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CITY OF CAPE TOWN | ISIXEKO SASEKAPA | STAD KAAPSTAD



EXPERIENCES OF THE CITY OF CAPETOWN

Presented by: SIFISO MDAKANE

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AGENDA

- **Where are we coming from?**
- **Overview of the Service**
- **COCT Water & Sanitation Asset**
- **COCT Water & Sanitation Business**
- **Our key challenges**
- **Towards Improved Asset Management**

Where are we coming from?

- **The City of Capetown is a new city which was born around 2001.**
- **Six different municipalities were consolidated into one : -**
 - **Oosternberg**
 - **Blaauwberg**
 - **Helderberg**
 - **Tygerberg**
 - **South Peninsula**
 - **Capetown**
- **Water & Sanitation Services reflects the above municipalities. Although Bulk Water Supply was maintained from one area in Capetown, reticulation, wastewater and engineering services and corporate support including finance were all well entrenched into the different administration.**

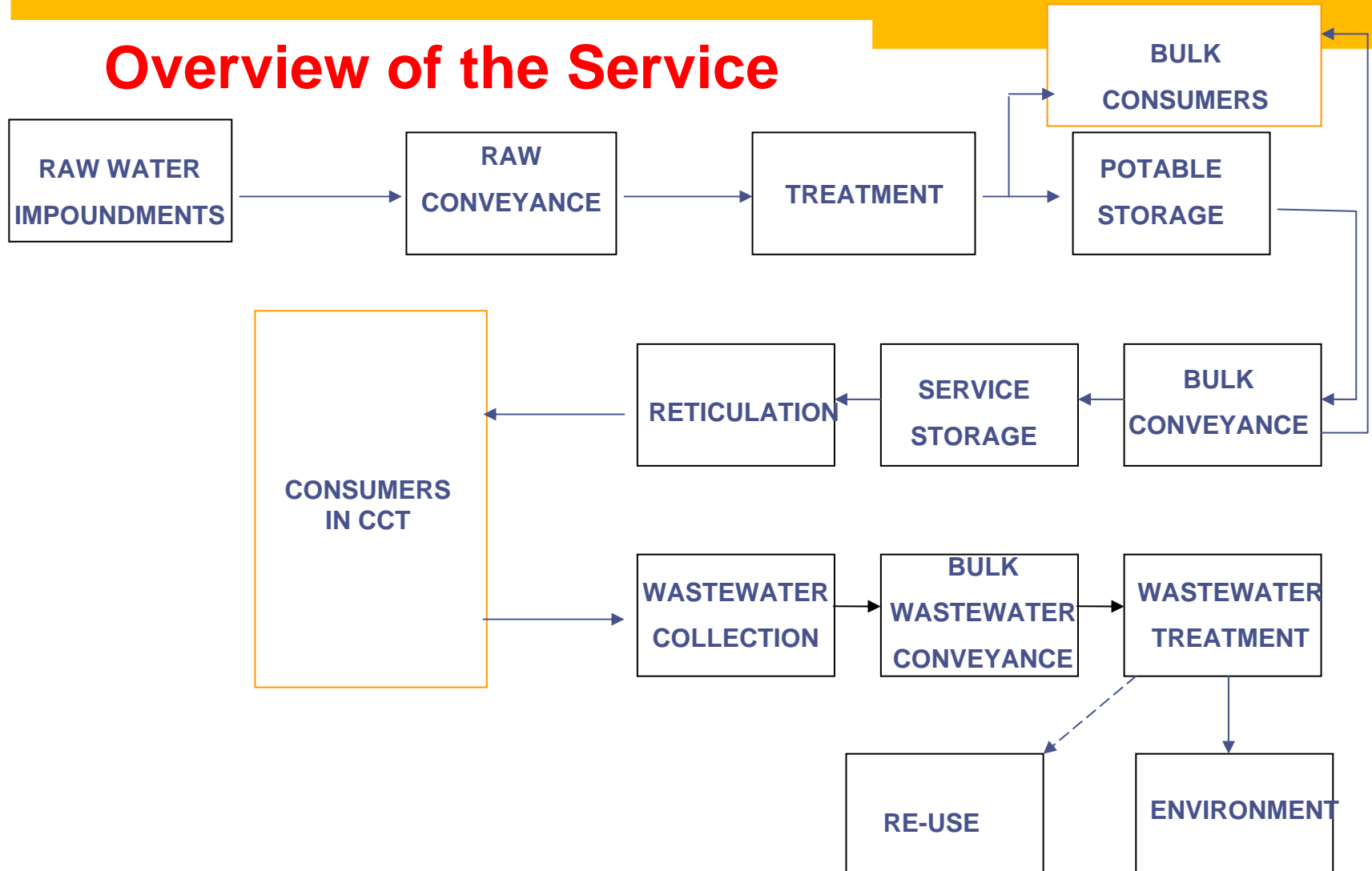


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Overview of the Service





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COCT Water and Sanitation Assets

- Our total asset base is estimated at R17.6 billion (2003)
- 11 Dams - (Big & Small) – (Accounts for 15% and the rest is from DWAF)
- 11 Water Treatment Plants – Treatment Capacity 1600ML/day(650-700ml/d)
- 18 Bulkwater Reservoirs
- 596 KMs of Bulkwater pipeline network (0,75 - 2,4m dia)
- 21 Wastewater Treatments Plants
- 510 Reticulation Pumpstations – Both Water & Wastewater (73%)
- 17000+ KMs of Reticulation Pipeline network.
- 122 Reticulation Reservoirs
- 953 vehicles
- 1800+ Sundry Plants
- 426 houses
- 3104 People (2385 Council & 719 Labour Brokers).



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COCT Water & Sanitation Business

THREE MAIN BUSINESS UNITS

- BULK WATER
- RETICULATION (The biggest unit)
- WASTEWATER

SUPPORT BUs

- Finance
- Engineering & Asset Management
- WDM & Strategy
- Support Service (HR, IR, Comms, IT)



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Our key challenges

- **The Growth in the City**
- **Ageing Infrastructure**
- **Ageing Fleet**
- **Skills shortages and Attracting talent**
- **Contractor Management**
- **Inadequate Capital Funding**
- **Political Instability**
- **Institutional Arrangement**



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The Growth in the City

PROJECTED DEVELOPMENTS BY 2010

Some future growth areas are : AECl/Macassar ; Athlone/Wingfield ; Bottlelary; Capeflats; Delft/Mfuleni; Fisantekraal/Durbanville ; Parklands

Service	Current (2006)	2.0% Growth Per Annum	2.5% growth Per Annum	2.5% growth Per Annum
Water	9629km	10420km	10630km	10840km
Sewer	8010km	8670km	8840km	9000km

Growth Areas



ESTIMATED DEVELOPMENT CONTRIBUTIONS FOR BULK WATER SUPPLY SYSTEM 2006-2016

Description	2006/07 R	2007/08 R	2008/09 R	2009/10 R	2010/11 R	2011/12 R	2012/13 R	2013/14 R	2014/15 R	2015/16 R
1. Blaauwberg	18,480,000	22,064,000	17,472,000	6,048,000	6,048,000	6,048,000	6,048,000	6,048,000	1,000,000	1,000,000
2. Kommetjie & Sun Valley	1,700,000	0	0	0	1,300,000	0	1,800,000	0	2,000,000	0
3. Helderberg	200,000	500,000	500,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
4. Gordonsbay	0	1,100,000	1,100,000	0	0	0	0	0	0	0
5. De Grendel	14,300,000	14,300,000	14,300,000	0	0	0	0	0	0	0
6. Durbanville	0	1,000,000	500,000	1,000,000	2,000,000	500,000	500,000	500,000	500,000	500,000
7. Bottelary	2,000,000	4,000,000	2,000,000	2,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
TOTAL	R36,680,000	42,964,000	R35,872,000	9,248,000	10,548,000	7,748,000	9,548,000	7,748,000	4,700,000	2,700,000

ESTIMATED DEVELOPMENT CONTRIBUTIONS FOR BULK SEWERAGE SUPPLY SYSTEM 2006-2016

Description	2006/07 R	2007/08 R	2008/09 R	2009/10 R	2010/11 R	2011/12 R	2012/13 R	2013/14 R	2014/15 R	2015/16 R
1. Blaauwberg	16,464,000	22,736,000	17,248,000	1,904,000	1,904,000	1,904,000	1,904,000	1,904,000	500,000	500,000
2. Kommetjie & Sun Valley	1,300,000	0	0	0	0	0	0	0	0	0
3. Helderberg	20,000,000	R38,000,000	R 0.00	500,000	500,000	500,000	100,000	100,000	100,000	100,000
4. Gordonsbay	0.00	1,100,000	1,100,000	0	0	0	0	0	0	0
5. De Grendel	4,730,000	4,730,000	4,730,000	0	0	0	0	0	0	0
6. Durbanville	15,000,000	66,000,000	10,000,000	1,000,000	4,200,000	500,000	500,000	1,000,000	500,000	500,000
7. Bottelary	20,000,000	12,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
TOTAL	77,494,000	144,566,000	34,078,000	R4,404,000	7,604,000	R3,904,000	3,504,000	4,004,000	R2,100,000	2,100,000



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Ageing Infrastructure

- Pipeline material problems – pitch fibre sewer pipes requires large scale replacement. Similarly certain asbestos cement pipes needs replacements
- Corrossion of cementitious pipes and manholes due to sulphide build-up was identified as problematic. Large scale maintenance is required and in most cases replacement is required.
- Pipe joins were found to be potential problems. Vitro clay and glazed pipes are likely require attention where they have been used.
- Large lengths of bulk sewers with poor grading require maintenance and in some cases have salted t oan extent where normal cleaning methods achieve no results.



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- Corroded valve bodies (We are even afraid to attempt opening or closing)
- Electrical Switchgear (MV) too old and is no longer supported especially in our wastewater treatment plants.
- The annual Repair & Maintenance budget of R193million not adequate to effect immediate improvement.



GRAPHIC PRESENTATION OF GRADUAL DETERIORATION OF A LARGE WATER NETWORK

Ideally COCT would be required to spend about R60 million annually to keep burst water mains statistics between 10 & 20 burst/100Km/annum



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Ageing Fleet

- 953 Vehicles with a replacement value of +R253million equating to a replacement programme of R22Mil/annum over a period 10 years- Unlikely.
- For every R1.21 spent on fuel we spend an equivalent of R1.21 on maintenance. The fleet is not well run.
- Operation cost of R44.54 Million is not adequate to keep up with the number of breakdowns and the extent to which they have to be repaired.
- Replacement programme of R22mil/annum would be required for the next 10 years. (Unlikely to happen)



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Skills Shortages and Attracting Talent

- With just under 30 professionally registered engineers & QSs – we are battling on the planning & design side.
- The exodus of artisan trades to the private sector is making us to bleed badly especially on the maintenance of key equipment.
- The increased overtime becomes a norm and legally it has to be maintained at a certain level.
- Lack of Graduate training and artisan training
- We cannot attract artisans (especially Electricians & Instr Mechanics) salaries we offer are not comparable to the private sector.
- People are not willing to relocate to Capetown because they can't afford housing which is viewed as unaffordable by many.



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Political Instability

- COCT is one of the few cities in the country where political decisions can change overnight.
- It is sometime very difficult to plan in an ever changing environment especially where priorities change everytime there is a new party in power.
- Fear of losing jobs skilled people – which they they opt for the private sector.



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Institutional Arrangement

- Water and Sanitation is very important service which in our view is a sustainable service provided the revenue generated for providing such a service is brought back to the service.
- As the second biggest revenue generator after electricity in the city, it pains to see water cross- subsidising police (which is for instance a national competence) .
- Capital is never enough to focus on vigorous infrastructure upgrade whilst we operate within an environment where many priorities prevail.

Towards Improved Asset Management

- Water & Sanitation Services MANCO intergrated asset management functions towards the end of 2005 into one functional area where common standards are developed for the entire department. This has seen some improvement in many areas although there are still challenges with skills(Artisans)
- We are able measure plant perfomance in some way ,which was a dream before the intergration. (KPIs include Utilisation, No.of Breakdowns, Backlog)
- CMMS (SAP PM) is being utilised to improve our planning processes much more better.
- Autonomous maintenance has been a success in Bulkwater and it is being extended in other BUs. Bulkwater has been a success story and this is being influenced in reticulation especially on Major pumpstsatons.
- Training of Maintenance Programmers has progressed positively towards improving our planning capacity.
- All our plants have maintenance plans in place and they are on our CMMS.
- We have standardised on Schneider Electric Modicon range of PLC.

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- The 596 KM Bulk Water pipeline network of which 60% is made of steel has never given us problems and we are confident that this will remain so for sometime. The high standard of our CATHODIC PROTECTION programme is working well for us. We have made sure that monitoring and acting on deviations promptly has proven positive results.
- The 4 major road crossings on the worst performing pipeline (Voelvlei - Platteklouf) which is a prestressed concrete (vertical / horizontal wires) were all replaced with steel and since then less problems have been experienced. This has become a standard.
- The maintenance KPIs have been maintained well beyond the set standards.
- The strategic pipeline/valve stock yard in Platteklouf is managed very well and a recent incident of a burst pipeline (Voelvlei) which was repaired in less than 24 hours made us proud that the right the right mix of all the requirements to reinstate supply was achieved. This has been a very difficult target to achieve.
- Bulkwater has maintained the accreditation ISO 9001 “2000” since 03 October 2003. This is being rolled out in other BUs.

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- Strengthening of the inhouse capacity to do inspections on an ongoing activity which has to be performed continually has been supported. 70% of the R116million allocated will focus on building capacity at Reticulation as we understand that they remain the service delivery face of Water & Sanitation.
- All steel pipelines in reticulation will be inspected with a view of affording CATHODIC PROTECTION capacity. This is to be done in the new financial year.
- Council has approved an amount in excess of R709 million for 2007/2008 on capital of which the bulk of it has been pushed to upgrade wastewater treatment plants. Looking at the SAICE assesment on this , it is a big challenge.
- The maintenance teams will be increased (Artisans) in the new financial year to deal with the major maintenance required in wastewater plants.

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- With the limited staff and project management capacity in 2005/2006 financial year Water & Sanitation Services achieved above 95% on capital expenditure making us the leader in the city even though we hold the bigger budget
- In 2006/2007 financial year we are going to beat the record we set for our self and the city in the 2005/2006 financial.
- 2007/2008 with the boost of over 700 posts (more focussed on infrastructure related functions) we will spend all the R700mil capital budget.
- The assistance provided by our QS and procurement departments has proven to be working and will also assist us in ensuring that all our contractors are compliant with the CIDB requirements.
- With the insistance by Water & Sanitation of including health & safety requirements on every contract , will go a long way in ensuring that our contractors are all protected by law and that IOD, Fatality incidents are reduced to a minimum.

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- Outsourcing of maintenance of specialised equipment has already been agreed and approved by procurement and this will be evident more in the new financial year. This will eliminate rework and untoward equipment failures which result in forcing plants to shut down.
- The use of students from the tertiary institutions in our maintenance renewal projects especially in wastewater has proven success in the past year.
- Dewatering has improved especially with the use of the belt presses which are much better to maintain.
- Maintenance Planning is receiving priority and this proves to be working as each and every BU has been allocated dedicated Maintenance Programmes to schedule work and plan.

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- Water and Sanitation Services is leading in the re-introduction of the apprenticeship system, since the call by the Minister of Trade and Industry. We are on track with the process and we hope to succeed in this.
- On the number of students recruited this financial year , we will be extending some of the contracts in order that we address the skill shortages, whilst also addressing the experience aspect on their part.
- As leaders in the student development drive in the city we are taking more students for the in-service training (20 mechanical , 15 electrical , 5 Instrumentation., 30 Civil , Chemical and Chemistry).
- The Engineer Trainee Programme will be part of our training & development strategy to ensure we have good starting point especially looking at our ageing engineers within the system. We have made provisions to get graduates who have completed a University Degree (BScEng/BTech) to follow an ECSA supported programme for professional registration.
- We are hoping that the council will consider ring fencing the Water business financially so that we can plan better in the future.



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ENKOSI !!!!

**Let us work together
for a better city**