoek and Steenbras Schemes, owned and operated by the City of Cape Town. The total storage capacity of the six dams of these major supply schemes is 898 million m<sup>3</sup>. The total storage of the six major dams on 29 June 2009 was 822 million m<sup>3</sup>, or 91.6% of total storage capacity.

The longer-term 13 year record is as depicted in figure C2.3a. The 2009 trend is plotted in bold.

Figure C2.3a



## Water Resources Supplying Cape Town

The CCT's allocation of water from the WCWSS, with the additional yield of the Berg River scheme, is 398 million m<sup>3</sup> per annum. Including the Berg River scheme, the CCT obtains 74% of its allocated water from DWAF owned sources, with the balance of 27% from CCT owned sources. The resources supplying the CCT and its allocation from these resources are shown in Table C 2.3a.

The CCT produced 326 million m<sup>3</sup> of potable water during the 2008/09 financial year.

## Water returned to the resource

The CCT obtains most of its raw water from mountainous catchments outside of its municipal area, and therefore most of the CCT's treated wastewater effluent is not returned to the raw water resource. A percentage of the effluent produced at the Westfleur Treatment Works at Atlantis is used to artificially recharge the aquifer from which water was abstracted for potable supply as part of the Atlantis Water Supply Scheme.

**TABLE C 2.3a Cape Town's allocation from the WCWSS**

	<i>Million m<sup>3</sup>/annum</i>	<i>% of Total</i>
<b>DWAF Owned Schemes</b>		
Theewaterskloof	118	29.6%
Voelvllei	70.4	17.7%
Palmiet	22.5	5.6%
Berg River	81	20.3%
<b>Subtotal DWAF Schemes</b>	<b>291.9</b>	<b>73.2%</b>
<b>CCT Owned Schemes</b>		
Wemmershoek	54	13.5%
Steenbras	40	10.0%
Lewis Gay and Kleinplaas Dams	1.8	0.5%
Land en Zeezicht Dam	1	0.3%
Table Mountain Dams	3.5	0.9%
Albion Springs	1.5	0.4%
Atlantis Groundwater Scheme	5	1.3%
<b>Subtotal CCT Schemes</b>	<b>106.8</b>	<b>26.8%</b>
<b>TOTAL ALLOCATION</b>	<b>398.7</b>	

## Quality of water

The quality of water produced at the CCT's water treatment plants is strictly monitored on a continual basis to ensure compliance with the South African National Standard 241:2005 on drinking water quality. The Scientific Services Branch conducts routine sampling and analysis of potable water produced at all water treatment plants, as well as inspection of treatment processes.

**TABLE C.2.3b: CCT Compliance with SANS 241:2005**

Month	Chemical %		12 month rolling ave		Micro %
	CLASS I	CLASSII	CLASS I	CLASSII	
Jul-08	93	100	95	100	100
Aug-08	96	100	95	100	100
Sep-08	94	100	95	100	100
Oct-08	96	100	96	100	100
Nov-08	98	100	96	100	100
Dec-08	98	100	96	100	99
Jan-09	98	100	96	100	100
Feb-09	96	100	96	100	100
Mar-09	98	100	97	100	100
Apr-09	98	100	97	100	100
May-09	98	100	97	100	98
Jun-09	97	100	97	100	99

Source: Scientific Services monthly reports

The values in Table C.2.3b are reported for samples from the distribution network. In terms of SANS 241/2005, the quality of the water produced is classified as excellent.

## Future Trends and Goals

Cape Town and the surrounding region continues to experience both economic and population growth, with an associated growth in the demand for water. The challenge to the water sector is therefore to ensure that future supply can continue to meet the growing demand for water in the region.

The DWA and CCT in 2007 completed the WCWSS Reconciliation Strategy, a strategic planning study conducted to ensure that future supply and demand for water could be reconciled.

The Study looked at issues such as probable demand growth, available supply, water conservation and demand management and potential supply augmentation schemes. The outcome of the Study was a Strategy to be followed to ensure the reconciliation of future supply and demand for water. The Strategy included recommendations on interventions to be implemented and potential interventions (schemes) to be studied further so that sufficient information would be available to consider options and select appropriate interventions to implement and be operational when required.

The CCT is currently implementing its Ten Year Water Demand Management Strategy to reduce the rate of demand growth and to ensure that existing water resources and infrastructure are utilized efficiently.

Schemes that are being considered for future implementation to increase the supply capacity of the WCWSS include river diversion, dam height raising, groundwater abstraction, water re-use and sea water desalination schemes.

The WCWSS Reconciliation Strategy is being further developed and updated on an ongoing basis. The implementation and development of the Strategy is overseen by a Steering Committee, comprising representatives from DWA, users of water in the region including the CCT, other municipalities and the agriculture sector, and stakeholders from the water and related sectors.

## Strategic gap analysis

The WCWSS Reconciliation Strategy included recommendations of interventions that needed to be implemented or studied further to ensure that potential schemes could be implemented in future when required. Table C2.3c summarises these interventions being implemented or studied further.

**Table C 2.3c: Interventions to be implemented or studied further**

Intervention	Study Level Required	Responsibility
<b>Existing Feasibility Studies in Progress</b>		
Water Demand Management	Intervention to be implemented	CCT
TMG Aquifer Feasibility Study	Feasibility	CCT
Pilot Desalination Plant	Feasibility	CCT
TMG Regional Monitoring	Monitoring	DWA
Invasive alien plant clearance	Ongoing	DWA
Voelplei Phase 1	Update feasibility	DWA
Mitchell's Pass Diversion	Pre-feasibility/feasibility	DWA
Upper Wit River Diversion	Pre-feasibility	DWA
Raising Steenbras Lower Dam	Pre-feasibility	DWA
Upper Molenaars Diversion	Pre-feasibility	DWA
Water Re-use	Pre-feasibility	DWA/CCT

<b>Future Studies Required</b>		
Newlands Aquifer	Pre-feasibility	CCT
Cape Flats Aquifer	Feasibility	CCT
Lourens River Diversion Scheme	Pre-feasibility	CCT

## **C2.4 Water conservation and demand management**

### **Situation assessment**

#### **Water Demand Management Interventions**

The efficient use of scarce water resources for the City of Cape Town's growing needs and the aim to maximize on the use of existing infrastructure are critical factors that drive the Water Demand Management and Water Conservation Strategy.

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

### **Trends and goals**

#### **Water Demand Management Interventions**

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 2029 can be achieved.

In the last four years a number of successful WC/WDM projects were implemented of which notable projects were:

- the Mfuleni and Protea Park Integrated Leak Repair Projects,
- the Fixit Project,
- the education campaigns,
- treated effluent recycling,
- extensive rollout of individual consumer Water Demand Management Devices allowing full flow of a daily allocation based on at least 350 litres, set higher by agreement with the consumer. More than 40 000 such devices have been installed. Organised rejection of the devices in some communities have occurred but is being dealt with responsibly.
- and various pressure management projects with the most recent implemented October 2008 for Mitchell's Plain, the third largest such scheme in the world.

The focus on these projects has reduced non-revenue demand. In addition the consumer contracts for treated effluent re-use were rationalised to generate additional income. The targeted savings for the coming year are 19.5 Ml/day or 7.0 million m<sup>3</sup> per annum, which is approximately 2.7% of the demand from all consumers.

## Strategic gaps and goals

**TABLE C.2.4a: Strategic gaps**

Resources	Inadequate financial resources
	Inadequate human resources to implement WC/WDM strategy
	Water balance not developed to IWA standard.
Technical capacity and tools	Ineffective management information and monitoring systems
	Inadequate demand measurement systems and tools
	No detection programme in place to identify water leaks before they become bursts

The levels of demand reduction planned for to a levelling out at 0% growth has unfortunately not yet been reached, with a year-on-year growth in demand to June 2009 of 3.2% still occurring. If funding on WDM is not continually prioritised to enable the planned programmes, the factors of economic growth and consumer behaviour will outstrip the gains made.

### Implementation Strategy

The Water Conservation and Water Demand Management Strategy is being followed in order to budget for and implement several initiatives in parallel. An update of the strategy and a detail review of progress made will be undertaken in 2010.

Top priority are the rollout of further Water Demand Management Devices on a prioritised suburb-by-suburb basis.

Further pressure reduction schemes are being designed for implementation.

The Automated Meter Reading Pilot installation on consumer meters is being finalised and evaluated early in 2010. Decisions on future roll-out options City-wide will follow and be considered for future budgets on a priority basis. Advantages indicated by preliminary evaluation include:

- synchronised simultaneous reading for an entire suburb
- more reliable readings with far fewer estimations
- Immediate loss detection at a consumer
- Immediate knowledge of a meter failure or tampering
- the ability to analyse water balance and losses by individual supply zones

## C2.5 Water services Infrastructure profile

### Situation assessment

The financial “book” value of the water and sewer infrastructure stood at R2.6 billion at 30 June 2008. However, because of inflation price increases over many years since these services were installed, the current June 2009 replacement value is estimated at R27.1 billion, about 10 times greater.

**TABLE C.2.5a: Infrastructure of Water and Sanitation Services - Estimated Replacement cost**

Description	Asset Count	Repl Value (R M)	Annual Maint Norm	Annual Maint req, Bulk Water seperate(R M)
Bulk Water (including water pump stations, water retic and reservoirs)				68.9
Dams and Catchments	12 No	1 322.5	0.50%	6.7
Water Treatment Works	13 No	1 449.0	1% Civil, 4% Mech/Elec	30.2
Waste Water Treatment Works incl Sea Outfalls	23 No	2 014.4	1% Civil, 4% Mech/Elec	41.8
Water Reticulation (incl Bulk Lines) (length escalated from 2003)	10 438	12 896.0	1%	58.6
Sewer Reticulation (length escalated from 2003)	9 021	6 643.9	1%	59.0
Depots	21 No	83.4	0.50%	0.4
Water Pump Stations	108 No	445.6	0.5% Civil, 4% Mech/Elec	7.1
Sewer Pump Stations	377 No	403.3	0.5% Civil, 4% Mech/Elec	10.5
Reservoirs	138 No	1 799.1	0.50%	3.7
		<b>27 057.2</b>		<b>287.0</b>

The City’s water supply infrastructure has 11 dams, 12 water supply treatments works and a water supply reticulation network that is 10 400 kilometres long. There are 108 water pump stations, 138 water reservoirs and 21 depots. The wastewater infrastructure has 23 wastewater treatment works, a 9 000 kilometre sewer reticulation network, 377 sewer pump stations and 21 depots.

### Trends and goals

The water supply and wastewater reticulation networks jointly account for 72% of the total replacement value. The water distribution networks experienced 5 237 bursts to water mains in 2008/09 compared to 6 080 in 2007/08. A drop in sewer burst incidents from 91 779 to 87 087 were experienced.

The operation and maintenance of the networks improved significantly in 2008/09, due to the allocation of more funding:

- 45.8 km of water mains were replaced in 2008/09 compared to 19.7 km in the previous year;
- 11.9 km of sewer mains were replaced in 2008/09 compared to a low 746 m in the previous year.

## **Strategic gaps**

Historically, maintenance of infrastructure was mostly reactive. This is evidenced by the backlog of overdue maintenance and replacement projects.

There are areas where water and sewer infrastructure are severely stressed. The goal is to alleviate the overloading of infrastructure especially in growth areas, being mainly:

- West Coast / Parklands development corridor
- De Grendel / N7 development node
- Northern development/Fisantekraal corridor
- Bottelary development corridor
- Fast-track housing projects (e.g. N2 Gateway)
- Maccassar / AECl development node

The strong growth trend in the City is making it difficult to maintain a balance between requirements and available resources.

## **Implementation strategies**

The City has undertaken an accelerated programme to improve the replacement of water distribution network mains, especially in areas that experience a high incidence of bursts, such as the Tygerberg district. More importantly, Water and Sanitation Services is implementing an Asset Management Programme (AMP). This will ensure that:

- Assets are maintained proactively rather than reactively,
- The total asset lifecycle is managed to maximise life of asset,
- Maintenance work is effectively coordinated,
- Operational downtime is significantly reduced.

The strategies for ensuring that wastewater treatment capacity is maintained include:

- Integrate planning for new works and extensions with the other branches and ensure that additional wastewater treatment capacity is provided where needed at the right time,
- Provide sufficient funding (EFF and MIG funds) to address the backlog in WWTW capacity and provide for growth.

To ensure long term sustainability, Water and Sanitation Services is developing an Integrated Master Plan for completion by 2010. The objectives of the master planning process are:

- To balance demand and capacity, all water and sanitation branches will use the same base data, assumptions and design parameters to ensure consistency,
- Infrastructure plans within Water and Sanitation Services are fully aligned,
- Alignment with the City's Spatial planning and IDP strategies are achieved,
- To provide sound information on which capital budgets for future years can be improved, and
- The plan is kept up to date annually to ensure reliable planning based on it.

An automation, monitoring and technology programme is being driven in the department towards achieving maximum efficiency and optimum utilisation of staff resources in a “smart” way. To this end, cooperation has been pursued with leaders in the field such as the Norwegian Oslo Waterworks and the Danish Hydraulic Institute.

The following framework plan indicates progress and future plans as at the end of 2009.

**TABLE C.2.5b: Automation, monitoring and technology Framework plan**

ACTION	PROGRESS	TIMEFRAME	IMPLEMENTATION COST
Plant SCADA upgrades. (Bulk, Wastewater, Pump stations).	SCADA upgrades completed at Atlantis, Blackheath and Steenbras WTP. Software and partial commissioning at Wildevoelwei WWTW and Wemmershoek Dam WTW.  Contract has been awarded to develop a new master station for all reservoirs and pump stations, including the supply of RTU's. Also included is the development of data from the new telemetry system to the database that DIMS will harvest.	5 years (2014)	R10M for current Reticulation system phase. Full system scope being developed.
Bulk & Zone meter automation	Loggers on all Treated Effluent bulk meters complete.  Meter audit and logging of all Bulk Water Meters.  Loggers on 40 water zone meters complete. Further zones delineated (201) and	2008.   All Bulk Water meters logged by mid 2010.	R5M in 2008/09. Scope to be determined.

	zone meters installed.	All Water Zone meters logged by 2014.	
Customer meter automation	AMR pilot installation to be completed March 2010. Extensive testing undertaking in N2 Gateway, Sunset Beach and Epping Industria. Various technical, meter supply and process issues addressed. Evaluation report to follow.	AMR Phased rollout planned in priority areas. 20 year timeframe (2030) for entire City.	R1.5M pilot phase.  R500M for entire City excluding meter replacement.
Integrated Information System	DIMS development (Danish Hydraulic Institute) with major DWA grant far advanced. Integrates all major Water and Sanitation information systems, showing key information in browser map-based dashboards.  Server systems installed and cooperating with Corporate system.  Workshop to follow 18 Feb 2010.	Completion May 2010.	R7M (R5M DWA grant)
Integrated Master Planning	Integrated Master Planning project far advanced. Already able to address planning for development and budget needs for large parts of the City. User training, software rollout to all users as well as central server installation underway.	Handover Sep 2010.	R14.5M
Technical Operating Centre process	SAP-GIS Integration being implemented under control of SAP. Includes: GIS & SCADA	2010	R10M.

improvements	integration in SAP, C3 Notifications, Tetra Radio comms and spatial tracking, Mobile Asset Management.		
SCADA/Telemetry masterplan	Being developed.	2010	
Automated Water Analysis	Process lab Units already installed at 9 Bulk Water Depots.  Installation of 8 computers and Connectivity testing to be in March 2010.	Completion end March 2010.	R693 000
Air Quality Monitoring System  (Service provider to Health Dept.)	Tender to be awarded April 2010.	Completion June 2010.	R1M

The Data Integration and Monitoring System Project (DIMS) is being piloted on behalf of DWA, to be completed by May 2010. This will integrate various data real time monitoring sources including SCADA logged measurements. Also included will be summary information about the infrastructure or water and sanitation processes. Simultaneous integration of the separate SCADA systems at treatment plants and the addition of the dispersed Reticulation system (including Pump Stations) onto SCADA will be implemented over the next few years.

## C2.6 Water balance

### Situation assessment

Unaccounted for water (UAW) for the water supply system as a whole stood at a volume of 75 901 MI/annum in 2008/09, made up of 53 476MI/annum Reticulation Non-revenue demand and 22 425MI/annum Bulk Water Non-revenue demand – at unit costs of R6.80/kl and R2.59/kl respectively, this places the rand value of 2008/09 non-revenue water at R421.7 million. (See Table C.2.6a)

Information is not currently available in order to provide detail allocation to loss areas in the IWA format, but such a measurement system is being developed. A first stage water balance based on balancing bulk water meters with consumer meters in 6 regional districts has shown a range of non-revenue demands from 19% to more than 30%, with higher problems in the more recently-developed regions. These high values are not expected to be due to leaks but rather coverage of the metering on the billing system, which is being investigated.

Information for June 2009 shows the total UAW expressed as a 12-month rolling average % for the Bulk Water (6.9%) and Reticulation branches (19.6%) separately, with 23.3% as well as for the overall process from Treatment to End Consumer sales.

**TABLE C.2.6a: Non-revenue water demand, 2008/09 Financial Year**

Bulk Water Treated	Potable water supplied by Bulk	Potable water supplied to Reticulation	Reticulation end consumers sold
325 691 626	303 266 409	273 009 826	219 533 825
			Reticulation non-revenue demand
			53 476 001
		Potable water supplied to external customers	
		30 256 583	
	Bulk non-revenue demand		
	22 425 217		

### Future trends and goals

The City has in principle adopted international best practice with respect to reporting on water balance and will stop reporting on UAW once more accurate data is available.

### Strategic gap analysis

The SABS 0306:1999 standard discourages the use of percentage losses to quantify water losses in the distribution network.

### Implementation strategies

A very high priority is being given to a comprehensive Water loss reduction strategy with detail action plans being developed for each of Technical losses (Pipe bursts, Leakage, Treatment losses, System losses), Apparent losses (illegal

connections, metering inefficiencies, unmetered authorised consumption, unauthorised consumption, Billing/accounting, meter reading).

Phased Installation of more zone- and bulk supply meters are being implemented as well as automated remote logging thereof to accurately measure input into water supply zones.

An added benefit of the Integrated Master Plan project is the creation of an accurate and up-to-date historic record of consumption by erf that can be used to derive water and sanitation demands. The first comprehensive and reliable dataset became available in January 2010. This data will be used together with zone meters and bulk meters to achieve a water balance based on smaller pressure zones. This will enable losses to be pinpointed and reduced or eliminated.

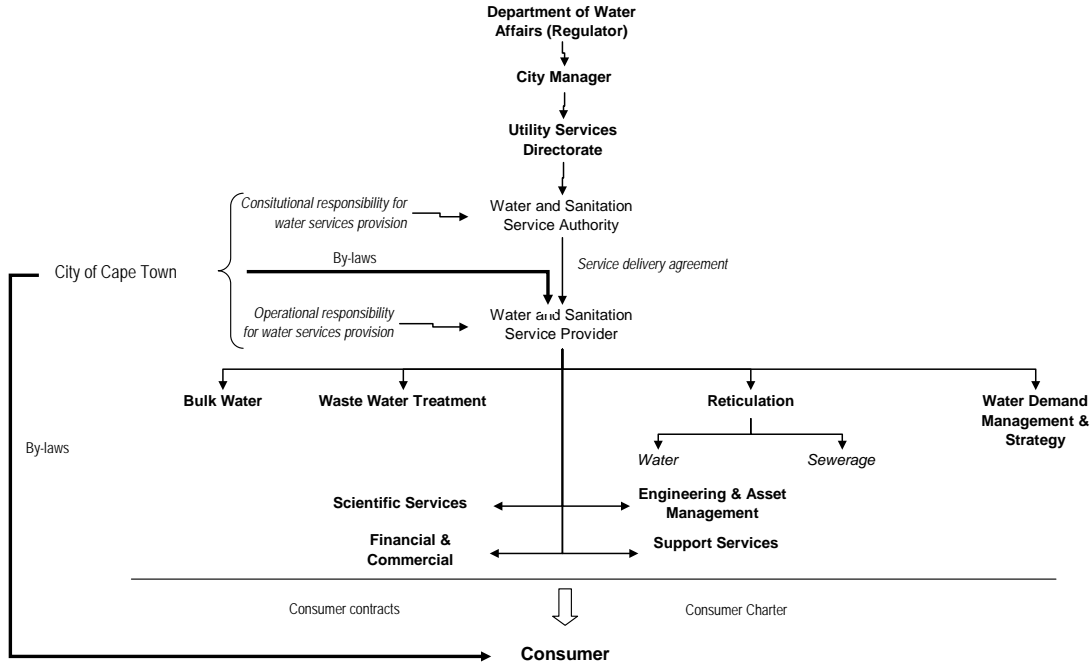
The DIMS project due to go-live in mid 2010 and mentioned earlier, has as a focus area the reporting of the latest Demand and Loss information to the IWA standard.

## C2.7 Water services institutional arrangements

### Situation assessment

The new City of Cape Town and the Water and Sanitation Services entity was formed with the amalgamation of the Cape Metropolitan Council and the 6 metropolitan local councils in December 2000.

**TABLE C.2.7: Water Service Institutional Arrangements**



Source: Water Demand Management Strategy

On 28 November 2001, Council authorized Water and Sanitation Services to operate as fully-fledged and functional internal business unit in order to ensure maximum independence and minimum constraints. In practice this has not been implemented further.

**Risk Management:** Work has started on an Integrated Risk Management Programme with the appointment of a Risk Manager and the development of a strategy.

**Safety:** All procedures were reviewed and risks still need to be identified.

### Future trends and goals

The appointment and retention of technical staff (engineers, scientists and IT personnel) remains a high priority.

### Strategic gap analysis

The City of Cape Town is currently undertaking the constitutional responsibility for water service provision (as the Water Services Authority (WSA)) as well as the operational responsibility (as the Water Service Provider (WSP)). The City has not separated the service authority and service provision function to establish a municipal entity, preferring to operate the service as an internal ring-fenced department. At the moment, there is no service delivery agreement between WSA and WSP in place.

## **Implementation strategies**

**Institutional reform:** The City's strategic intent, aligned with the national agenda and as stated in the IDP, is:

- universal access to basic services;
- achieving operational, financial and other efficiencies which will enhance equitable, affordable and effective service delivery and sustainable development;
- the separation of WSA/WSP Powers and functions.

**Human resources:** It is the City's strategic intent to develop and retain a skilled and motivated staff according to the Staffing Strategy and the Workplace Skills Plan.

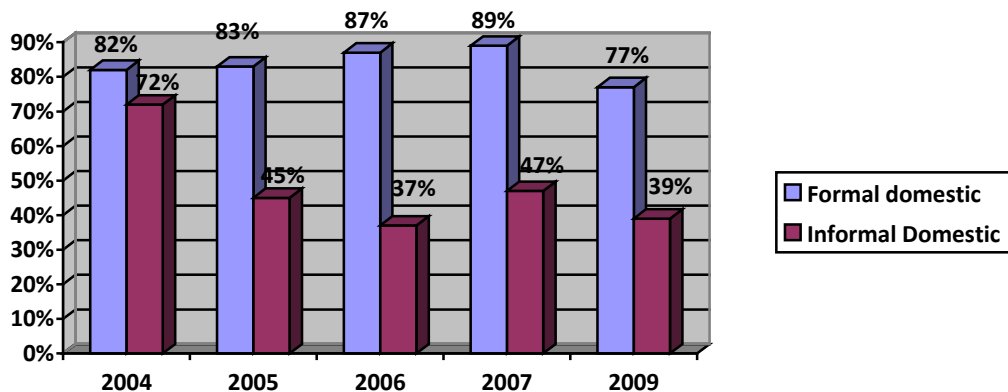
## C2.8 Customer service profile

### Situation assessment

Although under stress in certain regions, necessary infrastructure is in place to ensure an adequate quality of service to formal households. All customers receive water that is fully treated. There are mechanisms in place to attend to customer complaints and queries.

A survey is undertaken on an annual basis to gauge the customer satisfaction in formal domestic, informal domestic and business sectors and to identify specific issues of concern.

**Figure C2.8: Customer satisfaction levels over time**



The general conclusions are:

- The increasing satisfaction level for respondents living in formal residential areas has been reversed.
- Respondents living in informal residential areas are generally dissatisfied.
- 82% of business respondents are satisfied.

A possible cause for the drop is the introduction of the highest-ever tariff increase during the 2007/08 financial year, which precedes the latest survey. Another factor with an influence is likely the rapid introduction of water management devices in various suburbs across the City.

### Future Trends and goals

The goal is to ensure that the percentage of customers satisfied with the service continues to increase and reaches 95% within the next 5 years.

### Strategic gap analysis

There is no consolidated information on response times to complaints and queries and to repairing water and sewer mains. An integrated information system dealing with these matters is under development by the Technical Operating Centre.



## **Implementation strategies**

- Ensuring water pressure standards are maintained to improve areas of extreme high or low pressures.
- The Education and Awareness Campaign will be extended to affect behaviour change in residential customers towards reducing water consumption, and that all customers have a better knowledge of water efficient fittings.
- Establishment of a system at the Technical Operating Centre to ensure that customer complaints are measured and followed up.
- The AMR project promises to bring improved customer satisfaction around metering and billing.
- Appointment of staff for critical vacancies.

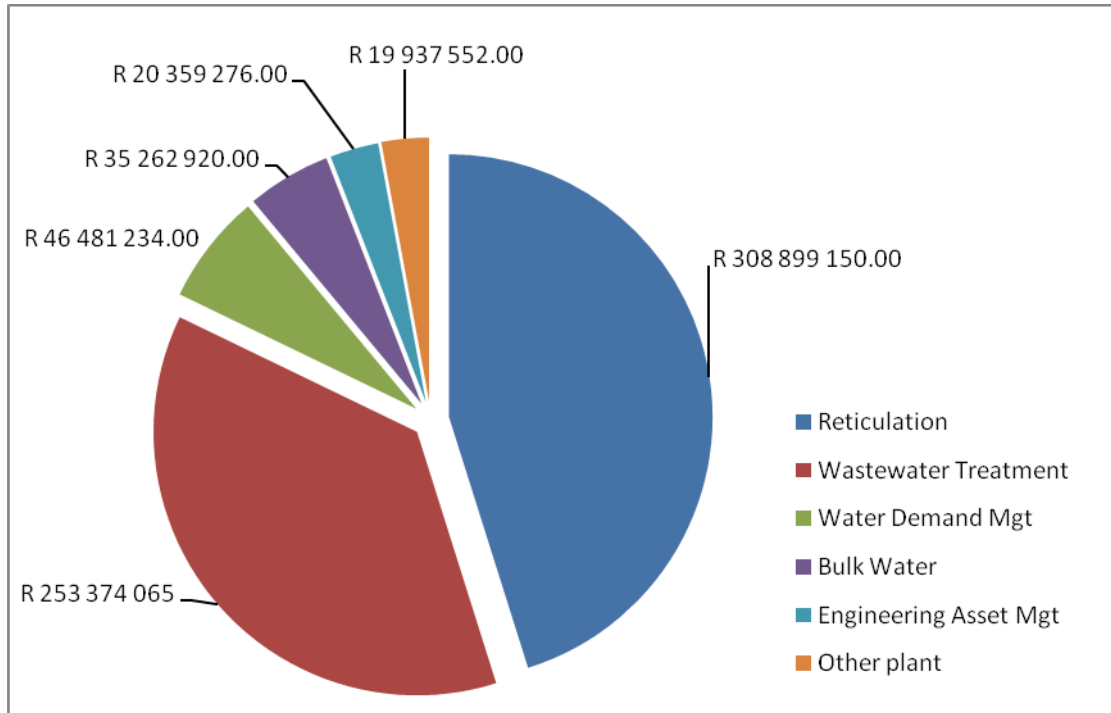
## C2.9 Financial profile

### Situation assessment

#### Capital expenditure and sources

Capital expenditure incurred during the year amounted to R684.3 million with an expenditure level of 94% original budget reached.

**Figure C2.9a: Water and Sanitation capital expenditure 2008/09**



Capital expenditure is financed from

- (i) CRR (Capital Replacement Reserve) a fund replenished from surplus in previous financial year,
- (ii) EFF (External Financing Funds) loans obtained by the City, attracting interest and depreciation charges and having a direct impact on the tariffs or
- (iii) CGD (Capital Grants & Donations).

#### Operating Costs and income

In 2008/09 operating costs amounted to approximately R3.57 billion, equivalent to approximately R3 200 per household per annum.

## Payment Ratio

2006/07	2007/08	2008/09
85.20%	86.17%	86.42%

As can be seen, the payment ratio (actual income vs billed) has shown steady improvement despite economic climate.

## Tariffs and Charges

Table C2.9b shows water and sanitation tariffs for recent years. The last increase in water user tariffs was 9.2% in 2008/09, while for sanitation it was 6.0%.

**Table C2.9b: Water and Sanitation tariffs trends**

WATER TARIFFS (Rands)		2005/06	2006/07	2007/08	2008/09
0-6 kℓ		-	-	-	-
+6-12 kℓ		2.39	2.56	3.05	3.33
+12-20 kℓ		5.10	5.46	6.50	7.10
+20-40 kℓ		7.55	8.08	9.63	10.52
+40-50 kℓ		9.33	9.98	11.90	12.99
+50 kℓ		12.31	13.17	15.70	17.14
Domestic cluster	per kℓ	n/a	5.47	6.52	7.12
Commercial	per kℓ	5.45	5.83	6.52	7.59
Industrial	per kℓ	5.45	5.83	6.52	7.59
Schools/sport	per kℓ	4.81	5.15	6.14	6.70
Government	per kℓ	5.17	5.53	6.59	7.20
Municipality	per kℓ	4.81	5.15	6.14	6.70
Miscellaneous	per kℓ	5.17	5.53	6.59	7.20
Misc (external)	per kℓ	6.18	6.61	7.88	8.60
Bulk Tariff	per kℓ	1.98	2.21	2.37	2.59
SANITATION TARIFFS (Rands)		2005/06	2006/07	2007/08	2008/09
0-4.2 kℓ		-	-	-	-
+4.2-8.4 kℓ		1.60	1.68	3.78	4.01
+8.4-14 kℓ		3.90	4.10	8.04	8.52
+28-35 kℓ		n/a	n/a	9.23	9.78
Domestic Cluster (>4.2 kℓ)	per kℓ	3.85	4.04	9.10	9.65
Departmental/Municipal	per kℓ	2.09	2.31	5.20	5.51
Industrial & Commercial	per kℓ	2.39	2.51	5.65	5.99

## Free Basic water and sanitation

The first 6 kilolitres of water supplied to all residential dwellings in the municipal area is free. There is no fixed charge. A R30 Indigent Grant (R20 prior to 2007/08 and applicable to sewerage) is applicable to the water tariff for qualifying households.

The first 4.2 kilolitres of sewerage removed from all residential dwellings in the municipal area is free.

## Trends

The Operating budget will increase in line with the City's Medium-Term Revenue and Expenditure Framework (MTREF)

There is pressure on annual tariffs increases to exceed inflation.

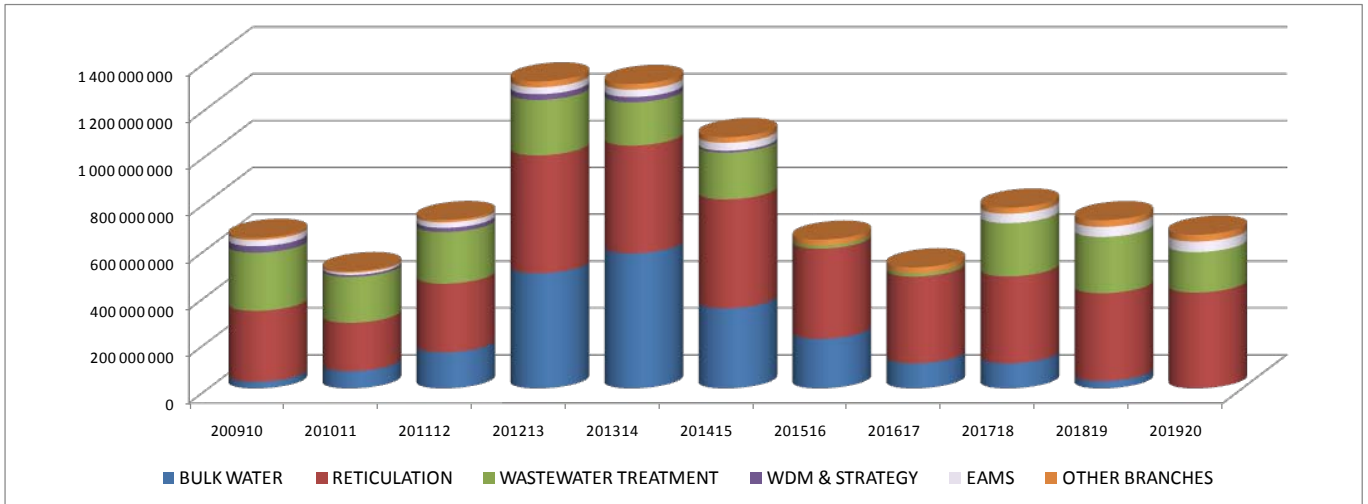
Increasing demands to supply new infrastructure and the resources to maintain and operate them are necessary

The long-term Capital budget requirement is summarised in Table 2.9c. The average annual requirement is R804 million.

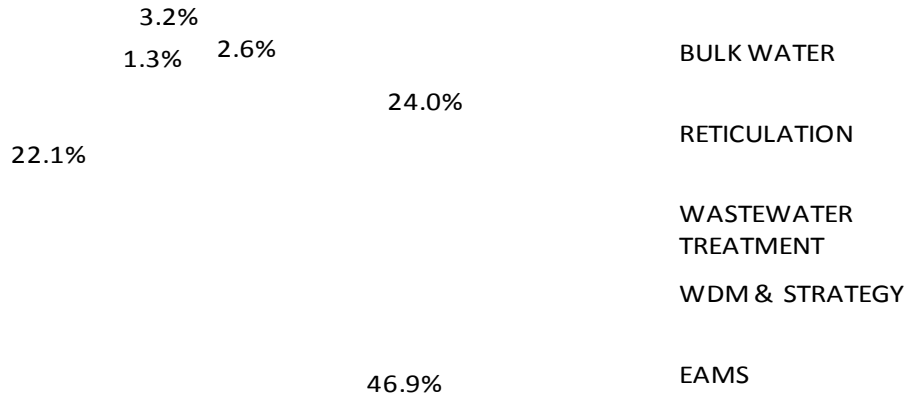
**Table 2.9c: Long-term Capital requirement for 11 years from 2009/10**

	200910	201011	201112	201213	201314	201415	201516	201617	201718	201819	201920	TOTAL
<b><i>BY BRANCH</i></b>												
BULK WATER	28.1	73.6	153.5	491.9	576.9	341.9	211.9	106.9	106.9	31.9	0.0	2 123.1
RETICULATION	303.1	206.6	293.8	503.6	460.4	465.7	385.4	371.1	371.8	374.7	409.3	4 145.5
WASTEWATER TREATMENT	248.4	195.7	220.6	236.9	185.0	199.6	13.7	13.7	227.2	240.1	173.1	1 953.7
WDM & STRATEGY	27.7	9.0	18.0	24.4	22.7	8.9	0.0	0.0	0.4	0.4	0.0	111.3
EAMS	26.4	9.1	23.1	29.5	31.3	33.4	0.0	0.0	40.2	42.7	45.0	280.6
OTHER BRANCHES	9.0	7.0	10.0	25.0	24.3	24.1	24.5	25.4	25.9	28.8	29.1	233.0
<b><i>BY INVESTMENT CATEGORY</i></b>												
New Infrastructure	414.3	328.0	461.5	859.4	847.1	646.6	304.9	189.7	357.6	319.3	311.8	5 040.1
Replacement Infrastructure	111.0	125.2	166.1	330.7	342.3	325.2	268.0	264.0	309.0	289.0	234.0	2 764.5
New Plant	10.3	1.5	13.8	31.0	21.6	14.7	11.4	12.4	16.1	14.2	12.9	159.7
Replacement Plant	87.0	24.2	46.0	64.1	65.7	67.4	36.1	36.0	74.5	81.0	82.7	664.4
Optimise Infrastructure	19.2	27.0	28.7	26.0	23.8	19.5	15.0	15.0	15.0	15.0	15.0	219.2
Admin	1.0	0.0	3.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	4.4
<b>TOTAL</b>	<b>642.8</b>	<b>500.9</b>	<b>719.1</b>	<b>1 311.2</b>	<b>1 300.5</b>	<b>1 073.4</b>	<b>635.4</b>	<b>517.0</b>	<b>772.2</b>	<b>718.5</b>	<b>656.4</b>	<b>8 847.3</b>

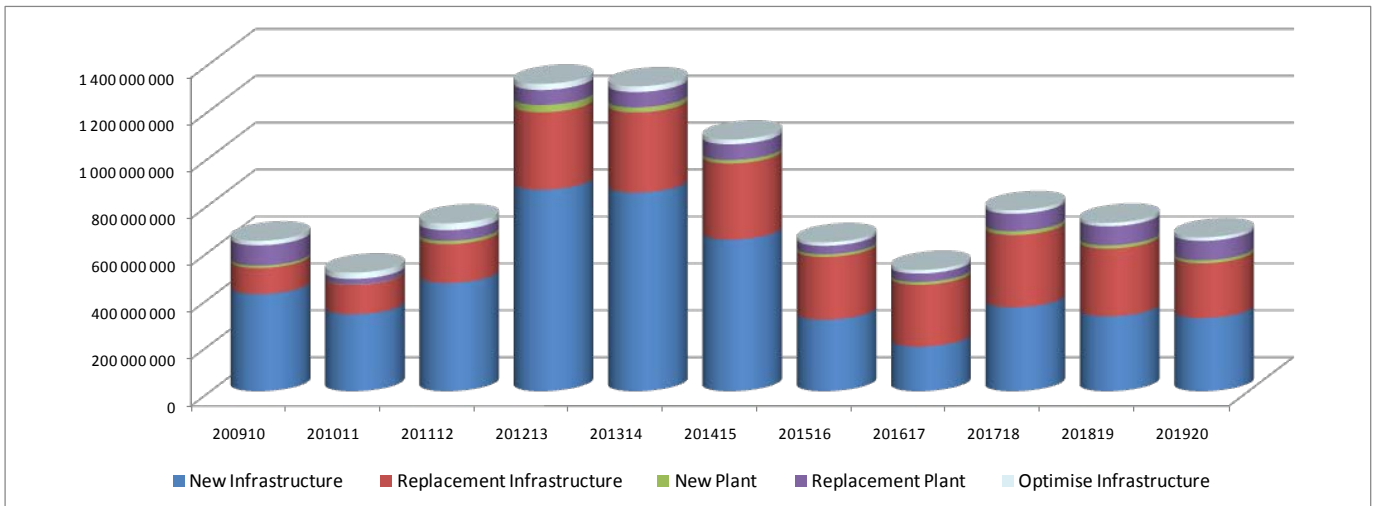
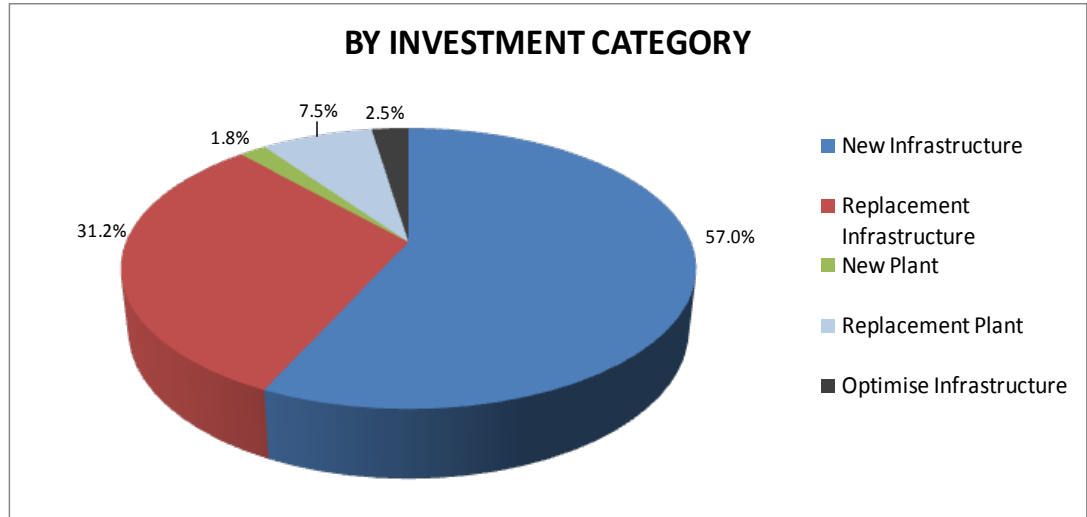
**Figure C2.9b: Long-term capital requirement by Branch**



### BY BRANCH



**Figure C2.9c: Long-term capital requirement by Investment Category**



### Strategic gaps

**Capital budget:** The high requirement for necessary infrastructure driven largely by rapid growth and economic development as well as the refurbishment of current infrastructure places severe pressure on the City's Capital Budget.

**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 troubled economic conditions.

## **Implementation strategies**

To achieve the required Capital Budget, it is necessary to maximise the use of Grant funding and to increase the Capital Replacement Reserve (CRR) via income and expenditure interventions.

The pressure on the operating budget needs to be addressed via above inflation tariff increases and initiatives to ensure that money due to the City is collected.

General strategies:

- Making adequate provision for the poor by maintaining a stepped tariff cross-subsidising the shortfall in the free basic service.
- Further relief to the poor via assistance to indigent customers.
- Investigation and debate into the use of Prepayment meters on the basis of its recent legal vindication.
- Ensuring that adequate cash reserves are maintained to cover legislated funds.