CITY OF CAPE TOWN
ISIXEKO SASEKAPA
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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 2022/23-2026/27

Version Control:

		Description	Date	Reference
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Version 2		Draft v02	12-12-2021	Chanee Johnstone
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Approval				

Prepared by:

Designation	Name
Technician	Chanee Johnstone
PPO	Shamile Manie

Abbreviations and Definitions

AADD	Average Annual Daily Demand
ASL	Above sea level
BDS	Blue Drop Certification System
BWAS	Bulk Water Augmentation Scheme
CAPEX	Capital Expenditure
CCT	City of Cape Town
CSRM	Catchment, Rivers and Stormwater Management
CTOD	Comprehensive Transit Oriented Development
DWS	Department of Water and Sanitation
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.
GDS	Green Drop Certification System
HH	Households
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 liter = 1 kiloliter
MERO	Municipal Economic Review and Outlook
Ml	Megaliter = 1 000 kiloliter = 1 000 000 liter
NRW	Non Revenue Water
OPEX	Operational Expenditure
PRV	Pressure Reducing Valve
SDBIP:	Service Delivery Budget Implementation Plan – is a management, implementation and monitoring tool that enable the Municipal Manager to monitor the performance of senior managers, the Mayor to monitor the performance of the Municipal Manager, and for the community to monitor the performance of the municipality.
TMG	Table Mountain Group
UAW	Un-accounted for Water
W2RAP	*Wastewater Risk Abatement Plan*
WC/WDM	Water Conservation/ Water Demand Management
WCWSS	*Western Cape Water Supply System*
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 Guide Framework	Modular tool which has been developed by the DWS to support Water Services Authorities in complying to the Water Services Act with respect to Water Services Development Planning and which is also used by the DWS to regulate such compliance
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)
WTW	Water Treatment Plant
WwTW:	Wastewater Treatment Works
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 2022/23- 2026/27. The Water and Sanitation Directorate 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 2021. 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 Directorate 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 all whilst trying to realise the Water and Sanitation Directorate's new vision of Cape Town being a water sensitive city by 2040. To achieve this vision, the Directorate has been restructured by logically clustering branches into 4 Departments with 2 focusing on direct delivery and 2 working transversely to improve coordination and efficiency.

Departments	Branch
Bulk Services	• Bulk water • Catchment, Stormwater and River Management • Wastewater
Distribution Services	• Reticulation • Informal Settlement and Basic Services
Technical Services (working transversally across branches)	• Engineering & Asset Management • WDM, Regulation & Planning • Scientific Services • Auxiliary Services
Commercial Services (Working transversally across branches)	• Customer Services • Capital & Contract Management • Finance & Commercial

As noted in the table above, two branches namely Technical Services and Commercial Services will be working transversally across the branches. This is to ensure that the quality and optimization of all operations are of a high standard in providing a sustainable water and sanitation services.

The City's Water and Sanitation Directorate now includes the Catchment, Stormwater and River Management Branch. This inclusion will ultimately get us closer to achieving our vision of a 'Water Sensitive City'. By including the CSRM Branch, it allows for the following:

- Improvement in the quality of our inland water bodies- better management of sewer spillages or pollution from WwTWs effluent.
- Increases the efforts for stormwater extraction/harvesting as multiple branch strategies and interventions can be coordinated.
- The possibility of managing stormwater and water bodies for aquifer recharge.

The Human Resources Business Partner (HRBP) Branch has been relocated from the Technical Services Department to The Office of the Executive Director (ED). Support Services and Communications has also been moved to the ED's Office since the Directorate restructuring occurred.

The **CCT Water Strategy** that was developed during the drought and adopted in 2019 sets out an approach for the next ten years to secure the City of Cape Town's water future by increasing reliability of water via alternative water sources by 300 million l /day in the next 10 years at an approximate cost of R5.7 billion. Increasing reliability standard of supply from 98% to 99.5%. The strategy explores investment into alternative water sources, including groundwater, wastewater reuse and desalination, to supplement its water supply.

The strategy is based on five commitments:

1.	Safe access to water and sanitation	Focus on improving access to water and sanitation in informal settlements
2.	Wise use	Promoting water conservation through pricing incentives, regulatory incentives, active citizenship and network management
3.	Sufficient, reliable water from diverse sources	Surface, groundwater, water reuse and desalinated water. Build new capacity of approximately 300 million liters per day over the next ten year
4.	Shared benefits from regional water resources	Optimise the economic, social and ecological benefits of regional water resources; reduce the risks; through collaborative processes.
5.	A water sensitive city	Optimal use of stormwater and urban waterways for the purposes of flood control, aquifer recharge, water reuse and recreation, based on sound ecological principles. Through new incentives and regulatory mechanisms as well as through the way the City invests in new infrastructure

Ten principles inform the strategy:

1. (Place) value on water
2. Grow inclusivity and trust
3. Build capacity (of staff and stakeholders)
4. Work together and across boundaries
5. Design for adaptation
6. Live with water (multiple uses of waterways)
7. Work with nature
8. When it rains, slow (down), store and repurpose (water)
9. Ready for climate shocks
10. Stimulate the green economy

The New Water Strategy is thus an integral part of the new five year WSDP. It will guide the manner in which we develop and deliver water and sanitation services to those living in the metro. There is a need to mitigate the risks of climate change specifically to limit the impact of the increased risk of drought.

Other key challenges related to delivering reliable water and sanitation services are:
Our aging infrastructure for both bulk and reticulation services as a result of a history of slow asset replacement. The combination of lack of capacity of wastewater treatment, general pollution of our rivers and water bodies exacerbated by sewer spillages and sewer dumping into stormwater systems.

The topography of the metro also necessitates the need for 452 sewer pump stations, which by virtue of its extent possess an infrastructure maintenance challenge. The increased pressure particularly on sewer infrastructure is due to existing settlement densification. On the other hand, natural growth and in-migration will require additional infrastructure to accommodate the demand.

The complexity of the urban context, the loss of expertise and experience through retirement and turnover internally or to external opportunity is a recognized challenge. Having sufficient qualified, well trained staff to do the work is becoming a challenge and will have to be addressed.

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 Directorate 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 after the 2000 municipal elections. 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 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 as the nature of informality is characterised by people arriving first on land followed by an official City response. This process 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 Directorate 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 growth in informality and similar growth in backyarder dwelling, the high price and slow process of insitu upgrades has prompted Human Settlements to consider a new delivery programme that could possibly at scale address the need and increase the rate of formalization, "Managed Land Settlement". There is interdepartmental discussion on weather a commitment could be made to this programme at this stage with the awareness that the impact will be broad.

Due to the impact of the drought, the threat of climate change and the need to improve water security, the City's Water and Sanitation Directorate has revised its vision and mission.
To achieve the improved service, the City's Water and Sanitation Directorate's new Vision and Mission are as follows:

Vision:
By 2040, Cape Town will be a water-sensitive city that optimises and integrates the management of water resources to improve resilience, competitiveness and liveability for the prosperity of its people.

Mission:
To provide safe, sustainable and affordable water and sanitation services through the efficient optimisation of resources and utmost respect for the environment
Commitments:

1. Safe access to water and sanitation
2. Wise use

3. Sufficient, reliable water from diverse source
4. Shared benefits from regional water resources
5. A water sensitive city

Values:

- Integrity: We act with integrity by doing what we say, doing the right thing, being honest, and treating everyone with fairness and respect.
- Service excellence: We strive for excellence in everything we do by focusing on our customers and delivering the highest standard of services.
- Accountability: We show accountability by taking ownership of our roles, responsibility for our actions, and by honouring our obligations.
- Trust: We show trust by working as a team and believing that the other person has our best interests at heart. Trust makes our relationships effective.
- Accessibility: We promote accessibility when we remove barriers between people and services, make obtaining services easier, and are responsive and attentive to customer needs.

Transitional plan programmes, 2021-2030

1. Upgrading water and sanitation in informal settlements (Commitment 1)
2. Improving water and sewer network management (Commitment 2)
3. Increasing water resilience (Commitments 3 and 4)
4. Improving water quality & transitioning to a water sensitive city (Commitment 5)
5. Creating a customer-oriented organisation
6. Achieving financial sustainability
7. Establishing a culture of continuous improvement
8. Becoming an employer of choice

Business focus areas to address critical challenges:

- First in Africa to become a Leading Water Utility of the World
- 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

Business Element 1: Administration

The new 2022/2023 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.

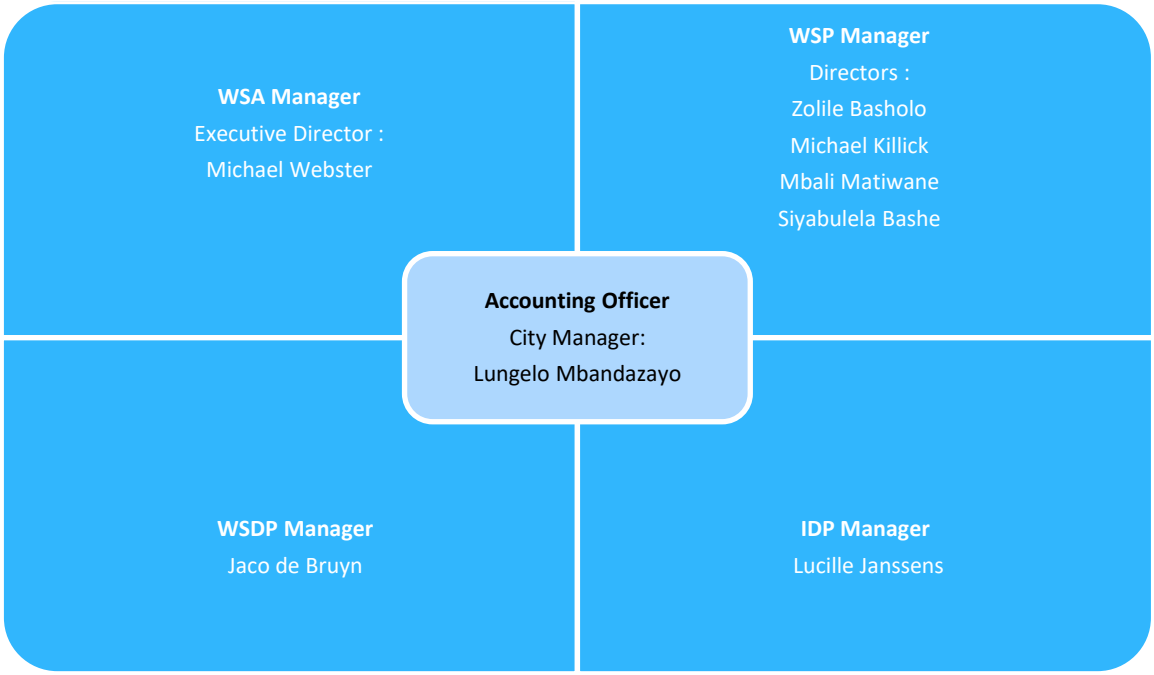


Figure 1: Key role players involved with the City of Cape Town's WSDP

The City of Cape Town is both the Water Services Authority and Water Services Provider. All water and wastewater services and infrastructure are operated and maintained by the City of Cape Town Metro Municipality.

One area of service provision that is much more challenging than the rest is the provision and maintenance of sanitation services in informal settlements- whilst the number of people living in informality is continuously increasing. Improvement in water and sanitation provision in informal areas is a priority for the City.

Business Element 2: Demographics

The City of Cape Town Metropolitan Municipality services an area covering 2 455 km² 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 1 907 people per km². The City of Cape Town serves a population that is estimated to be at 4 682 755 people (Policy and Strategy Department, 2021). The City's Water and Sanitation Directorate 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 Metro, all formal areas are adequately provided for with water and sanitation services while services within informal settlement areas are continually being improved upon as new informal settlements arise. The Directorate 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 (Western Cape Climate Change Response Strategy, 2014). This makes the City of Cape Town's water resource management more challenging. The latter coupled with the recent drought gave rise to the development of the New Water Strategy document which aims to mitigate the risks associated with climate change. 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 Metropolitan Area 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. The latter may be less of a challenge in future years as we find additional water sources to augment our supply and get closer to becoming a water sensitive city.

- 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. Alien plants also negatively impact on our water resource.

Demographic Perspective

- Economics- the CCT has an economic growth rate of 1.3 % over the period of 2014-2018, which closely resembles the Western Capes growth rate of 1.4 % (MERO, 2020). This is largely due to weakening global and national growth rates. This pattern has persisted due to the downgrades experienced and the global Covid 19 pandemic.
- The City of Cape Town contributes approximately 71.8 % to the Western Cape's Gross Domestic Product Regional (GDPR), (MERO, 2020). 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.
- Social- presently approximately 21.7% of households in the Cape Town Metro, lives in an informal dwelling. This is proportionately higher when compared to South Africa, 14.3%- most likely due to the fact that a) the Metro attract more jobseekers from other districts in the Western Cape as well as other provinces and b) the lack of affordable housing. 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- a slowly increasing gini coefficient, indicating higher levels of inequality- the City has managed to keep the percentage of broad unemployment rate of individuals to 29.8%, which is below the national broad unemployment rate of 44.4%. The unemployment rate within the City of Cape Town Metro continues to rise.
- 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.

- The current planning policy philosophy is Comprehensive Transit Oriented Development (CTOD) and is the bases for the new services infrastructure Master Plan. This policy aims to use investment in transport infrastructure to increase density in the city inner core and delay outward growth thus limiting outward expansion infrastructure with a more compact city.
- The latest 2040 planning scenario – embraces Transit Oriented Development but takes into account some of the negative impacts in the economy and predicts a huge increase in informality over the next 20 years with 53% of all new households over the period likely being informal. This is likely to impact on the way the capital/operating budget will change in order to service informal areas.

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 1: Water services overview (water)

Settlement Type	2019/2020		2020/2021		Water category									
	Households	Population	Households	Population	Adequate: Formal	Adequate: Informal	Adequate: Sahred 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	1,402,671	4,488,547	1,463,361	4,682,755	✓	✓								
Sub-Total	**1,402,671**	**4,488,547**	**1,463,361**	**4,682,755**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Water: Profile of consumers as at June 2020					**Adequate**			**Below RDP**					**None**	
None or inadequate(Target)	0	0	0	0										
Communal water supply	170,792	546,535	178,182	570,182		✓								
Controlled volume supply	207,388	663,641	204,646	654,867	✓									
Uncontrolled volume supply	1,024,491	3,278,371	1,080,533	3,457,706	✓									
Total	**1,402,671**	**4,488,547**	**1,463,361**	**4,682,755**	**0**	**0**	**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	**1,402,671**	**4,488,547**	**1,463,361**	**4,682,755**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: ** aligned with census data*

Table 2: Water services overview (sanitation)

Settlement Type	2019/2020		2020/2021		Sanitation category									
	Households	Population	Households	Population	Adequate: Formal	Adequate: Informal	Adequate: Sahred 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	1,402,671	4,488,547	1,463,361	4,682,755	✓	✓								
Sub-Total	**1,402,671**	**4,488,547**	**1,463,361**	**4,682,755**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Sanitation: Profile of consumers as at June 2020					Adequate			Below RDP					None	
None or inadequate(Target)	0	0												
Communal toilets / Portable flush	259,907	831,702	128,791	412,131		✓								
Full flush	1,142,764	3,656,845	1,334,570	4,270,624	✓									
Total	**1,402,671**	**4,488,547**	**1,463,361**	**4,682,755**	**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	**1,402,671**	**4,488,547**	**1,463,361**	**4,682,755**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: ** aligned with census data*

Business Element 3: Service Levels

Table 3: Residential water services delivery access profile: Water

Census Category	Description	Year 2021 FY2020/21		Year 2020 FY2019/20		Year 2019 FY2018/19	
		Nr	%	Nr	%	Nr	%
	WATER (ABOVE MIN LEVEL)						
Piped (tap) water inside dwelling/institution	House connections + water cluster	1,285,179	87.82%	1,231,879	87.82%	1,190,854	87.82%
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	178,182	12.18%	170,792	12.18%	165,105	12.18%
	Sub-Total: Minimum Serivce Level and Above	**1,463,361**	**100%**	**1,402,671**	**100%**	**1,355,959**	**100%**

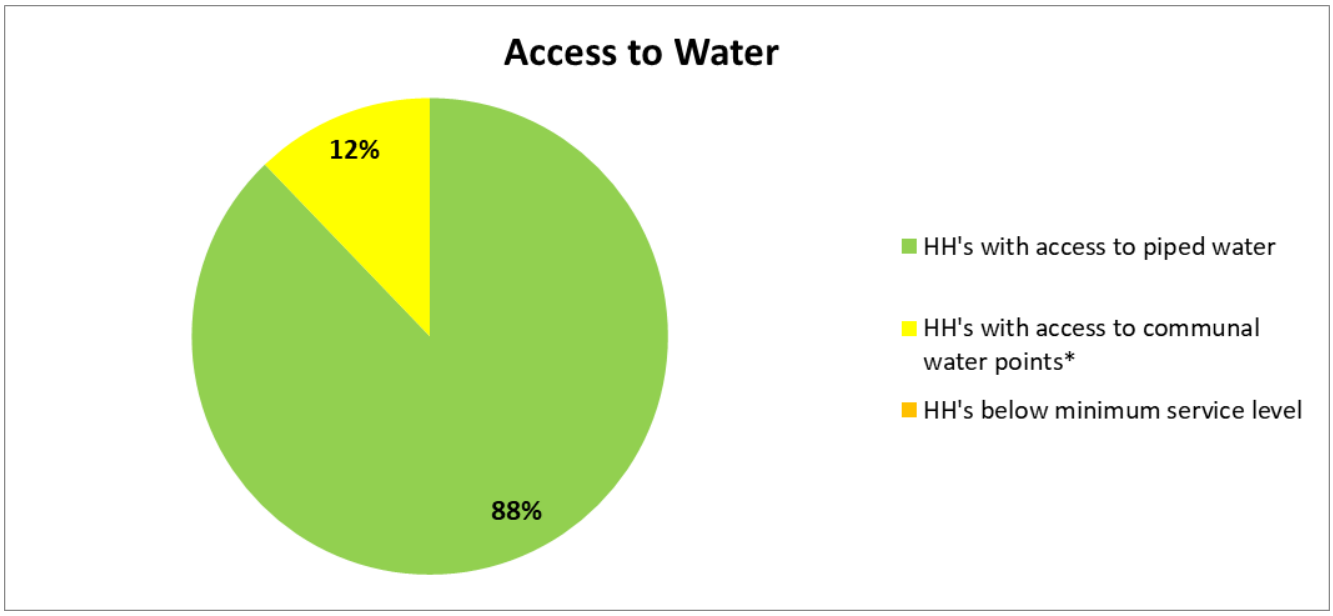


Figure 2: Household water <u>access</u> profile

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

Table 4: Residential water services delivery access profile: Wastewater

Census Category	Description	Year 2021 FY2020/21		Year 2020 FY2019/20		Year 2019 FY2018/19	
		Nr	%	Nr	%	Nr	%
	SANITATION (ABOVE MIN LEVEL)						
Flush toilet (connected to sewerage system)	Waterborne	1,334,570	91.20%	1,298,364	92.56%	1,272,349	93.83%
	Waterborne: Low Flush	0		0	0.00%	0	0.00%
Flush toilet (with septic tank)	Septic tanks / Conservancy	0		0	0.00%	3,561	0.26%
Chemical toilet	Non-waterborne (above min. service level)	63,105	4.31%	42,380	3.02%	38,640	2.85%
Pit toilet with ventilation (VIP)		985	0.07%	985	0.07%	985	0.07%
Other		64,617	4.42%	60,858	4.34%	40,340	2.98%
	Sub-Total: Minimum Serivce Level and Above	**1,463,277**	**99.9%**	**1,402,587**	**99.99%**	**1,355,875**	**99.99%**
	SANITATION (BELOW MIN LEVEL)						
Pit toilet without ventilation	Pit toilet	0		0	0.00%	0	0.00%
Bucket toilet	Bucket toilet	84	0.01%	84	0.01%	84	0.01%
Other toilet provision (below min. service level	Other	0		0	0.00%	0	0.00%
No toilet provisions	No services	0		0	0.00%	0	0.00%
	Sub-Total: Below Minimum Service Level	**84**	**0.01%**	**84**	**0.01%**	**84**	**0.01%**
	Total number of households	**1,463,361**	**100%**	**1,402,671**	**100.00%**	**1,355,959**	**100.00%**

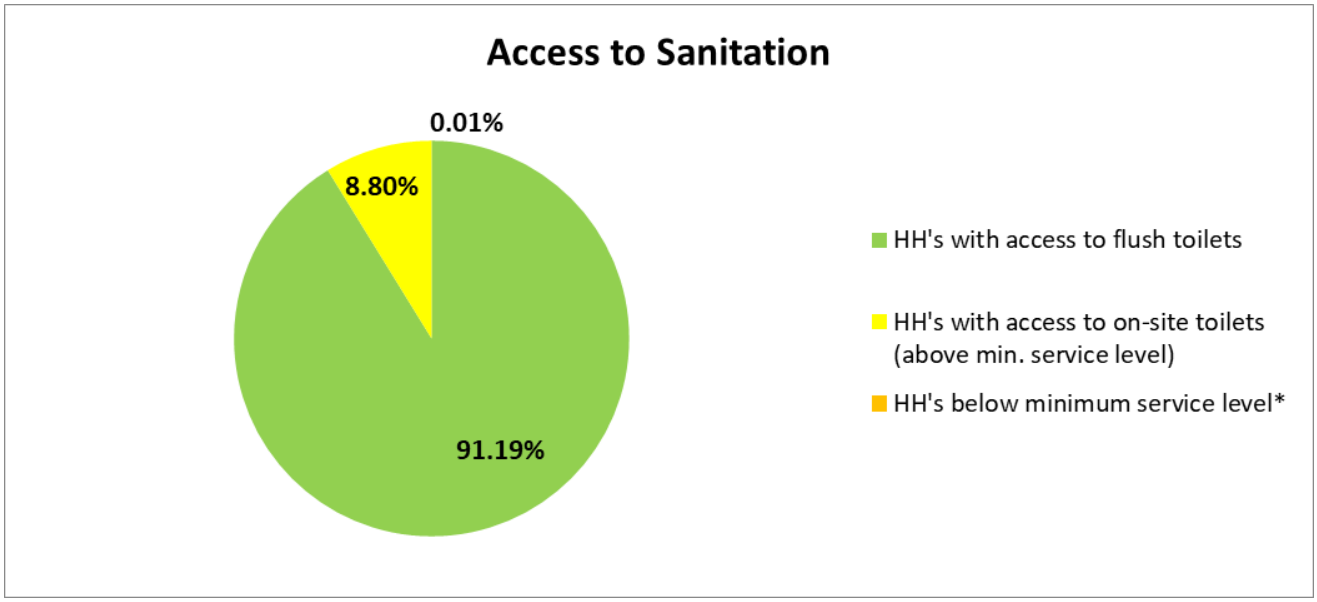


Figure 3: Household wastewater access profile

The City, as at June 2021, was servicing 84 black buckets (25 l). These are in the areas of Boys Town (77), Morkel's Cottage (2) and Rasta Camp (5) partly on City property and partly on private land. As the City wants to eradicate these remaining black buckets, residents using the black buckets have been offered alternative sanitation technologies e.g. portable flush toilets, but the offer has been declined. The City will therefore continue to service the remaining black buckets, but these are

therefore not seen as a service below the National Standards, as alternative sanitation technologies are available and accessible. Most of the areas mentioned above are currently part of Human Settlements development projects and therefore the remaining buckets will be eradicated, as the residents are absorbed into new housing initiatives.

Chemical Toilet sanitation although expensive remains the quickest way of providing sanitation in an informal settlement. The figures reflecting this form of sanitation will therefore constantly fluctuate.

The City is continually trying to eradicate these remaining 'bucket system toilets' as indicated in the table below.

Table 5: Table showing the progress made in eradicating the "bucket system toilets"

Provisions	2016/17	2016/17	2017/18	2018/19	2019/20
Chemical Toilets	6 259	6 259	7 086	6 792	8 476
Container Toilets	6 921	6 921	7 832	8 048	7 684
25l Black Buckets	217	217	72	84	84

Service Level Profile

The City of Cape Town recently recovered from one of the worst droughts over the past 100 years, placing our water resource under strain requiring restrictions and tight management the cities limited supply of water. The Various City water demand reducing methods during the drought resulted in a major drop in water demand across the city reaching less than half of the normal water demand. Since lifting the water restrictions on 1 November 2020 there has been a slow creep upward in water demand.

As a result of the drought, various waterless technologies have been explored over the past few years.

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.

Levels of access

Formal:

100% of households in Cape Town have access to piped water, with 97% receiving services through a metered connection to their property. 100% of households have access to adequate sanitation, with 97% of formal households having access to a connection to the city's sewer network from their property.

Informal Settlements

The City provides 95.64% households within informal settlements with free and unrestricted access to water via communal water points within 200m of each household and access to a shared toilet

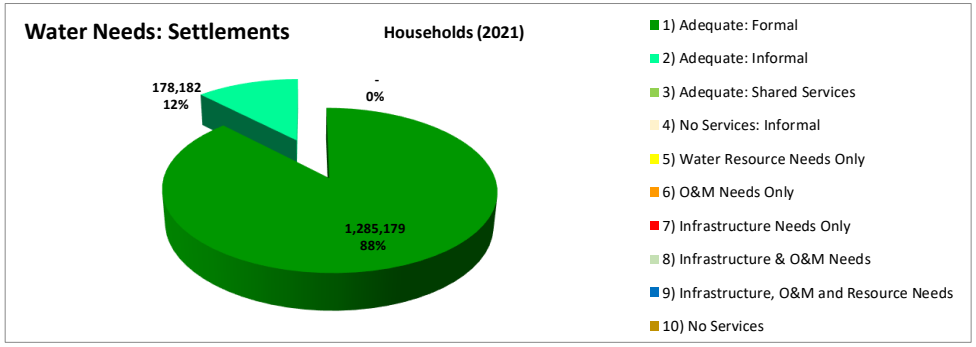
shared between 5 households, as is the required minimum standard nationally. Approximately 191 717 informal households in 779 informal settlements throughout Cape Town are served by some 8 400 communal taps and 58 000 toilets.

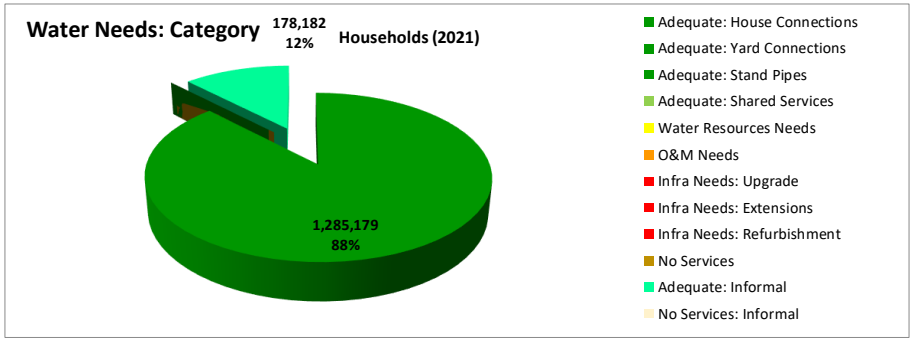
The City aims for its own internal higher service standard of a minimum one tap per 25 households within a maximum of 100 m and currently 87.69% of registered informal settlements in Cape Town are provided with a communal tap within 100m. Close to 36% of informal-settlement households are estimated to have access to full-flush toilets at a maximum ratio of five households to one toilet. 88.61% of households in informal settlements with toilets at a ratio of 1:5 through different types of sanitation typologies and 11.36% of households have 1:1 ratio in the form of Portable Flush Toilets.
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 or within a radius of 100m are provided. 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 2019/20 financial year, Water and Sanitation has installed a total of 1520 new tap and 2999 toilets in various informal settlements across the City. As of June 2021, an additional 799 water service points (taps) were provided against the target of 700 and 3428 sanitation service points (toilets) were provided against the target of 2500.

Table 6: 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	1,285,179	100%																						
2	0																					178,182	100%		
3	0																								
4	0																								
5	0																								
6	0																								
7	0																								
8	0																								
9	0																								
10	0																								
Total Household Interventions required		1,285,179		0		0		0		0		0		0		0		0		0		178,182		0	

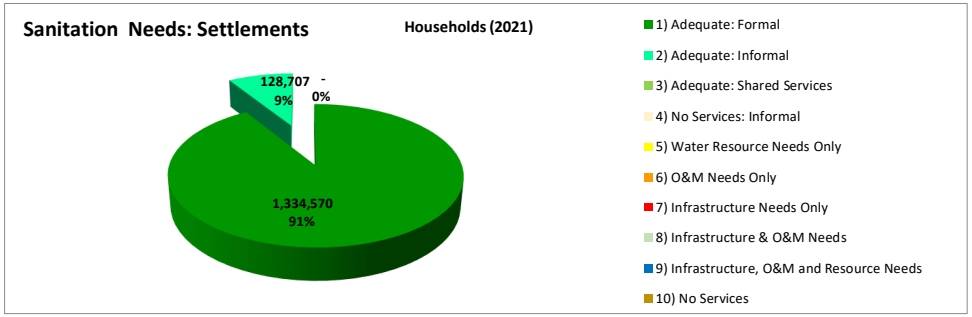


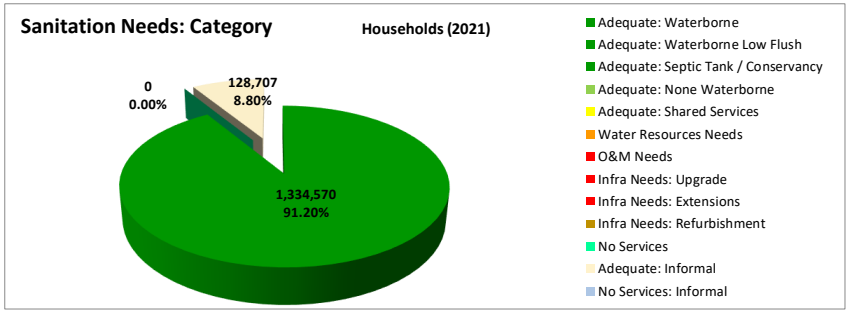


1	Adequate	3	Adequate: Shared services	5	Water Resources Needs **Only**	7	Infrastructure Needs **Only**	9	Infrastructure, O&M & Resource Needs
2	Adequate: Informal	4	No Services: Formal	6	O & M Needs **Only**	8	Infrastructure& O&M needs	10	No Services

Table 7: Residential water 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	1,334,570	100.00%			-	0.00%																				
2	0																							128,707	100%		
3	0																										
4	0																										
5	0																										
6	0																										
7	6																										
8	0																										
9	0																										
10	0																										
Total Household Interventions required		1,334,570		0		0		0		0		0		0		0		0		0		0		128,707		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 2020, the population of Cape Town was estimated to be approximately 4 488 547 obtained from Strategic Development Information and GIS Department (2020).

Table 8: Employment profile for the City of Cape Town Metro

		2016	2017	2018	2019	2020	2021
Employed	number	1 483 359	1 539 421	1 599 119	1 595 388	1 460 375	1 452 000
	%	53.1%	54.0%	55.0%	53.9%	48.5%	47.4%
Unemployed	number	437 123	450 951	437 662	447 327	429 128	552 000
	%	15.7%	15.8%	15.1%	15.1%	14.2%	
Labour force	number	1 920 480	1 990 372	2 036 782	2 042 715	1 889 503	2 004 000
	%	68.8%	69.9%	70.1%	69.0%	62.7%	65.5%
Not economically active	number	871 657	859 258	868 457	917 792	1 122 403	1 057 000
	%	31.2%	30.2%	29.9%	31.0%	37.3%	34.5%
Labour market (all aged 15-64)	number	2 792 137	2 849 630	2 905 239	2 960 507	3 011 906	3 061 000
	%	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 begun to decrease over the past 2 years namely 2019 and 2020. The average annual unemployment rate has declined to 21.09% (DIRC, 2019), despite the country's economic issue coupled with the Covid-19 Pandemic that's being experienced globally. The number of households living in informal settlements and backyards has been growing due to urbanisation, natural growth, changes in household size as well as the lack of affordable housing within the Metro.

Business Element 5.1: Water Services Infrastructure Management (Infrastructure)

To ensure long term sustainability, Water and Sanitation Services continually updates its 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 9: Replacement cost of Water and Sanitation assets as of June 2021

Description	Asset Count	Replacement Value (R M)	Annual Maintenance Norm	Annual Maint. req, Bulk Water separate (R M)
Dams	11	R2,675.00	0.50%	R13.38
Bulk Pipelines	658.5 (km)	R12,575.00		R67.91
Bulk Reservoirs	24	R2,542.00		R7.37
Water Treatment Plants & Well fields	12	R3,021.00	1% Civil, 4% Mech/Elec	R33.23
Bulk Pump Stations	24	R544.00		R7.82
Other (Canals, Tunnels, Meter, etc.)	-	R180.00		R1.10
Water Reticulation (as at end of June 2021)	10 927 (km)	R24,319.00	1%	R151.01
Sewer Reticulation (as end of June 2021)	9 524 (km)	R31,865.00	1%	R188.68
Water Pump Stations	120	R1,247.00	0.5% Civil, 4% Mech/Elec	R34.85
Sewer Pump Stations (inck treated effluent and stormwater PS)	487	R3,312.00	0.5% Civil, 4% Mech/Elec	R61.80
Reticulation tanks (including disused)	135	R2,373.00	0.50%	R7.37
Treated Effluent Network (km)	308	R386.00		
Treated Effluent Pumpstations (No.)	21	R13.02		
Total		**R93,081.70**		**R 1,028.22**

Status of All Water and Sanitation Infrastructure

The Water and Sanitation Directorate of the City completed their first in house master plan using an integrated planning approach in 2019 for the its entire infrastructure as well as for its alignment across directorates. It includes Bulk water, Water Reticulation, Sewer Reticulation as well as Wastewater Treatment and Treated Effluent. 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 existing model is from 2018. The latter was based on a comprehensive TOD (CTOD) scenario.

There is a current master plan update under way that is planned to be completed by March 2022 based on a new 2040 Landuse plan. This plan embraces CTOD but has been said to be more realistic and takes into account the latest impacts of the pandemic and changes in the nature of work (working from home etc.).

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. The water and sanitation infrastructure that is currently constrained has been identified and projects have been triggered to assist with alleviating the constraints.

The Reticulation Water Network is a total of 10 927 kilometres of pipe and the Sewerage Network a total of 9 524 kilometres of pipe as at June 2021. The operational expenditure to sustain the operational activities in the reticulation branch amounted to R5 735 498 790.77 for the 2019/20 FY. Water operational activities amount to R2 961 436 040.41 and sewer operational activities are R2 774 062 750.36.

Changes in Technology

The constant changes in technology in the water sector is largely aimed the water savings, better measurement of water usage, pressure, peak demands and other hydraulic parameters which will continue to improve the ability to manage and operate water services infrastructure.

Rapidly advancing technology is constantly introducing new and improved methods and approaches to planning, designing, operating and managing water and sanitation infrastructure.

The smart use of technology will be advanced in the following areas:

- Desalination plants to produce potable water. Various sites have been identified as possible desalination plant sites for the production of potable water by means of sea water reverse osmosis- forms part of the list of priority projects.
- Drilling, monitoring and extraction of deep lying aquifers.
- Advanced metering and logging of the bulk water networks.
- The latest methods of pipeline construction with advanced materials providing improved performance or having the ability to withstand adverse conditions.
- The rehabilitation or lining of sewers with new methods with the increased use of trenchless technology where possible
- Remote recording, logging and software analysis tools for improved network management
- The latest software for planning, analysis and costing for infrastructure development.
- The latest technology for pressure management, monitoring and controlling with increased remote control.
- Smart metering technologies under consideration.
- The increased use of membrane technology for wastewater treatment allowing improved capacity and more compact plants.
- The increased use and accessibility of electronic billing, resulting in improved tracking and analysis for targeted collection. The city intends to introduce Automated Metering Technology (AMI) that will give 24 hour visibility on water use of individual connections zone supplies and bulk meters. This will dramatically increase the data on all users, by land-use type and location instantaneously. This accurate automated data collection could significantly improve infrastructure operations, maintenance, planning, responses to failures/bursts/leaks/spills and service delivery in general. Artificial Intelligence (AI) opportunities is also likely to have a major impact in all areas of water and sanitation infrastructure operation.
- Infrastructure fieldwork: Effective portable data acquisition and management systems.
- The maintenance of a digital as-built drawing database
- The expansion and maintenance of spatial information and asset mapping layers (GIS) to improve planning and management.
- The expansion of electronic submission and processing of various types of customer applications to the City.
- The change in legislation which no longer allows the disposal of wet waste, has accelerated the need to establish three regional plants to process sludge from wastewater plants (Bio-Beneficiation). This is new technology for the City which will generate opportunity for cost recovery. The Northern regional sludge facility's goal upon completion is to produce higher quality bio solids that can be used as fertiliser and to produce a by-product which can be used to generate electricity. The Cape Flats WwTW will be another regional sludge facility that is on the budget for the next MTREF period.

A proposed budget of R 76 320 000 /annum and R 71 450 000 /annum is set aside specifically for water pipe replacement and sewer pipe replacement respectively for the 2021/2022 financial year. For reticulation water mains, the aim is to achieve an acceptable burst rate of approximately 15 bursts/100km/ year, dependent on affordability. Year to date we are currently at 28 bursts/ 100km/ year (30 June 2021). The Pipe Replacement Programme has received a progressively increasing budget to deal with the replacement backlog and is now a priority programme.
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 Directorate has developed an Infrastructure Master Plan that identifies the Water and Sewer upgrading requirements for all development areas.

Bulk water

The master planning process has identified projects that were due for implementation to address and meet the unconstrained growth in water demand as well as for other operational requirements. Some of the identified projects have been deferred to later dates due to a combination of budget readjustments, reduced water demand, the implementation of the water strategy, and/ or other considerations. These include certain components of the BWAS project, most notably the proposed Muldersvlei WTW, implementation of which is to be deferred to a later date. The Bulk Water Masterplan currently being updated will review the timing and phasing of all future bulk water infrastructure in order to meet the growth in water demand and increase flexibility.

Bulk Water undertakes strategic long-term planning for water supply infrastructure under two main processes namely, the Western Cape Water Supply System (WCWSS) Reconciliation Strategy and the Bulk Water Master Plan. The Reconciliation Strategy facilitates the reconciliation of current and predicted future water requirements with available water in the WCWSS over a 25-year planning period while the Bulk Water Master Plan addresses the infrastructure requirements for effective and efficient water treatment capacity, bulk storage and bulk transmission. Due to the integrated configuration of the bulk water supply infrastructure systems, capacity analysis is done both in an integrated manner and also at a system level under the two processes mentioned above.

The WCWSS is an integrated and collectively managed system of dams, tunnels, canals, pump stations and pipelines from the Berg River system, the Riviersonderend River system, and the coastal rivers such as the Palmiet and Steenbras Rivers. In addition to supplying the City of Cape Town, the system supplies water to towns in the Overberg District, Local Municipalities in the West Coast and Cape Winelands District Municipalities (DMs) as well as providing irrigation water for agriculture. The integrated system helps optimise the use of the water resources in the region as it allows water to be transferred between dams and catchment systems to service various demand centers. In doing so, this improves the assurance of water supply to the users in the WCWSS.

The Reconciliation Strategy provides a decision support framework for making timeous and informed recommendations on water resource interventions that should be implemented to meet future water requirements. The Reconciliation strategy is regularly reviewed and updated to ensure its relevance in planning.

In the following are key outputs of the WCWSS Reconciliation strategy report (2019).

The total allocation for the City of Cape Town has reduced to 346.9 million m3/a because of the following:

(i). The City of Cape Town had a temporary water allocation of 28 million m3/a form the Theewaterskloof Dam, which was withdrawn in 2018 as agriculture has taken up their allocation. The water has been allocated to historically disadvantaged farmers.

(ii). The City of Cape Town was finally allocated 70 million m3/a form the Berg River Dam in 2018, with the remaining 11 million m3/a of the dam's yield assigned to the three LMs in the West Coast DM.

(iii). The allocation for the City of Cape Town from Wemmershoek Dam includes the water it supplies to the Drakenstein LM Bulk Water Supply Agreement (BWSA) for 17.3 million m3/a to supply Paarl and 8.5 million m3/a for the town of Wellington), and the Stellenbosch LM (BWSA of 2.0 million m3/a).

Business Element 5.2: Water services Infrastructure Management (O&M)

As part of the City of Cape Town's 'Water Strategy' released in April 2019, the City developed a programme to augment the water available for use by the City while concurrently increasing the City's level of supply assurance from a 50-year recurrence interval to a 200-year recurrence interval. The City has divided their augmentation plan into a set of committed schemes which will be implemented over the next ten years and an 'adaptable' programme which will be revised. The purpose of the committed program is for achieving the desired reliability of supply as soon as possible. The committed programme comprises management interventions, groundwater abstraction, re-use and desalination, as well as additional surface water supply. The adaptable program intends to plan schemes that will be needed in the future, but for which, an immediate decision to implement is not required. Based on emerging information on demand bounce-back and rainfall, the City would be able to shift the adaptable program forward or backwards. The City of Cape Town's Water Strategy notes that the City will regularly update the water requirement and supply availability data and refine requirement and supply reconciliations based on these updates.

Table Committed Programmes

Table 10: Table showing the programmes that the Water and Sanitation Directorate are committed to achieving

Description	Water Strategy Completion Date / First water *(Nov 2018)*	Revised Completion Date / First water *(Nov 2021)*	Water Strategy Capacity *(Nov 2018 Ml/d)*	Revised Capacity *(Nov 2020) Ml/day*	Estimated Capex based on *(R million)*	Estimated Unit Capex *(Rm/MlD)*
Table Mountain Steenbras P1	2020	Jun-21	15	**25**	**90**	**3.6**
Table Mountain Nuweberg P2	2022	Jun-35	15	**15**	**302**	**20.1**
Table Mountain Groenlandberg P3	2022	Jun-35	20	**12**	**344**	**28.7**
CFA Strandfontein West	2020	Jun-22	45	**6**	**2675**	**44.6**
CFA Hanover Park	2021	Jun-24		**4.8**		
CFA Strandfontein N & E	2021	Dec-25		**18**		
CFA Philippi	2021	Jun-26		**7.2**		
CFA Mitchells Plain WTP	2021	Jun-27		**24**		
Atlantis Aquifer	2021	Jun-24	10	**16**	**587**	**36.7**
Berg Voëlvlei River Augmentation Scheme (BVRAS)	2023	Jun-25	40	**41**		
Faure New Water Scheme Ph1	2024	Dec-27	70	**70**	**2858**	**40.8**
Desalination Phase1	2026	Jun-30	50	**70**	**2116**	**30.2**
AIP Clearance (Total 6 priority catchments)	**To be confirmed once more detailed information becomes available**					
Management of the WCWSS						
Water Conservation/Demand Management						
Total (excl. AIP clearance and WDM interventions)			**265**	**309**		

*Prices are based on the December 2021 estimates

The water reconciliation strategy options that have been confirmed and committed to by the various institutional stakeholders were evaluated to determine the extent to which they will address the water supply deficit or improve the reliability of supply in the WCWSS.

A total of 181.06 million m3/a at a 98% assurance of supply will be added to the WCWSS yield. Of this annual volume, 121.56 million m3/a will be new water. It is important to note that some of the timeframes when first water will be available will be reviewed frequently.

The committed interventions will meet the future water requirements for the medium growth scenario without WC/WDM until 2031 and up to 2035 on the median growth scenario with the implementation of WC/WDM interventions by the municipalities. These results are based on a 50% success rate in the

implementation of WC/WDM by the domestic sector. If more savings are made, this will delay the need for additional reconciliation options for the WCWSS even further.

The BWAS entails the augmentation of bulk water supply from the recently constructed Berg River dam to the proposed Muldersvlei WTW and reticulation system of the northern areas of the CCT water distribution system. The new infrastructure will increase the CCT's water treatment and bulk storage capacity and improve the flexibility of the bulk water supply to the distribution network.
The proposed infrastructure includes the Muldersvlei component of the BWAS, the Voëlvlei-to-Glen Garry Transfer Scheme and the reinforcement of the Wemmershoek Pipeline between Glen Garry and Tygerberg Reservoirs.
The BWAS infrastructure comprises the following:

- 300 Mℓ Muldersvlei reservoir
- 500 Mℓ/d Muldersvlei Water Treatment Works
- Pipeline between Wemmershoek pipeline and Muldersvlei reservoir
- Pipeline between Muldersvlei reservoir and Wemmershoek pipeline
- Dasbos and Berg River Dam to Muldersvlei WTW pipeline
- Muldersvlei WTW to Muldersvlei reservoir pipeline
- Muldersvlei reservoir to Spes Bona reservoir pipeline.

The Voëlvlei-to-Glen Garry Transfer Scheme comprises the following:

- 300 Mℓ Spes Bona reservoir
- Spes Bona reservoir to existing Glen Garry reservoir pipeline
- PRV on the 1 000 mm Ø pipeline between the future Spes Bona reservoir and the existing Voëlvlei pipeline.
- A 200 to 300 Ml/d (capacity still to be determined) bi-directional pump station enabling water to be pumped either from Glen Garry reservoir to the proposed Spes Bona reservoir or from Glen Garry reservoir to Blackheath Upper reservoir via the existing link pipeline.

The Wemmershoek pipeline reinforcement involves the laying of a 1 000 mm diameter pipeline, parallel to the existing Wemmershoek pipeline, between the Glen Garry and Tygerberg reservoirs, to increase capacity of the existing Wemmershoek pipeline.
The motivation of for the BWAS scheme is as follows:

- The scheme will be required to meet the peak week growth in water demand
- The scheme is considered a significant risk mitigation measure. Blackheath and Faure WTP are fed from Theewaterskloof Dam via the RSE tunnel system. Should anything happen to the tunnel or should the tunnel be out of operation for any extended period the City would lose approximately 40% to 50% of its water treatment capacity as well as the ability to access approximately 45% of its current usable allocation of water resources. In addition to this the City would lose its flexibility to manage the bulk water supply system and also to draw

preferentially from the different water resources to maximise the water resource situation by the end of October each year.

- The scheme is a gravity scheme and can be fed from either the Berg River Dam or from Theewaterskloof Dam
- The water treatment cost will be significantly less than water from Theewaterskloof Dam
- The BWAS scheme will provide significant additional flexibility and redundancy in the bulk water supply system.

Other factors such as possible servitude or temporary working space encroachments may also dictate or bring forward the implementation of some of the proposed bulk water pipelines referred to above. The aim of the proposed phasing is to allow for the incremental use of the proposed infrastructure as well as to ensure some redundancy on the Voëlvlei pipeline in case of bursts or low production rates at Voëlvlei WTW.

While the water strategy has an emphasis on securing the water resource the BWAS represents the infrastructure projects to deliver the bulk water supply required meet the growth in demand. Both the new water and BWAS is required and neither can be delayed. There is an expected bounce back in demand since the drought, which is already visible it is however not clear at this stage how quick we will reach pre-drought demand figures.

Wastewater Treatment

The overarching aim of treating wastewater is to treat the various wastewaters produced by residents, commercial and industrial enterprises concentrated in an urban environment. This is necessary to minimize the pollution of the receiving environment by discharging treated effluent that complies with respective license discharge limits and to treat and dispose of all wastewater sludges produced at the Wastewater Treatment Works (WwTW) sustainably and in accordance with all relevant legislation.

As the urban environment grows, so does the volume and pollution load of the wastewaters produced within it. In order to prevent increased pollution of the urban waterways and coastlines, continued investment in wastewater treatment is required. Unfortunately, wastewater treatment has historically been underinvested in. Underinvestment in wastewater treatment can take up to a decade or more to manifest, and another decade or more to remedy. Hence the importance of project pipelines is to identify required infrastructure upgrades, estimate the financial requirements (CAPEX, OPEX, etc.), understand when each individual project would be needed and thereby have a proactive plan in place to prevent pollution to the receiving environment, etc.

A major direct risk to the project pipelines identified in the following sections is a change in effluent license by the regulatory authority. All projects identified and included in the project pipelines are geared to meet the current licensed effluent discharge limits. Should the license be reviewed and more stringent discharge standards be enforced, an entire new strategy for all our Wastewater Works would be required dependent on the standards required. The regulatory authority allows time for

implementation (usually 5 years), but the timeframe may not be long enough to implement what is required. If considered unreasonable, new licenses can be, and are, appealed by the City, but the outcomes are not always favorable.

The risks of cancelling, postponing or otherwise delaying upgrades (capacity or otherwise) to WwTW are generally the same, regardless of the WwTW affected:

- Treated effluent quality will deteriorate and pollution levels within the receiving water body (river, estuary, bay or ocean) will increase;
- Regulator may issue pre-directives and / or directives which are legal documents that could result in significant monetary fines and / or charging and ultimately imprisonment of officials;
- Development stop in catchment is implemented, meaning that no new developments are approved from a wastewater treatment perspective until the respective WwTW is upgraded (this is currently the case in the Macassar, Zandvliet and Potsdam catchments) – this applies to all new residential (private and public), commercial and industrial developments;
- Supply of treated effluent to users may be suspended completely, or users will switch back to potable water due to quality deterioration which will thereby increase potable water usage;
- Affect current and future indirect reuse schemes (managed aquifer recharge, e.g. Cape Flats Aquifer, Atlantis Aquifer), where the aquifer is recharged with treated effluent from the WwTWs and water is withdrawn and treated for potable purposes;
- Affect future direct reuse schemes (e.g. Faure reuse scheme) where treated effluent is directly treated further to potable standards; and
- Significantly slow down Cape Town progress to achieving the goals set out in the Water Strategy and moving towards becoming a water sensitive City.

The projects that are generally undertaken by the Wastewater Branch have been allocated under the headings below as follows:

1. New project / replacement:
    - Greenfields WwTWs;
    - New process units on existing WwTW;
    - Complete replacement of an existing process unit on a WwTW; or
    - Replacement of civil, mechanical, electrical or control & instrumentation equipment that has reached the end of its useful life.
2. Refurbishment:
    - Refurbishment projects on existing infrastructure only.
3. Improvement / Expansion:
    - All capacity expansions on existing WwTW;
    - All process upgrades / improvements on existing WwTW excluding complete process replacements.

Please note that all Wastewater Branch major infrastructure projects require professional service providers for the design of the projects. Where the professional service providers are appointed on a separate tender / contract, this is indicated. Where professional services are not mentioned, the providers were sourced from a panel type tender. In all cases the total budget estimate includes for professional fees.

There is a need to indicate the number of WwTW that exists, its indicated status and when an upgrade is required.
The Wastewater Branch is required to maintain and update a Branch Risk Register with the assistance of Corporate Probity: Risk, Ethics and Governance. A representative from Corporate meets with the Branch Manager and all Heads on a regular basis for a workshop to discuss and update the Wastewater Branch Risk Register:
Each risk is aligned to an objective(s) and where possible to one of the City's pillars. Objectives as per the Wastewater Branch business plan and the SDBIP are used as a base, and others are added as required. On a regular basis (bi- monthly) the risk register is revisited and updated. Any additional risks are also identified and added to the register.

Operational / WwTWs

Wastewater collection and treatment systems operate 24 hours a day, 7 days a week and 365 days of the year. The Wastewater Branch has no control over the quantity and quality of the raw wastewater entering its facilities. The environment in which these municipal assets operate is aggressive, corrosive and subject to aging infrastructure. If any part of this system fails, the consequence to public health and the environment is severe.
To mitigate potential risks, a Wastewater Risk Abatement Plan (W2RAP) becomes a valuable primary risk management tool to enhance municipal wastewater service delivery. The W2RAP encompasses all steps in the wastewater value chain, from production to discharge or reuse in a particular catchment.
A W2RAP has been produced for each sewer catchment and associated WwTW. These W2RAPs are maintained and updated on an annual basis, and this involves the Reticulation Branch (sewer network and pump stations), the Wastewater Branch (WwTW) and the Scientific Services Branch. Further, each WwTW also has a Baseline Hazard Identification and Risk Assessment (HIRA).

Business Element 6: Associated Services

Associated services are water and sanitation services being provided to Educational, Health, Government and any other Social Institutions.

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 Bulk Water Branch undertakes strategic long-term planning for water supply infrastructure under two main processes namely, the Western Cape Water Supply System (WCWSS) Reconciliation Strategy and the Bulk Water Master Plan. The Reconciliation Strategy facilitates the reconciliation of current and predicted future water requirements with available water in the WCWSS over a 25-year planning period while the Bulk Water Master Plan addresses the infrastructure requirements for effective and efficient water treatment capacity, bulk storage and bulk transmission. Due to the integrated configuration of the bulk water supply infrastructure systems, capacity analysis is done both in an integrated manner and also at a system level under the two processes mentioned above. The WCWSS is an integrated and collectively managed system of dams, tunnels, canals, pump stations and pipelines from the Berg River system, the Riviersonderend River system, and the coastal rivers such as the Palmiet and Steenbras Rivers. In addition to supplying the City of Cape Town, the system supplies water to towns in the Overberg District, Local Municipalities in the West Coast and Cape Winelands District Municipalities (DMs) as well as providing irrigation water for agriculture. The integrated system helps optimise the use of the water resources in the region as it allows water to be transferred between dams and catchment systems to service various demand centers. In doing so, this improves the assurance of water supply to the users in the WCWSS.
The Reconciliation Strategy provides a decision support framework for making timeous and informed recommendations on water resource interventions that should be implemented to meet future water requirements. The Reconciliation strategy is regularly reviewed and updated to ensure its relevance in planning.

The following are key outputs of the WCWSS Reconciliation strategy report (2019):

- With regards to Water Allocations and water requirements, the table below provides a summary of the total water allocation for the City of Cape Town from the WCWSS. This allocation does not include the small local dams and groundwater supply to the City. The total allocation for the City of Cape Town has reduced to 346.9 million m3/a because of the following:
  (i). The City of Cape Town had a temporary water allocation of 28 million m3/a form the Theewaterskloof Dam, which was withdrawn in 2018 as agriculture has taken up their allocation. The water has been allocated to historically disadvantaged farmers.
  (ii). The City of Cape Town was finally allocated 70 million m3/a form the Berg River Dam in 2018, with the remaining 11 million m3/a of the dam's yield assigned to the three LMs in the West Coast DM.
  (iii). The allocation for the City of Cape Town from Wemmershoek Dam includes the water it supplies to the Drakenstein LM Bulk Water Supply Agreement (BWSA) for 17.3 million m3/a to supply Paarl and 8.5 million m3/a for the town of Wellington), and the Stellenbosch LM (BWSA of 2.0 million m3/a).

Table 11: Summary of the total water allocation for the City of Cape Town from the WCWSS

Source	Ownership of Dams/ Infrastructure	ELU released from WCWSS dams (million m3/a)	Comments
Riviersonderend (Theewaterskloof Dam)	DWS	90	The City of Cape Town had a temporary allocation of 28 million m3/a in addition to their ELU from TWK Dam. As the agricultural sector grew into their demands, this temporary allocation was curbed. Limitations experienced by the City of Cape Town at Voëlvlei Dam requires the allocation of 9 million m3/a from Voëlvlei Dam to be released from TWK Dam.
Berg River Dam	DWS	70	Water use Licence provided in November 2018. It is a transfer of water from TCTA. Limitations experienced by the City of Cape Town at Voëlvlei Dam requires 10 million m3/a, of the allocated amount at Voëlvlei to be supplied from the Berg River Dam.
Wemmershoek Dam	City of Cape Town	54	Includes Bulk Supply Agreements between the City of Cape Town and the Drakenstein and Stellenbosch LMs
Upper Steenbras Dam	City of Cape Town	40	
Lower Steenbras Dam	City of Cape Town		
Palmiet Pumped Storage Scheme	Eskom	22.5	Water is transferred to the Steenbras Dams for use by the City of Cape Town
Voëlvlei Dam	DWS	70.4	The abstractions from the Voëlvlei Dam were reduced to address the limitations in the City of Cape Town bulk water infrastructure. The City of Cape Town currently abstracts 51.4 million m3/a from the Voëlvlei Dam. The remainder of the allocation from the Voëlvlei Dam is taken from the TWK and Berg River Dams.
Total ELU - City of Cape Town		346.9	

A comparison of the planned water requirements and the current allocation for the City of Cape Town estimates that the current allocations will be exceeded by 2023 for all three scenarios if no additional water resource augmentation projects, including water re-use, desalination, and groundwater are developed to supplement the existing water sources. Climate change and the increased growth of invasive alien plants have been shown to markedly impact the yield of the WCWSS- if left unchecked, it will reduce the yield 2.5 times faster.

Future water resource development for the City of Cape Town is addressed in the City of Cape Town's Water Strategy. Commitment 3 of the Strategy contains the 10 year committed programme and also references the adaptable programme which will be implemented thereafter. The City of Cape Town is building water resource infrastructure to allow for a higher level of supply assurance (1:200) in order to reduce the likelihood of severe water restrictions being imposed in the future.

Bulk Water Master Plan

The future system planning was done so as to accommodate the future water demands. The future AADD of the study area is anticipated to be 1 644 Mℓ/d. This AADD will be realized in the year ± 2035 if the demand increases at a compounded growth rate of ± 2.9% per year.

The CCT has adopted a "low water demand curve" for future planning of bulk water infrastructure. This water demand curve has an annual compounded growth rate of approximately 2.0%. Considering a 2.0% growth rate in water demand, an AADD of 1382 Mℓ/d will approximately be reached at the end of the 20 year planning horizon.

Water Treatment Works (WTW)

The City of Cape Town owns and operates 12 WTWs with a total theoretical treatment capacity of 1 655 Mℓ/d. The dams supplying the WTW are listed in the tables below:

Table 12: Major dams supplying the City of Cape Town

MAJOR DAMS (99.6% of total capacity)	**BULK STORAGE ON 31 MAY 2017 – 2021**						
	CAPACITY	**CAP. LESS DEAD**	**%**	**%**	**%**	**%**	**%**
	Ml	**STORAGE**	**2017**	**2018**	**2019**	**2020**	**2021**
Wemmershoek	58 644	125 800	35.8	51.8	41.1	42.4	62.9
Steenbras Lower	33 517	33 517	23.5	34.5	40.2	48.2	62.4
Steenbras Upper	31 767	29 267	55.9	58.7	64.5	97.1	58.4
Voëlvlei	164 095	156 022	14.3	18.7	55.1	49.9	61.4
Theewaterskloof	480 188	432 250	13.6	15.9	36.8	52.0	81.0
Berg River	130 010	58 544	30.7	44.7	70.7	69.5	86.1
TOTAL STORED	898 300	500 571	175 130	225 556	417 309	493 707	677 739
TOTAL STORAGE		835 400	898 300	898 300	898 300	898 300	898 300
% STORAGE			19.5%	25.1%	46.5%	55.0%	75.5%

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).

Table 13: Minor dams suppling the City of Cape Town

MINOR DAMS (0.4% of Total System Capacity)	CAPACITY MI	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
Dams supplying Kloof Nek WTW:						
Hely Hutchinson	925	100	100.3	68.4	79.9	99.8
Woodhead	954	93.3	100.5	72.6	100.6	62.3
Dams supplying Constantia Nek WTW:						
Victoria	128	96.6	72.7	37	103	100
Alexandra	126	42	90.2	13	51.2	93.9
De Villiers	243	58.2	87.9	80.4	100.7	87.3
Dams supplying Brooklands WTW:						
Kleinplaats	1,368	38.2	60.3	40.6	38.8	86
Lewis Gay	182	32.7	100.5	0	51.3	74.6

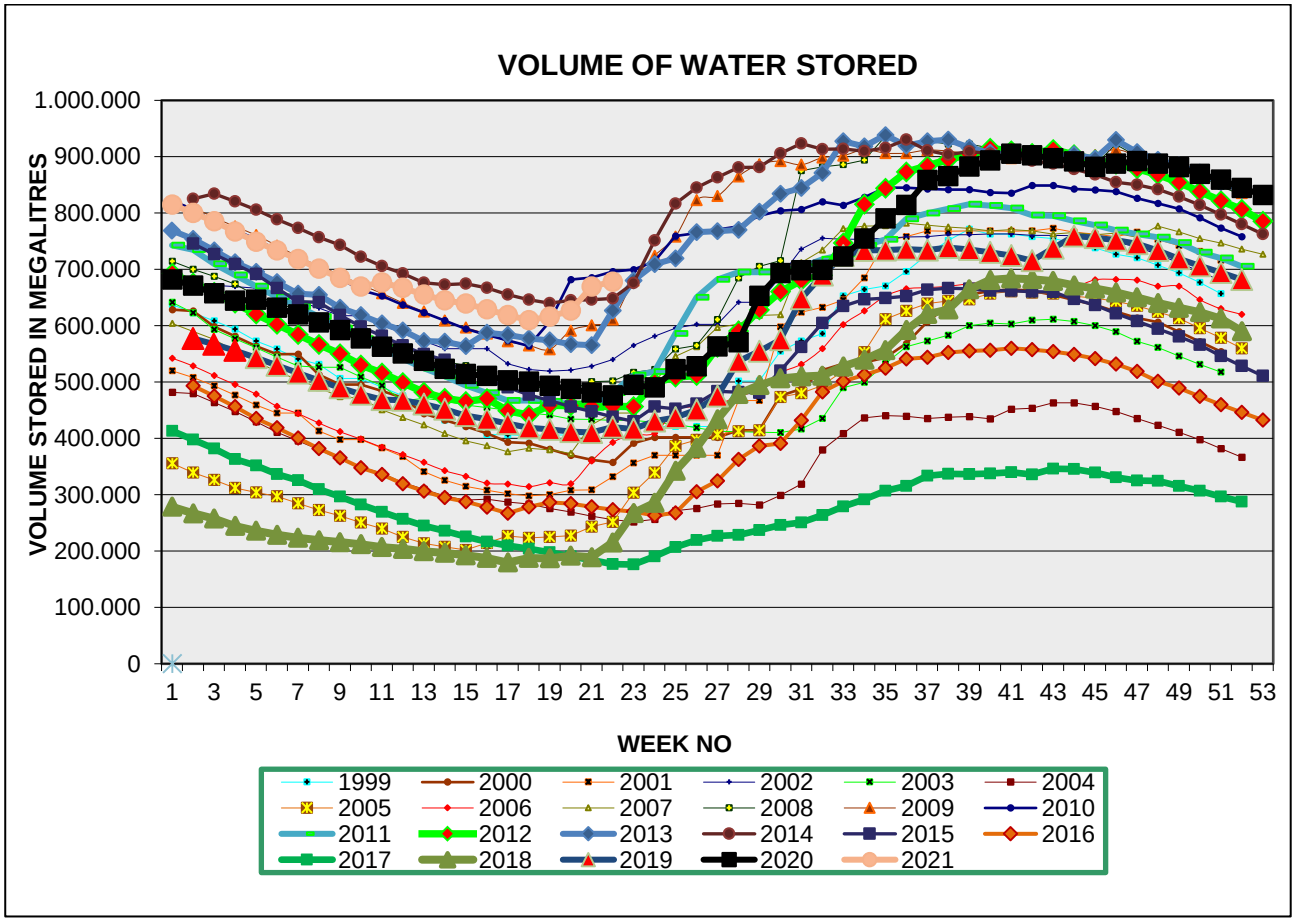


Figure 4: Graph showing the trend of the amount of water stored each week per annum

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.

The total capacity of all WTW's in the existing bulk supply system is 1 655 Mℓ/d. Given a peak week factor of 1.5, the current treatment capacity should be able to cope with an AADD of 1 655 ÷ 1,5 = 1 103 Mℓ/d. This is more than the 930 Mℓ/d AADD for which the present system was analyzed. Due to restrictions imposed during the recent drought, the AADD for 2019/20 Financial year was 665 Ml/d. This is increasing during the bounce-back period and expected to stabilize just below the original AADD given the changes in demand of residents and water saving technologies implemented on both the supply and demand sides.

Despite the available water treatment plant capacity, being able to cope with the current water demand, due to the age of the water treatment plants and other operational constraints the current maximum sustainable operating capacity of the water treatment plants is in the order of 1450 Ml/d. The following WTWs that are currently not able to operate at full capacity despite ongoing operation and maintenance, need further attention and investigation:

- Wemmershoek WTP – cannot operate at full capacity due to pipeline hydraulic and conveyance constraints and as a result of the reduced capacity of the filters. At a flow of approximately 230 Ml/d water starts backing up in the Wemmershoek pipeline at the WTW itself, limiting the output of the WTW. Ongoing remedial work on the filters further reduce the operating capacity of the WTW to approximately 200 Ml/d.
- Steenbras WTP – significant maintenance required especially w.r.t valves and the break pressure tank.
- Faure WTP – PLC urgently needs upgrading. Capacity of Faure needs to be confirmed. This study will be undertaken as part of the Faure New Water Scheme.

- Voelvlei WTP - Due to the bursts on the Voëlvlei pipeline it has been decided from an operational perspective to limit the capacity of the Voëlvlei WTW to 180 Ml/d (including conveyance capacity of the Voëlvlei pipeline).

A number of the Water Treatment works are 40+ years old and require sufficient downtime for periods of prolonged maintenance and refurbishment. It is proposed that new infrastructure be planned and implemented to allow any of the WTWs operated by the City to be able to go down for extended maintenance (1 month +). Currently the only two WTW which cannot go down for any extended period are the Voëlvlei WTW and Wemmershoek WTW.

In line with the City of Cape Town's Water Strategy, the City will be developing diverse sources of water at scale, including groundwater (TMG Aquifer and Cape Flats Aquifer), water reuse and desalination, and these schemes will be developed alongside and integrated with the existing surface water system. A number of these schemes also provide additional water treatment capacity.

Bulk Water Augmentation Scheme (BWAS)

There is motivation for the implementation of the BWAS scheme which will provide the following advantage:

- To meet the peak week growth in water demand,
- The scheme is considered a significant risk mitigation measure. Blackheath and Faure WTP are fed from Theewaterskloof Dam via the RSE tunnel system. Should anything happen to the tunnel or should the tunnel be out of operation for any extended period, the City would lose approximately 40% to 50% of its water treatment capacity as well as the ability to access approximately 45% of its current usable allocation of water resources. In addition to this the City would lose its flexibility to manage the bulk water supply system and also to draw preferentially from the different water resources.
- The scheme is a gravity scheme and can be fed from either the Berg River Dam or from Theewaterskloof Dam.
- The water treatment cost will be significantly less than water from Theewaterskloof Dam.
- The BWAS scheme will provide significant additional flexibility and redundancy in the bulk water supply system.

Bulk Water Supply Reservoirs

Name	Capacity (kl)	Top water level (m a.s.l.)
Faure	640 000	110.6
Plattekloof	570 900	111.0
Blackheath Lower	537 600	110.6
Tygerberg Large	276 000	110.6
Glen Gary	150 100	140.0
Newlands Upper	132 600	138.2
Blackheath Upper	48 200	174.5
Newlands Lower	46 000	106.0
Pella 40	40 000	239.4
Tygerberg Small	34 000	110.6
Monterey	23 300	189.1
Wynberg No. 2	22 200	118.2
Melkbos 1	20 000	100.0
Melkbos 2	20 000	100.0
Hospital 20	20 000	193.5
Hospital 10	10 000	193.5
Pella 10	10 000	242.0
Wynberg No. 1	8 400	118.2
Constantia Nek	3 370	230.0
Total storage capacity	2 612 670	

Time simulation of the Bulk Water network model shows that many of the reservoirs remain at or near their full levels since the available inflow (supply) meets or exceeds the average outflow (demand) over the peak week period. Such reservoirs include Faure, Blackheath Lower, Plattekloof, Glen Garry, Tygerberg No 1, Tygerberg No 2, Newlands Upper and Newlands Lower, both Hospital and both Pella reservoirs.

Some reservoirs on the other hand, experience a significant lowering of their water levels just after the peak day in the middle of the week. After this, the water levels gradually increase as the supply again start to dominate over the demand. Reservoirs where this phenomenon is reflected include Blackheath Upper, Wynberg No. 2, Monterey and Constantia Nek.

There are a few reservoirs where most of the capacity is utilized for balancing purposes and very little is available as emergency storage. These include Constantia Nek, Monterey, and to a lesser extent Wynberg No. 2 reservoir. Ideally, an upgrade of supply capacity and/or additional storage capacity is required at all these reservoirs.

Most of the large reservoirs remain practically full during the peak week and have most of their capacity available for emergency purposes. The security of supply is therefore very good. Various options exist in the operation of the system to utilize these surplus capacities in the event of an emergency.

The drought which was experienced between 2015 and 2017 highlighted the need for resilience in the bulk water supply system. The following additional infrastructure have been identified which will increase the flexibility and redundancy of the bulk water supply system.

- Additional bypass pump stations on the Wemmershoek pipeline in order to allow back-feeding from the proposed Muldersvlei Reservoir (part of BWAS) to Drakenstein Municipality;
- Additional bulk water infrastructure linking the Voëlvlei Water Treatment Plant with Swartland Water Treatment Plant and also linking Swartlands's bulk water supply infrastructure with the Atlantis Water Scheme.
- Pumping scheme between Blackheath Lower Reservoir and Blackheath Upper Reservoir
- Automation of selected control valves in order to manage the bulk water supply system.

Additional bulk water conveyance infrastructure is required as has been identified in the Bulk Water Masterplan. A 200 to 300 Ml/d (capacity still to be determined) bi-directional pump station is proposed enabling water to be pumped either from Glen Garry reservoir to the proposed Spes Bona reservoir or from Glen Garry reservoir to Blackheath Upper reservoir via the existing link pipeline. The timing and phasing of this infrastructure is currently under review as a result of the Water Strategy, the need to ensure additional redundancy and flexibility in the bulk water supply system, and also the reduced water demand following the drought. This includes the proposed 300 Ml Spes Bona Reservoir and Spes Bona to Glen Garry transfer scheme.

This additional infrastructure is in line with Commitment 4 of the Water Strategy, namely "Shared Benefits from Regional Water Resources" in order to share benefits and reduce risks.

The primary source of supply for the domestic water users in the WCWSS is the surface water resources. There has been a change in water mix as a result of the drought which has seen the following:

a. Increasing groundwater development and abstraction by the municipalities to supplement the surface water supplies of the WCWSS.

b. Development of desalination systems to supplement the water resources of the WCWSS. This volume is still minimal and accounts for less than 2% of the supplies in the WCWSS. This permanent Desalination plant should have first water by 2026.

Table 14: Existing water allocation for domestic and industries in the WCWSS

System	Allocation/Water Use Licence	Percentage of Sector Allocation
City of Cape Town	346.90	89.1%
Overberg Water	4.00	1.0%
Stellenbosch LM	3.00	0.8%
Wynland WUA - Industrial use (Stellenbosch)	0.14	0.0%
Wynland WUA - Industrial use (Helderberg)	0.51	0.1%
Drakenstein LM	1.17	0.3%
West Coast DM	31.66	8.1%
Lime Sales/ Iscor JV	0.07	0.0%
Piketberg	0.70	0.2%
A Serdyn	0.04	0.0%
Pretoria Portland Cement (PPC) - De Hoek	0.84	0.2%
Pretoria Portland Cement (PPC)	0.44	0.1%
Pretoria Portland Cement (PPC) - Riebeek Wes	-	
WCWSS Total Allocation	**389.47**	**100.0%**

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 current SANS 241 standard 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.

Scientific Services is ISO/IEC 17025:2017 SANAS accredited laboratory. The Quality Assurance and monitoring services of the branch focuses on total quality management applying the principles of ISO/IEC 17025:2017 Requirements to support the Analytical Services, Research and Development, Process Technology and Finance and Administration sections of the branch. The monitoring services provides reliable sampling services, development of monitoring programmes and auditing of the City's monitoring points. The objective is to ensure that a quality assurance management system is implemented and maintained to ensure and conserve credibility of our services.

In order to ensure the integrity of samples are maintained, the sampling process will in future be added onto the SANAS Scope of Accreditation.

The water quality report below indicates the analytical data and approximate distribution for Cape Town drinking water for May 2021 (refer to Table). The SANS Specification is also stipulated on this report. Water Compliance has exceeded the target of 98% at 99.08% (3rd Quarter SDBIP, 20/21).

Table 15: Water quality report below indicates the analytical data and approximate distribution for Cape Town drinking water for May 2021

Water Supply Outlets	Sample Points Per Water Supply Outlet	Sample Points Sampled	Number of Samples taken for May		% Compliance SANS 241			
					May month		12 Month Rolling Average	
			Chemical (Acute, chronic, aesthetic & operational)	Micro-biological (Acute)	Chemical (Acute, chronic, aesthetic & operational)	Micro-biological (Acute)	Chemical (Acute, chronic, aesthetic & operational)	Micro-biological (Acute)
Water Treatment Plants	14	10	64	61	99.46	100.00	99.50	98.67
Reservoir	27	27	115	118	97.76	99.26	98.43	99.66
Distribution	233	197	617	629	98.33	100.00	97.80	99.82
Total	**274**	**234**	**796**	**808**	**98.52**	**99.75**	**98.58**	**99.38**

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 2020/2021 financial year a total of 211 industrial discharge points were monitored on a monthly basis. A total of 6 fines for non-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.

The recent addition to the team is the Water Inspectorate (WI) whose function is the compliance monitoring and enforcement of the Water by-law to ensure responsible use and safe water installations, protecting the infrastructure and the quality of the product.

Water Pollution Control follows a risk model for prioritizing areas needing serious attention than others, where the risk of pollution and damage is medium to high.

Quality of effluent

A WwTW is designed to remove organic material (expressed as chemical oxygen demand, or COD), nitrogen and phosphorus or any combination of the three. The designed capacity is dependent on when the WwTW was designed as it relates to discharge standards (treated effluent quality) enforced at the time. These pollutants are present in the incoming wastewater and are expressed as

concentrations (mg/l). The nutrient load is calculated by multiplying the concentration in the wastewater by the daily flow rate of the wastewater (i.e. mg/l x Ml/d = kg/d, which is the daily nutrient load, or mass). Each WwTW is therefore designed to remove a maximum daily nutrient load of the pollutants.

If the daily nutrient load is higher than the design nutrient load, the treated effluent quality will start deteriorating, i.e. the WwTW will no longer produce the treated effluent quality it was designed to produce.

With reference to a WwTW's treatment capacity, it should be noted that:

- A WwTW can operate above its design ADWF capacity and still be operating below its nutrient load design capacity, provided the nutrient load is within the design specifications;
- A WwTW can operate below its design flow rate and still be operating above design capacity (overload conditions) if the nutrient load exceeds the design nutrient loads;
- A WwTW is designed for predetermined wastewater characteristics and flows. If the wastewater characteristics change over time, e.g. the wastewater becomes stronger (higher in concentration), then the same WwTW can only treat a reduced flow if it is to achieve the same treated effluent quality;
- WwTWs produce either primary or waste activated sludges, or both. These wastewater sludges must be treated and disposed of as per relevant legislation;
- Should an existing WwTW be required to:

(i) Treat a larger volume of wastewater;

(ii) Treat a higher nutrient load; or

(iii) Produce a better quality treated effluent (e.g. stricter license conditions),

The project to upgrade the existing WwTW infrastructure will require a significant time (4 - 8 years, depending on the work required) to implement. In other words, implementing changes at WwTWs takes a significant time and cannot be implemented quickly.

The overall Microbiological, Chemical and Physical compliance percentages of the final effluent samples taken at the end of June 2021 at the various WWTWs are summarised in the table below.

	PHYSICAL									CHEMICAL									MICROBIOLOGICAL						
	SUSPENDED SOLIDS			POTENTIAL HYDROGEN			CONDUCTIVITY			CHEMICAL OXYGEN DEMAND			AMMONIA			NITRATE/ NITRITES			ORTHO-PHOSPHATE			E.Coli			
WwTW	Samples Taken	Number Complied	Percentage Compliance	Samples Taken	Number Complied	Percentage compliance	Samples Taken	Number Complied	Percentage compliance	Samples Taken	Number Complied	Percentage compliance	Samples Taken	Number Complied	Percentage compliance	Samples Taken	Number Complied	Percentage compliance	Samples Taken	Number Complied	Percentage compliance	Samples Taken	Number Complied	Percentage compliance	Overall compliance
Athlone	52	16	30.8	52	52	100	52	52	100	51	28	54.9	52	15	28.8	51	46	90.2	52	51	98.1	52	2	3.8	63.29
Bellville	56	35	62.5	55	55	100	55	55	100	54	25	46.3	56	6	10.7	56	56	100	56	50	89.3	56	43	76.8	73.20
Borcherds Quarry	55	24	43.6	55	55	100	55	55	100	55	10	18.2	55	38	69.1	55	52	94.5	55	37	67.3	55	52	94.5	73.41
Camps Bay	361	264	73.1	362	360	99.4				359	283	78.8	363	241	66.4				363	363	100				83.57
Cape Flats	53	35	66.0	53	53	100	53	53	100	53	11	20.8	53	0	0.0	53	53	100	53	50	94.3	53	0	0.0	60.14
Fisantekraal	52	52	100	52	52	100	52	52	100	52	52	100	52	52	100	52	51	98.1	52	52	100	53	51	96.2	99.28
Green Point	361	303	83.9	363	360	99.2				360	344	95.6	364	363	99.7				363	363	100				95.69
Gordons Bay	53	52	98.1	53	46	86.8	53	53	100	53	52	98.1	53	51	96.2	53	27	50.9	53	53	100	53	51	96.2	90.80
Hout Bay	364	312	85.7	364	364	100				360	324	90.0	365	324	88.8				365	365	100				92.90
Klipheuwel	53	16	30.2	53	53	100	53	53	100	53	9	17.0	53	1	1.9	53	50	94.3	53	53	100	55	41	74.5	64.79
Kraaifontein	53	51	96.2	54	53	98.1	54	54	100	54	51	94.4	54	54	100	53	53	100	54	54	100	57	51	89.5	97.23
Llandudno	48	48	100	48	48	100	48	48	100	47	45	95.7	48	44	91,7	47	2	4.3	48	48	100	47	35	74.5	83.46
Macassar	52	24	46.2	53	53	100	53	53	100	53	2	3.8	53	0	0.0	53	53	100	53	50	94.3	53	29	54.7	62.41
Melkbosstrand	52	50	96.2	52	52	100	52	52	100	51	50	98.0	52	52	100	52	52	100	52	49	94.2	53	48	90.6	97.36
Millers Point	48	48	100	48	47	97.9	48	48	100	47	47	100	48	48	100	48	41	85.4	48	48	100	48	48	100	97.91
Mitchells Plain	52	36	69.2	53	53	100	53	53	100	53	33	62.3	53	38	71.7	53	48	90.6	53	48	90.6	53	14	26.4	76.36
Oudekraal	48	48	100	48	48	100	48	48	100	48	48	100	48	45	93.8	48	28	58.3	48	48	100	47	47	100	93.99
Potsdam	53	39	73.6	53	53	100	53	53	100	53	32	60.4	53	34	64.2	53	53	100	53	52	98.1	53	45	84.9	85.14
Scottsdene	54	49	90.7	54	54	100	54	54	100	54	47	87.0	54	43	79.6	54	54	100	54	53	98.1	56	45	80.4	91.94
Simons Town	52	49	94.2	52	52	100	52	50	96.2	52	0	0.0	52	22	42.3	52	0	0.0	52	43	82.7	52	18	34.6	56.25
Wesfleur Domestic	52	52	100	52	51	98.1	51	51	100	52	52	100	52	52	100	52	46	88.5	52	52	100	55	49	89.1	96.89
Wesfleur Industrial	52	48	92.3	52	52	100	52	37	71.2	52	13	25.0	52	20	38.5	52	51	98.1	52	45	86.5	54	34	63.0	71.77
Wildevoel vlei	52	20	38.5	52	52	100	52	52	100	51	16	31.4	52	0	0.0	52	52	100	52	52	100	52	41	78.8	68.67
Zandvliet	52	28	53.8	52	52	100	52	52	100	52	20	38.5	52	0	0.0	52	52	100	52	52	100	52	51	98.1	73.80
TOTAL/ MEANS	**2 180**	**1 699**	78	**2 185**	**2 170**	99.3	**1 095**	**1 078**	98	**2 169**	**1 594**	73	**2 189**	**1 543**	70.5	**1094**	**920**	84.1	**2 188**	**2 131**	97	**1 109**	**795**	72	81.26

As seen from the table above many of the WwTWs are non- compliant with the latest discharge standards from DWS. Compliance is any scoring between 90-100%. As mentioned in the paragraph preceding the table, WwTWs are designed to meet specific requirements/ licence conditions set out at the time by DWS, the actual upgrade of the plant to achieve the desired results takes anywhere between 4-8 years. After this time the licencing conditions may have changed again, resulting in non-compliance-. The upgrading and capacity extension projects for the WwTWs will be dominating the budget over the next 3- 5 years as many of the upgrades have already commenced.

The national Department of Water and Sanitation introduced the Blue Drop and Green Drop certification programmes in 2008. These measured the most important indicators for sustainable and safe water and wastewater service delivery, such as: management commitment; safety and risk planning and mitigation; process management; quality compliance; staff qualifications; and adequate budgets. The goal of the Blue Drop programme was compliance of water supply systems with the national Drinking Water Quality Standards, while the goal of the Green Drop was compliance of wastewater treatment works with the national Wastewater Discharge Standards.

In 2012, the No Drop programme, which measured water usage indicators such as water use per capita, water losses and water use efficiency, was also introduced for each water supply area.

The No Drop incentive based regulatory programme was developed to create an environment to improve service delivery and water security and reduce water losses and non-revenue water. The No Drop incentive based regulatory programme is primarily based on the Regulations Relating to Compulsory National Standards and Measures to Conserve Water. Regulations R509, 2001 under the Water Services Act, 1997 and other legislation.

These programmes will be reinstated soon, the first of which is the No Drop Programme, the submission date of information has been set for the 30 September 2021.

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, 2017).

The availability of Water Resources and adequate bulk water and wastewater infrastructure to meet the growing water demand in the City of Cape Town (CCT) is a limiting constraint to the social upliftment and economic prosperity of the city but the City has made tremendous strides in ensuring this constraint is limited. The 2007 WC/WDM strategy highlighted that as early as 1995, City of Cape Town committed itself to a 10% saving on the historical demand growth of 4 % per annum.

The latest 10-year WC/WDM Strategy has 5 goals each with numerous objectives that will be realised through various programmes.

In summary:

Goal A- CCT must by 2020/21 reduce and maintain the Non-Revenue Water by Volume to below 15% of Water Supplied.

A1	Reduce and maintain low levels of water losses through the reticulation system
A2	Reduce and maintain low levels of non-revenue demand by consumers
A3	Adopt and implement proactive O & M measures
A4	Reduce and maintain low levels of billing and metering losses

Goal B: Water wastage by consumers should be reduced and maintained to below 2% of the total demand by 2020/21 and relevant consumer's categories should achieve targeted unit consumption by 2020/21

B1	Promote the efficient use of water to consumers and customers
B2	Regulate and enforce the prevention of wastage of water
B3	Ensure the efficient use of water in new connections and developments
B4	Introduce more equitable tariffs and informative billing
B5	Assist and capacitate consumers to be water efficient, including the introduction of leak repair and retrofitting projects
B6	Reduce and maintain low levels of inefficient water use by Council (internal money)

Goal C CCT must by 2020/21 ensure and maintain ongoing effective management systems and implement Integrated Water Resource Planning in all decisions regarding Water Resources augmentation, bulk infrastructure development and water efficiency projects.

C1	Establish appropriate district management areas and monitor the unaccountable for water
C2	Ensure adequate information and policies to support decision-making
C3	Ensure all decisions are supported in terms of Integrated Resource Planning (IRP).
C4	Monitor the impact of WC/WDM measures and KPI

Goal D Adopt WC/WDM as one of key water service delivery strategies, give priority to its implementation and ensure an adequate enabling environment.

D1	Ensure adequate financial resources
D2	Ensure adequate human resources and processes
D3	Ensure adequate transparency, stakeholder buy-in and commitment

Goal E Reduce the projected potable water demand to an average growth rate of no more than 1% p.a. for the next ten years and conserve Cape Town's Water Resources

E1	Maximise the use of treated effluent
E2	Promote alternative Water Resources and technologies
E3	Conservation of existing Water Resources
E4	Ensure the quality of treated effluent is of suitable standards

The budget for the next ten years to hopefully realise these 5 policies and all of its programmes is approximately R 1 480 719 000.

Challenges facing the implementation of WC/WDM in CCT were identified according to discussions held from members of the WDM section. Challenges were broad spectrum, not necessarily focused on WC/WDM, but guided within the context of discussion around how the CCT could implement WC/WDM more effectively.

Some of the challenges experienced are as follows:

- Vandalism and theft of infrastructure
- Lack of clearly defined processes
- Lack of accountability
- Lack of sufficient skilled staff
- Lack of sufficient capital budgets
- Lack of sufficient operating budgets
- Over-regulation/reporting
- Staff inefficiency
- Contract award delays
- Unbilled consumption
- Task interference

- Inter-Departmental lack of synergy
- Erratic social behaviour – inability to sustain lowered consumption
- Enabling factors that were identified were as follows:
- Political support
- Social behaviour in terms of willingness to pay for services
- Social behaviour in terms of acceptance of water conservation
- Availability of materials

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.

There are approximately 348 water zones (per 20210216 dated water zone shape file). Of the 348 zones, 129 are advanced pressure managed zones, 5 are consequential PM, 9 are designed PRV zones, 2 are DMA's, 27 are investigated PRV zones, 47 are not pressure managed, 22 are not to be pressure managed (for various reasons), 1 proposed DMA Zone, 31 proposed PRV zone, 43 PRV zone, 27 Reticulation PRV zone and 5 are WDM pressure managed zones.

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 2020/21 financial year, a number of successful WC/WDM projects were implemented,:

- Water meters replaced re-fixed/relocated (2386)
- WDM Devices installed (1487)

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 16: City of Cape Town Water Balance (June 2021)

(A) System Input 268 485 210 **100%**	**(B)** Authorised 196 712 246 **73.3%**	**(D)** Billed 177 874 440 **66.3%**	**(H)** metered 177 874 440 **66.3%**	External Customers	24 643 609	**9.2%**	**(Q)** Revenue Water 177 874 440 **66.3%**
				Internal Customers	153 230 831	**57.1%**	
			(I) Unmetered		0	**0.0%**	
		(E) Unbilled 18 837 806 **7.0%**	**(J)** Metered 10 044 806 **3.7%**	Informal Settlements	7 691 250	**2.9%**	**(R)** NRW 90 610 769 **33.7%**
				Formal Metered Unbillec	2 353 556	**0.9%**	
			(K) Unmetered 8 793 000 **3.3%**	Formal Unmetered	8 793 000	**3.3%**	
	(C) Losses (UAW) 71 772 963 **26.7%**	**(F)** Apparent Losses 12 271 799 **4.6%**	**(L)** Unauthorised		2 619 105	**1.0%**	
			(M) Meter Inaccuracies		9 652 694	**3.6%**	
		(G) Real Losses 59 501 164 **22.2%**	**(N)** Mains		49 060 771	**18.3%**	
			(O) Storage		1 160	**0.0%**	
			(P) Connections		10 819 535	**4.0%**	

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 28.2 % and 35.3% respectively (2020/21).

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 39% (Green Cape, 2021) and the world average value of 35%.

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 Directorate 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.

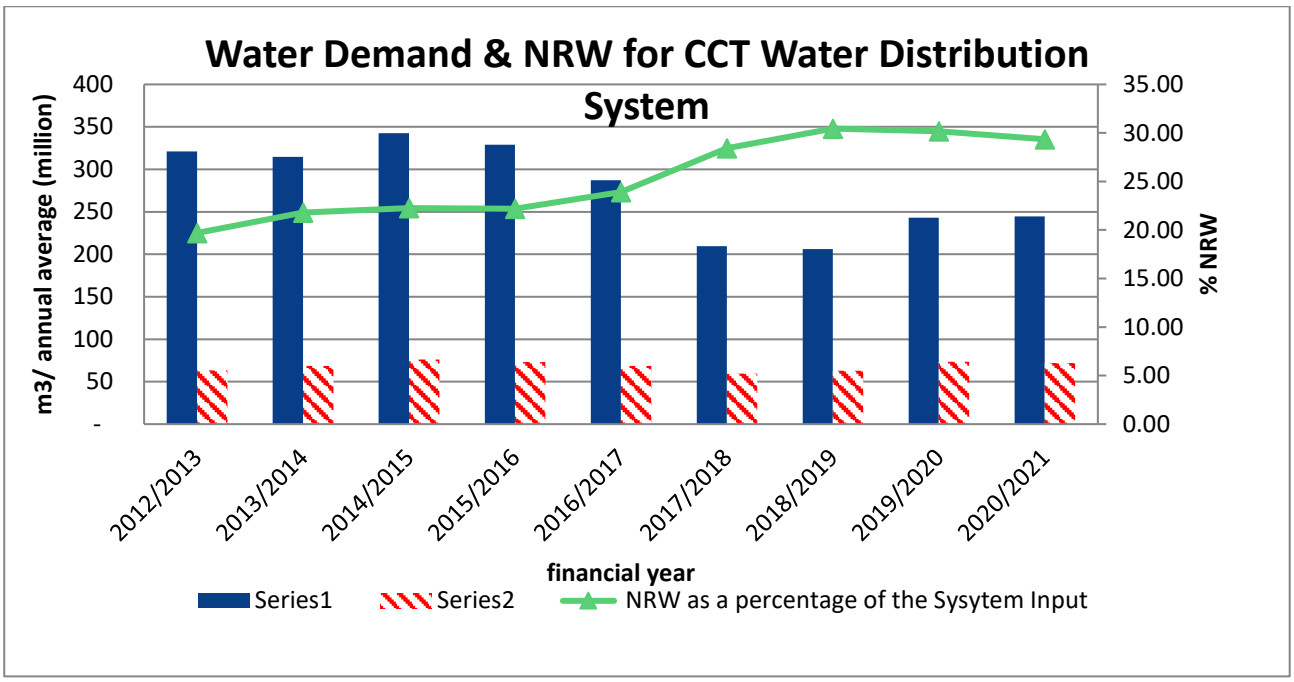


Figure 5: Graph showing the trends of the Water Demand and the % NRW for the CCT

Business Element 9: Financial Profile

Capital Expenditure:

Capital expenditure budgeted for the year 2020/2021 amounted to approximately R1 694 000 000 with an expenditure level reached against the current budget.

Below is the summary of the Capex since 2022/23 till 2024/25

Table 17: Capex summary by branch for the period 2022-2025

Department	Branch	Sum of Approved Adjusted Budget 2022/23	Sum of Approved Adjusted Budget 2023/24	Sum of Proposed Budget 2024/25
Management: WS	**Management: WS**	140,000	140,000	140,000
Bulk Services	**Bulk Water**	604,037,822	834,481,400	1,436,389,370
	Catchment and Stormwater Management	165,239,314	176,056,018	252,025,429
	Wastewater	971,625,515	1,805,088,869	1,326,260,239
Commercial Services	**Customer Services**	205,000,000	400,000,000	505,000,000
	Finance & Commercial Water & Sanitation	1,000,000	1,000,000	1,000,000
Distribution Services	**Informal Settlements Basic Services**	36,000,000	38,000,000	38,000,000
	Reticulation	366,643,413	752,189,277	974,576,000
Technical Services	**Auxiliary Services**	36,618,408	46,685,029	62,000,000
	Engineering & Asset Management	72,725,200	135,000,000	123,500,000
	Scientific Services	11,401,592	4,737,703	6,000,000
	Water Demand Management	48,000,000	85,000,000	75,000,000
Grand Total		**2,518,431,264**	**4,278,378,296**	**4,799,891,038**

* Please note that there are ongoing budget amendments and the final approved budget will override where there are differences between the plan and budget

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.
The planned expenditure by type for the City's Water and Sanitation Directorate as included in the latest Adjusted Budget:

Table 18: Operating Expenditure Budget for MTREF period

Expenditure Item	FY 2021/2022 Budget R'000	FY 2022/2023 Budget R'000	FY 2023/2024* Budget R'000
Employee Related Cost	R2 084 503	R2 583 127	R2 360 970
Debt Impairment	R510 000	R484 924	R488 072
Collection Costs	R2 196	R2 196	R2 400
Depreciation & asset impairment	R548 824	R587 782	R571 203
Contracted Services	R921 670	R1 211 304	R905 916
Transfers and Subsidies	R30 300	R28 000	R27 900
Other Expenditure	R4 747 760	R4 131 683	R2 823 046
Losses	R645 574	R454 297	R12 003
Repairs and Maintenance	R1 590 943	R1 394 554	R1 643 236
Insurance Fund	R1	R1	R49 308
Appropriations	R346 614	R270 286	R744 606
Internal Charges - Secondary	R2 193 260	R2 595 052	R4 542 884
Over/Under-absorption	**R13 621 645**	**R13 744 205**	**R14 171 544**

***To be reviewed on an annual basis using the standard MTREF methodology**

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. The 0- 6 kl usage (Step

one) is currently only free for indigent households (no longer for everyone) and as of 1 July 2021, step 1 to step 4 of the block tariff for water and sanitation is free for indigent households. City of Cape Town's block tariff structure for the previous and the current financial years for water and sanitation is presented on the table below:

Residential Water Tariffs (Domestic Full and Domestic Cluster)		
Water Steps (1kl = 1000 litres)	**Level 0 (2020/21)** From 1/11/2020 **Rands (incl VAT)**	**Level 0 (2021/22)** From 1/07/2021 **Rands (incl VAT)**
Step 1 (0 ≤ 6kl)	R17.37 (free for indigent households)	R18.23 (free for indigent households)
Step 2 (>6 ≤ 10.5kl)	R23.87 (free for indigent households)	R25.06 (free for indigent households)
Step 3 (>10.5 ≤ 35kl)	R32.43	R34.05 (free for indigent households)
Step 4 (>35kl)	R59.85	R62.84 (free for indigent households)

Residential Sanitation Tariffs (Domestic Full and Domestic Cluster)		
Water Steps (1kl = 1000 litres)	**Level 0 (2020/21)** From 1/11/2020 **Rands (incl VAT**	**Level 0 (2021/22)** From 1/07/2021 **Rands (incl VAT)**
Step 1 (0 ≤ 4.2kl)	R15.26 (free for indigent households)	R16.03 (free for indigent households)
Step 2 (>4.2 ≤ 7.35kl)	R20.97 (free for indigent households)	R22.02 (free for indigent households)
Step 3 (>7.35 ≤ 24.5kl)	R29.45	R30.93 (free for indigent households)
Step 4 (>24.5 ≤ 35kl)	R46.33	R48.64 (free for indigent households)

** Sanitation charged to a maximum of 35kl*

Domestic Full = Stand-alone houses

Domestic Cluster = Flats, sectional title units, cluster developments and gated villages

Business Element 10: Water Services Institutional Arrangements

The City of Cape Town's Water and Sanitation Directorate has recently changed the organisational structure. The organogram below shows the four main departments and the newly restructured ED's Office, with their own directors and the branches that they are comprised of:

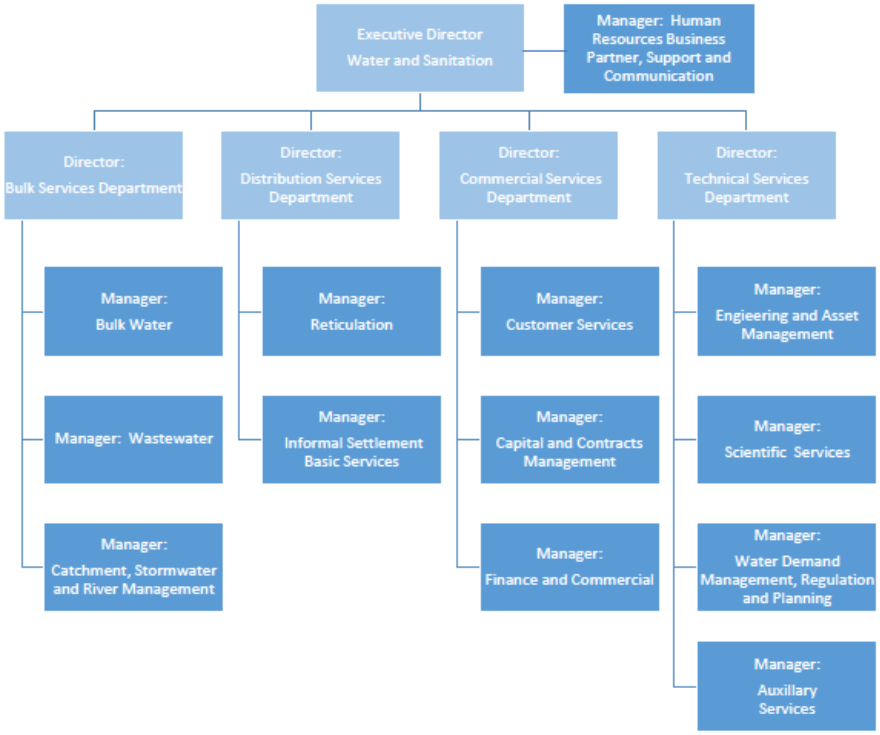


Figure 6: Organogram showing the new Water and Sanitation Directorate organisational structure

The new organizational structure and seven identified programmes have been developed to respond to the full challenge to address water resource shortage, infrastructure backlogs, customer relations, and the expected proliferation of informality.

The challenge to sustainably address the infrastructure needs within the financial constraints of keeping the tariffs affordable and providing a high quality level of service will require conscious trade-offs. Maintaining the correct balance of the growing need for augmenting expensive bulk infrastructure, maintaining levels of service and building a responsive and appropriately skilled staff compliment will be critical.

The combined slow economy, post drought recovery, unstable Eskom energy supply and Covid-19 pandemic impact will require careful prioritization.

The Water and Sanitation Directorate is in active support of the collective commitment to the City values of Integrity, Service Excellence, Accountability, Trust and Accessibility.

Improved Administrative Management

The Directorate 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 departments according to the requirements of ISO 9001 Standards.

Risk and Safety Management

The Directorate 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 Directorate, 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 Directorate. 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 Directorate.
- 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 departments is also carried out annually.

Staffing strategy

In order to fulfil its mandate and achieve its strategic objectives, Water and Sanitation Directorate 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 Directorate define a clear and succinct staffing strategic direction. In doing so, the Directorate 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 Departments and respective Branches are ultimately responsible for this initiative. The effective implementation of the staffing strategy will enable the Directorate 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.

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 Directorate 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 4 administrative regions within 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 2017/18 financial year are drawn from the CCT's Water and Sanitation Services Customer Perception and Satisfaction Survey (official title).

and are as follows:

- In terms of **drinking water and water quality**, leaks, supply disruptions (availability), pressure management and water cleanliness were raised as existing issues in need of intervention. The key intervention recommended in the study was for the supply of standpipes in informal settlements to be increased, and the existing stock to be better maintained.
- Overflowing manholes, blocked drains/ sewers and the state (cleanliness, maintenance, supply) of shared toilet facilities emerged as the most frequently cited issues with **sewage and wastewater** services provided by the City. In addition to infrastructure upgrade/ expansion/maintenance, the survey revealed that significant demand exists from businesses to make use of treated effluent if provided by the City at a lower cost than that of potable water.
- With regards to **stormwater services**, flooding (of roads and properties) and blocked catch pits were commonly stated sources of dissatisfaction from residents and businesses. Respondents expressed a desire for the City to explore avenues through which more rainwater could be captured through the stormwater system.
- As the first post-drought edition of the CPSS, new questions under the **water conservation** theme revealed how the majority of respondents considered the City's Day Zero messaging and drought campaign as having been successful. Continued public education was seen by survey respondents as a means by which water conservation efforts could be sustained.
- Whilst the majority of respondents feel that the City's water-related **metering** and billing are accurate, input from residents and businesses indicated a desire for metering to be undertaken more frequently, and for **billing** to be made easier to understand.
- Traditional **communication** channels (mass media, contact centre, visiting municipal offices) prevail in terms of current and preferred future use by survey respondents. The findings indicate that improved communication channels (e.g. ward councillors), content (regular

progress/status updates), and capacity (responsiveness) may allow the City to foster more positive sentiment from its WSD customers.

Some results from the survey are as follows:

Satisfaction with drinking water and water quality:

Attribute	% Satisfied: Informal	% Satisfied: Formal	% Satisfied: Business
Taste	68	70	72
Smell	70	73	73
Appearance	67	74	74
Pressure	62	70	70
Availability	49	60	60
Overall Service	57	69	69

Informal respondents have a significantly lower level of satisfaction than the other groups across all the water quality attributes considered. Notably, less than half of informal respondents are satisfied with the availability of water, this encompassing the quantity and duration of supply interruptions. The figures presented in the table signify an overall reduction in satisfaction compared to the previous year in which the CPSS was undertaken.

Satisfaction with sewage, wastewater and share toilets:

The customers scored this section as follows:

- Informal: 39%
- Formal: 66%
- Business: 59%

Over half of formal and business respondents indicated they are satisfied with the sewage and wastewater service provided by the City. This may be contrasted against the majority of informal respondents who are dissatisfied with the sewage and shared toilet service they receive, with a fifth of their complaints being about their shared latrine not working.

The Customer Services branch, a new branch established in late 2019 is an important milestone for the City to enable efficiency, financial sustainability and improve service delivery.

The purpose of the Customer Service Branch is to consolidate and direct all water customer services under a new Customer Services Manager responsible for:

- Optimised water meter management operations
- Accurate billing based on actual meter readings
- Effective debt management & revenue collection
- Responsive customer queries management
- Business analysis functions aimed at co-ordinating SAP/ERP requirements, quality assurance and continuous improvement

Section B: State of Water Services Planning

This WSDP for the 2022/2023 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, 2017/2018 financial year
- Sewer Master Plan, City of Cape Town, 2017/2018 financial year

The City of Cape Town is currently busy with the updating of their Water and Sewer Master Plans. The Water and Sewer Master Plan process entails the establishment of computer models for the water systems and the sewer systems within the Metro.

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
- Sewer Pump Station Condition Assessment currently in progress – To date up to 40% of the critical pump stations have been assessed

Water Safety Plans are in place for the distribution systems and treatment facilities. W2RAPs are also in place for all the WWTWs and the sewer drainage networks.

Water Safety Plans are a form of water quality assurance through a comprehensive risk assessment and risk management approach that encompasses all steps in water supply from catchment to consumer. The multiple barrier principle implies that actions are required at all stages in the process of producing and distributing water in order to protect water quality.

The W2RAP is an all-inclusive risk analysis tool by which risks associated with the management of collection, treatment and disposal of wastewater are identified and rated (quantified). The W2RAP is used by the City to manage the identified risks according to its potential impacts on the receiving environment / community / resources.

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 Directorate 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.

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 option of getting an external service provider to dedicate their time to sourcing and populating the database needs to be investigated.

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 on and/or provide more housing for the people living in 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 still committed to poverty alleviation through their subsidised services to indigent households.

Service Levels

There is a need for an improved level of service within the Informal Settlements and Backyarders as seen in section A Service level business element. 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 may 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 low-income households are cross subsidised by the tariffs and the Indigent Policy.

Post drought, various alternative waterless technologies were explored and some successfully implemented. 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 achieve its Vision by 2040.

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. This needs to be further developed, to fast track service delivery and to sustain technology lifecycle maintenance.

The other issue relating to informal settlement servicing is the rate at which informality increases and the fact that the City cannot provide formal housing fast enough to keep up with the demand. There is a concept called Managed Land Settlement (MLS), which is a process of servicing large tracts of land and allowing households to occupy planned serviced sites in an informal structure. The household is then expected to formalise the dwelling through incremental investment into a formal house over time.

The implications for the Water and Sanitation Directorate is unlike formal developments, the servicing of the MLS sites will have to be very rapid and the supporting bulk services will have to be available. For water and sanitation this should be an individual metered connection via a water management device/AMI and a sewer connection within a prefabricated toilet structure. The result of back-yarder residents is that the density increase in the affected areas increases the water demand and sewer load on existing infrastructure considerably. Areas where back-yarding is anticipated it would be cost effective if the opportunity exists, to install services with additional capacity and allow easy backyard sewer connections upfront.

Planning for W&S infrastructure will be in support of Human Settlements and Spatial Planning initiatives for the City, such as the Management Land Settlement programme and the Metropolitan Spatial Development Framework (MSDF).

With respect to the effluent discharged from industrial sites, non-complying and polluting trade effluent often affects the wastewater treatment process serving the catchment. The size and efficiency of the inspectorate have been increased over the past few years. 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. Regarding the number of job opportunities created through the Expanded Public Works Programme (EPWP), the Water and Sanitation Directorate consistently contributes to job creation. The Covid 19 Pandemic than began last year, 2020, caused all the EPWP projects to be suspended. For the 2019/ 2020 financial year, the target was 2000 job opportunities, but the departments only managed to create 1138 opportunities before Lockdown began.

As urbanisation continues at high levels it is likely that more residents will enter the indigent household bracket. This in turn means more and more people could fall within the CCT's subsidised or emergency housing programme creating 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:

The overarching aim of treating wastewater is to treat the various wastewaters produced by residents, commercial and industrial enterprises concentrated in an urban environment. This is necessary to minimize the pollution of the receiving environment by discharging treated effluent that complies with respective license discharge limits and to treat and dispose of all wastewater sludges produced at the Wastewater Treatment Works (WwTW) sustainably and in accordance with all relevant legislation.

One of the main aims of all spheres of government is to encourage investment in an urban area for economic growth, which in turn results in job creation, poverty alleviation and ultimately prosperity. This in turn attracts more people to the urban area and so the cycle continues. As the urban environment grows, so does the volume and pollution load of the wastewaters produced within it.

In order to prevent increased pollution of the urban waterways and coastlines, continued investment in wastewater treatment is required. Unfortunately, wastewater treatment has historically been underinvested in, as it is not on the foremost mind of residents who generally do not understand the systems and processes in place for the transportation and treatment of wastewater. Underinvestment in wastewater treatment can take up to a decade or more to manifest, and another decade or more to remedy. Hence the importance of master planning, to identify required infrastructure upgrades, estimate the financial requirements.

A major direct risk to the master planning process (or the project pipelines initiative) identified in the following section is a change in effluent license by the regulatory authority. All projects identified and included in are geared to meet the current licensed effluent discharge limits. Should the license be reviewed and more stringent discharge standards be enforced, an entire new strategy for all our Wastewater Works would be required dependent on the standards required. The regulatory authority allows time for implementation (usually 5 years), but the timeframe may not be long enough to implement what is required. If considered unreasonable, new licenses can be, and are, appealed by the City, but the outcomes are not always favorable.

The risks of cancelling, postponing or otherwise delaying upgrades (capacity or otherwise) to WwTW are generally the same, regardless of the WwTW affected:

- Treated effluent quality will deteriorate and pollution levels within the receiving water body (river, estuary, bay or ocean) will increase;
- Regulator may issue pre-directives and / or directives which are legal documents that could result in significant monetary fines and / or charging and ultimately imprisonment of officials;
- Development stop in catchment is implemented, meaning that no new developments are approved from a wastewater treatment perspective until the respective WwTW is upgraded (this is currently the case in the Macassar, Zandvliet and Potsdam catchments) – this applies to all new residential (private and public), commercial and industrial developments;
- Supply of treated effluent to users may be suspended completely, or users will switch back to potable water due to quality deterioration which will thereby increase potable water usage;
- Affect current and future indirect reuse schemes (managed aquifer recharge, e.g. Cape Flats Aquifer, Atlantis Aquifer), where the aquifer is recharged with treated effluent from the WwTWs and water is withdrawn and treated for potable purposes; Affect future direct reuse schemes (e.g. Faure reuse scheme) where treated effluent is directly treated further to potable standards; and
- Significantly slow down Cape Town progress to achieving the goals set out in the Water Strategy and moving towards becoming a water sensitive City.

Major Infrastructure Projects:

Most projects undertaken by the Wastewater Branch fall into this category, which we understand to be all projects greater than R 10 Million.

The projects that are generally undertaken by the Wastewater Branch have been allocated under the headings below as follows:

1. New project / replacement:
    - Greenfields WwTWs;
    - New process units on existing WwTW;
    - Complete replacement of an existing process unit on a WwTW; or
    - Replacement of civil, mechanical, electrical or control & instrumentation equipment that has reached the end of its useful life.
2. Refurbishment:
    - Refurbishment projects on existing infrastructure only.
3. Improvement / Expansion:
    - All capacity expansions on existing WwTW;
    - All process upgrades / improvements on existing WwTW excluding complete process replacements.

Table 19: WWTW's scheduled for refurbishment over the next 5 years

Project Name	Estimated Cost	Required By	Current Status
Design – Build of Mechanical and Electrical Works for Reactor Equipment Refurbishments at the Cape Flats and Mitchells Plain Wastewater Treatment Works	R 101 000 000.00	2023	Delivery (Under construction)
Refurbishment of various Civil and Mechanical infrastructure at the Fisantekraal WwTW	R 56 000 000.00	ASAP	Design
Bellville WwTW 'DA' Module reactor reconfiguration and refurbishment	R 141 000 000.00	Overdue	Contracting
Design- Build of mechanical and electrical works for the refurbishment of sludge dewatering equipment at Wildevoelvlei WWTW	R 120 000 000.00	ASAP	Design

Table 20: WWTWs scheduled for additional capacity over the next 5 years

Project Name	Estimated Cost	Required By	Current Status
Expansion of the Zandvliet WwTW	R 1 742 214 320.00	Overdue	Delivery (under construction)
Expansion of the Potsdam WwTW	R 1 900 000 000.00	Overdue	Contracting (construction tender stage)
Expansion of the Athlone WwTW	R 1 500 000 000.00	2025	Contracting: 1 x Civil construction and 1 x Mech/Elec construction (tender award stage); Design: Remaining 2
Expansion of the Macassar WwTW	R 1 100 000 000.00	2022	Appointment of professional services provider
Capacity expansion and conversion of the Klipheuwel WwTW to a pump station & rising main to Fisantekraal WWTW	R 34 000 000.00	Overdue	Design
Capacity expansion of the Wesfleur Domestic WwTW	R 185 000 000.00	2022	Not started
Capacity expansion of the Fisantekraal WwTW	R 470 000 000.00	2024	Not started

From the tables above one notes the following:

Current capacity upgrades are being implemented at WwTW that are at or over capacity and which serve catchments with the highest growth rates (Athlone, Klipheuwel, Potsdam and Zandvliet).

Macassar's capacity is also being upgraded, even though the data indicates a lesser urgency. The reason for this is that indications are that its catchment will grow at an increased rate in the future, and it is earmarked to receive flows from the Zandvliet catchment via the Black Mac diversion.
Capacity expansions for Melkbos, Mitchells Plain, Scottsdene and Wesfleur Domestic need to be scheduled, to avoid capacity constraints in future.

Water reticulation infrastructure

Water network performance is monitored by recording bursts on particular lengths of pipework. Lengths of pipework have been relayed in past financial years yet other sections continue to age and exhibit increased burst frequencies. While Cape Town has made impressive improvements over time with respect to water pipe bursts the combination of aging infrastructure, increased demand and low rates of pipe replacement- more needs to be done.
It is critical to increase capacity, refurbish and maintain the City's water network, to ensure a safe, reliable and sustainable supply of water to Cape Town and its surrounding region.

Table 21: A summary of the major water reticulation infrastructure projects

WBS Element Description	Start	End	Estimated Costs	Water / Sewer
Main Rd Clovelly Simonstown	2025/26	2028/29	R760 000 000	
Replace Water Network (City Wide)	Ongoing	Ongoing (10 year view)	R1 362 500 000	Water
Water Projects as per Master Plan	Ongoing	Ongoing (10 year view)	R34 164 822	Water
Zevenwacht Reservoir and Network	2022/23	2025/26	R31 580 000	Water
Upgrade Reservoirs City Wide	2020/21	2028/29	R95 685 136	Water

Table 22: Summary of Reticulation reservoirs that need capacity upgrades

Region	Initiative	Reservoir Capacity (kl)	Trigger	Initiative Description
1	Brakkloof	13 636	Capacity	Increase Storage Capacity
1	Da Gama Park Top	2 500	Capacity/ Condition	Increase Storage Capacity/ Rehabilitation
1	Hout Bay Heights	35	Capacity	Increase Storage Capacity
1	Kogelfontein	1 234	Capacity	Increase Storage Capacity
1	Swaanswyk Upper	10	Capacity	Increase Storage Capacity
1	Hout Bay	10 000	Capacity	Increase Storage Capacity
1	Suikerbossie	1 140	Capacity	Increase Storage Capacity
1	Wynberg	30 600	Capacity	Increase Storage Capacity
2	Bakkerskloof	1 100	Capacity	Increase Storage Capacity
2	Upper Mountainside	300	Capacity	Increase Storage Capacity
2	Firgrove	450	Capacity	Increase Storage Capacity
2	Gordons Bay High Pressure	400	Capacity	Increase Storage Capacity
2	Kleinvlei	4 500	Capacity	Increase Storage Capacity
2	Macassar	4 500	Capacity	Increase Storage Capacity
2	Strand	5 000	Capacity	Increase Storage Capacity
3	Philadelphia	465	Capacity	Increase Storage Capacity
3	Milnerton	45 400	Capacity	Increase Storage Capacity
4	Verwoerd High	680	Capacity	Increase Storage Capacity
4	Verwoerd Low	4 500	Capacity	Increase Storage Capacity

Table 23: Summary of Reticulation reservoirs that need condition/ rehabilitation upgrades

Region	Initiative	Reservoir Capacity (kl)	Trigger	Initiative Description
1	Neptune Reservoir	45 000	Condition	Rehabilitation
1	Millers Point	5	Condition	Rehabilitation
1	Victoria	13 000	Condition	Rehabilitation
1	Glencairn Heights	500	Condition	Rehabilitation
1	Koegelfontein	1 234	Condition	Rehabilitation
1	Welcome Glen	500	Condition	Rehabilitation
1	Westlake Lower	3 000	Condition	Rehabilitation
1	Mount Rhodes	545	Condition	Rehabilitation
1	Bierman reservoir	2 000	Condition	Rehabilitation
1	Peak Road	1 600	Condition	Rehabilitation
1	Ocean View	1 136	Condition	Rehabilitation
1	Price Drive	500	Condition	Rehabilitation

Sewer Reticulation Infrastructure

The City has an extensive sewer network in place that requires constant maintenance. The most recently completed major projects are the Gordons Bay beachfront sewer, the Penhill sewer installation and the Retreat low lift pump station. In an effort to achieve a more compact City with densification and a TOD approach, the bulk sewers of the City are coming under increasing pressure. This has triggered a few projects as listed below:

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. The Rehabilitation of Cape Flats will stretch over the period of 2020/21 to 2024/25, estimated at R 564 823 240.

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 bulk sewer flows to the lower reaches of the existing Cape Flats 3 bulk sewer. The project will be implemented in the period from 2020/21 to 2024/25 at a cost of R 285 216 500.

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 2020/21 to 2026/27 to the estimated value of R 311 400 000.

Table 24: A summary of the major sewer reticulation infrastructure projects

WBS Element Description	Start	End	Estimated Costs
Bulk Retic Sewers in Milnerton Rehab	2020/21	2026/27	R311 400 000
Gordon's Bay Firlands Sewerage Services	2022/23	2023/24	R11 500 000
Gordon's Bay Sewer Rising Main	2022/23	2024/25	R170 000 000
Upgrade Rietvlei Sewer Pump Station	2020/21	2028/29	R127 200 000
Philippi Collector Sewer	2020/21	2024/25	R285 216 500
Cape Flats Rehabilitation	2020/21	2024/25	R564 823 240
Repl & Upgr Sew Pump Station	2020/21	2028/29	R221 797 294
Replace Sewer Network (Citywide)	Ongoing	Ongoing (10 year view)	R1 516 500 000
Sewer Projects as per Master Plan	Ongoing	Ongoing (10 year view)	R25 500 000

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.

Catchment, Stormwater and River Management

The Catchment, Stormwater and River Management (CSRM) Branch is responsible for the system of rivers and tributaries, whether natural or lined (canals), including estuaries, wetlands, vleis and ponds within river corridors/floodplains, stormwater dams and hydrological monitoring stations (rainfall and river flow). This system is critical to major flood management on a catchment scale, harvesting stormwater as a water resource, river corridor development/restoration, water quality management and integrated urban water cycle and catchment management.
In order to facilitate and transition the City of Cape Town into a water-sensitive city over time, new incentives and regulatory mechanisms will be of utmost importance, in addition to investments in new infrastructure.

There has recently been an outcry from the public regarding the progressive deterioration in quality of our inland water bodies (vleis, rivers, streams etc).
In response, a Mayoral Priority Programme known as **Sanitation and Inland Water Quality Programme** is currently under development, which aims to reduce pollution in waterways and improve water quality in rivers and vleis.
The programme will result in improvements in capacity and performance of water and wastewater infrastructure (particularly wastewater treatment, sewer pump stations and sewer spills) resulting in improvements in environmental water quality, elimination of development constraints and keeping recreational vleis open for recreation.

Table 25 :Summary of all the major CRSM branch projects with start and end dates

Project Name	Category	Start date	End date	Cost Estimate
DIEP RIVER - DOORENBACH DIVERSIONS	New Project/ Replacement	2021	2026	R 11 226 807.00
DIEP RIVER - THEO MARAIS CANAL	New Project/ Replacement	2021	2026	R 27 561 113.00
MACASSAR FLOOD ALLEVIATION	New Project/ Replacement	2021	2028	R 460 433 906.00
GEELSLOOT (PROJECT 2 - CHANNEL)	New Project/ Replacement	2023	2025	R 13 456 140.00
LOURENS RIVER PHASE 2	New Project/ Replacement	2021	2030	R 527 428 601.00
SOET RIVER (UPSTREAM DETENTION POND)	New Project/ Replacement	2023	2027	R 18 033 008.00
LITTER TRAPS	New Project/ Replacement	2021	2027	R 30 853 760.00
STORMWATER HARVESTING	New Project/ Replacement	2024	2030	R 35 555 609.00
LOURENS RIVER PHASE 1J	New Project/ Replacement	2021	2023	R 46 000 000.00
VYGEKRAAL - DESIGN & EIA & CONSTRUCT ALL	Refurbishment	2021	2027	R 22 181 891.00
STORMWATER DAMS	Refurbishment	2021	2025	R 26 953 826.00
SPAANSCHEMAT AND PRINSKASTEEL RIVERS	Refurbishment	2021	2025	R 13 759 402.00
DIEP RIVER - ERICA ROAD OUTFALL	Improvement/ Expansion	2021	2024	R 10 106 001.00
MANENBERG CANAL	Improvement/ Expansion	2021	2025	R 27 895 829.00
ZANDVLEI CANAL	Improvement/ Expansion	2021	2025	R 15 329 314.00
GEELSLOOT (PROJECT 3)	Improvement/ Expansion	2023	2026	R 13 456 144.00
GEELSLOOT (PROJECT 4)	Improvement/ Expansion	2024	2027	R 13 456 142.00
GEELSLOOT (PROJECT 5)	Improvement/ Expansion	2025	2027	R 13 456 142.00
GEELSLOOT (PROJECT 6)	Improvement/ Expansion	2026	2029	R 13 456 141.00
GEELSLOOT (PROJECT 7)	Improvement/ Expansion	2027	2030	R 13 456 141.00
SOET RIVER (ONVERWAGT)	Improvement/ Expansion	2024	2029	R 33 084 139.00
SOET RIVER (21ST STREET)	Improvement/ Expansion	2026	2030	R 67 437 807.00
SOET RIVER (DETENTION POND & PIPE UPGRADE)	Improvement/ Expansion	2027	2031	R 23 599 859.00
PRINCESS GEORGE DRIVE CANAL	Improvement/ Expansion	2023	2028	R 31 684 703.00
KALKSTEEN CANAL UPGRADE	Improvement/ Expansion	2025	2029	R 21 404 802.00
BONTEHEUWEL CANAL UPGRADE	Improvement/ Expansion	2027	2031	R 21 404 799.00
SIR LOWRY'S PASS RIVER - 2.7 KM RIVER UPGRADE FROM THE N2 TO FALSE BAY, GORDON'S BAY	Improvement/ Expansion	2021	2025	R 419 000 000.00
LIVEABLE URBAN WATERWAY PROGRAMME - WATERWAY REHABILITATION	Improvement/ Expansion	2021	2031	R 50 000 000.00
LIVEABLE URBAN WATERWAY PROGRAMME - ROSCOMMON ROAD WETLAND	Improvement/ Expansion	2021	2024	R 12 150 000.00

Water Resources

The Bulk Water Branch is 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.

Table 26 : Summary of the main major Bulk Water Branch projects

Project Name	Category	Start date	End date	Cost Estimate (R x million)
Additional Resources Desalination	New Replacement	2024	2030	2 174
Cape Flats Aquifer	New Replacement	2018	2027	2 675
Desalination Location 1	New Replacement	2025	2030	2 116
Zandvliet Plant Re-use (50ML)	New Replacement	2020	2027	2 858

There are a couple of major projects that are almost at the end of ther period and / close to completion. There are also multiple projects that are triggered by the projects listed in table 25
The Bulk Water Branch has identified the need for a 'computer-based' decision support system (DSS). The intention of developing a DSS is to empower the Branch (and decision-makers more generally) to optimally plan, manage, and operate the CCT's water resources and bulk water supply network. A DSS that incorporates the whole of the WCWSS will ensure the CCT Bulk Water Branch is always aware of how the WCWSS is being operated and is alerted, as early as possible, to any potential problems that could threaten the City's water security.

Other Master Planning Items

Other proposed infrastructure are as follows:
Increase of storage capacity at Blackheath upper reservoir: to fully utilize the spare capacity in the 1 525 mmØ pipeline between the Blackheath Upper to Glen Garry/Tygerberg reservoirs to feed the two large volume off-takes to reticulation reservoirs and a few smaller minor off-takes on the pipeline.
Steenbras 100 Mℓ storage reservoir: to provide for strategic storage in the vicinity of Steenbras WTW and the Helderberg basin, the buffering capacity of which will allow the Steenbras WTW to be operated at an even rate, thereby providing operational relief and avoid major operational

problems at the Steenbras WTW. to increase flexibility of the subsystem it is proposed to provide a cross-connection between the 810 and 840 mm Ø pipelines

Due to the Covid-19 pandemic, the City has recently revised capital expenditure budgets which will have significant impact on the timing of implementation of a number of projects.

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- as seen in the extensive project list. In this new 5 year term WSDP majority of the budget are for the Wastewater Branch

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.
The current Operating Budget projections:
Expenditure:
Parameters:
The following parameter assumptions are performed by the Corporate Budget Office via engagement with various external sources:
- Inflation Rate
- Cost of Living increases for Staff Cost
- Annual Increment
- Expected parameter increases to the different expenditure categories
- Once-off interventions via differentiated approach
- Depreciation of assets previously procured
- Interest flowing from the assets previously procured
- Depreciation and interest projections flowing form the latest projection of assets to be procured in the current and future year with due consideration of the expected asset life.
- Interest rates for borrowing
- Corporate cash flow position
- Corporate funding approach
- Overheads

The details and impact of the projections are available within the overall MTREF which are still being finalised via the internal process. See below the relevant parameters for the 3-year budget cycle under consideration. The release of this information is subject to proper authorisation.

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. The Directorate is investigating the replacement of its ageing metering infrastructure with a state-of-the-art alternative, in a phased manner over 10 years. 75% of its conventional meters are more than ten years old and need to be replaced to maintain accuracy and reliability. Readings will be available at hourly interval for virtually all meters as against current monthly readings of about 85% of the meters and a range of benefits are expected to all parties.

The meter change will be accompanied by Automated Meter Infrastructure (AMI) to take full advantage with respect to operations, billing, leak detection, water balance and planning.

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.

The calculation of all tariffs is based on the general principles of full cost recovery, to protect the basic level of service and to ensure long-term sustainability of the service. This will include the cost of backlogs, maintenance and renewal of plants and networks as well as the cost of new infrastructure. The calculated tariffs are thus a function of the cost required to deliver the service based on the volumes consumed. This needs to be done with due cognisance of water losses and cross-subsidisation that need to take place to support the poor / indigent households. Different volumetric sets would be applicable for the different restriction levels that may arise.

The City also makes use of a "Fixed Basic Charge" for the Water service to cover a portion of the fixed cost of delivering the service. The "Fixed Basic Charge" is a recurring monthly charge based on payment for the right of service provision / access to the network. It is applicable throughout the entire period during which the relevant premises are connected to the supply mains irrespective of whether any consumption is used or not. It is calculated based on the nominal bore of the meter installed at the property.

The same approach with the applicable volumes apply for Sanitation with the exception that it does not have a fixed charge.

Asset management

Continuously update the asset/ inventory registers and keeping control over the +/- 27 000 items under the City's Water and Sanitation Directorate's control. In terms of maintenance this is broken in two main categories being reactive and proactive maintenance. In the proactive maintenance space, WSMT has made a commitment to place more emphasis on this aspect. This is being reflected in the 8 transversal programmes, in particular the continuous development programme (see Section 4). The implications will be greater resource allocation, budgets and better processes put in place after consultation with LUOW. The commitments and achievement of proactive maintenance will be detailed in the next asset management plan.

The increase in proactive maintenance coupled with replacement will reduce the frequency of infrastructure failure as a result poor performance and structural integrity. However, there is a backlog of ageing infrastructure together with an increase in population and households requiring services from the existing ageing infrastructure.

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. Outsourcing of operations occurs at both Zandvliet and Fisantekraal WwTWs. As technology advances along with the need to find alternative sources of drinking water- Zandvliet WwTw ran a demonstration where they successfully managed to produce 10Ml/day.

In order to sustainably supply the most basic essential services of water and sanitation, the departments 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

The Customer Services branch is a new branch established in late 2019 which marks a milestone for the City to enable efficiency, financial sustainability and improve service delivery. The purpose of the Customer Service Branch is to consolidate and direct all water customer services under a new Customer Services Manager responsible for:

- Optimised water meter management operations
- Accurate billing based on actual meter readings
- Effective debt management & revenue collection
- Responsive customer queries management
- Business analysis functions aimed at co-ordinating SAP/ERP requirements, quality assurance and continuous improvement

Backlogs currently being experienced by the customer relations section:

1. Meter management- The purpose of the Meter management section is for the provision of a water metering function that contributes to water revenue protection and growth. The key objective is to achieve Quality Meter (large and small) installation through efficient procurement, contract management, Quality Control and process design and implementation. Meter management operates on a centralised model based at Wynberg Depot supporting the 660 161 water meters distributed throughout Cape Town consisting of 62 operational staff and 20 administrative staff and 6 contractors. The table below illustrates that a substantial amount of meters that are old and possibly not working correctly hence is due to be replacement.

   Key challenges:

   - A centralised operational model adversely impacts response time and service delivery.
   - Budget and accommodation to facilitate a decentralised operating model
   - Capacity to respond and resolve water meter related emergencies within 24hrs on a 24hr Basis.
   - Water meter related emergencies logged via C3 notification do not automatically route to the Meter Management Team's Work Centre's, and requires manual capturing of a service order or works order to the respective team's WorkCentre's. This process needs to be automated to improve response times when operating on a 24hr basis.
   - Capacity and skills to management and monitoring contract performance, quality control and warranties.
   - Capacity to project management the meter replacement programme for aged and faulty meters
   - All meter related functions performed by the Reticulation Branch to be transferred to Meter Management operating with teams already struggling to cope with the current workload, inefficient centralised operating model and not on a 24hr basis.

2. Debt management- The purpose is to provide of a comprehensive debt management function in association with the CFO's office that contributes to water revenue protection and growth by maximizing debt collection practices and strategies functions. Debt management operates with 135 operational staff, 37 administrative staff and 1 contractor and logistically allocates the teams according to the quantities and geographically dispersed Dunning letters (warning letters) to be physically delivered or service orders to perform disconnection, restriction or reconnection actions on the meters.

   Key challenges:
   - A centralised operational model adversely impacts response time and service delivery
   - Budget and accommodation to facilitate a decentralised operating model
   - After hour responsiveness to facilitate customer payment arrangements with Corporate Revenue to authorise the Debt Management teams to reconnect the customer's water (no water complaints are high priority from a basic rights and political perspective)
   - Foreman and Admin staff have to manually validate and filter the Corporate Revenue disconnection and reconnections service orders capturing of a service order or works order to the respective team's WorkCentre's. This process needs to be automated to improve response times when operating on a 24hr basis.
   - Capacity and skills to management and monitoring contract performance, quality control and warranties.
   - Staff working conditions, accommodation and facilities are not ideal and impacting staff morale which leads to union grievances.

3. Billing management- The purpose is to provide accurate meter reading consumption and customer billing service that contributes to water revenue protection and growth. Billing management operates with 41 administrative staff, Meter reading operates with 18 administrative staff, 155 meter readers and 3 contractors decentralised in the 4 main areas.

   Key challenges:
   - To read approximately 660,161 meters staggered over 20 meter reading portions before the billing cycle closes. There is a short window period of 5 days to read the scheduled portion consisting of approximately 30,000 meters before the billing cycle closes.
   - Manual adjustment and changes to amend meter reading units (MRU) or meter reading routes to improve reading efficiency
   - High risk and dangerous areas adhesively impacts the meter reading performance and poses a serious security threat to meter readers
   - Accessibility factors preventing meters from being read like, customer refusals, construction, faulty, seized and damaged meters
   - Near real-time performance monitoring tools for meter readers improve the efficiency meter reading teams

4. Customer relations manager- The provision of a Water Services customer relations service, in conjunction with other City customer services functions, that contributes to water revenue protection and growth and meets the City's customer centric vision. CRM operates with 48 staff members in a decentralise model distributed across the 5 main areas addressing water related customer queries.

   Key challenges:

   - Capacity for a planning and monitoring hub to service key accounts and high level complaint taking ownership throughout the customer query lifecycle
   - No systematic feedback loop to the customer on the status technical work completed in the field hence causing duplicate C3 being logged
   - Lack of quality Business Intelligence reporting.

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.

Table D1: WSDP FY2022: Water Services Objectives and Strategies

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2021 status quo)	WSDP Year 1 FY2022/23 Target	WSDP Year 2 FY2023/2024 Target	WSDP Year 3 FY2024/2025 Target	WSDP Year 4 FY2025/2026 Target	WSDP Year 5 FY2026/2027 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		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	38404 ha	n/a	n/a	n/a	n/a	n/a
WSDP Topic 3: Service levels								
	Service level profile in informal settlements							
3.1	Service Delivery Programme in	Number of water service points (taps) provided	799	700	700	700	700	700

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2021 status quo)	WSDP Year 1 FY2022/23 Target	WSDP Year 2 FY2023/2024 Target	WSDP Year 3 FY2024/2025 Target	WSDP Year 4 FY2025/2026 Target	WSDP Year 5 FY2026/2027 Target
	Informal Settlements	Number of sanitation service points (toilets) provided	3428	2,500	2,500	2,500	2,500	2,500
		Service rate for informal settlement water complaints	97.33%	88%	88%	88%	88%	88%
		Service rate for informal settlement sanitation complaints	98.15%	87%	87%	87%	87%	87%
WSDP Topic 4: Socio economic								
4.1	Expanded Public Works Programme (EPWP)	Number of Expanded Public Works Programme (EPWP) opportunities created	6225	4,000	4,000	4,000	4,000	4,000
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)	65	200	200	200	200	200
		Number of apprentices	20	20	20	20	20	20
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(Primary & Secondary)		95%	95%	95%	95%	95%
		Metres of water reticulation mains replaced this year	56,047	50,000	50,000	50,000	50,000	50,000
		Metres of sewer reticulation mains replaced this year	28,140	50,000	100,000	100,000	100,000	100,000

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2021 status quo)	WSDP Year 1 FY2022/23 Target	WSDP Year 2 FY2023/2024 Target	WSDP Year 3 FY2024/2025 Target	WSDP Year 4 FY2025/2026 Target	WSDP Year 5 FY2026/2027 Target
		Repair to Burst Water Mains	2,777	n/a	n/a	n/a	n/a	n/a
		Percentage river and vlei samples with E. coli count ≤ 4 000	57.6%	61%	61%	61%	63%	65%
		Percentage sample with E. coli count ≤ 4 000	6080.0%	60%	60%	60%	60%	60%
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)	R1 997.4m of R2 136.0 = 94%	90%	90%	90%	90%	90%
		Number of outstanding valid applications for water services expressed as a percentage of total number of billings for the service	0.16%	< 0.7%	< 0.7%	< 0.7%	< 0.7%	< 0.7%
		Number of outstanding valid applications for sewerage services expressed as a percentage of total number of billings for the service	0.21%	< 0.7%	< 0.7%	< 0.7%	< 0.7%	< 0.7%
5.2.2	Engineering and Asset Management	Define and agree on roles of OPS and responsibilities of E&AM (SLA)	Review of Asset Management Strategy for Water and Sanitation	80%	100%	100%	100%	100%
		Drive asset management – continuous improvement	Develop documented SOP/SLAs for AM programmes within Water and Sanitation. Review of Roles and Responsibilities. Draft and Approval	80%	80%	80%	80%	80%

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2021 status quo)	WSDP Year 1 FY2022/23 Target	WSDP Year 2 FY2023/2024 Target	WSDP Year 3 FY2024/2025 Target	WSDP Year 4 FY2025/2026 Target	WSDP Year 5 FY2026/2027 Target
		Drive ISO 55001 implementation and certification	Development of certification plan and GAP analysis. Improvement of Asset Management System in alignment to ISO 55001 standard requirements and preparation for Stage 1 of certification process	70%	90%	100%	100%	100%
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
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.	R23.5m of R26.3m (90%)	n/a	n/a	n/a	n/a	n/a
		Install real time monitoring that will provide a tool for the verification of infrastructure attributes, verification of master planning models and optimization of infrastructure performance.	Water & Sewer Loggers, PRV Controllers, Pressure management of zones, Bulk Operational	Zone Pressure Management, Water & Sewer loggers	Zone Pressure Management, Water & Sewer loggers	TBD annually	TBD annually	TBD annually

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2021 status quo)	WSDP Year 1 FY2022/23 Target	WSDP Year 2 FY2023/2024 Target	WSDP Year 3 FY2024/2025 Target	WSDP Year 4 FY2025/2026 Target	WSDP Year 5 FY2026/2027 Target
7.1.2	Implement effective regulation to protect the infrastructure and the environment	To conduct education and awareness to the companies that have non-compliance industrial quality limits set out by the City in the commercial & industrial sector utilising existing resources.	Limited by Covid 19, person to person contact was limited. Stability after the 3rd way will facilitate continuation	20	20	20	20	20
		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)	Pollution Response groups have been setup via Mobile Platform WhatsApp. Relevant stakeholders from Reticulation, Policy&Regulation and other sections during the 2020/2021 financial year	4 (groups, representing the 4 reticulation regions)	4 (groups, representing the 4 reticulation regions)	4 (groups, representing the 4 reticulation regions)	4 (groups, representing the 4 reticulation regions)	4 (groups, representing the 4 reticulation regions)
		Approach a minimum of 1 per financial year, existing sector forums and forge partnership by entering into agreements with	Limited by Covid 19, person to person contact was limited. Stability after the 3rd way will facilitate continuation	1	1	1	1	1
		Approach worst polluters to agree to invest in pre-treatment facilities and thereafter grant them a rebate	Detemined based on the quality of the Industrial effluent sampling analyses reports	TBC annually	TBC annually	TBC annually	TBC annually	TBC annually
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	Implementation of mobile and monitoring technology to ensure efficient utilization of staff, timeous and effective response to an incident/ event	1 (CCTV Pipeline inspection system) . To deploy sewer logger measuring devices a strategic positions and monitor them remotely	20 (loggers)	20 (loggers)	20 (loggers)	20 (loggers)	20 (loggers)

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2021 status quo)	WSDP Year 1 FY2022/23 Target	WSDP Year 2 FY2023/2024 Target	WSDP Year 3 FY2024/2025 Target	WSDP Year 4 FY2025/2026 Target	WSDP Year 5 FY2026/2027 Target
	educational interventions	Transversal Programme: Sewer Spillage Prevention	Development of sewer infrastructure maintenance plan	Sewer Infrastructure Maintenance Plan	Implementation of Plan	Implementation of Plan	Implementation of Plan	Implementation of Plan
		Implementation of mobile	Developed RIMA 2 App with Asset Verification Functionality	Deployment/ roll-out of Application	Deployment/ roll-out of Application	Deployment/ roll-out of Application	Monitor RIMA 2 Performance	Monitor RIMA 2 Performance
	Non-Revenue Water							
7.2.2	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	R177m of budget of R208m (WDM & EPWP)	n/a	n/a	n/a	n/a	n/a
		To spend the allocated capital budget on the Pressure Management related programmes and projects and to install real time monitoring that will ensure continued effectiveness of these Pressure Management related programmes and projects	R13,259,370.00	R15,000,000.00	R15,000,000.00	R15,000,000.00	R10,000,000	R10,000,000
7.2.3	Water Conservation and Water Demand Management Strategy	Percentage of treated potable water not billed	34.37%	25%	25%	TBD annually	TBD annually	TBD annually
		Percentage of potable water reused as treated effluent	6.61%	6%	6%	6%	6%	6%
		Volume of treated effluent supplied (Ml/year)	15,051	10,000	10,000	10,000	10,000	10,000
WSDP Topic 8: Water Resources								
	Water use efficiency							
8.1	Volume water treated	Megalitres of water supplied to meet demand management targets	589Ml/d	TBD annually	TBD annually	TBD annually	TBD annually	TBD annually
8.2	Volume water supplied	Water supplied to reticulation network		TBD annually	TBD annually	TBD annually	TBD annually	TBD annually
	Water and Wastewater Quality Compliance							

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2021 status quo)	WSDP Year 1 FY2022/23 Target	WSDP Year 2 FY2023/2024 Target	WSDP Year 3 FY2024/2025 Target	WSDP Year 4 FY2025/2026 Target	WSDP Year 5 FY2026/2027 Target
8.3	Compliance to DWS Standards	Number of WWTWs with >= 95% compliance with DWswater quality requirements	n/a	12	12	12	12	12
		Percentage compliance with 4 critical DWS effluent standards	n/a					
		Percentage compliance with drinking water quality standards	99.11%	98%	98%	98%	98%	98%
WSDP Topic 9: Financial profile								
	Capital and Operating Expenditure							
9.1	Financial management programme	Percentage spend of capital budget	90%	90%	90%	90%	90%	90%
		Rand value of capital invested in engineering infrastructure (growth, refurbishment and replacement of Water & Sanitation infrastructure)	R2,256,025,933	R2,692,255,451	R4,581,373,353	R3,910,326,618	R3,327,294,129	R4,442,846,333
	Operating Expenditure							
9.2	Financial management programme	Percentage of Operating Budget spent	96%	95%	95%	95%	95%	95%
	Revenue							
9.3	Financial management programme	Revenue collected as a percentage of billed amount (Water)	94.61%	91%	91%	91%	91%	91%
		Revenue collected as a percentage of billed amount (Sewerage)	96.27%	93%	93%	93%	93%	93%
		Percentage of water meters read on a monthly basis	88.95%	88%	88%	88%	88%	88%
	General							
9.4	Financial management programme	Percentage of assets verified	99%	100%	100%	100%	100%	100%
		Percentage Internal Audit findings resolved	86%	75%	75%	75%	75%	75%
WSDP Topic 10: Institutional Arrangements profile								

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2021 status quo)	WSDP Year 1 FY2022/23 Target	WSDP Year 2 FY2023/2024 Target	WSDP Year 3 FY2024/2025 Target	WSDP Year 4 FY2025/2026 Target	WSDP Year 5 FY2026/2027 Target
10.1	HR, Talent Management, Skills Development programme (Integrated Talent management Approach)	Percentage incidence of overtime hours in excess of 43hrs	7.64%	≤ 9%	≤ 9%	≤ 9%	≤ 9%	≤ 9%
		Percentage adherence to EE target in all appointments (internal & external)	97.39%	100%	100%	100%	100%	100%
		Percentage adherence to 2% of people with disabilities (PWD)	1.89%	2%	2%	2%	2%	2%
		Percentage of absenteeism	3.13%	≤ 5%	≤ 5%	≤ 5%	≤ 5%	≤ 5%
		Percentage vacancy rate	17.47%	≤ 7%	≤ 7%	≤ 7%	≤ 7%	≤ 7%
		Percentage adherence to utilisation target (composite Indicator)	n/a	100%	100%	100%	100%	100%
		Percentage budget spent on implementation of WSP	99.81%	95%	95%	95%	95%	95%
		Percentage adherence to employee talent target (composite indicator)	n/a	100%	100%	100%	100%	100%
		Percentage adherence to OHS target (composite Indicator)	n/a	95%	95%	95%	95%	95%
		Percentage OHS incidents reported	1.46%	≤ 5%	≤ 5%	≤ 5%	≤ 5%	≤ 5%
		Percentage OHS investigations completed	Not reported on due to SAP evidence shortcomings	100%	100%	100%	100%	100%
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 2020/21	Directors Office EAM Finance and Commercial,Wastewater -Bellville plant WDMS Reticulation Bulk water HR Business Partner Catchment, Stormwater&River Management Auxiliary Services	Directors Office EAM Scientific Services Finance & Commercial Bulkwater Reticulation WDM Catchment, Stormwater and River Management Auxiliary Services	Directors Office EAM Scientific Services Finance & Commercial Bulkwater Reticulation WDM Catchment, Stormwater and River Management Auxiliary Services	Directors Office EAM Scientific Services Finance & Commercial Bulkwater Reticulation WDM Catchment, Stormwater and River Management Auxiliary Services	Directors Office EAM Scientific Services Finance & Commercial Bulkwater Reticulation WDM Catchment, Stormwater and River Management Auxiliary Services	Directors Office EAM Scientific Services Finance & Commercial Bulkwater Reticulation WDM Catchment, Stormwater and River Management Auxiliary Services

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2021 status quo)	WSDP Year 1 FY2022/23 Target	WSDP Year 2 FY2023/2024 Target	WSDP Year 3 FY2024/2025 Target	WSDP Year 4 FY2025/2026 Target	WSDP Year 5 FY2026/2027 Target
				HR Business Partner Wastewater Bellville Plant	HR Business Partner Wastewater Bellville Plant	HR Business Partner Wastewater Bellville Plant Informal Settlements and Basic Services Capital and Contract Management Customer Services	HR Business Partner Wastewater Bellville Plant Informal Settlements and Basic Services Capital and Contract Management Customer Services	HR Business Partner Wastewater Bellville Plant Informal Settlements and Basic Services Capital and Contract Management Customer Services Directors Office EAM Scientific Services Finance & Commercial Bulkwater Reticulation WDM Catchment, Stormwater and River Management Auxiliary Services HR Business Partner Wastewater Bellville Plant Informal Settlements and Basic Services Capital and Contract Management Customer Services Directors Office

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2021 status quo)	WSDP Year 1 FY2022/23 Target	WSDP Year 2 FY2023/2024 Target	WSDP Year 3 FY2024/2025 Target	WSDP Year 4 FY2025/2026 Target	WSDP Year 5 FY2026/2027 Target
								EAM Scientific Services Finance & Commercial Bulkwater Reticulation WDM Catchment, Stormwater and River Management Auxiliary Services HR Business Partner Wastewater Bellville Plant Informal Settlements and Basic Services Capital and Contract Management Customer Services
		Introduce and pilot applicable and available information management systems	Number of people trained: SAP DMS=225 SAP QMS= 37	Number of people trained: SAP DMS= 250 SAP QMS= 50	Number of people trained: SAP DMS= 300 SAP QMS= 67	Number of people trained: SAP DMS= 360 SAP QMS= 90	Number of people trained: SAP DMS= 410 SAP QMS= 120	Number of people of trained: SAP DMS= 500 SAP QMS= 200
10.3	Staffing strategy documented and consolidated for each branch	Have a strategically aligned staffing strategy documented for each branch(consolidated and signed off)	n/a	n/a	n/a	n/a	n/a	n/a
WSDP Topic 11: Customer service requirements								

Nr	Objective / Strategy	Key Performance Indicator	Baseline (FY2021 status quo)	WSDP Year 1 FY2022/23 Target	WSDP Year 2 FY2023/2024 Target	WSDP Year 3 FY2024/2025 Target	WSDP Year 4 FY2025/2026 Target	WSDP Year 5 FY2026/2027 Target
11.1	Annual Community Satisfaction Survey	Community satisfaction survey (score 1-5) for residents	2.4	2.9	2.9	2.9	2.9	2.9
		Community satisfaction survey (score 1-5) for business	3.41	2.9	2.9	2.9	2.9	2.9
11.2	Managing service delivery through the service management process	Percentage adherence to Citywide service standard based on all external notifications	85.51%	90%	90%	90%	90%	90%

**** This table is subject to change and will be reviewed on an annual basis**

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.2a provides the projects identified for implementation in FY2022/23-2024/25.

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 27 : Summary of MTEF Projects

Project Main Category	Number of Projects	FY2022/23	Number of Projects	FY2023/24	Number of Projects	FY2024/25	Number of Projects	MTEF Total
Sanitation Projects	27	1,295,850,154	36	2,496,506,955	33	2192186239	**96**	**5,984,543,348**
Water Projects	22	885,475,722	25	1,328,052,591	35	2,085,889,370	**82**	**4,299,417,683**
Other	45	337,105,388	48	453,818,750	54	521,815,429	**147**	**1,312,739,567**
TOTAL	**94**	**2,518,431,264**	**109**	**4,278,378,296**	**122**	**4,799,891,038**	**325**	**11,596,700,598**

Table 28 : Summary of MTEF Projects by Department

Department	Sum of Approved Adjusted Budget 2022/23	Sum of Approved Adjusted Budget 2023/24	Sum of Proposed Budget 2024/25	MTEF Total
Management: WS	140,000	140,000	140,000	**420,000**
Bulk Services	1,740,902,651	2,815,626,287	3,014,675,038	**7,571,203,976**
Commercial Services	206,000,000	401,000,000	506,000,000	**1,113,000,000**
Distribution Services	402,643,413	790,189,277	1,012,576,000	**2,205,408,690**
Technical Services: W & S	168,745,200	271,422,732	266,500,000	**706,667,932**
Grand Total	**2,518,431,264**	**4,278,378,296**	**4,799,891,038**	**11,596,700,598**

Table 29 : Water Services MTEF Projects – FY2022-2024 (MTEF period containing only Capital Budget projects)

Nr	Project Reference Number	Project Name	Main Category "W" or "S"	FY2023 Budget	FY2024 Budget	FY2025 Budget	Total Cost	MTEF Project Source
1. Infrastructure Projects				**1684046829**	**3062871164**	**3114561668**	**7861479661**	
	C12.86091-F1	Borchards Quarry WWTW	s	0	6000000	0	6000000	CGD
	CPX.0029825-F1	Borchards Quarry WWTW Phase II	s	0	0	7400000	7400000	CGD
	C13.86081-F1	Athlone WWTW-Capacity Extension-phase 1	s	0	24000000	0	24000000	EFF
	C13.86081-F2	Athlone WWTW-Capacity Extension-phase 1	s	86000000	65000000	32769108	183769108	CGD
	CPX.0014706-F1	BW Infrastructure Replacement FY23	w	60600000	0	0	60600000	EFF
	CPX.0014707-F1	BW Infrastructure Replacement FY24	w	0	100000000	0	100000000	EFF
	CPX.0018250-F1	BW Infrastructure Replacement FY25	w	0	0	110000000	110000000	EFF
	CPX.0008041-F1	Bellville WWTW Extension	s	0	0	42530000	42530000	EFF
	CPX.0008041-F2	Bellville WWTW Extension	s	0	22000000	0	22000000	CGD
	CPX.0014614-F1	Infrastructure Replacements - WWTW FY23	s	10000000	0	0	10000000	EFF
	CPX.0014615-F1	Infrastructure Replacements - WWTW FY24	s	0	45000000	0	45000000	EFF
	CPX.0018207-F1	Infrastructure Replacements - WWTW FY25	s	0	0	10000000	10000000	EFF
	CPX.0018207-F2	Infrastructure Replacements - WWTW FY25	s	0	0	20000000	20000000	CGD
	CPX.0016300-F2	Cape Flats WWTW - Biosolids	s	202500000	404000000	223000000	829500000	EFF
	CPX.0016300-F3	Cape Flats WWTW - Biosolids	s	0	20000000	0	20000000	CGD
	CPX.0015630-F1	Cape Flats WWTW Inlet works & rising mai	s	1000000	40788869	53211131	95000000	EFF
	CPX.0015630-F2	Cape Flats WWTW Inlet works & rising mai	s	0	0	10000000	10000000	CGD
	C13.86005-F1	Cape Flats WWTW-Refurbish various struct	s	0	49000000	0	49000000	EFF
	CPX.0016426-F1	Wesfleur Aeration & Blower Replacement	s	39700000	2600000	19850000	62150000	EFF
	CPX.0022520-F1	Wesfleur WWTW: Mobile Pump (16 inch)	s	714385	0	0	714385	REVENUE
	CPX.0010426-F1	Wildevoelvlei WWTW-Upgrade dewatering	s	5000000	20000000	6000000	31000000	EFF
	CPX.0015797-F1	WS Contingency prov - Insurance FY23		50000	0	0	50000	REVENUE
	CPX.0015798-F1	WS Contingency prov - Insurance FY24		0	50000	0	50000	REVENUE
	CPX.0017979-F1	WS Contingency prov - Insurance FY25		0	0	50000	50000	REVENUE
	CPX.0007929-F1	Zandvliet WWTW: Prim Treatment & Sludge	s	100000000	100000000	0	200000000	EFF
	C12.86059-F1	Macassar WWTW Extension	s	30000000	78000000	315000000	423000000	EFF

	C12.86059-F2	Macassar WWTW Extension	s	20000000	72000000	100000000	192000000	CGD
	CPX.0014746-F1	Plant & Equipment Additional FY23	w	750000	0	0	750000	EFF
	CPX.0014747-F1	Plant & Equipment Additional FY24	w	0	750000	0	750000	EFF
	CPX.0018266-F1	Plant & Equipment Additional FY25	w	0	0	750000	750000	EFF
	C11.86063-F1	Potsdam WWTW - Extension	s	411343309	836400000	480000000	1727743309	EFF
	C11.86063-F3	Potsdam WWTW - Extension	s	62067821	0	0	62067821	CGD
	C13.86010-F1	Mitchells Plain WWTW-Improvements Phase2	s	0	0	2000000	2000000	EFF
	CPX.0014750-F1	Sundry Equipment: Additional FY23	s	300000	0	0	300000	EFF
	CPX.0014751-F1	Sundry Equipment: Additional FY24	s	0	300000	0	300000	EFF
	CPX.0018210-F1	Sundry Equipment: Additional FY25	s	0	0	500000	500000	EFF
	CPX.0014767-F1	Plant & Equipment: Replacement FY23	w	750000	0	0	750000	EFF
	CPX.0014768-F1	Plant & Equipment: Replacement FY24	w	0	750000	0	750000	EFF
	CPX.0018269-F1	Plant & Equipment: Replacement FY25	w	0	0	750000	750000	EFF
	CPX.0003893-F1	OSEC (Electrolytic Chlorination Infr)	w	0	15000000	0	15000000	EFF
	CPX.0008886-F1	OSEC(Electrolytic Chlorination Infr) Ph2	w	0	0	1000000	1000000	EFF
	CPX.0008887-F1	OSEC(Electrolytic Chlorination Infr) PH3	w	0	0	5000000	5000000	EFF
	CPX.0009633-F1	Fisantekraal WWTW	s	3000000	20000000	4000000	27000000	EFF
	CPX.0017546-F1	Rehabilitation Keysers River Steenberg		1436238	5190766	0	6627004	EFF
	CPX.0017475-F1	Rehabilitation of Grootboschkloof River		1436238	5190766	0	6627004	EFF
	CPX.0017549-F1	Rehabilitation of Westlake River		1529195	7241610	0	8770805	EFF
	CPX.0020148-F1	Sand/Langvlei Canal Wetland Rehab		0	0	2983507	2983507	EFF
	CPX.0016623-F1	Upgrade of Manenberg Canal		278721	9931366	12426307	22636394	CGD
	CPX.0016671-F1	Upgrade Vygekraal River banks - Phase II		305692	1055676	6497492	7858860	CGD
	CPX.0017548-F1	Zandvlei River: channel enhancement		2309347	7978036	4687096	14974479	EFF
	CPX.0013019-F1	Flood Alleviation - Lourens River		0	19621942	0	19621942	EFF
	CPX.0013019-F4	Flood Alleviation - Lourens River		20709988	0	0	20709988	CGD
	CPX.0016672-F1	Flood Alleviation-Lourens River Phase II		12385189	1185847	2669028	16240064	EFF
	CPX.0017342-F1	Geelsloot stormwater rehab Section 2		0	139571	764301	903872	EFF
	CPX.0017343-F1	Geelsloot stormwater rehab Section 3		0	0	139990	139990	EFF
	CPX.0016674-F1	Macassar Flood Alleviation		1094743	1134945	1747668	3977356	CGD
	CPX.0016674-F2	Macassar Flood Alleviation		3184621	486405	3606143	7277169	EFF
	CPX.0012948-F2	Sir Lowry's Pass River Upgrade		115000000	91165277	122643136	328808413	EFF
	CPX.0016605-F1	Soet River Construction detention pond		0	0	285239	285239	CGD
	CPX.0016605-F2	Soet River Construction detention pond		0	0	31693	31693	EFF

	CPX.0016652-F1	Soet River Detention Pond		0	285239	151569	436808	CGD
	CPX.0016652-F2	Soet River Detention Pond		0	31693	16841	48534	EFF
	CPX.0016675-F1	Upgrade of Geelsloot - Somerset West		116565	104574	13234999	13456138	EFF
	CPX.0016650-F1	Upgrade of Geelsloot Pond -Somerset West		742318	97632	8012738	8852688	EFF
	CPX.0016619-F1	Diep River - Doornbach Diversions		227541	430146	6469706	7127393	CGD
	CPX.0017547-F1	Litter Traps Citywide		1588854	648578	2054340	4291772	EFF
	CPX.0016669-F2	Rehab of Diep River - Erica Road Outfall		245933	5754497	3823388	9823818	EFF
	CPX.0016668-F1	Rehab of Diep River - Joe Slovo Pond		105553	5271094	3048681	8425328	CGD
	CPX.0016670-F2	Rehab of Diep River - Theo Marais Canal		498565	206301	9514773	10219639	EFF
	CPX.0016647-F1	Stormwater Dams: Safety upgr (City-wide)		216428	4945478	9604230	14766136	CGD
	CPX.0016647-F2	Stormwater Dams: Safety upgr (City-wide)		1483572	3296986	6402820	11183378	EFF
	CPX.0017550-F1	Upgrade of Zandvlei Canal		294013	4611593	159744	5065350	EFF
	CPX.0030776-F1	Bayside Canal Upgrade		0	0	31000000	31000000	EFF
	CPX.0014663-F2	Water Meters New Connections FY23	w	15000000	0	0	15000000	CGD
	CPX.0014663-F3	Water Meters New Connections FY23	w	15000000	0	0	15000000	CGD
	CPX.0014664-F2	Water Meters New Connections FY24	w	0	15000000	0	15000000	CGD
	CPX.0014664-F3	Water Meters New Connections FY24	w	0	15000000	0	15000000	CGD
	CPX.0017976-F1	Water Meters New Connections FY25	w	0	0	20000000	20000000	CGD
	CPX.0017976-F2	Water Meters New Connections FY25	w	0	0	15000000	15000000	CGD
	CPX.0014748-F1	Meter Replacement Programme FY23	w	155000000	0	0	155000000	EFF
	CPX.0014749-F1	Meter Replacement Programme FY24	w	0	80000000	0	80000000	EFF
	CPX.0017840-F1	Meter Replacement Programme FY25	w	0	0	14500000	14500000	EFF
	CPX.0019987-F1	AMI rollout programme	w	20000000	290000000	455000000	765000000	EFF
	CPX.0016236-F1	Informal Settlem Sanitation Install FY23	s	30000000	0	0	30000000	EFF
	CPX.0017871-F1	Informal Settlem Sanitation Install FY24	s	0	30000000	0	30000000	EFF
	CPX.0017872-F1	Informal Settlem Sanitation Install FY25	s	0	0	30000000	30000000	CGD
	CPX.0016237-F1	Informal Settlem Water Installation FY23	w	6000000	0	0	6000000	EFF
	CPX.0017875-F1	Informal Settlem Water Installation FY24	w	0	8000000	0	8000000	EFF
	CPX.0017996-F1	Informal Settlem Water Installation FY25	w	0	0	8000000	8000000	CGD
	CPX.0014665-F1	Water Projects as per Master Plan FY24	w	0	1000000	0	1000000	EFF
	CPX.0021023-F1	Water Projects as per Master Plan FY25	w	0	0	4000000	4000000	EFF
	C11.86060-F1	Philippi Collector Sewer	s	1400000	52940000	66376000	120716000	EFF
	C11.86060-F3	Philippi Collector Sewer	s	5000000	43000000	30000000	78000000	CGD
	CPX.0014756-F1	Sewer Projects as per Master Plan FY24	s	0	1000000	0	1000000	EFF

	CPX.0020973-F1	Sewer Projects as per Master Plan FY25	s	0	0	3000000	3000000	EFF
	CPX.0014763-F1	Regional resources development FY23		950874	0	0	950874	EFF
	CPX.0014764-F1	Regional resources development FY24		0	2000000	0	2000000	EFF
	CPX.0029340-F1	Koeberg Pump station capacity upgrade	s	0	0	35000000	35000000	EFF
	CPX.0029305-F2	Langa Pump Station (9) - screens, pumps	s	0	0	50000000	50000000	EFF
	CPX.0029269-F1	Raapenberg Pump Station Upgrade	s	0	0	80000000	80000000	EFF
	CPX.0014765-F1	Repl & Upgr Sew Pump Station FY23	s	15000000	0	0	15000000	EFF
	CPX.0014765-F2	Repl & Upgr Sew Pump Station FY23	s	3000000	0	0	3000000	CGD
	CPX.0014766-F1	Repl & Upgr Sew Pump Station FY24	s	0	15000000	0	15000000	EFF
	CPX.0014766-F2	Repl & Upgr Sew Pump Station FY24	s	0	10000000	0	10000000	CGD
	CPX.0021055-F1	Repl & Upgr Sew Pump Station FY25	s	0	0	50000000	50000000	EFF
	CPX.0021055-F2	Repl & Upgr Sew Pump Station FY25	s	0	0	10000000	10000000	CGD
	CPX.0008876-F2	Retreat Low Lift Pump station	s	0	5416385	0	5416385	EFF
	CPX.0029346-F1	Sanddrift East Pump Station Upgrade	s	0	0	2000000	2000000	EFF
	CPX.0009389-F1	Digtebij sewer Installation	s	0	355618	0	355618	EFF
	CPX.0009390-F1	Gordon's Bay Firlands Sewerage Services	s	0	5500000	0	5500000	EFF
	CPX.0009432-F1	Gordon's Bay Sewer Rising Main	s	1570000	70000000	13000000	84570000	EFF
	CPX.0010420-F1	Replace Sewer Network (Citywide) FY23	s	49000000	0	0	49000000	EFF
	CPX.0010420-F2	Replace Sewer Network (Citywide) FY23	s	1500000	0	0	1500000	CGD
	CPX.0014769-F1	Replace Sewer Network (Citywide) FY24	s	0	52250000	0	52250000	EFF
	CPX.0014769-F2	Replace Sewer Network (Citywide) FY24	s	0	10000000	0	10000000	CGD
	CPX.0017688-F1	Replace Sewer Network (Citywide) FY25	s	0	0	295000000	295000000	EFF
	CPX.0017688-F2	Replace Sewer Network (Citywide) FY25	s	0	0	10000000	10000000	CGD
	CPX.0018735-F2	Replace Water Network (City Wide) FY23	w	64000000	0	0	64000000	EFF
	CPX.0018735-F3	Replace Water Network (City Wide) FY23	w	1500000	0	0	1500000	CGD
	CPX.0014770-F1	Replace Water Network (City Wide) FY24	w	0	58266666	0	58266666	EFF
	CPX.0014770-F2	Replace Water Network (City Wide) FY24	w	0	6000000	0	6000000	CGD
	CPX.0017257-F1	Replace Water Network (City Wide) FY25	w	0	0	10000000	10000000	CGD
	CPX.0017257-F2	Replace Water Network (City Wide) FY25	w	0	0	91000000	91000000	EFF
	CPX.0014771-F1	Upgrade Reservoirs City Wide FY23	w	3000000	0	0	3000000	EFF
	CPX.0014772-F1	Upgrade Reservoirs City Wide FY24	w	0	4000000	0	4000000	EFF
	CPX.0021009-F1	Upgrade Reservoirs City Wide FY25	w	0	0	10000000	10000000	EFF
	CPX.0011318-F1	Bulk Retic Sewers in Milnerton Rehab	s	70229126	65000000	90000000	225229126	EFF
	CPX.0007376-F1	Diversion Dunoon Sewer	s	0	242497	0	242497	EFF

	CPX.0007405-F1	Main Rd Clovelly Simonstown	w	0	0	0	0	EFF
	CPX.0007409-F1	Peligrini Sewer Pumpstation Diversion	s	0	77309	0	77309	EFF
	CPX.0020255-F1	Gordons Bay Beach Front Sewer Ph2	s	282000	9386277	0	9668277	EFF
	CPX.0007423-F1	Upgrade Andrag Supply System	w	0	341525	0	341525	EFF
	CPX.0010643-F1	Upgrade Rietvlei Sewer Pump Station	s	27500000	115250000	21250000	164000000	EFF
	CPX.0021366-F1	Acquisition & Registr & servitude FY23		150000	0	0	150000	EFF
	CPX.0021367-F1	Acquisition & Registr & servitude FY24		0	200000	0	200000	EFF
	CPX.0027775-F1	Acquisition & Registr & servitude FY25		0	0	150000	150000	EFF
	CPX.0023031-F2	Gordon's Bay Firlands Network Infrastruc	w	0	0	5500000	5500000	CRR
2. Source Development Projects				**541937822**	**717981400**	**1318889370**	**2578808592**	
	CPX.0014708-F1	Development of Add Infrastructure FY23	w	30000000	0	0	30000000	EFF
	CPX.0014709-F1	Development of Add Infrastructure FY24	w	0	50000000	0	50000000	EFF
	CPX.0018253-F2	Development of Add Infrastructure FY25	w	0	0	60000000	60000000	EFF
	C11.86077-F1	Bulk Water Augmentation Scheme	w	0	0	5000000	5000000	EFF
	CPX.0007972-F2	BWAS:Muldersvlei Reservoir & Pipeline	w	5000000	40000000	200000000	245000000	EFF
	CPX.0007977-F2	BWAS:M'vlei WTP-SBR P/Line-13km C4-D&CS	w	2000000	3900000	2000000	7900000	EFF
	CPX.0007980-F2	BWAS:Ph2:SpesBonaRes(300Ml)C6-D&CS-VV-GG	w	0	0	5000000	5000000	EFF
	CPX.0007982-F2	BWAS:Ph3:SBR-GG P/Line-13km C7-EIA-VV-GG	w	0	0	500000	500000	EFF
	CPX.0007975-F2	BWAS:Raw Water P/line-M'vlei WTP C2-D&CS	w	0	0	2500000	2500000	EFF
	CPX.0003851-F1	Contermanskloof Reservoir	w	8158422	0	0	8158422	EFF
	CPX.0009469-F1	Helderberg/Faure Scheme	w	0	1000000	7000000	8000000	EFF
	CPX.0011032-F3	Atlantis Aquifer	w	90000000	112000000	71000000	273000000	EFF
	CPX.0010520-F4	Cape Flats Aquifer	w	40000000	256000000	0	296000000	EFF
	CPX.0013724-F1	Cape Flats Aquifer Recharge	w	270179400	120081400	236089370	626350170	EFF
	CPX.0029945-F1	Cape Flats Aquifer:Hanover Park & Philip	w	0	0	20000000	20000000	EFF
	CPX.0029946-F1	Cape Flats Aquifer:Strandfontein NorthE	w	0	0	166000000	166000000	EFF
	CPX.0016653-F1	Desalination Permanent Site	w	4500000	5000000	2300000	11800000	EFF
	CPX.0016654-F1	Table Mountain Group Aquifer	w	80000000	120000000	0	200000000	EFF
	CPX.0029949-F1	Table Mountain Group Aquifer: Nuweberg	w	0	0	500000	500000	EFF

	CPX.0030011-F1	Table Mountain Group Aquifer: Pre-Treatm	w	0	0	500000	500000	EFF
	CPX.0030010-F1	Table Mountain Group Aquifer:Groenlandbe	w	0	0	500000	500000	EFF
	CPX.0014007-F1	Zandvliet Plant Re-use (50ML)	w	12100000	10000000	540000000	562100000	EFF
3. Demand Management projects				**48000000**	**85000000**	**75000000**	**208000000**	
	CPX.0014705-F1	Treated Effluent: Reuse & Inf Upgr FY23		33000000	0	0	33000000	EFF
	CPX.0011112-F1	Treated Effluent: Reuse & Inf Upgr FY24		0	70000000	0	70000000	EFF
	CPX.0014759-F1	Pressure Management: COCT FY23		15000000	0	0	15000000	EFF
	CPX.0014760-F1	Pressure Management: COCT FY24		0	15000000	0	15000000	EFF
	CPX.0018001-F1	Pressure Management: COCT FY25		0	0	15000000	15000000	EFF
	CPX.0030050-F1	Treated Effluent Re-Use: Cape Flats EP		0	0	1000000	1000000	EFF
	CPX.0029983-F1	Treated Effluent Re-Use: Cape Flats PS		0	0	500000	500000	EFF
	CPX.0029985-F1	Treated Effluent Re-Use: Scottsdene PH1		0	0	34500000	34500000	EFF
	CPX.0029929-F1	Treated Effluent Re-Use: Zandvleit PS		0	0	12000000	12000000	EFF
	CPX.0029988-F1	Treated Effluent Re-Use:Wildevoelvlei PS		0	0	12000000	12000000	EFF
4. O&M Commitments								
Operations								
Maintenance (under infrastructure projects)								
5. Institutional				**122765200**	**190562732**	**195140000**	**508467932**	
	CPX.0018305-F1	Computer Equipment: Additional FY23		35000	0	0	35000	EFF
	CPX.0022214-F2	Computer Equipment: Additional FY24		0	35000	0	35000	EFF
	CPX.0030757-F1	Computer Equipment: Additional FY25		0	0	35000	35000	EFF
	CPX.0018306-F1	WS Contingency Prov - Insurance FY23		30000	0	0	30000	REVENUE
	CPX.0022213-F1	WS Contingency Prov - Insurance FY24		0	30000	0	30000	REVENUE
	CPX.0030758-F1	WS Contingency Prov - Insurance FY25		0	0	30000	30000	REVENUE
	CPX.0022236-F2	Computer Equipment: Replacement FY23		35000	0	0	35000	EFF
	CPX.0022237-F2	Computer Equipment: Replacement FY24		0	35000	0	35000	EFF

	CPX.0029932-F1	Computer Equipment: Replacement FY25		0	0	35000	35000	EFF
	CPX.0018864-F1	Furniture: Replacement FY23		40000	0	0	40000	EFF
	CPX.0022215-F2	Furniture: Replacement FY24		0	40000	0	40000	EFF
	CPX.0028878-F1	Furniture: Replacement FY25		0	0	40000	40000	EFF
	CPX.0023016-F1	Depot Realignment: Blomtuin FY25		0	0	6000000	6000000	EFF
	CPX.0023012-F1	Depot Realignment: Schaapkraal FY25		0	0	22000000	22000000	EFF
	CPX.0012971-F1	EAM Depot Realignment: 5 Nodal Syst FY23		5185200	0	0	5185200	EFF
	CPX.0015296-F1	EAM Depot Realignment: 5 Nodal Syst FY24		0	63000000	0	63000000	EFF
	CPX.0011337-F1	IT: System, Infrastr Equipment: Add FY23		13000000	0	0	13000000	EFF
	CPX.0014713-F1	IT: System, Infrastr Equipment: Add FY24		0	13122732	0	13122732	EFF
	CPX.0017986-F1	IT: System, Infrastr Equipment: Add FY25		0	0	20000000	20000000	EFF
	CPX.0019197-F1	Furniture: Additional FY23		3700000	0	0	3700000	EFF
	CPX.0020384-F1	Furniture: Additional FY24		0	1600000	0	1600000	EFF
	CPX.0021129-F1	Furniture: Additional FY25		0	0	1600000	1600000	EFF
	CPX.0019199-F1	Office Equipment: Additional FY23		300000	0	0	300000	EFF
	CPX.0020385-F1	Office Equipment: Additional FY24		0	400000	0	400000	EFF
	CPX.0021082-F1	Office Equipment: Additional FY25		0	0	400000	400000	EFF
	CPX.0014703-F1	Laboratory Equipment: Additional FY23		11001592	0	0	11001592	EFF
	CPX.0014704-F1	Laboratory Equipment: Additional FY24		0	4337703	0	4337703	EFF
	CPX.0017989-F1	Laboratory Equipment: Additional FY25		0	0	5000000	5000000	EFF
	CPX.0029742-F1	EAM Heavy Vehicles additional FY25		0	0	42400000	42400000	EFF
	CPX.0029567-F1	EAM Light Vehicles Additional FY25		0	0	7600000	7600000	EFF
	CPX.0018884-F1	EAM Plant Equip: Additional FY23		9300000	0	0	9300000	EFF
	CPX.0018885-F1	EAM Plant Equip: Additional FY24		0	8000000	0	8000000	EFF
	CPX.0018916-F1	EAM Plant Equip: Additional FY25		0	0	10000000	10000000	EFF
	CPX.0016856-F1	Vehicles Additional FY23		22040000	0	0	22040000	EFF
	CPX.0016858-F1	Vehicles Additional FY24		0	50000000	0	50000000	EFF
	CPX.0012973-F1	Specialised Equipment: Additional FY23		4500000	0	0	4500000	EFF
	CPX.0015246-F1	Specialised Equipment: Additional FY24		0	4000000	0	4000000	EFF
	CPX.0015619-F1	Specialised Equipment: Additional FY25		0	0	3500000	3500000	EFF
	CPX.0029590-F1	EAM Heavy Vehicles: Replacement FY25		0	0	18000000	18000000	EFF
	CPX.0029568-F1	EAM Light Vehicles: Replacement FY25		0	0	11000000	11000000	EFF
	CPX.0012972-F1	Vehicles: Replacement FY23		28700000	0	0	28700000	EFF

	CPX.0014754-F1	Vehicles: Replacement FY24		0	7000000	0	7000000	EFF
	CPX.0014761-F1	Refurbishment of Labs FY23		400000	0	0	400000	EFF
	CPX.0014762-F1	Refurbishment of Labs FY24		0	400000	0	400000	EFF
	CPX.0017992-F1	Refurbishment of Labs FY25		0	0	1000000	1000000	EFF
	CPX.0021098-F1	Depot Upgrade FY23		2000000	0	0	2000000	EFF
	CPX.0021409-F1	Depot Upgrade FY24		0	16900000	0	16900000	EFF
	CPX.0021410-F1	Depot Upgrade FY25		0	0	40000000	40000000	EFF
	CPX.0021408-F1	Telemetry and Automation FY23		3000000	0	0	3000000	EFF
	CPX.0021426-F1	Telemetry and Automation FY24		0	3000000	0	3000000	EFF
	CPX.0021428-F1	Telemetry and Automation FY25		0	0	3000000	3000000	EFF
	CPX.0020398-F1	Reactive Incident Management System		17618408	14662297	0	32280705	EFF
	CPX.0014714-F1	WS Contingency prov - Insurance FY23		1000000	0	0	1000000	REVENUE
	CPX.0014715-F1	WS Contingency prov - Insurance FY24		0	1000000	0	1000000	REVENUE
	CPX.0017780-F1	WS Contingency prov - Insurance FY25		0	0	1000000	1000000	REVENUE
	CPX.0030265-F1	Plant & Equipment: Add (CSM) FY25		0	0	500000	500000	EFF
	CPX.0014757-F1	Small Plant & Equip: Add (Retic) FY23		880000	0	0	880000	EFF
	CPX.0014758-F1	Small Plant & Equip: Add (Retic) FY24		0	3000000	0	3000000	EFF
	CPX.0020998-F1	Small Plant & Equip: Add (Retic) FY25		0	0	2000000	2000000	EFF
6. Water Services Programms								
Awareness Programs								
WASH Programs								
		Total		**2396749851**	**4056415296**	**4703591038**	**11156756185**	

Section F: WSDP Projects

Table 30 WSDP project list

Branch Description	Item	WBS Element	WBS Element Description	Approved Adj Budget 2022/23	Approved Adj Budget 2023/24	Proposed Budget 2024/25 Submitted	Proposed Budget 2025/26	Proposed Budget 2026/27	Total Cost	Major Fund
Auxiliary Services	CPX.0011337	CPX.0011337-F1	IT: System, Infrastr Equipment: Add FY23	13,000,000	0	0	0	0	13,000,000	EFF
Auxiliary Services	CPX.0014713	CPX.0014713-F1	IT: System, Infrastr Equipment: Add FY24	0	13,122,732	0	0	0	13,122,732	EFF
Auxiliary Services	CPX.0017986	CPX.0017986-F1	IT: System, Infrastr Equipment: Add FY25	0	0	20,000,000	0	0	20,000,000	EFF
Auxiliary Services	CPX.0017987	CPX.0017987-F1	IT: System, Infrastr Equipment: Add FY26	0	0	0	20,000,000	0	20,000,000	EFF
Auxiliary Services	CPX.0017988	CPX.0017988-F1	IT: System, Infrastr Equipment: Add FY27	0	0	0	0	20,000,000	20,000,000	EFF
Auxiliary Services	CPX.0019197	CPX.0019197-F1	Furniture: Additional FY23	3,700,000	0	0	0	0	3,700,000	EFF
Auxiliary Services	CPX.0020384	CPX.0020384-F1	Furniture: Additional FY24	0	1,600,000	0	0	0	1,600,000	EFF
Auxiliary Services	CPX.0021129	CPX.0021129-F1	Furniture: Additional FY25	0	0	1,600,000	0	0	1,600,000	EFF
Auxiliary Services	CPX.0021130	CPX.0021130-F1	Furniture: Additional FY26	0	0	0	6,600,000	0	6,600,000	EFF
Auxiliary Services	CPX.0021131	CPX.0021131-F1	Furniture: Additional FY27	0	0	0	0	4,600,000	4,600,000	EFF
Auxiliary Services	CPX.0019199	CPX.0019199-F1	Office Equipment: Additional FY23	300,000	0	0	0	0	300,000	EFF
Auxiliary Services	CPX.0020385	CPX.0020385-F1	Office Equipment: Additional FY24	0	400,000	0	0	0	400,000	EFF
Auxiliary Services	CPX.0021082	CPX.0021082-F1	Office Equipment: Additional FY25	0	0	400,000	0	0	400,000	EFF
Auxiliary Services	CPX.0021083	CPX.0021083-F1	Office Equipment: Additional FY26	0	0	0	400,000	0	400,000	EFF
Auxiliary Services	CPX.0021084	CPX.0021084-F1	Office Equipment: Additional FY27	0	0	0	0	400,000	400,000	EFF
Auxiliary Services	CPX.0021098	CPX.0021098-F1	Depot Upgrade FY23	2,000,000	0	0	0	0	2,000,000	EFF
Auxiliary Services	CPX.0021409	CPX.0021409-F1	Depot Upgrade FY24	0	16,900,000	0	0	0	16,900,000	EFF
Auxiliary Services	CPX.0021410	CPX.0021410-F1	Depot Upgrade FY25	0	0	40,000,000	0	0	40,000,000	EFF
Auxiliary Services	CPX.0021411	CPX.0021411-F1	Depot Upgrade FY26	0	0	0	50,000,000	0	50,000,000	EFF
Auxiliary Services	CPX.0021412	CPX.0021412-F1	Depot Upgrade FY27	0	0	0	0	50,000,000	50,000,000	EFF

Branch Description	Item	WBS Element	WBS Element Description	Approved Adj Budget 2022/23	Approved Adj Budget 2023/24	Proposed Budget 2024/25 Submitted	Proposed Budget 2025/26	Proposed Budget 2026/27	Total Cost	Major Fund
Auxiliary Services	CPX.0020398	CPX.0020398-F1	Reactive Incident Management System	17,618,408	14,662,297	0	0	0	32,280,705	EFF
Bulk Water	CPX.0014706	CPX.0014706-F1	BW Infrastructure Replacement FY23	60,600,000	0	0	0	0	60,600,000	EFF
Bulk Water	CPX.0014707	CPX.0014707-F1	BW Infrastructure Replacement FY24	0	100,000,000	0	0	0	100,000,000	EFF
Bulk Water	CPX.0018250	CPX.0018250-F1	BW Infrastructure Replacement FY25	0	0	110,000,000	0	0	110,000,000	EFF
Bulk Water	CPX.0018251	CPX.0018251-F1	BW Infrastructure Replacement FY26	0	0	0	109,185,752	0	109,185,752	EFF
Bulk Water	CPX.0018252	CPX.0018252-F1	BW Infrastructure Replacement FY27	0	0	0	0	88,000,000	88,000,000	EFF
Bulk Water	CPX.0014708	CPX.0014708-F1	Development of Add Infrastructure FY23	30,000,000	0	0	0	0	30,000,000	EFF
Bulk Water	CPX.0014709	CPX.0014709-F1	Development of Add Infrastructure FY24	0	50,000,000	0	0	0	50,000,000	EFF
Bulk Water	CPX.0018253	CPX.0018253-F2	Development of Add Infrastructure FY25	0	0	60,000,000	0	0	60,000,000	EFF
Bulk Water	CPX.0018254	CPX.0018254-F1	Development of Add Infrastructure FY26	0	0	0	70,000,000	0	70,000,000	EFF
Bulk Water	CPX.0018255	CPX.0018255-F1	Development of Add Infrastructure FY27	0	0	0	0	80,000,000	80,000,000	EFF
Bulk Water	C11.86077	C11.86077-F1	Bulk Water Augmentation Scheme	0	0	5,000,000	0	0	5,000,000	EFF
Bulk Water	C11.86077	C11.86077-F4	Bulk Water Augmentation Scheme	0	0	0	5,400,000	1,700,000	7,100,000	CGD
Bulk Water	CPX.0007989	CPX.0007989-F2	BWAS: Servitudes(C2&C4)	0	0	0	0	2,000,000	2,000,000	EFF
Bulk Water	CPX.0007972	CPX.0007972-F2	BWAS:Muldersvlei Reservoir & Pipeline	5,000,000	40,000,000	200,000,000	200,000,000	165,000,000	610,000,000	EFF
Bulk Water	CPX.0007979	CPX.0007979-F2	BWAS:M'vlei WTP-SBR P/Line-13km C4-C	0	0	0	0	5,000,000	5,000,000	EFF
Bulk Water	CPX.0007977	CPX.0007977-F2	BWAS:M'vlei WTP-SBR P/Line-13km C4-D&CS	2,000,000	3,900,000	2,000,000	1,600,000	2,000,000	11,500,000	EFF
Bulk Water	CPX.0007981	CPX.0007981-F2	BWAS:Ph2:SpesBonaRes(300Ml)C6-C-VV-GG	0	0	0	0	30,000,000	30,000,000	EFF
Bulk Water	CPX.0007980	CPX.0007980-F2	BWAS:Ph2:SpesBonaRes(300Ml)C6-D&CS-VV-GG	0	0	5,000,000	2,000,000	2,500,000	9,500,000	EFF
Bulk Water	CPX.0007982	CPX.0007982-F2	BWAS:Ph3:SBR-GG P/Line-13km C7-EIA-VV-GG	0	0	500,000	400,000	0	900,000	EFF
Bulk Water	CPX.0007983	CPX.0007983-F2	BWAS:Ph3:SBR-GG P/Line-13kmC7-D&CS-VV-GG	0	0	0	800,000	2,400,000	3,200,000	EFF
Bulk Water	CPX.0007975	CPX.0007975-F2	BWAS:Raw Water P/line-M'vlei WTP C2-D&CS	0	0	2,500,000	800,000	2,500,000	5,800,000	EFF
Bulk Water	CPX.0007976	CPX.0007976-F2	BWAS-C2-C-Raw Water P/line-M'vlei WTP	0	0	0	0	110,600,000	110,600,000	EFF

Branch Description	Item	WBS Element	WBS Element Description	Approved Adj Budget 2022/23	Approved Adj Budget 2023/24	Proposed Budget 2024/25 Submitted	Proposed Budget 2025/26	Proposed Budget 2026/27	Total Cost	Major Fund
Bulk Water	CPX.0014746	CPX.001474 6-F1	Plant & Equipment Additional FY23	750,000	0	0	0	0	750,000	EFF
Bulk Water	CPX.0014747	CPX.001474 7-F1	Plant & Equipment Additional FY24	0	750,000	0	0	0	750,000	EFF
Bulk Water	CPX.0018266	CPX.001826 6-F1	Plant & Equipment Additional FY25	0	0	750,000	0	0	750,000	EFF
Bulk Water	CPX.0018267	CPX.001826 7-F1	Plant & Equipment Additional FY26	0	0	0	750,000	0	750,000	EFF
Bulk Water	CPX.0018268	CPX.001826 8-F1	Plant & Equipment Additional FY27	0	0	0	0	750,000	750,000	EFF
Bulk Water	CPX.0014767	CPX.001476 7-F1	Plant & Equipment: Replacement FY23	750,000	0	0	0	0	750,000	EFF
Bulk Water	CPX.0014768	CPX.001476 8-F1	Plant & Equipment: Replacement FY24	0	750,000	0	0	0	750,000	EFF
Bulk Water	CPX.0018269	CPX.001826 9-F1	Plant & Equipment: Replacement FY25	0	0	750,000	0	0	750,000	EFF
Bulk Water	CPX.0018270	CPX.001827 0-F1	Plant & Equipment: Replacement FY26	0	0	0	750,000	0	750,000	EFF
Bulk Water	CPX.0018271	CPX.001827 1-F1	Plant & Equipment: Replacement FY27	0	0	0	0	750,000	750,000	EFF
Bulk Water	CPX.0003851	CPX.000385 1-F1	Contermanskloof Reservoir	8,158,422	0	0	0	0	8,158,422	EFF
Bulk Water	CPX.0003893	CPX.000389 3-F1	OSEC (Electrolytic Chlorination Infr)	0	15,000,000	0	0	0	15,000,000	EFF
Bulk Water	CPX.0008886	CPX.000888 6-F1	OSEC(Electrolytic Chlorination Infr) Ph2	0	0	1,000,000	0	0	1,000,000	EFF
Bulk Water	CPX.0008887	CPX.000888 7-F1	OSEC(Electrolytic Chlorination Infr) PH3	0	0	5,000,000	10,500,000	4,500,000	20,000,000	EFF
Bulk Water	CPX.0008888	CPX.000888 8-F1	OSEC(Electrolytic Chlorination Infr) Ph4	0	0	0	500,000	500,000	1,000,000	EFF
Bulk Water	CPX.0003895	CPX.000389 5-F1	Steenbras Reservoir	0	0	0	80,000,000	80,000,000	160,000,000	EFF
Bulk Water	CPX.0009469	CPX.000946 9-F1	Helderberg/Faure Scheme	0	1,000,000	7,000,000	40,000,000	15,000,000	63,000,000	EFF
Bulk Water	C15.86043	C15.86043-F1	Additional Resources Desalination Reclai	0	0	0	0	5,000,000	5,000,000	EFF
Bulk Water	CPX.0011032	CPX.001103 2-F3	Atlantis Aquifer	90,000,000	112,000,000	71,000,000	35,000,000	20,000,000	328,000,000	EFF
Bulk Water	CPX.0010520	CPX.001052 0-F4	Cape Flats Aquifer	40,000,000	256,000,000	0	0	0	296,000,000	EFF
Bulk Water	CPX.0013724	CPX.001372 4-F1	Cape Flats Aquifer Recharge	270,179,400	120,081,400	236,089,370	160,610,630	0	786,960,800	EFF
Bulk Water	CPX.0029947	CPX.002994 7-F1	Cape Flats Aquifer: Mitchells Plain	0	0	0	65,000,000	135,000,000	200,000,000	EFF
Bulk Water	CPX.0029945	CPX.002994 5-F1	Cape Flats Aquifer:Hanover Park & Philip	0	0	20,000,000	60,000,000	0	80,000,000	EFF

Branch Description	Item	WBS Element	WBS Element Description	Approved Adj Budget 2022/23	Approved Adj Budget 2023/24	Proposed Budget 2024/25 Submitted	Proposed Budget 2025/26	Proposed Budget 2026/27	Total Cost	Major Fund
Bulk Water	CPX.0029946	CPX.002994 6-F1	Cape Flats Aquifer:Strandfontein NorthE	0	0	166,000,000	0	0	166,000,000	EFF
Bulk Water	CPX.0016653	CPX.001665 3-F1	Desalination Permanent Site	4,500,000	5,000,000	2,300,000	500,000	500,000	12,800,000	EFF
Bulk Water	CPX.0016654	CPX.001665 4-F1	Table Mountain Group Aquifer	80,000,000	120,000,000	0	0	0	200,000,000	EFF
Bulk Water	CPX.0029949	CPX.002994 9-F1	Table Mountain Group Aquifer: Nuweberg	0	0	500,000	500,000	500,000	1,500,000	EFF
Bulk Water	CPX.0030011	CPX.003001 1-F1	Table Mountain Group Aquifer: Pre-Treatm	0	0	500,000	500,000	500,000	1,500,000	EFF
Bulk Water	CPX.0030010	CPX.003001 0-F1	Table Mountain Group Aquifer:Groenlandbe	0	0	500,000	500,000	500,000	1,500,000	EFF
Bulk Water	CPX.0014007	CPX.001400 7-F1	Zandvliet Plant Re-use (50ML)	12,100,000	10,000,000	540,000,000	800,000,000	500,000,000	1,862,100,000	EFF
Catchment and Stormwater Management	CPX.0015797	CPX.001579 7-F1	WS Contingency prov - Insurance FY23	50,000	0	0	0	0	50,000	REVENUE
Catchment and Stormwater Management	CPX.0015798	CPX.001579 8-F1	WS Contingency prov - Insurance FY24	0	50,000	0	0	0	50,000	REVENUE
Catchment and Stormwater Management	CPX.0017979	CPX.001797 9-F1	WS Contingency prov - Insurance FY25	0	0	50,000	0	0	50,000	REVENUE
Catchment and Stormwater Management	CPX.0017980	CPX.001798 0-F1	WS Contingency prov - Insurance FY26	0	0	0	50,000	0	50,000	REVENUE
Catchment and Stormwater Management	CPX.0017981	CPX.001798 1-F1	WS Contingency prov - Insurance FY27	0	0	0	0	50,000	50,000	REVENUE
Catchment and Stormwater Management	CPX.0017546	CPX.001754 6-F1	Rehabilitation Keysers River Steenberg	1,436,238	5,190,766	0	0	0	6,627,004	EFF
Catchment and Stormwater Management	CPX.0017475	CPX.001747 5-F1	Rehabilitation of Grootboschkloof River	1,436,238	5,190,766	0	0	0	6,627,004	EFF
Catchment and Stormwater Management	CPX.0017549	CPX.001754 9-F1	Rehabilitation of Westlake River	1,529,195	7,241,610	0	0	0	8,770,805	EFF
Catchment and Stormwater Management	CPX.0020148	CPX.002014 8-F1	Sand/Langvlei Canal Wetland Rehab	0	0	2,983,507	6,433,885	0	9,417,392	EFF
Catchment and Stormwater Management	CPX.0016623	CPX.001662 3-F1	Upgrade of Manenberg Canal	278,721	9,931,366	12,426,307	4,898,337	0	27,534,731	CGD
Catchment and Stormwater Management	CPX.0016671	CPX.001667 1-F1	Upgrade Vygekraal River banks - Phase II	305,692	1,055,676	6,497,492	6,497,494	6,497,494	20,853,848	CGD
Catchment and Stormwater Management	CPX.0017548	CPX.001754 8-F1	Zandvlei River: channel enhancement	2,309,347	7,978,036	4,687,096	0	0	14,974,479	EFF
Catchment and Stormwater Management	CPX.0013019	CPX.001301 9-F1	Flood Alleviation - Lourens River	0	19,621,942	0	0	0	19,621,942	EFF
Catchment and Stormwater Management	CPX.0013019	CPX.001301 9-F4	Flood Alleviation - Lourens River	20,709,988	0	0	0	0	20,709,988	CGD
Catchment and Stormwater Management	CPX.0016672	CPX.001667 2-F1	Flood Alleviation-Lourens River Phase II	12,385,189	1,185,847	2,669,028	84,204,217	81,514,219	181,958,500	EFF
Catchment and Stormwater Management	CPX.0017342	CPX.001734 2-F1	Geelsloot stormwater rehab Section 2	0	139,571	764,301	12,552,269	0	13,456,141	EFF

Branch Description	Item	WBS Element	WBS Element Description	Approved Adj Budget 2022/23	Approved Adj Budget 2023/24	Proposed Budget 2024/25 Submitted	Proposed Budget 2025/26	Proposed Budget 2026/27	Total Cost	Major Fund
Catchment and Stormwater Management	CPX.0017343	CPX.0017343-F1	Geelsloot stormwater rehab Section 3	0	0	139,990	830,651	12,485,500	13,456,141	EFF
Catchment and Stormwater Management	CPX.0017344	CPX.0017344-F1	Geelsloot stormwater rehab Section 4	0	0	0	136,227	233,510	369,737	EFF
Catchment and Stormwater Management	CPX.0017345	CPX.0017345-F1	Geelsloot stormwater rehab Section 5	0	0	0	0	136,644	136,644	EFF
Catchment and Stormwater Management	CPX.0016674	CPX.0016674-F1	Macassar Flood Alleviation	1,094,743	1,134,945	1,747,668	38,020,694	49,995,780	91,993,830	CGD
Catchment and Stormwater Management	CPX.0016674	CPX.0016674-F2	Macassar Flood Alleviation	3,184,621	486,405	3,606,143	41,378,017	41,378,017	90,033,203	EFF
Catchment and Stormwater Management	CPX.0012948	CPX.0012948-F2	Sir Lowry's Pass River Upgrade	115,000,000	91,165,277	122,643,136	76,300,000	24,191,587	429,300,000	EFF
Catchment and Stormwater Management	CPX.0012948	CPX.0012948-F3	Sir Lowry's Pass River Upgrade	0	0	0	10,000,000	0	10,000,000	EFF
Catchment and Stormwater Management	CPX.0016666	CPX.0016666-F1	Soet River 21st Street Drainage Channel	0	0	0	0	953,028	953,028	CGD
Catchment and Stormwater Management	CPX.0016666	CPX.0016666-F2	Soet River 21st Street Drainage Channel	0	0	0	0	105,892	105,892	EFF
Catchment and Stormwater Management	CPX.0016605	CPX.0016605-F1	Soet River Construction detention pond	0	0	285,239	273,779	8,373,908	8,932,926	CGD
Catchment and Stormwater Management	CPX.0016605	CPX.0016605-F2	Soet River Construction detention pond	0	0	31,693	30,420	930,434	992,547	EFF
Catchment and Stormwater Management	CPX.0016652	CPX.0016652-F1	Soet River Detention Pond	0	285,239	151,569	5,105,862	7,194,346	12,737,016	CGD
Catchment and Stormwater Management	CPX.0016652	CPX.0016652-F2	Soet River Detention Pond	0	31,693	16,841	567,318	799,372	1,415,224	EFF
Catchment and Stormwater Management	CPX.0016675	CPX.0016675-F1	Upgrade of Geelsloot - Somerset West	116,565	104,574	13,234,999	0	0	13,456,138	EFF
Catchment and Stormwater Management	CPX.0016650	CPX.0016650-F1	Upgrade of Geelsloot Pond -Somerset West	742,318	97,632	8,012,738	0	0	8,852,688	EFF
Catchment and Stormwater Management	CPX.0016619	CPX.0016619-F1	Diep River - Doornbach Diversions	227,541	430,146	6,469,706	3,812,027	0	10,939,420	CGD
Catchment and Stormwater Management	CPX.0017547	CPX.0017547-F1	Litter Traps Citywide	1,588,854	648,578	2,054,340	6,054,339	9,054,338	19,400,449	EFF
Catchment and Stormwater Management	CPX.0016669	CPX.0016669-F2	Rehab of Diep River - Erica Road Outfall	245,933	5,754,497	3,823,388	0	0	9,823,818	EFF
Catchment and Stormwater Management	CPX.0016668	CPX.0016668-F1	Rehab of Diep River - Joe Slovo Pond	105,553	5,271,094	3,048,681	0	0	8,425,328	CGD
Catchment and Stormwater Management	CPX.0016670	CPX.0016670-F2	Rehab of Diep River - Theo Marais Canal	498,565	206,301	9,514,773	12,152,447	4,992,084	27,364,170	EFF
Catchment and Stormwater Management	CPX.0016647	CPX.0016647-F1	Stormwater Dams: Safety upgr (City-wide)	216,428	4,945,478	9,604,230	1,275,251	0	16,041,387	CGD
Catchment and Stormwater Management	CPX.0016647	CPX.0016647-F2	Stormwater Dams: Safety upgr (City-wide)	1,483,572	3,296,986	6,402,820	850,167	0	12,033,545	EFF
Catchment and Stormwater Management	CPX.0017550	CPX.0017550-F1	Upgrade of Zandvlei Canal	294,013	4,611,593	159,744	6,766,446	7,025,851	18,857,647	EFF

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Catchment and Stormwater Management	CPX.0030776	CPX.0030776-F1	Bayside Canal Upgrade	0	0	31,000,000	16,000,000	0	47,000,000	EFF
Customer Services (Water)	CPX.0014663	CPX.0014663-F2	Water Meters New Connections FY23	15,000,000	0	0	0	0	15,000,000	CGD
Customer Services (Water)	CPX.0014663	CPX.0014663-F3	Water Meters New Connections FY23	15,000,000	0	0	0	0	15,000,000	CGD
Customer Services (Water)	CPX.0014664	CPX.0014664-F2	Water Meters New Connections FY24	0	15,000,000	0	0	0	15,000,000	CGD
Customer Services (Water)	CPX.0014664	CPX.0014664-F3	Water Meters New Connections FY24	0	15,000,000	0	0	0	15,000,000	CGD
Customer Services (Water)	CPX.0017976	CPX.0017976-F1	Water Meters New Connections FY25	0	0	20,000,000	0	0	20,000,000	CGD
Customer Services (Water)	CPX.0017976	CPX.0017976-F2	Water Meters New Connections FY25	0	0	15,000,000	0	0	15,000,000	CGD
Customer Services (Water)	CPX.0017977	CPX.0017977-F1	Water Meters New Connections FY26	0	0	0	20,000,000	0	20,000,000	CGD
Customer Services (Water)	CPX.0017977	CPX.0017977-F2	Water Meters New Connections FY26	0	0	0	20,000,000	0	20,000,000	CGD
Customer Services (Water)	CPX.0017978	CPX.0017978-F2	Water Meters New Connections FY27	0	0	0	0	15,000,000	15,000,000	CGD
Customer Services (Water)	CPX.0017978	CPX.0017978-F3	Water Meters New Connections FY27	0	0	0	0	15,000,000	15,000,000	CGD
Customer Services (Water)	CPX.0014748	CPX.0014748-F1	Meter Replacement Programme FY23	155,000,000	0	0	0	0	155,000,000	EFF
Customer Services (Water)	CPX.0014749	CPX.0014749-F1	Meter Replacement Programme FY24	0	80,000,000	0	0	0	80,000,000	EFF
Customer Services (Water)	CPX.0017840	CPX.0017840-F1	Meter Replacement Programme FY25	0	0	14,500,000	0	0	14,500,000	EFF
Customer Services (Water)	CPX.0017841	CPX.0017841-F1	Meter Replacement Programme FY26	0	0	0	25,000,000	0	25,000,000	EFF
Customer Services (Water)	CPX.0017842	CPX.0017842-F1	Meter Replacement Programme FY27	0	0	0	0	40,000,000	40,000,000	EFF
Customer Services (Water)	CPX.0019987	CPX.0019987-F1	AMI rollout programme	20,000,000	290,000,000	455,000,000	480,000,000	499,000,000	1,744,000,000	EFF
Customer Services (Water)	CPX.0030265	CPX.0030265-F1	Plant & Equipment: Add (CSM) FY25	0	0	500,000	0	0	500,000	EFF
Engineering & Asset Management	CPX.0023016	CPX.0023016-F1	Depot Realignment: Blomtuin FY25	0	0	6,000,000	0	0	6,000,000	EFF
Engineering & Asset Management	CPX.0023012	CPX.0023012-F1	Depot Realignment: Schaapkraal FY25	0	0	22,000,000	0	0	22,000,000	EFF
Engineering & Asset Management	CPX.0012971	CPX.0012971-F1	EAM Depot Realignment: 5 Nodal Syst FY23	5,185,200	0	0	0	0	5,185,200	EFF
Engineering & Asset Management	CPX.0015296	CPX.0015296-F1	EAM Depot Realignment: 5 Nodal Syst FY24	0	63,000,000	0	0	0	63,000,000	EFF
Engineering & Asset Management	CPX.0029742	CPX.0029742-F1	EAM Heavy Vehicles additional FY25	0	0	42,400,000	0	0	42,400,000	EFF

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Engineering & Asset Management	CPX.0029567	CPX.0029567-F1	EAM Light Vehicles Additional FY25	0	0	7,600,000	0	0	7,600,000	EFF
Engineering & Asset Management	CPX.0018884	CPX.0018884-F1	EAM Plant Equip: Additional FY23	9,300,000	0	0	0	0	9,300,000	EFF
Engineering & Asset Management	CPX.0018885	CPX.0018885-F1	EAM Plant Equip: Additional FY24	0	8,000,000	0	0	0	8,000,000	EFF
Engineering & Asset Management	CPX.0018916	CPX.0018916-F1	EAM Plant Equip: Additional FY25	0	0	10,000,000	0	0	10,000,000	EFF
Engineering & Asset Management	CPX.0021012	CPX.0021012-F1	EAM Plant Equip: Additional FY26	0	0	0	11,000,000	0	11,000,000	EFF
Engineering & Asset Management	CPX.0021016	CPX.0021016-F1	EAM Plant Equip: Additional FY27	0	0	0	0	12,000,000	12,000,000	EFF
Engineering & Asset Management	CPX.0016856	CPX.0016856-F1	Vehicles Additional FY23	22,040,000	0	0	0	0	22,040,000	EFF
Engineering & Asset Management	CPX.0016858	CPX.0016858-F1	Vehicles Additional FY24	0	50,000,000	0	0	0	50,000,000	EFF
Engineering & Asset Management	CPX.0021030	CPX.0021030-F1	Vehicles Additional FY26	0	0	0	55,000,000	0	55,000,000	EFF
Engineering & Asset Management	CPX.0021031	CPX.0021031-F1	Vehicles Additional FY27	0	0	0	0	58,000,000	58,000,000	EFF
Engineering & Asset Management	CPX.0012973	CPX.0012973-F1	Specialised Equipment: Additional FY23	4,500,000	0	0	0	0	4,500,000	EFF
Engineering & Asset Management	CPX.0015246	CPX.0015246-F1	Specialised Equipment: Additional FY24	0	4,000,000	0	0	0	4,000,000	EFF
Engineering & Asset Management	CPX.0015619	CPX.0015619-F1	Specialised Equipment: Additional FY25	0	0	3,500,000	0	0	3,500,000	EFF
Engineering & Asset Management	CPX.0016730	CPX.0016730-F1	Specialised Equipment: Additional FY26	0	0	0	3,000,000	0	3,000,000	EFF
Engineering & Asset Management	CPX.0016731	CPX.0016731-F1	Specialised Equipment: Additional FY27	0	0	0	0	3,000,000	3,000,000	EFF
Engineering & Asset Management	CPX.0029590	CPX.0029590-F1	EAM Heavy Vehicles: Replacement FY25	0	0	18,000,000	0	0	18,000,000	EFF
Engineering & Asset Management	CPX.0029701	CPX.0029701-F1	EAM Heavy Vehicles: Replacement FY26	0	0	0	7,000,000	0	7,000,000	EFF
Engineering & Asset Management	CPX.0029703	CPX.0029703-F1	EAM Heavy Vehicles: Replacement FY27	0	0	0	0	12,000,000	12,000,000	EFF
Engineering & Asset Management	CPX.0029568	CPX.0029568-F1	EAM Light Vehicles: Replacement FY25	0	0	11,000,000	0	0	11,000,000	EFF
Engineering & Asset Management	CPX.0029704	CPX.0029704-F1	EAM Light Vehicles: Replacement FY27	0	0	0	0	3,000,000	3,000,000	EFF
Engineering & Asset Management	CPX.0012972	CPX.0012972-F1	Vehicles: Replacement FY23	28,700,000	0	0	0	0	28,700,000	EFF
Engineering & Asset Management	CPX.0014754	CPX.0014754-F1	Vehicles: Replacement FY24	0	7,000,000	0	0	0	7,000,000	EFF
Engineering & Asset Management	CPX.0021408	CPX.0021408-F1	Telemetry and Automation FY23	3,000,000	0	0	0	0	3,000,000	EFF

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Engineering & Asset Management	CPX.0021426	CPX.0021426-F1	Telemetry and Automation FY24	0	3,000,000	0	0	0	3,000,000	EFF
Engineering & Asset Management	CPX.0021428	CPX.0021428-F1	Telemetry and Automation FY25	0	0	3,000,000	0	0	3,000,000	EFF
Engineering & Asset Management	CPX.0021429	CPX.0021429-F1	Telemetry and Automation FY26	0	0	0	3,000,000	0	3,000,000	EFF
Engineering & Asset Management	CPX.0021430	CPX.0021430-F1	Telemetry and Automation FY27	0	0	0	0	3,000,000	3,000,000	EFF
Finance & Commercial Water & Sanitation	CPX.0017782	CPX.0017782-F1	WS Contingency prov - Insurance FY27	0	0	0	0	1,000,000	1,000,000	REVENUE
Finance & Commercial Water & Sanitation	CPX.0014714	CPX.0014714-F1	WS Contingency prov - Insurance FY23	1,000,000	0	0	0	0	1,000,000	REVENUE
Finance & Commercial Water & Sanitation	CPX.0014715	CPX.0014715-F1	WS Contingency prov - Insurance FY24	0	1,000,000	0	0	0	1,000,000	REVENUE
Finance & Commercial Water & Sanitation	CPX.0017780	CPX.0017780-F1	WS Contingency prov - Insurance FY25	0	0	1,000,000	0	0	1,000,000	REVENUE
Finance & Commercial Water & Sanitation	CPX.0017781	CPX.0017781-F1	WS Contingency prov - Insurance FY26	0	0	0	1,000,000	0	1,000,000	REVENUE
Informal Settlements Basic Services	CPX.0016236	CPX.0016236-F1	Informal Settlem Sanitation Install FY23	30,000,000	0	0	0	0	30,000,000	EFF
Informal Settlements Basic Services	CPX.0017871	CPX.0017871-F1	Informal Settlem Sanitation Install FY24	0	30,000,000	0	0	0	30,000,000	EFF
Informal Settlements Basic Services	CPX.0017872	CPX.0017872-F1	Informal Settlem Sanitation Install FY25	0	0	30,000,000	0	0	30,000,000	CGD
Informal Settlements Basic Services	CPX.0017873	CPX.0017873-F1	Informal Settlem Sanitation Install FY26	0	0	0	30,000,000	0	30,000,000	CGD
Informal Settlements Basic Services	CPX.0017874	CPX.0017874-F1	Informal Settlem Sanitation Install FY27	0	0	0	0	30,000,000	30,000,000	CGD
Informal Settlements Basic Services	CPX.0016237	CPX.0016237-F1	Informal Settlem Water Installation FY23	6,000,000	0	0	0	0	6,000,000	EFF
Informal Settlements Basic Services	CPX.0017875	CPX.0017875-F1	Informal Settlem Water Installation FY24	0	8,000,000	0	0	0	8,000,000	EFF
Informal Settlements Basic Services	CPX.0017996	CPX.0017996-F1	Informal Settlem Water Installation FY25	0	0	8,000,000	0	0	8,000,000	CGD
Informal Settlements Basic Services	CPX.0017997	CPX.0017997-F1	Informal Settlem Water Installation FY26	0	0	0	8,000,000	0	8,000,000	CGD
Informal Settlements Basic Services	CPX.0017999	CPX.0017999-F1	Informal Settlem Water Installation FY27	0	0	0	0	8,000,000	8,000,000	CGD
Management: Water & Sanitation	CPX.0018305	CPX.0018305-F1	Computer Equipment: Additional FY23	35,000	0	0	0	0	35,000	EFF
Management: Water & Sanitation	CPX.0022214	CPX.0022214-F2	Computer Equipment: Additional FY24	0	35,000	0	0	0	35,000	EFF
Management: Water & Sanitation	CPX.0030757	CPX.0030757-F1	Computer Equipment: Additional FY25	0	0	35,000	0	0	35,000	EFF
Management: Water & Sanitation	CPX.0018306	CPX.0018306-F1	WS Contingency Prov - Insurance FY23	30,000	0	0	0	0	30,000	REVENUE

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Management: Water & Sanitation	CPX.0022213	CPX.0022213-F1	WS Contingency Prov - Insurance FY24	0	30,000	0	0	0	30,000	REVENUE
Management: Water & Sanitation	CPX.0030758	CPX.0030758-F1	WS Contingency Prov - Insurance FY25	0	0	30,000	0	0	30,000	REVENUE
Management: Water & Sanitation	CPX.0022236	CPX.0022236-F2	Computer Equipment: Replacement FY23	35,000	0	0	0	0	35,000	EFF
Management: Water & Sanitation	CPX.0022237	CPX.0022237-F2	Computer Equipment: Replacement FY24	0	35,000	0	0	0	35,000	EFF
Management: Water & Sanitation	CPX.0029932	CPX.0029932-F1	Computer Equipment: Replacement FY25	0	0	35,000	0	0	35,000	EFF
Management: Water & Sanitation	CPX.0029933	CPX.0029933-F1	Computer Equipment: Replacement FY26	0	0	0	35,000	0	35,000	EFF
Management: Water & Sanitation	CPX.0029934	CPX.0029934-F1	Computer Equipment: Replacement FY27	0	0	0	0	35,000	35,000	EFF
Management: Water & Sanitation	CPX.0018864	CPX.0018864-F1	Furniture: Replacement FY23	40,000	0	0	0	0	40,000	EFF
Management: Water & Sanitation	CPX.0022215	CPX.0022215-F2	Furniture: Replacement FY24	0	40,000	0	0	0	40,000	EFF
Management: Water & Sanitation	CPX.0028878	CPX.0028878-F1	Furniture: Replacement FY25	0	0	40,000	0	0	40,000	EFF
Management: Water & Sanitation	CPX.0028985	CPX.0028985-F1	Furniture: Replacement FY26	0	0	0	40,000	0	40,000	EFF
Management: Water & Sanitation	CPX.0028986	CPX.0028986-F1	Furniture: Replacement FY27	0	0	0	0	40,000	40,000	EFF
Reticulation	CPX.0005615	CPX.0005615-F1	Cape Flats Rehabilitation	19,750,000	176,053,944	10,300,000	0	0	206,103,944	EFF
Reticulation	CPX.0005615	CPX.0005615-F2	Cape Flats Rehabilitation	99,993,513	29,946,056	0	0	0	129,939,569	CGD
Reticulation	CPX.0005615	CPX.0005615-F5	Cape Flats Rehabilitation	0	0	70,000,000	0	0	70,000,000	CGD
Reticulation	CPX.0021780	CPX.0021780-F1	Zevenwacht Reservoir and Network	1,937,900	15,963,000	10,102,537	16,000,000	120,000	44,123,437	EFF
Reticulation	CPX.0021780	CPX.0021780-F3	Zevenwacht Reservoir and Network	0	0	5,897,463	0	0	5,897,463	CRR
Reticulation	CPX.0014665	CPX.0014665-F1	Water Projects as per Master Plan FY24	0	1,000,000	0	0	0	1,000,000	EFF
Reticulation	CPX.0021023	CPX.0021023-F1	Water Projects as per Master Plan FY25	0	0	4,000,000	0	0	4,000,000	EFF
Reticulation	CPX.0021024	CPX.0021024-F1	Water Projects as per Master Plan FY26	0	0	0	5,000,000	0	5,000,000	EFF
Reticulation	CPX.0021026	CPX.0021026-F1	Water Projects as per Master Plan FY27	0	0	0	0	1,000,000	1,000,000	EFF
Reticulation	C11.86060	C11.86060-F1	Philippi Collector Sewer	1,400,000	52,940,000	66,376,000	0	57,000,000	177,716,000	EFF
Reticulation	C11.86060	C11.86060-F3	Philippi Collector Sewer	5,000,000	43,000,000	30,000,000	35,000,000	0	113,000,000	CGD

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Reticulation	C11.86060	C11.86060-F6	Philippi Collector Sewer	0	0	0	64,696,800	60,000,000	124,696,800	CGD
Reticulation	CPX.0014756	CPX.0014756-F1	Sewer Projects as per Master Plan FY24	0	1,000,000	0	0	0	1,000,000	EFF
Reticulation	CPX.0020973	CPX.0020973-F1	Sewer Projects as per Master Plan FY25	0	0	3,000,000	0	0	3,000,000	EFF
Reticulation	CPX.0020974	CPX.0020974-F1	Sewer Projects as per Master Plan FY26	0	0	0	3,000,000	0	3,000,000	EFF
Reticulation	CPX.0020975	CPX.0020975-F1	Sewer Projects as per Master Plan FY27	0	0	0	0	1,000,000	1,000,000	EFF
Reticulation	CPX.0014757	CPX.0014757-F1	Small Plant & Equip: Add (Retic) FY23	880,000	0	0	0	0	880,000	EFF
Reticulation	CPX.0014758	CPX.0014758-F1	Small Plant & Equip: Add (Retic) FY24	0	3,000,000	0	0	0	3,000,000	EFF
Reticulation	CPX.0020998	CPX.0020998-F1	Small Plant & Equip: Add (Retic) FY25	0	0	2,000,000	0	0	2,000,000	EFF
Reticulation	CPX.0020994	CPX.0020994-F1	Small Plant & Equip: Add (Retic) FY26	0	0	0	3,000,000	0	3,000,000	EFF
Reticulation	CPX.0020995	CPX.0020995-F1	Small Plant & Equip: Add (Retic) FY27	0	0	0	0	3,000,000	3,000,000	EFF
Reticulation	CPX.0014763	CPX.0014763-F1	Regional resources development FY23	950,874	0	0	0	0	950,874	EFF
Reticulation	CPX.0014764	CPX.0014764-F1	Regional resources development FY24	0	2,000,000	0	0	0	2,000,000	EFF
Reticulation	CPX.0029340	CPX.0029340-F1	Koeberg Pump station capacity upgrade	0	0	35,000,000	35,000,000	0	70,000,000	EFF
Reticulation	CPX.0029305	CPX.0029305-F1	Langa Pump Station (9) - screens, pumps	0	0	0	5,000,000	0	5,000,000	CGD
Reticulation	CPX.0029305	CPX.0029305-F2	Langa Pump Station (9) - screens, pumps	0	0	50,000,000	40,000,000	0	90,000,000	EFF
Reticulation	CPX.0029269	CPX.0029269-F1	Raapenberg Pump Station Upgrade	0	0	80,000,000	110,000,000	0	190,000,000	EFF
Reticulation	CPX.0014765	CPX.0014765-F1	Repl & Upgr Sew Pump Station FY23	15,000,000	0	0	0	0	15,000,000	EFF
Reticulation	CPX.0014765	CPX.0014765-F2	Repl & Upgr Sew Pump Station FY23	3,000,000	0	0	0	0	3,000,000	CGD
Reticulation	CPX.0014766	CPX.0014766-F1	Repl & Upgr Sew Pump Station FY24	0	15,000,000	0	0	0	15,000,000	EFF
Reticulation	CPX.0014766	CPX.0014766-F2	Repl & Upgr Sew Pump Station FY24	0	10,000,000	0	0	0	10,000,000	CGD
Reticulation	CPX.0021055	CPX.0021055-F1	Repl & Upgr Sew Pump Station FY25	0	0	50,000,000	0	0	50,000,000	EFF
Reticulation	CPX.0021055	CPX.0021055-F2	Repl & Upgr Sew Pump Station FY25	0	0	10,000,000	0	0	10,000,000	CGD
Reticulation	CPX.0020915	CPX.0020915-F1	Repl & Upgr Sew Pump Station FY27	0	0	0	0	50,000,000	50,000,000	EFF

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Reticulation	CPX.0020915	CPX.0020915-F2	Repl & Upgr Sew Pump Station FY27	0	0	0	0	10,000,000	10,000,000	CGD
Reticulation	CPX.0008876	CPX.0008876-F2	Retreat Low Lift Pump station	0	5,416,385	0	0	0	5,416,385	EFF
Reticulation	CPX.0029306	CPX.0029306-F1	River Road Pump Station (16) upgrade com	0	0	0	0	5,000,000	5,000,000	EFF
Reticulation	CPX.0029346	CPX.0029346-F1	Sanddrift East Pump Station Upgrade	0	0	2,000,000	42,000,000	0	44,000,000	EFF
Reticulation	CPX.0026294	CPX.0026294-F1	Table View East Bulk Sewer & PS	0	0	0	0	2,000,000	2,000,000	EFF
Reticulation	CPX.0009389	CPX.0009389-F1	Digtebij sewer Installation	0	355,618	0	0	0	355,618	EFF
Reticulation	CPX.0009390	CPX.0009390-F1	Gordon's Bay Firlands Sewerage Services	0	5,500,000	0	0	0	5,500,000	EFF
Reticulation	CPX.0009432	CPX.0009432-F1	Gordon's Bay Sewer Rising Main	1,570,000	70,000,000	13,000,000	0	0	84,570,000	EFF
Reticulation	CPX.0010420	CPX.0010420-F1	Replace Sewer Network (Citywide) FY23	49,000,000	0	0	0	0	49,000,000	EFF
Reticulation	CPX.0010420	CPX.0010420-F2	Replace Sewer Network (Citywide) FY23	1,500,000	0	0	0	0	1,500,000	CGD
Reticulation	CPX.0014769	CPX.0014769-F1	Replace Sewer Network (Citywide) FY24	0	52,250,000	0	0	0	52,250,000	EFF
Reticulation	CPX.0014769	CPX.0014769-F2	Replace Sewer Network (Citywide) FY24	0	10,000,000	0	0	0	10,000,000	CGD
Reticulation	CPX.0017688	CPX.0017688-F1	Replace Sewer Network (Citywide) FY25	0	0	295,000,000	0	0	295,000,000	EFF
Reticulation	CPX.0017688	CPX.0017688-F2	Replace Sewer Network (Citywide) FY25	0	0	10,000,000	0	0	10,000,000	CGD
Reticulation	CPX.0020958	CPX.0020958-F1	Replace Sewer Network (Citywide) FY26	0	0	0	290,000,000	0	290,000,000	EFF
Reticulation	CPX.0020958	CPX.0020958-F2	Replace Sewer Network (Citywide) FY26	0	0	0	10,000,000	0	10,000,000	CGD
Reticulation	CPX.0020959	CPX.0020959-F1	Replace Sewer Network (Citywide) FY27	0	0	0	0	290,000,000	290,000,000	EFF
Reticulation	CPX.0020959	CPX.0020959-F2	Replace Sewer Network (Citywide) FY27	0	0	0	0	10,000,000	10,000,000	CGD
Reticulation	CPX.0018735	CPX.0018735-F2	Replace Water Network (City Wide) FY23	64,000,000	0	0	0	0	64,000,000	EFF
Reticulation	CPX.0018735	CPX.0018735-F3	Replace Water Network (City Wide) FY23	1,500,000	0	0	0	0	1,500,000	CGD
Reticulation	CPX.0014770	CPX.0014770-F1	Replace Water Network (City Wide) FY24	0	58,266,666	0	0	0	58,266,666	EFF
Reticulation	CPX.0014770	CPX.0014770-F2	Replace Water Network (City Wide) FY24	0	6,000,000	0	0	0	6,000,000	CGD
Reticulation	CPX.0017257	CPX.0017257-F1	Replace Water Network (City Wide) FY25	0	0	10,000,000	0	0	10,000,000	CGD

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Reticulation	CPX.0017257	CPX.0017257-F2	Replace Water Network (City Wide) FY25	0	0	91,000,000	0	0	91,000,000	EFF
Reticulation	CPX.0017258	CPX.0017258-F1	Replace Water Network (City Wide) FY26	0	0	0	10,000,000	0	10,000,000	CGD
Reticulation	CPX.0017258	CPX.0017258-F2	Replace Water Network (City Wide) FY26	0	0	0	90,000,000	0	90,000,000	EFF
Reticulation	CPX.0020924	CPX.0020924-F1	Replace Water Network (City Wide) FY27	0	0	0	0	95,000,000	95,000,000	EFF
Reticulation	CPX.0020924	CPX.0020924-F2	Replace Water Network (City Wide) FY27	0	0	0	0	10,000,000	10,000,000	CGD
Reticulation	CPX.0014771	CPX.0014771-F1	Upgrade Reservoirs City Wide FY23	3,000,000	0	0	0	0	3,000,000	EFF
Reticulation	CPX.0014772	CPX.0014772-F1	Upgrade Reservoirs City Wide FY24	0	4,000,000	0	0	0	4,000,000	EFF
Reticulation	CPX.0021009	CPX.0021009-F1	Upgrade Reservoirs City Wide FY25	0	0	10,000,000	0	0	10,000,000	EFF
Reticulation	CPX.0021011	CPX.0021011-F1	Upgrade Reservoirs City Wide FY26	0	0	0	15,000,000	0	15,000,000	EFF
Reticulation	CPX.0021013	CPX.0021013-F1	Upgrade Reservoirs City Wide FY27	0	0	0	0	10,000,000	10,000,000	EFF
Reticulation	CPX.0011318	CPX.0011318-F1	Bulk Retic Sewers in Milnerton Rehab	70,229,126	65,000,000	90,000,000	56,000,000	7,500,000	288,729,126	EFF
Reticulation	CPX.0007376	CPX.0007376-F1	Diversion Dunoon Sewer	0	242,497	0	0	0	242,497	EFF
Reticulation	CPX.0007405	CPX.0007405-F1	Main Rd Clovelly Simonstown	0	0	0	0	62,000,000	62,000,000	EFF
Reticulation	CPX.0007409	CPX.0007409-F1	Peligrini Sewer Pumpstation Diversion	0	77,309	0	0	0	77,309	EFF
Reticulation	CPX.0020255	CPX.0020255-F1	Gordons Bay Beach Front Sewer Ph2	282,000	9,386,277	0	0	0	9,668,277	EFF
Reticulation	CPX.0007423	CPX.0007423-F1	Upgrade Andrag Supply System	0	341,525	0	0	0	341,525	EFF
Reticulation	CPX.0010643	CPX.0010643-F1	Upgrade Rietvlei Sewer Pump Station	27,500,000	115,250,000	21,250,000	0	0	164,000,000	EFF
Reticulation	CPX.0021366	CPX.0021366-F1	Acquisition & Registr & servitude FY23	150,000	0	0	0	0	150,000	EFF
Reticulation	CPX.0021367	CPX.0021367-F1	Acquisition & Registr & servitude FY24	0	200,000	0	0	0	200,000	EFF
Reticulation	CPX.0027775	CPX.0027775-F1	Acquisition & Registr & servitude FY25	0	0	150,000	0	0	150,000	EFF
Reticulation	CPX.0029924	CPX.0029924-F1	Acquisition & Registr & servitude FY26	0	0	0	150,000	0	150,000	EFF
Reticulation	CPX.0029925	CPX.0029925-F1	Acquisition & Registr & servitude FY27	0	0	0	0	150,000	150,000	EFF
Reticulation	CPX.0023031	CPX.0023031-F2	Gordon's Bay Firlands Network Infrastruc	0	0	5,500,000	6,000,000	2,400,000	13,900,000	CRR

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Scientific Services	CPX.0014703	CPX.0014703-F1	Laboratory Equipment: Additional FY23	11,001,592	0	0	0	0	11,001,592	EFF
Scientific Services	CPX.0014704	CPX.0014704-F1	Laboratory Equipment: Additional FY24	0	4,337,703	0	0	0	4,337,703	EFF
Scientific Services	CPX.0017989	CPX.0017989-F1	Laboratory Equipment: Additional FY25	0	0	5,000,000	0	0	5,000,000	EFF
Scientific Services	CPX.0017990	CPX.0017990-F1	Laboratory Equipment: Additional FY26	0	0	0	5,000,000	0	5,000,000	EFF
Scientific Services	CPX.0017991	CPX.0017991-F1	Laboratory Equipment: Additional FY27	0	0	0	0	5,000,000	5,000,000	EFF
Scientific Services	CPX.0014761	CPX.0014761-F1	Refurbishment of Labs FY23	400,000	0	0	0	0	400,000	EFF
Scientific Services	CPX.0014762	CPX.0014762-F1	Refurbishment of Labs FY24	0	400,000	0	0	0	400,000	EFF
Scientific Services	CPX.0017992	CPX.0017992-F1	Refurbishment of Labs FY25	0	0	1,000,000	0	0	1,000,000	EFF
Scientific Services	CPX.0017993	CPX.0017993-F1	Refurbishment of Labs FY26	0	0	0	1,000,000	0	1,000,000	EFF
Scientific Services	CPX.0017994	CPX.0017994-F1	Refurbishment of Labs FY27	0	0	0	0	1,000,000	1,000,000	EFF
Wastewater	C12.86091	C12.86091-F1	Borchards Quarry WWTW	0	6,000,000	0	0	0	6,000,000	CGD
Wastewater	CPX.0029825	CPX.0029825-F1	Borchards Quarry WWTW Phase II	0	0	7,400,000	20,650,000	29,650,000	57,700,000	CGD
Wastewater	C13.86081	C13.86081-F1	Athlone WWTW-Capacity Extension-phase 1	0	24,000,000	0	79,468,378	205,207,675	308,676,053	EFF
Wastewater	C13.86081	C13.86081-F2	Athlone WWTW-Capacity Extension-phase 1	86,000,000	65,000,000	32,769,108	0	102,000,573	285,769,681	CGD
Wastewater	CPX.0008041	CPX.0008041-F1	Bellville WWTW Extension	0	0	42,530,000	11,750,000	300,000	54,580,000	EFF
Wastewater	CPX.0008041	CPX.0008041-F2	Bellville WWTW Extension	0	22,000,000	0	0	0	22,000,000	CGD
Wastewater	CPX.0014614	CPX.0014614-F1	Infrastructure Replacements - WWTW FY23	10,000,000	0	0	0	0	10,000,000	EFF
Wastewater	CPX.0014615	CPX.0014615-F1	Infrastructure Replacements - WWTW FY24	0	45,000,000	0	0	0	45,000,000	EFF
Wastewater	CPX.0018207	CPX.0018207-F1	Infrastructure Replacements - WWTW FY25	0	0	10,000,000	0	0	10,000,000	EFF
Wastewater	CPX.0018207	CPX.0018207-F2	Infrastructure Replacements - WWTW FY25	0	0	20,000,000	0	0	20,000,000	CGD
Wastewater	CPX.0018208	CPX.0018208-F1	Infrastructure Replacements - WWTW FY26	0	0	0	10,000,000	0	10,000,000	EFF
Wastewater	CPX.0018208	CPX.0018208-F2	Infrastructure Replacements - WWTW FY26	0	0	0	20,000,000	0	20,000,000	CGD
Wastewater	CPX.0018209	CPX.0018209-F1	Infrastructure Replacements - WWTW FY27	0	0	0	0	10,000,000	10,000,000	EFF

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Wastewater	CPX.0018209	CPX.0018209-F2	Infrastructure Replacements - WWTW FY27	0	0	0	0	20,000,000	20,000,000	CGD
Wastewater	CPX.0016300	CPX.0016300-F2	Cape Flats WWTW - Biosolids	202,500,000	404,000,000	223,000,000	110,000,000	0	939,500,000	EFF
Wastewater	CPX.0016300	CPX.0016300-F3	Cape Flats WWTW - Biosolids	0	20,000,000	0	0	0	20,000,000	CGD
Wastewater	CPX.0015630	CPX.0015630-F1	Cape Flats WWTW Inlet works & rising mai	1,000,000	40,788,869	53,211,131	5,000,000	140,000,000	240,000,000	EFF
Wastewater	CPX.0015630	CPX.0015630-F2	Cape Flats WWTW Inlet works & rising mai	0	0	10,000,000	55,000,000	0	65,000,000	CGD
Wastewater	CPX.0015629	CPX.0015629-F1	Cape Flats WWTW-Biosolids Phase 2	0	0	0	0	20,000,000	20,000,000	EFF
Wastewater	C13.86005	C13.86005-F1	Cape Flats WWTW-Refurbish various struct	0	49,000,000	0	0	0	49,000,000	EFF
Wastewater	CPX.0016426	CPX.0016426-F1	Wesfleur Aeration & Blower Replacement	39,700,000	2,600,000	19,850,000	0	0	62,150,000	EFF
Wastewater	CPX.0022520	CPX.0022520-F1	Wesfleur WWTW: Mobile Pump (16 inch)	714,385	0	0	0	0	714,385	REVENUE
Wastewater	CPX.0010426	CPX.0010426-F1	Wildevoelvlei WWTW-Upgrade dewatering	5,000,000	20,000,000	6,000,000	0	0	31,000,000	EFF
Wastewater	CPX.0007929	CPX.0007929-F1	Zandvliet WWTW: Prim Treatment & Sludge	100,000,000	100,000,000	0	0	0	200,000,000	EFF
Wastewater	C12.86059	C12.86059-F1	Macassar WWTW Extension	30,000,000	78,000,000	315,000,000	133,689,240	5,000,000	561,689,240	EFF
Wastewater	C12.86059	C12.86059-F2	Macassar WWTW Extension	20,000,000	72,000,000	100,000,000	111,310,760	0	303,310,760	CGD
Wastewater	C11.86063	C11.86063-F1	Potsdam WWTW - Extension	411,343,309	836,400,000	480,000,000	434,000,000	200,000,000	2,361,743,309	EFF
Wastewater	C11.86063	C11.86063-F3	Potsdam WWTW - Extension	62,067,821	0	0	0	0	62,067,821	CGD
Wastewater	C13.86010	C13.86010-F1	Mitchells Plain WWTW-Improvements Phase2	0	0	2,000,000	20,000,000	0	22,000,000	EFF
Wastewater	C13.86010	C13.86010-F2	Mitchells Plain WWTW-Improvements Phase2	0	0	0	0	64,000,000	64,000,000	CGD
Wastewater	CPX.0011021	CPX.0011021-F1	Mitchells Plain WWTW-reuse PS extension	0	0	0	0	20,000,000	20,000,000	EFF
Wastewater	CPX.0014750	CPX.0014750-F1	Sundry Equipment: Additional FY23	300,000	0	0	0	0	300,000	EFF
Wastewater	CPX.0014751	CPX.0014751-F1	Sundry Equipment: Additional FY24	0	300,000	0	0	0	300,000	EFF
Wastewater	CPX.0018210	CPX.0018210-F1	Sundry Equipment: Additional FY25	0	0	500,000	0	0	500,000	EFF
Wastewater	CPX.0018211	CPX.0018211-F1	Sundry Equipment: Additional FY26	0	0	0	500,000	0	500,000	EFF
Wastewater	CPX.0018212	CPX.0018212-F1	Sundry Equipment: Additional FY27	0	0	0	0	500,000	500,000	EFF

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Wastewater	CPX.0009633	CPX.0009633-F1	Fisantekraal WWTW	3,000,000	20,000,000	4,000,000	43,590,000	63,570,000	134,160,000	EFF
Wastewater	CPX.0030025	CPX.0030025-F1	Camps Bay Outfall Improvements	0	0	0	3,360,180	36,360,180	39,720,360	EFF
Wastewater	CPX.0030027	CPX.0030027-F1	Greenpoint Outfall Improvements	0	0	0	3,000,000	30,000,000	33,000,000	EFF
Water Demand Management	CPX.0014705	CPX.0014705-F1	Treated Effluent: Reuse & Inf Upgr FY23	33,000,000	0	0	0	0	33,000,000	EFF
Water Demand Management	CPX.0011112	CPX.0011112-F1	Treated Effluent: Reuse & Inf Upgr FY24	0	70,000,000	0	0	0	70,000,000	EFF
Water Demand Management	CPX.0014759	CPX.0014759-F1	Pressure Management: COCT FY23	15,000,000	0	0	0	0	15,000,000	EFF
Water Demand Management	CPX.0014760	CPX.0014760-F1	Pressure Management: COCT FY24	0	15,000,000	0	0	0	15,000,000	EFF
Water Demand Management	CPX.0018001	CPX.0018001-F1	Pressure Management: COCT FY25	0	0	15,000,000	0	0	15,000,000	EFF
Water Demand Management	CPX.0018002	CPX.0018002-F1	Pressure Management: COCT FY26	0	0	0	10,000,000	0	10,000,000	EFF
Water Demand Management	CPX.0018003	CPX.0018003-F1	Pressure Management: COCT FY27	0	0	0	0	10,000,000	10,000,000	EFF
Water Demand Management	CPX.0030030	CPX.0030030-F1	Treated Effluent Re-Use: Belhar	0	0	0	0	11,800,000	11,800,000	EFF
Water Demand Management	CPX.0030032	CPX.0030032-F1	Treated Effluent Re-Use: Bellville NW1	0	0	0	0	500,000	500,000	EFF
Water Demand Management	CPX.0029984	CPX.0029984-F1	Treated Effluent Re-Use: Borcherds PS	0	0	0	0	12,000,000	12,000,000	EFF
Water Demand Management	CPX.0030050	CPX.0030050-F1	Treated Effluent Re-Use: Cape Flats EP	0	0	1,000,000	0	20,000,000	21,000,000	EFF
Water Demand Management	CPX.0029983	CPX.0029983-F1	Treated Effluent Re-Use: Cape Flats PS	0	0	500,000	14,500,000	0	15,000,000	EFF
Water Demand Management	CPX.0029986	CPX.0029986-F1	Treated Effluent Re-Use: Fisantekraal PS	0	0	0	0	1,500,000	1,500,000	EFF
Water Demand Management	CPX.0029990	CPX.0029990-F1	Treated Effluent Re-Use: Kuilsriver	0	0	0	17,000,000	18,000,000	35,000,000	EFF
Water Demand Management	CPX.0029982	CPX.0029982-F1	Treated Effluent Re-Use: Potsdam PH1	0	0	0	11,500,000	9,500,000	21,000,000	EFF
Water Demand Management	CPX.0029985	CPX.0029985-F1	Treated Effluent Re-Use: Scottsdene PH1	0	0	34,500,000	7,000,000	5,500,000	47,000,000	EFF
Water Demand Management	CPX.0030036	CPX.0030036-F1	Treated Effluent Re-Use: Stikland	0	0	0	0	10,000,000	10,000,000	EFF
Water Demand Management	CPX.0029929	CPX.0029929-F1	Treated Effluent Re-Use: Zandvleit PS	0	0	12,000,000	0	0	12,000,000	EFF
Water Demand Management	CPX.0030038	CPX.0030038-F1	Treated Effluent Re-Use:Wildevoelvlei EP	0	0	0	0	1,200,000	1,200,000	EFF
Water Demand Management	CPX.0029988	CPX.0029988-F1	Treated Effluent Re-Use:Wildevoelvlei PS	0	0	12,000,000	0	0	12,000,000	EFF

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Water Demand Management	CPX.0030037	CPX.0030037-F1	Treated Effluent Re-Use:Wildevoelvlei WP	0	0	0	10,000,000	0	10,000,000	EFF

Signatures in support:

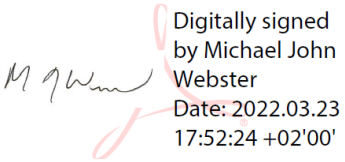
NAME	MICHEAL KILLICK	SIGNATURE BLOCK:
E-MAIL ADDRESS	Micheal.Killick@capetown.gov.za	M.A. Killick Digitally signed by M.A. Killick Date: 2022.03.17 16:11:12 +02'00'
TITLE	DIRECTOR: BULK SERVICES DEPARTMENT	

NAME	SIYABULELA BASHE	SIGNATURE BLOCK:
E-MAIL ADDRESS	Siyabulela.Bashe@capetown.gov.za	Digitally signed by Siyabulela Bashe Date: 2022.03.18 10:23:47 +02'00'
TITLE	DIRECTOR: COMMERCIAL SERVICES DEPARTMENT	

NAME	MBALI MATIWANE	SIGNATURE BLOCK:
E-MAIL ADDRESS	Mbali.Matiwane@capetown.gov.za	Mbali Matiwane Digitally signed by Mbali Matiwane Date: 2022.03.18 11:15:59 +02'00'
TITLE	DIRECTOR: DISTRIBUTION SERVICES DEPARTMENT	

NAME	ZOLILE BASHOLO	SIGNATURE BLOCK:
E-MAIL ADDRESS	Zolile.Basholo@capetown.gov.za	Mbali Matiwane Digitally signed by Mbali Matiwane Date: 2022.03.18 11:16:45 +02'00'
TITLE	DIRECTOR: TECHNICAL SERVICES DEPARTMENT	**PP**

Signatures for Approval:

NAME	MICHEAL WEBSTER	SIGNATURE BLOCK:
E-MAIL ADDRESS	Micheal.Webster@capetown.gov.za	 Digitally signed by Michael John Webster Date: 2022.03.23 17:52:24 +02'00'
APPROVED BY	EXECUTIVE DIRECTOR: WATER AND SANITATION	

NAME	ZAHID BADROODIEN	SIGNATURE BLOCK:
E-MAIL ADDRESS	Zahid.Badroodien@capetown.gov.za	 Zahid Badroodien Digitally signed by Zahid Badroodien Date: 2022.03.30 14:23:00 +02'00'
APPROVED BY	MAYCO MEMBER	