



WITZENBERG MUNICIPALITY

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

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

2022/2023

Version Control

Table B1.1: WSDP- and reporting reference

Nr	WSDP Title and Reference	Status	Date	WSDP Year	Financial Year	Reporting year
1	Witzenberg Municipality: Water Services Development Plan 2016/2017	Drafted:	2017/09/15	Year 1	2016/2017	Year -5
		Comment submit:	2017/10/17	Year 2	2017/2018	Year -4
		Finalised:	2017/10/30	Year 3	2018/2019	Year -3
		Adopted:	Approved	Year 4	2019/2020	Year -2
		Published:	2017/11/01	Year 5	2021/2022	Year -1
2	Witzenberg Municipality: Water Services Development Plan 2023/2024	Drafted:	2023/07/01	Year 1	2023/2024	Year 0
		Comment submit:	2023/10/01	Year 2	2024/2025	Year 1
		Finalised:	Not yet	Year 3	2025/2026	Year 2
		Adopted:	Not yet	Year 4	2026/2027	Year 3
		Published:	Not yet	Year 5	2027/2028	Year 4

Prepared by:

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Foreword

Witzenberg Municipality has a duty to all its customers or potential customers in its area of jurisdiction to progressively ensure efficient, affordable, economical and sustainable access to water services that promote sustainable livelihoods and economic development.

This report is submitted as a fulfilment of clause 18 of the Water services Act No 108 of 1997, which reads:

- “18 (1) A water services authority must report on the implementation of its development plan during each financial year.
- (2) The report-
- (a) must be made within four months after the end of each financial year; and
 - (b) must be given to the Minister, the Minister for Provincial Affairs and Constitutional Development, the relevant Province and every organization representing municipalities having jurisdiction in the area of the water services authority.
- (3) The water services authority must publicise a summary of its report.
- (4) A copy of the report and of its summary must be –
- (a) available for inspection at the offices of the water services authority; and
 - (b) be obtainable against payment of a nominal fee.”

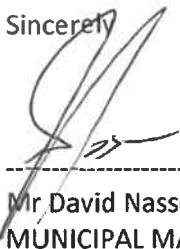
The water services audit is designed to monitor the compliance of Witzenberg Municipality with the above regulations. Witzenberg Municipality is performing very well with regard to drinking water quality management, to the extent that the Municipality was awarded Blue Drop Status (>95%) for all their distribution systems in 2014 and received an overall Blue Drop Score of 96%. Witzenberg received municipal Blue Drop status for the third time in a row for all 5 systems. The Municipality was 2nd on the 2014 Blue Drop Provincial Performance Log for the Western Cape, and in the 9th position on the National Performance Log.

Witzenberg Municipality is also performing well with regard to wastewater quality management, to the extent that the Municipality was awarded Green Drop Status (>90%) for three of the four wastewater systems in 2022. This achievement was as a result of team’s organised approach, excellent preparation; strong management input, disciplined and truly committed team work.

Water losses decreased from 13.9% in the 2021/22 to 11.75% in the 2022/23 financial year and this volume remains within the target set for the financial year. Management processes are, however, on-going to reduce the rate of water losses even further.

The Municipality wishes to express its gratitude for the consistent support from the DWS: Western Cape regional office, with respect to Water Services Development Planning and the specific support provided in developing this Annual WSDP Performance- and Water Services Audit Report. As a WSA we are committed to improved water services development planning.

Sincerely



Mr. David Nasson
MUNICIPAL MANAGER

Abbreviations and Definitions

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

Table of Contents

Foreword	3
Abbreviations and Definitions	4
<i>Section A: Water Services Authority Profile</i>	6
A1: Map of Water Services Authority Area of Jurisdiction.....	6
A2: Water services administration and organization	8
A3: Water services overview	11
<i>Section B: WSDP Performance Report</i>	15
B1: WSDP reference and status.....	15
B2: Performance on water services objectives and strategies	16
B3: Status of water services projects	22
B4: Past financial year water services project impact declaration.....	24
<i>Section C: Water Services Audit Report</i>	25
C1. Quantity of water services provided (Water Balance)	25
C2. Water services delivery profile.....	27
C3. Cost recovery and free basic services	35
C4. Water quality.....	40
C5. Water conservation and demand management	49
<i>Section D: Approval and Publication Record</i>	51

Section A: Water Services Authority Profile

A1: Map of Water Services Authority Area of Jurisdiction

Witzenberg Municipality is situated within the Cape Winelands District Municipality, and consist of the towns of Tulbagh, Wolseley, Ceres, Prince Alfred Hamlet and Op Die Berg. The Municipality covers an area of 10 753 km².

Figure A1.1: Location of Witzenberg within the District

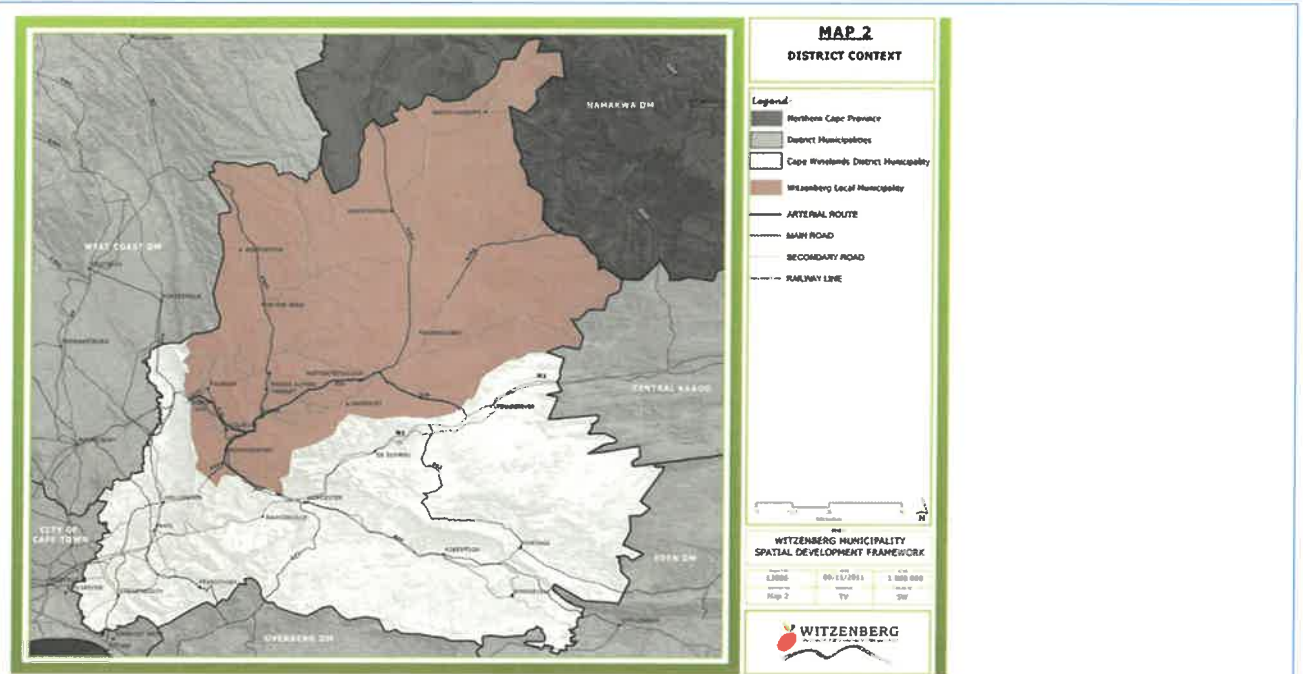


Figure A1.2: Cape Winelands District Municipality



Figure A1.3: Local Context

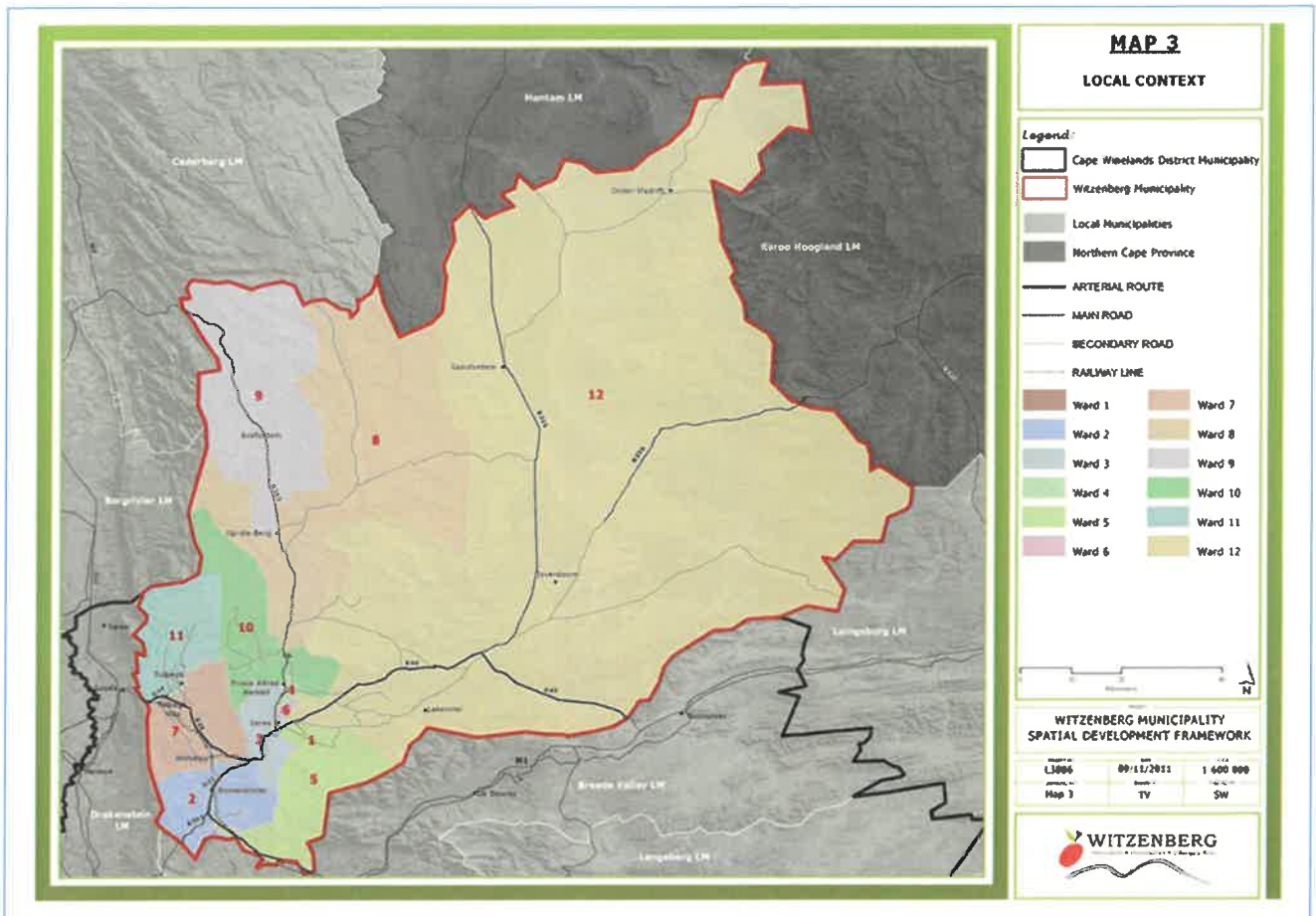


Figure A1.4: National & Provincial Context

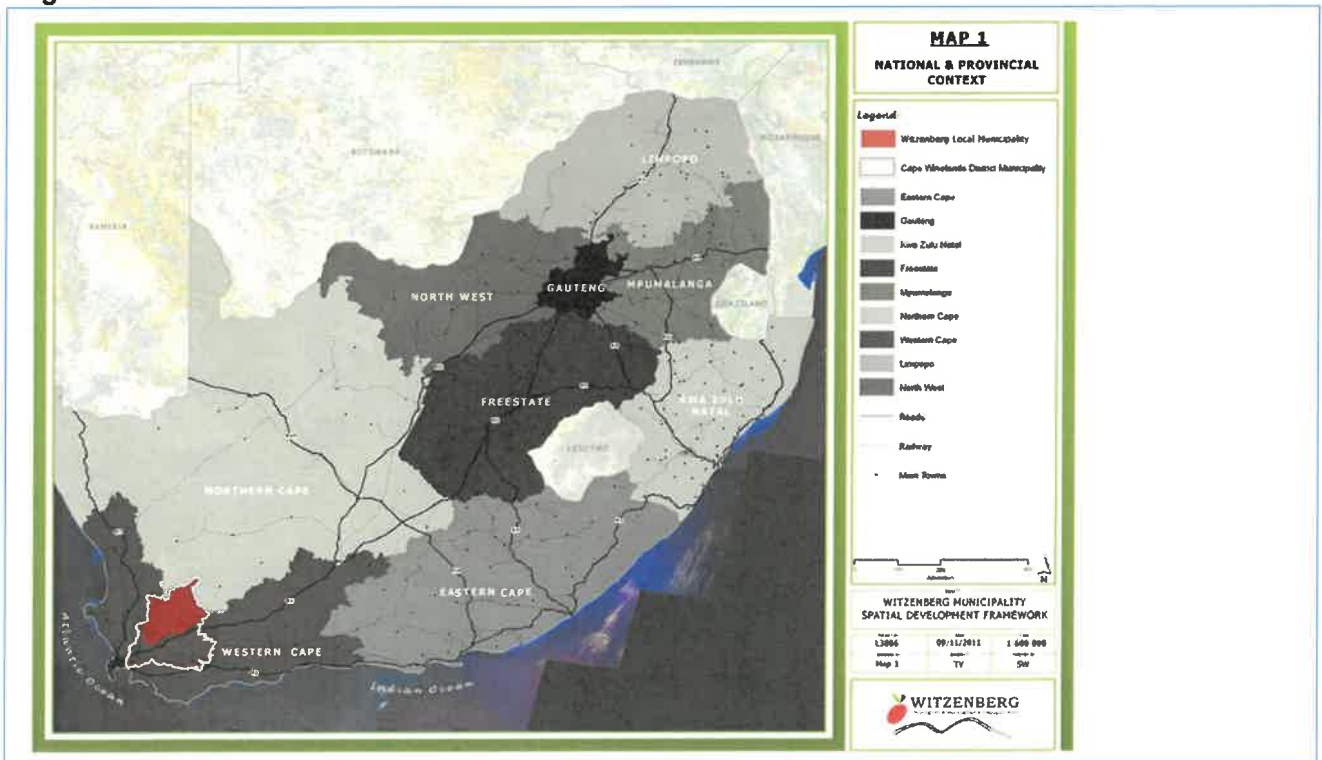


Figure A1.5: River Status

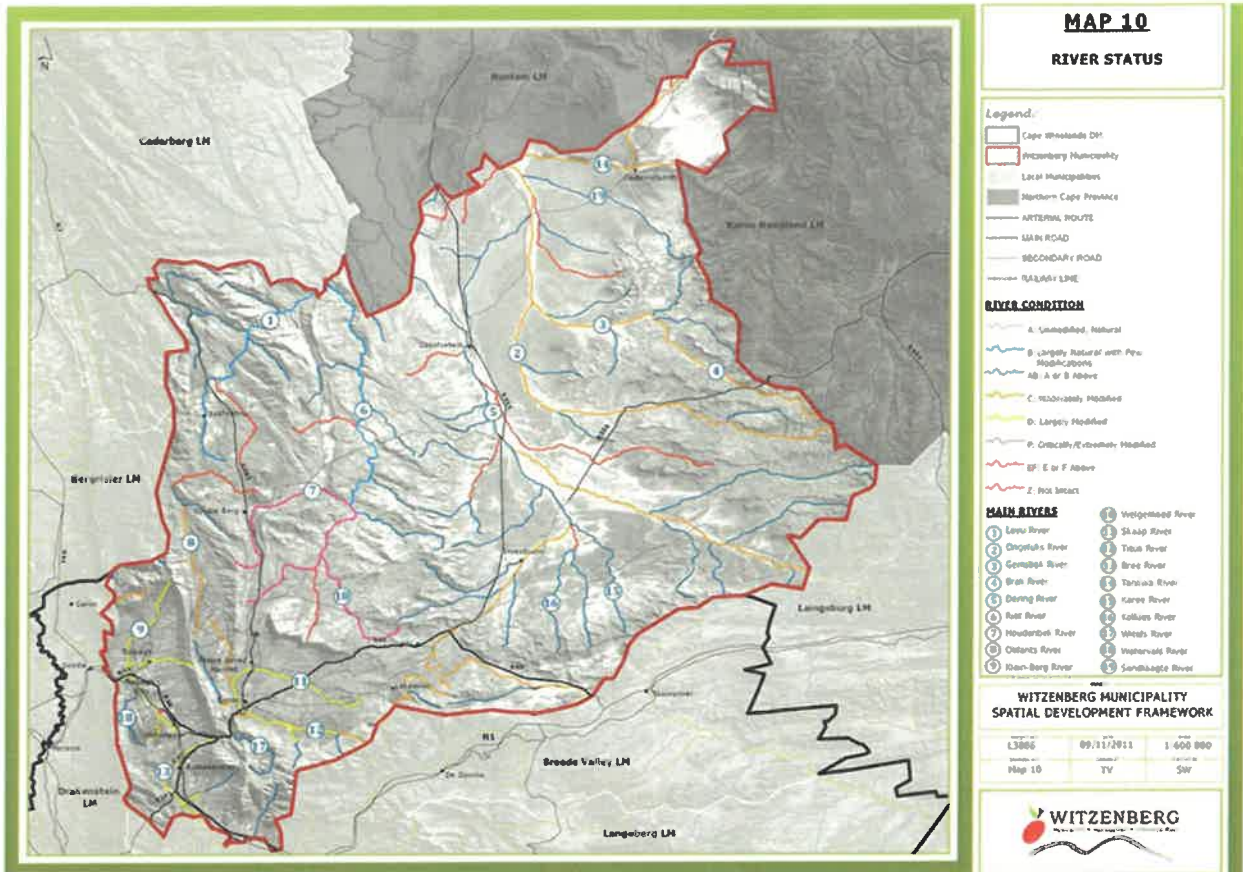


Figure A1.6: Topography

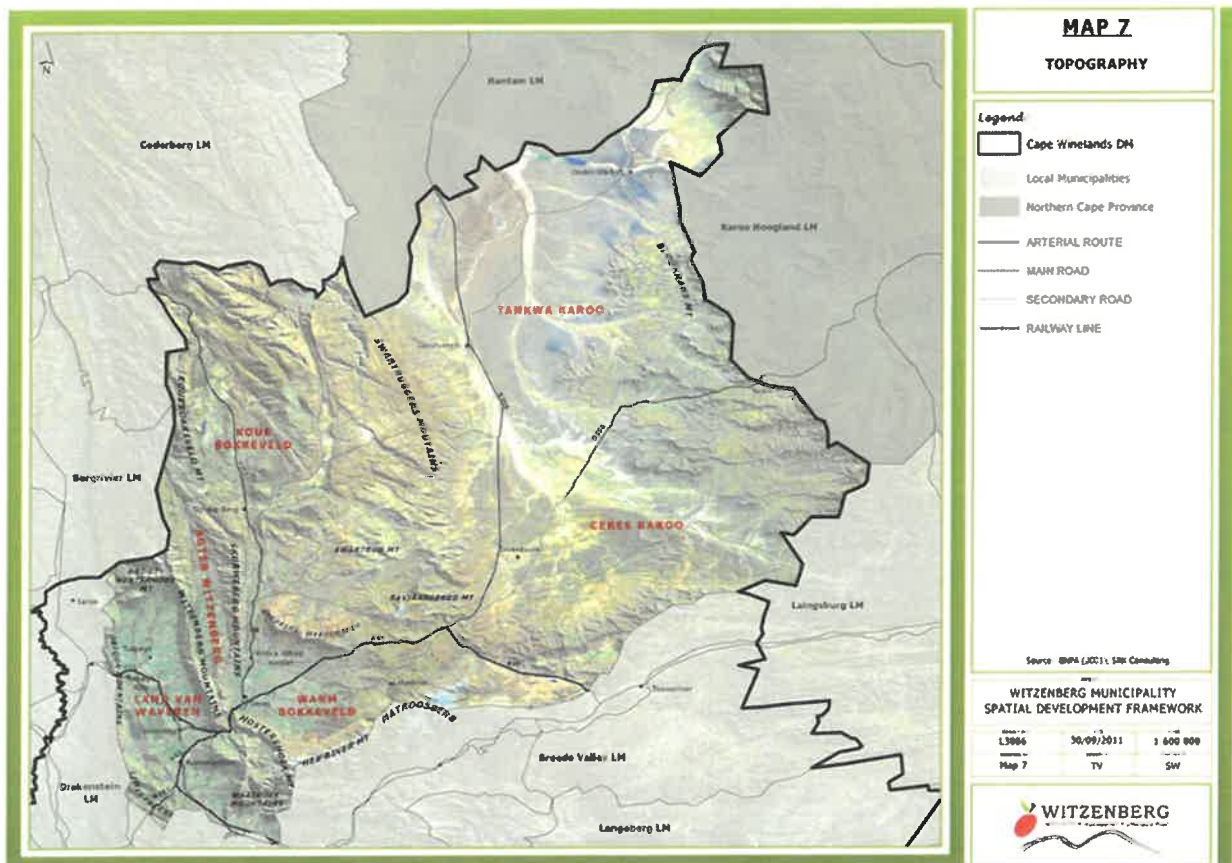
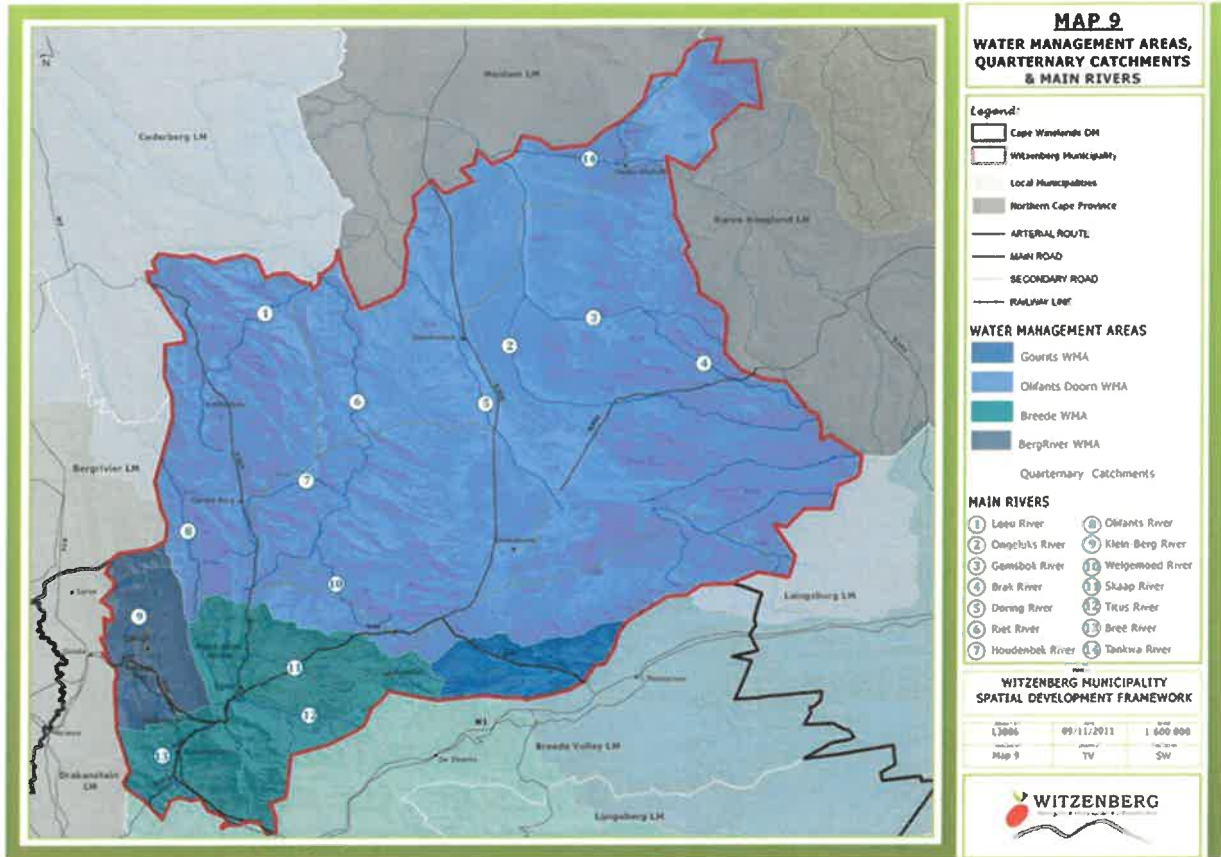


Figure A1.7: Water Management Areas



A2: Water services administration and organization

Table A2.1: Water services administrative structure

Accounting Officer	
Designation:	Municipal Manager
Name:	David Nasson
Telephone Nr:	023 316 1854
Fax Nr:	
Cell Nr:	083 647 5909
Email:	david@witzenberg.gov.za
Director: Technical Services	
Designation:	Director: Technical Services
Name:	Joseph Barnard
Telephone Nr:	023 316 8540
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Email:	joseph@witzenberg.gov.za
Chief Financial Officer	
Designation:	Director: Finance
Name:	Cobus Kritzinger
Telephone Nr:	023 316 1854
Fax Nr:	023 3121495
Cell Nr:	083 382 6117
Email:	cobus@witzenberg.gov.za
WSDP Manager	
Designation:	Senior Manager: Water & Sewerage
Name:	Nathan Jacobs
Telephone Nr:	023 316 8540
Fax Nr:	023 3123472
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Project Coordinator	
Designation:	Manager: Projects
Name:	Johan Swanepoel
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Fax Nr:	
Cell Nr:	083 287 7747
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IDP Manager	
Designation:	IDP Manager
Name:	Adrian Hofmeester
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Fax Nr:	
Cell Nr:	083 348 3606
Email:	adrian@witzenberg.gov.za

A3: Water services overview

The Witzenberg Local Municipality (LM), founded in 2000, is classified as a Category B municipality and is responsible for basic service provision to the demarcated municipal area that includes the towns of Ceres, Tulbagh, Prince Alfred's Hamlet, Wolseley and Op-Die-Berg. The rural areas within the municipal boundary are Ceres Valley, Koue Bokkeveld, Achter-Witzenberg and the northern portion of Breede River Valley (Land van Waveren).

The climate in Witzenberg is known for its hot and dry summer days. Winds are seasonal and generally North-westerly or South-easterly. The average annual rainfall in Ceres is about 1 088 mm and the average temperature range is 2,4°C to 29,9°C.

The two largest sector contributors to the GDP are agriculture (35.6%) and the manufacturing sector (20.9%), growing on average at 2.1% and 10.6% respectively per annum. Within the manufacturing sector, the food, beverage sub-sector is clearly dominant, representing 69.4% of total manufacturing.

According to the Census of 2011, Witzenberg's population stands at 115 946 and the racial breakdown is 65.9% Coloured, 25.3% Black, 7.7% White, 0.2% Asians and 0.8% other. The following table shows the overall population breakdown within the specific areas (Census 2011)

Area	Population	Population with 2% growth (2022/23)
Witzenberg NU	52 200	69 936
Op –Die-Berg	1 530	2 050
Meulstroom	1 083	1 452
Tulbagh	8 969	12 016
Prince Alfred Hamlet	6 809	9 122
Bella Vista		
Ceres	33 232	44 510
eNduli		
Wolseley		
Pine Valley	12 132	16 254
Montana		
Total	115 946	155 341

The 2022 population of Witzenberg Municipality is based on a 2.67% growth rate. (2010/2011 to 2019/2020 was based on 2.4%).

Witzenberg Municipality is responsible for the operation and maintenance of all water and sewerage infrastructure summarised as follows:

- 328 km of water networks of different diameter
- 217 km of sewer networks of different diameter
- 5 WTW of different capacities ranging from 0.7MI/day to 44MI /day
- 4 WWTW of different capacities ranging from 0.3MI / day to 8.5MI / day
- 23 sewer pump stations of different capacities ranging from 2.6kw to 75kw
- 6 water pump stations of different capacities ranging from 11 – 85 l/s
- Servicing of septic tanks over an area of 10,753 km²
- Provision and servicing of chemical toilets and standpipes in informal areas
- Bulk water supply including source, bulk networks, reservoirs and storage dams

The Water & Sanitation department consist of:

○ Ceres, Nduli and Bella Vista Sewer Network and Treatment	:	8
○ Ceres, Nduli and Bella Vista Water Network and Treatment	:	6
○ PAH & ODB Water & Sewer Network and Treatment	:	9
○ Wolseley Water & Sewer Network and Treatment	:	7
○ Tulbagh Water & Sewer Network and Treatment	:	11
○ Superintendent	:	1
○ Senior Technicians	:	2
○ Senior Manager	:	1
○ Total	:	47

The tables below give an overview of the water and sanitation services in Witzenberg Municipality's Management area.

Table A3.1: Water services overview

Settlement Type	2020/2021		2021/2022		2022/2023		Water category									
	Households	Population	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 Town							Adequate			Below RDP				None		
Ceres	2 423	13 234	2 397	13 587	2 402	13 950	✓	✓	✓							
Prince Alfred Hamlet	1 389	8 654	1 397	8 885	1 394	9 122	✓	✓	✓							
Op-die-Berg	544	1 945	544	1 997	546	2 050	✓	✓	✓							
Wolseley	2 575	15 420	2 576	15 831	2 578	16 254	✓	✓	✓							
Tulbagh	1 932	11 400	1 943	11 704	1 943	12 016	✓	✓	✓							
Sub-Total	8 863	50 653	8 857	52 004	8 863	53 392	5	5	5	0	0	0	0	0	0	0
Townships							Adequate			Below RDP				None		
Bella Vista	2 632	17 108	2 683	17 564	2 686	18 033	✓	✓	✓							
Nduli	2 544	11 884	2 546	12 201	2 560	12 527	✓	✓	✓							
Wolseley	1 790		2 266		2 642											
Tulbagh	1 610		1 988		2 634											
Prince Alfred Hamlet	242		242		242											
Sub-Total	8 818	28 992	9 725	29 765	10 764	30 560	2	2	2	0	0	0	0	0	0	0
Sub-Total: (Urban)	17 681	79 645	18 582	81 769	19 627	83 952	7	7	7	0	0	0	0	0	0	0
RURAL																
Rural Small Village							Adequate			Below RDP				None		
<i>Example: Rural small village 1</i>																
Sub-Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rural Scattered							Adequate			Below RDP				None		
	0	0	0	0	0	0										
Sub-Total	0	0	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	0	0										
Sub-Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Farming							Adequate			Below RDP				None		
	0	0	0	0	0	0										
Sub-Total	0	0	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	0	0
TOTAL	17 681	79 645	18 582	81 769	19 627	83 952	7	7	7	0	0	0	0	0	0	0

Table A3.1: Sewer services overview

Settlement Type	2020/2021		2021/2022		2022/2023		Sanitation category									
	Households	Population	Households	Population	Households	Population	Adequate: Formal	Adequate: Informal	Adequate: Shared Services	Water resources needs only	O&M needs only	Infrastructure needs only	Infrastructure & O&M needs	Infrastructure, O&M & Resource need	No Services: Informal	No Services: Formal
URBAN																
Formal Town							Adequate	Below RDP						None		
Ceres	2 769	13 234	2 501	13 587	2 794	13 950	✓	✓	✓							
Prince Alfred Hamlet	2 071	8 654	2 112	8 885	2 085	9 122	✓	✓	✓							
Op-die-Berg	477	1 945	490	1 997	477	2 050	✓	✓	✓							
Wolseley	2 612	15 420	2 576	15 831	2 553	16 254	✓	✓	✓							
Tulbagh	1 845	11 400	1 964	11 704	1 851	12 016	✓	✓	✓							
Sub-Total	9 774	50 653	9 643	52 004	9 760	53 392	5	5	5	0	0	0	0	0	0	0
Townships							Adequate	Below RDP						None		
Bella Vista	2 586	17 108	2 580	17 564	2 637	18 033	✓	✓	✓							
Nduli	2 464	11 884	2 563	12 201	2 480	12 527	✓	✓	✓							
Wolseley	1 790		2 266		2 642											
Tulbagh	1 610		1 988		2 634											
Prince Alfred Hamlet	242		242		242											
Sub-Total	8 692	28 992	9 639	29 765	10 635	30 560	2	2	2	0	0	0	0	0	0	0
Sub-Total: (Urban)	18 466	79 645	19 282	81 769	20 395	83 952	7	7	7	0	0	0	0	0	0	0
RURAL																
Rural Small Village							Adequate	Below RDP						None		
<i>Example: Rural small village 1</i>																
Sub-Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rural Scattered							Adequate	Below RDP						None		
	0	0	0	0	0	0										
Sub-Total	0	0	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	0	0										
Sub-Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Farming							Adequate	Below RDP						None		
	0	0	0	0	0	0										
Sub-Total	0	0	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	0	0
TOTAL	18 466	79 645	19 282	81 769	20 395	83 952	7	7	7	0	0	0	0	0	0	0

Section B: WSDP Performance Report**B1: WSDP reference and status**

The table below gives an overview of the Municipality's WSDP status.

Table B1.1: WSDP- and reporting reference

Nr	WSDP Title and Reference	Status	Date	WSDP Year	Financial Year	Reporting year
1	Witzenberg Municipality: Water Services Development Plan 2016/2017	Drafted:	2017/09/15	Year 1	2016/2017	Year -5
		Comment submit:	2017/10/17	Year 2	2017/2018	Year -4
		Finalised:	2017/10/30	Year 3	2018/2019	Year -3
		Adopted:	Approved	Year 4	2019/2020	Year -2
		Published:	2017/11/01	Year 5	2021/2022	Year -1
2	Witzenberg Municipality: Water Services Development Plan 2023/2024	Drafted:	2023/07/01	Year 1	2023/2024	Year 0
		Comment submit:	2023/10/01	Year 2	2024/2025	Year 1
		Finalised:	Not yet	Year 3	2025/2026	Year 2
		Adopted:	Not yet	Year 4	2026/2027	Year 3
		Published:	Not yet	Year 5	2027/2028	Year 4

B2: Performance on water services objectives and strategies

The IDP is the Municipality's single most strategic document that drives and directs all implementation and related processes. The Municipality's budget is developed based on the priorities, programmes and projects of the IDP, after which a Service Delivery Budget Implementation Plan (SDBIP) is developed, to ensure that the organisation actually delivers on the IDP targets.

The SDBIP is the process plan and performance indicator / evaluation for the execution of the budget. The SDBIP is being used as a management, implementation and monitoring tool that assists and guide the Executive Mayor, Councillors, Municipal Manager, Senior Managers and the community. The plan serves as an input to the performance agreements of the Municipal Manager and Directors. It also forms the basis for the monthly, quarterly, mid-year and the annual assessment report and performance assessments of the Municipal Manager and Directors.

Finally, the Annual Report, of which the Water Services Audit Report forms a part, records the success or otherwise of the previous year's implementation.

WSDP Topic 4: Socio economic										
4.1	NA									
	etc.									
WSDP Topic 5.1: Water Services Infrastructure management										
5.1.1	Repair breaks within 24 Hours after water break has been reported to call centre	Repair breaks within 24 Hours after water break has been reported to call centre	Yes	Yes	100%	100%	100%	100%	100%	100%
5.1.2	Water assets is maintained in terms of the maintenance budget	Water assets is maintained in terms of the maintenance budget.	Yes	Yes	95	109	95	109	95	90
	etc.									
WSDP Topic 5.2: Wastewater Services Infrastructure management										
5.2.1	Regular inspection at pump stations to inspect for faulty, damage or defective equipment and infrastructure at the pump station	Regular inspection at pump stations to inspect for faulty, damage or defective equipment and infrastructure at the pump station	Yes	Yes			23	23	23	23
5.2.2	Sanitation assets is maintained in terms of the maintenance budget	Sanitation assets is maintained in terms of the maintenance budget	Yes	Yes	95	118	95	117	95	104
	etc.									
WSDP Topic 6: Associated services										
6.1	NA									
	etc.									

WSDP Topic 7.1: Conservation and Demand management (Water Resource Management)										
7,1,1	Repair faulty meters received per list from finance within 20 days.	Repair faulty meters received per list from finance within 20 days.	Yes	Yes	100	100	100	100	100	100
etc.										
WSDP Topic 7.2: Conservation and Demand management (Water Balance)										
7,2,1	Decrease unaccounted water losses.	Decrease unaccounted water losses.	Yes	Yes	18	11,75	18	13,58	18	12,12
etc.										
WSDP Topic 8: Water Resources										
8.1	Quality of waste water discharge measured by the overall average percentage water quality level within SANS and DWAF standards for microbiological, physical and chemical for all WWTW plants	Quality of waste water discharge measured by the overall average percentage water quality level within SANS and DWS standards for microbiological, physical and chemical for all WWTW plants	Yes	Yes	90	89	90	92	90	91
etc.										
WSDP Topic 9: Financial profile										
9.1	Submission of nr of water connections for the month to Finance Income section.	Submission of nr of water connections for the month to Finance Income section.	Yes	Yes	1	1	1	1	1	1
9,2	Submission of nr of sewer connections for the month to Finance Income section.	Submission of nr of sewer connections for the month to Finance Income section.	Yes	Yes	1	1	1	1	1	1
9,3	Percentage of valid water connection applications connected by reporting period end	Percentage of valid water connection applications connected by reporting period end	Yes	Yes	95%	100%	95%	100%	95%	100%
9,3	Percentage of valid sanitation connection applications connected by reporting period end	Percentage of valid sanitation connection applications connected by reporting period end	Yes	Yes	95%	100%	95%	100%	95%	100%

WSDP Topic 10: Institutional Arrangements profile										
10.1	None									
	etc.									
WSDP Topic 11: Social and Customer service requirements										
11.1	Repair breaks within 24 Hours after water break has been reported to call centre.	Repair breaks within 24 Hours after water break has been reported to call centre.	Yes	Yes	100	100	100	100	100	100
	Sewerage blockage removals within 24 hours from receipt of the complaint by the control room	Sewerage blockage removals within 24 hours from receipt of the complaint by the control room	Yes	Yes	100	100	100	100	100	100
	etc.									

The following performance highlights may be presented for the past financial year:

Water services:

- Construction of the Waverenskroon Dam, Tulbagh.
- Updating of the Water Services Development Plans
- Updating of Water Safety Plans
- Completion of the Kleinberg rising main and booster pump station.

Sanitation services:

- Security Upgrades at Sewer PS's
- Investigation and preliminary design completed for Wolseley WWTW Upgrades:
Phase1 completed.
Phase 2A in tender stage.
- Investigation and inspection phase completed – Wastewater Risk Abatement Plan

B3: Status of water services projects

Witzenberg Municipality completed the following water capital projects during the last financial year:

Table B3.1: Water Services projects status and performance

Nr	Project Title and Description	Inclusion		Total Project Cost R'000	Year 0 Performance - FY2022/2023			Funding Source(s)	Project Category / Type	Planned Period		Project Status	Actual Completion Year
		WSDP	IDP		FY Budget R'000	Expended R'000	%			From FY	To FY		
Water services													
1	Tulbagh Dam	Yes	Yes	R27 000	R16 730	R13 388	80%	RBIG	Water	2022/23	2022/23	Completed	2023/24
2	Network replacement	Yes	Yes	R28	R28	R28	100%	CRR	Water	2022/23	2022/23	Completed	2022/23
3	Op-die-Berg Reservoir	Yes	Yes	R5 000	R174	R174	100%	MIG	Water	2022/23	2022/23	Design completed	2023/24
4	Tierhokskloof Pipeline	Yes	Yes	R14 000	R820	R820	100%	MIG	Water	2022/23	2022/23	Design Phase	2023/24
5	Tulbagh Reservoir	Yes	Yes	R8 500	R460	R460	100%	MIG	Water	2022/23	2022/23	Design Phase	2024/25
Total				R54 528	R18 211	R14 869	82%						

Witzenberg Municipality completed the following sewerage capital projects during the last financial year:

Nr	Project Title and Description	Inclusion		Total Project Cost R'000	Year 0 Performance - FY2022/2023			Funding Source(s)	Project Category / Type	Planned Period		Project Status	Actual Completion Year
		WSDP	IDP		FY Budget R'000	Expended R'000	%			From FY	To FY		
Sanitation services													
1	Sewer Network	Yes	Yes	R3 203	R3 226	R3 203	99%	CRR	Sanitation	2022/23	2022/23	Completed	2022/23
2	Upgrade Wolseley WWTW	Yes	Yes	R15 000	R9 294	R7 919	85%	WSIG	Sanitation	2022/23	2022/23	Phase 1 completed	2023/24
3	Toilets for Informal settlements	Yes	Yes	R957	R957	R0	0%		Sanitation	2022/23	2022/23	Waiting on roll over	2023/24
4	Generators	Yes	Yes	R183	R183	R0	0%		Sanitation	2022/23	2022/23		2023/24
5	Generators	Yes	Yes	R413	R413	R0	0%		Sanitation	2022/23	2022/23		2023/24
6	Security upgrades	Yes	Yes	R75	R88	R75	86%	CRR	Sanitation	2022/23	2022/23	Completed	2022/23
Total					R19 831	R14 160	R11 197	79%					

B4: Past financial year water services project impact declaration

The impacts of the water and sewerage capital projects which were implemented in the previous financial year by Witzenberg Municipality (2022/2023)

Table B4.1: Past financial year project impact declaration

Nr	Project Title and Description	Project Category	Settlements which benefitted	Nr Beneficiaries		Impact Declaration
				HH's	Pop	
1	Tulbagh Dam	Supply + Drought relief	Tulbagh	19282	12016	Drought Relief + Supply
2	Water Network	Reticulation	Witzenberg	19627	83952	Upgrade old infrastructure
3	Op-die-Berg Reservoir	Supply	Op-die-Berg	546	2050	Increase and secure supply
4	Tierhokskloof Pipeline	Supply	Wolseley	5220	16254	Upgrade old infrastructure
5	Tulbagh Reservoir	Supply	Tulbagh	4577	12016	Increase and secure supply
6	Sewer Network	Reticulation	Witzenberg	20395	83952	Upgrade old infrastructure
7	Upgrade Wolseley WWTW	Treatment / Compliance	Wolseley	5195	16254	Secure compliance
8	Toilets for Informal settlements	Service delivery	Witzenberg	20395	83952	Service delivery
9	Generators	Treatment / Compliance	Witzenberg	20395	83952	Compliance
10	Generators	Treatment / Compliance	Witzenberg	20395	83952	Compliance
11	Security upgrades	Treatment / Compliance	Witzenberg	20395	83952	Secure infrastructure
	TOTAL					

Section C: Water Services Audit Report

C1. Quantity of water services provided (Water Balance)

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

WSDP Ref. #	Regulations Ref. #	Description	m ³ per annum			Ml/d		
			Year 0	Year - 1	Year - 2	Year 0	Year - 1	Year - 2
			FY2022/23	FY2021/22	FY2020/21	FY2022/23	FY2021/22	FY2020/21
		RAW WATER						
7.2.1		Surface water purchased						
7.1 / 7.2.2		Surface water abstracted *						
7.1 / 7.2.3		Ground water abstracted						
7.2.14		Effluent recycled						
7.2.4		/less Raw water supplied to others						
7.2.5		Sub-Total: Raw Water supplied		0	0		0,00	0,00
	10.2 (g) (i)	BULK WATER SUPPLY						
7.2.6		Volume of water treated	6937653	7187597	6708325	19,01	19,69	18,38
7.2.7	10.2 (a) (ii)	Purchased treated water						
7.2.7A		Ground water not treated						
7.2.6A		/less Treated water supplied to others						
		Sub-Total: System Input Volume	6937653	7 187 597	6 708 325	19,01	19,69	18,38
		WATER CONSUMPTION						
7.2.8.1		Billed Metered:	4 565 692	4 904 527	3 816 636	12,51	13,44	10,46
	10.2 (a) (i)	Domestic						
	10.2 (a) (i)	Commercial						
	10.2 (a) (i)	Industrial						
	10.2 (a) (i)	etc.						
7.2.8.2		Billed Unmetered	1406786,3	1412186	1586010	3,85	3,87	4,35
	10.2 (a) (i)	Domestic						
	10.2 (a) (i)	Commercial						
	10.2 (a) (i)	Industrial						
	10.2 (a) (i)	etc.						
7.2.8.3		Unbilled Metered						
7.2.8.4		Unbilled Unmetered						
	10.2 (g) (i)	Sub-Total: Authorized consumption	5 972 478	6 316 713	5 402 646	16,36	17,31	14,80
		UNACCOUNTED FOR WATER						
7.3.1		Raw water bulk loss						
7.2.3/7.2.4		Billing losses						
7.2.5		Apparent losses						
7.2.5.1		Illegal connections						
7.2.5.2		Inaccurate meters						
7.2.5.3		Data errors						
7.2.6		Real losses						
	10.2 (g) (ii)	Sub-Total: Unaccounted for water	965 175	870 884	1 305 679	2,64	2,39	3,58
		WASTEWATER TREATMENT						
7.2.9	10.2 (a) (iii)	Total received at WWTW	3600526	3603502	3323913	9,86	9,87	9,11
7.2.11		Total discharged	3240473	3243152	2991521	8,88	8,89	8,20
7.2.13		Returned to environment	3240473	3243152	2991521	8,88	8,89	8,20
7.2.14		Recycled						
	10.2 (a) (iv)	Quantity of water supplied not discharged to WWTW's	2 371 952	2 713 211	2 078 733	6,50	7,43	5,70

Table C1.2: Quantity of water services provided / water balance (Ml/d)

Table C2.1: User Connection Profile

WSDP Ref. #	Category of users	Water Services						New Connections Year 0 Nr
		Year 0 FY2022/23		Year 1 FY2021/22		Year 1 FY2020/21		
		Nr	%	Nr	%	Nr	%	
	RESIDENTIAL (DOMESTIC)							
3,3	Metered: Uncontrolled		0%		0%		0%	0
3,3	Metered: Controlled*	12 987	66%	12 972	70%	13 167	74%	15
	Unmetered (flat rate)						0%	0
	Communal water supply	6 640	34%	5 610	30%	4 514	26%	0
	Sub-Total: Residential	19 627	100%	18 582	100%	17 681	100%	15
	EDUCATION							
3,3	Schools	48	0%	48	0%	48	0%	0
	Tertiary education facilities		0%		0%		0%	0
	Sub-Total: Education	48	0%	48		48		0
	HEALTH							
3,3	Clinics	14	0%	14	0%	14	0%	
3,3	Hospitals	2	0%	2	0%	2	0%	
3,3	Health Centres		0%		0%		0%	
	Sub-Total: Health	16	0%	16	0%	16	0%	
	INSTITUTIONAL							
	Public Institutions		0%		0%		0%	0
3,3	Magistrate Offices	2	0%	2	0%	2	0%	0
3,3	Police Stations	3	0%	3	0%	5	0%	0
3,3	Prisons	3	0%	3	0%	3	0%	0
	etc		0%		0%		0%	0
	Sub-Total: Institutional	8	0%	8	0%	10	0%	0
	INDUSTRIAL							
3,3	Dry industries		0%		0%		0%	0
3,3	Wet industries	23	0%	23	0%	23	0%	0
	Sub-Total: Industrial	23	0%	23	0%	23	0%	0
	COMMERCIAL							
3,3	Businesses	110	1%	110	1%	50	0%	0
3,3	Office Buildings		0%		0%		0%	0
	Sub-Total: Commercial	110	1%	110	1%	50	0%	0
	MINING							
			0%		0%		0%	0
	Sub-Total: Mining	0	0%	0	0%	0	0%	0
	OTHER							
	Agriculture		0%	0	0%	0	0%	0
	Churches		0%	0	0%	0	0%	0
	Unknown		0%	0	0%	0	0%	0
	Sub-Total: Other	0	0%	0	0%	0	0%	0
	TOTAL	19 627	100%	18 582	100%	17 681	100%	15

C2. Water services delivery profile

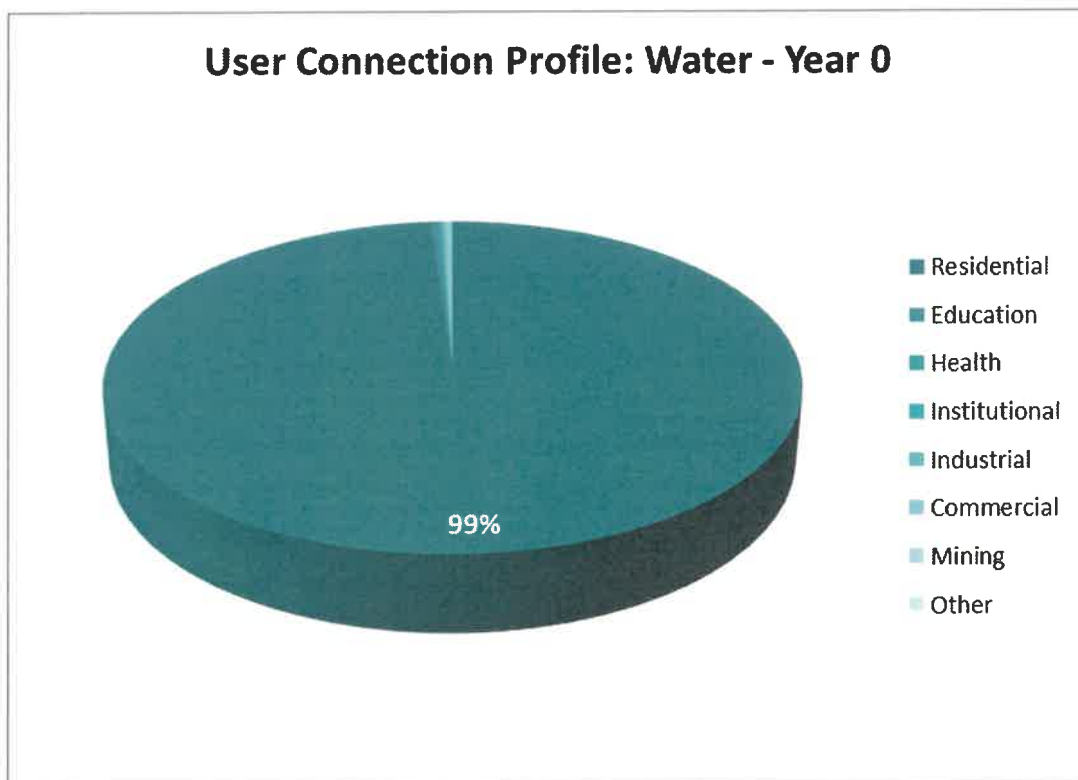
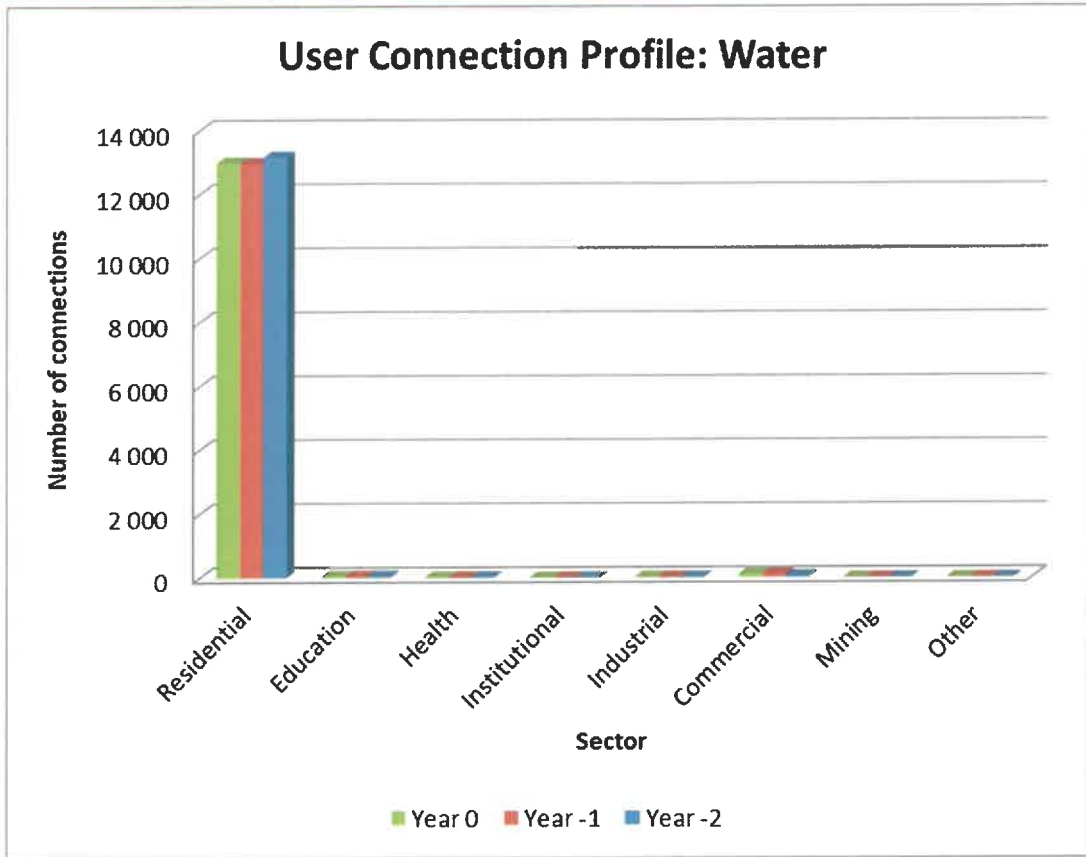


Table C2.1.2: User connection profile: Wastewater

Table C2.1: User Connection Profile

WSDP Ref. #	Category of users	Wastewater Services						
		Year 0 FY2022/23		Year 1 FY2021/22		Year 1 FY2020/21		New Connections Year 0
		Nr	%	Nr	%	Nr	%	
	RESIDENTIAL (DOMESTIC)							
3,3	Metered: Uncontrolled		0%		0%		0%	
3,3	Metered: Controlled*	13 755	67%	13 672	71%	13 952	76%	83
	Unmetered (flat rate)		0%	0	0%	0	0%	0
	Communal water supply	6 640	33%	5 610	29%	4 514	24%	
	Sub-Total: Residential	20 395	100%	19 282	100%	18 466	100%	83
	EDUCATION							
3,3	Schools	47	0%	47	0%	47	0%	0
	Tertiary education facilities		0%		0%		0%	0
	Sub-Total: Education	47	0%	47	0%	47	0%	0
	HEALTH							
3,3	Clinics	14	0%	14	0%	14	0%	0
3,3	Hospitals		0%	2	0%	2	0%	-2
3,3	Health Centres		0%		0%		0%	0
	Sub-Total: Health	14	0%	16	0%	16	0%	-2
	INSTITUTIONAL							
	Public Institutions		0%		0%		0%	0
3,3	Magistrate Offices	2	0%	2	0%	2	0%	0
3,3	Police Stations	3	0%	3	0%	3	0%	0
3,3	Prisons	3	0%	3	0%	3	0%	0
	etc		0%		0%		0%	0
	Sub-Total: Institutional	8	0%	8	0%	8	0%	0
	INDUSTRIAL							
3,3	Dry industries		0%		0%		0%	0
3,3	Wet industries	23	0%	23	0%	23	0%	0
	Sub-Total: Industrial	23	0%	23	0%	23	0%	0
	COMMERCIAL							
3,3	Businesses	110	1%	110	1%	110	1%	50
3,3	Office Buildings		0%		0%		0%	0
	Sub-Total: Commercial	110	1%	110	1%	110	1%	50
	MINING							
			0%		0%		0%	0
	Sub-Total: Mining	0	0%	0	0%	0	0%	0
	OTHER							
	Agriculture		0%	0	0%	0	0%	0
	Churches		0%	0	0%	0	0%	0
	Unknown		0%	0	0%	0	0%	0
	Sub-Total: Other	0	0%	0	0%	0	0%	0
	TOTAL	20 395	100%	19 282	100%	18 466	100%	131

Figure C2.1.4: User connection profile for wastewater

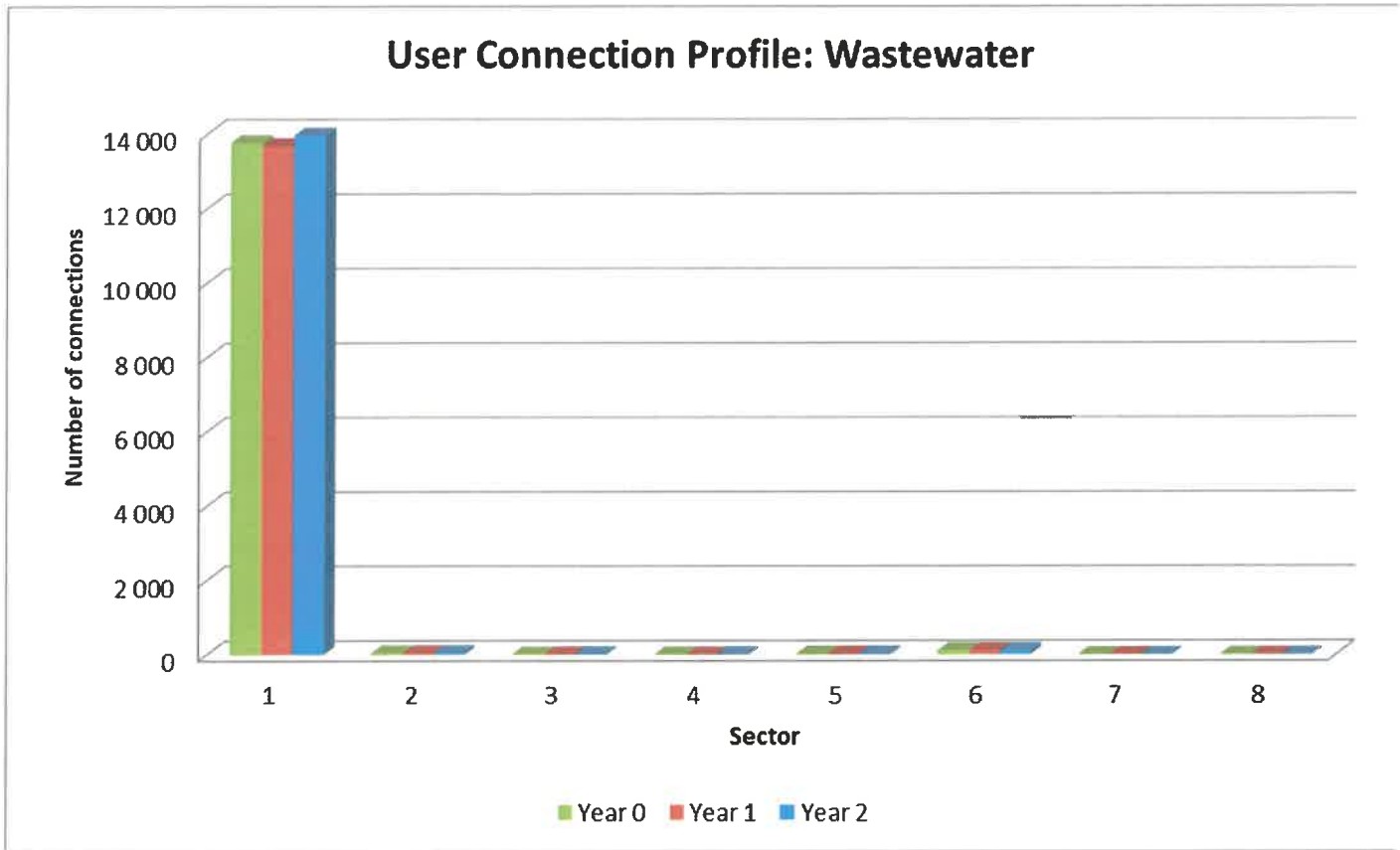


Figure C2.1.5: User connection distribution for wastewater - Year 0

C2.2 Residential water services delivery access profile

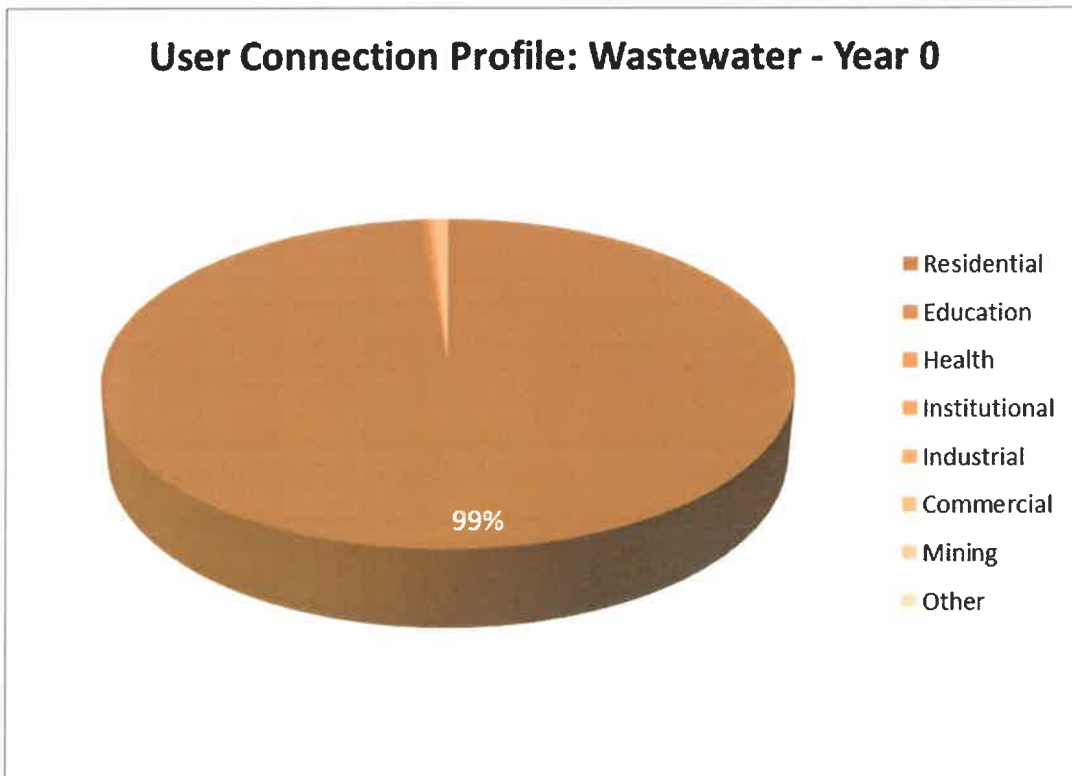


Table C2.2 (a): Residential water services delivery access profile: Water

Census Category	Description	Year 0		Year 1		Year 2	
		FY2022/23		FY2021/22		FY2020/21	
		Nr	%	Nr	%	Nr	%
	WATER (ABOVE MIN LEVEL)						
Piped (tap) water inside dwelling/institution	House connections	12 987	66%	12 972	70%	13 167	74%
Piped (tap) water inside yard	Yard connections						
Piped (tap) water on community stand: distance less than 200m from dwelling/institution	Standpipe connection < 200 m	6 640	34%	5 610	30%	4 514	26%
	Sub-Total: Minimum Service Level and Above	19 627	100%	18 582	100%	17 681	100%
	WATER (BELOW MIN LEVEL)						
Piped (tap) water on community stand: distance between 200m and 500m from dwelling/institution	Standpipe connection: > 200 m < 500 m						
Piped (tap) water on community stand: distance between 500m and 1000m (1km) from dwelling /institution	Standpipe connection: > 500 m < 1 000 m	0	0%	0	0%	0	0%
Piped (tap) water on community stand: distance greater than 1000m (1km) from dwelling/institution	Standpipe connection: > 1 000 m						
No access to piped (tap) water	No services	0	0%	0	0%	0	0%
	Sub-Total: Below Minimum Service Level	0	0%			0	0%
	Total number of households	19 627	100%	18 582	100%	17 681	100%

Table C2.2.1: Residential water services delivery access profile: Water

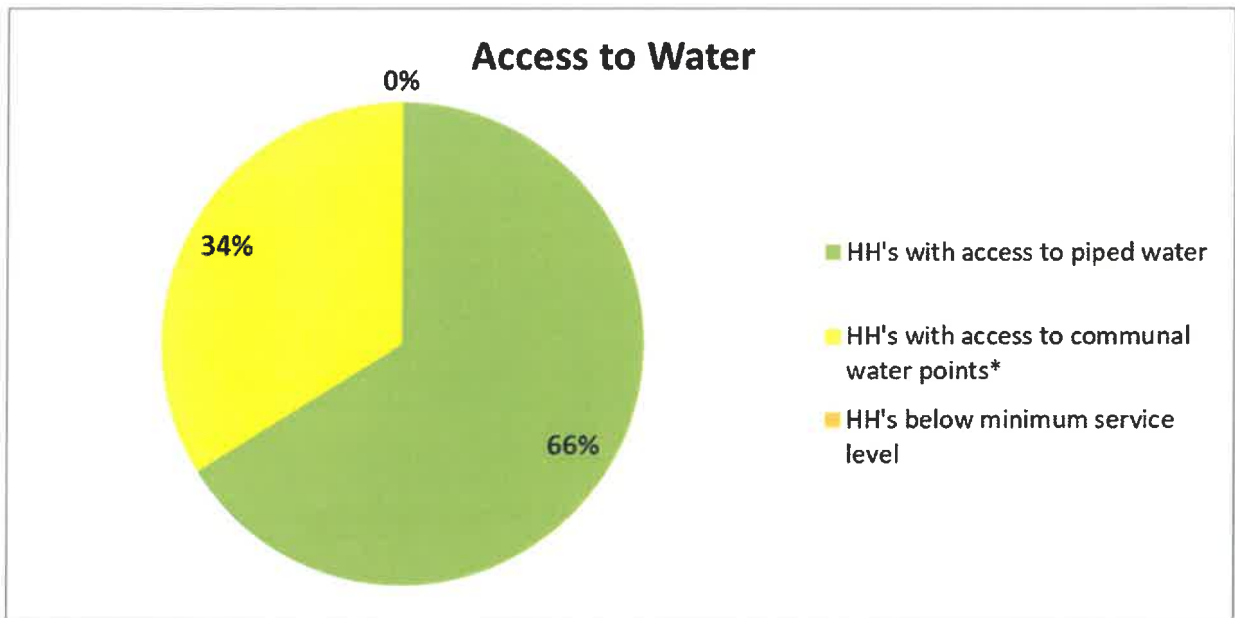


Table C2.2.2: Residential water services delivery access profile: Sanitation

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

Census Category	Description	Year 0		Year 1		Year 2	
		FY2022/23		FY2021/22		FY2020/21	
		Nr	%	Nr	%	Nr	%
SANITATION (ABOVE MIN LEVEL)							
Flush toilet (connected to sewerage system)	Waterborne	13 038	64%	12 955	67%	13 235	72%
	Waterborne: Low Flush	0	0%	0	0%	0	0%
Flush toilet (with septic tank)	Septic tanks / Conservancy	717	4%	717	4%	717	4%
Chemical toilet	Non-waterborne (above min. service level)	77	0%	58	0%	56	0%
Pit toilet with ventilation (VIP)		0	0%	0	0%	0	0%
Other		6 640	33%	5 610	29%	4 514	24%
Sub-Total: Minimum Service Level and Above		20 395	100%	19 282	100%	18 466	100%
SANITATION (BELOW MIN LEVEL)							
Pit toilet without ventilation	Pit toilet	0	0%	0	0%	0	0%
Bucket toilet	Bucket toilet	0	0%	0	0%	0	0%
Other toilet provision (below min. service level)	Other	0	0%	0	0%	0	0%
No toilet provisions	No services	0	0%	0	0%	0	0%
Sub-Total: Below Minimum Service Level		0	0%	0	0%	0	0%
Total number of households		20 395	100%	19 282	100%	18 466	100%

Figure C2.2.2: Household sanitation access profile

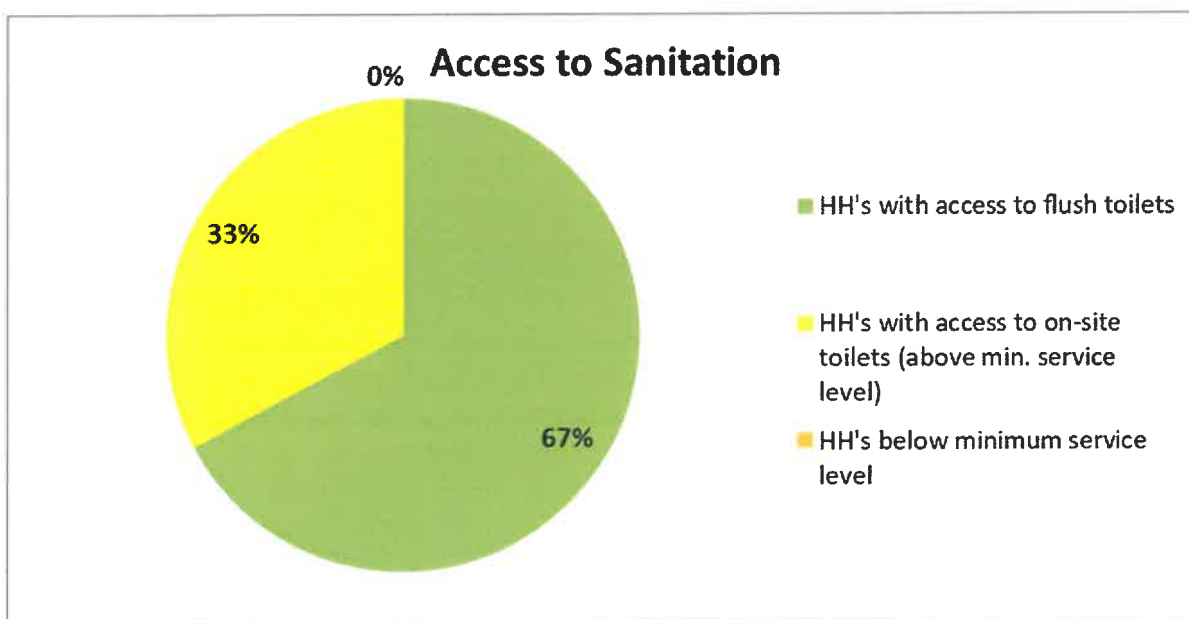


Table C2.3 (a): Residential water services delivery adequacy profile (Water)

Water Category	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	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	HH	%		
1	9	12 987	100%																				
2	23																						
3	0																						
4	29																						
5	0																						
6	0																						
7	3																						
8	0																						
9	0																						
10	0																						
Total Household Interventions required		12 987		0			0			12 987	100%			5 220	34%	5 123	33%	5 220	34%	0		6 640	100%

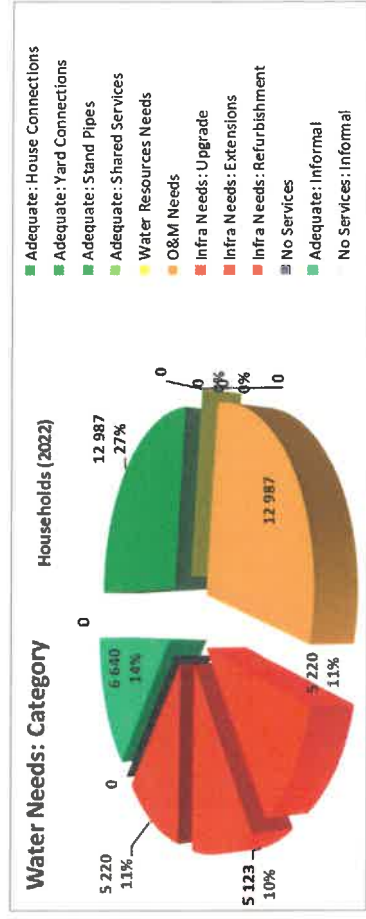
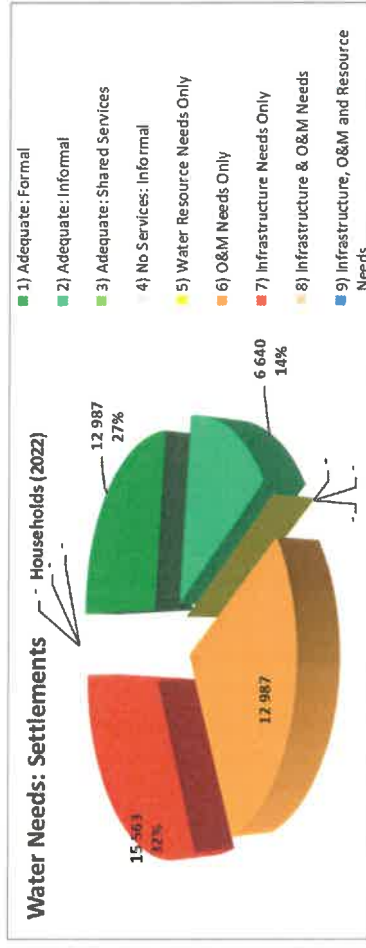
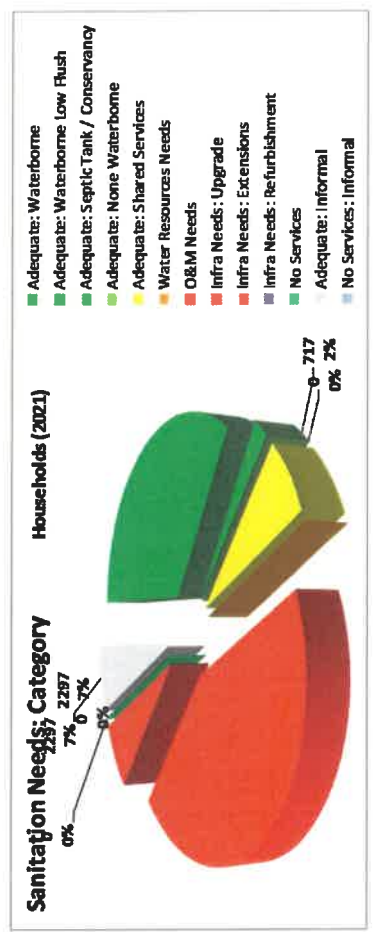
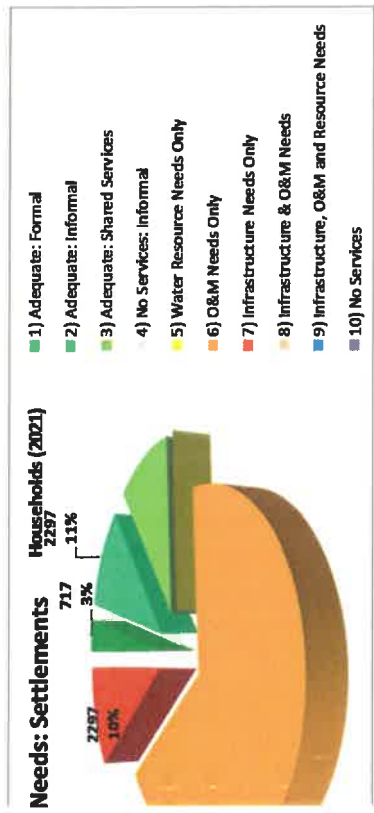


Table C2.3 (b): Residential water services delivery adequacy profile (Sanitation)

: Residential water services delivery adequacy profile (Sanitation)																				
FORMAL																				
Waterborne	Adequate			None Waterborne			Water Resource needs	O & M Needs			Infrastructure Needs			No services		Adequate		No services		
	HH	%	HH	%	HH	%		HH	%	HH	%	HH	%	HH	%	HH	%	HH	%	
Waterborne	13 038	100%															6 640	100%		
Waterborne Low flush																				
Septic Tank/Conservancy																				
Shared Services																				
Water Resource needs							20 395	100%												
O & M Needs									8 152	44%										
Infrastructure Needs																				
Upgrades																				
Extensions																				
Refurbishment																				
No services																				
Adequate																	6 640	100%		
No services																				0
	13 038						20 395		8 152								6 640			0



C3. Cost recovery and free basic services

C3.1 Tariffs - *The table above indicates the tariffs applicable to Water.*

Table C3.1.1: Tariffs for Water

Nr	Category	Sector	Unit	Tariff (VAT excluded)			% increase Year 0
				Year 0 2022/2023	Year -1 FY2021/22	Year -2 FY2020/21	
1,1	BASIC CHARGES						
	Unimproved Sites		Consumer	142,51	R 140,85	R 132,88	6,0%
	Water Connection size: 0-25mm		Consumer	72,14	R 72,17	R 72,17	0,0%
	Water Connection size: 26-50mm		Consumer	1075,12	R 945,70	R 892,17	6,0%
	Water Connection size: 51-80mm		Consumer	2715,1	R 2 389,15	R 2 253,91	6,0%
	Water Connection size: 81-100mm		Consumer	4300,49	R 3 782,82	R 3 568,70	6,0%
	Water Connection size: 101-150mm		Consumer	9619,53	R 8 461,57	R 7 982,61	6,0%
	Consumption of more than 200000 kl per month		Consumer	209366,25	R 184 163,48	R 173 739,13	6,0%
	Un-metered connections		Consumer	364,41	R 278,73	R 262,96	6,0%
2	VOLUME CHARGES						
	No restrictions						
	0-6kl		kl	3,2	R 2,99	R 2,82	6,0%
	7-30kl		kl	9,27	R 8,64	R 8,15	6,0%
	31-60kl		kl	9,27	R 8,64	R 8,15	6,0%
	61-300kl		kl	9,27	R 8,64	R 8,15	6,0%
	Above 300kl		kl	32,32	R 30,13	R 28,43	6,0%
	Block B (Aimed at larger and commercial and smaller industrial clients)						
	0-300kl		kl	10,72	R 10,00	R 9,43	6,0%
	301-1000kl		kl	10,72	R 10,00	R 9,43	6,0%
	1001-8000kl		kl	10,72	R 10,00	R 9,12	9,6%
	Above 8000kl		kl	11,8	R 10,00	R 9,12	9,6%
	Block C (Aimed at industrial clients)						
	Consumption above 20000kl per month		kl	4,35	R 3,10	R 2,92	6,2%
	Block D (Internal)						
	Departmental Consumption		kl	3,91	R 2,62	R 2,47	6,0%
	Moderate restrictions						
	Block A (Aimed at residential and smaller commercial clients)						
	0-6kl		kl	3,2	R 2,99	R 2,82	6,0%
	7-30kl		kl	10,3	R 12,11	R 13,06	-7,3%
	31-60kl		kl	10,3	R 12,11	R 13,06	-7,3%
	61-300kl		kl	10,3	R 12,11	R 13,06	-7,3%
	Above 300kl		kl	37,3	R 39,13	R 43,48	-10,0%
	Block B (Aimed at larger and commercial and smaller industrial clients)						
	0-300kl		kl	12,87	R 14,01	R 15,11	-7,3%
	301-1000kl		kl	12,87	R 14,01	R 15,11	-7,3%
	1001-8000kl		kl	12,87	R 14,01	R 14,61	-4,1%
	Above 8000kl		kl	12,87	R 14,01	R 14,61	-4,1%
	Block C (Aimed at industrial clients)						
	Consumption above 20000kl per month		kl	5,22	R 4,34	R 4,38	-0,9%
	Extreme restrictions						
	Block A (Aimed at residential and smaller commercial clients)						
	0-6kl		kl	3,2	R 2,99	R 2,82	6,0%
	7-30kl		kl	12,99	R 17,30	R 16,32	6,0%
	31-60kl		kl	12,99	R 17,30	R 16,32	6,0%
	61-300kl		kl	12,99	R 17,30	R 16,32	6,0%
	Above 300kl		kl	41,97	R 52,17	R 52,17	0,0%
	Block B (Aimed at larger and commercial and smaller industrial clients)						
	0-300kl		kl	15,02	R 20,01	R 18,88	6,0%
	301-1000kl		kl	15,02	R 20,01	R 18,88	6,0%
	1001-8000kl		kl	15,02	R 20,01	R 18,26	9,6%
	Above 8000kl		kl	15,02	R 20,01	R 18,26	9,6%
	Block C (Aimed at industrial clients)						
	Consumption above 20000kl per month		kl	6,09	R 6,20	R 5,61	10,6%
	RECONNECTION CHARGES						
	OTHER CHARGES (DEFINE CATEGORY)						

Table C3.1.2: Tariffs for Sanitation / Wastewater

Nr	Category	Sector	Unit	Tariff (VAT excluded)			% increase
				Year -0	Year -1	Year - 2	
				FY2022/23	FY2021/22	FY2020/21	Year 0
BASIC CHARGES							
	Unimproved Sites			84,69	R 78,97	R 74,50	6,0%
	Water Connection size: 0-25mm			239,39	R 223,21	R 210,57	6,0%
	Water Connection size: 26-50mm			931,57	R 868,60	R 210,57	312,5%
	Water Connection size: 51-80mm			2385,3	R 2 224,06	R 2 098,17	6,0%
	Water Connection size: 81-100mm			3726,66	R 3 474,74	R 3 278,06	6,0%
	Water Connection size: 101-150mm			8382,42	R 7 815,78	R 7 373,38	6,0%
OTHER CHARGES							
	Obiqua Prison - Tulbagh			39 661,17	R 36 980,11	R 34 886,90	6,0%
	Schools - Op - die -Berg			239,39	R 223,21	R 210,57	6,0%
	Other Sites - Op - die -Berg			239,39	R 223,21	R 210,57	6,0%
	Departmental Tarrif			98,33	R 91,68	R 86,49	6,0%
	Special Contracts, for example Del monte as per each agreement. Rand per Kg COD						
	Ceres Group Companies			6,62	R 6,17		
	Du Toit Vrugte			10,64	R 9,92		
	L O Rall			10,64	R 9,92		
	Bokkeveld Korrektiewe Dienste			10,64	R 9,92		
	Snocooled Marketing (Edms). Bpk.			10,64	R 9,92		
	Ceres Fruit Growers			10,64	R 9,92		
	Informal settlements without an account (Flat rate)			180,67	R 168,46		
	Unnecessary call outs for work on customer side			494,28	R 460,87		

The table above indicates the tariffs applicable to Sewerage. All the tariffs were increased with $\pm 6\%$. This was done in line with inflation.

C3.2 Metering, Billing and Free Basic Services

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

Regulations Ref. #	Description	Unit	Year -0	Year -1	Year - 2
			FY2022/23	FY2021/22	FY2020/21
	UNITS SUPPLIED (as per water services access profile)				
10.2 (b) (i)	Household water connections (house and yard connections)	Nr	12987	12 972	13 167
10.2 (b) (iv)	Household sewerage connections	Nr	13038	12 955	12 993
	METERING				
	Metered Water Connections (aligned with Billing System)				
	Residential	Nr	12736	12790	12975
	Commercial / Business	Nr	90	63	110
	Industrial	Nr	84	25	10
	Government / Institutional	Nr	77	94	72
	etc.	Nr			
	Sub-Total: Metered Water Connections	Nr	12987	12972	13167
	Proportion of metered connections (residential)	%	98%	99%	99%
	Total number of meters	Nr	12987	12 972	13 167
10.2 (b) (vi)	Total number of new connections (aligned with Table C.2.1)	Nr	15		
10.2 (e) (i)	Total number of new meters installed	Nr	15		
	Proportion of new connections, metered	%			
	Number of meters tested	Nr	0	0	0
10.2 (e) (ii)	Proportion of meters tested to total number of meters	%	0	0	0
	Number of meters replaced	Nr			
10.2 (e) (ii)	Proportion of meters replaced to total number of meters	%			
	BILLING				
	Customer billing (water and sewerage)			Nr	Nr
	Residential	Nr	12736	12790	12975
	Commercial / Business	Nr	90	63	110
	Industrial	Nr	84	25	10
	Government / Institutional	Nr	77	94	72
	etc.	Nr	0	0	0
	Sub-Total: Customers billed	Nr	12987	12972	13167
	Proportion of bills to metered connections	%	100%	100,0%	100,0%
	Residential	%	100%	100,0%	100,0%
	Commercial / Business	%	100%	100,0%	100,0%
	Industrial	%	100%	100,0%	100,0%
	Government / Institutional	%	100%	100,0%	100,0%
	etc.				
	FREE BASIC SERVICES				
	Nr customers receiving:				
	Free Basic Water	Nr	3205	5 368	4 514
10.2 (b) (v)	Free Basic Sanitation	Nr	3205	5 368	4 514
	Proportion of Free Basic Services				
	Water	%	25%	41%	34%
	Sewerage	%	25%	41%	35%

C3.3 Revenue collection and cost recovery

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

Regulations Ref. #	Description	Year 0	Year - 1	Year - 2
		FY2022/23	FY2021/22	FY2020/21
	INCOME	R'000	R'000	R'000
	Billed			
	Water reticulation / provision	R 48 764	R 54 335	R 51 732
	Sewerage / wastewater	R 58 484	R 33 222	R 35 569
	Sub-Total: Billed	R 107 248	R 87 558	R 87 302
	Collections			
	Water reticulation / provision_Collections	R 34 049	R 39 693	R 35 970
	Sewerage / wastewater_Collections	R 38 141	R 29 633	R 27 255
	Sub-Total: Collections	R 72 190	R 69 326	R 63 225
	Equitable share income			
	Water reticulation / provision_FBS	R 2 737	R 2 671	R 3 152
	Sewerage / wastewater_FBS	R 8 841	R 8 128	R 11 650
	Sub-Total: Equitable share income	R 11 577	R 10 799	R 14 802
	EXPENDITURE (O&M)	R'000	R'000	R'000
Water Distr	Water services	R 53 258	R 39 383	R 41 301
Sewerage	Sewerage / wastewater services	R 41 937	R 32 584	R 31 209
	Total: Water Services O&M	R 95 195	R 71 967	R 72 510
	COST RECOVERY ANALYSIS / RATIO'S	%	%	%
10.2 (d) (ii)	Billed as % of Cost			
	Water	92%	138%	125%
	Sewerage	139%	102%	114%
	Total	113%	122%	120%
10.2 (d) (iii)	Unrecovered as % of Cost			
	Water services	28%	37%	38%
	Sewerage / wastewater services	49%	11%	27%
	Total	37%	25%	33%

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

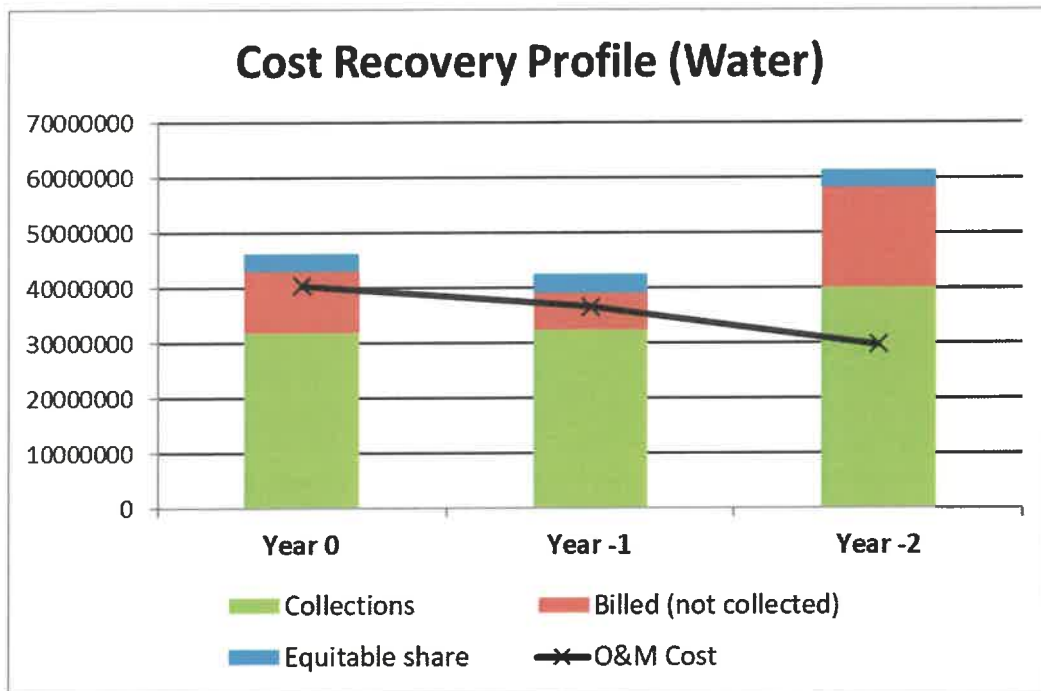
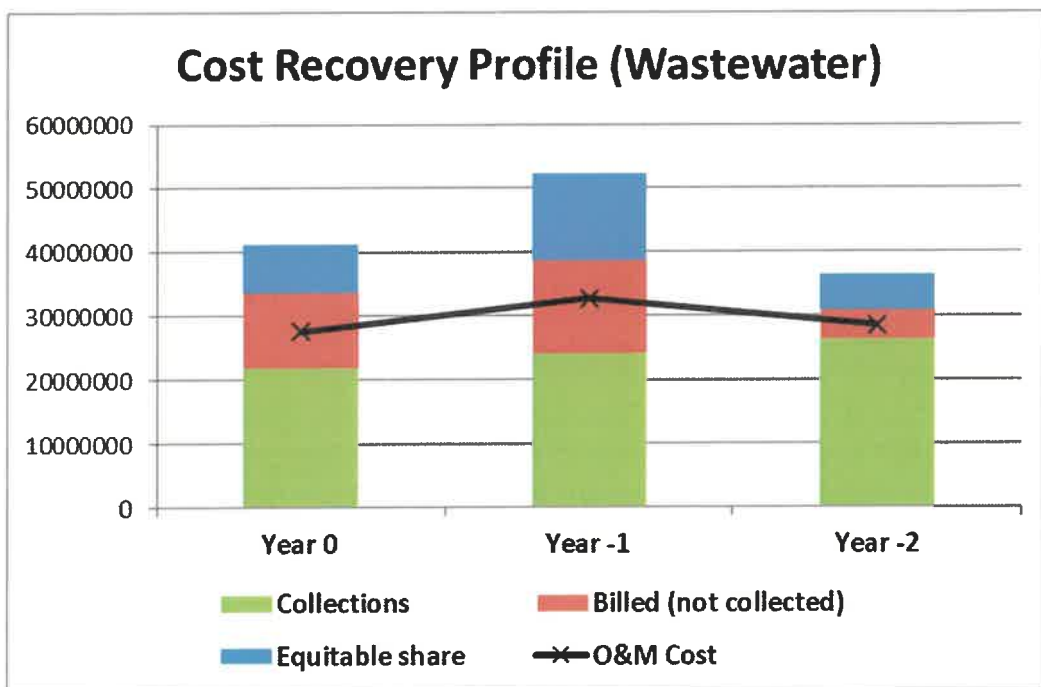


Figure C3.3.2: Revenue collection and cost recovery profile (wastewater)



C4. Water quality

C4.1 Sampling programme

The table below gives an overview of Witzenberg Municipality’s compliance sampling programme for potable water quality: **Table C4.1.1: Sampling programme for potable water quality**

Table C4.1.1: Sampling programme for potable water quality

Treated Water Schemes								
Registered Sites per Scheme		Active (yes/no)			Determinands per Category	Frequency		
		Year 0	Year-1	Year-2		Year 0	Year-1	Year-2
#	Name	FY2022/23	FY2021/22	FY2020/21		FY2022/23	FY2021/22	FY2020/21
	Ceres WTW				Microbiological (Health)			
1	Reservoir Final, Post Chlorination	Yes	Yes	Yes	E.Coli	12	12	12
2	Wastewater Treatment Works	Yes	Yes	Yes	Total Coliforms	12	12	12
3	John Steyn Library	Yes	Yes	Yes	Cryptosporidium	1	1	1
4	Kaap Agri	Yes	Yes	Yes	Gardia	1	1	1
5	Egoli	Yes	Yes	Yes	Somatic Coliphages	1	1	1
6	Bella Vista Clinic	Yes	Yes	Yes	Heterotrophic Plate Count	12	12	12
7	Langstraat	Yes	Yes	Yes	Physical, Organoleptic (Non Health)			
8	Buitenstraat	Yes	Yes	Yes	Colour	12	12	12
9	Geelhoutstraat	Yes	Yes	Yes	Conductivity	d	d	12
10	N'Duli Intermediate school	Yes	Yes	Yes	Total Dissolved Solids	12	12	12
11	41 Chris Hani	Yes	Yes	Yes	pH@ 25°C	d	d	d
12	Zola Avenue	Yes	Yes	Yes	Turbidity	d	d	d
	ODB WTW				Chemical (Macro)			
13	De Keurstraat	Yes	Yes	Yes	Free Chlorine	d	d	d
14	469 River Singel	Yes	Yes	Yes	Total Chlorine	d	d	d
15	Clinic	Yes	Yes	Yes	Monochloromine	1	1	1
16	Tap (Behind Spar)	Yes	Yes	Yes	Ammonia	4	4	4
	PAH WTW				Sodium	1	1	1
17	Reservoir Final, Post Chlorination	Yes	Yes	Yes	Chloride	4	4	4
18	266 Steve Tshewete St, Kliprug	Yes	Yes	Yes	Fluoride	4	4	4
19	Municipal Offices	Yes	Yes	Yes	Nitrate	4	4	4
20	Tap (Restaurant)	Yes	Yes	Yes	Nitrite	4	4	4
21	Denne Laan	Yes	Yes	Yes	Nitrate and Nitrate	4	4	4
	TULBAGH WTW				Sulphate	1	1	1
22	Water Treatment Works - Final	Yes	Yes	Yes	Zinc	1	1	1
23	Municipal Offices	Yes	Yes	Yes	Chemical (Micro)			
24	Bloekombossie Restaurant	Yes	Yes	Yes	Aluminium	12	12	12
25	Central Town (Police Station)	Yes	Yes	Yes	Iron	12	12	12
26	Clinic	Yes	Yes	Yes	Manganese	12	12	12
27	Wastewater Treatment Works	Yes	Yes	Yes	Copper	4	4	4
28	Shell Garage, Main Road	Yes	Yes	Yes	Antimony	1	1	1
	WOLSELEY WTW				Arsenic	1	1	1
29	Water Treatment Works - Final	Yes	Yes	Yes	Cadmium	1	1	1
30	No 4 NPK Pine Valley	Yes	Yes	Yes	Total Chromium	1	1	1
31	Municipal Offices	Yes	Yes	Yes	Cobalt	1	1	1
32	Stamperstraat Reservoir	Yes	Yes	Yes	Cyanide	1	1	1
33	H/V Eiland & Breestraat	Yes	Yes	Yes	Lead	1	1	1
					Mercury	1	1	1
					Nickel	1	1	1
					Selenium	1	1	1
					Uranium	1	1	1
					Barium	1	1	1
					Boron	1	1	1
					Chemical (Organic)			
					Total Trihalomethanes	4	4	4
					Chloroform	1	1	
					Bromoform	1	1	
					Dibromochloromethane	1	1	
					Bromodichloromethane	1	1	
					Trihalomethanes Ratio	1	1	
					Total Organic Carbon	4	4	
					Phenols	1	1	1
					Total Microcystin	1	1	1

The table below gives an overview of Witzenberg Municipality’s compliance sampling programme for wastewater final effluent quality:

Table C4.1.2: Sampling programme for wastewater effluent quality

Table C4.1.2: Sampling programme for wastewater effluent quality

Registered Sites		Active			Determinands per Category	Frequency		
		Year 0	Year-1	Year-2		Year 0	Year-1	Year-2
#	Name	FY2022/23	FY2021/22	FY2020/21		FY2022/23	FY2021/22	FY2020/21
1	Ceres WWTW	yes	yes	yes	Parameters testing			
2	Tulbagh WWTW	yes	yes	yes	pH (at 25 deg. C) – Lab*	12	12	12
3	Wolseley WWTW	yes	yes	yes	Settleable Solids (ml/l)*Δ	d	d	d
4	Op-die-Berg WWTW	yes	yes	yes	Conductivity (mS/m) (at 25 deg.C)	12	12	12
					Faecal Coliforms (organisms per 100 ml)	12	12	12
					Chemical Oxygen Demand (mg/l)	d	d	d
					Total Kjeldahl Nitrogen (mg/l)	12	12	12
					Ammonia Nitrogen (mg/l as N)	12	12	12
					Nitrate Nitrogen (mg/l as N)	12	12	12
					Nitrite Nitrogen (mg/l as N)	12	12	12
					Dissolved Oxygen (mg/l) *	d	d	d
					Total Suspended Solids (mg/l)	d	d	d
					Volatile Suspended Solids (mg/l)	d	d	d
					Total Phosphorus (mg/l as P)	12	12	12
					Ortho Phosphorus (mg/l as P)	12	12	12
					Sludge Volume Index (ml/g)	d	d	d
					Diluted Sludge Volume Index (ml/g)	d	d	d
					Free Chlorine (mg/l as Cl) *	d	d	d
					Total Chlorine (mg/l as Cl) *	d	d	d
					Calcium (mg/l as Ca)	2	2	2
					Magnesium (mg/l as Mg)	2	2	2
					Sodium (mg/l as Na)	2	2	2
					Sodium Absorption Ratio	2	2	2
					Dissolved Arsenic (µg/l)	2	2	2
					Dissolved Cadmium (µg/l)	2	2	2
					Dissolved Chromium (VI) (mg/l)	2	2	2
					Dissolved Copper (µg/l)	2	2	2
					Dissolved Cyanide (µg/l)	2	2	2
					Dissolved Iron (µg/l as Fe)	2	2	2
					Dissolved Lead (µg/l)	2	2	2
					Dissolved Manganese (µg/l as Mn)	2	2	2
					Mercury (µg/l as Hg)	2	2	2
					Dissolved Selenium (µg/l)	2	2	2
					Dissolved Zinc (mg/l)	2	2	2
					Boron (mg/l as B)	2	2	2

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

The table below gives an overview of compliance with regard to the sampling programmes:

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

Measurable / Enabling Factor	Unit	Year 0				Year-1				Year-2			
		FY2022/23				FY2021/22				FY2020/21			
		M	C	P	O	M	C	P	O	M	C	P	O
Potable Water Quality													
Supply system submissions	Nr registered	5	5	5	5	5	5	5	5	5	5	5	5
	Nr submitted*	5	5	5	5	5	5	5	5	5	5	5	5
	Annual %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Monitoring compliance	Average %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Data Credibility	Average %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
IRIS In-Time Submission	Annual %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Wastewater Quality													
Monitoring compliance	Average %	100%				100%				100%			
Operational monitoring compliance	Average %	Not captured on IRIS - captured by PC's at each WWTW's											

Legend

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

The table below gives an overview of the water quality monitoring from the WSDP Guide Framework perspective:

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

WSDP Ref #	Measurable / Enabling Factor	Unit	Year 0	Year - 1	Year - 2
			FY2022/23	FY2021/22	FY2020/21
6,3	Water Supply and Quality				
6.3.2	Process Control in place	yes/total WTW in %	100%	100%	100%
6.3.3	Monitoring Programme in place	yes/total schemes in %	100%	100%	100%
6.3.4	Sample Analysis Credibility	Average %	100%	100%	100%
9,2	Monitoring				
9.2.1	% of water abstracted monitored: Surface water	Q monitored / Q abstracted in %	100%	100%	100%
9.2.2	% of water abstracted monitored: Ground water	Q monitored / Q abstracted in %	100%	100%	100%
9.2.3	% of water abstracted monitored: External Sources (Bulk purchase)	Q monitored own / Q purchased in %	NA	NA	NA
9.2.6	Water quality for formal schemes? (1: daily, 2: weekly, 3: monthly, 4: annually, 5: never)	frequency	3	3	3
9.2.7	Water quality for rudimentary schemes? (1: daily, 2: weekly, 3: monthly, 4: annually, 5: never)	frequency	3	3	3
9.2.9	Is the number sufficient in accordance to the SANS241 requirements?	yes/no	yes	yes	yes
9,3	Water Quality				
	Is there a water quality plan in place?	yes/no	yes	yes	yes
9.3.1	Reporting on quality of water taken from source: urban & rural	yes/total schemes in %	yes	yes	yes
9.3.5	Quality of water taken from source: urban - % monitored by WSA self?	monitored by WSA / total schemes in %	yes	yes	yes
9.3.6	Quality of water taken from source: rural - % monitored by WSA self?	monitored by WSA / total schemes in %	NA	NA	NA
9.3.9	Are these results available in electronic format?	yes/no	yes	yes	yes

The table below gives an overview of the wastewater quality monitoring from the WSDP Guide Framework perspective:

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

WSDP Ref #	Measurable / Enabling Factor	Unit	Year 0	Year - 1	Year - 2
			FY2022	FY2021	FY2020
5.3.1	Monitoring and Sample Failure				
5.3.1.1	<u>Monitoring</u> : % of tests performed as required by general limits /special limits/ license requirements (Average % over previous 12 months)	Annual %	100%	100%	100%
5.3.1.2	<u>Operational</u> : % of tests performed as required by general limits /special limits/ license requirements (Average % over previous 12 months)	Annual %	100%	100%	100%
6.4	Wastewater Supply and Quality				
6.4.2	Process Control in place	yes/total WWTW in %	yes	yes	yes
6.4.3	Monitoring Programme in place	yes/total WWTW in %	yes	yes	yes
6.4.4	Sample Analysis Credibility	Average %	100%	100%	100%
9.2	Monitoring				
9.2.10	Is the number sufficient in accordance to licences?	yes/no	yes	yes	yes
9.3	Water Quality				
	Is there a water quality plan in place?	yes/no	yes	yes	yes
9.3.2	Quality of water returned to the resource: urban	yes/total WWTW in %	yes	yes	yes
9.3.3	Quality of water returned to the resource: rural	yes/total WWTW in %	NA	NA	NA
9.3.7	Quality of water returned to resource: urban - % monitored by WSA self?	monitored by WSA / urban WWTW in %	100%	100%	100%
9.3.8	Quality of water returned to resource: rural - % monitored by WSA self?	monitored by WSA / rural WWTW in %	NA	NA	NA
9.3.9	Are these results available in electronic format?	yes/no	yes	yes	yes

C4.2 Water quality compliance

The table below gives an overview of Witzenberg Municipality’s water quality compliance, as taken from the BDS / IRIS:

WSDP Ref #	Measurable / Enabling Factor	Unit	Year 0			Year-1			Year-2											
			2022/23			2021/22			2020/2021											
			M	C	O	M	C	O	M	C	O									
Results per the Blue Drop System																				
n/a	Analysis compliance	Total	All data available on the IRIS system																	
n/a		Nr Failures																		
n/a		Compliance %																		
n/a	Samples frequency	Total																		
n/a		Nr Failures																		
n/a		Compliance %																		
n/a	Sites compliance	Total																		
n/a		Nr Failures																		
n/a		Compliance %																		
6.3 Water Supply and Quality																				
6.3.6	Blue Drop Status	certified per BDS										NA			NA			NA		
9.3 Water Quality																				
9.3.10	% Time (days) within SANS 241 standards per year	Average of sites compliance %	NA			NA			NA											

Table C4.2.2: Overview of wastewater quality compliance

Table C4.2.2: Overview of wastewater quality compliance

WSDP Ref #	Measurable / Enabling Factor	Unit	Year 0				Year-1				Year-2			
			FY2022/23				FY2021/22				FY2020/21			
			M	C	P	O	M	C	P	O	M	C	P	O
Results per the Green Drop System														
n/a	Regulatory compliance	Total	48	192	144		48	192	144		48	192	144	
n/a		Nr Failures	1	38	16		1	31	7		1	28	14	
n/a		Compliance %	98%	80%	89%		98%	84%	95%		98%	85%	90%	
n/a	Operational compliance	Total												
n/a		Nr Failures												
n/a		Compliance %												
5.3.1 Monitoring and Sample Failure														
5.3.1.3	Average % of sample failure	Failure %	11,0%				8,0%				9,0%			
5.3.1.4														
5.3.1.5														
6.3 Water Supply and Quality														
6.4.6	Green Drop Status	certified per GDS	96%				NA				NA			

C4.3 Incident management

Water Safety Plans are in place for all the water distribution systems and treatment works. A detailed risk assessment was done and the existing control measures implemented by Witzenberg Municipality. The WSP's are re-evaluated on an annual basis and all types of incidents are investigated.

For wastewater treatment and reticulation we have Risk Abatement Plans (W2RAP) for all sewer networks and treatment plants. Risks were identified and rated and are managed according to its potential impact.

An Incident Response Management Protocol is in place and forms part of Witzenberg Municipality's Water Safety Plans and W2RAP. The IMP process entails that certain procedures are followed when certain incidents occurs. This includes power failures, human error, faulty equipment etc.

Witzenberg Municipality have an Electrical and Mechanical Maintenance of Water and Sewer Pump stations and Treatment works contract with Megaflow for the repair and preventative maintenance work to equipment and infrastructure.

Operational Alert levels are also in place for all the Water Treatment Works and the Wastewater Treatment Works. This is to ensure that all plants perform optimally. If these levels are exceeded, specific actions are taken to rectify. The Alert levels also form part of an operational and compliance drinking water quality and final effluent quality monitoring plan which meets the requirements of the DWS standards.

Table C4.3.1: Incident management and reporting overview

WSDP Ref #	Measurable / Enabling Factor	Unit	Year 0	Year - 1	Year - 2
			FY2022	FY2021	FY2020
6,3	Water Supply and Quality				
6.3.1	Incident Management Protocol in place	yes/total schemes in %	100%	100%	100%
6.3.5	Failure Response Management in place	yes/total schemes in %	100%	100%	100%
6,4	Waste Water Supply and Quality				
6.4.1	Incident Management Protocol in place	yes/total schemes in %	100%	100%	100%
6.4.5	Failure Response Management in place	yes/total schemes in %	100%	100%	100%

Table C4.3.2: Summary of water quality compliance per the Blue Drop System

Measurable / Enabling Factor	Unit	Year 0				Year-1				Year-2			
		FY2022/23				FY2021/22				FY2020/21			
		Acute Health - 1 Microbiological	Acute Health - 1 Chemical	Acute Health - 2 Microbiological	Chronic Health	Acute Health - 1 Microbiological	Acute Health - 1 Chemical	Acute Health - 2 Microbiological	Chronic Health	Acute Health - 1 Microbiological	Acute Health - 1 Chemical	Acute Health - 2 Microbiological	Chronic Health
Failures in terms of Analysis	Total nr	All results available on the BDS (IRIS)				All results available hard copy or via email. IRIS was not 100% operational				All results available on the BDS (IRIS)			
	Nr of failures												
	Failure %												
	Nr reported												
Reported % of failure													
Failures in terms of Samples	Total												
	Nr of failures												
	Failure %												
	Nr reported												
Reported % of failure													
Failures in terms of Sites	Total												
	Nr of failures												
	Failure %												
	Nr reported												
Reported % of failure													

C5. Water conservation and demand management

Table C5: Overview of water conservation and demand management activities

WSDP Ref. #	Regulations Ref. #	Description	Urban Settlements						Rural Settlements					
			Year 0		Year 1		Year 2		Year 0		Year 1		Year 2	
			FY2022/23	FY2021/22	FY2020/21	FY2022/23	FY2021/22	FY2020/21	FY2022/23	FY2021/22	FY2020/21			
7.1.1	10.2.g.iii	REDUCING UNACCOUNTED FOR												
		Number of customers where the following activities have been pursued:	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total
7.1.1.1		Night flow metering	83 952	100%	81 769	100%	79 645	100%	0	0%	0	0%	0	0%
7.1.1.2		Day flow metering	83 952	100%	81 769	100%	79 645	100%	0	0%	0	0%	0	0%
7.1.1.3		Reticulation leaks fixed		100%	2 184	100%	1 778	100%	0	0%	0	0%	0	0%
7.1.1.4		Illegal connections formalized	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
7.1.1.5		Un-metered connections, metered	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
7.1.2	10.2.g.iii	REDUCING HIGH PRESSURES FOR												
		Number of residential consumers with water supply pressure of:	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total
7.1.2.1		< 300 kPa	70 002	83%	68 182	83%	66 756	82%	0	0%	0	0%	0	0%
7.1.2.2		300 kPa - 600 kPa	13 950	17%	13 587	17%	12 889	18%	0	0%	0	0%	0	0%
7.1.2.3		600 kPa - 900 kPa	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
7.1.2.4	10.2.b.iii	> 900 kPa	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
7.1.3	10.2.g.iii	LEAK AND METER REPAIR PROGRAMMES												
		Number of consumer units targeted by:	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total
7.1.3.1		Leak repair assistance programme	19 627	100%	18 582	100%	17 681	100%	0	0%	0	0%	0	0%
7.1.3.2	10.2.g.iv	Retro-fitting of water inefficient toilets		0%		0%	0	0%	0	0%	0	0%	0	0%
7.1.3.3		Meter repair programme	19 627	100%	18 582	100%	17 681	100%	0	0%	0	0%	0	0%
7.1.4	10.2.g.iii	CONSUMER / END-USE DEMAND												
			Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total	Nr	% of total
7.1.4.1		Number of schools targeted by education programmes	48	100%	48	100%	48	100%	0	0%	0	0%	0	0%
7.1.4.2		Number of consumers (people) targeted by public information programmes	83 952	100%	79 645	100%	77 572	100%	0	0%	0	0%	0	0%

Herewith UAW percentages for the last three financial years:

FINANCIAL YEAR	PERCENTAGES
2014/2015	20.5%
2015/2016	15.8%
2016/2017	19.4%
2017/2018	17.91%
2018/2019	17.73%
2019/2020	15.04%
2020/2021	12.12
2021/2022	13.91%
2022/2023	10.75%

Demand activities undertaken:

- Additional flow meters were installed at strategy positions.
- The municipality ensured that all existing bulk water meters are in an operational condition and that all data is logged on spreadsheets.
- Compared financial data with bulk flow meters i.e. establish the difference between bulk water supply to each town and actual supply of water to individual households.
- Purchased and installed removable data loggers to assist with the identification of high night flows.
- Installed additional zone meters to enable proper water audits in all towns.
- A formal programme to replace water meters was implemented.
- Monthly water audit to identify problems. Special attention was given to the categorizing of the different losses.
- Calculation of safe yields from existing water sources – completed and details contained in comprehensive report titled “Witzenberg Water Management – PUDJA cc”
- Determination of long term needs
- Investigation of alternative water sources
- Implementation of a water meter replacement programme.
- The bulk meters was only read once a month and was thus hard to estimate a value for the rest of the month if the meter should break. This in turns lengthens the time it takes to notice a faulty meters that perhaps stop functioning maybe as a result of debris. It has been changed to daily reading for more accurate calculations.
- Repair/replacement of all damaged Bulk Supply meters in Witzenberg
- Repair/replacement of damaged Bulk Consumer meters in Witzenberg
- Ensuring the municipal stores were stocked with replacement meters for all various sizes
- Water meter audit – All towns
- Pipe and Valve replacement programmes
- Leak detection
- Townbased programmes – internal leak repairs (beyond the meter) in poor areas.
- Water restrictions and devices.

Section D: Approval and Publication Record

This Annual Water Services Development Plan Performance- and Water Services Audit Report for the Financial Year ending 2022/2023 is hereby approved for submission to the Minister of the Department of Water Affairs, the Minister for Department of Cooperative Governance, the Province and to SALGA, as required by the Water Services Act, 1997.

The municipality will endeavour to publicise a summary of the report.

This report will be available for inspection at the offices of the municipality.

RECOMMENDED:

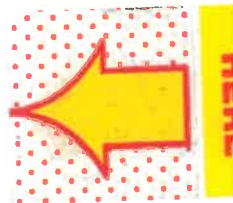


Signature

Name: Nathan Jacobs

Title: Manager: Water & Sewerage

30.10.23
Date



Signature

Name: Joseph Barnard

Title: Director: Technical services

30/10/23
Date

APPROVED:



Signature

Name: David Nasson

Title: Municipal Manager

31/10/2023
Date