CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

City of Cape Town

Water Services Development Plan-

IDP Water Sector Input Report

For IDP incorporation as directed by the Water Services Act (Act 108 of 1997)

FY 2017/18-2021/22

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Prepared by:

Designation	***Name***	***Contact No.***	***E-mail***
Technician	Chanee Johnstone	021 444 9216	Chanee.claassen@capetown.gov.za
PPO	Shamile Manie	021 444 0739	Shamile.manie@capetown.gov.za

Abbreviations and Definitions

AADD	Average Annual Daily Demand
ADWF	Average Dry Weather Flow
BWAS	Bulk Water Augmentation Scheme
CCT	City of Cape Town
DIMS	Data Information Management System
DMA	District Metered Area
EPWP	Expanded Public Works Programe
IWA	International Water Association
WC/WDM	Water Conservation/ Water Demand Management
DWS	Department of Water and Sanitation
WCWSS	Western Cape Water Supply system
WMD	Water Management Device
WTW	Water Treatment Works
WWTW	Wastewater Treatment Works
TMG Aquifer	Table Mountain Group Aquifer
Labour market	All individual aged 15-64 years
Labour force	All those aged 15 to 64 years that are employed or unemployed
Climate	The change in climate variables like changes in temperature and precipitation

Change	could result in numerous locations becoming susceptible to extreme weather events like floods or heatwaves and is recognised as one of the greatest challenges of our generation
BDS	Blue Drop Certification System
FY:	Financial Year - means in relation to – • a national or provincial department, the year ending 31 March; or • a municipality, the year ending 30 June.
GDPR	Gross Domestic Product Regional
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.
m^3	cubic metres = 1 000 litre = 1 kilolitre
Ml	Megalitre = 1 000 kilolitre = 1 000 000 litre
Non-Revenue Water (NRW)	Is defined as the volume of water used by the municipality for which no income is received where revenue water includes Free Basic water which is billed at a zero rate.
SDBIP:	Service Delivery and 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 o f1997)
WSDP	Modular tool which has been developed by the DWA to support Water Services

Guide Framework	Authorities in complying to the Water Services Act with respect to Water Services Development Planning and which is also used by the DWA 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

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Introduction

This executive summary forms part of the broader Water & Sanitation sector plan, which supports the City of Cape Town's (CCT) Integrated Development Plan (IDP) for the period 2017/18- 2021/22. The Water and Sanitation department is the Water Services Provider (WSP) for the City of Cape Town as Water Services Authority (WSA). Sections 12 and 13 of the Water Services Act (Act No. 108 of 1997) places a duty on each Water Services Authority to prepare and maintain a Water Services Development Plan (WSDP)- also known as a sector plan- every 5 years and update it annually. This sector plan is based on audited information as at 30 June 2016. It integrates technical planning with social, institutional, financial and environmental planning. The report also aligns the capital expenditure with operational expenditure and maintenance requirements.

The sector plan is reported on to meet the Department of Water and Sanitation (DWS) requirements for a Water Services Development Plan. The executive summary provides the necessary information in the required format as per the DWS template. The sector plan provides for an integrated planning approach with the various internal and external stakeholders and thus the report needs to go through a public participation process for annual updates.

The WSDP consists of the following documents.

- Executive Summary document (For Council approval and Public Participation Process)
- Module 1: Overview and assessment of the status of information and strategies on a WSA level (internal use).
- Module 2: Detailed information: Enabling factors, compliancy, and supportive information.
- Module 3: Future plans and strategic supportive information.

The Executive Summary of the WSDP was compiled separately for ease of submission to Council for approval and public comment. DWS's new WSDP guidelines (October 2010) was used to compile the three Modules.

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. It also needs to occur in line with the City's new Organisational Development and Transformation Plan (ODTP) that includes 11 transformational priorities.

The ODTP transformational priorities link to the Water and Sanitation Department in the following ways:

Excellence in basic service delivery

The Department has historically always worked at a district level, allowing water services officials to have in-depth operational knowledge at a local level, have close customer contact and be able to respond to complaints quickly. The establishment of the metro has managed to provide many advantages of scale and pooling of resources. However, the area-based approach will again reinforce relationships with communities and be able to deal with area based issues with improved response times and greater community engagement.

Mainstreaming basic service delivery to informal settlements and backyard dwellers

Service delivery to Informal Settlements and backyarders (informal structures in rental stock)- a dedicated department, dealing with all aspects of informal settlements has been established, allowing for focused delivery in this complex and challenging environment. It has been brought closer to the Water and Sanitation Department, who previously only dealt with providing basic services to those areas. The focus will include efforts to partner with communities in the delivery of W&S services in an environment that provides increased security of tenure as well as maximizing responsive social services. The aim is to improve general well-being and health of individuals and communities in general.

Safe Communities

The department notes that our water service infrastructure generally has an indirect relationship to safety but informal settlement communities are directly affected by the type of service such as sanitation (communal toilets far from the HH dwelling). Recent high profile cases have amplified the danger, particularly to minors and women.

Transit Oriented Development

The current master plan of W&S is based on a pragmatic densification approach– however a future scenario based on Comprehensive Transit Orientated Development (CTOD) has been modelled and will have to be taken into account so that in the future the W&S infrastructure is responsive to a CTOD implementation. This is expected to be achieved progressively as a CTOD planning scenario is implemented. There is a proposed directive for higher density affordable housing projects for which the design for water and sanitation infrastructure need to take into account an additional 2 informal structures on a plot.

Leveraging technology

The use of digital platforms to report faults and service delivery challenges- using technology to manage our services more effectively. To improve the identification of losses such as leaks and progressively optimize maintenance and infrastructure replacement. To more effectively improve the efficiency of delivery along the full value chain of water services. Some innovations include smart metering, logging, automated meter reading, data storage, consolidation and management. Examples are the use of automated and IT methods that minimize/eliminate the need for hardcopy documentation such as the DAMS and As-Built Scanning Project within water services.

Positioning Cape Town as a forward-looking, globally competitive business City

The aim is to attract both people and businesses as a place of choice to live and invest. The City looks at W&S infrastructure investment as a central strategy to attract a range of businesses in targeted localities. That will have limited / no constraints as far as water services. The aim should be to have the right mix of manufacturing, design, commercial, warehousing and service industries to enable a diverse economy that is able to generate a range business opportunities and employ a people with a diverse range of skills in various localities across the city.

Resource efficiency

For water services our recent history has indicated the fragility of our traditional water resource base. The threat of climate change has amplified this challenge. This will require an aggressive approach to conservation as well as fast tracking the exploitation of the most economical alternative sources- in particular, demand management interventions, ground water and effluent reuse. This reality calls for an approach that focusses a lot more on measurement and continuous monitoring with increased ability to measure remotely, build good data trends and appropriate diagnostic tools that would enable more targeted interventions.

Building integrated communities

The number of service delivery protest and court challenges suggests that the need to build partners with communities to achieving effective water service delivery. The delivery of water services will be chiefly affected by density and the increased low income residential will occur in well located land in the city and by so doing improve accessibility to various opportunity. Achieving this will lead to a more compact city and an improved infrastructure efficiency. At the same time there is a need to build a relationship with informal communities in particular those on marginal land that constantly face fire and the threat of flooding. The city indigent policy is particular important and requires full understanding by the paying and non-paying customer. The free water service component that no longer will be provided across the board is an important step in making water services economically viable and satisfying the rights based approach at the same time.

Economic Inclusion

The large capital budget of the Water and Sanitation department allows for a large number of EPWP opportunities and the department has looked at innovative ways of expanding this programme. The ongoing expansion of the graduate and apprenticeship programmes supported by a skills development programme has built valuable skills and increased marketability and accessibility to the economy. This skills development contributes to the much needed economic growth.

Operational Sustainability

The department of W & S has had a tradition of budgeting over 3 year and financial planning over 5 year and 10 year periods supported by a master planning approach that has a 20 year horizon. This approach has helped to keep the combination water service tariffs, loans, grants and reserves at sustainable levels. These tools have also enabled the department to effectively accommodate indigent customers in securing their right to water services.

Water services Master Planning is driven by spatial planning scenarios that enables identifications of infrastructure constraints the alignment of infrastructure development transversally. This approach is further reinforced by the Built Environment Performance Plan (BEPP). There has been an additional establishment of service tariffs as well as a revised Development Contribution policy that has been able to more realistically price Development Contributions.

The department embraces the notion that its leaders will display a leadership style driven by values and integrity. Through this leadership the department will encourage employees to be committed performers with customer centric approach that is reinforced by interdepartmental engagement and alignment.
The Water and Sanitation Department evaluates projects and programmes against the strategic pillars of the City namely: The Opportunity City, Safe City, Caring City, Inclusive City and Well-Run City.

The purpose of this report is to provide relevant and summarized water services development planning inputs for incorporation into the City of Cape Town integrated development planning process and is structured as follows:

Section A: Status Quo Overview: *providing a summarized view of the water services status quo in terms of the water services functional business elements as aligned to the WSDP framework.*

Section B: State of Water Services Planning: *presents the status of- and references the water services development plan of the Water Services Authority.*

Section C: Water Services Existing Needs Perspective: *an overview of the WSA's assessment and interpretation of its water services, with specific focus on problem definition statements.*

Section D: Water Services Objectives and Strategies*: outlines the 5-year water services objectives and strategies as developed through the water services development planning process for incorporation in terms of the integrated development plan and aligned to the water services functional business elements.*

Section E: Water Services MTEF Projects*: the agreed water services projects for the medium-term expenditure framework and inclusive of funding sources.*

Section F: WSDP Projects: *presents the projects identified during the water services development planning process in order to meet the water services strategies of the water services authority, as aligned to the outflow from the situation analysis per water services business element.*

Section A: Status Quo Overview

The Water and Sanitation Department has made significant progress in providing water and sanitation services to the City of Cape Town (CCT) residents since the formation of one Metro administration. All formal areas are adequately provided for with water and sanitation services, while services within informal settlement areas are continually being improved. Large scale urbanisation as seen in the City has led to some new regions being developed, resulting in the demand potentially exceeding the installed capacity. In formal areas the latter is fully planned for in advance, in informal settlements it is not always fully planned for to the same extent. Thus it could potentially impact on the CCT's ability to improve service levels.

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 corporate scorecard. This is 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.

The growing housing challenge in the CCT has given rise to an increasing number of backyard dwellers in the City's public rental stock. CCT has drafted a backyarder policy (this will be run by the CCT's Department of Informal Settlements and Backyarders) which will cover the supply of separate basic services such as electricity, refuse removal, water and sanitation to these residents. For water and sanitation this is taking the form of an individual metered connection via a water management device and a sewer connection within a prefabricated toilet structure. The result of yarder residents is that the density increase in the affected areas reduces the cost of new infrastructure but increases the water demand and sewer load on existing infrastructure considerably.

To ensure and to measure the level of progress, the internal service level targets for the CCT which exceed the national standards will be used.

To achieve the improved service levels, the City's Water and Sanitation has developed a new Vision and Mission.

VISION STATEMENT

To be a beacon in Africa through the progressive realisation of Cape Town as a water sensitive city

MISSION STATEMENT

Provide safe, reliable, sustainable and affordable Water and Sanitation services to Cape Town.

The Strategic Focus Areas to achieve our Mission and Vision:

- Employee and Leadership Development
- Infrastructure Stability

- Water Resource Adequacy
- Product Quality
- Community Sustainability
- Consumer Satisfaction
- Operational Optimisation
- Stakeholder Management and Support
- Financial Viability
- Operational Resilience

We operate within a value system aligned to Batho Pele principles:

- **Integrity**: We maintain the highest level of ethics and fairness in our interaction with each other, our customers and other stakeholders.
- **Respect**: We respect each other's opinion, beliefs, position and contribution to the Department including those of our customers and other stakeholders. All employees are equal in their contributions.
- **Customer focus**: We meet customers' needs by providing excellent service, optimal product performance and efficient support system. Our customers are the reason for our existence. The environment is our silent customer who shall receive an equal share of our services.
- **Trust**: Our business model and relationship is based on trust. A "Yes" shall mean a Yes and a "No" shall mean a No. Our common purpose, integrity and honesty shall constrain us to have trust in each other. Trust shall be felt, experienced, lived and seen in our Departmental family.
- **Transparency**: We operate safely, openly, honestly and with care for the environment and the community. Transparency shall be defined by the customers and stakeholders we serve.
- **Professional**: We use the right skills or competencies to find appropriate solutions enriched with compassion, innovation, sustainability, cost-effectiveness, accountability and excellence.

Business Element 1: Administration

The 2017/2018 WSDP will be distributed to the public as part of the IDP public participation process as per section 14 of the Water Services Act. The draft WSDP will also be distributed to all the neighbouring WSAs for their comments as per section 15 of the WSA. All relevant comments received on the draft WSDP will be included in the final WSDP.

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

Figure A. 1: Key role players involved with the City of Cape Town's WSDP

Business Element 2: Demographics

The City of Cape Town Metropolitan Municipality services an area covering 2455 km^2 in the Western Cape. It is comprised of 24 sub- councils and then further divided into 116 wards. The City of Cape Town Municipality is relatively densely populated with approximately 1618 people per km^2. It houses the legislative capital of South Africa and accounts for 73 % of the Western Cape's GDP (MERO, 2015). The City of Cape Town serves a population that is estimated to be at 3 972 237 people (Strategic Development Information and GIS Department, 2016). Although the population continues to increase, the annual average growth rate is slowing down- with the average household size being closer to that of developed countries (two to three members) as opposed to developing countries (five or more members). The City's Water and Sanitation Department is both the WSA and the WSP and thus has the constitutional and the operational responsibility to provide water and sanitation services to the residents. Within the City of Cape Town all formal areas are adequately provided for with water and sanitation services while services within informal settlement areas are continually being improved upon. 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. This will enable sustainable, fair, equitable, reliable and financially viable provision of water and sanitation services for all.

Physical Perspective

- Topography- The area consists of varying topography which includes flat plains, hills and mountains. A major portion of the CCT consists of the area known as the Cape Flats, which has an elevation of between 20 and 45 m above sea level. This area is relatively low-lying and can be supplied via the bulk supply network from large reservoirs with top water levels at 110 m above sea level (ASL). The mountainside developments in Somerset-West, along Table Mountain and the Peninsula mountain range, as well as the hilly development in Durbanville, Brackenfell-north, and the Atlantis area are at elevations which are too high to be supplied from the 110 m ASL reservoirs. Very few areas with water demand are located at elevations higher than 200 m ASL.
- Climate Change- the Western Cape was projected as one of the South African provinces most at risk of climate-induced warming and rainfall change. This makes the City of Cape Town's resource management more challenging and thus they have developed their own Climate Change Strategy which aims to promote a more sustainable use of energy whilst identifying vulnerable communities and ecosystems in order to reduce the impacts on them (City of Cape Town, 2006). This has also contributed to the paradigm shift in the way the CCT traditionally views water to that of Cape Town being a water sensitive city.

The Cape Town CMA is a winter rainfall area with dry summers. This contrast complicates the management of a bulk water supply system, as sufficient runoff needs to be stored during winter in order to meet the increased water demand in the hot and dry summer months.

- Natural environment- Cape Town is located in a highly sensitive and vulnerable ecosystem, is recognised as a global biodiversity hotspot and is fortunate to have a National park within its boundary. Finding the balance for sustainable development and improving quality of life remains the challenge. Growing consumption, pollution (air, water, solid waste) and the protection of the city's biodiversity are key issues that must be addressed. Cape Town is located within the Cape Floral Region, which is geographically the smallest of the world's six floral kingdoms, but supports the highest density of plant species. This floral diversity relates to the steep environmental gradients, including altitudinal, geological and rainfall gradients; that have combined to create a large number of different habitats. These vegetation types support species that are unique to Cape Town and many of these are under threat from extinction, owing mainly to habitat destruction and invasion by alien plants.

Demographic Perspective

- Economics- the CCT has an economic growth rate of 3.4%, which closely resembles the Western Capes growth rate (MERO, 2015). This is largely due to weakening global and national growth rates. This pattern has persisted due to the downgrades experienced.

  The City of Cape Town contributes approximately 73 % to the Western Cape's Gross Domestic Product Regional (GDPR), (MERO, 2015). The City of Cape Town's tertiary sector has been a key driver of economic performance which has contributed greatly to both the GDPR and the employment in the Metropolitan. This is compared to the city economic growth rate of 2.7% in 2016. This slowing down is in line with national and international expectation for economic growth.
- Social- presently approximately 14% of households (almost 584643 people) in Cape Town lives in inadequate or informal housing. This is an improvement when compared to figures from previous years. Cape Town, along with the rest of the Western Cape is faced with immense human and social development challenges. Although decades of distorted development in the City have resulted in the highly-skewed distribution of income and wealth, the City has managed to reduce the percentage of unemployment rate of individuals down to 23.9 % in December 2016 (StatsSa, 2016). This is below the national unemployment rate of 26.5%
- Main infrastructure development / growth areas

  Cape Town continues to grow and the urban edge is constantly changing. Urban sprawl contributes to increasing commuting times as well as the loss of valuable agricultural land and areas with high biodiversity conservation potential (Concentration of populations in urban areas greatly reduces the unit cost of piped water, sewers, drains and roads. The use of environmentally friendly energy sources and transport can reduce these costs even

further. The City's Human Settlements Department is advocating for high density residential areas – more people benefitting per km of sewer and water infrastructure.

In the City's growth areas the water and sewer infrastructure are severely stressed:

- West Coast / Parklands development corridor;
- De Grendel / N7 development node;
- Northern development/Fisantekraal corridor;
- Bottelary development corridor;
- Maccassar / AECI development node

The tables below give an overview of the population and households it also indicates the water and sanitation service level categories within the City of Cape Town Municipality's jurisdiction.

Table A. 1 : Water services overview (water)

Settlement Type	2014/2015		2015/2016		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	Infrastructure, O&M & Resource need		No Services: Informal	No Services: Formal	
URBAN														
Formal & Informal households					**Adequate**			**Below RDP**					**None**	
Cape Town	1 122 328	3 928 148	1 134 925	3 972 237	✓	✓								
Sub-Total	**1 122 328**	**3 928 148**	**1 134 925**	**3 972 237**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Water: Profile of consumers as at June 2016					**Adequate**			**Below RDP**					**None**	
None or inadequate(Target)	0	0	0	0										
Communal water supply	155 015	0	156 755	0		✓								
Controlled volume supply	138 605	0	187 754	0	✓									
Uncontrolled volume supply	828 708	**0**	790 416	**0**		✓								
Total	**1 122 328**	**0**	**1 134 925**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
RURAL														
Rural Small Village					**Adequate**			**Below RDP**					**None**	
Example: Rural small village 1	0	0	0	0										
Sub-Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Rural Scattered					**Adequate**			**Below RDP**					**None**	
	0	0	0	0										
Sub-Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Working towns & service centres					**Adequate**			**Below RDP**					**None**	
	0	0	0	0										
Sub-Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Farming					**Adequate**			**Below RDP**					**None**	
	0	0	0	0										
Sub-Total	**0**	**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**	**0**
TOTAL	**1 122 328**	**0**	**1 134 925**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: ** aligned with Census 2011*

Table A. 2 : Water services overview (sanitation)

Settlement Type	2014/2015		2015/2016		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	No Services: Formal
URBAN														
Formal & Informal households					**Adequate**			**Below RDP**					**None**	
Cape Town	1 122 328	3 928 148	1 134 925	3 972 237	✓	✓								
Sub-Total	**1 122 328**	**3 928 148**	**1 134 925**	**3 972 237**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Sanitation: Profile of consumers as at June 2016					**Adequate**			**Below RDP**					**None**	
None or inadequate(Target)	0	0	0	0										
Communal toilets / Portable flush	155 015	0	156 755	0		✓								
Full flush	967 313	0	978 170	0	✓									
Total	**1 122 328**	**0**	**1 134 925**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
RURAL														
Rural Small Village					**Adequate**			**Below RDP**					**None**	
Example: Rural small village 1	0	0	0	0										
Sub-Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Rural Scattered					**Adequate**			**Below RDP**					**None**	
	0	0	0	0										
Sub-Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Working towns & service centres					**Adequate**			**Below RDP**					**None**	
	0	0	0	0										
Sub-Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Farming					**Adequate**			**Below RDP**					**None**	
	0	0	0	0										
Sub-Total	**0**	**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**	**0**
TOTAL	**1 122 328**	**0**	**1 134 925**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: ** aligned with Census 2011*

Table A. 3: Residential water services delivery access profile: Water

Census Category	Description	Year 0 FY2015/16		Year -1 FY2014/15		Year -2 FY2013/14	
		Nr	%	Nr	%	Nr	%
	WATER (ABOVE MIN LEVEL)						
Piped (tap) water inside dwelling/institution	House connections + water cluster	978 170	86.19%	967 313	86.19%	965 018	86.19%
Piped (tap) water inside yard	Yard connections	0	0.00%	0	0.00%	0	0.00%
Piped (tap) water on community stand: distance less than 200m from dwelling/institution	Standpipe connection < 200 m	156 755	13.81%	155 015	13.81%	154 648	13.81%
	Sub-Total: Minimum Service Level and Above	**1 134 925**	**100%**	**1 122 328**	**100%**	**1 119 666**	**100%**

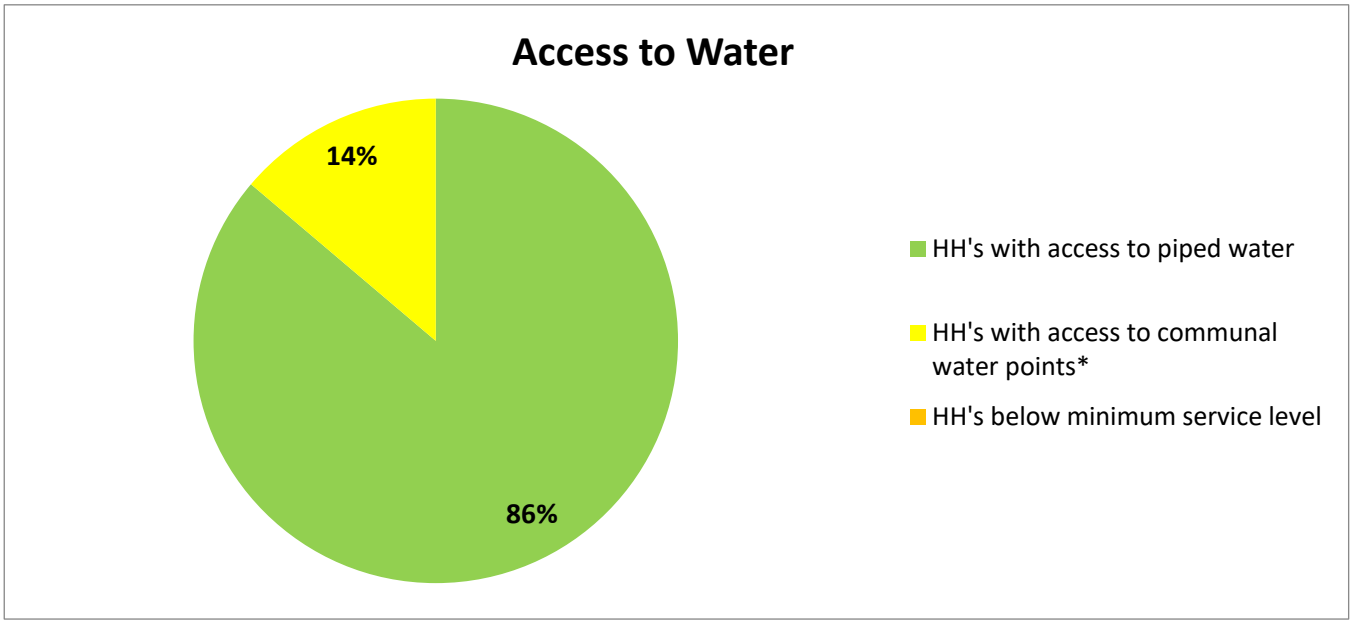


Figure A 1: Household water access profile

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

Table A. 4 : Residential water services delivery access profile: Wastewater

Census Category	Description	Year 0		Year -1		Year -2	
		FY2015/16		FY2014/15		FY2013/14	
		Nr	%	Nr	%	Nr	%
	SANITATION (ABOVE MIN LEVEL)						
Flush toilet (connected to sewerage system)	Waterborne	1 059 560	93.36%	1 041 253	92.78%	1 027 292	91.59%
	Waterborne: Low Flush	0	0.00%	0	0.00%	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	2.59%
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%
	Sub-Total: Minimum Service Level and Above	**1 134 708**	**99.98%**	**1 121 100**	**99.89%**	**1 119 666**	**100%**
	SANITATION (BELOW MIN LEVEL)						
Pit toilet without ventilation	Pit toilet	0	0.00%	1 005	0.09%	1 560	0.14%
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%**	**1 937**	**0.17%**
	Total number of households	**1 134 925**	**0.02%**	**1 122 328**	**0.11%**	**1 121 603**	**0%**

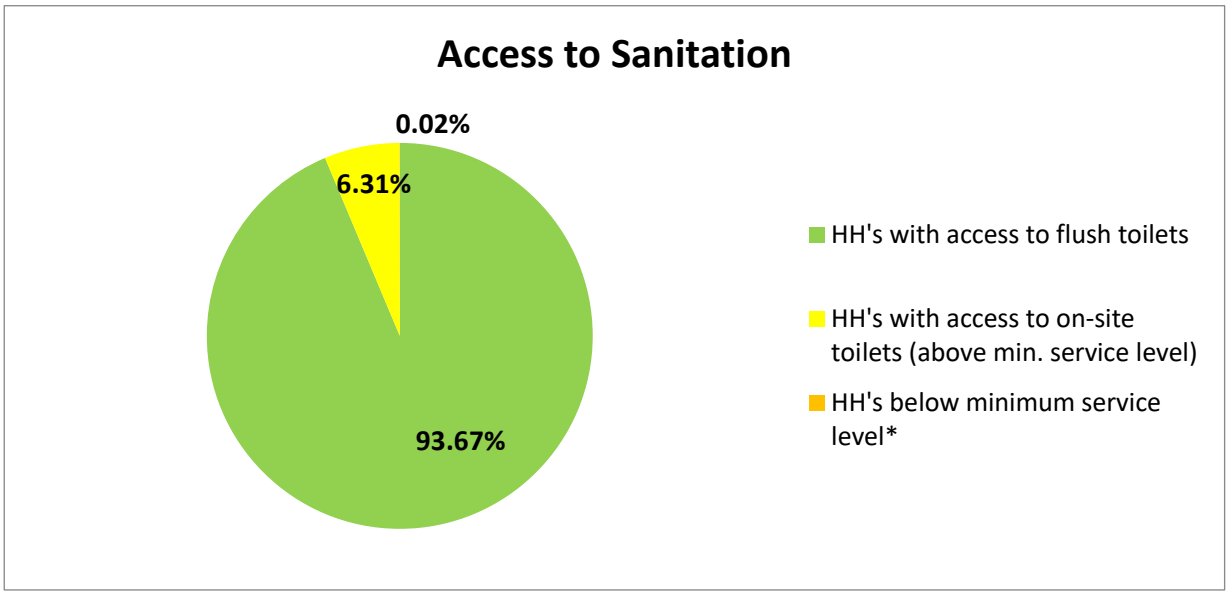


Figure A. 2: Household wastewater access profile

**As at June 2016, the City is servicing around 217 'buckets' within is area of jurisdiction- some of these buckets are located on City of Cape Town land and others on privately owned land. These are all in the Boys Town and Sir Lowry's Pass vicinity (Morkel's Cottage, Rasta Camp, Pine Town and Uitkyk). All the residents who are using these 'bucket system' toilets have been offered a portable flush toilet by the City, but have declined. The City is continually trying to eradicate these remaining 'bucket system toilets' as indicated in the table below.

End of Financial year:	**2006/ 07**	**2007/ 08**	**2008/ 09**	**2009/ 10**	**2010/ 11**	**2011/ 12**	**2012/ 13**	**2013/ 14**	**2014/ 15**	**2015/ 16**

TOILET TYPE										
Chemical Toilets	1,049	2,651	3,862	3,843	3,953	4,716	5,129	5816	5991	5917
Container Toilets	7,462	7,294	7,500	5,670	5,794	5,481	4,223	5678	6584	7138
25l Black Buckets	2,857	2,561	3,915	3,915	868	1,108	958	377	223	217

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.

Service Level Profile

South Africa is experiencing one of the worst droughts over the past 95 years, leaving many parts of the country with a limited supply of water. The City has had to implement a level 3 water restriction as a precaution to ensure that all its residents have access to basic services.

As a result of the drought, various waterless technologies will be explored over the following 5 years. Partnerships with reputable institutions such as Tertiary institutions and the Water Research Commission amongst others will to be included in agreements to ensure that the City remains the "beacon in Africa through the progressive realisation of Cape Town as a water sensitive city".

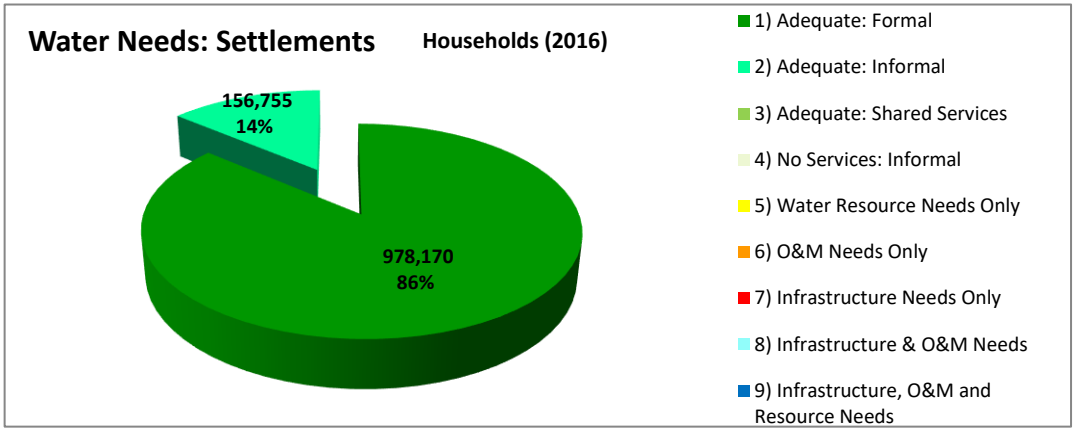
The City of Cape Town strives to ensure adequate service delivery to all residents which includes the ever growing number of informal settlements and backyard dwellers. As of January 2016 the number of accounted for settlements within the City is approximately 204 settlements with an estimated 79 612 number of households that accounts for yarders (service levels report as of June 2016). This figure is constantly changing and therefore the City ensures that a household count is performed on a regular basis.

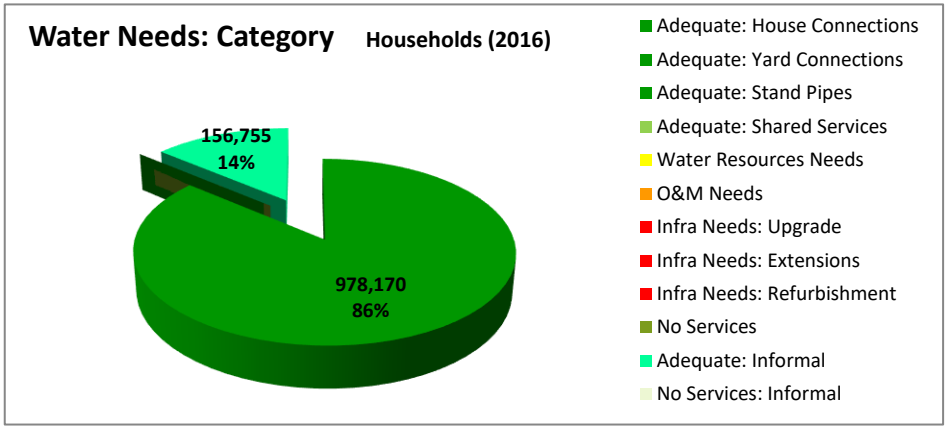
Along with ensuring that the National minimum standards- as required by the National Water Act 108 of 1997 are met, the City has set its own targets in terms of service provision. This aims to ensure that a minimum of 1 tap per 25 households are provided within at least a 100m distance from the dwelling. In terms of sanitation provision, the City aims to provide 1 toilet per 5 households, usually in the form of waterborne sanitation systems, on-site and partial on-site sanitation treatment technologies. Between the 2015/16 financial year, the Department of Water and Sanitation has installed a total of 834 new tap and 3392 toilets in various informal settlements across the City.

The backyard dwellings are a growing occurrence within the City as can be seen in areas such as Dunoon, Doorenbach and Hanover Park etc. Although these residents reside in formal areas, ensuring that these residents have access to free basic service has become a priority of the City. From the start of the Backyarder programme in 2013 up until the end of the 2015/16 financial year, a total of 549 toilets and wash basin structures have been installed in various areas within the City.

Table A. 5 (a): Residential water services delivery adequacy profile (Water)

Water Categorisation	Number of settlements	FORMAL																				INFORMAL			
		Adequate								Water Resource needs		O & M Needs		Infrastructure Needs						No services		Adequate		No services	
		House Connections		Yard Connections		Stand Pipes		Shared Services						Upgrades		Extensions		Refurbishment							
		HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%
1	0	978 170	100%																						
2	0																					156 755	100%		
3	0																								
4	0																								
5	0																								
6	0																								
7	0																								
8	0																								
9	0																								
10	0																								
Total Household Interventions required		**978 170**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**156 755**		**0**	

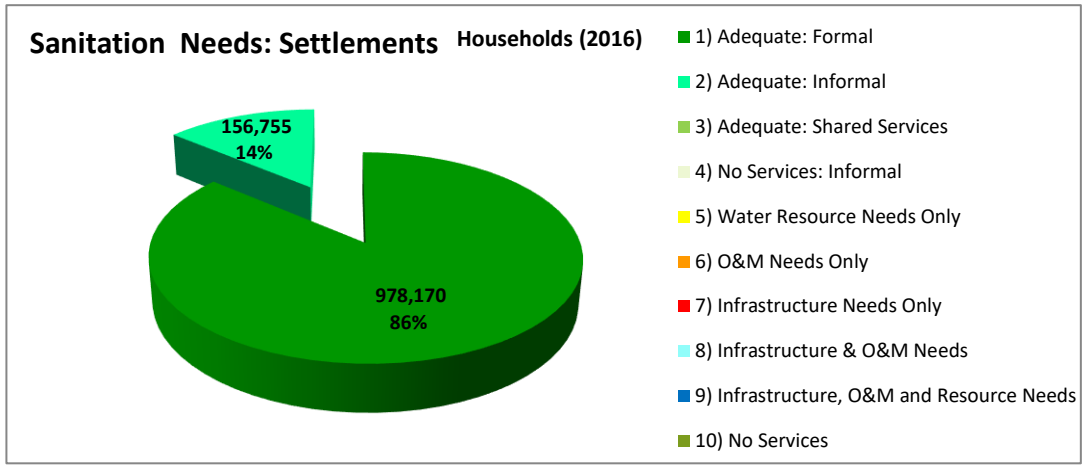


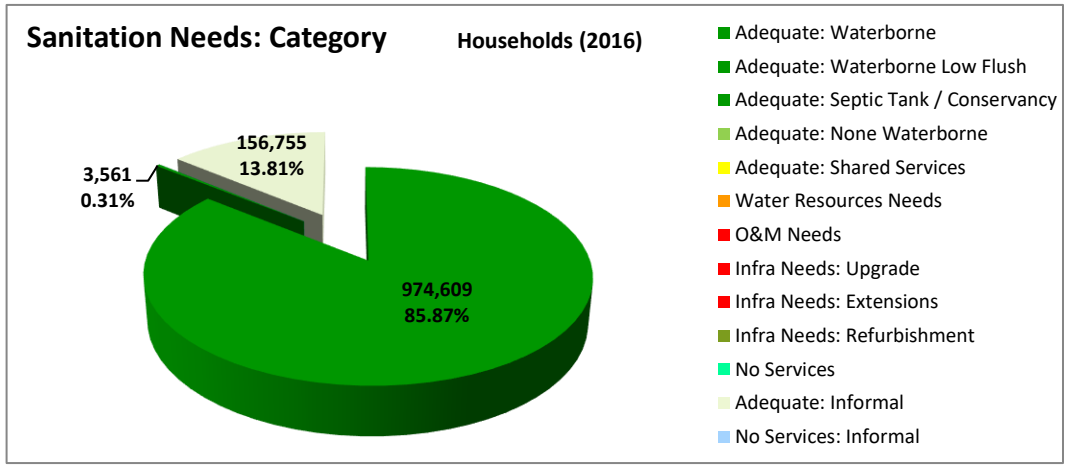


1	Adequate	**3**	Adequate: Shared services	**5**	Water Resources Needs **Only**	**7**	Infrastructure Needs **Only**	**9**	Infrastructure, O&M & Resource Needs
2	Adequate: Informal	**4**	No Services: Formal	**6**	O & M Needs **Only**	**8**	Infrastructure & O&M needs	**10**	No Services

Table A.5 (b): Services delivery adequacy profile (Wastewater)

Water Categorisation	Number of settlements	FORMAL																				INFORMAL			
		Adequate										Water Resource needs		O & M Needs		Infrastructure Needs						No services		Adequate		No services	
		Waterborne		Waterborne Low flush		Septic Tank/ Conservancy		None Waterborne		Shared Services						Upgrades		Extensions		Refurbishment							
		HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%
1	0	974 609	99.64%			3 561	0.36%																				
2	0																							156 755	100%		
3	0																										
4	0																										
5	0																										
6	0																										
7	6																										
8	0																										
9	0																										
10	0																										
Total Household Interventions required		**974609**		**0**		**3 561**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**156755**		**0**	





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

Business Element 4: Socio- Economic Profile

As of 30 June 2016, the population of Cape Town was estimated to be approximately 3 972 237 obtained from Strategic Development Information and GIS Department (2016). In terms of population trends, the projected 5 year growth rate for Cape Town is currently at 0.96.

Table A. 6: Labour Force Statistics

		2008 Average	2009 Average	2010 Average	2011 Average	2012 Average	2013 Average	2014 Average	2015 Average
Employed	Number	1 362 213	1 371 003	1 320 903	1 444 700	1 433 008	1 411 069	1 479 648	1 457 330
	%	54.2%	52.5%	50.8%	51.8%	51.3%	50.8%	51.7%	53.3%
Unemployed	Number	322 481	397 510	424 306	439 061	475 030	466 437	490 143	413 488
	%	12.8%	15.2%	16.3%	15.7%	17.0%	16.8%	17.1%	15.1%
Labour Force	Number	**1 684 694**	**1 768 513**	**1 745 210**	**1 883 761**	**1 908 038**	**1 877 506**	**1 969 791**	**1 870 818**
	%	67.1%	67.7%	67.2%	67.5%	68.3%	67.6%	68.8%	68.4%
Not Economically Active	Number	827 120	842 736	852 589	907 760	886 055	898 660	892 482	865 813
	%	32.9%	32.3%	32.8%	32.5%	31.7%	32.4%	31.2%	31.6%
Labour Market (all aged 15-64 years)	Number	**2 511 814**	**2 611 249**	**2 597 798**	**2 791 520**	**2 794 093**	**2 776 166**	**2 862 273**	**2 736 631**
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Strategic Development Information and GIS Department

The overall trend is that Cape Town's population will continue to grow each year albeit at a slower rate than in previous years. The labour force has continued to increase over the period 2008-2015 and the average annual unemployment rate has declined to 22.1%, the lowest since 2009, despite the country's economic issues. The number of households living in informal settlements and backyards has been growing due to urbanisation, natural growth and changes in household size; however the percentage residing in informal settings has continued to decrease.

Business Element 5.1: Water Services Infrastructure Management (Infrastructure)

To ensure long term sustainability, Water and Sanitation Services had by 2010 developed an Integrated Master Plan. 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
- The plan is kept up to date annually to ensure reliable planning based on it.

In line with the IDP Focus Area of infrastructure led development and economic growth the WSDP will:

- Focus on maintaining and replacing aging existing infrastructure;
- Improve delivery of services to informal areas, and
- Promote efforts to densify the city by reviewing and upgrading infrastructure to accommodate higher residential density.

Table A. 7: Infrastructure of Water and Sanitation Services -Estimated Replacement cost (as at end of June 2016)

Description	Asset Count	Replacement Value (R Millions)	Annual Maintenance Norm	Annual Maint. req, Bulk Water separate (R Millions)
Dams	11	R 2 190.00	0.50%	R 3.95
Bulk Pipelines	658.5 (km)	R 10 295.00		R 8.23
Bulk Reservoirs	24	R 2 082.00		R 6.69
Water Treatment Plants & Well fields	12	R 2 474.00	1% Civil, 4% Mech/Elec	R 27.04
Bulk Pump Stations	24	R 445.00		R 7.82
Other (Canals, Tunnels, Meter, etc.)	-	R 151.00		R 1.97
Waste Water Treatment Works including three Sea Outfalls and two oxidation ponds (June 2015)	27	R 7 600.00	1% Civil, 4% Mech/Elec	R 380.00
Informal Settlements- Water (standpipes)	11 329	R 92.00	Assume 20% of Replacement Value	R 18.39
Informal Settlements- Sewer (toilets)	52 478	R 274.70	Assume 20% of Replacement Value	R 54.93
Water Reticulation	10 617.87 (km)	R 15 101.00	1%	R 151.01
Sewer Reticulation	9 216.05 (km)	R 18 868.00	1%	R 188.68
Depots	37	R 76.00	0.50%	R 0.38
Water Pump Stations	82	R 774.00	0.5% Civil, 4% Mech/Elec	R 34.85
Sewer Pump Stations (Including treated effluent and stormwater PS)	406	R 1 373.00	0.5% Civil, 4% Mech/Elec	R 61.80
Reticulation tanks	115	R 1 474.00	0.50%	R 7.37
Total		**R 63 269.70**		**R 953.11**

Status of All Water and Sanitation Infrastructure

The Water and Sanitation Department of the City has since 2007 extended its local area master planning to an integrated planning approach for the department's entire infrastructure as well as for its alignment across directorates. It includes Bulk water, Water Reticulation, Sewer Reticulation as well as Wastewater Treatment, with Treated Effluent system also being added in 2016/17. It plans for the development and upgrading of infrastructure to ensure capacity based on Spatial Planning Scenarios with a 20 year development horizon. The first one was published in 2011 while the currently-used one is from 2014. The latter was based on the Pragmatic Densification scenario in Transport Zones, which provided a basis to fully align with current spatial- and City integrated/ transversal planning. Current work in 2016 is to update the master plan based on a comprehensive TOD scenario.

The Master Planning Process rests on an evidence-based and deterministic model, using existing property information, accurate aerial photography and topography, as well as measured water supplied-, water consumption- and sewage treatment volumes to determine unit demands, which can be imposed on future planning scenarios to predict spatial water demands and sanitation discharge. This is followed by conceptual design of new infrastructure required to meet the demand, making up the Master Plan, being incorporated into SAP PPM as the long-term project plan of identified new projects required for new development.

The existing infrastructure has a finite life span and it is essential that it is maintained, upgraded and replaced within the relevant time frames to ensure the sustainability and efficiency of the City's water and sanitation services.

An estimated minimum of R 57 530 590 /annum and R 71 754 082 /annum is required for water pipe replacement and sewer pipe replacement respectively for the 2016/2017 financial year. For reticulation water mains, the aim is to achieve an acceptable burst rate of approximately 15 bursts/100km/ year, dependent on affordability. The Pipe Replacement Programme will need to receive a progressively increased budget to deal with the replacement backlog.

Key components of existing infrastructure, in rapidly-developing regions of the City, operate at peak level during periods of high demand. Capacity improvements will be required to enable development. The Department has developed an Infrastructure Master Plan that identifies the Water and Sewer upgrading requirements for all development areas.

It is projected that the bulk water supply system in the north eastern and north western corridors of the City will come under increasing stress in the future due to the growth of these areas. Augmentation of the bulk water system will be required to ensure that supply capacity can meet the future demand for water. The proposed Bulk Water Augmentation Scheme, comprising a 500 Ml/day water treatment works, two 300 Ml bulk reservoirs, two 100 Ml reservoirs and bulk water conveyance pipelines, will increase the overall capacity of the bulk water supply system, as well as increased supply capacity to the northern areas of the city.

The sewer reticulation system is also experiencing severe constraints particularly in the more densely populated lower income suburbs.

Business Element 5.2: Water services Infrastructure Management (Operational and Maintenance)

Bulk water has a continuing maintenance programme with an estimated budget of R 166 Million (for the 2017/2018 to 2021/2022 period) in place to ensure that the current distribution pipelines, water treatment works and reservoirs are either refurbished or replaced as required. The City is currently in the process of re-drafting the new Water Safety Plan.

The City has a Disaster Risk Management Plan that is compiled by the Disaster and Risk Management Department. It confirms the arrangements for managing disaster risk and for preparing for- and responding to disasters within the City of Cape Town Metro as required by the Disaster Management Act. A Disaster Risk Management Plan is in place for the Department, supported by detailed protocols for different scenarios and individual site emergency management plans, with various simulated emergency exercises being held on a regular basis for readiness and improvement purposes.

The City of Cape Town Metro takes operational and compliance samples on a routine basis at all the WWTWs and WTW's are analysed at Scientific Services, an accredited laboratory. The monitoring and inspection reports for all of the WWTW's and the WTW's are also then compiled by the laboratory. The relevant branches concerned takes immediate action to rectify problems and / or improve operational aspects as and when may be required. This information is then used for the Blue and Green reports compiled by DWS.

Risk analysis tool

The Water and Sanitation Department is focusing on growing its 'asset management maturity' with the implementation of a Strategic Municipal Asset Management (SMAM) programme. This is facilitated through Engineering and Asset Management. The City also has a Wastewater Risk Abatement Plan (WWRAP) which is of significant importance as wastewater carries with it many potential risks to both the environment and the health of the public. This plan is in line with the approach adopted by DWS in which it identify, analyses and evaluates the risks as well as develops the strategies to mitigate or minimize the impacts of the risks.

An automation, monitoring and technology programme is being driven in the department in conjunction the Information Systems & Technology department towards achieving maximum efficiency and optimum utilisation of staff resources in a "smart" way. To this end, available technologies are being investigated to harness existing infrastructure in order to achieve the most economical platforms to achieve these aims.

The DWS launched the Blue, Green and No Drop Certification, with regard to drinking water quality, wastewater quality and the status of water losses and water use efficiency respectively.

Blue Drop status is awarded to those towns that comply with 95% criteria on drinking water quality management. The Blue Drop Certification programme promises to be the catalyst for sustainable improvement of South African drinking water quality management in its entirety. The Blue Drop performance of the City of Cape Town Metro Municipality is summarised as follows in the DWS's 2014 Blue Drop Report in which we scored 95.86%.

Table A. 8: Blue Drop Score for City of Cape Town

Water Services Authority and Water Services Provider	**City of Cape Town Metropolitan Municipality**
2014	95.86
Performance Area	**City of Cape Town**
Water Safety Planning (35 %)	32.03
Treatment Process Management (8%)	8.00
DWQ Compliance (30 %)	30.00
Management, Accountability (10 %)	8.50
Asset Management (14%)	13.58
Use Efficiency, Loss Management (3%)	2.85
Bonus Scores	0.91
Penalties	0.00
Blue Drop Score (2012)	98.1
Blue Drop Score (2011)	97.6
Blue Drop Score (2010)	0
System Design Capacity (Ml/d)	1664
Operational Capacity (% i.t.o. Design)	52
Average daily consumption (l/p/d)	223.7
Microbiological Compliance (%)	99.5
Chemical Compliance (%)	99.9

DWS's Green Drop Report for 2014, which provides a scientific and verifiable status of municipal wastewater treatment, scored the City of Cape Town 89.7%, with 11 WWTWs ascertaining the Green Drop Status. Green Drop status is awarded to the wastewater treatment works within the WSA's area of jurisdiction that comply with 90% criteria on key selected indicators of waste water quality management. The Green Drop performance of Metro is summarised as follows in the DWS's 2014 Green Drop Report below:

Table A. 9: Green Drop Result for the City of Cape Town

Technology Description		Athlone	Bellville	Cape Flats
Technology (Liquid)		Activated sludge BNR and diffused air	Activated sludge extended aeration and diffused air	Activated sludge and BNR
Technology (Sludge)		Centrifugal dewatering, Gravity and DAF thickening	Belt press dewatering & Sludge lagoon/pond	Centrifugal thickening, Belt press dewatering and Anaerobic digestion
Key Risk Areas				
A	ADWF Design Capacity	105	54.6	200
B	Operational flow (% of Design	133%	99%	58%
C	Annual Average Effluent Quality	64.8%	31.4%	96.8%
C	1) Microbiological Compliance (%)	90.6%	0.0%	81.3%
C	2) Physical Compliance (%)	68.8%	39.6%	98.0%
C	3) Chemical Compliance (%)	55.3%	32.2%	99.5%
D	Technical skills (Reg 813)	Partial	Yes	Yes
2014 Wastewater Risk Rating		**70.3%**	**59.4%**	**45.9%**
2013 Wastewater Risk Rating		64.9%	59.4%	43.2%
Risk Abatement Planning				
Highest Risk Areas based on the CRR		Wastewater quality, technical skills, operational	Wastewater quality, process controller skills	Microbial wastewater quality, process controller skills
WW Risk Abatement Status		Final document annual	Final document annual	Final document annual review no. 2
Capital & Refurbishment expenditure for Fin Year		R3,209m	R115,446m	R10,45m
Description of Projects' Expenditure 2012- 2013		Completed mechanical and civil works on PST	Capacity extension of the works by 20Ml/d	Completed sludge regional facility, refurbished digesters, replaced low & medium voltage breakers, replaced substation switch gear, installed CCTV

Technology Description		Green Point outfall	Borcherd's	Macassar-Strand
Technology (Liquid)		Screenings and maceration	Activated sludge and BNR and diffused air	Activated sludge extended and mechanical aeration
Technology (Sludge)		None - Marine or Deep-sea Outfall	Belt press and Centrifugal dewatering & Sludge lagoon/pond	Belt press dewatering
Key Risk Areas				
A	ADWF Design Capacity (Ml/d)	40	33	35
B	Operational flow (% of Design Capacity)	70%	106%	109%
C	Annual Average Effluent Quality Compliance (2012-2013)	93.6%	33.1%	57.2%
	1) Microbiological Compliance (%)	NMR	20.8%	90.2%
	2) Physical Compliance (%)	86.1%	51.3%	66.2%
	3) Chemical Compliance (%)	99.2%	22.6%	42.9%
D	Technical skills (Reg 813)	Partial	Yes	Partial
2014 Wastewater Risk Rating (%CRR/CRR$_{max}$)		**44.4%**	**74.1%**	**66.7%**
2013 Wastewater Risk Rating (%CRR/CRR$_{max}$)		44.4%	70.4%	40.7%
Risk Abatement Planning				
Highest Risk Areas based on the CRR		Wastewater quality, process controller skills	Wastewater quality, process controller skills, operational capacity	Wastewater quality, process controller skills, operational capacity
WW Risk Abatement Status		Final document annual review no. 2	Final document annual review no. 2	Final document annual review no. 2
Capital & Refurbishment expenditure for Fin Year 2012-2013 (Rand)		None	R1,850m	R9,595m
Description of Projects' Expenditure 2012- 2013		None	Initiated dewatering contract, modified skip dolly at inlet works	Street lights replaced, effluent reuse pump station civil works, generator installation completion and CCTV

Technology Description		Mitchells Plain	Hout Bay	Kraaifontein
Technology (Liquid)		Activated sludge and BNR and diffused air	Screenings, detritus removal & maceration	Activated sludge & BNR and Biological filters
Technology (Sludge)		DAF and Gravity thickening and Belt press	Marine or Deep-sea Outfall	Belt press dewatering and Anaerobic digestion
Key Risk Areas				
A	ADWF Design Capacity (Ml/d)	45	9.6	17.5
B	Operational flow (% of Design Capacity)	78%	52%	111%
C	Annual Average Effluent Quality Compliance (2012-2013)	81.3%	91.9%	64.1%
	1) Microbiological Compliance (%)	29.4%	NMR	94.0%
	2) Physical Compliance (%)	88.8%	92.2%	74.0%
	3) Chemical Compliance (%)	88.5%	91.7%	49.5%
D	Technical skills (Reg 813)	Yes	Partial	Yes
2014 Wastewater Risk Rating (%CRR/CRR_{max})		**51.9%**	**45.5%**	**54.5%**
2013 Wastewater Risk Rating (%CRR/CRR_{max})		48.2%	59.1%	40.9%
Risk Abatement Planning				
Highest Risk Areas based on the CRR		Wastewater quality, process controller skills	Process controller skills	Wastewater quality, process controller skills, operational capacity
WW Risk Abatement Status		Final document annual review no. 2	Final document annual review no. 2	Final document annual review no. 2
Capital & Refurbishment expenditure for Fin Year 2012-2013 (Rand)		R0,85m	None	R5m
Description of Projects' Expenditure 2012- 2013		MV electrical panel refurbished and rehabilitated security fence	None	Mechanical installation for new inlet works and reuse pump station

Technology Description		Groot Springfontein	Zandvliet	Potsdam-Milnerton
Technology (Liquid)		Evaporation ponds (no effluent)	Activated sludge MBR, BNR & extended aeration	Activated sludge BNR and mechanical
Technology (Sludge)		None specified	Belt press dewatering	Belt press dewatering, DAF thickening and
Key Risk Areas				
A	ADWF Design Capacity (Ml/d)	0.1	72	55
B	Operational flow (% of Design Capacity)	10%	117%	96%
C	Annual Average Effluent Quality Compliance (2012-2013)	80.3%	75.9%	85.9%
	1) Microbiological Compliance (%)	0.0%	94.3%	53.1%
	2) Physical Compliance (%)	100.0%	98.7%	98.1%
	3) Chemical Compliance (%)	0.0%	54.3%	84.6%
D	Technical skills (Reg 813)	Partial	Partial	Yes
2014 Wastewater Risk Rating (%CRR/CRR_{max})		**29.4%**	**68.8%**	**46.9%**
2013 Wastewater Risk Rating (%CRR/CRR_{max})		23.5%	43.8%	46.9%
Risk Abatement Planning				
Highest Risk Areas based on the CRR		Wastewater quality, process controller skills	Wastewater quality, process controller skills, operational	Wastewater quality
WW Risk Abatement Status		Final document annual review no. 2	Final document annual review no. 2	Final document annual review no. 2
Capital & Refurbishment expenditure for Fin Year 2012-2013 (Rand)		None	R0,95m	R2,85m
Description of Projects' Expenditure 2012- 2013		None	CCTV installed	Refurbished UV unit and completed coarse screen

Technology Description		Camps Bay outfall	Scottsdene	Wesfleur Industrial
Technology (Liquid)		Screenings and maceration	Activated sludge BNR and extended aeration	Activated sludge BNR and extended aeration
Technology (Sludge)		Marine or Deep-sea Outfall	Belt press dewatering	Solar drying beds
Key Risk Areas				
A	ADWF Design Capacity (Ml/d)	5.5	12.3	6
B	Operational flow (% of Design Capacity)	42%	89%	53%
C	Annual Average Effluent Quality Compliance (2012-2013)	91.4%	91.0%	90.0%
	1) Microbiological Compliance (%)	NMR	100.0%	87.5%
	2) Physical Compliance (%)	84.5%	99.3%	100.0%
	3) Chemical Compliance (%)	96.9%	82.7%	83.3%
D	Technical skills (Reg 813)	Partial	Partial	Partial
2014 Wastewater Risk Rating (%CRR/CRR$_{max}$)		**31.8%**	**54.5%**	**59.1%**
2013 Wastewater Risk Rating (%CRR/CRR$_{max}$)		36.4%	40.9%	40.9%
Risk Abatement Planning				
Highest Risk Areas based on the CRR		Wastewater quality, process controller skills	Wastewater quality, process controller skills	Wastewater quality, process controller skills
WW Risk Abatement Status		Final document annual review no. 2	Final document annual review no. 2	Final document annual review no. 2
Capital & Refurbishment expenditure for Fin Year 2012-2013 (Rand)		None	R0,506m	None
Description of Projects' Expenditure 2012-2013		None	SCADA upgrade	None

Technology Description		Wildevoelvlei	Parow	Philadelphia
Technology (Liquid)		Activated sludge BNR and extended aeration	Activated sludge and extended aeration and	Aerated ponds/ Oxidation ponds
Technology (Sludge)		Belt press dewatering	None specified	None specified
Key Risk Areas				
A	ADWF Design Capacity (Ml/d)	14	1.25	0.086
B	Operational flow (% of Design Capacity)	71%	64%	93%
C	Annual Average Effluent Quality Compliance (2012-2013)	98.3%	90.1%	85.4%
	1) Microbiological Compliance (%)	98.0%	82.0%	NMR
	2) Physical Compliance (%)	97.4%	98.7%	100.0%
	3) Chemical Compliance (%)	99.0%	85.8%	0.0%
D	Technical skills (Reg 813)	Yes	Partial	Yes
2014 Wastewater Risk Rating (%CRR/CRR_{max})		**31.8%**	**52.9%**	**23.5%**
2013 Wastewater Risk Rating (%CRR/CRR_{max})		36.4%	47.1%	35.3%
Risk Abatement Planning				
Highest Risk Areas based on the CRR		Process controller skills	Wastewater quality, process controller skills	Wastewater quality, process controller skills
WW Risk Abatement Status		Final document annual review no. 2	Final document annual review no. 2	Final document annual review no. 2
Capital & Refurbishment expenditure for Fin Year 2012-2013 (Rand)		R0,504m	None	None
Description of Projects' Expenditure 2012-2013		Installed CCTV, fibre-optic ring and replaced SCADA equipment	None	None

Technology Description		Wesfleur Domestic	Klipheuwel	Melkbosstrand
Technology (Liquid)		Activated sludge BNR, extended aeration and diffused air	Rotating biological contactors	Activated sludge BNR, mechanical and extended aeration
Technology (Sludge)		Solar drying beds	Sludge transported to Kraaifontein plant	Solar drying beds
Key Risk Areas				
A	ADWF Design Capacity (Ml/d)	8	0.09	5.4
B	Operational flow (% of Design Capacity)	106%	194%	70%
C	Annual Average Effluent Quality Compliance (2012-	98.5%	73.3%	59.1%
	1) Microbiological Compliance (%)	98.0%	89.8%	97.8%
	2) Physical Compliance (%)	99.4%	93.3%	50.3%
	3) Chemical Compliance (%)	98.1%	55.6%	56.9%
D	Technical skills (Reg 813)	Partial	Partial	Partial
2014 Wastewater Risk Rating (%CRR/CRR$_{max}$)		**45.5%**	**64.7%**	**59.1%**
2013 Wastewater Risk Rating (%CRR/CRR$_{max}$)		45.5%	41.2%	50.0%

Risk Abatement Planning			
Highest Risk Areas based on the CRR	Process controller skills, operational capacity	Wastewater quality, process controller skills, operational capacity	Wastewater quality, process controller skills
WW Risk Abatement Status	Final document annual review no. 2	Final document annual review no. 2	Final document annual review no. 2
Capital & Refurbishment expenditure for Fin Year 2012-2013 (Rand)	R0,175m	None	None
Description of Projects' Expenditure 2012-2013	Replaced 350kW motor	None	None

Technology Description		Miller's Point	Simon's Town	Oudekraal
Technology (Liquid)		Rotating biological contactors	Biological filters	Rotating biological contactors
Technology (Sludge)		Septic tank sludge removed regularly	Solar drying beds and Anaerobic digestion	Septic tank sludge removed regularly
Key Risk Areas				
A	ADWF Design Capacity (Ml/d)	0.06	4	0.03
B	Operational flow (% of Design Capacity)	17%	55%	33%
C	Annual Average Effluent Quality Compliance (2012-2013)	98.8%	69.8%	96.8%
	1) Microbiological Compliance (%)	95.8%	75.5%	100.0%
	2) Physical Compliance (%)	100.0%	91.3%	98.7%
	3) Chemical Compliance (%)	98.6%	52.9%	94.6%
D	Technical skills (Reg 813)	Partial	Yes	Partial
2014 Wastewater Risk Rating (%CRR/CRR_{max})		**23.5%**	**47.1%**	**23.5%**
2013 Wastewater Risk Rating (%CRR/CRR_{max})		29.4%	70.6%	64.7%
Risk Abatement Planning				
Highest Risk Areas based on the CRR		Process controller skills	Wastewater quality	Process controller skills
WW Risk Abatement Status		Final document annual review no. 2	Final document annual review no. 2	Final document annual review no. 2
Capital & Refurbishment expenditure for Fin Year 2012-2013 (Rand)		None	R0,072m	R1,8m
Description of Projects' Expenditure 2012-2013		None	Replace starter motor for pump	Completion of DSS online monitoring

Technology Description		Gordon's Bay	Llandudno
Technology (Liquid)		Activated sludge and extended aeration	Rotating biological contactors
Technology (Sludge)		Conveyed via sewer to Macassar plant	None specified
Key Risk Areas			
A	ADWF Design Capacity (Ml/d)	3.06	0.12
B	Operational flow (% of Design Capacity)	144%	167%
C	Annual Average Effluent Quality Compliance (2012-2013)	67.1%	87.8%
	1) Microbiological Compliance (%)	100.0%	100.0%
	2) Physical Compliance (%)	67.1%	93.3%
	3) Chemical Compliance (%)	59.1%	80.9%
D	Technical skills (Reg 813)	Yes	Partial
2014 Wastewater Risk Rating (%CRR/CRR_{max})		**52.9%**	**52.9%**
2013 Wastewater Risk Rating		58.8%	47.1%

Risk Abatement Planning		
Highest Risk Areas based on the CRR	**Wastewater quality, process controller skills, operational capacity**	**Wastewater quality, process controller skills, operational capacity**
WW Risk Abatement Status	**Final document annual review no. 2**	**Final document annual review no. 2**
Capital & Refurbishment expenditure for Fin Year 2012-2013 (Rand)	**None**	**None**
Description of Projects' Expenditure 2012- 13	**None**	**None**

The No Drop Metro Report is to provide an overview of the status of the Metros with regards to their water security, water losses, non-revenue water and water use efficiency. Due to the latter it gives a very good overview of the modus operandi of the Water Demand Management branch. The City of Cape Town scored 83.54% in the 2014 No Drop Report found below.

Table A. 10: Results of the No Drop score for City of Cape Town

Key Performance Areas	Weight (%)	All Supply Systems (%)
WCWDM Strategy, Planning and Implementation	20	100
Asset Management	15	67
Technical Skills	5	92.5
Credibility	10	84
Compliance and Performance	35	66
Local Regulation	5	100
Customer care	10	74
Bonus score		4.97
Penalties (included in KPI score)		0
No Drop Score		83.54%
Water use targets (Recon All Town Strategy Targets)		385.90 million
Availability of supply based on current WUL or SLA		398.70 million
System Input Volume (kl/annum)		314.77 million
Infrastructure Leakage Index (ILI)		2.6
Apparent/ Commercial Losses (%of SIV)		2.4%
Non-revenue water (%)		21.1
Water Use Efficiency (l/cap/day)		200
NDRR		26
NDRR/$NDRR_{max}$		54.2
Authorised Consumption (l/cap/day)		192
Real Losses (l/conn/day)		153
Real Losses (m^3/km mains/day)		9
%Water losses		13.9

Business Element 6: Associated Services

All the schools, hospitals and clinics in City of Cape Town's Management Area are supplied with a higher level of water and sanitation services- when compared to the minimum standards. All heath facilities are provided with adequate onsite water and sanitation services and there are no backlogs.

While the population growth scenarios and hence future water demands and wastewater loadings do factor in the impact of HIV/AIDS this impact needs to be monitored on an annual basis to ensure continuous delivery of water to these facilities.

Business Element 7: Water Resources

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

The CCT and DWS operate the WCWSS in an integrated manner to ensure that the storage of water is maximized and spillage is minimized during current and future hydrological years. The annual yield of the WCWSS, including the Berg River scheme, is 556 million kℓ per annum.

The major raw water supply schemes of the WCWSS are the Riviersonderend, Voelvlei and Berg River Schemes, owned and operated by the DWS, and the Wemmershoek and Steenbras Schemes, owned and operated by the City of Cape Town. The total storage capacity of the six major dams of the WCWSS is 898.3 million kℓ. The actual amount of water stored on 27 June 2016 was 324.8 million kℓ.

Table A. 11: Year on year comparative Bulk Storage of the Major Dams

MAJOR DAMS (99.6% of total storage)	BULK STORAGE ON 27 JUNE 2012 – 2016						
	CAPACITY (Ml)	CAP. LESS DEAD STORAGE	2012%	2013%	2014%	2015%	2016%
Wemmershoek	58 644	58 544	50.4	90.8	91.0	53.5	50.3
Steenbras Lower	33 517	33 517	53.6	75.6	74.1	56.3	37.0
Steenbras Upper	31 767	29 267	76.0	88.1	101.2	58.4	69.9
Voëlvlei	164 122	156 022	48.6	70.5	82.1	40.5	27.6
Theewaterskloof	480 250	432 250	59.8	84.1	100.0	55.4	34.2
Berg River	130 000	125 800	72.6	97.1	101.2	60.3	39.4
TOTAL STORED (Ml)			532 848	752 176	856 933	479 582	324 753
TOTAL STORAGE	898 300	835 400	768 300	898 300	898 300	898 300	898 300
% STORAGE			59.3	83.7	95.4	53.4	36.2

The six major dams comprise 99.6% of the total system capacity. The percentages in the above table include "dead storage" (water that is not available for use). The approximate dead storage for each dam is indicated in Table A.11.

Table A. 12: Minor Dam Levels supplying City of Cape Town

MINOR DAMS (0.4% of Total System Capacity)	CAPACITY (Ml)	% on 2016/06/27
Dams supplying Kloof Nek WTW:		
Hely Hutchinson	925	89
Woodhead	954	76.2
Dams supplying Constantia Nek WTW:		
Victoria	128	31.6
Alexandra	126	33.5
De Villiers	243	93.5
Dams supplying Brooklands WTW:		
Kleinplaats	1 368	44.9
Lewis Gay	182	1.5

The minor dams owned and operated by the City of Cape Town comprise 0.4% of the total system capacity. The minor dams in the table above are grouped by systems: Hely Hutchinson and Woodhead Dams supply Kloof Nek WTP; Victoria, Alexandra and De Villiers Dams supply Constantia Nek WTP; and the Kleinplaats and Lewis Gay Dams supply Brooklands WTP.

A long-term 19 year record of the storage level of the WCWSS is shown below in Figure A.3

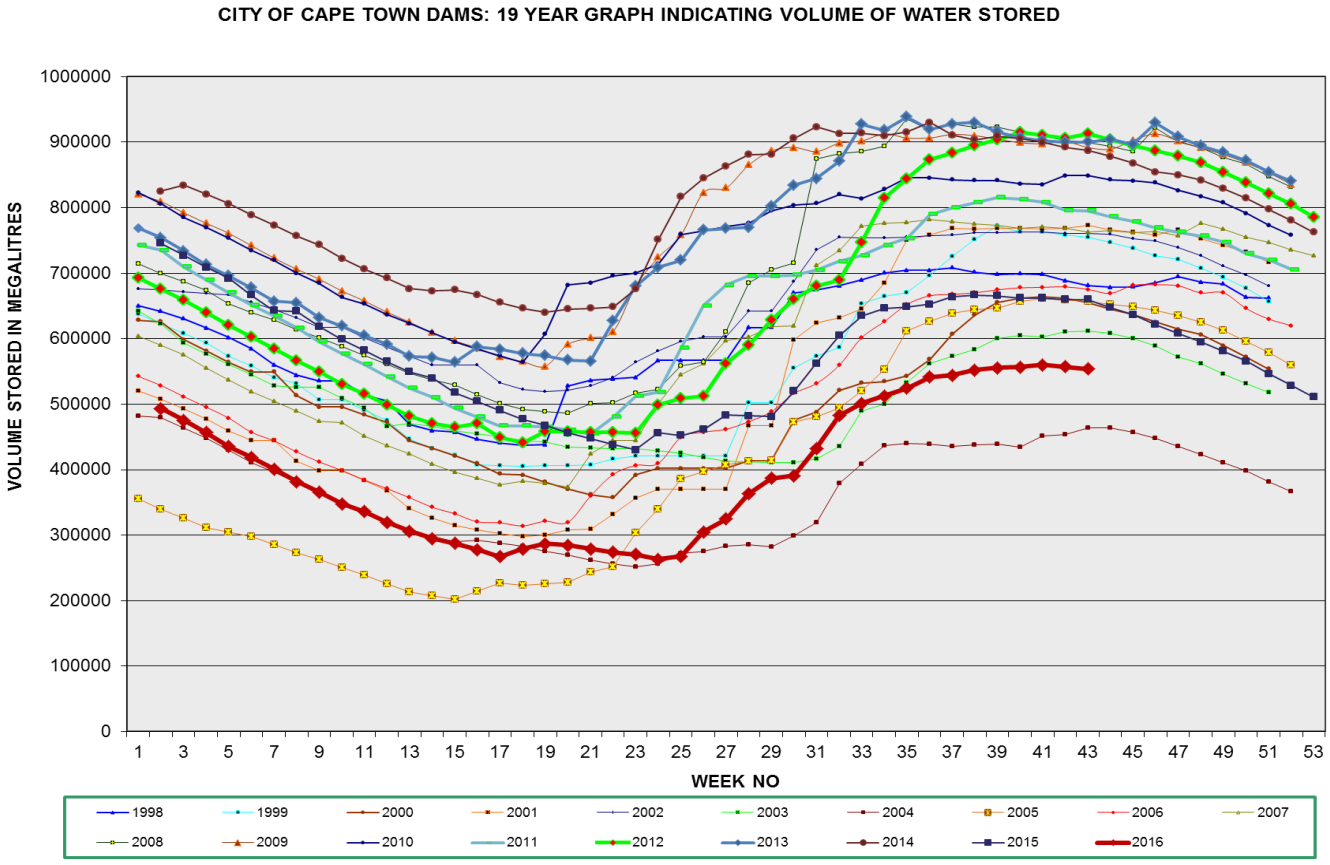


Figure A. 3: 19 year long term history of reservoir storage capacity

The CCT's allocation of water from the WCWSS, with the additional yield of the Berg River scheme, is 398 million kl per annum. The CCT's potable water input was 329.0 million kl during the 2015/16 financial year. 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 treated effluent produced at the Wesfleur Treatment Works in Atlantis is used to artificially recharge the aquifer from which water was abstracted for potable supply as part of the Atlantis Water Supply Scheme. It is critical to augment, refurbish and maintain the City's bulk water supply system, to ensure a safe, reliable and sustainable supply of water to Cape Town and its surrounding region.

As a result of consecutive winters with below average rainfall, the combined storage of the major dams of the Western Cape Water Supply System (WCWSS), at the end of the 2016 winter rainfall season, is at 62.5%. Level 3B water restrictions are currently implemented for the coming hydrological year as a measure to ensure the protection of the region's water resources and water supply. This is to ensure that over this drought period, consumers will receive an ongoing, possibly restricted, supply of water. This aims to prevent emptying of the supply sources over the next few hydrological years.

The City will continue to engage with the national Department of Water and Sanitation (DWS) on reviewing and finalising water allocations and water use licencing from the WCWSS. With the regional supply area of the WCWSS and the increasing probability of future competition for water, the City will be considering the regional impact of Cape Town's future water resources, and form closer working relationships with neighbouring municipalities to more effectively plan and operate existing and future water supplies.

DWS is currently implementing the Berg River to Voëlvlei Dam Augmentation Scheme as the next water resource scheme to augment the capacity of the WCWSS. In addition to this, a number of schemes are currently being investigated by the City to augment the WCWSS. These projects include:

- Groundwater from the Table Mountain Group Aquifer;
- Groundwater from the Cape Flats Aquifer;
- Water reclamation for potable use;
- Integrated urban water management;
- The Lourens River scheme;

  Seawater Desalination – Due to the ongoing drought crisis the City is experiencing, the procurement of a desalination pilot plant will be undertaken. It should be running by July 2017 and will yield approximately 2.5 ML/day at a cost of R 30 million– which has impacted the 2017/18 draft Water and Sanitation tariff increases.

The next four months the following proposed emergency supply schemes will be implemented.

Scheme	Yield (Ml/day)	Detail	Cost	First Water Available
TMG Aquifer	2.5	Fast-tracked drilling of production boreholes at Wemmershoek and Steenbras catchments.	R5 million	30 June 2017
Seawater Desalination Package Plant	2.5	Emergency procurement of a desalination package plant to reinforce Atlantis supply zone.	R30 million	30 June 2017
WC/WDM Strategy	50 - 100	Intensification of demand management measures: • Water restrictions • Pressure management • Communication	R5 million	30 June 2017

The next 12-18 months the proposed accelerated supply schemes will be implemented.

Scheme	Yield (Ml/day)	Detail	Cost	First Water Available
TMG Aquifer	10	Incremental expansion of the wellfields constructed as emergency scheme.	R90 million	June 2018
Seawater Desalination Package Plant	2.5	Expansion of the emergency package plant. Primarily for sea water quality data acquisition.	R30 million	June 2018
Wastewater Re-use (drinking water)	10	Treatment of effluent from Zandvliet WWTW for direct or indirect injection into bulk water supply system.	R120 million	June 2018
Cape Flats Aquifer	5	Incremental drilling of boreholes abstracting water from the aquifer in Mitchells Plain / Khayelitsha	R40 million	June 2018
WC/WDM Strategy	100	Intensification of demand management measures: • Water restrictions • Pressure management • Water saving incentive schemes • Regulation of plumbing fittings and water using appliances • Informative water billing • Communication	R10 million	June 2018
Voelvlei Augmentation (Phase 1)	60	DWS Scheme – Pumped transfer of water from Berg River to Voelvlei Dam	R275 million	December 2019

In the longer term, with the increasing competition for water in the region and the potential for climate change to reduce the yields of our surface water dams, it will become more important for the City to manage water within its own municipal area in a more holistic and beneficial way. It is envisioned that Cape Town can progress to becoming a water sensitive city, where natural resources, such as rivers and groundwater sources, and engineered water services, such as water supply, wastewater and stormwater services, are planned and managed in an integrated and holistic way, to realise the following benefits:

- Be able to use urban water as a resource for drinking and non-drinking water supply.
- Improve the health of Cape Town's rivers and waterways, and improve liveability for communities through which these waterways flow.

- Create opportunities for development around rivers and waterways.
- Conserve and rehabilitate the natural environment.
- Improve resilience of Cape Town's water supply service.

The Branch will also be conducting an assessment of the funding requirements and options for its capital development and maintenance programmes, and assessing the impact of these funding requirements on the bulk water tariff. Approximately R 166M has been budgeted over the next five years for with respect to a Bulk Water maintenance programme. This is to ensure that the current distribution pipelines, water treatment plants and subsequent reservoirs are refurbished or replaced as it is required.

Quality of water

The quality of water produced at the CCT's water treatment plants are strictly monitored on a continual operational basis by the Bulk Water Branch, to ensure compliance with the South African National Standard (SANS 241:2015) 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.

ISO 17025 accreditation for the laboratory quality testing has been attained in September 2011. Building expansion of the laboratory is a necessity for improving its capability to undertake a wide spectrum of tests.

The water quality report below indicates the analytical data and approximate distribution for Cape Town drinking water for June 2016 (refer to Table A.13). The SANS Specification is also stipulated on this report. Water Compliance has exceeded the target of 98% at 99.1% (4th Quarter SDBIP, 15/16).

Table A. 13 : Class 1: Drinking Water Quality for June 2016 (SANS 241: 2015 requirements per population size; 1 sample: 20 000 population)

Water Supply Outlets	Sample Points Per Water Supply Outlet	Sample Points Sampled	Number of Samples Taken for June		% Compliance SANS 241:2015			
					June Month		12 Month Rolling Average	
			Chemical	Micro-biological	Chemical	Microbiological	Chemical	Microbiological
Water Treatment Plant	10	10	32	31	98.89	100	99.4	99.6
Reservoir *	24	23	101	113	99.85	99.23	99.96	99.58
Distribution *	132	123	572	581	99.87	100	99.90	99.59
Total	166	156	705	725	99.54	99.74	99.75	99.59

Regulation of Industrial consumers

The CCT has a dedicated team of inspectors that form the Water Pollution Control Inspectorate. Their function is to protect municipal infrastructure and the environment against pollution. Most of the inspectors are Peace officers, who regulate public institutions and the industrial/commercial sector. For the 2015/2016 financial year a total of 230 industrial discharge points were monitored on a monthly basis. A total of 44 fines for none compliance were issued for the same period. These fines include those who have contravened the Treated Effluent and The Wastewater & Industrial effluent by-law. Spot fines have recently been approved by the Magistrate committee and are effective immediately. A process has been developed, approved and implemented to handle section 54 and 56 notices issued under the criminal procedure Act. This will enhance the enforcement arm of the unit.

Quality of effluent

The overall Microbiological, Chemical and Physical compliance percentages of the final effluent samples taken at the end of June 2016 at the various WWTWs are summarised in the table below.

Table A. 14: Wastewater Effluent Quality Results

PLANT	Date	Flow	TSS	COD	Ammonia	Nitrate	ortho-phosphate	E.coli	Chloride	pH	Conductivity	Res. Chlorine
		Ml/d	mg/l	mg/l	mgN/l	mgN/l	mgP/l	per 100ml	mg/l		mS/m	mg/l
Athlone	27-Jun-16	118.1	5	45	0.2	16.1	0.1	47	152	6.8	85	0.1
Bellville	28-Jun-16	33.8	3	43	6.0	5.6	3.9	85	115	7.5	92	-
Borcherds Quarry	29-Jun-16	24.2	-	-	5.4	8.4	5.6	390	144	7.3	101	0.0
Cape Flats	29-Jun-16	128.5	5	42	18.0	1.8	5.3	490	106	7.5	87	0.0
Fisantekraal	28-Jun-16	11.0	3	25	1.3	5.7	1.2	1	101	7.8	66	0.0
Gordons Bay	29-Jun-16	-	3	35	1.5	8.7	4.8	3	195	7.2	99	0.1
Klipheuwel	28-Jun-16	0.55	13	69	48.5	3.1	5.4	52000	91	7.8	100	0.1
Kraaifontein	28-Jun-16	7.5	3	35	1.6	2.6	0.8	1	121	7.7	74	0.2
Llandudno	30-Jun-16	-	17	79	5.9	18.7	6.6	-	144	7.1	90	0.5
Macassar	29-Jun-16	-	235	275	19.0	0.1	4.1	84000	134	7.1	97	0.0
Millers Point	30-Jun-16	-	3	26	0.2	1.3	2.7	-	70	8.1	47	2.0
Melkbosstrand	27-Jun-16	3.7	13	49	0.6	2.8	1.3	740	134	8.3	80	0.0
Mitchells Plain	29-Jun-16	28.7	11	61	8.5	0.1	4.2	200000	85	7.7	79	0.0
Oudekraal	30-Jun-16	-	3	10	0.2	0.2	0.1	-	25	9.2	22	1.5
Parow	-	-	-	-	-	-	-	-	-	-	-	-
Potsdam	27-Jun-16	44.9	3	40	0.2	3.5	0.1	9600	156	7.6	90	0.0
Scottsdene	28-Jun-16	11.4	5	30	0.8	4.5	0.1	440	62	7.3	42	0.1
Simons Town	30-Jun-16	-	21	105	16.6	28.8	5.9	-	126	7.2	98	-
Wesfleur DOM	27-Jun-16	9.2	3	45	0.9	12.8	2.2	63	174	7.6	106	0.0
Wesfleur IND	-	-	-	-	-	-	-	-	-	-	-	-
Wildevoelvlei	30-Jun-16	-	3	31	21.3	2.8	1.8	-	141	7.7	90	0.0
Zandvliet	28-Jun-16	72.4	28	74	26.2	2.8	2.5	120	72	7.4	77	0.1

Business Element 8: Conservation and Demand Management

Water demand management is an essential core requirement for sustainability of water supply to the City. 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 (WC/WDM Strategy).

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.

Water Demand Management primarily aims to obtain an overall reduction in the water demand across the City and does this by a proactive investment in infrastructure to achieve real loss reduction. The projects are required to minimise losses in the Bulk and Reticulation system but also save on infrastructure, chemicals and energy for required treatment. At lower pressures, the life of the reticulation system is extended. These interventions postpone the need for expensive infrastructure upgrades.

Pressure management is being implemented across the City in various configured District Metered Areas (DMAs) where the most impact can be achieved based on the calculated Infrastructure Leakage Index (ILI). Once the proposed DMA's have been finalised and implemented, the water balance model will then be developed at the zone (DMA) level.

An Advanced Pressure Management solution is being implemented, which includes for a monitoring system. Increasing the number of DMA's often results in the addition of new reservoir zones and supply points. A total of R 170M over the next five years has been allocated to the programme.

If 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.

In the 2015/16 financial year, a number of successful WC/WDM projects were implemented, of which notable projects were:

- Water meters replaced re-fixed/relocated 7131
- WDM Devices installed 24997

Pressure Management was successfully installed in Sunningdale, Imhoff's Gift, Wynberg 3 Zone B, Vrygrond, Masiphumelele, Therina, Helderzicht and Silverboom. Savings achieved from this intervention is reported to be in the region of 8.24 million m^3 per annum for the 2015/2016 year.

For the past three years, the City has paid attention to its own infrastructure, and decreased its water demand by introducing various water conservation and water demand management

(WCWDM) initiatives. Most of the maintenance activities of the Reticulation Branch also have a WCWDM impact, for example the pipe replacement programme. WCWDM initiatives include the creation and analysis of District Metered Areas (DMA's), installation of pressure relief valves in high-pressure areas, thus decreasing the quantity of water losses through leaks and burst pipes. Further initiatives implemented include the meter replacement programme and meter audits, installation of water management devices, retrofitting, treated-effluent reuse, and consumer education and awareness.

Water Balance:

The City of Cape Town has already started implementing the water balance as per the International Water Association (IWA standard).

Table A. 15: City of Cape Town Water Balance (30 June 2016)

<table>
<tr><td rowspan="6">(A)
System Input
329 003 715

100%</td><td rowspan="3">(B)
Authorised
278 188 341
84.6%</td><td rowspan="2">(D)
Billed
255 971 841</td><td>(H) Metered
255 971 841</td><td>External Customers 33 556 585
Internal Customers 222 415 256</td><td>Free Basic 50 064 802
Non-Free Basic 172 350 454</td><td rowspan="2">(Q)
Revenue Water
255 971 841
77.8%</td></tr>
<tr><td>(I) Unmetered 0</td><td colspan="2"></td></tr>
<tr><td rowspan="3">(E)
Unbilled
22 216 500</td><td>(J) Metered
13 396 500</td><td>Informal Settlements 11 049 660</td><td></td><td rowspan="4">

(R)
NRW
73 031 874
22.2%</td></tr>
<tr><td></td><td>Formal Metered Unbilled 2 346 840</td><td></td></tr>
<tr><td>(K) Unmetered
8 820 000</td><td>Formal Unmetered 8 820 000</td><td></td></tr>
<tr><td rowspan="3">(C)
Losses (UAW)
50 815 374
15.4%</td><td rowspan="2">(F)
Apparent Losses
19 509 978</td><td>(L) Unauthorised 2 906 686</td><td colspan="2"></td></tr>
<tr><td>(M) Meter Inaccuracies 16 603 292</td><td colspan="2"></td></tr>
<tr><td>(G)
Real Losses
31 305 396</td><td>(N) Mains 20 520 569
(O) Storage 403 800
(P) Connections 10 381 027</td><td colspan="2"></td></tr>
</table>

Using water and billing figures, the Water Losses (or unaccounted-for water (UAW)) and Non-Revenue Water (NRW) for the overall supply system from Bulk Water Treated to end consumer billing is 15.4% and 22.2% respectively (2015/16).

Water loss is measured internationally using an indicator called Non-Revenue Water (NRW). Average Non-Revenue Water for municipal water use in South Africa is estimated to be 36.8% (Water Research Commission, The State of Non-Revenue Water in South Africa, 2012) and the world average value of 36.6%.

The percentage of treated potable water not billed has increased over the past months, but has stabilised during the second quarter. Although current achievements are above the set targets, these should be seen against the national average of around 34%. The City's targets are extremely stringent and W&S will be reviewing targets following the conclusion of a detailed analysis. Future non-revenue water figures (water not billed) will be closely monitored. The Department is taking steps to further improve the accuracy of measurements and estimations. This includes a review of bulk water metering data and improvements to consumer metering.

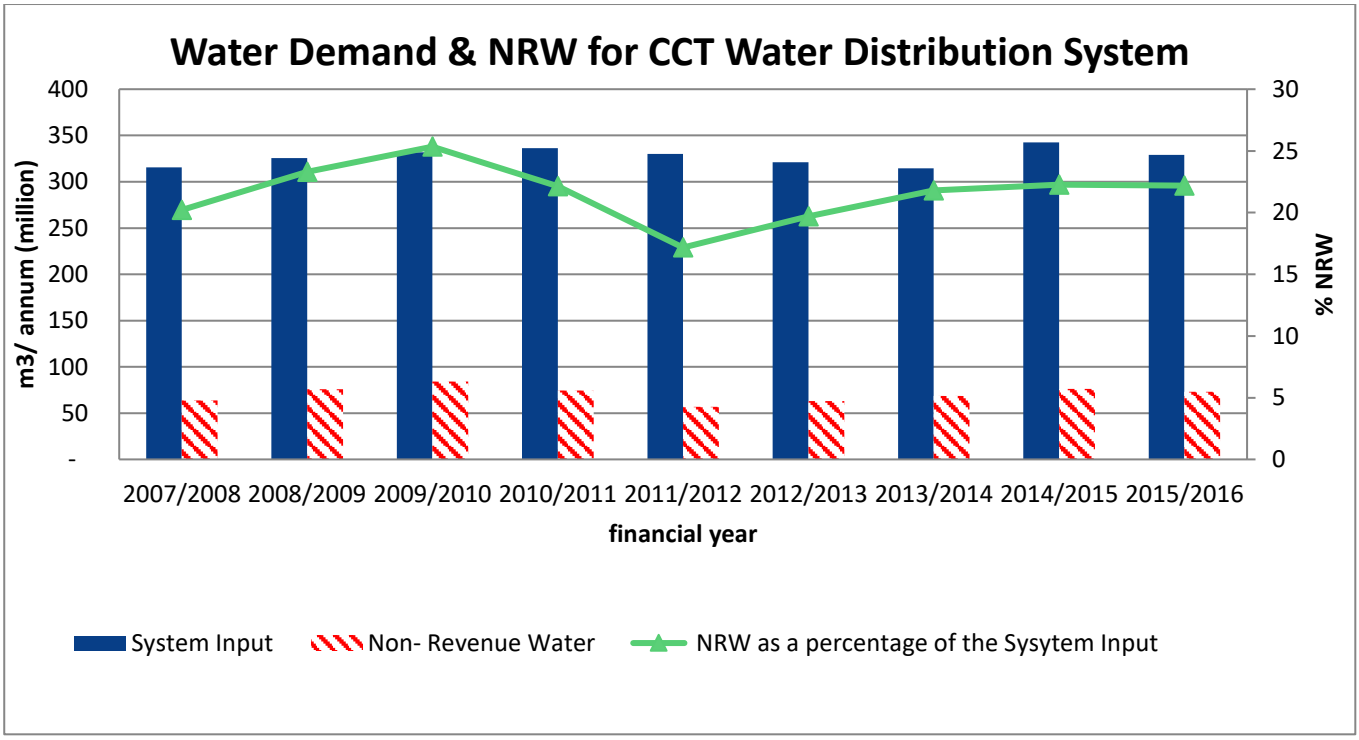


Figure A. 4: Graph showing the trends of the Water Demand and the % NRW for the CCT

In terms of driving water security, the construction of the 25 million litre De Grendel reservoir was completed. The reservoir, built at a cost of approximately R42 million, is located just west of Durbanville Hills Winery and provides 48 hours potable-water storage capacity to existing and future developments in Burgundy, Welbeloond and Annandale Ridge (also known as the N7 development corridor). Between 2006 and 2011, more than 200 000 people moved to the Western Cape, with a significant portion of these residents settling in the greater Cape Town area. Therefore, the City has to plan ahead to ensure water security, and the De Grendel reservoir is an important water security component of these plans.

Business Element 9: Financial Profile

Capital Expenditure:

Capital expenditure incurred during the year 2015/2016 amounted to approximately R1400 million with an expenditure level reached against the current budget.

Below is the summary of the Capex since 2016/17 till 2018/19

Table A. 16: Capex summary by branch for the period 2016-2019

Branch	Budget 2016/17	Budget 2017/18	Budget 2018/19
Bulk Water (R)	186,000,000	174,700,000	287,926,000
Eng. & Asset Management(R)	238,249,954	49,500,000	36,500,000
Reticulation	381,542,702	327,829,589	393,874,000
Water Demand Management (R)	45,000,000	44,760,000	43,430,000
Waste Water Treatment Works (R)	482,467,207	616,800,000	713,785,490
Scientific Services, Finance & Commercial & Support Service (R)	360,891,487	341,731,727	291,818,338
Grand Total (R)	1,694,151,350	1,555,321,316	1,767,333,828

Branch Area (R' Million)	2013/2014	2014/2015	2015/2016	total
Bulk Water	39	77	117	**233**
Wastewater	161	275	354	**790**
Reticulation	363	292	455	**1110**
WDM&S	52	49	40	**141**
EAM	73	60	125	**258**
Finance & Commercial, Scientific Services, Support Services and Head Office	135	231	310	**676**
Total	**823**	**985**	**1400**	**3208**

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).

Trends Operating budget:

The Operating budget will increase in line with the City's Medium-Term Revenue and Expenditure Framework (MTREF). This reflects the need for increasing demands to repair and

maintain current infrastructure and the requirement of resources to operate new infrastructure. Consequently, there is more pressure on annual tariffs increases.

Table A. 17: Prior Year's Operating Budget

	Prior Year Outcomes			
	Budget 2014/15	Actuals 2014/15	Budget 2015/16	Actuals 2015/16
Operating Expenditure (R)	6 193 034 209	6 169 789 235	6 989 404 363	7 327 496 963
% Spent	99.62%		104.84%	

Table A. 18: Medium Term Operating Expenditure

2015/16 Medium Term Expenditure Framework		
Adjustments Budget 2015/16	Approved Budget 2016/17	Approved Budget 2017/18
R 6 989 404 363	R 7 605 647 919	R 8 443 388 846

Capital budget:

The Department conforms to the City's financial budgeting process forming part of the IDP and basis its budget formulation on the key Strategic plans of the department. The Department plans ahead on a 10 year budget estimate, which is based on identifying current and potential future requirements for that period and beyond. The budget schedule contains 3 years of rolling approved budget projected to 5 years, plus another 5 years based on forward planning.

The Water and Sanitation Integrated Master Plan frames infrastructure requirements to provide capacity for an "ultimate land use development" scenario of more than 20 years. This planning is well-integrated with other Departments of the City, primarily Spatial Planning and its Spatial Development Framework, Human Settlements and Transport for Cape Town.

The Asset Management Plans of the Branches guide priorities for replacement, refurbishment and maintenance projects and programmes. Projects are developed, services are procured and projects are implemented with emphasis on best practice project management and engineering.

The medium-term (3 year approved) budget is summarised in Table A.19. This 3 year budget includes infrastructure and non-infrastructure related capital expenditure.

Table A. 19: Summary of Medium-Term Approved Capital Budget by Branch

Branch Category	FY2017/18	FY2018/19	FY2019/20	MTEF Total
	Value (R'000)	Value (R'000)	Value (R'000)	Value (R'000)
Bulk Water	108 907	196 926	343 400	649 233
EAM	138 132	101 268	92 500	331 900
Reticulation	327 830	393 874	443 029	1 164 732
WDM & Strategy	44 760	43 430	40 100	128 290
Other Branches	258 600	227 050	229 050	714 700
Wastewater	611 300	713 785	342 500	1 667 585
TOTAL	1 489 528	1 676 334	1 490 579	4 656 441

Tariffs and charges:

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 for water and sanitation is presented on the table below:

Table A. 20: Tariffs for water and sanitation

WATER TARIFFS (RANDS)	2012/13	2013/14	2014/15	2015/16	2016/17
Domestic Full: 0-6 kℓ	-	-	-	-	-
+6-10.5 kℓ	5.83	7.60	8.75	9.71	13.06
+10.5-20 kℓ	10.60	11.61	12.54	13.92	15.28
+20-35 kℓ	15.70	17.20	18.58	20.62	22.63
+35-50 kℓ	19.40	21.24	22.94	25.47	27.95
+50 kℓ	25.58	28.02	30.27	33.59	36.87
Domestic cluster:>6kℓ	**na**	**na**	**na**	**na**	**na**
+6-20 kℓ	9.07	na	na	na	na
+6-10.5kℓ	na	9.93	10.72	11.90	13.06
+10.5-20 kℓ	17.55	11.61	12.54	13.92	15.28
+20-35 kℓ	na	17.20	18.58	20.62	22.63
+35-50 kℓ	na	21.24	22.94	25.47	27.95
+50 kℓ	na	28.02	30.27	33.59	36.87
Commercial	11.42	12.51	13.51	15.00	16.46
Industrial	11.42	12.51	13.51	15.00	16.46
Schools/sport	10.09	11.06	11.94	13.26	14.55
Government	10.85	11.88	12.83	14.24	15.63
Municipality	10.09	11.06	11.9	13.26	14.55
Miscellaneous	10.85	11.88	12.83	14.24	15.63
Misc. (external)	12.96	14.19	15.33	17.01	18.67
Bulk Tariff	3.22	3.42	3.49	3.70	3.92
SANITATION TARIFF (RANDS)	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**
Domestic Full:0-4.2 kℓ	-	-	-	-	-
+4.2-7.35 kℓ	5.81	7.20	8.25	9.16	11.02
+8.4-14 kℓ	na	na	na	na	na
+7.35-14 kℓ	12.38	13.56	14.64	16.25	17.84
+14-28 kℓ	na	na	na	na	na
+14-24.5 kℓ	13.53	14.83	16.01	17.77	19.50
+28-35 kℓ	na	na	na	na	na
+24.5-35 kℓ	14.21	15.56	16.81	18.66	20.48
Industrial & Commercial	8.78	9.62	10.39	11.53	12.65
Departmental/Municipal	8.08	8.85	9.56	10.61	11.65
Domestic Cluster (>4.2 kℓ)	-	-	-	-	-
+4.2-14 kℓ	na	na	na	na	na
+4.2-7.35 kℓ	9.05	na	9.05	10.05	11.02
+7.35-14 kℓ	na	13.56	14.64	16.25	17.84
+14-35 kℓ	15.04	na	na	na	na
+14-24.5 kℓ	na	14.82	16.01	17.77	19.50
+24.5≤ 35 kℓ	na	15.56	16.81	18.66	20.48

As we get closer to requiring an augmentation scheme, the tariffs will have to be reviewed in order to cover the costs of this scheme. The City of Cape Town has in the past year implemented Level 2 water restrictions during the period 01/01/2016 till 31/10/2016 and then Level 3 water restrictions

were from 01/11/2016t till 31/01/2017. Since the 01/02/2017 the City has implemented Level 3 B Water Restrictions. This is due to the extended period of drought we are experiencing coupled with the low dam levels across the country.

Table A. 21: Restriction level and the required savings

Restriction Level	Water savings required
Level 1	10%
Level 2	20%
Level 3	30%

Free basic water and sanitation

Currently, the first 6kℓ of water supplied to all residential dwellings in the municipal area and the first 4.2 kℓ 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 Integrated Leaks Repair aimed at repairing leaks, reducing consumption, reducing monthly bills and eliminating arrears of properties occupied by Indigent households. (Refer to the Water Conservation and Demand Management Strategy.)

Collection ratio on billed services will place an upward pressure on the city services tariff.

However there is a 2017/18 Draft Budget that is out for public participation which states the following:

As of the 1st July 2017:

- Only indigent residents will be receiving the first 6 kl of water and the first 4.2 kl of sewage free of charge.
- The criteria to be considered as indigent are as follows: a) property values of less than or equal to R 400 000; b) the monthly household income is less than R 4 000; or c) pensioners
- People on the cusp of this indigent category are able to apply for a rates rebate
- All non-indigent residents will be paying for their water and sanitation services from the first drop.

Business Element 10: Water Services Institutional Arrangements

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.

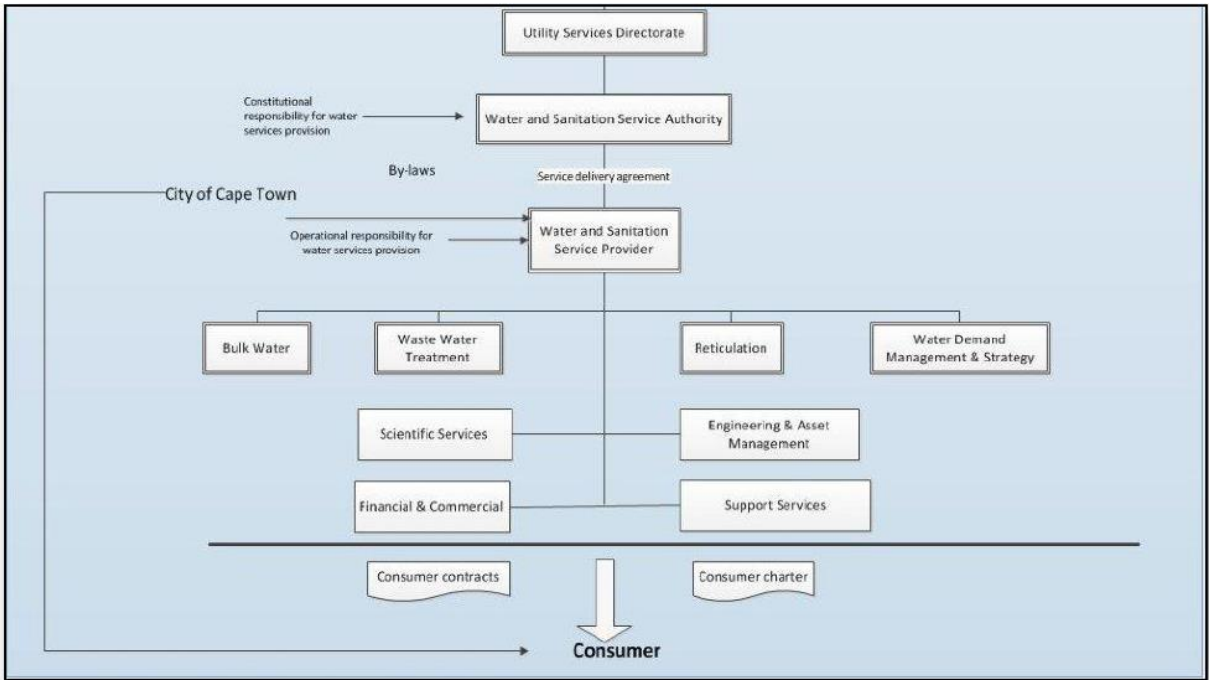


Figure A. 5: Organogram for Water and Sanitation

On 28 November 2001, Council authorized Water and Sanitation Services as it was called then 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 and the service is now housed in the Utility Services Directorate as the Water and Sanitation Department.

Improved Administrative Management

The Department is committed to consistently provide the highest quality water and sanitation services that meet and exceed the requirements and expectations of our consumers by ensuring the implementation of an Integrated Quality Management System that complies with ISO 9001, ISO 14001 and OSHAS 18001. To this end, both a Quality Statement and Customer Service Charter have been accepted for implementation. There is also a Department-wide ISO certification project being undertaken. Together with the Risk Management programmes being implemented, these initiatives will ensure quality and minimise risks.

The Quality Management System has been successfully developed throughout the department according to the requirements of ISO 9001 Standards:

- The Technical Services has achieved a certification on SANS 990 and ISO 9001. This is a great achievement for the City of Cape Town as it is the first Call Centre in Africa to be certified on SANS 990.
- Bulk Water has achieved certification for all 23 sites on ISO 9001.
- Water Demand Management & Strategy has achieved the certification on ISO 9001 Standard for all of its four sections and workplaces.
- Water and Sanitation Training Centre has achieved its SETA accreditation in October 2012 and is currently implementing ISO 9001 Standard.
- ISO 9001 certification was awarded to the Department's Reticulation Branch as well as the Finance and Commercial Branch (Administration).
- The Support Services Branch complied with all the requirements and has ISO 9001 Certification.
- The Engineering and Asset Management Brach has ISO 9001, OSHAS18001 and ISO 14001 Certification.
- The Finance and Commercial Branch, Technical Division will be audited in May 2017 for ISO 9001 Certification.
- The Department's HR Business Partner and the Director's Office will be audited in September 2017 for ISO 9001 Certification.
- The Wastewater and Scientific Services Braches will be audited later in the 2017/2018 financial year for ISO 9001 Certification.

The following business improvements initiatives are receiving focused attention:

- The new Informal Settlements and Backyarders Department will enable improvement of the level of service to the indigent households.
- Due to the current drought imperative, alternative waterless technologies will need to urgently be explored.
- We need internal staff with experience and expertise in the development and maintenance of alternative sanitation technologies. This is to further develop fast track service delivery and to sustain technology lifecycle maintenance.
- The increased amount of people needing to be in the indigent bracket due to the high rate of urbanisation coupled with the ageing infrastructure will put stress on the tariffs and subsidies.
- An asset performance and monitoring systems in order to improve asset operations, and thereby asset performance, the use of technology is being investigated as a facilitation tool.

- A service provider was employed to assist the department in developing line managers to be coaches who will support shift workers to cope with a changing environment.
- A communication protocol which addresses the communication needs with both internal and external customers has been developed and it is currently at the implementation stages.
- Scientific Services has developed productivity standards for the Sampling Laboratory and it is the objective of the Business Development section to determine productivity standards across the entire department.

Risk and Safety Management

The Department is committed to integrated risk and safety management in order to ensure consistency, legal compliance, continuous improvement and the effective management of risk.
The aim is to proactively mitigate (avoid, prevent or minimize) any condition, event or situation which could impact on Safety, Health, Risk, Environment or Quality or which has already resulted in injury, death or disease to person/s; loss or damage to Council or Third Party property; misuse or abuse of Council resources; impairment of the environment; statutory non-compliance; or which could negatively influence the achievement of Council objectives.

- A Disaster Risk Management Plan is in place for the Department, supported by detailed protocols for different scenarios and individual site emergency management plans, with various simulated emergency exercises being held on a regular basis for readiness and improvement purposes.
- A comprehensive Workplace Health and Safety Committee structure is in place for the Department. These committees also report to their respective Branch Risk and Safety Committee, which in turn reports to the Departmental Risk and Safety Committee who reports to the newly established Central Health & Safety Committee of the City.
- To assist the Section 16(2) Appointees for the Department with employer management responsibilities as required by the OHS Act, the necessary responsibilities have been assigned to operational management where the specialised nature of operational activities requires it.
- To increase machinery safety supervision, a system has been developed to expand on Employer Appointees in terms of General Machinery Regulations 2(1) and 2(7) and which is in the process of being implemented.
- All departmental sites are assessed at least once annually in terms of Health and Safety Compliance, Machinery Safety Compliance and Operational Systems Compliance in order to identify non-compliances and to implement appropriate corrective action.
- A Risk and Safety Performance Statistics System is in place where injury, vehicle/motor crime and public liability incidents/accidents are monitored on a monthly basis. This system also

includes the monitoring of compliance in terms of H&S Committees, required legislative appointees, training required, PPE and hazards identified.

- Loss Control Systems are in place to investigate alleged misconduct within the department.
- Security assessments are done for all sites at regular intervals.
- Various action plans are in place to pro-actively manage the safety and security of staff when operating within high risk areas.
- Departmental and Branch risk registers are in place.
- Risk and safety management system procedures are reviewed annually.
- To strengthen risk and safety related systems and to complement quality objectives, where appropriate, the implementation of ISO 45001 (health and safety standards), ISO 14001 (environmental standards) and ISO 31001 (risk management standards) will be considered.

The Integrated Development Plan is the Metro's most strategic document that drives and directs all implementation and related processes. The budget is developed based on the priorities, programmes and projects listed in the IDP. A Service Delivery Budget Implementation Plan (SDBIP) with a corporate scorecard is developed, to ensure that the organisation actually delivers on the IDP targets. The plan forms the basis for the monthly, quarterly, mid-year and the annual assessment report and performance assessments of the Municipal Manager and Directors.

At a technical, operations and management level, municipal staff is continuously exposed to training opportunities, skills development and capacity building in an effort to create a more efficient overall service to the users. A Workplace Skills Plan for all the branches is in place. A training needs assessment across the department is also carried out annually.

Staffing strategy

In order to fulfil its mandate and achieve its strategic objectives, Water and Sanitation department need competent and adequate levels of human capital at the right place and time. The staffing strategy document becomes the strategic tool needed in helping the department define a clear and succinct staffing strategic direction. In doing so, the Department has followed a systematic and structured process in order to identify and implement a successful staffing strategy. Staff planning for a 3-5 year time frame provides a balance between short and long term planning. A range of human resource initiatives should become apparent over this time frame such as job analysis and design, graduate recruitment, staff training and development, changes to work practices, succession planning, career development and flexible work practices. Although HR is a major player in the development and implementation of staff planning the Department and respective Branches are ultimately responsible for this initiative. The effective implementation of the staffing strategy will enable the Department to identify staffing gaps and also take action in terms of devising staffing strategies to address identified staffing gaps. To this end a critical analysis of the staff demand and supply was done in an endeavour to ensure more precise and relatively

accurate staffing solutions. Notwithstanding this the departmental staffing strategy is still pending fine tuning (especially the demand element) and approval, thus we are not at this point ready to provide specificities around projects and forecasted staffing requirements.

Organisational Development and Transformation Plan (ODTP)

Vision for the ODTP:

The organisation needs to change if the City is to be completely responsive to citizen needs, be sustainable, and provide resilient and adaptable services in a dynamic and competitive environment. We have to adapt business practices to create public value of complex products.

Central to the organisational restructuring is to ensure that the City is constantly reinforcing a Customer Centric Operating Model and will have to develop policy, operational framework as well as the staff and leadership in every Department to achieve this. This operational model will to be reflected transversally (across departments) with sufficient engagement, participation and transparency both internally and externally.

In trying to achieve this specific elements of focus will have to include:

- entrenching a culture of long-term and general planning that also includes effective monitoring and evaluation thus requiring data and evidence to inform all forms of decision-making
- enhancing transversal collaboration
- prioritising service functions;
- building an adaptable system that works with a strong coordinating centre and strong satellite arms of service functions with limited but effective support;
- becoming solutions-oriented not compliance-driven;
- engaging with our communities effectively and constantly;
- entrenching the right functions and personnel in the organisation that are primarily service oriented;
- clearly understanding our roles and responsibilities and trusting each other, correcting for errant individuals and not implementing system corrections for every individual error;
- operating according to a clear strategic framework, priorities, and organisational vision and mission;
- Never compromising on creating value through our delivery and implementation efforts.

Due to the challenging and ever changing complex urban environment the city will implement its mandate via 10 directorates and 4 Areas see figures A.6 and A.7 respectively. To remain creative in coming up with solution driven approaches to challenges an innovation unit will be setup with support from the Mayors Directorate.

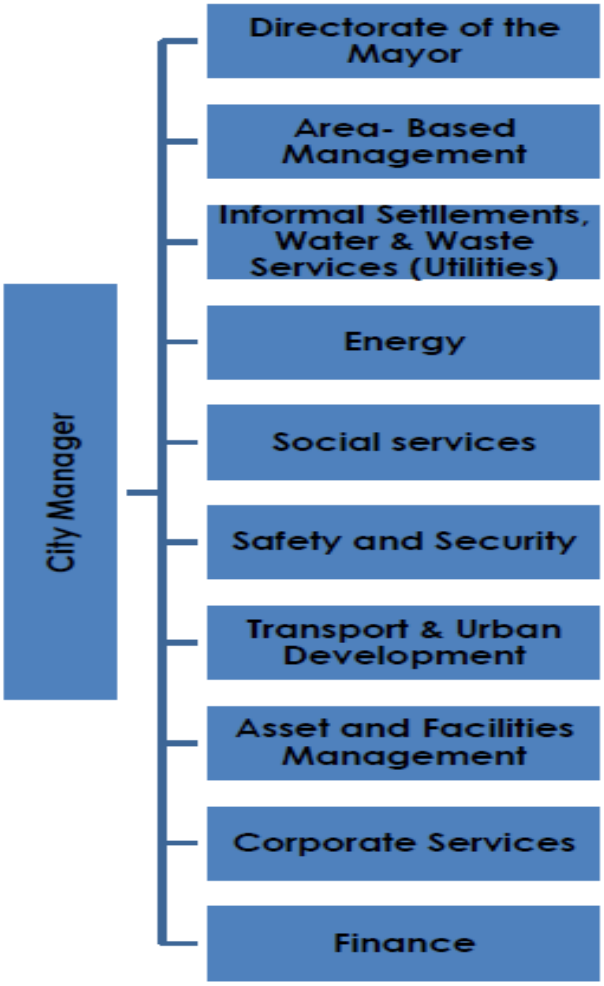


Figure A. 6: The new 10 Directorates

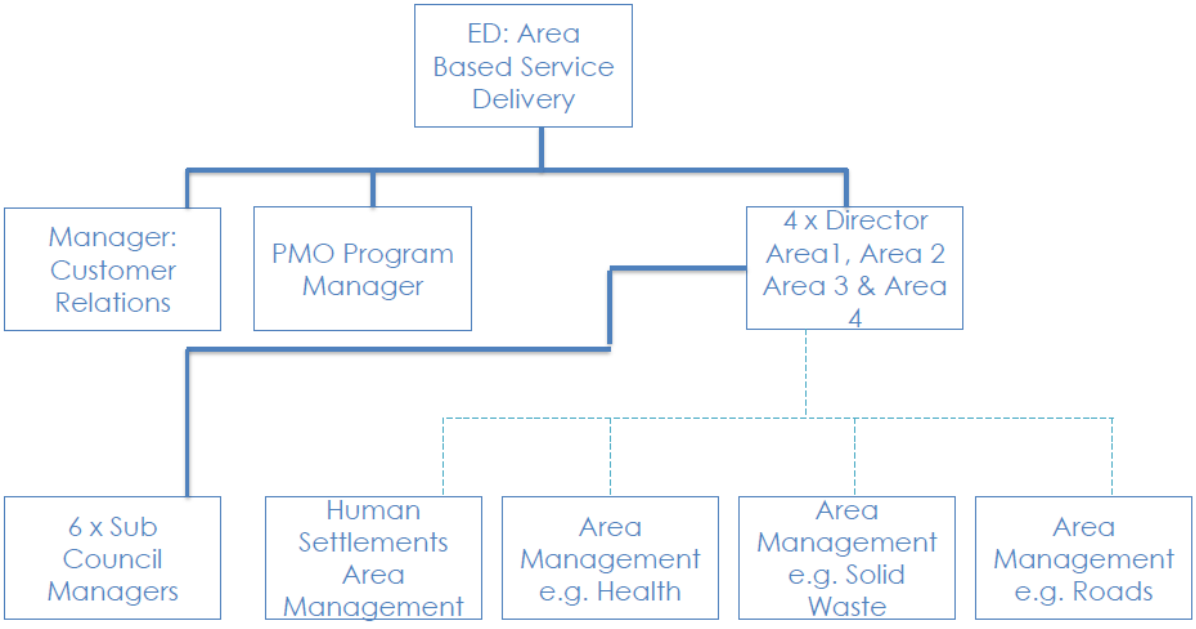


Figure A. 7: Area based management

To achieve this Organisational and Operational Transformation the process will be driven by the following 11 Transformational Priorities:

1. Excellence in basic service delivery
2. Mainstreaming basic service delivery to informal settlements and backyard dwellers
3. Safe communities
4. Dense and transit oriented urban growth and development
5. An efficient, integrated transport system
6. Leveraging technology for progress
7. Positioning Cape Town as a forward-looking, globally competitive business City
8. Resource efficiency and security
9. Building integrated communities
10. Economic Inclusion
11. Operational sustainability

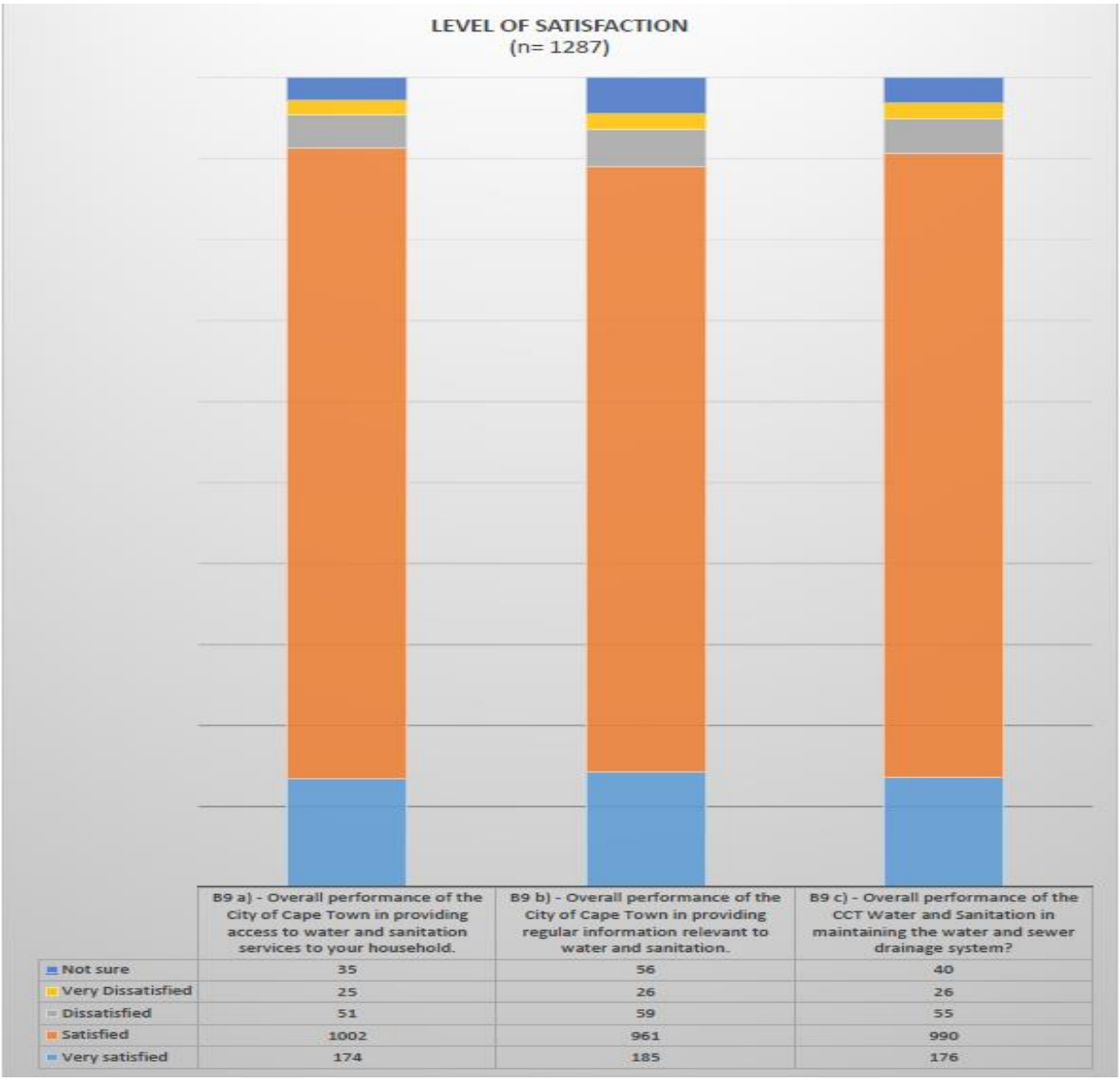
Business Element 11: Customer Service Requirements

Although under stress in certain areas of the Metro, necessary infrastructure is in place to ensure an adequate quality of service to all households. All customers receive water that is fully treated and meets the SANS 241:2015 standard. The CCT has mechanisms in place to attend to customer complaints, queries and compliments.

The Water and Sanitation Department conducts their own customer satisfaction surveys. These surveys are undertaken on an annual basis to gauge the customer satisfaction level in formal domestic, informal domestic and business sectors and to identify specific issues of concern. The survey targets three different customer markets namely formal residential, informal residential and businesses. The samples were conducted over the 8 administrative districts in the CCT. The survey is in a new format that gives more details when analysing the various issues related to service delivery.

The general conclusions for the 2015/16 financial year are drawn from the CCT's Water and Sanitation Services Customer Satisfaction Survey 2016 and are as follows:

- There is a very high increase in the overall satisfaction level of water availability and provision of sanitation and sewerage services as compared to the previous studies done. This shows that the Department has improved in the provision of services.



	B9 a) - Overall performance of the City of Cape Town in providing access to water and sanitation services to your household.	B9 b) - Overall performance of the City of Cape Town in providing regular information relevant to water and sanitation.	B9 c) - Overall performance of the CCT Water and Sanitation in maintaining the water and sewer drainage system?
Not sure	35	56	40
Very Dissatisfied	25	26	26
Dissatisfied	51	59	55
Satisfied	1002	961	990
Very satisfied	174	185	176

Figure A. 8: Level of Satisfaction of formal residents

Formal residents

- Most respondents are either very satisfied or satisfied with the performance of the City of Cape Town with regards to their access to water, information and the City of Cape Town's maintenance of the sewer and drainage system as seen in figure A.8 above. Klipfontein district has the most dissatisfied respondents to all three the questions asked in the survey.
- When evaluating access to water services, 98% of respondents said that they have daily access to water and receive clean, piped water. Only 63% of respondents know how many free litres of water they are entitled to per month and 93% of respondents are happy with the amount of free water they get monthly. Most (90%) of respondents have a water meter, 84% of respondents report that the water meter is read regularly and 86% of respondents have no problems with the meter. Most respondents (82%) are unaware that they have been requested to update their cell phone details.

- From the sample, almost 100% of the respondents has access to sanitation services, only 5 respondents indicated that use a portable flushing toilet or other.
- 93% of respondents have not experienced blocked sewers in the last year. From the results, the Klipfontein district respondents record the most problems (26 incidents) regarding blocked sewers. Most of the respondents who experienced a problem with sewage blockage contacted the City of Cape Town.
- Most respondents (76%) do not make use of alternative water resources. Of the respondents that do make use of alternative water resources, 9% make use of rain water, 7% of other resources, 5% of borehole/well point, 2% of grey water, 1% of spring water and 1% of river water.
- The majority of respondents receive a bill every month (94%) on time (83%). Less than two-thirds (60%) think the bill is accurate and a number is uncertain (22%). More than half think the bill is easy to understand (62%) and 24% is not sure.

Informal Areas

- 90% of respondents have access to clean, potable drinking water in informal areas. Most respondents get their drinking water from a standpipe (77%) or tagged standpipe (6%). The remainder get their water from their own connection (8%), a neighbour (7%) or another source (2%).
- Approximately only two-thirds of respondents have access to a working toilet facility. These respondents are fairly evenly distributed between all the districts with the exception of Kraaifontein/Blouberg and Klipfontein where the "No" responses are in the majority with 79% of respondents in Kraaifontein/Blouberg and 76% of respondents in Klipfontein reporting "No". The highest "yes" response is from the Central district respondents (80%).

Business Areas

- Of the businesses interviewed, 99% reported that they have access to water and 98% has access to piped water, 94% has a water meter.
- An interesting finding in the survey showed that 99% of the businesses in the sample were not making use of an alternative water source. This is especially concerning as we have been impletementing water restrictions for the past 2 years. Level one during 2015, level two during 2016 and currently level three restrictions are implemented now.
- All the businesses who were interviewed have flushing toilet systems, a small number of businesses (11%) have reported that they have experienced a sewerage blockage or other sanitation related problem in the last year.

Section B: State of Water Services Planning

This WSDP for the 2017/2018 financial year is currently in its drafting phase to be ready for the IDP public participation process. The City of Cape Town is committed to meeting the objectives set out in the plan as well as adhering to the legislation as per DWS.
The City of Cape Town Metro has consistently completed its Annual WSDP Performance- and Water Services Audit Reports over the years. The Annual WSDP Performance- and Water Services Audit Report gives an overview of how successful the implementation of the Municipality's previous year's WSDP is.

The City of Cape Town's Water and Sewer Master Plan process entails the use of computer models for the water and the sewer systems in the Metro. An external service provider is responsible for the linking of these models to the stand and water meter databases of the treasury financial system, evaluation and master planning of the networks and the posting of all the information to IMQS

The latest Water and Sewer Master Plans, which are available on request for the City of Cape Town Metro, are as follows:

- Water Master Plan, City of Cape Town, 2014/2015 financial year
- Sewer Master Plan, City of Cape Town, 2014/2015 financial year

The other Water Services Planning studies recently completed were as follows:

- The Water Sector Business Plan for input into the annual IDP
- The Annual WSDP Performance- and Water Services Audit Reports

Section C: Water Services Existing Needs Perspective

Water Services Development Planning

The WSDP is by law required to go through a public participation process. The City of Cape Town's Water Services Department submits the WSDP to the IDP office when they do the public participation process for the IDP sector business plans- both plans run for the same term.

For the 2017-2022 WSDP the Vision and Mission statements of the City of Cape Town Metro are:

Vision:

To be a beacon in Africa through the progressive realisation of Cape Town as a water sensitive city

Mission:

Provide safe, reliable, sustainable and affordable Water and Sanitation services to Cape Town

The Strategic Focus Areas to achieve our Vision and Mission are as follows:

- Employee and Leadership Development
- Infrastructure Stability
- Water Resource Adequacy
- Product Quality
- Community Sustainability
- Consumer Satisfaction
- Operational Optimisation
- Stakeholder Management and Support
- Financial Viability
- Operational Resilience

Demographics

Better alignment between the type of data collected by the City of Cape Town and what is required on the DWS website (in terms of reporting for the WSDP). The City of Cape Town is continually growing and thus urban sprawl continues. The extent of urban sprawl is currently at 38404 ha. There is a continuous need to find more available land to develop and or provide housing for the people within the metro.

Although the City's Spatial Development Framework is being orientated around the transportation network, the water and sewer master plan also has influence over these future development areas. The City is committed to poverty alleviation through their subsidised services to indigent households along with the free basic water that all residents receive. All the new affordable housing schemes have immediate access to free basic services.

Service Levels

There is a need for an improved level of service within the Informal Settlements and Backyarders. The cost of providing this improved level of service (i.e. service above the minimum standards as defined by the NWA) that we currently do, results in very high costs, causing major financial implications. The water supply to informal settlements is in the form of standpipes while for sanitation there is a range of sanitation technology solutions that can be implemented, based on the specific conditions of the settlement. All the water and sanitation services provided within the CCT are linked to the Tariff Policy. The poor households are cross subsidised by the tariffs and the Indigent Policy.

Due to the current drought imperative, alternative waterless technologies will be explored in the next 5 years. Partnerships with reputable institutions e.g. Tertiary institutions, the Water Research Commission and others will need to be included in agreements to ensure that the City can be the "Beacon in Africa through the progressive realisation of Cape Town as a water sensitive city".

The ever-present harsh conditions in Informal Settlements remain a challenging environment to work in. As a result, the ongoing maintenance and repairs to the existing infrastructure in Informal Settlements dictate that realistic performance indicators be utilised. There is a need for the experience and expertise of internal staff with regard to the rollout and maintenance of the alternative sanitation technology's needs, to be further developed to fast track service delivery and to sustain technology lifecycle maintenance.

With respect to the effluent discharged from industrial sites, non-complying and polluting trade effluent often 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. All the clinics, hospitals and schools under the CCT's area of jurisdiction have adequate and safe water supply and sanitation services.

Socio- economics

It is important for the CCT to apply labour intensive construction methods such as Expanded Public Works Programmes (EPWP), where applicable, to new projects. This will aid in alleviating poverty through job creation. Number of opportunities requires a performance stretch with budget and process adjustments implications. The achievement of targets is therefore subject to operational considerations. With regards to the number of job opportunities created through the Expanded Public Works Programme (EPWP), the Water and Sanitation Department is constantly contributing to job creation. In 2013/14 a total of 4934 opportunities were created by the Department.

And then in 2014/15, against a target of 5100, the Department showed that it is serious about playing a positive role in supporting the Government's ideals and contributing to the wellbeing of the community by job creation through offering 5905 EPWP job opportunities to the citizens of Cape Town. In 2015/16 the Water and Sanitation Department is setting the annual target of 5 100.

If urbanisation continues at these high levels it is likely that more residents will enter the indigent bracket. This in turn means more and more people could fall within the CCT's subsidised or emergency housing programme which creates implications for growth of the City and its infrastructure.

Infrastructure investment creates an environment for economic growth and is important for sustainable growth. Failure to improve the current state of infrastructure poses a serious threat to the local economy. In order to ensure medium to long-term sustainability of the existing infrastructure, proactive rehabilitation and maintenance of the infrastructure is being and will continue to be implemented. 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 sustained national electricity tariff increases, is making it extremely difficult for the City to address all needs.

WS Infrastructure Management (Infrastructure)

Waste Water Treatment Works:

Due to the increased amount of developments there is a larger quantity of wastewater entering the Wastewater Treatment Works (WWTWs) and this has led to a need for refurbishments to many of the WWTWs.

Table C. 1: WWTW's scheduled for refurbishment over the next 5 years

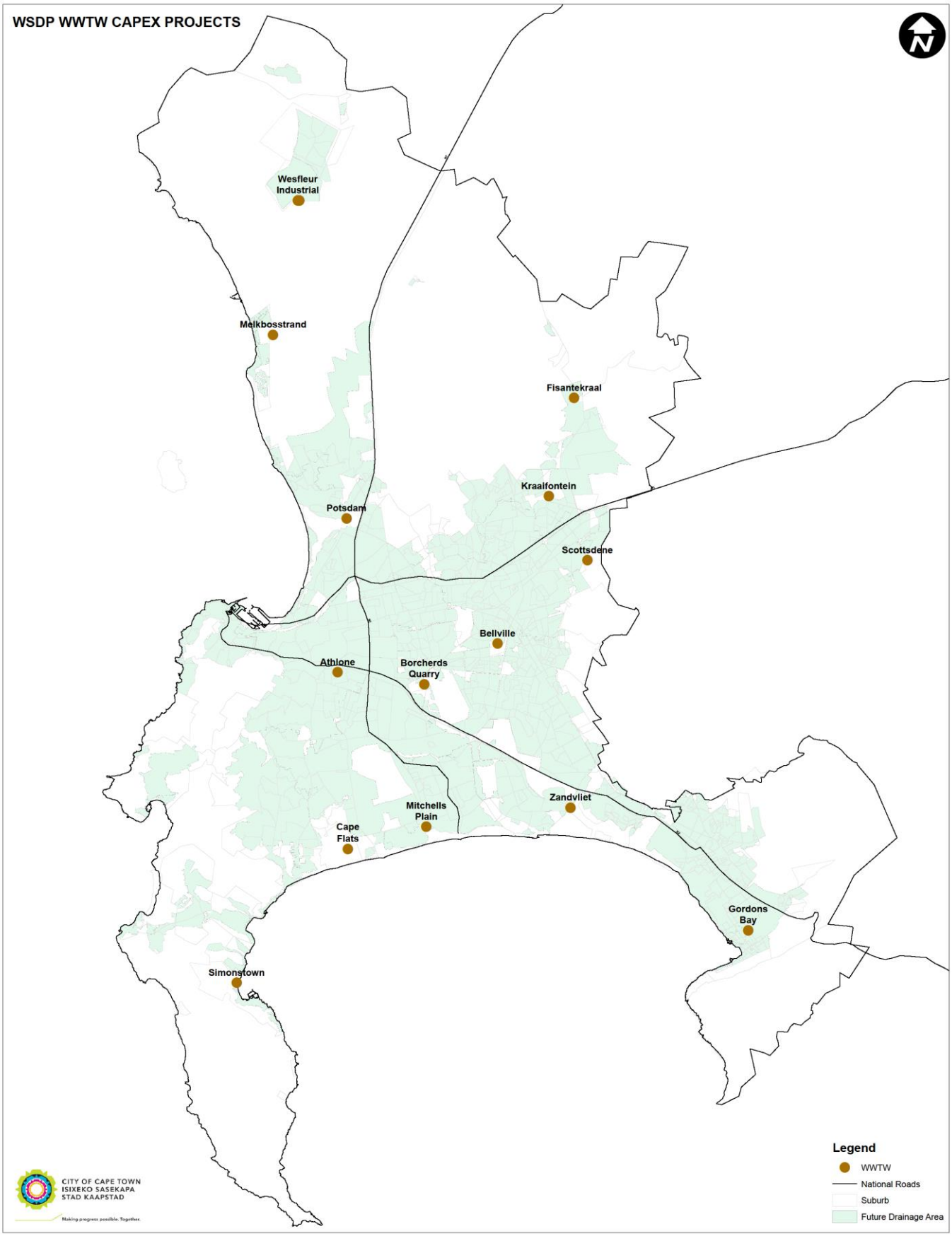
WWTW	FINANCIAL YEARS	BUDGET (R Million)
Cape Flats	2017/18 – 2022/23	R302.000
Mitchells Plain	2017/18 - 2020/21	R122.800
Bellville	2017/18 - 2022/23	R30.000
Scottsdene	2017/18	R4.000
Gordons Bay	2016/17	R1.000

Investment in WWTWs Infrastructure in various parts of the City is critical in improving or maintaining a healthy physical environment and more specifically the downstream rivers around the City. Whilst there is ongoing maintenance on all WWTWs around the City there will be major upgrades in 4 of the 24 plants.

It should be noted that the Borcherd's Quarry, Zandvliet, Wesfleur, Mitchells Plain, Athlone and Bellville plants are serving a mix of middle- and lower income areas.

Table C. 2: WWTWs scheduled for additional capacity over the next 5 years

WWTW	FINANCIAL YEARS	BUDGET (R Million)
Athlone	2017/18 – 2020/21	R186.000
Bellville Extension	2017/18 – 2018/19	R69.000
Borcherds Quarry	2017/18 – 2018/19	R124.500
Macassar	2017/18 – 2018/19	R62.415
Northern Regional Sludge Facility (new)	2017/18 – 2020/21	R307.841
Potsdam	2017/18 - 2022/23	R678.325
Wes Fleur	2017/18 – 2020/21	R129.350
Zandvliet	2019/20 – 2020/21	R299.500


WSDP WWTW CAPEX PROJECTS
Wesfleur Industrial
Melkbosstrand
Fisantekraal
Kraaifontein
Potsdam
Scottsdene
Bellville
Athlone
Borcherds Quarry
Zandvliet
Mitchells Plain
Cape Flats
Gordons Bay
Simonstown
CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD
Legend
WWTW
National Roads
Suburb
Future Drainage Area

Sewer reticulation infrastructure

The City has an extensive sewer network in place that requires constant maintenance. The most recent of such critical sewers rehabilitated are the Langa interceptor and the Northern Areas Sewer. In an effort to progressively achieve a more compact City with densification and a TOD approach, the bulk sewers of the City will come under increasing pressure.

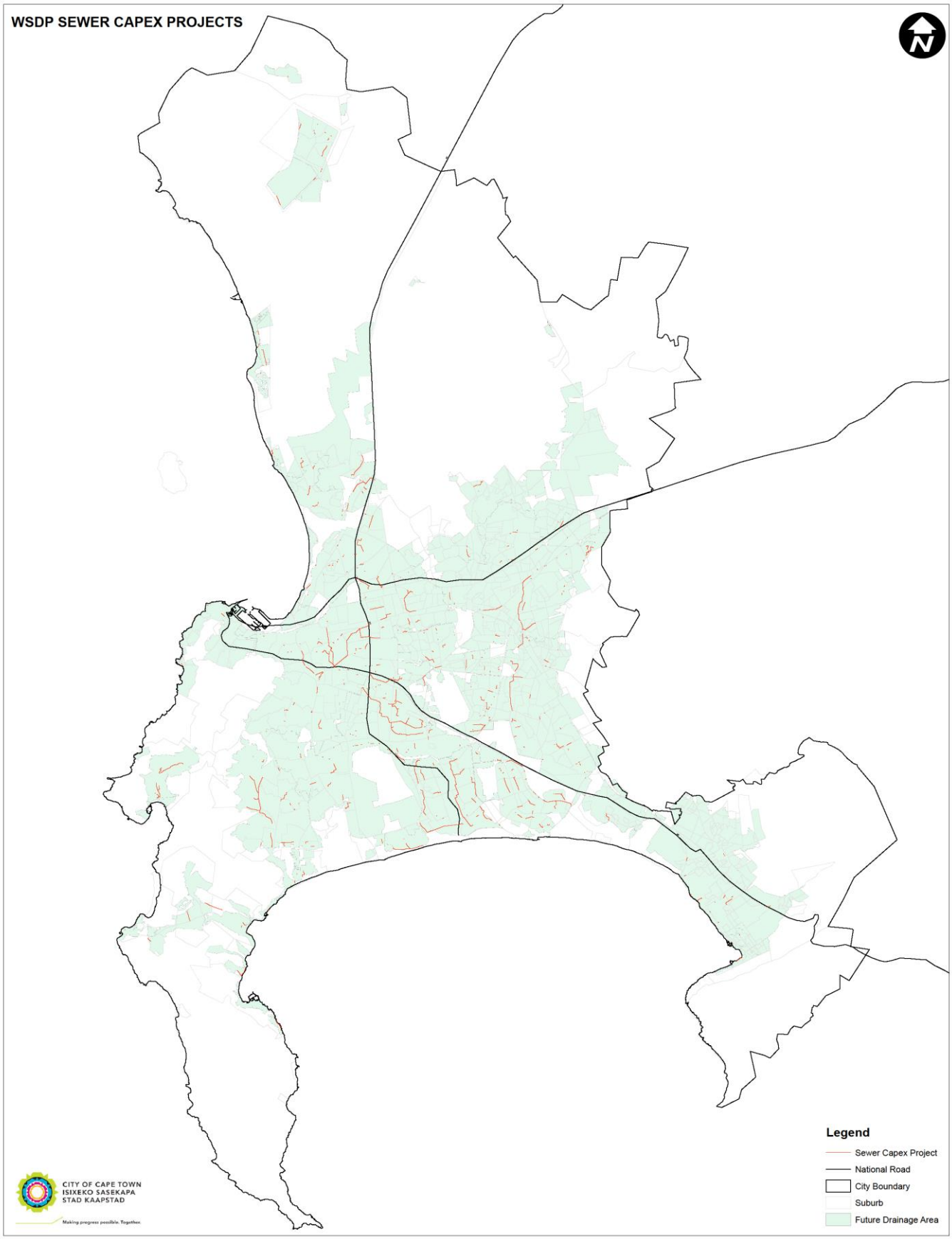
Cape Flats Bulks Sewer 1, 2 and 3- These three sewers of 1 275 mm, 1 675mm and 1 800mm diameter respectively, functions as conveyors of sewer from the Athlone WWTW and Bridge Town Pump Station catchments and also to transfer between Athlone WWTW and the Cape Flats WWTW in Muizenberg. Cape Flats 1 and 2 sewers require major rehabilitation due to siltation up to 60% of the pipe diameter in both cases. This long-standing constraint can only be overcome once the construction of the last leg of the Cape Flats 3 bulk sewer is complete, which is a Rising main from Bridge Town Pump Station to Lansdowne road, routed through built-up areas. It is expected to be complete by 2017 at a cost of R250 Million. The Rehabilitation of Cape Flats 1 and 2 will stretch over a period of more than 3 years, estimated at R 158.5 Million.

Philippi Collector Sewer - The Philippi bulk sewer is a 900 mm bulk sewer that serves the larger Philippi area including Cross Roads and the North West corner of Khayelitsha bounded by the Cape Flats arterial, Jakes Gerwel Drive and Phillipi Station, an area predominantly made up of low income households. This sewer has experienced 3 collapses in the last 2 years and its rehabilitation has become critical. This bulk sewer flows to the lower reaches of the existing Cape Flats 3 bulk sewer. The project will be implemented in the period from 2017 to 2020 at a cost of R 193 Million.

Milnerton Bulk Sewers - The collapse a few years ago of the bulk sewer in Montague Drive triggered a condition evaluation of the bulk sewers in the broader Milnerton Area. This has resulted in a sewer rehabilitation programme that includes elements of increased capacity on connecting sewer infrastructure. The rehabilitation programme will be implemented from 2017/18 to 2022/23 to the value of R 240 million.

Table C. 3: Key sewer projects planned for on the Water and Sanitation Budget

PROJECT	DESCRIPTION	BUDGETED YEAR	BUDGET (R Million)	STATUS
Nooiensfontein Pump Station & Outfall Sewer	New pump station, Rising main & Collector sewer: Triggered by development, Densification & ageing Infrastructure	2017/18	25.0	Conceptual planning
Rietvlei Pump Station & Bottelary outfall sewer	Upgrade pumping station, rising main	2017/18	1.07	Initial stage
West Beach Pump station, rising Main & collector sewer	Upgrade collector sewer	2017/18	17.0	Under construction
Du Noon Sewer Diversion and outfall sewer	Diversion Structure & Upgrade outfall sewer	2018/19	1.0	Conceptual planning
Gordons Bay Beach Front Sewer	Upgrade pumping stations along beach road	2018/19	5.8	Conceptual planning
Sewer Projects as per Master Plan 17/18	Extension of Sir Lowry's pass outfall to create relief on the Trappies outfall and Lourens River Pump Station	2017/18	5.8	Completion stage
Black-Mac Screening Station & Macassar Pump Station	Divert flow of 8000kl/day from Blackheath and Eerste River to Macassar	2017/18	32.3	Under construction


WSDP SEWER CAPEX PROJECTS
Legend
Sewer Capex Project
National Road
City Boundary
Suburb
Future Drainage Area
CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

Water reticulation infrastructure

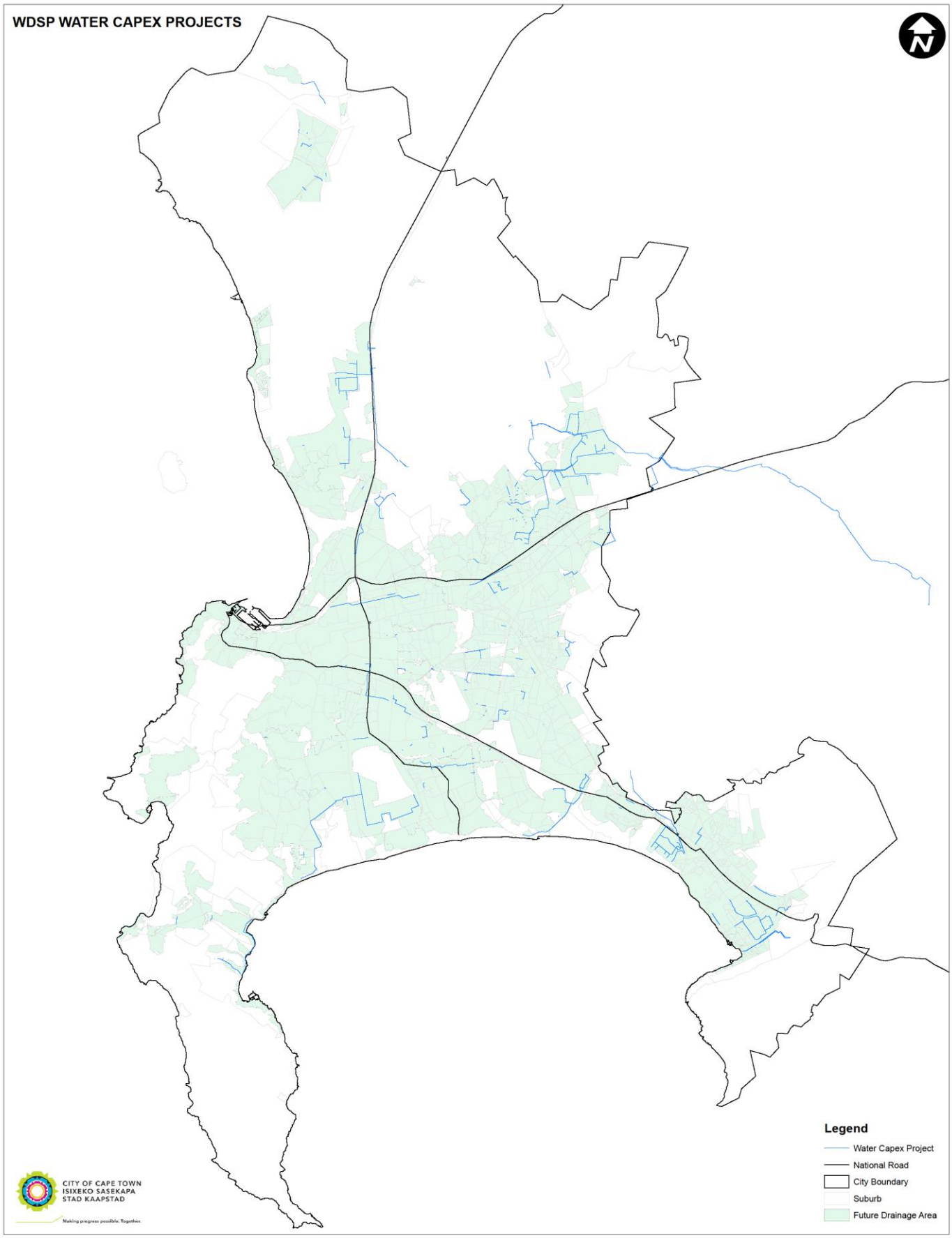
It is critical to augment, refurbish and maintain the City's bulk water supply system, to ensure a safe, reliable and sustainable supply of water to Cape Town and its surrounding region.

In view of the current drought that the country is facing, the City will be ensuring the protection of the region's water resources and water supply to consumers by implementing appropriate water restrictions over the coming hydrological year. This will ensure that over the short term drought event, consumers will receive an ongoing, albeit restricted, supply of water and that the dams do not empty over the next few hydrological years.

The Bulk Water Branch is investigating setting up a decision support and operational automation system to assist with operating its system of dams, water treatment works and reservoirs, to ensure that resources are protected and maximised over the hydrological year, especially during the current drought being experienced.

The Bulk Water Branch is also focussing on maintenance and refurbishment of existing infrastructure, including upgrading of major pump stations; repair of concrete structures such as reservoirs and dam intakes; and verification and replacement of large diameter meters. Various process improvement initiatives are also being implemented, including the current construction of three large scale electrolytic chlorination plants, to replace the use of chlorine gas for disinfection at certain bulk water reservoirs.

The Branch will also be conducting an assessment of the funding requirements and options for its capital development and maintenance programmes, and assessing the impact of these funding requirements on the bulk water tariff.


WDSP WATER CAPEX PROJECTS
Legend
Water Capex Project
National Road
City Boundary
Suburb
Future Drainage Area
CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

Associated Services

There is an urgent need to have a better relationship with the authorities of Education and Health facilities that fall in the CCT Management area so that we can have effective communication between the water services authority and them. All the facilities under the jurisdiction of the CCT has access to adequate quality and quantity of water and has access to adequate sanitation services.

Water Resources

The timing of the development of the required bulk water infrastructure is dependent on the growth in water demand and the effectiveness of the Water Conservation and Water Demand Management (WC/WDM) Strategy. To ensure security of supply, the City of Cape Town, in consultation with the Department of Water and Sanitation (DWS), is exploring the next water resource scheme to be developed by 2022. The schemes being considered include the Voëlvlei Augmentation Phase 1 (by the DWS), water reclamation for potable use, groundwater from the TMG Aquifer and sea water desalination. The sea water desalination and water reclamation, for potable use, feasibility studies are currently underway. The City is planning to commence with the extended exploration of, and pump testing from, the TMG Aquifer.

The City will continue to engage with the national Department of Water and Sanitation (DWS) on reviewing and finalising water allocations and water use licencing from the WCWSS. With the regional supply area of the WCWSS and the increasing probability of future competition for water, the City will be considering the regional impact of Cape Town's future water resources, and form closer working relationships with neighbouring municipalities to more effectively plan and operate existing and future water supplies. In addition, the City of Cape Town will increase the treatment and conveyance capacity of the bulk water supply system by implementing :

- The Bulk Water Branch is also continuing with augmentation and maintenance of the bulk water supply system, and is focussing on implementing a number of large infrastructure projects over the next ten years, including:
- A 500 Ml/day water treatment works and a 300 Ml bulk water storage reservoir at Mulderslvei. This will increase overall drinking water production and storage capacity, as well as increase redundancy and flexibility of operation of the bulk water system.
- The 300 Ml Spes Bona Reservoir, to increase bulk storage in the Durbanville and Kraaifontein areas and provide additional flexibility in the operation of the bulk water supply system.
- The 100 Ml Contermanskloof Reservoir, to increase the storage capacity for the Table View and Parklands areas.
- The 100 Ml Steenbras Reservoir, to increase storage for the Gordons Bay and Strand areas, as well as improving operational efficiency of the Steenbras water treatment works.

Water Conservation and Demand Management

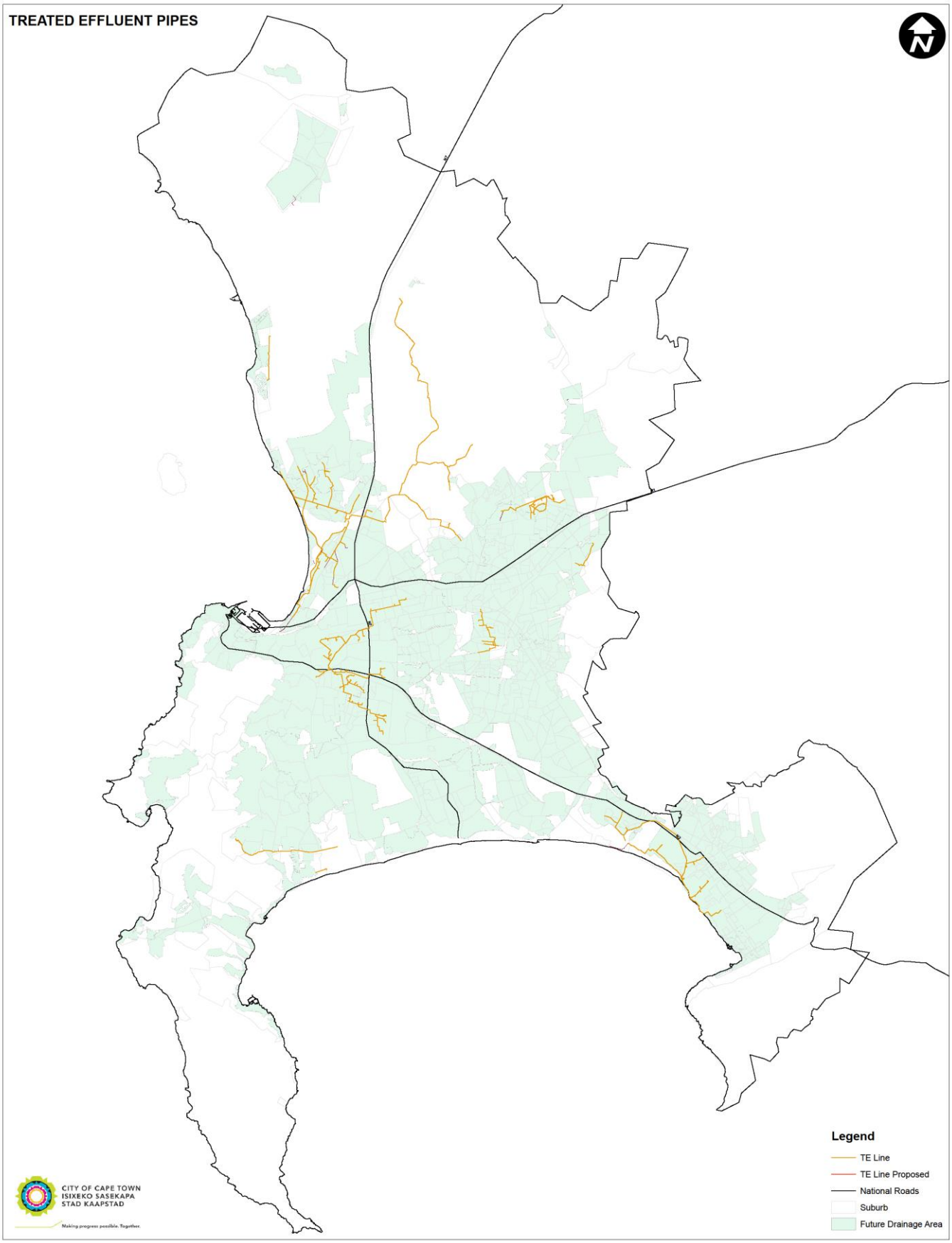
Pressure Management

Water Demand Management primarily aims to obtain an overall reduction in the water demand across the City and also does this by a proactive investment in infrastructure to achieve real loss reduction. These interventions include pressure management-, leak detection-, pipe replacement- and treated effluent programmes. These projects are required to minimise losses in the Bulk and Reticulation system but also save on infrastructure, chemicals and energy for required treatment. At lower pressures, the life of the reticulation system is extended. These interventions postpone the need for expensive infrastructure upgrades.

Pressure management is being implemented across the City in various configured District Metered Areas (DMAs) where the most impact can be achieved based on the calculated Infrastructure Leakage Index (ILI). An Advanced Pressure Management solution is being implemented, which includes for a monitoring system. Increasing the number of DMA's often results in the addition of new reservoir zones and supply points. A total of R 170M over the next five years has been allocated to the programme.

Treated Effluent - Reuse

Two thirds of the City's water consumption ends up in more than 20 wastewater treatment works across the City from where the final effluent is discharged back into the environment. The City of Cape Towns' objective is to offset the use of potable water by supplying treated effluent for irrigation purpose. As part of a Treated Effluent Master-plan study initially undertaken in 2003 and later updated in 2012 but with continuous improvement, the potential demand of treated effluent used in various areas across the City's wastewater treatment works was identified. The treated effluent infrastructure projects enables the City to supply treated effluent for irrigation purposes to schools, golf courses, parks and sports fields. An estimated budget of R210M for the following five years will ensure the expansion the treated effluent network in areas such as Athlone, Bellville and Macassar. With the current drought being experienced and the need for greater efforts to secure the water resource of the City, the department is considering adopting the Water Sensitive City approach. This approach which has been successful elsewhere in the world will provide the opportunity to build greater public awareness and stimulate innovative engineering solutions in confronting the City's water scarcity challenge.


TREATED EFFLUENT PIPES
CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD
Legend
TE Line
TE Line Proposed
National Roads
Suburb
Future Drainage Area

Sewer Blockage, Stormwater Ingress and Pollution Control

The sewer interventions include the sewer blockage programme, the stormwater ingress programme as well as an Industrial Effluent Catchment profiling programme. These projects are being rolled out City-wide and aim to reduce overload in the sewer system, thereby prolonging infrastructure integrity and protecting the environment. An important element is raising awareness with the public on preventing and reporting sewer blockages and overflows. Regulation of by-laws is also important for preventing damage to infrastructure, wastewater treatment plants and the environment. A budget of R 22.5M has been earmarked for these programmes over the next five years.

Additional key projects to be implemented include the large-scale roll-out of waterless urinals in City-owned facilities to replace approximately 5 000 automatic flushing urinals can save up to 20 million litres of water per year.

Further projects of a similar nature include the 35 million litre Spes Bona reservoir outside Durbanville, which will eventually 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.

Water Balance

According to the SABS 0306:1999 standard, it discourages the use of percentage losses to quantify water losses in the distribution network. A comprehensive WC/WDM Strategy was developed for the CCT that contains measures to continually reduce the NRW. Implementation of these measures mentioned above is critical for success in NRW reduction.

A very high priority is being given to a comprehensive water loss reduction strategy with detail action plans being developed for each of the technical losses (Pipe bursts, Leakage, Treatment losses, System losses), Apparent losses (illegal connections, metering inefficiencies, unmetered authorised consumption, unauthorised consumption, Billing/accounting, meter reading).

An added benefit of the Integrated Master Plan project is the creation of an accurate and up-to-date historic record of consumption by individual properties that can be used to derive water and sanitation demands. The first comprehensive and reliable dataset became available in January 2010. This data updated regularly, 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 Data Information Management System (DIMS) project that was implemented, reports the latest Demand and Loss information as per the IWA standard.

Financials

Capital budget

The high requirement for necessary infrastructure is driven largely by growth and economic development as well as the refurbishment of current infrastructure which 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 of the operating budget during difficult economic conditions.

Meter Replacement Programme

Due to the aging of the meters in the city, a meter replacement programme is in place. Accurate water metering ensures that actual consumed water quantities are charged for, as water meters have been found to increasingly under-measure with age. Accurate metering also assists in obtaining a more accurate estimation of the City's water balance, which in its simplest terms is the measurement of the difference between the amount of water supplied into the system and that which is consumed, equating to water loss. From 2017/18 to 2022/23 the City plans to spend approximately R 1 261 billion averaging R 252 million per year. These meter replacements will occur throughout the City based on either the age of the meter or its failure as well as to provide new meter connections.

Tariffs

The W&S Finance and Commercial branch is responsible to ensure the provision of affordable and sustainable water supply to the citizens of Cape Town. This is done by developing, drafting and implementing processes, policies, practices and procedures maximize income and prevent loss of water resources- optimization of revenue.

Asset management

Continuously update the asset/ inventory registers and keeping control over the +/- 27 000 items under the City's Water and Sanitation Departments control.

Water and Sanitation Institutional Arrangements

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.

In order to sustainably supply the most basic essential services of water and sanitation, the department needs highly competent and adequate levels of human capital at the right place and

time. New technology is increasingly being introduced in order to remain cost-effective and maintain high water quality standards, all of which demand specialised skills.

In preparation for a comprehensive staffing strategy, a critical analysis of the staff demand and supply was done and initiatives such as aggressive graduate recruitment, changes to work practice, focussed training plans, succession planning, skills retention, career development and flexible work practices were introduced. A draft staffing strategy has been developed, aiming to achieve a balance between short- and long-term-planning over the IDP term.

Customer Service Requirements

There is no internal consolidated information on response times to complaints and queries and to repairing water and sewer mains. A Customer Satisfaction Survey for the City of Cape Town's Water and Sanitation Department is currently being compiled by and external service provider. An integrated information system dealing with these matters is under development by the Technical Services.

Customer lodging and service delivery - The findings reveal that the Department needs to increase awareness of the customer service contacts as many seem not to know about them.

Water Conservation- There is a need for consumer sensitisation to the regulatory mechanisms that control the abuse of water and sanitation services for both residential and commercial consumers. Increase the awareness of water management devices in order to create additional awareness as most formal residents indicated they had not installed the device.

Awareness on sanitation environmental impact - The Department needs to conduct an awareness campaign on change of behaviour regarding water conservation and conduct more presentations regarding sewerage blockages.

Section D: Water Services Objectives and Strategies

The water services objectives and strategies presented below were derived from the water services situational analysis as summarized in Section C: Water Services Existing Needs Perspective and presents the 5-year Water Services objectives and strategies as established in the WSA's WSDP.
We are still awaiting the targets that the department will be chasing for the next five years.

Table D1: WSDP FY2017: Water Services Objectives and Strategies **sheet 1 of 11**

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2015/16 status quo)	WSDP Year 1 FY2017/18 Target	WSDP Year 2 FY2018/19 Target	WSDP Year 3 FY2019/20 Target	WSDP Year 4 FY2020/21 Target	WSDP Year 5 FY2021/22 Target
WSDP Topic 1: Administration								
	Ensure integrated development and implementation of water services plans							
1.1	Develop and adopt a new WSDP every 5 years	New WSDP every 5 years	busy with the new Draft WSDP	none	none	none	none	none
1.2	Compile and submit annual WSDP implementation- and water services audit report	Date submitted	Apr-16	October every year	October every year	October every year	October every year	October every year
1.3	Extract and incorporate WSDP objectives and projects into IDP / SDBIP	Date completed	Achieved	September every year	September every year	September every year	September every year	September every year
1.4	Review and submit the WSDP Guide Framework on annual basis	Date submitted	Achieved	March every year	March every year	March every year	March every year	March every year
WSDP Topic 2: Demographics								
2.1	Extent of the City of Cape Town urban sprawl is calculated to be.	None established	n/a					
WSDP Topic 3: Service levels								
	Service level profile in informal settlements							
3.1	Service Delivery Programme in Informal Settlements	Number of water service points (taps) provided	919	600	700	700	700	700
		Number of sanitation service points (toilets) provided	3 058	2 800	2 600	2 500	2 500	2 500

Table D1: WSDP FY2017: Strategies and Objectives **sheet 2 of 11**

Nr	Objective / Strategy Strategy	Key Performance Indicator	Baseline (FY2015/16 status quo)	WSDP Year 1 FY2017/18 Target	WSDP Year 2 FY2018/19 Target	WSDP Year 3 FY2019/20 Target	WSDP Year 4 FY2020/21 Target	WSDP Year 5 FY2021/22 Target
WSDP Topic 4: Socio economic								
4.1	Expanded Public Works Programme (EPWP)	Number of Expanded Public Works Programme (EPWP) opportunities created	6 034	TBD annually	TBD annually	TBD annually	TBD annually	TBD annually
4.2	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)	158	158	168	175	190	200
		Number of apprentices	20	20	40	40	40	45
WSDP Topic 5:1: Water Services Infrastructure Management								
	Infrastructure of Water and Sanitation Services							
5.1.1	Annual Maintenance required	Percentage spend on repairs and maintenance	93.20%	90%	TBD annually	TBD annually	TBD annually	TBD annually
		Metres of water reticulation mains replaced this year	32 814	33 000	TBD annually	TBD annually	TBD annually	TBD annually
		Metres of sewer reticulation mains replaced this year	25 975	20 000	TBD annually	TBD annually	TBD annually	TBD annually

Table D1: WSDP FY2017: Strategies and Objectives **sheet 3 of 11**

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2016 status quo)	WSDP Year 1 FY2017/18 Target	WSDP Year 2 FY2018/19 Target	WSDP Year 3 FY2019/20 Target	WSDP Year 4 FY2020/21 Target	WSDP Year 5 FY2021/22 Target
WSDP Topic 5.2: Water Services Infrastructure Management								
	Capital expenditure on development and Maintenance of its extensive infrastructure							
5.2.1.	Investment in Infrastructure	Rand value of capital invested in engineering infrastructure (growth, refurbishment and replacement of Water & Sanitation infrastructure)	R 1260.77 M	TBD annually	TBD annually	TBD annually	TBD annually	TBD annually
		Number of outstanding valid applications for water services expressed as a percentage of total number of billings for the service	0.29%	< 0.7%	TBD annually	TBD annually	TBD annually	TBD annually
		Number of outstanding valid applications for sewerage services expressed as a percentage of total number of billings for the service	0.24%	< 0.7%	TBD annually	TBD annually	TBD annually	TBD annually
5.2.2	Engineering and Asset Management	Define and agree on roles of OPS and responsibilities of E&AM (SLA)						
		Drive asset management – continuous improvement						
		Drive ISO 55001 implementation and certification						
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

Table D1: WSDP FY2017: Strategies and Objectives **sheet 4 of 11**

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2016 status quo)	WSDP Year 1 FY2017/18 Target	WSDP Year 2 FY2018/19 Target	WSDP Year 3 FY2019/20 Target	WSDP Year 4 FY2020/21 Target	WSDP Year 5 FY2021/22 Target
WSDP Topic 7.1: Conservation and Demand management - Water Resource Management								
7.1.1	Prolong the need for investment in large potable water infrastructure in the City of Cape Town Water System.	To spend the allocated capital budget on the Treated Effluent re-use programmes and projects by the current financial year end June 2017	R25.2M	R20.0M	R20.0M	R20.0M	R20.0M	R20.0M
		Bulk infrastructure expansion, maintenance and refurbishment of existing infrastructure	R100 000	TBD annually	TBD annually	TBD annually	TBD annually	TBD annually
		To spend the allocated R Operating Budget commencing recommendations from the Springs Strategy by the end June 2017	N/A	N/A	N/A	N/A	N/A	N/A
		Install, by 2018, real time monitoring that will provide a tool for the verification of infrastructure attributes, verification of master planning models and optimization of infrastructure performance.	N/A	N/A	N/A	N/A	N/A	N/A
7.1.2	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	R2.8M	R2.8M	R2.8M	R2.8M	R2.8M

Table D1: WSDP FY2017: Strategies and Objectives **sheet 5 of 11**

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2016 status quo)	WSDP Year 1 FY2017/18 Target	WSDP Year 2 FY2018/19 Target	WSDP Year 3 FY2019/20 Target	WSDP Year 4 FY2020/21 Target	WSDP Year 5 FY2021/22 Target
7.1.3	Implement effective regulation to protect the infrastructure and the environment	To conduct education and awareness to the top 20 worst polluters in the commercial & industrial sector utilising existing resources by June 2017.	20	18	15	13	12	10
		Implementation of an events management and monitoring dashboard to ensure early alerts to attend to events which may warrant Section 30 NEMA Report (control of emergency incidents)	New	TBD	TBD	TBD	TBD	TBD
		Approach a minimum of 03 existing sector forums and forge partnership by entering into agreements with, by June 2017.	3	1	1	1	1	1
		Approach 02 worst polluters to agree to invest in pre-treatment facilities and thereafter grant them a rebate, by end June 2017.	0 rebates for 16/17, to date. 3 done in 15/16.	2	2	2	2	2

Table D1: WSDP FY2017: Strategies and Objectives **sheet 6 of 11**

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2016 status quo)	WSDP Year 1 FY2017/18 Target	WSDP Year 2 FY2018/19 Target	WSDP Year 3 FY2019/20 Target	WSDP Year 4 FY2020/21 Target	WSDP Year 5 FY2021/22 Target
WSDP Topic 7.2: Conservation and Demand management - Water Balance								
	Water awareness and education							
7.2.1	Reduce sewer blockages and overflow to storm water system through technical and educational interventions	Implementation of mobile and monitoring technology to ensure efficient utilization of staff, timeous and effective response to an incident/ event by the end of June 2018	New	TBD	TBD	TBD	TBD	TBD
		Conduct technical and education (utilising EPWP resources) interventions to 10 worst affected areas by end June 2017	TBD	TBD	TBD	TBD	TBD	TBD
		Conduct impact survey to 2 or 3 areas and if need be, improve the education/technical rollout methodology, by June 2017	TBD	TBD	TBD	TBD	TBD	TBD
7.2.2	EPWP employment projects including consumer satisfaction surveys, job seeker registration	Established in Topic 4	n/a					

Table D1: WSDP FY2017: Strategies and Objectives **sheet 7 of 11**

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2016 status quo)	WSDP Year 1 FY2017/18 Target	WSDP Year 2 FY2018/19 Target	WSDP Year 3 FY2019/20 Target	WSDP Year 4 FY2020/21 Target	WSDP Year 5 FY2021/22 Target
WSDP Topic 7.2: Conservation and Demand management - Water Balance								
	Non-Revenue Water							
7.2.3	Ensure the reduction of water wastage and losses in the City of Cape Town's water system.	To spend the allocated budget on Water Conservation programmes and projects utilising EPWP resource	R4.8M	R4.0M	R4.0M	R4.0M	R4.0M	R4.0M
		To spend the allocated capital budget on the Pressure Management related programmes and projects by the current financial year end June 2017 and to install real time monitoring that will ensure continued effectiveness of these Pressure Management related programmes and projects by 2018.	R14.8M	R15M	R15M	R15M	R15M	R15M
7.2.4	Water Conservation and Water Demand Management Strategy	Percentage of treated potable water not billed	22.20%	≤ 25%	TBD annually	TBD annually	TBD annually	TBD annually
		Percentage of potable water reused as treated effluent	6.58%	5.5 %	TBD annually	TBD annually	TBD annually	TBD annually
		Volume of potable water reused as treated effluent	n/a					

Table D1: WSDP FY2017: Strategies and Objectives **sheet 8 of 11**

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2016 status quo)	WSDP Year 1 FY2017/18 Target	WSDP Year 2 FY2018/19 Target	WSDP Year 3 FY2019/20 Target	WSDP Year 4 FY2020/21 Target	WSDP Year 5 FY2021/22 Target
WSDP Topic 8: Water Resources								
	Water use efficiency							
8.1	Volume water treated	Per capita water consumption	≤ 210	TBD	TBD	TBD	TBD	TBD
	Water and Wastewater Quality Compliance							
8.3	Compliance to DWS Standards	Number of WWTWs with >= 90% compliance with DWS water quality requirements	new	12	TBD annually	TBD annually	TBD annually	TBD annually
		Percentage compliance with 4 critical DWS effluent standards	n/a					
		Percentage compliance with drinking water quality standards	99.67%	98%	TBD annually	TBD annually	TBD annually	TBD annually

Table D1: WSDP FY2017: Strategies and Objectives **sheet 9 of 11**

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2016 status quo)	WSDP Year 1 FY2017/18 Target	WSDP Year 2 FY2018/19 Target	WSDP Year 3 FY2019/20 Target	WSDP Year 4 FY2020/21 Target	WSDP Year 5 FY2021/22 Target
WSDP Topic 9: Financial profile								
	Capital and Operating Expenditure							
9.1	Financial management programme	Percentage spend of capital budget	90.60%	90%	TBD annually	TBD annually	TBD annually	TBD annually
		Rand value of capital invested in engineering infrastructure (growth, refurbishment and replacement of Water & Sanitation infrastructure)	R1 260.77M	TBD annually	TBD annually	TBD annually	TBD annually	TBD annually
	Operating Expenditure							
9.2	Financial management programme	Percentage of Operating Budget spent	104.80%	95%	TBD annually	TBD annually	TBD annually	TBD annually
	Revenue							
9.3	Collection of 90% Revenue	Continued installations of WMD with new technologies						
		Continued data clean-up						
		Implement communication / education / media campaign to ensure customer understanding of why payments are required						
9.4	Financial management programme	Revenue collected as a percentage of billed amount (Water)	78.52%	82%	TBD annually	TBD annually	TBD annually	TBD annually
		Revenue collected as a percentage of billed amount (Sewerage)	86.35%	86%	TBD annually	TBD annually	TBD annually	TBD annually
		Percentage of water meters read on a monthly basis	87.94%	85%	TBD annually	TBD annually	TBD annually	TBD annually
	General							
9.5	Financial management programme	Percentage of assets verified	100%	100%	TBD annually	TBD annually	TBD annually	TBD annually
		Percentage Internal Audit findings resolved	43%	70%	TBD annually	TBD annually	TBD annually	TBD annually

Table D1: WSDP FY2017: Strategies and Objectives **sheet 10 of 11**

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2016 status quo)	WSDP Year 1 FY2017/18 Target	WSDP Year 2 FY2018/19 Target	WSDP Year 3 FY2019/20 Target	WSDP Year 4 FY2020/21 Target	WSDP Year 5 FY2021/22 Target
WSDP Topic 10: Institutional Arrangements profile								
10.1	HR, Talent Management, Skills Development programme (Integrated Talent management Approach)	Percentage incidence of overtime hours in excess of 43hrs	7.64%	8.5%	TBD annually	TBD annually	TBD annually	TBD annually
		Percentage adherence to EE target in all appointments (internal & external)	98.06%	80%	TBD annually	TBD annually	TBD annually	TBD annually
		Percentage adherence to 2% of people with disabilities (PWD)	2.50%	≥ 2%	TBD annually	TBD annually	TBD annually	TBD annually
		Percentage of absenteeism	6.04%	≤ 5%	TBD annually	TBD annually	TBD annually	TBD annually
		Percentage vacancy rate	11.50%	≤ 7%	TBD annually	TBD annually	TBD annually	TBD annually
		Percentage adherence to utilisation target (composite Indicator)	n/a					
		Percentage budget spent on implementation of WSP	103.60%	95%	TBD annually	TBD annually	TBD annually	TBD annually
		Percentage adherence to employee talent target (composite indicator)	n/a					
		Percentage adherence to OHS target (composite Indicator)	n/a					
		Percentage OHS incidents reported	1.80%	≤ 5%	TBD annually	TBD annually	TBD annually	TBD annually
		Percentage OHS investigations completed	New	100%	TBD annually	TBD annually	TBD annually	TBD annually
10.2	To document, store, avail, share operational processes and train staff to continuously improve operational efficiency	Implement and ensure ISO 9001 certification of relevant branches by end June 2016/17	Bulk Water Reticulation WDMS Support Services Finance & Commercial - Administrative	Director Office EAM Scientific Services Finance & Commercial - Technical HR Business Partner Wastewater – Bellville Plant	Wastewater – Kraaifontein Melkbosstrand Potsdam Scottsdene Athlone Macassar Gordonsbay	Wastewater – Outfalls	Zandfliet	Borchard Quarry Mitchells Plain SimonsTown Wildevoelvlei
		Implement and ensure ISO 14001 & OSHAS 18001 certification of relevant	EAM	WDMS	Reticulation	Wastewater	Wastewater	Wastewater

		branches by end June 2021/22			Support Services Loss Control	HR Business Partner Bulk Water Reticulation	Bulk Water Scientific Services	Bulk Water
		Introduce and pilot applicable and available information management systems by June 2016/17	SAP IMS Consultant and Business analyst appointed	SAP IMS Blue Print and Charter develop and approved	SAP IMS implementation in the Branches: WDMS Support Services EAM Loss Control	SAP IMS implementation in the Branches: Wastewater HR Business Partner Bulk Water Reticulation	Scientific Services	
10.3	Staffing strategy documented and consolidated for each branch	Have a strategically aligned staffing strategy documented for each branch by June 2017(consolidated and signed off)	4 479	4 500 (TBA)	4 700(TBA)	5 000(TBA)	5 300(TBA)	5 697(TBA)

Table D1: WSDP FY2017: Strategies and Objectives **sheet 11 of 11**

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2016 status quo)	WSDP Year 1 FY2017/18 Target	WSDP Year 2 FY2018/19 Target	WSDP Year 3 FY2019/20 Target	WSDP Year 4 FY2020/21 Target	WSDP Year 5 FY2021/22 Target
WSDP Topic 11: Customer service requirements								
11.1	Annual Community Satisfaction Survey	Community satisfaction survey (score 1-5) for residents	3.17	3.0	TBD annually	TBD annually	TBD annually	TBD annually
		Community satisfaction survey (score 1-5) for business	3.41	3.0	TBD annually	TBD annually	TBD annually	TBD annually
11.2	Managing service delivery through the service management process	Percentage adherence to Citywide service standard based on all external notifications	93.29%	100%	TBD annually	TBD annually	TBD annually	TBD annually

Section E: Water Services MTEF Projects

The Water Services Medium-Term Expenditure Framework (MTEF) projects are presented below and outlines the water services projects which are funded for implementation within the next three years. Table E.2 provides the projects identified for implementation in FY2017-2020.
It should be highlighted that the projects included herein, represents only projects for which funding has already been secured, and therefore does not comprise the comprehensive water services project requirements of the WSA.

The summary of the MTEF water services projects may be presented as follows:

Table E. 1: Summary of MTEF Projects

Branch Category	**FY2017/18**	**FY2018/19**	**FY2019/20**	**MTEF Total**
	Value (R'000)	Value (R'000)	Value (R'000)	**Value (R'000)**
Bulk Water	108 907	196 926	343 400	**649 233**
EAM	138 132	101 268	92 500	**331 900**
Reticulation	327 830	393 874	443 029	**1 164 732**
WDM & Strategy	44 760	43 430	40 100	**128 290**
Other Branches	258 600	227 050	229050	**714 700**
Wastewater	611300	713785	342500	**1 667 585**
TOTAL	**1 489 528**	**1 676 334**	**1 490 579**	**4 656 441**

Table E. 2: Water Services MTEF Projects – FY2017 (MTEF period) **sheet 1 of 1**

Nr	Project Reference Number	Project Name	Description	Component type	Project Budget / Funding Sources				
					prev spent FY2016	FY2018 Budget	FY2019 Budget	FY2020 Budget	Total Cost
1. Infrastructure Projects					**R2 728 020**	**R1 440 752**	**R1 631 495**	**R1 313 100**	**R7 113 367**
	C06.30148-F1	Mitchells Plain Wastewater Treatment Works	Upgrade	WWTW	R19 100	**R0**	R0	R0	**R19 100**
	C06.30148-F3	Mitchells Plain Wastewater Treatment Works	Upgrade	WWTW	R130 410	**R0**	R0	R0	**R130 410**
	CPX.0007458-F1	Acquisition & Registration & servitude	New		R0	**R100**	R0	R0	**R100**
	CPX.0007459-F1	Acquisition & Registration & servitude	New		R0	**R0**	R100	R0	**R100**
	CPX.0007468-F1	Acquisition & Registration & servitude	New		R0	**R0**	R0	R100	**R100**
	C06.30170-F3	Bellville Wastewater Treatment Works	Upgrade	WWTW	R3 297	**R0**	R0	R0	**R3 297**
	C07.00407-F1	Northern Area Sewer Thornton	New		R134 205	**R0**	R0	R0	**R134 205**
	C06.01457-F1	Bellvile North Water Supply system	New		R3 288	**R0**	R0	R0	**R3 288**
	C06.30170-F1	Bellville Wastewater Treatment Works	Upgrade	WWTW	R22 528	**R0**	R0	R0	**R22 528**
	C08.86027-F1	Somerset West Bus. Park Main sewer	New		R27 093	**R0**	R0	R0	**R27 093**
	CPX.0008041-F1	Bellville WWTW Extension	Upgrade	WWTW	R0	**R35 000**	R34 000	R0	**R69 000**
	CPX.0008041-F2	Bellville WWTW Extension	Upgrade	WWTW	R0	**R1 000**	R0	R0	**R1 000**
	CPX.0007931-F1	Black-Mac Screening Station & Macassar P	New		R0	**R32 262**	R0	R0	**R32 262**
	C12.86090-F1	BlacMac Sewer: Upgrade sewer diversion	Upgrade		R2 500	**R0**	R0	R0	**R2 500**
	C08.86027-F2	Somerset West Bus. Park Main sewer	New		R5 000	**R0**	R0	R0	**R5 000**
	C07.00048-F2	Blue Route Interceptor Sewer	Upgrade		R1 000	**R0**	R0	R0	**R1 000**
	C08.86038-F1	Main Rd Upgrade M/Berg to Clovelly Rehab	Replace / rehab		R61 356	**R0**	R0	R0	**R61 356**
	CPX.0006479-F1	Bulk Retic Sewers in Milnerton Rehab	Replace / rehab		R0	**R1 000**	R35 000	R34 000	**R70 000**
	C14.86038-F1	Bulk Sewer (Housing Projects)	New		R4 585	**R0**	R0	R0	**R4 585**
	C15.86040-F1	Bulk Sewer (Housing Projects)	New		R4 581	**R0**	R0	R0	**R4 581**
	C09.86008-F1	Ruyterwacht Midblock water Pipes	Replace / rehab		R5 746	**R0**	R0	R0	**R5 746**
	CPX.0005717-F1	Bulk Sewer (Housing Projects)	New		R0	**R13 000**	R0	R0	**R13 000**
	CPX.0005718-F1	Bulk Sewer (Housing Projects)	New		R0	**R0**	R5 000	R0	**R5 000**
	CPX.0007761-F1	Bulk Sewer (Housing Projects)	New		R0	**R0**	R0	R5 000	**R5 000**
	C14.86039-F1	Bulk Water (Housing Projects)	New		R3 600	**R0**	R0	R0	**R3 600**
	C15.86061-F1	Bulk Water (Housing Projects)	New		R2 357	**R0**	R0	R0	**R2 357**
	C09.86015-F1	Rehab Outfall Sewers Pentz Sandrift m/qu	Replace / rehab		R39 357	**R0**	R0	R0	**R39 357**

	CPX.0003986-F1	Bulk Water (Housing Projects)	New		R0	**R20 000**	R0	R0	**R20 000**
	CPX.0003987-F1	Bulk Water (Housing Projects)	New		R0	**R0**	R5 000	R0	**R5 000**
	CPX.0007772-F1	Bulk Water (Housing Projects)	New		R0	**R0**	R0	R5 000	**R5 000**
	C10.86018-F1	Gordons Bay WWTW-Improvements	Upgrade	WWTW	R17 570	**R1 000**	R0	R0	**R18 570**
	C10.86033-F3	Zandvliet WWTW-Extension	Upgrade	WWTW	R44 096	**R0**	R0	R125 500	**R169 596**
	C14.86037-F1	Bulk Water Infrastructure Replacement	Replace / rehab		R23 817	**R0**	R0	R0	**R23 817**
	C11.86063-F1	Potsdam WWTW - Extension	Upgrade	WWTW	R828	**R29 650**	R35 000	R0	**R65 478**
	CPX.0001839-F1	BW Infrastructure Replace/Refurb 17/18	Replace / rehab		R0	**R20 000**	R0	R0	**R20 000**
	CPX.0001858-F1	BW Infrastructure Replace/Refurb 18/19	Replace / rehab		R0	**R0**	R26 000	R0	**R26 000**
	CPX.0004942-F1	BW Infrastructure Replace/Refurb 19/20	Replace / rehab		R0	**R0**	R0	R30 000	**R30 000**
	C15.86041-F1	BW Infrastructure Replacement 14/15	Replace / rehab		R30 257	**R0**	R0	R0	**R30 257**
	C10.82001-F1	Cape Flats #1 Rehabilitation	Replace / rehab		R1 862	**R0**	R0	R0	**R1 862**
	C10.82002-F1	Cape Flats #2 Rehabilitation	Replace / rehab		R1 903	**R0**	R0	R0	**R1 903**
	C11.86077-F1	Bulk Water Augmentation Scheme	New		R8 950	**R30 000**	R40 000	R150 000	**R228 950**
	CPX.0005615-F1	Cape Flats Rehabilitation 17/18	Replace / rehab		R0	**R14 000**	R0	R0	**R14 000**
	CPX.0005616-F1	Cape Flats Rehabilitation 18/19	Replace / rehab		R0	**R0**	R20 000	R0	**R20 000**
	CPX.0007470-F1	Cape Flats Rehabilitation 19/20	Replace / rehab		R0	**R0**	R0	R42 000	**R42 000**
	C11.86077-F2	Bulk Water Augmentation Scheme	New		R18 506	**R16 340**	R18 940	R26 260	**R80 046**
	C13.86005-F2	Cape Flats WWTW-Refurbish various structures	Replace / rehab	WWTW	R0	**R40 000**	R40 000	R30 000	**R110 000**
	C11.86077-F4	Bulk Water Augmentation Scheme	New		R27 702	**R19 860**	R25 260	R75 540	**R148 362**
	C12.86084-F1	Completion of Langa Collector Sewer	New		R8 364	**R0**	R0	R0	**R8 364**
	C12.86083-F1	New Rest Reticulation Rectification	Upgrade		R9 003	**R0**	R0	R0	**R9 003**
	CPX.0003851-F1	Contermanskloof Reservoir	New	Reservoir	R920	**R82 500**	R51 000	R500	**R134 920**
	C12.86091-F1	Borchards Quarry WWTW	Upgrade	WWTW	R81 236	**R59 500**	R65 000	R0	**R205 736**
	CPX.0008003-F1	D1-REP-First Avenue-Grassy Park	Replace / rehab		R0	**R2 000**	R0	R0	**R2 000**
	CPX.0008002-F1	D1-REP-Klip road-Grassy Park	Replace / rehab		R0	**R2 000**	R0	R0	**R2 000**
	CPX.0008011-F1	D5,7&8-REP-Gugulethu-Various Rds-150 MM	Replace / rehab		R0	**R12 000**	R5 700	R0	**R17 700**
	CPX.0008010-F1	D5,7&8-REP-HANOVER PK-VARIOUS RDS-100 MM	Replace / rehab		R0	**R7 200**	R0	R0	**R7 200**
	CPX.0008009-F1	D5,7&8-REP-Manenberg-Various Rds-100 MM	Replace / rehab		R0	**R1 185**	R630	R0	**R1 815**
	CPX.0008008-F1	D6-UPSZ- Brackenfell -100 mm	Replace / rehab		R0	**R0**	R5 000	R0	**R5 000**
	CPX.0008007-F1	D6-UPSZ- Brackenfell -75 mm	Replace / rehab		R0	**R5 522**	R14 985	R0	**R20 506**
	CPX.0008005-F1	D6-UPSZ-BRACKENFELL-50 mm	Replace / rehab		R0	**R1 185**	R1 047	R0	**R2 232**

	CPX.0008006-F1	D6-UPSZ-BRACKENFELL-63 mm	Replace / rehab		R0	**R4 200**	R0	R0	**R4 200**
	C08.86023-F1	De Gendel Reservoir Link	New	Reservoir	R255	**R0**	R0	R0	**R255**
	C08.00214-F1	De Grendel Reservoir	New	Reservoir	R13 137	**R0**	R0	R0	**R13 137**
	C08.00214-F2	De Grendel Reservoir	New	Reservoir	R7 000	**R0**	R0	R0	**R7 000**
	New project 11	Delft Sewer Upgrading	Upgrade		R0	**R500**	R7 400	R2 000	**R9 900**
	C12.86094-F1	Scottsdene WWTW	Upgrade	WWTW	R707	**R0**	R2 000	R0	**R2 707**
	CPX.0001788-F1	Development of Add Infrastructure 17/18	Upgrade		R0	**R19 500**	R0	R0	**R19 500**
	CPX.0001789-F1	Development of Add Infrastructure 18/19	Upgrade		R0	**R0**	R28 100	R0	**R28 100**
	CPX.0004931-F1	Development of Add Infrastructure 19/20	Upgrade		R0	**R0**	R0	R25 000	**R25 000**
	C12.86094-F2	Scottsdene WWTW	Upgrade	WWTW	R3 550	**R0**	R0	R0	**R3 550**
	C14.86055-F3	Development of Additional Infrastructure	Upgrade		R4 415	**R0**	R0	R0	**R4 415**
	C15.86036-F1	Development of Additional Infrastructure	Upgrade		R5 633	**R0**	R0	R0	**R5 633**
	New project 1	Digtebij Sewer installation DP0973	New		R0	**R1 600**	R0	R0	**R1 600**
	CPX.0007376-F1	Diversion Du Noon Sewer	New		R0	**R0**	R2 500	R2 500	**R5 000**
	New project 12	Doordekraal Sewer Pumpstation	New	Pump station	R0	**R500**	R8 000	R24 000	**R32 500**
	C05.01333-F3	Durbanville Collectors Sewers	New		R173	**R0**	R0	R0	**R173**
	C13.86005-F1	Cape Flats WWTW-Refurbish various structures	Replace / rehab	WWTW	R37 291	**R14 000**	R18 000	R19 000	**R88 291**
	C06.01613-F2	Expansion of WWTW	Upgrade	WWTW	R11 749	**R0**	R0	R0	**R11 749**
	CPX.0007428-F1	Expansion of WWTW (2019)	Upgrade	WWTW	R0	**R0**	R6 700	R3 000	**R9 700**
	C13.86010-F1	Mitchells Plain WWTW-Improvements Phase2	Upgrade	WWTW	R13 175	**R10 800**	R0	R0	**R23 975**
	C13.86010-F2	Mitchells Plain WWTW-Improvements Phase2	Upgrade	WWTW	R38 988	**R0**	R2 000	R0	**R40 988**
	C07.00047-F2	Fish Hoek Outfall Sewer	Upgrade		R469	**R0**	R0	R0	**R469**
	C13.86053-F1	Completion of Cape Flats III Bulk Sewer	New		R73 005	**R0**	R0	R0	**R73 005**
	CPX.0007411-F1	Gordons Bay Beach Front Sewer	Upgrade		R0	**R0**	R2 500	R3 300	**R5 800**
	New project 2	Gordon's Bay Firlands Sewerage Services	Upgrade		R0	**R0**	R0	R500	**R500**
	New project 3	Gordon's Bay Firlands Water Reticulation	Upgrade		R0	**R0**	R0	R500	**R500**
	New project 4.1	Gordon's Bay Sewer Rising Main D1575	Upgrade		R0	**R0**	R500	R15 000	**R15 500**
	New project 4.2	Gordon's Bay Sewers and Water investigation DP0962	New		R0	**R0**	R500	R0	**R500**
	C13.86053-F2	Completion of Cape Flats III Bulk Sewer	New		R50 901	**R25 000**	R0	R0	**R75 901**
	CPX.0007380-F1	Harmony Park	New		R0	**R0**	R2 500	R0	**R2 500**
	New project 9	Helderberg / Faure scheme	New		R0	**R100**	R800	R7 000	**R7 900**
	CPX.0007402-F1	Hillary Close Sewer	New		R0	**R0**	R1 500	R0	**R1 500**

	C12.86057-F1	Hout Bay Outfall-Refurbish equipment	Replace / rehab		R300	**R0**	R0	R0	**R300**
	C13.86053-F3	Completion of Cape Flats III Bulk Sewer	New		R10 000	**R0**	R0	R0	**R10 000**
	C13.86040-F1	Informal Incremental Areas Upgrade	New		-R16	**R0**	R0	R0	**-R16**
	C14.86015-F1	Informal Settlements Sanitation Installa	New		R17 882	**R0**	R0	R0	**R17 882**
	C15.86023-F1	Informal Settlements Sanitation Installa	New		R18 184	**R0**	R0	R0	**R18 184**
	C13.86081-F2	Athlone WWTW-Capacity Extension-phase 1	Upgrade	WWTW	R499	**R36 000**	R84 000	R75 000	**R195 499**
	C14.86001-F1	Penhill Sewer Installation	New		R2 719	**R12 000**	R12 000	R0	**R26 719**
	CPX.0003989-F1	Informal Settlements Sanitation Installa	New		R0	**R23 000**	R0	R0	**R23 000**
	CPX.0003990-F1	Informal Settlements Sanitation Installa	New		R0	**R0**	R20 000	R0	**R20 000**
	CPX.0005677-F1	Informal Settlements Sanitation Installa	New		R0	**R0**	R0	R20 000	**R20 000**
	C14.86053-F1	Informal settlements water installations	New		R2 375	**R0**	R0	R0	**R2 375**
	C15.86028-F1	Informal settlements water installations	New		R808	**R0**	R0	R0	**R808**
	C14.86043-F1	Melkbos WWTW-Effluent Disinfection	Upgrade	WWTW	R1 700	**R0**	R20 000	R30 000	**R51 700**
	CPX.0003992-F1	Informal settlements water installations	New		R0	**R4 000**	R0	R0	**R4 000**
	CPX.0003993-F1	Informal settlements water installations	New		R0	**R0**	R4 000	R0	**R4 000**
	CPX.0005617-F1	Informal settlements water Installations	New		R0	**R0**	R0	R4 000	**R4 000**
	C12.86008-F2	Infrastructure Replace/Refurbish - WWT	Replace / rehab	WWTW	R16 800	**R0**	R0	R0	**R16 800**
	C14.86016-F1	Infrastructure Replace/Refurbish - WWT	Replace / rehab	WWTW	R47 958	**R0**	R0	R0	**R47 958**
	C15.86027-F1	Infrastructure Replace/Refurbish - WWTW	Replace / rehab	WWTW	R113 041	**R0**	R0	R0	**R113 041**
	C15.86027-F2	Infrastructure Replace/Refurbish - WWTW	Replace / rehab	WWTW	R52 613	**R0**	R0	R0	**R52 613**
	C14.86044-F2	Wesfleur WWTW-Capacity Extension USDG	Upgrade	WWTW	R2 500	**R20 000**	R60 000	R0	**R82 500**
	C14.86055-F2	Development of Additional Infrastructure	Upgrade	WWTW	R8 036	**R0**	R0	R0	**R8 036**
	CPX.0002290-F1	Infrastructure Replace/Refurbish - WWTW	Replace / rehab	WWTW	R0	**R10 100**	R0	R0	**R10 100**
	CPX.0002290-F2	Infrastructure Replace/Refurbish - WWTW	Replace / rehab	WWTW	R0	**R100**	R0	R0	**R100**
	CPX.0002291-F1	Infrastructure Replace/Refurbish - WWTW	Replace / rehab	WWTW	R0	**R0**	R10 000	R0	**R10 000**
	CPX.0002291-F2	Infrastructure Replace/Refurbish - WWTW	Replace / rehab	WWTW	R0	**R0**	R5 000	R0	**R5 000**
	CPX.0006613-F1	Infrastructure Replace/Refurbish - WWTW	Replace / rehab	WWTW	R0	**R0**	R0	R30 000	**R30 000**
	C14.86056-F1	Spes Bona Reservoir 35 Ml	New	Reservoir	R14 086	**R0**	R0	R0	**R14 086**
	C10.86066-F2	Khayelitsha Driftsands Site C	New		R2 971	**R0**	R0	R0	**R2 971**
	C14.86056-F2	Spes Bona Reservoir 35 Ml	New	Reservoir	R8 500	**R0**	R0	R0	**R8 500**
	C15.86054-F1	Logger Installation	New		R2 931	**R0**	R0	R0	**R2 931**
	C14.86069-F1	Logger installations	New		R2 974	**R0**	R0	R0	**R2 974**
	C12.86059-F1	Macassar WWTW Extension	Upgrade	WWTW	R0	**R20 000**	R25 000	R0	**R45 000**
	C12.86059-F2	Macassar WWTW Extension	Upgrade	WWTW	R0	**R35 050**	R48 650	R0	**R83 700**

	CPX.0007405-F1	Main Rd Clovelly Simonstown	Replace / rehab		R0	**R15 000**	R8 000	R10 000	**R33 000**
	C14.86059-F1	Zevenwacht Reservoir and Network	New	Reservoir	R296	**R0**	R0	R0	**R296**
	C14.86073-F1	Fisantekraal Housing Garden City - Water	New		R29 399	**R0**	R0	R0	**R29 399**
	C14.86070-F1	Meter Replacement Program	Replace / rehab		R103 511	**R0**	R0	R0	**R103 511**
	C15.86056-F1	Meter Replacement Program	Replace / rehab		R200 544	**R0**	R0	R0	**R200 544**
	C14.86074-F1	Fisantekraal Housing Garden City - Sewer	New		R6 340	**R0**	R0	R0	**R6 340**
	C15.86046-F1	West Beach S/Pumpstation and rising Main	Upgrade	Pump station	R481	**R17 000**	R0	R0	**R17 481**
	CPX.0001938-F1	Meter Replacement Programme	Replace / rehab		R0	**R190 000**	R0	R0	**R190 000**
	CPX.0001939-F1	Meter Replacement Programme	Replace / rehab		R0	**R0**	R190 000	R0	**R190 000**
	CPX.0004933-F1	Meter Replacement Programme	Replace / rehab		R0	**R0**	R0	R190 000	**R190 000**
	C16.86009-F1	Development of Add Infrastructure 15/16	Upgrade		R5 145	**R0**	R0	R0	**R5 145**
	CPX.0007407-F1	New Brakkloof Reservoir	New	Reservoir	R0	**R0**	R500	R20 000	**R20 500**
	C16.86010-F1	BW Infrastructure Replace/Refurb 15/16	Replace / rehab		R57 418	**R0**	R0	R0	**R57 418**
	CPX.0008735-F1	Nooiensfontein Outfall Sewer	New		R0	**R3 750**	R25 000	R0	**R28 750**
	C12.86075-F1	Northern Regional Sludge Facility	New		R0	**R500**	R42 785	R25 000	**R68 285**
	C12.86075-F2	Northern Regional Sludge Facility	New		R0	**R36 270**	R10 000	R0	**R46 270**
	CPX.0007409-F1	Peligrini Sewer Pumpstation Diversion	New	Pump station	R0	**R500**	R3 000	R7 000	**R10 500**
	C16.86017-F1	Zone Metering & Valves	New		R3 999	**R0**	R0	R0	**R3 999**
	C11.86060-F1	Philippi Collector Sewer	New		R0	**R5 000**	R5 000	R20 000	**R30 000**
	C11.86060-F3	Philippi Collector Sewer	New		R0	**R50 000**	R66 810	R40 000	**R156 810**
	C16.86019-F1	Refurbishment of Labs	Replace / rehab		R544	**R0**	R0	R0	**R544**
	C11.86063-F3	Potsdam WWTW - Extension	Upgrade	WWTW	R840	**R25 000**	R7 000	R0	**R32 840**
	C11.86063-F4	Potsdam WWTW - Extension	Upgrade	WWTW	R3 011	**R0**	R0	R0	**R3 011**
	C08.86031-F1	Provision of Sewerage to Croydon	New		R535	**R0**	R0	R0	**R535**
	C09.86014-F1	Pump Station & Rising Main Du Noon	Upgrade	Pump station	R20 543	**R0**	R0	R0	**R20 543**
	C09.86014-F2	Pump Station & Rising Main Du Noon	Upgrade	Pump station	R4 998	**R0**	R0	R0	**R4 998**
	C14.86020-F1	Pump Stn Rehab (Citywide)	Replace / rehab	Pump station	R6 913	**R0**	R0	R0	**R6 913**
	C14.86009-F1	Refurbishment of Labs	Replace / rehab		R886	**R0**	R0	R0	**R886**
	C15.86006-F1	Refurbishment of Labs	Replace / rehab		R651	**R0**	R0	R0	**R651**
	CPX.0001861-F1	Refurbishment of Labs	Replace / rehab		R0	**R0**	R300	R0	**R300**
	CPX.0004898-F1	Refurbishment of Labs	Replace / rehab		R0	**R0**	R0	R300	**R300**
	C16.86030-F1	Meter Replacement Programme	Replace / rehab		R205 910	**R0**	R0	R0	**R205 910**
	C14.86022-F1	Rehab of Sewer Network (Citywide)	Replace / rehab		R4 996	**R0**	R0	R0	**R4 996**
	C15.86029-F1	Rehab of Sewer Network (USDG Citywide)	Replace / rehab		R4 788	**R0**	R0	R0	**R4 788**

	C14.86023-F1	Rehab of Water Network (Citywide)	Replace / rehab		R2 888	**R0**	R0	R0	**R2 888**
	C16.86030-F2	Meter Replacement Programme	Replace / rehab		R69 997	**R0**	R0	R0	**R69 997**
	C10.86132-F1	Remove midblock water network-Bishop Lavis	Replace / rehab		R8 171	**R0**	R0	R0	**R8 171**
	C16.86031-F1	Sewer Projects as per Master Plan 15/16	New		R121	**R0**	R0	R0	**R121**
	CPX.0002759-F1	Repl & Upgr Sew Pump Station	Replace / rehab	Pump station	R0	**R15 000**	R0	R0	**R15 000**
	CPX.0002759-F2	Repl & Upgr Sew Pump Station	Replace / rehab	Pump station	R0	**R5 000**	R0	R0	**R5 000**
	CPX.0002893-F1	Repl & Upgr Sew Pump Station	Replace / rehab	Pump station	R0	**R0**	R18 000	R0	**R18 000**
	CPX.0002893-F2	Repl & Upgr Sew Pump Station	Replace / rehab	Pump station	R0	**R0**	R5 000	R0	**R5 000**
	CPX.0005618-F1	Repl & Upgr Sew Pump Station	Replace / rehab	Pump station	R0	**R0**	R0	R25 000	**R25 000**
	CPX.0005618-F2	Repl & Upgr Sew Pump Station	Replace / rehab	Pump station	R0	**R0**	R0	R5 000	**R5 000**
	C15.86026-F1	Replace & Upgr Sew Pumpstation	Replace / rehab	Pump station	R16 721	**R0**	R0	R0	**R16 721**
	C15.86026-F2	Replace & Upgr Sew Pumpstation	Replace / rehab	Pump station	R5 636	**R0**	R0	R0	**R5 636**
	C13.86047-F1	Replace & Upgr Sewer Network (Citywide)	Replace / rehab		R2 091	**R0**	R0	R0	**R2 091**
	C14.86024-F1	Replace & Upgr Sewer Network (Citywide)	Replace / rehab		R46 089	**R0**	R0	R0	**R46 089**
	C15.86024-F1	Replace & Upgr Sewer Network (Citywide)	Replace / rehab		R44 450	**R0**	R0	R0	**R44 450**
	C16.86034-F1	Bulk Water (Housing Projects)	New		R942	**R0**	R0	R0	**R942**
	CPX.0003849-F1	Replace & Upgr Sewer Network (Citywide)	Replace / rehab		R0	**R0**	R50 000	R0	**R50 000**
	CPX.0003849-F2	Replace & Upgr Sewer Network (Citywide)	Replace / rehab		R0	**R5 000**	R5 000	R0	**R10 000**
	CPX.0003860-F1	Replace & Upgr Sewer Network (Citywide)	Replace / rehab		R0	**R44 000**	R0	R0	**R44 000**
	CPX.0007774-F1	Replace & Upgr Sewer Network (Citywide)	Replace / rehab		R0	**R0**	R0	R50 000	**R50 000**
	CPX.0007774-F2	Replace & Upgr Sewer Network (Citywide)	Replace / rehab		R0	**R0**	R0	R5 000	**R5 000**
	C16.86037-F1	Informal Settlements Sanitation Installa	New		R18 811	**R0**	R0	R0	**R18 811**
	C16.86037-F2	Informal Settlements Sanitation Installa	New		R4 031	**R0**	R0	R0	**R4 031**
	CPX.0002879-F1	Replace & Upgr Water Network (City Wide)	Replace / rehab		R0	**R0**	R0	R50 000	**R50 000**
	CPX.0003862-F1	Replace & Upgr Water Network (City Wide)	Replace / rehab		R0	**R11 260**	R0	R0	**R11 260**
	CPX.0003864-F1	Replace & Upgr Water Network (City Wide)	Replace / rehab		R0	**R0**	R22 639	R0	**R22 639**
	New project 13	Replace & Upgr Water Network (City Wide)	Replace / rehab		R0	**R5 000**	R5 000	R5 000	**R15 000**
	C13.86048-F1	Replace & Upgr Water Network (citywide)	Replace / rehab		R1 443	**R0**	R0	R0	**R1 443**
	C14.86025-F1	Replace & Upgr Water Network (citywide)	Replace / rehab		R59 652	**R0**	R0	R0	**R59 652**
	CPX.0003866-F1	Replace & Upgr Water Network FY2015	Replace / rehab		R40 375	**R0**	R0	R0	**R40 375**
	CPX.0003866-F2	Replace & Upgr Water Network FY2015	Replace / rehab		R1 251	**R0**	R0	R0	**R1 251**
	C13.86046-F1	Replace &Upgr Sew Pumpstns (citywide)	Replace / rehab	Pump station	R1 966	**R0**	R0	R0	**R1 966**
	C14.86026-F1	Replace &Upgr Sew Pumpstns (citywide)	Replace / rehab	Pump station	R4 210	**R0**	R0	R0	**R4 210**
	C16.86038-F1	Replace & Upgr Sewer Network (Citywide)	Replace / rehab		R50 233	**R0**	R0	R0	**R50 233**

	C16.86038-F2	Replace & Upgr Sewer Network (Citywide)	Replace / rehab		R4 990	**R0**	R0	R0	**R4 990**
	C15.86045-F1	Rietvlei P/Station, R/Main Bottelary	New		R0	**R5 000**	R6 000	R16 000	**R27 000**
	C16.86039-F1	Replace & Upgr Water Network (City Wide)	Replace / rehab		R45 835	**R0**	R0	R0	**R45 835**
	C11.86059-F3	Sandtrap Bridgetown Sewer Pump Station	Upgrade	Pump station	R2 905	**R0**	R0	R0	**R2 905**
	New project 14	Sandvlei, Macassar Provision of Services	New		R0	**R500**	R4 500	R0	**R5 000**
	C12.86103-F1	Scottsdene : Reticulation Network	Upgrade		R897	**R0**	R0	R0	**R897**
	C16.86039-F2	Replace & Upgr Water Network (City Wide)	Replace / rehab		R3 998	**R0**	R0	R0	**R3 998**
	C16.86040-F1	Infrastructure Replace/Refurbish - WWTW	Replace / rehab	WWTW	R38 703	**R0**	R0	R0	**R38 703**
	C14.86071-F1	Sewer Projects as per Master Plan	New		R1 152	**R0**	R0	R0	**R1 152**
	C16.86040-F2	Infrastructure Replace/Refurbish - WWTW	Replace / rehab	WWTW	R73 073	**R0**	R0	R0	**R73 073**
	CPX.0003967-F1	Sewer Projects as per Master Plan 17/18	New		R0	**R2 000**	R0	R0	**R2 000**
	CPX.0003968-F1	Sewer Projects as per Master Plan 18/19	New		R0	**R0**	R2 000	R0	**R2 000**
	CPX.0005620-F1	Sewer Projects as per Master Plan 19/20	New		R0	**R0**	R0	R7 500	**R7 500**
	C14.86075-F1	Sewer Pump Station Centuary City (DC)	New	Pump station	R3 398	**R0**	R0	R0	**R3 398**
	New project 5	Sir Lowry's Pass parallel sewer HC-F02	New		R0	**R0**	R0	R500	**R500**
	C16.86041-F1	Informal settlements water installations	New		R979	**R0**	R0	R0	**R979**
	C16.86044-F1	Water Meters New Connections	New		R8 342	**R0**	R0	R0	**R8 342**
	C16.86044-F3	Water Meters New Connections	New		R3 533	**R0**	R0	R0	**R3 533**
	CPX.0002122-F1	Telemetry Automation (Retic)	Upgrade		R2 698	**R0**	R0	R0	**R2 698**
	CPX.0003895-F1	Steenbras Reservoir	New	Reservoir	R0	**R7 500**	R30 500	R4 600	**R42 600**
	New project 6	Strand Seawall sewer and pumping stations	new	Pump station	R0	**R2 789**	R5 000	R3 000	**R10 789**
	CPX.0002489-F1	Bulk Sewer (Housing Projects)	New		R1 581	**R0**	R0	R0	**R1 581**
	C14.86063-F1	Telemetry Automation (Retic)	Upgrade		R1 964	**R0**	R0	R0	**R1 964**
	CPX.0002111-F1	Telemetry Automation (Retic)	Upgrade		R2 402	**R0**	R0	R0	**R2 402**
	CPX.0002760-F1	Repl & Upgr Sew Pump Station	Replace / rehab	Pump station	R8 607	**R0**	R0	R0	**R8 607**
	CPX.0002124-F1	Telemetry Automation (Retic)	Upgrade		R0	**R1 000**	R0	R0	**R1 000**
	CPX.0002128-F1	Telemetry Automation (Retic)	Upgrade		R0	**R0**	R3 000	R0	**R3 000**
	CPX.0004521-F1	Telemetry Automation (Retic)	Upgrade		R0	**R0**	R0	R3 000	**R3 000**
	CPX.0002760-F2	Repl & Upgr Sew Pump Station	Replace / rehab	Pump station	R11 983	**R0**	R0	R0	**R11 983**
	CPX.0003851-F2	Contermanskloof Reservoir	New	Reservoir	R3 516	**R5 500**	R0	R0	**R9 016**
	CPX.0007932-F1	Trenchless Rehabilitation of Black-Mac P	Replace / rehab		R0	**R20 505**	R17 000	R0	**R37 505**
	CPX.0007423-F1	Upgrade Andrag Supply System	Upgrade		R0	**R2 500**	R5 000	R3 000	**R10 500**
	C13.86002-F1	Upgrade clarifiers - Bellville WWTW	Upgrade	WWTW	R0	**R0**	R10 000	R0	**R10 000**
	CPX.0004140-F1	Upgrade Reservoirs City Wide	Upgrade	Reservoir	R4 304	**R0**	R0	R0	**R4 304**

	CPX.0003893-F1	OSEC (Electrolytic Chlorination Infr)	New		R8 883	**R200**	R2 150	R2 000	**R13 233**
	CPX.0005843-F1	Upgrade Reservoirs City Wide	Upgrade	Reservoir	R0	**R4 000**	R0	R0	**R4 000**
	CPX.0005844-F1	Upgrade Reservoirs City Wide	Upgrade	Reservoir	R0	**R0**	R4 000	R0	**R4 000**
	CPX.0007775-F1	Upgrade Reservoirs City Wide	Upgrade	Reservoir	R0	**R0**	R0	R5 000	**R5 000**
	CPX.0003893-F2	OSEC (Electrolytic Chlorination Infr)	New		R23 422	**R0**	R2 000	R1 000	**R26 422**
	CPX.0002010-F1	Water Meter (Retic)	New		R1 738	**R0**	R0	R0	**R1 738**
	C13.86091-F2	Water Meters (Retic)	New		-R1	**R0**	R0	R0	**-R1**
	C14.86054-F1	Water Meters (Retic)	New		R9 515	**R0**	R0	R0	**R9 515**
	C14.86054-F2	Water Meters (Retic)	New		R4 153	**R0**	R0	R0	**R4 153**
	C15.86031-F1	Water Meters New Connections	New		R8 554	**R0**	R0	R0	**R8 554**
	C15.86031-F3	Water Meters New Connections	New		R3 570	**R0**	R0	R0	**R3 570**
	C15.86031-F4	Water Meters New Connections	New		R4 500	**R0**	R0	R0	**R4 500**
	CPX.0004708-F1	Cape Flats Rehabilitation 15/16	Replace / rehab		R321	**R0**	R0	R0	**R321**
	CPX.0004870-F1	Hout Bay Refurbishment	Replace / rehab		R7 997	**R0**	R0	R0	**R7 997**
	CPX.0001950-F1	Water Meters New Connections	New		R0	**R0**	R12 000	R0	**R12 000**
	CPX.0001950-F2	Water Meters New Connections	New		R0	**R0**	R6 000	R0	**R6 000**
	CPX.0001950-F3	Water Meters New Connections	New		R0	**R0**	R6 000	R0	**R6 000**
	CPX.0001959-F1	Water Meters New Connections	New		R0	**R6 000**	R0	R0	**R6 000**
	CPX.0001959-F2	Water Meters New Connections	New		R0	**R6 000**	R0	R0	**R6 000**
	CPX.0001959-F3	Water Meters New Connections	New		R0	**R12 000**	R0	R0	**R12 000**
	CPX.0004934-F1	Water Meters New Connections	New		R0	**R0**	R0	R12 000	**R12 000**
	CPX.0004934-F2	Water Meters New Connections	New		R0	**R0**	R0	R5 000	**R5 000**
	CPX.0004934-F3	Water Meters New Connections	New		R0	**R0**	R0	R6 000	**R6 000**
	C14.86072-F1	Water Projects as per Master Plan	New		R2 257	**R0**	R0	R0	**R2 257**
	C15.86059-F1	Water Projects as per Master Plan	New		R864	**R0**	R0	R0	**R864**
	CPX.0003970-F1	Water Projects as per Master Plan 17/18	New		R0	**R1 000**	R0	R0	**R1 000**
	CPX.0003971-F1	Water Projects as per Master Plan 18/19	New		R0	**R0**	R2 000	R0	**R2 000**
	CPX.0005619-F1	Water Projects as per Master Plan 19/20	New		R0	**R0**	R0	R7 500	**R7 500**
	C12.86082-F1	Water Supply at Baden Powell Dr to Khaye	New		R33	**R30 000**	R22 000	R0	**R52 033**
	CPX.0005791-F1	Upgrade Reservoirs City Wide	Upgrade	Reservoir	R4 631	**R0**	R0	R0	**R4 631**
	CPX.0005992-F1	Acquisition & Commissioning of large Gen	New		R42 836	**R0**	R0	R0	**R42 836**
	CPX.0007930-F1	Zandvliet WWTW: MBR & Bottlenecks	Upgrade	WWTW	R0	**R0**	R190 000	R0	**R190 000**
	CPX.0007929-F1	Zandvliet WWTW: Primary Treatment & Slud	Upgrade	WWTW	R0	**R20 000**	R34 000	R0	**R54 000**
	CPX.0007929-F2	Zandvliet WWTW: Primary Treatment & Slud	Upgrade	WWTW	R0	**R189 463**	R0	R0	**R189 463**

	CPX.0006477-F1	Acquisition & Registration & servitude	New		R447	**R0**	R0	R0	**R447**
	CPX.0006480-F1	Bloekombos Water P/S & Reservoir	New	Reservoir	R2 700	**R0**	R0	R0	**R2 700**
	C14.86059-F2	Zevenwacht Reservoir and Network	New	Reservoir	R131	**R9 000**	R5 000	R0	**R14 131**
	C14.86068-F1	Zone Metering	New		R1 644	**R0**	R0	R0	**R1 644**
	C15.86053-F1	Zone Metering	New		R1 813	**R0**	R0	R0	**R1 813**
	CPX.0007093-F1	Zone Metering & Valves	New		R0	**R4 760**	R0	R0	**R4 760**
2. Source Development Projects					**R3 580**	**R0**	**R20 000**	**R20 000**	**R43 580**
	C15.86043-F1	Additional Resources Desalination Reclamation	New	Source Development	R0	**R0**	R20 000	R20 000	**R40 000**
	C12.86019-F2	TMS Aquifer Deep Borehole	New	Source Development	R3 580	**R0**	R0	R0	**R3 580**
3. Demand Management projects					**R124 811**	**R45 600**	**R40 100**	**R40 100**	**R250 611**
	CPX.0005845-F1	Energy Efficiency & Demand Side Manageme	New		R0	**R5 500**	R0	R0	**R5 500**
	C16.86007-F1	Pressure Management: COCT 15/16	New	WCDM	R15 750	**R0**	R0	R0	**R15 750**
	C16.86016-F1	Treated Effluent: Reuse & Inf Upgrades	Upgrade	WCDM	R19 955	**R0**	R0	R0	**R19 955**
	C14.86062-F1	Pressure Management	New	WCDM	R19 311	**R0**	R0	R0	**R19 311**
	C15.86050-F1	Pressure Management: COCT	New	WCDM	R19 666	**R0**	R0	R0	**R19 666**
	CPX.0001906-F1	Pressure Management: COCT 17/18	New	WCDM	R0	**R20 000**	R0	R0	**R20 000**
	CPX.0001907-F1	Pressure Management: COCT 18/19	New	WCDM	R0	**R0**	R20 000	R0	**R20 000**
	CPX.0004867-F1	Pressure Management: COCT 19/20	New	WCDM	R0	**R0**	R0	R15 000	**R15 000**
	New project 10	Replace & Upgr Treated Effluent Network	Replace / rehab	WCDM	R0	**R100**	R100	R100	**R300**
	C14.86061-F1	Treated Effluent : Re-use and Upgrades	Upgrade	WCDM	R24 932	**R0**	R0	R0	**R24 932**
	C13.95014-F1	Treated Effluent: Infrastructure Upgrade	Upgrade	WCDM	R300	**R0**	R0	R0	**R300**
	C15.86019-F1	Treated Effluent: Reuse & Inf Upgrades	Upgrade	WCDM	R24 897	**R0**	R0	R0	**R24 897**
	CPX.0001911-F1	Treated Effluent: Reuse & Inf Upgrades	Upgrade	WCDM	R0	**R20 000**	R0	R0	**R20 000**
	CPX.0001923-F1	Treated Effluent: Reuse & Inf Upgrades	Upgrade	WCDM	R0	**R0**	R20 000	R0	**R20 000**
	CPX.0004868-F1	Treated Effluent: Reuse & Inf Upgrades	Upgrade	WCDM	R0	**R0**	R0	R25 000	**R25 000**
4. O&M Commitments					**R4 277 298**	**R14 609 150**	**R16 147 695**	**R16 955 080**	**R51 989 222**
Operations									**R0**

	WATER								**R0**
	Employee Related Costs-Salaries				240 143 244	**R985 324**	R1 087 482	R1 141 856	**R3 454 806**
	Remuneration Cost for City of Ca				310 771 304	**R1 251 663**	R1 376 067	R1 444 870	**R4 383 372**
	Working Capital Reserves				155 956 899	**R401 657**	R445 811	R468 102	**R1 471 527**
	Depreciation				71 069 342	**R273 474**	R341 917	R359 013	**R1 045 474**
	Contracted Services				20 912 360	**R132 150**	R139 418	R146 389	**R438 869**
	General Expenses - Other				112 827 877	**R391 079**	R450 867	R473 411	**R1 428 184**
	General Expenditure - Materials				4 922 218	**R10 639**	R11 224	R11 785	**R38 571**
	Interest Internal Borrowings				81 705 989	**R238 781**	R268 694	R282 129	**R871 310**
	Internal Utilities Expenditure				23 263 352	**R79 574**	R90 098	R94 603	**R287 539**
	Bulk Charges Expenditure				384 130 331	**R1 117 213**	R1 184 166	R1 243 374	**R3 928 884**
	Insurance Departmental Premiums				5 343 197	**R13 408**	R14 146	R14 853	**R47 750**
	Activity Based Costs to Capital				-1 486 248	**-R5 677**	-R5 677	-R5 960	**-R18 800**
	Income Statement Expenditure				1 402 364 392	**R4 805 224**	R5 373 534	R5 642 211	**R17 223 333**
	SANITATION								**R0**
	Employee Related Costs-Salaries				26 873 948	**R96 879**	R105 211	R110 471	**R339 435**
	Remuneration Cost for City of Ca				33 422 806	**R119 815**	R130 106	R136 612	**R419 956**
	Working Capital Reserves				65 298 985	**R170 893**	R191 227	R200 788	**R628 207**
	Depreciation				35 789 812	**R119 395**	R127 753	R134 140	**R417 078**
	Contracted Services				65 154 433	**R197 567**	R208 433	R218 855	**R690 010**
	General Expenses - Other				20 339 074	**R58 354**	R62 419	R65 540	**R206 653**
	General Expenditure - Materials				686 795	**R2 095**	R2 211	R2 321	**R7 314**
	Interest Internal Borrowings				35 641 665	**R102 956**	R115 854	R121 647	**R376 098**
	Internal Utilities Expenditure				2 650 038	**R6 976**	R8 033	R8 435	**R26 094**
	Bulk Charges Expenditure				230 136 294	**R918 858**	R1 019 932	R1 070 929	**R3 239 856**
	Insurance Departmental Premiums				353 530	**R936**	R987	R1 037	**R3 314**
	Activity Based Costs to Operating				-62 643 456	**-R133 096**	-R142 202	-R149 312	**-R487 253**
	Income Statement Expenditure				693 894 503	**R2 273 565**	R2 497 294	R2 622 158	**R8 086 912**
Maintenance									**R0**
	WATER								**R0**
	Repairs and Maintenance				R184 903	**R621 877**	R661 881	R694 975	**R2 163 636**
	SANITATION								**R0**
	Repairs and Maintenance				R132 872	**R357 566**	R380 808	R399 848	**R1 271 094**

5. Institutional					R18 196	R284 432	R101 864	R117 379	R852 790
	C10.86130-F1	Regional resources development	Institutional		18 196 403	**R0**	R0	R0	**R18 196**
	C12.86074-F1	Construction of new Head Office	Institutional		23 259 883	**R146 632**	R0	R0	**R169 892**
	C12.86079-F1	EAM Depot Realignment - 5 Nodal System	Institutional		95 835 418	**R39 000**	R35 000	R46 000	**R215 835**
	C13.86036-F1	Furniture & Equipment (IT): Additional	Institutional		33 090	**R0**	R0	R0	**R33**
	C14.86005-F1	Furniture & Equipment (IT): Additional	Institutional		688 720	**R0**	R0	R0	**R689**
	C14.86060-F1	Furniture & Equipment Electrical	Institutional		134 409	**R0**	R0	R0	**R134**
	C15.86001-F1	Furniture & Equipment: Additional	Institutional		630 919	**R0**	R0	R0	**R631**
	CPX.0001993-F1	Furniture & Equipment: Additional	Institutional		0	**R1 000**	R0	R0	**R1 000**
	CPX.0002104-F1	Furniture & Equipment: Additional	Institutional		0	**R0**	R500	R0	**R500**
	CPX.0004937-F1	Furniture & Equipment: Additional	Institutional		0	**R0**	R0	R750	**R750**
	C14.86012-F1	Furniture, Tools & Equip: Additional WDM	Institutional		99 955	**R0**	R0	R0	**R100**
	C14.86013-F1	Furniture,Tools & Equip: Additional WWTW	Institutional		181 588	**R0**	R0	R0	**R182**
	CPX.0002286-F1	Furniture,Tools & Equip: Additional WWTW	Institutional		0	**R300**	R0	R0	**R300**
	C13.86037-F1	Furniture,Tools, Equipme: Additional WD	Institutional		39 074	**R0**	R0	R0	**R39**
	C14.86011-F1	Furniture,Tools,Equipment:AdditionalE AMS	Institutional		229 187	**R0**	R0	R0	**R229**
	C14.86045-F1	IT: System, Infra. Equipment: Additional	Institutional		8 683 321	**R0**	R0	R0	**R8 683**
	CPX.0002106-F1	IT: System, Infra. Equipment: Additional	Institutional		0	**R36 000**	R0	R0	**R36 000**
	CPX.0002107-F1	IT: System, Infra. Equipment: Additional	Institutional		0	**R0**	R8 000	R0	**R8 000**
	CPX.0004938-F1	IT: System, Infra. Equipment: Additional	Institutional		0	**R0**	R0	R10 000	**R10 000**
	C13.86086-F1	IT:System,Infrastruct Equip: Additional	Institutional		-3 867	**R0**	R0	R0	**-R4**
	C15.86004-F1	IT:System,Infrastruct Equip: Additional	Institutional		9 956 082	**R0**	R0	R0	**R9 956**
	C14.86008-F1	Laboratory Equipm: Addition Scientif Ser	Institutional		5 168 760	**R0**	R0	R0	**R5 169**
	C15.86005-F1	Laboratory Equipment: Additional	Institutional		2 993 957	**R0**	R0	R0	**R2 994**
	CPX.0001866-F1	Laboratory Equipment: Additional	Institutional		0	**R4 750**	R0	R0	**R4 750**
	CPX.0001868-F1	Laboratory Equipment: Additional	Institutional		0	**R0**	R3 500	R0	**R3 500**
	CPX.0004895-F1	Laboratory Equipment: Additional	Institutional		0	**R0**	R0	R4 000	**R4 000**
	CPX.0001834-F1	Laboratory Extension SANS	Upgrade		0	**R10 350**	R0	R0	**R10 350**

	C16.86004-F1	Replacement of Plant & Equipment 15/16	Institutional		249 879	**R0**	R0	R0	**R250**
	C16.86005-F1	Plant & Equipment Additional 15/16	Institutional		746 753	**R0**	R0	R0	**R747**
	C16.86012-F1	Furniture & Equipment: Additional	Institutional		1 225 911	**R0**	R0	R0	**R1 226**
	C16.86013-F1	IT: System, Infra. Equipment: Additional	Institutional		14 313 388	**R0**	R0	R0	**R14 313**
	C15.86039-F1	Plant & Equipment Additional 14/15	Institutional		670 826	**R0**	R0	R0	**R671**
	C16.86018-F1	Laboratory Equipment: Additional	Institutional		5 944 384	**R0**	R0	R0	**R5 944**
	CPX.0001895-F1	Plant & Equipment Additional 17/18	Institutional		0	**R500**	R0	R0	**R500**
	CPX.0001898-F1	Plant & Equipment Additional 18/19	Institutional		0	**R0**	R750	R0	**R750**
	CPX.0004943-F1	Plant & Equipment Additional 19/20	Institutional		0	**R0**	R0	R750	**R750**
	C14.86051-F1	Plant & Equipment Additional BW	Institutional		491 417	**R0**	R0	R0	**R491**
	C13.86056-F1	Plant and Equipment Additional	Institutional		-811	**R0**	R0	R0	**-R1**
	C16.86023-F1	Specialised Equipment: Additional	Institutional		7 284 684	**R0**	R0	R0	**R7 285**
	C16.86024-F1	Vehicles,Plant Equip: Additional	Institutional		19 950 285	**R0**	R0	R0	**R19 950**
	CPX.0007430-F1	Regional resources development	Institutional		0	**R2 000**	R0	R0	**R2 000**
	CPX.0007431-F1	Regional resources development	Institutional		0	**R0**	R2 000	R0	**R2 000**
	CPX.0007502-F1	Regional resources development	Institutional		0	**R0**	R0	R3 000	**R3 000**
	C16.86033-F1	TOC Infrastructure Development	New		165 293	**R0**	R0	R0	**R165**
	C16.86036-F1	Sundry Equip: Additional various WWTW	Institutional		258 841	**R0**	R0	R0	**R259**
	C14.86033-F1	Replacement of Plant & Equipment (EAMS)	Institutional		9 399 445	**R0**	R0	R0	**R9 399**
	C15.86038-F1	Replacement of Plant & Equipment 14/15	Institutional		449 782	**R0**	R0	R0	**R450**
	CPX.0001785-F1	Replacement of Plant & Equipment 17/18	Institutional		0	**R500**	R0	R0	**R500**
	CPX.0001786-F1	Replacement of Plant & Equipment 18/19	Institutional		0	**R0**	R500	R0	**R500**
	CPX.0004928-F1	Replacement of Plant & Equipment 19/20	Institutional		0	**R0**	R0	R750	**R750**
	C14.86050-F1	Replacement of Plant & Equipment BW	Institutional		249 473	**R0**	R0	R0	**R249**
	CPX.0005914-F1	Replacement of Trunk Radios	Institutional		8 619	**R0**	R0	R0	**R9**
	C14.86007-F1	Replacement of Vehicles	Institutional		31 179 714	**R0**	R0	R0	**R31 180**
	CPX.0007389-F1	Replacement Vehicles - FY 17/18	Institutional		0	**R10 000**	R10 000	R10 000	**R30 000**
	C15.86032-F1	Small Plant & Equip: Additional (Retic)	Institutional		3 578 599	**R0**	R0	R0	**R3 579**
	CPX.0007136-F1	Small Plant & Equip: Additional (Retic)	Institutional		0	**R1 100**	R0	R0	**R1 100**

	CPX.0007372-F1	Small Plant & Equip: Additional (Retic)	Institutional		0	**R0**	R2 064	R0	**R2 064**
	CPX.0007373-F1	Small Plant & Equip: Additional (Retic)	Institutional		0	**R0**	R0	R1 629	**R1 629**
	C14.86034-F1	Small Plant & Equipment: Additional	Institutional		2 439 262	**R0**	R0	R0	**R2 439**
	C14.86003-F1	Specialised Equip: Additional Electrical	Institutional		495 996	**R0**	R0	R0	**R496**
	C15.86010-F1	Specialised Equipment: Additional	Institutional		3 429 434	**R0**	R0	R0	**R3 429**
	C16.86046-F1	Small Plant & Equip: Additional (Retic)	Institutional		2 979 599	**R0**	R0	R0	**R2 980**
	CPX.0002109-F1	Specialised Equipment: Additional	Institutional		0	**R3 500**	R0	R0	**R3 500**
	CPX.0002110-F1	Specialised Equipment: Additional	Institutional		0	**R0**	R3 500	R0	**R3 500**
	CPX.0004520-F1	Specialised Equipment: Additional	Institutional		0	**R0**	R0	R3 500	**R3 500**
	CPX.0001843-F1	Mitchell's Plain depot	Institutional		7 456 827	**R0**	R0	R0	**R7 457**
	C14.86027-F1	Sundry Equip: Additional various WWTW	Institutional		292 680	**R0**	R0	R0	**R293**
	C15.86021-F1	Sundry Equip: Additional various WWTW	Institutional		204 359	**R0**	R0	R0	**R204**
	CPX.0002356-F1	Sundry Equip: Additional various WWTW	Institutional		0	**R300**	R0	R0	**R300**
	CPX.0002357-F1	Sundry Equip: Additional various WWTW	Institutional		0	**R0**	R300	R0	**R300**
	C13.86050-F1	TOC Infrastructure Development	New		7 469 873	**R0**	R0	R0	**R7 470**
	C15.86060-F1	TOC Infrastructure Development	New		11 274 235	**R0**	R0	R0	**R11 274**
	CPX.0005612-F1	TOC Infrastructure Development	New		0	**R0**	R0	R0	**R0**
	CPX.0003982-F1	TOC Infrastructure Development	New		0	**R1 000**	R0	R0	**R1 000**
	CPX.0003983-F1	TOC Infrastructure Development	New		0	**R0**	R1 000	R0	**R1 000**
	CPX.0003984-F1	TOC Infrastructure Development	New		0	**R0**	R0	R1 000	**R1 000**
	C13.86065-F1	Tools & Equipment: Additional (Mech)	Institutional		-4 041	**R0**	R0	R0	**-R4**
	C14.86031-F1	Tools & Equipment: Additional (Mech)	Institutional		869 665	**R0**	R0	R0	**R870**
	C14.86032-F1	Tools & Equipment: Additional (PCS)	Institutional		833 106	**R0**	R0	R0	**R833**
	C14.86030-F1	Tools,Equip: Additional Design contracts	Institutional		690 529	**R0**	R0	R0	**R691**
	C14.86046-F1	Tools,Sundry Equip:Additional Flt Maint	Institutional		65 235	**R0**	R0	R0	**R65**
	CPX.0002126-F1	Vehicles, Plant Equip: Additional	Institutional		0	**R25 000**	R0	R0	**R25 000**
	CPX.0002127-F1	Vehicles, Plant Equip: Additional	Institutional		0	**R0**	R30 000	R0	**R30 000**
	CPX.0004932-F1	Vehicles, Plant Equip: Additional	Institutional		0	**R0**	R0	R30 000	**R30 000**
	C15.86011-F1	Vehicles,Plant Equip: Additional Flt Man	Institutional		34 933 404	**R0**	R0	R0	**R34 933**
	CPX.0004962-F1	Admin,storage and mess upgrading	Institutional		3 430 713	**R2 000**	R4 000	R5 000	**R14 431**

	CPX.0001970-F1	WS contingency provision - Insurance	Institutional		0	**R500**	R0	R0	**R500**
	CPX.0001972-F1	WS contingency provision - Insurance	Institutional		0	**R0**	R750	R0	**R750**
	CPX.0004936-F1	WS contingency provision - Insurance	Institutional		0	**R0**	R0	R1 000	**R1 000**
	CPX.0006502-F1	Replacement Vehicles - FY 15/16	Institutional		9 960 773	**R0**	R0	R0	**R9 961**
6. Water Services Programmes					**R2 748**	**R0**	**R0**	**R0**	**R2 748**
Awareness Programs									**R0**
									R0
WASH Programs									**R0**
	C14.86077-F1	Pollution Control	New		R2 748	**R0**	R0	R0	**R2 748**
									R0
		Total			**R7 320 113**	**R16 379 934**	**R17 941 154**	**R18 445 658**	**R60 252 318**

Section F: WSDP Projects

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.00059 92-F1	Acquisition & Commissioning of large Gen	91 149 954	0	0	0	0	CRR	EAM
CPX.00074 58-F1	Acquisition & Registration & servitude	100 000	0	0	0	0	EFF	Reticulation
CPX.00074 59-F1	Acquisition & Registration & servitude	0	100 000	0	0	0	EFF	Reticulation
CPX.00074 68-F1	Acquisition & Registration & servitude	0	0	100 000	0	0	EFF	Reticulation
CPX.00075 26-F1	Acquisition & Registration & servitude	0	0	0	100 000	0	EFF	Reticulation
CPX.00077 83-F1	Acquisition & Registration & servitude	0	0	0	0	120 000	EFF	Reticulation
C15.86043-F1	Additional Resources Desalination Reclai	0	20 000 000	20 000 000	200 000 000	245 000 000	EFF	Bulk Water
CPX.00095 70-F1	Admin, Storage, and Mess Upgrading	0	0	5 000 000	0	0	EFF	WWTW
CPX.00049 62-F1	Admin,storage and mess upgrading	1 000 000	0	0	0	0	EFF	WWTW
CPX.00095 69-F1	Admin,Storage,and Mess Upgrading	0	4 000 000	0	0	0	EFF	WWTW
C13.86081-F1	Athlone WWTW-Capacity Extension-phase 1	0	0	0	8 000 000	10 000 000	EFF	WWTW

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
C13.86081-F2	Athlone WWTW-Capacity Extension-phase 1	6 000 000	84 000 000	59 000 000	70 000 000	20 000 000	CGD	WWTW
CPX.00080 41-F1	Bellville WWTW Extension	34 643 173	50 700 000	0	0	0	EFF	WWTW
CPX.00080 41-F2	Bellville WWTW Extension	37 006 822	0	3 000 000	10 000 000	0	CGD	WWTW
CPX.00079 31-F1	Black-Mac Screening & Macassar P/St	32 261 720	0	0	0	0	CGD	WWTW
C12.86091-F1	Borchards Quarry WWTW	95 500 000	50 000 000	0	30 000 000	40 000 000	CGD	WWTW
CPX.00064 79-F1	Bulk Retic Sewers in Milnerton Rehab	1 000 000	45 000 000	30 000 000	70 000 000	30 000 000	EFF	Reticulation
CPX.00057 17-F1	Bulk Sewer (Housing Projects)	2 500 000	0	0	0	0	CGD	Reticulation
CPX.00057 18-F1	Bulk Sewer (Housing Projects)	0	9 501 745	0	0	0	CGD	Reticulation
CPX.00077 61-F1	Bulk Sewer (Housing Projects)	0	0	3 000 000	5 000 000	0	CGD	Reticulation
CPX.00039 86-F1	Bulk Water (Housing Projects)	1 938 000	0	0	0	0	CGD	Reticulation
CPX.00039 87-F1	Bulk Water (Housing Projects)	0	9 501 745	0	0	0	CGD	Reticulation
CPX.00077 72-F1	Bulk Water (Housing Projects)	0	0	3 000 000	5 000 000	0	CGD	Reticulation
C11.86077-F2	Bulk Water Augmentation Scheme	77 000	0	0	0	0	CRR	Bulk Water

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
C11.86077-F4	Bulk Water Augmentation Scheme	900 000	1 200 000	149 500 000	200 000	100 000	CGD	Bulk Water
CPX.0001839-F1	BW Infrastructure Replace/Refurb 17/18	40 000 000	0	0	0	0	EFF	Bulk Water
CPX.0001858-F1	BW Infrastructure Replace/Refurb 18/19	0	50 000 000	0	0	0	EFF	Bulk Water
CPX.0004942-F1	BW Infrastructure Replace/Refurb 19/20	0	0	60 000 000	0	0	EFF	Bulk Water
CPX.0006468-F1	BW Infrastructure Replace/Refurb 20/21	0	0	0	60 000 000	0	EFF	Bulk Water
CPX.0009376-F1	BW Infrastructure Replace/Refurb 21/22	0	0	0	0	30 000 000	EFF	Bulk Water
CPX.0007972-F1	BWAS: Muldersvlei Reservoir & Pipeline	13 800 000	59 000 000	21 500 000	0	0	CGD	Bulk Water
CPX.0007972-F2	BWAS: Muldersvlei Reservoir & Pipeline	0	43 000 000	35 800 000	65 000 000	33 000 000	EFF	Bulk Water
CPX.0007972-F3	BWAS: Muldersvlei Reservoir & Pipeline	41 200 000	0	42 200 000	0	0	CRR	Bulk Water
CPX.0007989-F1	BWAS-C2&C4-BWAS Servitudes	0	1 000 000	1 800 000	0	0	CGD	Bulk Water
CPX.0007989-F3	BWAS-C2&C4-BWAS Servitudes	0	0	3 200 000	1 000 000	1 000 000	CRR	Bulk Water
CPX.0007976-F2	BWAS-C2-C-Raw Water P/line-M'vlei WTP	0	0	0	44 450 000	64 800 000	EFF	Bulk Water
CPX.0007976-F3	BWAS-C2-C-Raw Water P/line-M'vlei WTP	0	0	0	0	135 200 000	CRR	Bulk Water

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.000797 5-F1	BWAS-C2-D&CS-Raw Water P/line-M'vlei WTP	0	1 000 000	1 000 000	0	0	CGD	Bulk Water
CPX.000797 5-F2	BWAS-C2-D&CS-Raw Water P/line-M'vlei WTP	0	0	0	2 000 000	2 000 000	EFF	Bulk Water
CPX.000797 5-F3	BWAS-C2-D&CS-Raw Water P/line-M'vlei WTP	500 000	0	0	105 550 000	0	CRR	Bulk Water
CPX.000797 4-F2	BWAS-C3-C-Muldersvlei WTP (500Ml/day)	0	0	0	0	46 400 000	EFF	Bulk Water
CPX.000797 4-F3	BWAS-C3-C-Muldersvlei WTP (500Ml/day)	0	0	0	0	102 800 000	CRR	Bulk Water
CPX.000797 3-F1	BWAS-C3-D&CS-Muldersvlei WTP (500Ml/day)	0	1 000 000	1 000 000	0	0	CGD	Bulk Water
CPX.000797 3-F3	BWAS-C3-D&CS-Muldersvlei WTP (500Ml/day)	0	0	3 500 000	8 000 000	2 000 000	CRR	Bulk Water
CPX.000797 9-F2	BWAS-C4-C-MuldersvleiWTP-SBR P/Line-13km	0	0	30 000 000	54 550 000	20 000 000	EFF	Bulk Water
CPX.000797 9-F3	BWAS-C4-C-MuldersvleiWTP-SBR P/Line-13km	0	5 000 000	40 000 000	45 250 000	80 300 000	CRR	Bulk Water
CPX.000797 7-F1	BWAS-C4-D&CS-M'vlei WTP-SBR P/Line-13km	0	1 200 000	0	0	0	CGD	Bulk Water
CPX.000797 7-F3	BWAS-C4-D&CS-M'vlei WTP-SBR P/Line-13km	2 000 000	0	1 000 000	1 000 000	1 000 000	CRR	Bulk Water
CPX.000798 7-F3	BWAS-C5-D&CS-SpesBona-VV PRV&Flow Cntrl	0	0	0	0	3 200 000	CRR	Bulk Water
CPX.000798 1-F2	BWAS-C6-C-VV-GGPh2:SpesBonaRes(300Ml)	0	0	30 000 000	80 000 000	79 300 000	EFF	Bulk Water

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.00079 81-F3	BWAS-C6-C-VV-GGPh2:SpesBonaRes(300Ml)	0	0	0	0	20 000 000	CRR	Bulk Water
CPX.00079 80-F1	BWAS-C6-D&CS-VV-GGPh2:SpesBonaRes(300Ml)	1 500 000	2 200 000	0	0	0	CGD	Bulk Water
CPX.00079 80-F2	BWAS-C6-D&CS-VV-GGPh2:SpesBonaRes(300Ml)	0	2 800 000	3 800 000	2 000 000	2 000 000	EFF	Bulk Water
CPX.00079 83-F1	BWAS-C7-D&CS-VV-GGPh3:SBR-GG P/Line-13km	0	0	400 000	0	0	CGD	Bulk Water
CPX.00079 83-F2	BWAS-C7-D&CS-VV-GGPh3:SBR-GG P/Line-13km	0	0	400 000	2 000 000	2 500 000	EFF	Bulk Water
CPX.00079 82-F1	BWAS-C7-EIA-VV-GGPh3:SBR-GG P/Line-13km	200 000	500 000	500 000	100 000	0	CGD	Bulk Water
CPX.00056 15-F1	Cape Flats Rehabilitation 17/18	7 000 000	0	0	0	0	EFF	Reticulation
CPX.00056 16-F1	Cape Flats Rehabilitation 18/19	0	0	0	0	0	EFF	Reticulation
CPX.00074 70-F1	Cape Flats Rehabilitation 19/20	0	25 000 000	30 000 000	0	0	EFF	Reticulation
CPX.00077 82-F1	Cape Flats Rehabilitation 20/21	0	0	0	25 000 000	26 000 000	EFF	Reticulation
CPX.00089 75-F1	Cape Flats rehabilitation FY19/20 USDG	0	0	30 000 000	0	0	CGD	Reticulation
C13.86005-F1	Cape Flats WWTW-Refurbish various struct	36 000 000	50 000 000	19 000 000	30 000 000	40 000 000	EFF	WWTW
CPX.00094 19-F1	CCTV & Specialised Equipment	2 000 000	0	0	0	0	EFF	WDM&P

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
C13.86053-F2	Completion of Cape Flats III Bulk Sewer	25 000 000	0	0	0	0	EFF	Reticulation
C12.86074-F1	Construction of new Head Office	146 632 011	0	0	0	0	EFF	EAM
CPX.0003851-F1	Contermanskloof Reservoir	82 500 000	51 000 000	500 000	0	0	EFF	Bulk Water
CPX.0003851-F2	Contermanskloof Reservoir	5 500 000	0	0	0	0	CGD	Bulk Water
CPX.0008003-F1	D1-REP-First Avenue-Grassy Park	2 000 000	0	0	0	0	EFF	Reticulation
CPX.0008011-F1	D5,7&8-REP-Gugulethu-Various Rds-150 MM	10 000 000	4 000 000	0	0	0	EFF	Reticulation
CPX.0008009-F1	D5,7&8-REP-Manenberg-Various Rds-100 MM	1 185 250	629 500	0	0	0	EFF	Reticulation
CPX.0008008-F1	D6-UPSZ-BRACKENFELL-100 mm	0	5 000 000	0	0	0	EFF	Reticulation
CPX.0008007-F1	D6-UPSZ-BRACKENFELL-75 mm	5 521 635	12 984 700	0	0	0	EFF	Reticulation
CPX.0008977-F1	Delft Sewer Upgrading	0	7 400 000	2 000 000	0	0	CGD	Reticulation
CPX.0001788-F1	Development of Add Infrastructure 17/18	19 500 000	0	0	0	0	EFF	Bulk Water
CPX.0001789-F1	Development of Add Infrastructure 18/19	0	28 100 000	0	0	0	EFF	Bulk Water
CPX.0004931-F1	Development of Add Infrastructure 19/20	0	0	25 000 000	0	0	EFF	Bulk Water

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.000747 6-F1	Development of Add Infrastructure 20/21	0	0	0	30 000 000	0	EFF	Bulk Water
CPX.000937 7-F1	Development of Add Infrastructure 21/22	0	0	0	0	49 000 000	EFF	Bulk Water
CPX.000938 9-F1	Digtebij sewer Installation	1 600 000	0	0	0	0	EFF	Reticulation
CPX.000737 6-F1	Diversion Du Noon Sewer	0	2 500 000	2 500 000	0	0	EFF	Reticulation
CPX.000943 4-F1	Doordekraal Sewer Pumpstation	0	0	0	0	35 000 000	REVENUE	Reticulation
C12.86079-F1	EAM Depot Realignment - 5 Nodal System	0	0	0	0	0	EFF	EAM
CPX.000870 9-F1	EAM Depot Realignment - 5 Nodal System	30 000 000	0	0	0	0	EFF	EAM
CPX.000953 4-F1	EAM Depot Realignment - 5 Nodal System	0	35 778 338	0	0	0	EFF	EAM
CPX.000953 6-F1	EAM Depot Realignment - 5 Nodal System	0	0	46 000 000	0	0	EFF	EAM
CPX.000953 7-F1	EAM Depot Realignment - 5 Nodal System	0	0	0	46 000 000	0	EFF	EAM
CPX.000953 8-F1	EAM Depot Realignment - 5 Nodal System	0	0	0	0	7 000 000	EFF	EAM
CPX.000742 8-F1	Expansion of WWTW (2019)	0	0	3 000 000	3 000 000	10 000 000	EFF	WWTW
CPX.000742 9-F1	Expansion of WWTW (2020)	0	0	20 000 000	0	0	EFF	WWTW

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.0001993-F1	Furniture & Equipment: Additional	1 000 000	0	0	0	0	EFF	Support Services
CPX.0002104-F1	Furniture & Equipment: Additional	0	500 000	0	0	0	EFF	Support Services
CPX.0004937-F1	Furniture & Equipment: Additional	0	0	750 000	0	0	EFF	Support Services
CPX.0006474-F1	Furniture & Equipment: Additional	0	0	0	1 500 000	0	EFF	Support Services
CPX.0002286-F1	Furniture,Tools & Equip: Additional WWTW	0	0	0	0	0	EFF	WWTW
CPX.0007411-F1	Gordons Bay Beach Front Sewer	2 500 000	3 300 000	0	0	0	EFF	Reticulation
CPX.0009390-F1	Gordon's Bay Firlands Sewerage Services	0	0	500 000	0	6 000 000	EFF	Reticulation
CPX.0009436-F1	Gordon's Bay Firlands Water Reticulation	0	0	500 000	0	16 000 000	EFF	Reticulation
CPX.0009432-F1	Gordon's Bay Sewer Rising Main D1575	0	500 000	12 000 000	20 000 000	11 000 000	EFF	Reticulation
CPX.0009438-F1	Gordon's Bay Sewers and Water investigat	0	500 000	0	0	0	EFF	Reticulation
CPX.0007378-F1	Gugulethu Flume and Rail Crossing	0	0	0	0	0	EFF	Reticulation
CPX.0007380-F1	Harmony Park	0	2 500 000	0	0	0	EFF	Reticulation
CPX.0009469-F1	Helderberg/Faure Scheme	100 000	80 000	7 000 000	50 000 000	15 000 000	EFF	Bulk Water

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.0007402-F1	Hillary Close Sewer	0	1 500 000	0	0	0	EFF	Reticulation
CPX.0003989-F1	Informal Settlements Sanitation Installa	22 000 000	0	0	0	0	EFF	Reticulation
CPX.0003989-F2	Informal Settlements Sanitation Installa	1 000 000	0	0	0	0	CGD	Reticulation
CPX.0003990-F1	Informal Settlements Sanitation Installa	0	21 000 000	0	0	0	EFF	Reticulation
CPX.0003990-F2	Informal Settlements Sanitation Installa	0	3 000 000	0	0	0	CGD	Reticulation
CPX.0005677-F1	Informal Settlements Sanitation Installa	0	0	20 000 000	25 000 000	25 000 000	EFF	Reticulation
CPX.0005677-F2	Informal Settlements Sanitation Installa	0	0	5 000 000	0	0	CGD	Reticulation
CPX.0003992-F1	Informal settlements water installations	4 000 000	0	0	0	0	EFF	Reticulation
CPX.0003993-F1	Informal settlements water installations	0	4 000 000	0	0	0	EFF	Reticulation
CPX.0005617-F1	Informal settlements water Installations	0	0	5 000 000	6 000 000	6 000 000	EFF	Reticulation
CPX.0002290-F1	Infrastructure Replace/Refurbish - WWTW	20 900 005	0	0	0	0	EFF	WWTW
CPX.0002290-F2	Infrastructure Replace/Refurbish - WWTW	4 100 000	0	0	0	0	CGD	WWTW
CPX.0002291-F1	Infrastructure Replace/Refurbish - WWTW	0	20 000 000	0	0	0	EFF	WWTW

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.00022 91-F2	Infrastructure Replace/Refurbish - WWTW	0	5 000 000	15 000 000	0	0	CGD	WWTW
CPX.00066 13-F1	Infrastructure Replace/Refurbish - WWTW	0	0	20 000 000	0	0	EFF	WWTW
CPX.00066 15-F1	Infrastructure Replace/Refurbish - WWTW	0	0	0	45 000 000	45 000 000	EFF	WWTW
CPX.00021 06-F1	IT: System, Infra. Equipment: Additional	51 100 000	0	0	0	0	EFF	Support Services
CPX.00021 07-F1	IT: System, Infra. Equipment: Additional	0	8 000 000	0	0	0	EFF	Support Services
CPX.00049 38-F1	IT: System, Infra. Equipment: Additional	0	0	8 000 000	0	0	EFF	Support Services
CPX.00064 75-F1	IT: System, Infra. Equipment: Additional	0	0	0	6 000 000	7 000 000	EFF	Support Services
CPX.00087 20-F1	Kommetjie Rd Ou Kaapseweg	16 500 000	0	0	0	0	EFF	Reticulation
CPX.00018 66-F1	Laboratory Equipment: Additional	4 750 000	0	0	0	0	EFF	Scientific Services
CPX.00018 68-F1	Laboratory Equipment: Additional	0	3 500 000	0	0	0	EFF	Scientific Services
CPX.00048 95-F1	Laboratory Equipment: Additional	0	0	4 000 000	4 000 000	0	EFF	Scientific Services
CPX.00092 91-F1	Laboratory Equipment: Additional	0	0	0	0	4 000 000	EFF	Scientific Services
CPX.00018 34-F1	Laboratory Extension SANS	10 350 000	0	0	0	0	EFF	Scientific Services

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
C12.86059-F1	Macassar WWTW Extension	0	25 000 000	50 000 000	30 000 000	10 000 000	EFF	WWTW
C12.86059-F2	Macassar WWTW Extension	15 050 000	38 650 000	10 000 000	5 700 000	10 000 000	CGD	WWTW
CPX.00074 05-F1	Main Rd Clovelly Simonstown	5 000 000	15 000 000	10 000 000	20 000 000	20 000 000	EFF	Reticulation
C14.86043-F1	Melkbos WWTW-Effluent Disinfection	6 000 000	12 000 000	30 000 000	0	0	EFF	WWTW
CPX.00019 38-F1	Meter Replacement Programme	250 000 000	0	0	0	0	EFF	Fin and Comm
CPX.00019 39-F1	Meter Replacement Programme	0	270 000 000	0	0	0	EFF	Fin and Comm
CPX.00049 33-F1	Meter Replacement Programme	0	0	270 000 000	0	0	EFF	Fin and Comm
CPX.00064 73-F1	Meter Replacement Programme	0	0	0	270 000 000	0	EFF	Fin and Comm
CPX.00093 17-F1	Meter Replacement Programme	0	0	0	0	270 000 000	EFF	Fin and Comm
C13.86010-F1	Mitchells Plain WWTW-Improvements Phase2	10 800 000	0	20 000 000	0	5 000 000	EFF	WWTW
C13.86010-F2	Mitchells Plain WWTW-Improvements Phase2	0	2 000 000	1 000 000	84 700 000	50 100 000	CGD	WWTW
CPX.00080 02-F1	Network Repl: King & Union St Houtbaai	2 000 000	0	0	0	0	EFF	Reticulation
CPX.00080 06-F1	Network Repl: Loevenstein Various	4 200 000	0	0	0	0	EFF	Reticulation

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.0008010-F1	Network Repl: Milnerton Tableview	5 200 000	0	0	0	0	EFF	Reticulation
CPX.0008005-F1	Network Repl: Oakdale Various streets	1 185 250	1 047 000	0	0	0	EFF	Reticulation
CPX.0007407-F1	New Brakkloof Reservoir	0	500 000	20 000 000	5 000 000	0	EFF	Reticulation
C12.86075-F1	Northern Regional Sludge Facility	10 006 822	42 785 490	20 000 000	30 000 000	100 000 000	EFF	WWTW
C12.86075-F2	Northern Regional Sludge Facility	0	13 500 000	10 000 000	30 000 000	4 800 000	CGD	WWTW
CPX.0003893-F1	OSEC (Electrolytic Chlorination Infr)	200 000	2 150 000	2 000 000	6 000 000	20 000 000	EFF	Bulk Water
CPX.0003893-F2	OSEC (Electrolytic Chlorination Infr)	0	2 000 000	1 000 000	0	0	CGD	Bulk Water
CPX.0009823-F1	Paardevlei Development - Bulk Sewer	0	0	2 496 533	2 496 532	0	CGD	Reticulation
CPX.0009823-F3	Paardevlei Development - Bulk Sewer	0	0	2 496 533	2 496 532	0	CRR	Reticulation
CPX.0009700-F2	Paardevlei Development - Bulk Water	0	0	7 632 250	11 448 373	0	CGD	Reticulation
CPX.0009700-F3	Paardevlei Development - Bulk Water	0	0	0	11 448 373	0	CRR	Reticulation
CPX.0007409-F1	Peligrini Sewer Pumpstation Diversion	500 000	3 000 000	7 000 000	0	0	EFF	Reticulation
C14.86001-F1	Penhill Sewer Installation	10 000 000	0	0	0	0	EFF	Reticulation

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
C11.86060-F1	Philippi Collector Sewer	3 000 000	5 000 000	24 000 000	24 000 000	0	EFF	Reticulation
C11.86060-F3	Philippi Collector Sewer	0	66 810 000	30 000 000	0	0	CGD	Reticulation
CPX.00018 95-F1	Plant & Equipment Additional 17/18	500 000	0	0	0	0	EFF	EAM
CPX.00018 98-F1	Plant & Equipment Additional 18/19	0	750 000	0	0	0	EFF	EAM
CPX.00049 43-F1	Plant & Equipment Additional 19/20	0	0	750 000	0	0	EFF	EAM
CPX.00064 66-F1	Plant & Equipment Additional 20/21	0	0	0	750 000	0	EFF	Reticulation
CPX.00094 67-F1	Plant & Equipment Additional 21/22	0	0	0	0	750 000	EFF	Reticulation
C11.86063-F1	Potsdam WWTW - Extension	0	35 000 000	20 000 000	80 000 000	125 000 000	EFF	WWTW
C11.86063-F3	Potsdam WWTW - Extension	4 000 000	7 000 000	20 000 000	0	174 820 000	CGD	WWTW
CPX.00019 06-F1	Pressure Management: COCT 17/18	15 000 000	0	0	0	0	EFF	WDM&P
CPX.00019 07-F1	Pressure Management: COCT 18/19	0	22 430 000	0	0	0	EFF	WDM&P
CPX.00048 67-F1	Pressure Management: COCT 19/20	0	0	27 000 000	0	0	EFF	WDM&P
CPX.00064 53-F1	Pressure Management: COCT 20/21	0	0	0	20 000 000	20 000 000	EFF	WDM&P

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.0001861-F1	Refurbishment of Labs	0	300 000	0	0	0	EFF	Scientific Services
CPX.0004898-F1	Refurbishment of Labs	0	0	300 000	0	0	EFF	Scientific Services
CPX.0007773-F1	Refurbishment of Labs	0	0	0	300 000	0	EFF	Scientific Services
CPX.0009375-F1	Refurbishment of Labs	0	0	0	0	300 000	EFF	Scientific Services
CPX.0007430-F1	Regional resources development	2 000 000	0	0	0	0	EFF	Reticulation
CPX.0007431-F1	Regional resources development	0	2 000 000	0	0	0	EFF	Reticulation
CPX.0007502-F1	Regional resources development	0	0	2 000 000	0	0	EFF	Reticulation
CPX.0007503-F1	Regional resources development	0	0	0	3 000 000	4 000 000	EFF	Reticulation
CPX.0002759-F1	Repl & Upgr Sew Pump Station	15 000 000	0	0	0	0	EFF	Reticulation
CPX.0002759-F2	Repl & Upgr Sew Pump Station	1 000 000	0	0	0	0	CGD	Reticulation
CPX.0002892-F2	Repl & Upgr Sew Pump Station	0	0	3 000 000	0	0	CGD	Reticulation
CPX.0002893-F1	Repl & Upgr Sew Pump Station	0	18 000 000	0	0	0	EFF	Reticulation
CPX.0002893-F2	Repl & Upgr Sew Pump Station	0	5 000 000	0	0	0	CGD	Reticulation

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.0005618-F1	Repl & Upgr Sew Pump Station	0	0	20 000 000	15 000 000	15 000 000	EFF	Reticulation
CPX.0005618-F2	Repl & Upgr Sew Pump Station	0	0	0	5 000 000	0	CGD	Reticulation
CPX.0003849-F1	Replace & Upgr Sewer Network (Citywide)	0	0	0	0	0	EFF	Reticulation
CPX.0003849-F2	Replace & Upgr Sewer Network (Citywide)	0	6 000 000	0	5 000 000	0	CGD	Reticulation
CPX.0003860-F1	Replace & Upgr Sewer Network (Citywide)	44 000 000	0	0	0	11 000 000	EFF	Reticulation
CPX.0007774-F1	Replace & Upgr Sewer Network (Citywide)	0	109 500 000	157 000 000	150 000 000	50 000 000	EFF	Reticulation
CPX.0007774-F2	Replace & Upgr Sewer Network (Citywide)	0	0	3 000 000	0	0	CGD	Reticulation
CPX.0008976-F1	Replace & Upgr Water NetW FY2019(Citywid	0	5 000 000	3 000 000	0	0	CGD	Reticulation
CPX.0002879-F1	Replace & Upgr Water Network (City Wide)	0	0	129 500 000	0	0	EFF	Reticulation
CPX.0003862-F1	Replace & Upgr Water Network (City Wide)	31 260 000	0	0	0	0	EFF	Reticulation
CPX.0003864-F1	Replace & Upgr Water Network (City Wide)	0	76 338 800	0	0	0	EFF	Reticulation
CPX.0003896-F1	Replace & Upgr Water Network (City Wide)	0	0	0	130 000 000	114 000 000	EFF	Reticulation
CPX.0001785-F1	Replacement of Plant & Equipment 17/18	500 000	0	0	0	0	EFF	EAM

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.0001786-F1	Replacement of Plant & Equipment 18/19	0	500 000	0	0	0	EFF	EAM
CPX.0004928-F1	Replacement of Plant & Equipment 19/20	0	0	750 000	0	0	EFF	EAM
CPX.0006467-F1	Replacement of Plant & Equipment 20/21	0	0	0	750 000	0	EFF	Reticulation
CPX.0009466-F1	Replacement of Plant & Equipment 21/22	0	0	0	0	750 000	EFF	Reticulation
CPX.0007389-F1	Replacement Vehicles - FY 17/18	10 000 000	0	0	0	0	EFF	Reticulation
CPX.0009485-F1	Replacement Vehicles - FY 18/19	0	10 000 000	0	0	0	EFF	EAM
CPX.0009473-F1	Replacement Vehicles - FY 19/20	0	0	10 000 000	0	0	EFF	EAM
CPX.0009475-F1	Replacement Vehicles - FY 20/21	0	0	0	10 000 000	0	EFF	EAM
CPX.0009657-F1	Replacement Vehicles - FY 21/22	0	0	0	0	10 000 000	EFF	EAM
C15.86045-F1	Rietvlei P/Station, R/Main Bottelary	1 000 000	1 000 000	0	0	0	EFF	Reticulation
CPX.0008979-F1	Sandvlei: Macassar Provision of Services	500 000	4 500 000	0	0	0	CGD	Reticulation
CPX.0009506-F1	Sandvlei: Macassar Provision of Services	0	4 000 000	0	0	0	EFF	Reticulation
C12.86094-F1	Scottsdene WWTW	1 900 020	4 016 872	18 149 986	0	0	CGD	WWTW

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
C12.86094-F2	Scottsdene WWTW	10 000 000	0	0	0	0	EFF	WWTW
CPX.000396 7-F1	Sewer Projects as per Master Plan 17/18	2 000 000	0	0	0	0	EFF	Reticulation
CPX.000396 8-F1	Sewer Projects as per Master Plan 18/19	0	2 000 000	0	0	0	EFF	Reticulation
CPX.000562 0-F1	Sewer Projects as per Master Plan 19/20	0	0	5 000 000	15 000 000	20 000 000	EFF	Reticulation
CPX.000943 3-F1	Sir Lowry's Pass parallel sewer HC-F02	0	0	500 000	0	153 000 000	EFF	Reticulation
CPX.000713 6-F1	Small Plant & Equip: Additional (Retic)	2 000 000	0	0	0	0	EFF	Reticulation
CPX.000737 2-F1	Small Plant & Equip: Additional (Retic)	0	2 000 000	0	0	0	EFF	Reticulation
CPX.000737 3-F1	Small Plant & Equip: Additional (Retic)	0	0	1 000 000	0	0	EFF	Reticulation
CPX.000737 4-F1	Small Plant & Equip: Additional (Retic)	0	0	0	1 600 000	3 000 000	EFF	Reticulation
CPX.000210 9-F1	Specialised Equipment: Additional	3 500 000	0	0	0	0	EFF	EAM
CPX.000211 0-F1	Specialised Equipment: Additional	0	3 500 000	0	0	0	EFF	EAM
CPX.000452 0-F1	Specialised Equipment: Additional	0	0	3 500 000	0	0	EFF	EAM
CPX.000650 3-F1	Specialised Equipment: Additional	0	0	0	4 500 000	0	EFF	EAM

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.0009484-F1	Specialised Equipment: Additional	0	0	0	0	4 500 000	EFF	EAM
CPX.0003895-F1	Steenbras Reservoir	4 500 000	33 500 000	4 600 000	10 000 000	100 000 000	EFF	Bulk Water
CPX.0009435-F1	Strand Seawall sewer and pumping station	2 789 454	5 000 000	3 000 000	0	0	EFF	Reticulation
CPX.0002356-F1	Sundry Equip: Additional various WWTW	300 000	0	0	0	0	EFF	WWTW
CPX.0002357-F1	Sundry Equip: Additional various WWTW	0	300 000	0	0	0	EFF	WWTW
CPX.0006616-F1	Sundry Equip: Additional various WWTW	0	0	0	300 000	0	EFF	WWTW
CPX.0002124-F1	Telemetry Automation (Retic)	1 000 000	0	0	0	0	EFF	EAM
CPX.0002128-F1	Telemetry Automation (Retic)	0	3 000 000	3 000 000	3 000 000	4 500 000	EFF	EAM
CPX.0007932-F1	Threchless Rehab: Black-Mac network	20 505 102	17 000 000	0	0	0	CGD	WWTW
CPX.0003982-F1	TOC Infrastructure Development	500 000	0	0	0	0	EFF	Reticulation
CPX.0003983-F1	TOC Infrastructure Development	0	500 000	0	0	0	EFF	Reticulation
CPX.0003984-F1	TOC Infrastructure Development	0	0	500 000	1 000 000	1 000 000	EFF	Reticulation
CPX.0001911-F1	Treated Effluent: Reuse & Inf Upgrades	20 000 000	0	0	0	0	EFF	WDM&P

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.0001923-F1	Treated Effluent: Reuse & Inf Upgrades	0	20 000 000	0	0	20 000 000	EFF	WDM&P
CPX.0004868-F1	Treated Effluent: Reuse & Inf Upgrades	0	0	25 000 000	0	0	EFF	WDM&P
CPX.0006454-F1	Treated Effluent: Reuse & Inf Upgrades	0	0	0	20 000 000	0	EFF	WDM&P
CPX.0007423-F1	Upgrade Andrag Supply System	2 500 000	5 000 000	6 000 000	0	0	EFF	Reticulation
C13.86002-F1	Upgrade clarifiers - Bellville WWTW	0	10 000 000	0	0	0	EFF	WWTW
CPX.0005843-F1	Upgrade Reservoirs City Wide	4 000 000	0	0	0	0	EFF	Reticulation
CPX.0005844-F1	Upgrade Reservoirs City Wide	0	4 000 000	0	0	0	EFF	Reticulation
CPX.0007775-F1	Upgrade Reservoirs City Wide	0	0	4 000 000	5 000 000	5 000 000	EFF	Reticulation
CPX.0002126-F1	Vehicles, Plant Equip: Additional	25 000 000	0	0	0	0	EFF	EAM
CPX.0002127-F1	Vehicles, Plant Equip: Additional	0	30 000 000	0	0	0	EFF	EAM
CPX.0009483-F1	Vehicles, Plant Equip: Additional	0	0	0	0	30 000 000	EFF	EAM
CPX.0004932-F1	Vehicles, Plant Equip: Additional	0	0	30 000 000	0	0	EFF	Reticulation
CPX.0006504-F1	Vehicles, Plant Equip: Additional	0	0	0	30 000 000	0	EFF	Reticulation

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.00019 50-F1	Water Meters New Connections	0	12 000 000	0	0	0	CGD	Fin and Comm
CPX.00019 50-F2	Water Meters New Connections	0	6 000 000	0	0	0	CRR	Fin and Comm
CPX.00019 50-F3	Water Meters New Connections	0	5 000 000	0	0	0	CGD	Fin and Comm
CPX.00019 59-F1	Water Meters New Connections	6 000 000	0	0	0	0	CRR	Fin and Comm
CPX.00019 59-F2	Water Meters New Connections	1 500 000	0	0	0	0	CGD	Fin and Comm
CPX.00019 59-F3	Water Meters New Connections	12 000 000	0	0	0	0	CGD	Fin and Comm
CPX.00049 34-F1	Water Meters New Connections	0	0	12 000 000	0	0	CGD	Fin and Comm
CPX.00049 34-F2	Water Meters New Connections	0	0	5 000 000	0	0	CRR	Fin and Comm
CPX.00049 34-F3	Water Meters New Connections	0	0	3 000 000	0	0	CGD	Fin and Comm
CPX.00049 35-F1	Water Meters New Connections	0	0	0	5 000 000	6 000 000	CRR	Fin and Comm
CPX.00049 35-F2	Water Meters New Connections	0	0	0	12 000 000	0	CGD	Fin and Comm
CPX.00049 35-F3	Water Meters New Connections	0	0	0	5 000 000	0	CGD	Fin and Comm
CPX.00039 70-F1	Water Projects as per Master Plan 17/18	1 000 000	0	0	0	0	EFF	Reticulation

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.0003971-F1	Water Projects as per Master Plan 18/19	0	2 000 000	0	0	0	EFF	Reticulation
CPX.0005619-F1	Water Projects as per Master Plan 19/20	0	0	5 000 000	15 000 000	30 000 000	EFF	Reticulation
C12.86082-F1	Water Supply at Baden Powell Dr to Khaye	30 000 000	22 000 000	0	0	0	CGD	Reticulation
C14.86044-F2	Wesfleur WWTW-Capacity Extension USDG	20 000 000	50 000 000	0	20 000 000	0	CGD	WWTW
C15.86046-F1	West Beach S/Pumpstation and rising Main	17 000 000	0	0	0	0	CRR	Reticulation
C10.86030-F1	Wildevoelvlei WWTW-Upgrade dewatering	0	0	10 000 000	5 000 000	5 000 000	EFF	WWTW
CPX.0001970-F1	WS contingency provision - Insurance	500 000	0	0	0	0	REVENUE	Fin and Comm
CPX.0001972-F1	WS contingency provision - Insurance	0	750 000	0	0	0	REVENUE	Fin and Comm
CPX.0004936-F1	WS contingency provision - Insurance	0	0	1 000 000	0	0	REVENUE	Fin and Comm
CPX.0006472-F1	WS contingency provision - Insurance	0	0	0	1 000 000	0	REVENUE	Fin and Comm
CPX.0009320-F1	WS contingency provision - Insurance	0	0	0	0	1 000 000	REVENUE	Fin and Comm
CPX.0007930-F1	Zandvliet WWTW: Membrane Bio Reactor	0	83 746 510	0	0	0	CGD	WWTW
CPX.0007929-F1	Zandvliet WWTW: Prim Treatment & Sludge	1 000 000	34 000 000	0	0	20 000 000	EFF	WWTW

WBS Element	WBS Element Description	Revised Budget 2017/18	Revised Budget 2018/19	Revised Budget 2019/20	Revised Budget 2020/21	Revised Budget 2021/22	Major Fund	Branch
CPX.00079 29-F2	Zandvliet WWTW: Prim Treatment & Sludge	145 313 178	0	25 800 000	40 000 000	0	CGD	WWTW
C10.86033-F1	Zandvliet WWTW-Extension	0	0	0	80 000 000	100 000 000	EFF	WWTW
C10.86033-F3	Zandvliet WWTW-Extension	0	0	111 500 000	74 000 000	100 000 000	CGD	WWTW
C14.86059-F1	Zevenwacht Reservoir and Network	3 000 000	3 000 000	2 000 000	0	0	EFF	Reticulation
C14.86059-F2	Zevenwacht Reservoir and Network	6 000 000	6 000 000	0	0	0	CRR	Reticulation
CPX.00070 93-F1	Zone Metering & Valves	0	0	0	0	0	EFF	WDM&P

References:

Municipal Economic Review & Outlook (MERO) (2015): Western Cape Government. Online: www.westerncape.gov.za

Statistics SA: Labour Force Survey: Fourth quarter 2016, Statistical release P0211. Online: http://www.statssa.gov.za/publications/P0211/P02114thQuarter2016.pdf

Strategic Development Information and GIS Department, 2016: City of Cape Town Statistics Online: http://cityweb.capetown.gov.za/en/cdirc/Statsandindicators/Pages/Official-Stats-Index.aspx

APPROVED BY:	MANAGER: WATER DEMAND MANAGEMENT & STRATEGY		
Name & Surname:	**Zolile Basholo**	Signature:	
Date:	15/05/2017	Comment:	
APPROVED BY:	DIRECTOR		
Name & Surname:	**Peter Flower**	Signature:	
Date:	2017-05-15	Comment:	
APPROVED BY:	EXECUTIVE DIRECTOR		
Name & Surname:	**Gisela Kaiser**	Signature:	
Date:	15 MAY 2017	Comment:	
APPROVED BY:	MAYCO MEMBER		
Name & Surname:	**Xanthea Limberg**	Signature:	
Date:	15 May 2017	Comment:	