OVERSTRAND MUNICIPALITY

Water Services Development Plan (WSDP) – IDP Water Sector Input Report

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

FY 2026/2027

FINAL

27 May 2026

OVERSTRAND MUNICIPALITY

P O Box 20
Hermanus
7200
Tel: +27(28) 313 8000
Fax: +27(28) 3131111

Contact Person:
Principal Engineer: Mr Hanre Blignaut

OVERSTRAND MUNICIPALITY

Disclaimer

This report has been prepared on behalf of and for the exclusive use of Overstrand Municipality, and is subject to and issued in accordance with the agreement between Overstrand Municipality and iX engineers (Pty) Ltd. Overstrand Municipality and iX engineers (Pty) Ltd accepts no liability or responsibility whatsoever for it in respect of any use of or reliance upon this report by any third party.

Copying this report without the permission of Overstrand Municipality and iX engineers (Pty) Ltd is not permitted.

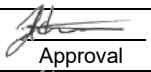
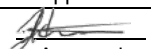
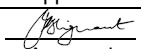
Version Control:

Status	Description	Date	Reference
Draft	Draft WSDP-IDP Water Sector Input Report for 2026/2027	27 February 2026	Draft Document
Approval	Final WSDP-IDP Water Sector Input Report for 2026/2027	27 May 2026	Council Resolution for approval will be forwarded by the Municipality to the DWS.

Prepared by:

Designation	Name	Contact No.	E-mail
Principal Engineer	Hanre Blignaut	028 - 313 5047 / 082 497 9169	hblignaut@overstrand.gov.za
Manager	Patrick Robinson	028 – 313 5046 / 076 548 8256	probinson@overstrand.gov.za
Engineer	Jaco Human	021 912 3000 / 084 431 8728	jaco.h@ixengineers.co.za

PROJECT P10376 - OVERSTRAND MUNICIPALITY'S WSDP-IDP SECTOR INPUT REPORT FOR 2026/2027

REV	DESCRIPTION	ORIG	REVIEW	IX APPROVAL	DATE	CLIENT APPROVAL	DATE
Draft	Draft issued for external review	R Kuffner Author	JT Human A Reviewer	 Approval	20/02/2026	 Approval	09/02/2026
Final	Final for Council approval	R Kuffner Author	JT Human A Reviewer	 Approval	07/05/2026	 Approval	08/05/2026

OVERSTRAND MUNICIPALITY

WSDP – IDP WATER SECTOR INPUT REPORT (EXECUTIVE SUMMARY)

ITEM **DESCRIPTION** **PAGE**

Section A: Status Quo Overview

Section B: State of Water Services Planning

Section C: Water Services Existing Needs Perspective

Section D: Water Services Strategies

Section E: Water Services MTEF Projects

Section F: WSDP Projects

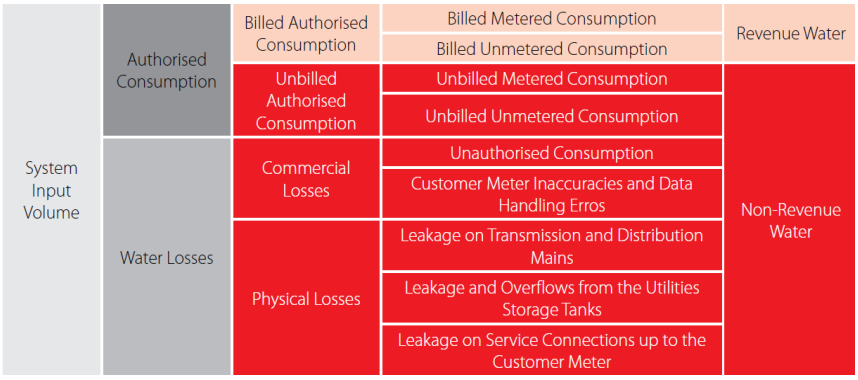
Figures

AADD	Average Annual Daily Demand
AC	Asbestos Cement
ADWF	Average Dry Weather Flow
AMP	Asset Management Plan
AMR	Automatic Meter Reading
BDRR	Blue Drop Risk Rating
BGWMA	Breede-Gouritz Water Management Area
BOWMA	Breede-Olifants Water Management Area
CAP	Corrective Action Plan
CAPEX	Capital Expenditure
CBD	Central Business District
CBO	Community Based Organisation
CMA	Catchment Management Agency
COD	Chemical Oxygen Demand
CRC	Current Replacement Cost
CRR	Cumulative Risk Ratio
CV	Carrying Value
CWDP	Coastal Water Discharge Permit
DAF	Dissolved Air Flotation
DCoG	Department of Cooperative Government
DEADP	Department of Environmental Affairs and Development Planning
DM	Disaster Management
DMAF	Disaster Management Advisory Forum
DMC	Disaster Management Centre
DO	Dissolved Oxygen
DRC	Depreciated Replacement Cost
DWQ	Drinking Water Quality
DWS	Department of Water and Sanitation
DWWTS	Decentralised Wastewater Treatment Systems
EHP	Environmental Health Practitioner
EIA	Environmental Impact Assessment
FOG	Fats, Oils and Grease
FY	Financial Year
GA	General Authorisation
GAMAP	General Accepted Municipal Accounting Practice
GD	Green Drop
GDIP	Green Drop Improvement Plan
GIS	Geographical Information Systems
GRAP	Generally Recognized Accounting Practice
HH	Households
HL	High Level
IBT	Inclining Block Tariff
IDP	Integrated Development Plan
ILI	Infrastructure Leakage Index
IMQS	Infrastructure Management Query System
IRIS	Integrated Regulatory Information System
ISO	International Standards Organisation
IWA	International Water Association
JOC	Joint Operation Centre

Kl	Kilolitre
Kl/d	Kilolitre per Day
KPA	Key Performance Area
KPI	Key Performance Indicator
l/c/d	Litre Per Capita Per Day
LED	Local Economic Development
LGTAS	Local Government Turn Around Strategy
LL	Low Level
LM	Local Municipality
l/p/d	Litre Per Person Per Day
MCC	Motor Control Centre
MFMA	Municipal Finance Management Act
MIG	Municipal Infrastructure Grant
MISA	Municipal Infrastructure Support Agent
Ml	Mega Litre
Ml/a	Mega Litre per Annum
Ml/d	Mega Litre per Day
MLSS	Mixed Liquor Suspended Solids
MNF	Minimum Night Flow
MP	Master Plan
MTEF	Medium-Term Expenditure Framework
MuSSA	Municipal Strategic Self-Assessment
N/A	Not Applicable
NGO	Non-Governmental Organisation
NRW	Non-Revenue Water
NSSS	Non-sewered Sanitation Systems
NWRS	National Water Resource Strategy
O&M	Operation and Maintenance
OLM	Overstrand Local Municipality
PAT	Progress Assessment Tool
PC	Process Controller
PDA	Previously Disadvantage Area
PDD	Peak Daily Demand
PFD	Process Flow Diagram
PMF	Peak Month Factor
PRP	Pipeline Replacement Programme
PRV	Pressure Reducing Valve
PS	Pump Station
RAS	Return Activated Sludge
RDP	Reconstruction and Development Programme
RO	Reverse Osmosis
RR	Risk Ratio
RUL	Remaining Useful Life
SALGA	South African Local Government Association
SAMRAS	South African Municipal Resource Administration System
SANS	South African National Standard
SAPS	South African Police Service
SCADA	Supervisory Control and Data Acquisition
SDBIP	Service Delivery and Budget Implementation Plan

SDF	Spatial Development Framework
SIDAFF	Sustainable Infrastructure Development and Finance Facility
SIV	System Input Volume
SST	Secondary Settling Tank
SWOT	Strengths, Weaknesses, Opportunities, Threats
SWRO	Sea Water Reverse Osmosis
TMG	Table Mountain Group
TSS	Total Suspended Solids
VAT	Value Added Tax
VIP	Ventilated Improved Pit
WARMS	Water use Authorisation and Registration Management System
WAS	Waste Activated Sludge
WaSP	Water Safety Plan
WC/WDM	Water Conservation / Water Demand Management
WCNCB	Western Cape Nature Conservation Board
WESS	Water Efficient Sanitation Solutions
WDM	Water Demand Management
WMA	Water Management Area
WPS	Water Pump Station
WRC	Water Research Commission
WSA	Water Services Authority
WSDP	Water Services Development Plan
WSI	Water Services Institution
WSIG	Water Services infrastructure Grant
WSP	Water Services Provider
WSS	Water Supply System
WTP	Water Treatment Plant
WTW	Water Treatment Works
WULA	Water Use License Application
W_2RAP	Wastewater Risk Abatement Plan
WWTW	Waste Water Treatment Works

KEY TERMS AND INTERPRETATIONS

Climate Change	Changes in climatic conditions due to natural causes or to anthropogenic (man-made) effects such as emissions of greenhouse gases, e.g. carbon dioxide, nitrous oxide, and methane, from industry, transport, farming and deforestation, that are expected to have significant consequences for rainfall and water availability on earth.
Current replacement cost (CRC)	The cost of replacing the service potential of an existing asset, by reference to some measure of capacity, with an appropriate modern equivalent asset. GAMAP defines CRC as the cost the entity would incur to acquire the asset on the reporting date.
Depreciated Replacement Cost (DRC)	The replacement cost of an existing asset after deducting an allowance for wear or consumption to reflect the remaining economic life of the existing asset.
Financial Year	Financial year means in relation to- • a national or provincial department, the year ending 31 March; or • a municipality, the year ending 30 June.
Global Warming	The increase in the average surface temperatures across the globe, usually measured over long periods of time; reported to have increased by 1°C over the past hundred years.
Integrated Development Plan (IDP)	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.
National Water Resource Strategy 2	Sets out how we will achieve the following core objectives: • Water supports development and the elimination of poverty and inequality. • Water contributes to the economy and job creation, and • Water is protected, used, developed, conserved, managed and controlled sustainably and equitably.
International Water Association (IWA) Water Balance	
System Input Volume	The volume of treated water input to that part of the water supply system to which the water balance calculation relates.
Authorised Consumption	The volume of metered and/or un-metered water taken by registered customers, the water supplier and others who are implicitly or explicitly authorised to do so by the water supplier, for residential, commercial and industrial purposes. It also includes water exported across operational boundaries. Authorised consumption may include items such as fire-fighting and training, flushing of mains and sewers, street cleaning, watering of municipal gardens, public fountains, frost protection, building water, etc. These may be billed or unbilled, metered or unmetered.
Water Losses	The difference between System Input and Authorised Consumption. Water losses can be considered as a total volume for the whole system, or for partial systems such as transmission or distribution schemes, or individual zones. Water Losses consist of Physical Losses and Commercial Losses (also known as Real Losses and Apparent Losses).
Billed Authorised Consumption	Those components of Authorised Consumption which are billed and produce revenue (also known as Revenue Water). Equal to Billed Metered Consumption plus Billed Unmetered Consumption.
Unbilled Authorised Consumption	Those components of Authorised Consumption which are legitimate but not billed and therefore do not produce revenue. Equal to Unbilled Metered Consumption plus Unbilled Unmetered Consumption.
Commercial Losses	Includes all types of inaccuracies associated with customer metering as well as data handling errors (meter reading and billing), plus unauthorised consumption (theft or illegal use). Commercial losses are called "Apparent Losses" by the International Water Association and in some countries the misleading term "Non-Technical Losses" is used.

KEY TERMS AND INTERPRETATIONS

Physical Losses	Physical water losses from the pressurized system and the utility's storage tanks, up to the point of customer use. In metered systems this is the customer meter, in unmetered situations this is the first point of use (stop tap/tap) within the property. Physical losses are called "Real Losses" by the International Water Association and in some countries the misleading term "Technical Losses" is used.
Billed Metered Consumption	All metered consumption which is also billed. This includes all groups of customers such as domestic, commercial, industrial or institutional and also includes water transferred across operational boundaries (water exported) which is metered and billed.
Billed Unmetered Consumption	All billed consumption which is calculated based on estimates or norms but is not metered. This might be a very small component in fully metered systems (for example billing based on estimates for the period a customer meter is out of order) but can be the key consumption component in systems without universal metering. This component might also include water transferred across operational boundaries (water exported) which is unmetered but billed.
Unbilled Metered Consumption	Metered Consumption which is for any reason unbilled. This might for example include metered consumption by the utility itself or water provided to institutions free of charge, including water transferred across operational boundaries (water exported) which is metered but unbilled.
Unbilled Unmetered Consumption	Any kind of Authorised Consumption which is neither billed nor metered. This component typically includes items such as fire-fighting, flushing of mains and sewers, street cleaning, frost protection, etc. In a well-run utility it is a small component which is very often substantially overestimated. Theoretically this might also include water transferred across operational boundaries (water exported) which is unmetered and unbilled – although this is an unlikely case.
Unauthorised Consumption	Any unauthorised use of water. This may include illegal water withdrawal from hydrants (for example for construction purposes), illegal connections, bypasses to consumption meters or meter tampering.
Customer Metering Inaccuracies and Data Handling Errors	Commercial water losses caused by customer meter inaccuracies and data handling errors in the meter reading and billing system.
Leakage on Transmission and /or Distribution Mains	Water lost from leaks and breaks on transmission and distribution pipelines. These might either be small leaks which are still unreported (e.g. leaking joints) or large bursts which were reported and repaired but did obviously leak for a certain period before that.
Leakage and Overflows at Utility's Storage Tanks	Water lost from leaking storage tank structures or overflows of such tanks caused by e.g. operational or technical problems.
Leakage on Service Connections up to point of Customer Metering	Water lost from leaks and breaks of service connections from (and including) the tapping point until the point of customer use. In metered systems this is the customer meter, in unmetered situations this is the first point of use (stop tap/tap) within the property. Leakage on service connections might be reported breaks but will predominately be small leaks which do not surface and which run for long periods (often years).
Revenue Water	Those components of Authorised Consumption which are billed and produce revenue (also known as Billed Authorised Consumption). Equal to Billed Metered Consumption plus Billed Unmetered Consumption.
Non-Revenue Water	Those components of System Input which are not billed and do not produce revenue. Equal to Unbilled Authorised Consumption plus Physical and Commercial Water Losses.
Remaining useful life (RUL)	The time remaining over which an asset is expected to be used.
Re-use	Utilisation of treated or untreated wastewater for a process other than the one that generated it. For instance, the re-use of municipal wastewater for agricultural irrigation. Water re-use can be direct or indirect, intentional or unintentional, planned or unplanned, local, regional or national in terms of location, scale and significance. Water re-use may involve various kinds of treatment (or not) and the reclaimed water may be used for a variety of purposes.
Service Delivery Budget Implementation Plan (SDBIP)	The SDBIP is a management, implementation and monitoring tool that enable the City Manager to monitor the performance of senior managers, the Mayor to monitor the performance of the City Manager, and for the community to monitor the performance of the municipality.
Strategic Framework for Water Services	The Strategic Framework provides a comprehensive summary of policy with respect to the water services sector in South Africa and sets out a strategic framework for its implementation over the next ten years.
Water Conservation	The minimisation of loss or waste, the care and protection of water resources and the efficient and effective use of water.
Water Demand Management	The adaptation and implementation of a strategy by a water institution or consumer to influence the water demand and usage of water in order to meet any of the following objectives: economic efficiency, social development, social equity, environmental protection, sustainability of water supply and services, and political acceptability.

KEY TERMS AND INTERPRETATIONS

Water Services Authority (WSA)	A 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). There can only be one water services authority in any specific area. Water services authority area boundaries cannot overlap. Water services authorities are metropolitan municipalities, district municipalities and authorised local municipalities.
Water Services Development Plan (WSDP)	A 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 DWS to support WSAs 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.
Water Services Provider (WSP)	A WSP means any person or institution that provides water services to consumers or to another water services institution, but does not include a water services intermediary.

WSDP – IDP Water Sector Input Report (Executive Summary)

Introduction

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

Sections 12 and 13 of the Water Services Act (Act No 108 of 1997) place a duty on WSAs to prepare and maintain a WSDP, as part of the process of preparing an IDP. The DWS has developed a new set of WSDP guidelines to assist WSAs with the WSDP process and to provide a framework for the capturing of the data. The topics included in the guidelines and addressed in detail in Overstrand Municipality's WSDP are as follows:

- Settlements and Demographics
- Service Levels
- Water Services Infrastructure Management (Infrastructure)
- Water Services Infrastructure Management (O&M)
- Conservation and Demand Management
- Water Resources
- Financial
- Institutional Arrangements and Customer Care

The primary instrument of planning in the water services sector is the WSDP. The following principles apply to the WSDP:

- All WSAs must develop a WSDP.
- A new plan must be developed every five years and the plan should be updated as necessary and appropriate in the interim years.
- The WSDP must be integrated with the IDP of the municipality, as required in terms of the Municipal Systems Act.
- The WSDP must integrate water supply planning with sanitation planning.
- The WSDP must integrate technical planning with social, institutional, financial and environmental planning. The planning of capital expenditures must also be integrated with the associated operation and maintenance requirements and expenditures.
- The WSDP must be informed by the business plans developed by water services providers and with the plans of any regional water services providers, as relevant.
- The plan must take into account the impact of HIV/Aids on future water demand.
- The WSDP must integrate with the catchment management strategy.
- The planning process must take into account the views of all important stakeholders, including communities, through a consultative and participatory process. Every effort must be made to ensure the adequate and meaningful participation of women in consultation forums.
- The draft plan must be made available for public and stakeholder comment and all comments made must be considered when preparing the final plan.
- The contents of the WSDP must be communicated to all important stakeholders, including the DWS.
- A WSA must report annually and in a public way on progress in implementing the plan (Annual WSDP Performance- and Water Services Audit Report).

The purpose of this report is to provide relevant and summarised WSDP inputs for incorporation into Overstrand Municipality's IDP process and is structured as follows:

Section A: Status Quo Overview: Provides a summarised overview 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 planning within Overstrand Municipality.

Section C: Water Services Existing Needs Perspective: Gives an overview of Overstrand Municipality'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 WSDP process for incorporation in terms of the IDP 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 WSDP process in order to meet the water services strategies of Overstrand Municipality, as aligned to the outflow from the situation analysis per water services business element.

The **SWOT analysis** for Overstrand Municipality indicated the following Strengths, Weaknesses, Opportunities and Threats (2025/2026 IDP).

Strengths:

- Ethical, participative and accountable governance;
- Stable, skilled and highly knowledgeable workforce; and
- Available and well-maintained municipal infrastructure that enhances social and economic growth.

Weaknesses:

- Lack of suitable land for urban expansion in certain areas due to topography (land locked between sea and mountain);
- Lack of affordable residential accommodation;
- Inadequate and/or non-existing public transport services that hamper opportunities to develop local economy;
- Gaps in pro-active and timely communication through the relevant mechanisms; and
- Inadequate resources to combat disasters.

Opportunities:

- Diverse economic income streams;
- Capitalise on its ability to foster local economic development;
- Promote safety and security;
- Make the most of its unique natural assets;
- Capacity building of elected statutory structures and community structures to be able to deal with challenges in local communities; and
- Promotion of diversity and social cohesion.

Threats:

- Load shedding;
- Covid-19 pandemic;
- Adverse economic climate affecting the revenue stream of the Municipality;
- Urbanisation; and
- Excessive red tape.

SECTION A: STATUS QUO OVERVIEW

Overstrand Municipality is situated within the Breede-Olifants Water Management Area (WMA). The Municipality consists of fourteen (14) individual wards and is the only WSA within this municipal area and is also the Water Services Provider for the internal water and sewerage networks and services. The bulk water and sewerage infrastructure are operated and maintained by an external Service Provider. Overstrand Municipality's Management Area includes the following towns and ***Water Distribution Systems***:

- Rooi Els, Pringle Bay, Betty's Bay – ***Buffels River System***

  The towns of Rooi Els, Pringle Bay and Betty's Bay obtain their bulk water from the Buffels River Dam. The raw water is treated at the Buffels River WTW before it is distributed to the various consumers in Rooi Els, Pringle Bay and Betty's Bay.

- Kleinmond – ***Kleinmond System***

  Kleinmond is supplied from the Palmiet River. The "Dorpsfontein" and a borehole (1998), located 300m to the east of the fountain, is available as additional sources in case of emergency. The raw water is treated at the Kleinmond WTW before it is distributed to the various consumers in Kleinmond.

- Fisherhaven, Hawston, Vermont, Onrus, Sandbaai, Zwelihle, Hermanus – ***Greater Hermanus System***

  The Greater Hermanus area is supplied with bulk surface water from De Bos Dam and bulk groundwater from the Gateway-, Camphill- and Volmoed Well Fields. The surface and groundwater are treated at the Preekstoel WTW before it is distributed to the various consumers in the Greater Hermanus area. A portion of the final effluent from the Hermanus WWTW is used for irrigation purposes. Raw surface water from the Mossel River and Fisherhaven Dams is also used for irrigation purposes.

- Stanford – ***Stanford System***

  Stanford is supplied with bulk water from the high discharging Stanford Spring, generally known as "Die Oog" (the Eye), which was previously the sole source of supply of potable water to the town and the greater area. Two boreholes were drilled in the "Kouevlakte wellfield" during 2010/2011 and a new bulk pipeline was constructed the following year in order to connect the boreholes to the existing network. The raw water is treated at the Stanford WTW (Ultrafiltration plus Reverse Osmosis Plant) before it is distributed to the various consumers in Stanford.

- De Kelders, Gansbaai, Kleinbaai, Franskraal – ***Greater Gansbaai System***

  The water sources of Gansbaai, De Kelders, Kleinbaai and Franskraal are integrated with each other through the bulk water supply distribution system. In the past specific sources were utilised for specific areas, but due to peak supply limitations of underground resources during peak seasons, the system has become completely integrated. Bulk water supply to the Greater Gansbaai system is from the Franskraal and Kraaibosch dams and the Klipgat and Grotte water sources, which consist of a spring in the De Kelders caves and a spring at Stanfords Bay. The raw water from the Franskraal and Kraaibosch dams are treated at the Franskraal WTW and the water from the Klipgat and Grotte water sources are treated at the De Kelders WTW. Final effluent from the Gansbaai WWTW is used for irrigation purposes.

- Pearly Beach – ***Pearly Beach System***

  Pearly Beach is supplied from seven springs located in the mountains some 6km from Pearly Beach. The water from the springs is kept in storage at the Pearly Beach Dam. A Service Level Agreement is also in place for the supply of 0.26 Ml/d from the Koekemoer Dam free of charge to the Municipality. The raw water is treated at the Pearly Beach WTW before it is distributed to the various consumers in Pearly Beach.

- Baardskeerdersbos – ***Baardskeerdersbos System***

  Bulk water supply to Baardskeerdersbos is from two boreholes. Baardskeerdersbos previously received their bulk water from the Boskloof Stream, but all current bulk water supply to the area and in the future will be from the boreholes. The groundwater is treated at the Baardskeerdersbos WTW before it is distributed to the various consumers in Baardskeerdersbos.

- Buffeljags Bay – ***Buffeljags Bay System***

  Bulk water supply to Buffeljags Bay is from a borehole. The water is disinfected before it is distributed to the various consumers in Buffeljags Bay.

The most significant basic services challenges experienced by Overstrand Municipality from a water and sanitation services delivery perspective, as summarised in the draft 2024/2025 Annual Report, are as follows.

- Aging infrastructure and lack of funds;
- Additional water sources required for Hermanus and Pearly Beach in the medium term; and
- Inflows at some wastewater treatment facilities is approaching its design capacity;

Physical Perspective:

Climate change: In terms of adapting for climate change, water systems will need to be more robust and new / alternative sources of supply may need to be found. Increased skills will be required from water managers and long-term water projections are required. Although an overall decrease in rainfall is generally not forecasted, increased variability in the climate and frequency of extreme events, as well as increased temperature and wind could have an impact on water sources, particularly surface waters.

It is necessary for WSAs to develop climate response strategies and include these in their WSDPs, implement WC/WDM and reduce levels of NRW and Water Losses. Water-related climate change adaptation and mitigation planning should be incorporated into all WSDPs and IDPs. The implementation of WC/WDM is a critical element of adapting to climate change. This must be implemented by all water sector institutions and water users and should include the optimisation of dam and groundwater operation, as well as the reduction of physical water losses and the introduction of water-efficient appliances, processes and crops.

It is therefore advisable for Overstrand Municipality that a conservative approach be followed regarding the management of water sources. It is proposed that the following approach be adopted to mitigate and adapt to the impacts of climate change:

- All resources, especially surface water resources, need to be re-evaluated, especially where demand is close to the safe one in twenty-year yields. It is therefore important to establish assurance of supply levels of all water sources;
- increase assurance of supply of the water resources by ensuring that there is at least 10% additional capacity (headroom), when considering the maximum 24-hour demand on the peak month of the year;
- do not undertake new developments unless a proper investigation of the implication on water sources and sustainability in the long term has been undertaken;
- vigorously implement WDM measures, especially in terms of the following:
  - increased water efficiency
  - frequent monitoring of the water supply system, from the sources to the consumers; and

- regular and adequate system maintenance and repairs.

- Diversify water resources, e.g. surface water, groundwater, wastewater re-use and sea water desalination.

Overstrand Municipality's aim is to diversify the water resources where practical and feasible, i.e., not to be dependent on surface water sources only. The feasibility of potential augmentation of existing groundwater sources, waste water re-use schemes, and seawater desalination have been investigated, in addition to utilizing existing surface water sources.

The municipality will continue with its successful water conservation and water demand management program, to curtail the demand for potable water as far as possible.

Options to supply bulk water and sewerage facilities from alternative energy sources and to save on electricity consumption are being investigated continuously.

Floods: One of the climate change threats in some parts of the Western Cape is the likelihood of floods with greater intensity and longer-term impacts. There is likely to be increases in the severity and unpredictability of weather patterns. Flooding and storms are predicted which could have devastating effects on agricultural production.

Natural Environment:

Overstrand Municipality strives towards sustainable environmental management by means of environmental good practice. Accordingly, the Environmental Management section strives to coordinate, plan and manage all human activities in a defined environmental system, to accommodate the broadest possible range of sustainable short and long term environmental, social and economic development objectives. The mission of the section is to promote the use of sound environmental management principles to ensure a healthy environment within the Overstrand Municipality.

TOPIC 1: SETTLEMENTS AND DEMOGRAPHICS

The tables below gives an overview of the settlements, population and households in Overstrand Municipality's Management Area for 2024/2025. The numbers of settlements are in accordance with the grouping of the different areas in DWS's GeoDatabase.

Table A.1.1: Settlement Summary

Section	Value	Assessment Score
1.1 Total Population (Permanent)	135 343	80%
1.2 Total Number of Households (Permanent)	46 907	80%
1.3 Average Household Size	2.88	80%
1.4 Total Number of Settlements (GeoDatabase)	60	80%

Note: The score of 80% in the above table is Excellent, which is the highest score in DWS's eWSDP website.

Table A.1.2 Summary by Settlement Group (Urban / Rural Split)

Settlement Type	Settlements (GeoDatabase)	Population	Households	Assessment Score
Rural	10	6 068	2 271	80%
Urban	50	129 275	44 636	80%
Total	**60**	**135 343**	**46 907**	**80%**

Note: The score of 80% in the above table is Excellent, which is the highest score in DWS's eWSDP website.

Table A.1.3 Assessment Score by Settlement Type						
Main Type	**Settlement Type**	**Settlements GeoDatabase**	**Population**	**Households**	**Avg. Household Size**	**Assessment Score**
Rural	Farming	9	6 004	2 255	2.66	80%
Rural	Rural – Informal Settlements	1	64	16	4.00	80%
Urban	Urban - Informal Settlements	23	41 544	10 386	4.00	80%
Urban	Urban - Formal Town	27	87 731	34 250	2.56	80%
Total		**60**	**135 343**	**46 907**	**2.88**	**80%**

Note: The score of 80% in the above table is Excellent, which is the highest score in DWS's eWSDP website.

Table.A.1.4 Amenities Summary (Health & Educational Facilities)		
Amenity Type	**Number of Amenities**	**Assessment Score**
Health Facilities	11	80%
Educational facilities	39	80%

Note: The score of 80% in the above table is Excellent, which is the highest score in DWS's eWSDP website.

The Community Survey of 2016 from Statistics South Africa estimate the 2016 population for Overstrand Municipality at 93 466 persons and the permanent households at 35 739, at an average household size of 2.6 persons per household.

Overstrand Municipality's Spatial Development Framework (SDF), May 2020, estimated the 2019 population at 116 550 persons. The SDF indicated that the population of the Overstrand Municipality grew at an approximate rate of 3% per annum between 2011 and 2016, and that future growth will continue to be between 2.8% and 3.3% per annum.

The published 2022 Census population for Overstrand Municipality was 132 495 persons (Annual growth rate of 4.9% over the period 2011 to 2022) and the number of permanent households was 59 980. The 2022 Census data is not yet available per town and it was therefore not possible to update Overstrand Municipality's projected population and households per town at this stage.

The 2024 Socio-economic Profile for Overstrand Municipality, as compiled by the Western Cape Government, indicated the 2024 population at 120 422 persons and the households at 41 136 (With an annual population growth rate of 1.8% over the period 2023 to 2029). Overstrand Municipality's 2025/2026 IDP and the draft 2024/2025 Annual Report include an estimated 2024/2025 population of 139 674 persons.

The on-going in-migration into the Overstrand Municipal area will place increasing demands on the infrastructure and available space for urban growth. The increased footprint in the Municipal area needs careful management if it is not to impact negatively on the natural environment of Overstrand. The increased population growth will place increased pressure on the municipal resources to develop new as well as maintain existing infrastructure. Vandalism of the water and sewerage infrastructure is also becoming more widespread and problematic. The seriousness of such vandalism cannot be understated as it leads to increases in water losses, a loss of reliability of the systems and unfruitful expenditure of funds to replace such infrastructure, when it could have been better spent on new services.

The 2024/2025 populations for the various water distribution systems were estimated by applying the annual growth rates as indicated in Table A.1.5. The current population figures and the annual population growth percentages used in the WSDP-IDP Water Sector Input Report are aligned with the figures used in DWS's GeoDatabase.

The future estimated annual population growth percentages, as listed in the table below, were agreed with the Municipality's Community Services and Engineering Planning Departments during January 2014.

Table A.1.5: Estimated Future Annual Population Growth Percentages, Population and Households per Distribution System

Town	Estimated future annual Population Growth %	Projected 2024/2025 Persons	Projected 2024/2025 Permanent Households
Buffels River	4.15%	3 897	1 965
Kleinmond	2.50%	9 138	3 767
Greater Hermanus	4.45%	83 361	27 506
Stanford	2.65%	6 717	2 098
Greater Gansbaai	4.89%	24 788	8 664
Pearly Beach	2.11%	1 374	636
Baardskeerdersbos	0.50%	130	42
Buffeljags Bay	0.50%	157	35
Farms	1.56%	5 781	2 194
Total	**4.09%**	**135 343**	**46 907**

Note: The number of permanent households in the above table include households in backyards and households in informal areas, but exclude holiday homes.

The current 2024/2025 population for Overstrand Municipality is therefore estimated at 135 343 persons and the permanent households at 46 907, as indicated in the table above.

The table below gives an overview of the projected population and permanent number of households and the water and sanitation service levels in Overstrand Municipality's Management Area.

Table A.1.6: Water Services Overview

Settlement Type	2011/2012		2024/2025		Water category										Sanitation category									
	Households	Population	Households	Population	Adequate: Formal	Adequate: Informal	Adequate: Shared Services	Water resources needs only	O&M needs only	Infrastructure needs only	Infrastructure & O&M needs	Infrastructure, O&M & Resource need	No Services: Informal	No Services: Formal	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																								
Metropolitan Area					Adequate			Below RDP					None		Adequate			Below RDP					None	
Sub-Total	**0**	**0**	**0**	**0**																				
Formal Town					Adequate			Below RDP					None		Adequate			Below RDP					None	
Buffels River	1 158	2 297	1 965	3 897	P		P								P		P							
Kleinmond	2 351	5 101	2 659	4 706	P		P								P		P							
Greater Hermanus	14 256	41 884	19 163	49 989	P		P								P		P							
Stanford	1 379	4 325	1831	5 649	P		P								P		P							
Greater Gansbaai	3 251	7 698	8124	22 628	P		P								P		P							
Pearly Beach	314	363	508	862	P		P								P		P							
Baardskeerdersbos	39	122	42	130	P										P									
Buffeljags Bay	33	147	19	93	P		P								P		P							
Sub-Total	**22 781**	**61 937**	**34 311**	**87 954**																				
Townships					Adequate			Below RDP					None		Adequate			Below RDP					None	
Sub-Total	**0**	**0**	**0**	**0**																				
Informal Settlements					Adequate			Below RDP					None		Adequate			Below RDP					None	
Greater Gansbaai	1 407	5 628	540	2 160		P										P								
Greater Hermanus	1 362	5 448	8 343	33 372		P										P								
Kleinmond	382	1 528	1 108	4 432		P										P								
Stanford	114	456	267	1 068		P										P								
Pearly Beach	171	684	128	512		P										P								
Buffeljags Bay			16	64		P										P								
Sub-Total	**3 436**	**13 744**	**10 402**	**41 608**																				
Working towns & service centres					Adequate			Below RDP					None		Adequate			Below RDP					None	
Sub-Total	**0**	**0**	**0**	**0**																				
Sub-Total: (Urban)	**26 217**	**75 681**	**44 713**	**129 562**																				
RURAL																								
Rural / Farming					Adequate			Below RDP					None		Adequate			Below RDP					None	
Overstrand Rural	1 794	4 727	2 194	5 781	P		P							P	P		P							P
Sub-Total	**1 794**	**4 727**	**2 194**	**5 781**																				
Informal Settlements					Adequate			Below RDP					None		Adequate			Below RDP					None	
Sub-Total	**0**	**0**	**0**	**0**																				
Sub-Total (Rural)	**1 794**	**4 727**	**2 194**	**5 781**																				
TOTAL	**28 011**	**80 408**	**46 907**	**135 343**																				

TOPIC 2: SERVICE LEVELS

The National Norms and Standards for Domestic Water and Sanitation Services, as published in the Government Gazette No.41100 of 8 September 2017, make provision for the following norms and standards for levels of water supply and sanitation services:

Table A.2.1: Norms and Standards for Levels of Water Supply Services		
Full level of service: People access and pay for more than 90 l/c/d at high pressure.	Interim **Full**	**Full provision**: People access a minimum of 50 l/c/d of SANS241 quality water on demand at the boundary of the yard, metered and tariffed.
Middle level of service: People access and pay for 51-90 l/c/d at medium pressure.	Interim **Upper**	**Upper provision**: People access a maximum of 90 l/c/d of SANS241 quality water from an improved source at the boundary of the yard, metered and tariffed.
	Interim **Intermediate**	Intermediate provision: People access more than 50 l/c/d but less than 90 l/c/d of SANS241 quality water from an improved source at the boundary of the yard, metered and tariffed.
Minimum level of service: People access 25-50 l/c/d at low to medium pressure, use of more than 25 l/c/d is paid for.	Interim **Basic Plus**	**Basic Plus provision**: People access more than 25 l/c/d but less than 50 l/c/d of SANS241 quality water from an improved source at the boundary of the yard, metered and tariffed.
	Interim **Basic**	**Basic provision**: People access a minimum of 25 l/c/d of SANS241 quality water from an improved source at the boundary of the yard, metered and tariffed.
	Interim **Free Basic**	**Free basic provision**: People access a minimum of 25 l/c/d of SANS241 quality water from an improved source at the boundary of the yard, metered.
	Intermittent	**Intermittent provision**: People access a minimum of 1500 l/household/week of acceptable quality water on a weekly basis within 100m, which is metered.
Bulk service: Source of potable water to be provided to people, which is metered in all circumstances.		
No service / provision = backlog: People access water from insecure or unimproved sources, or sources that are too distant, too time consuming or are of poor quality.		

Interim provision: People access a minimum of 25 l/c/d of acceptable quality water within 24 hours of disruption, normal service to be restored within 7 days.

Table A.2.2: Norms and Standards for Levels of Sanitation Services		
Hygiene promotion; Prevention of pollution; Re-use / recycle; Operation and Maintenance; Metering and tariffing; Solid Waste Management; Asset Management		
Full level: Full concern for human health, environment and sustainability of interconnected systems.	**Full services**	**In-house facility**: Storm water, wastewater/excreta, greywater, solid waste are collected and managed to achieve maximum benefits from treatment and re-use of water and nutrients.
		In-house facility: Access to a pleasant, safe, reliable and properly maintained facility for 24 hours a day, with control of nutrients in human excreta, wastewater and greywater.
Basic level: Remove excreta from the environment through treatment, pathogen reduction, resource recovery and nutrient reuse.	**Free basic services**	**Toilet with functional hand washing facility in the yard**: Access to a pleasant, safe and reliable facility for 24 hours a day, including privacy, personal safety and shelter through a subsidy for free. Maintenance of the facility is for free and is the responsibility of services provider.
	Basic services	**Toilet with functional hand washing facility in the yard**. Access to a pleasant, safe and reliable facility for 24 hours a day, including privacy, personal safety and shelter through a capital subsidy. Maintenance of the facilities is not for free and is the responsibility of the household / owner.
Interim level: Blocking the spread of faecal-oral diseases through proper excreta containment at a fixed point.	**Excreta containment**	**Household, shared or communal toilets with functional hand washing facilities**: Access to safe, reliable and properly maintained toilet and hand washing facility, free of charge, within 200m of the dwelling, which at a minimum safely contains human excreta. Maintenance is the responsibility of the services provider. To be phased out by 2030.
No service / provision = backlog: People practice open defecation or access an unimproved sanitation facility, such as pit toilets and bucket toilets. To be completely eliminated by 2030.		

Proper disposal, clean platform, vector and rodent control, resource use and health protection.

Emergency level: People access pleasant, safe, reliable and properly maintained improved toilets and hand washing facility on the premises in close proximity to the temporary dwelling within 24 hours and for duration of event.

All the formal households in the urban areas of Overstrand Municipality's Management Area are provided with water and sewer connections inside the premises. Informal areas are supplied with shared services as an intermediary measure. Overstrand Municipality works towards a ratio of at least one tap per twenty-five households and one communal toilet per five households for their shared services. Overstrand Municipality is committed to ensure that private landowners provide at least basic water and sanitation services to those households in the rural areas with existing services below RDP standard.

Overstrand Municipality's challenges with regard to the provision of basic water and sanitation services are as follows.

- The operation and maintenance of communal services in informal areas are a challenge, with regular sewer blockages, vandalism of infrastructure and facilities and water leaks.
- To provide basic water and sanitation services in the informal areas to new citizens moving into the informal areas and to ensure that health and hygiene awareness and education is part of the process of providing basic services.
- To identify suitable land for the relocation of the people from informal areas, with existing communal services, to formal houses with a higher level of water and sanitation service (Services inside the erven).
- To identify adequate funding for the rehabilitation, maintenance, replacement and upgrading of the existing bulk and reticulation infrastructure in order to support the sustainability of the water and sanitation services.
- To monitor the provision of basic water and sanitation on privately owned land.

The table and graph below give an overview of the water service delivery access profile of Overstrand Municipality.

Table A.2.3: Residential Water Services Delivery Access Profile: Water

Census Category	Description	Year -2 FY2022/23		Year -1 FY2023/24		Year 0 FY2024/25	
		Nr	%	Nr	%	Nr	%
	WATER (ABOVE MIN LEVEL)						
Piped (tap) water inside dwelling/institution	House connections	40 620	71%	41 303	72%	42 254	73%
Piped (tap) water inside yard	Yard connections	5 300	9%	5 300	9%	5 300	9%
Piped (tap) water on community stand: distance less than 200m from dwelling/institution	Standpipe connection < 200 m	11 191	20%	10 452	18%	10 433	18%
	Sub-Total: Minimum Serivce Level and Above	**57 111**	**100%**	**57 055**	**100%**	**57 987**	**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	21	0%	21	0%	21	0%
Piped (tap) water on community stand: distance between 500m and 1000m (1km) from dwelling /institution	Standpipe connection: > 500 m < 1 000 m	8	0%	8	0%	8	0%
Piped (tap) water on community stand: distance greater than 1000m (1km) from dwelling/institution	Standpipe connection: > 1 000 m	5	0%	5	0%	5	0%
No access to piped (tap) water	No services	49	0%	49	0%	49	0%
	Sub-Total: Below Minimum Service Level	**83**	**0%**	**83**	**0%**	**83**	**0%**
	Total number of households	**57 194**	**100%**	**57 138**	**100%**	**58 070**	**100%**

Note: The households in the above residential water services delivery access profile include all permanent residential households, holiday homes, the households in informal areas and the backyard dwellers and is not the same as the permanent residential households in Table A.1.6.

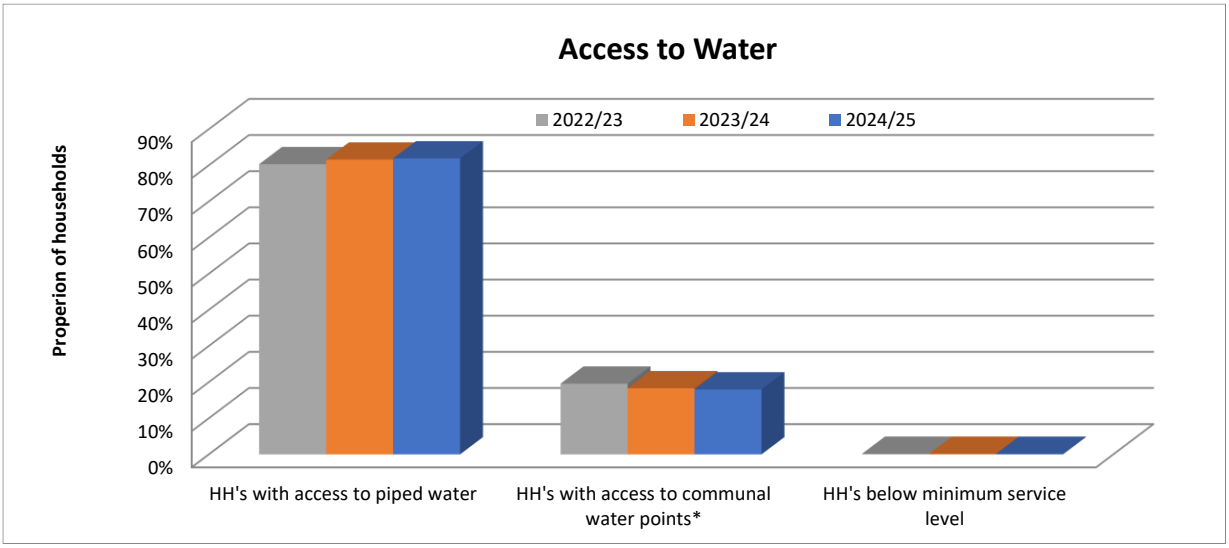


Figure A.2.1: Access to Water Services.

The existing residential water service levels in Overstrand Municipality's Management Area are indicated in the table below.

Table A.2.4: Residential Water Service Levels (Residential Consumer Units)

Service Level	Buffels River	Kleinmond	Greater Hermanus	Stanford	Greater Gansbaai	Pearly Beach	Baardskeer-dersbos	Buffeljags Bay	Farms	Total
No Water Services	0	0	0	0	0	0	0	0	49 [2)]	49
Below RDP: Infrastructure Upgrade	0	0	0	0	0	0	0	0	0	0
Below RDP: Infrastructure Extension	0	0	0	0	0	0	0	0	34 [3)]	34
Below RDP: Infrastructure Refurbishment	0	0	0	0	0	0	0	0	0	0
Below RDP: O&M Needs	0	0	0	0	0	0	0	0	0	0
Below RDP: Water Resource Needs	0	0	0	0	0	0	0	0	0	0
Below RDP: Infrastructure and O&M Needs	0	0	0	0	0	0	0	0	0	0
Below RDP: Infrastructure, O&M and Water Resource Needs	0	0	0	0	0	0	0	0	0	0
Total Basic Need (RDP)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**83**	**83**
Below Housing Interim [4)]	0	0	0	0	0	0	0	0	0	0
Adequate Housing Permanent [5)]	0	1 108	8 343	267	540	128	0	16	0	10 402
Total Housing Need	**0**	**1 108**	**8 343**	**267**	**540**	**128**	**0**	**16**	**0**	**10 402**
Standpipes	0	0	0	0	0	0	0	0	31	31
Yard Connections [6)]	6	282	3 623	482	625	39	0	0	243	5 300
House Connections [1)]	4 035	3 773	20 866	1 952	7 765	1 826	95	30	1 912	42 254
Total Adequate	**4 041**	**4 055**	**24 489**	**2 434**	**8 390**	**1 865**	**95**	**30**	**2 186**	**47 585**
Total Residential Consumer Units for the Municipality	**4 041**	**5 163**	**32 832**	**2 701**	**8 930**	**1 993**	**95**	**46**	**2 269**	**58 070**

Notes:
1) Number of residential billed metered consumers for the urban areas for 2024/2025, as taken from the financial system.
2) Census 2011: Number of households with no access to piped (tap) water 49
3) Census 2011: Number of households with communal services (200m – 500m) 21, (500m – 1000m) 8 and (>1000m) 5.
4) Below Housing Interim in the above table is the number of informal households in informal areas without basic water services.
5) Adequate Housing Permanent in the above table is the number of informal households in informal areas with communal water services, as confirmed by the Municipality (June 2025).
6) Estimated number of backyard dwellers, as agreed with the Municipality during January 2014, as part of DWS's Backlog Eradication Strategy process.

Table A.2.5: Improvement in Eradicating the Water Backlog					
Settlement	Urban / Rural	2024/25		2023/24 (-Y1)	
		Water backlog HH	Water Backlog Population	Water backlog HH	Water Backlog Population
Buffels River	Urban	0	0	0	0
Kleinmond	Urban	0	0	0	0
Greater Hermanus	Urban	0	0	0	0
Stanford	Urban	0	0	0	0
Greater Gansbaai	Urban	0	0	0	0
Pearly Beach	Urban	0	0	0	0
Baardskeerdersbos	Urban	0	0	0	0
Buffeljags Bay	Urban	0	0	0	0
Farms	Rural	83	218	83	218
Total		**83**	**218**	**83**	**218**

Table A.2.6: Water Supply Level Profile (Households)		
Water Profile	Totals	Assessment Score
Total households with a water need (Irrelevant the type of need)	**83**	**80%**
Total households below RDP	**83**	**80%**
Piped water inside the dwelling/house-Households	42 254	80%
Piped water inside yard-Households	5 300	80%
Piped water distance <200m - Households	10 433	80%
Piped water distance >200m - Households	34	60%
Borehole in the yard - Households	0	80%
Rain-water tank in yard - Households	0	80%
Water vendor-carrier/tanker - Households	0	80%
Stagnant water - dam/pool - Households	19	60%
Flowing water/spring/ stream/river - Households	4	60%
Water Other – Households (include no water)	26	60%
Total	**58 070**	**80%**

Note: The scores of 60% and 80% in the above table is Good and Excellent. 80% is the highest score in DWS's eWSDP website.

Table A.2.7: Water Reliability Profile (Households)		
Section: Water Reliability Profile	Totals	Assessment Score
Total Number of Households having Reliable Service	**57 987**	**80%**
Total Number of Households NOT having Reliable Service	**83**	**60%**

Note: The scores of 60% and 80% in the above table is Good and Excellent. 80% is the highest score in DWS's eWSDP website.

The households not having reliable water services in the rural areas, in the previous tables, are still based on the 2011 Census data and can only be updated once the 2022 Census data becomes available per town or subplace.

The table and graph below give an overview of the sanitation service delivery access profile in Overstrand Municipality's Management Area.

Table A.2.8: Residential Water Services Delivery Access Profile: Sanitation							
Census Category	Description	Year -2 FY2022/23		Year -1 FY2023/24		Year 0 FY2024/25	
		Nr	%	Nr	%	Nr	%
	SANITATION (ABOVE MIN LEVEL)						
Flush toilet (connected to sewerage system)	Waterborne	30 398	53%	31 139	54%	31 993	55%
	Waterborne: Low Flush	4 100	7%	4 100	7%	4 100	7%
Flush toilet (with septic tank)	Septic tanks / Conservancy	11 239	20%	11 181	20%	11 278	19%
Chemical toilet	Non-waterborne (min. service level)	5	0%	5	0%	5	0%
Pit toilet with ventilation (VIP)		27	0%	27	0%	27	0%
Other / Communal Services	Waterborne (min. service level, communal)	11 160	20%	10 421	18%	10 402	18%
	Sub-Total: Minimum Serivce Level and Above	**56 929**	**100%**	**56 873**	**100%**	**57 805**	**100%**
	SANITATION (BELOW MIN LEVEL)						
Pit toilet without ventilation	Pit toilet	12	0%	12	0%	12	0%
Bucket toilet	Bucket toilet	68	0%	68	0%	68	0%
Other toilet provision (below min. service level	Other	119	0%	119	0%	119	0%
No toilet provisions	No services	66	0%	66	0%	66	0%
	Sub-Total: Below Minimum Service Level	**265**	**0%**	**265**	**0%**	**265**	**0%**
	Total number of households	**57 194**	**100%**	**57 138**	**100%**	**58 070**	**100%**

Note: The households in the above residential sanitation services delivery access profile include all permanent residential households, holiday homes, the households in informal areas and the backyard dwellers and is not the same as the permanent residential households in Table A.1.6.

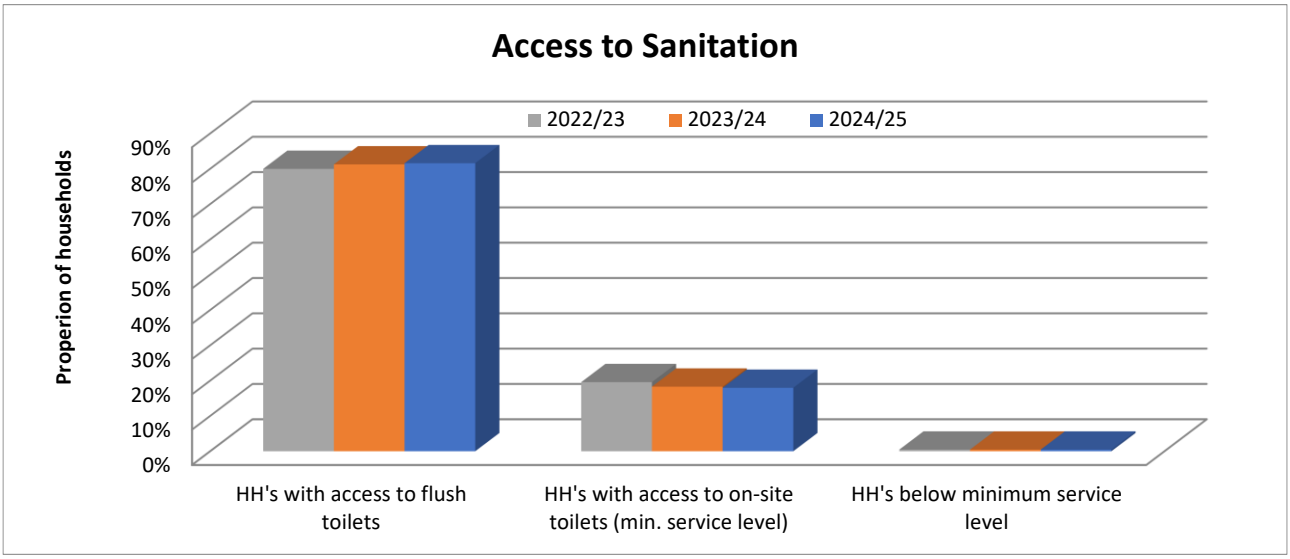


Figure A.2.2: Access to Sanitation Services.

The existing residential sanitation service levels in Overstrand Municipality's Management Area are indicated in the table below.

Table A.2.9: Residential Sanitation Service Levels (Residential Consumer Units)

Service Levels	Buffels River	Kleinmond	Greater Hermanus	Stanford	Greater Gansbaai	Pearly Beach	Baardskeer-dersbos	Buffeljags Bay	Farms	Total
No Sanitation Services	0	0	0	0	0	0	0	0	66 [3]	66
Below RDP: Infrastructure Upgrade	0	0	0	0	0	0	0	0	204 [4]	204
Below RDP: Infrastructure Extension	0	0	0	0	0	0	0	0	0	0
Below RDP: Infrastructure Refurbishment	0	0	0	0	0	0	0	0	0	0
Below RDP: O&M Needs	0	0	0	0	0	0	0	0	0	0
Below RDP: Water Resource Needs	0	0	0	0	0	0	0	0	0	0
Below RDP: Infrastructure and O&M Needs	0	0	0	0	0	0	0	0	0	0
Below RDP: Infrastructure, O&M and Water Resource Needs	0	0	0	0	0	0	0	0	0	0
Total Basic Need (RDP)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**270**	**270**
Below Housing Interim [5]	0	0	0	0	0	0	0	0	0	0
Adequate Housing Permanent [6]	0	1 108	8 343	267	540	128	0	16	0	10 402
Total Housing Need	**0**	**1 108**	**8 343**	**267**	**540**	**128**	**0**	**16**	**0**	**10 402**
No Waterborne (VIP)	0	0	0	0	0	0	0	0	27	27
Waterborne Low Flush	0	0	4 100	0	0	0	0	0	0	4 100
Septic Tanks / Conservancy Tanks	4 041	908	1 284	56	2 370	522	95	30	1 972	11 278
Waterborne	0	3 147	19 105	2 378	6 020	1 343	0	0	0	31 993
Total Adequate [2]	**4 041**	**4 055**	**24 489**	**2 434**	**8 390**	**1 865**	**95**	**30**	**1 999**	**47 398**
Total Residential Consumer Units for the Municipality	**4 041**	**5 163**	**32 832**	**2 701**	**8 930**	**1 993**	**95**	**46**	**2 269**	**58 070**

Notes: 1) Total for Septic Tanks and Conservancy tanks in Urban Areas was estimated from previous Municipal information for June 2025 for "Developed Sites Septic Tanks (SE8D)"

2) Include Backyard dwellers

3) Census 2011: Number of households with no toilet facility 66.

4) Census 2011: Number of households with existing buckets 68, chemical toilets 5, pit toilets without ventilation 12 and "other" 119.

5) Below Housing Interim in the above table is the number of informal households in informal areas without basic sanitation services.

6) Adequate Housing Permanent in the above table is the number of informal households in informal areas with communal ablution facilities, as confirmed by the Municipality (June 2025).

Table A.2.10: Improvement in Eradicating the Sanitation Backlog

Settlement	Urban / Rural	2024/25		2024/25	
		Sanitation backlog HH	Sanitation Backlog Population	Sanitation backlog HH	Sanitation Backlog Population
Buffels River	Urban	0	0	0	0
Kleinmond	Urban	0	0	0	0
Greater Hermanus	Urban	0	0	0	0
Stanford	Urban	0	0	0	0
Greater Gansbaai	Urban	0	0	0	0
Pearly Beach	Urban	0	0	0	0
Baardskeerdersbos	Urban	0	0	0	0
Buffeljags Bay	Urban	0	0	0	0
Farms	Rural	270	710	270	710
Total		**270**	**710**	**270**	**710**

Table A.2.11: Sanitation Level of Service (Households)		
Section: Sanitation Service Infrastructure Supply Level Profile	**Totals**	**Assessment Score**
Bucket toilet - Households	68	60%
Pit without ventilation - Households	12	60%
Pit toilet with ventilation (VIP) - Households	27	60%
Chemical Toilet - Households	5	60%
Flush toilet (with septic / conservancy tank) - Households	11 278	80%
Flush toilet (connected to sewerage system) - Households	46 495	80%
None - Households	185	60%
Total	**58 070**	**80%**

Note: The scores of 60% and 80% in the above table is Good and Excellent. 80% is the highest score in DWS's eWSDP website.

Table A.2.12: Sanitation Reliability Profile (Households)		
Section: Sanitation Reliability Profile	**Totals**	**Assessment Score**
Total number of households having reliable service	**57 800**	**80%**
Total number of households not having reliable service	**270**	**60%**
Infrastructure to be upgraded: None to VIP (HH)	185	60%
Infrastructure requirement: Bucket to VIP (HH)	68	60%
Infrastructure to be upgraded: Pit to VIP (HH)	12	60%

Note: The scores of 60% and 80% in the above table is Good and Excellent. 80% is the highest score in DWS's eWSDP website.

The households not having reliable sanitation services in the rural areas, in the previous tables, are still based on the 2011 Census data and can only be updated once the 2022 Census data becomes available per town or subplace.

Table A.2.13: Direct Backlog (Water and Sanitation)		
Direct Backlog (Water & Sanitation)	**Totals**	**Assessment Score**
Direct settlement backlog water households. Total household of settlement with a water need (irrelevant the type of need)	83	60%
Direct settlement backlog water population. Total population of settlement with a water need (irrelevant the type of need)	218	60%
Direct settlement backlog sanitation households. Total household of settlement with a sanitation need (irrelevant the type of need)	270	60%
Direct settlement backlog sanitation population. Total population of settlement with a sanitation need (irrelevant the type of need)	710	60%

Overstrand Municipality's Directorate Community Services regularly count the number of households in the informal areas. The current number of households in the informal areas, with access to communal basic services, is 3 076. The number of households with communal services in the informal areas and the number of households per facility type are summarised in the table below (June 2025).

Table A.2.14: Communal Service Levels in the Informal Areas						
Area	**Informal Settlement**	**No. of Households**	**Number of Toilets**	**Household / Toilet**	**Number of Taps**	**Households / Tap**
Stanford	Die Kop	159	20	8.0	7	22.7
Kleinmond	Overhills	497	103	4.8	29	17.1
Gansbaai	Mashakhane	506	52	9.7	8	63.3
	Buffeljags Bay	16	8	2.0	2	8.0
Hawston	Erf 170	5	6	0.8	2	2.5
Zwelihle	Tsepe-Tsepe	262	36	7.3	7	37.4
	Serviced Sites	81	25	3.2	4	20.3
	Thambo Square	351	13	27.0	2	175.5
	Asazani	89	14	6.4	4	22.3
	Temporary Relocation Area	250	125	2.0	125	2.0

Table A.2.14: Communal Service Levels in the Informal Areas						
Area	**Informal Settlement**	**No. of Households**	**Number of Toilets**	**Household / Toilet**	**Number of Taps**	**Households / Tap**
	New Camp	55	12	4.6	7	7.9
	Transit Camp	171	140	1.2	136	1.3
Sub-Total		**2 442**	**554**	**4.4**	**333**	**7.3**
Communal Service Levels – Emergency Housing						
Stanford	Stanford EHP	108	36	3.0	9	12.0
Hermanus	Mount Pleasant EHP (Haven)	25	8	3.1	4	6.3
	Mount Pleasant EHP (Dankbaar)	29	10	2.9	4	7.3
	Zwelihle EHP	152	42	3.6	13	11.7
	Zwelihle: Swimming Pool	94	20	4.7	14	6.7
	Zwelihle(old Mandela)	64	10	6.4	5	12.8
Gansbaai	Masakhane EHP	34	16	2.1	3	11.3
	Eluxolweni EHP	128	30	4.3	11	11.6
Sub-Total		**634**	**172**	**3.7**	**63**	**10.1**
Total		**3 076**	**726**	**4.2**	**396**	**7.8**

Notes: No Services, Ratios above Targets, Ratios meeting Targets

Targets: Overstrand Municipality works towards a ratio of at least 1 tap per twenty-five households and 1 communal toilet per five households for their shared services.

The table below indicates the number of communal services provided on erven that was part of the land invasion.

Table A.2.15: Communal Service Levels Provided During Land Invasion						
Area	**Settlement**	**No. of Households**	**Number of Toilets**	**Household / Toilet**	**Number of Taps**	**Households / Tap**
Hermanus	Marikana (Area of church)	2 215	14	34.6	10	48.2
	Marikana (Next to swimming pool)		20		16	
	Marikana (Next to recycling site)		20		12	
	Marikana (Next to parking area)		10		8	
	Dubai (Schulphoek)	4 327	30	144.2	21	206.0
	Back of sportground, Zwelihle	173	20	8.7	8	21.6
Kleinmond	Overhills	611	19	32.2	6	101.8
Sub-Total		**7 326**	**133**	**55.1**	**81**	**90.4**

The number of billed metered consumers in each user sector and the percentage annual growth over the period 2016/2017 to 2024/2025, for the different water distribution systems, are included in the table below for the various financial years.

Table A.2.16: Number of Billed Metered Consumers in each User Sector for the Last Nine Financial Years and Annual Percentage Growth over the period 2016/2017 to 2024/2025							
Water Distribution System	**Year**	**Residential**	**Commercial**	**Industrial**	**Other**	**Total**	**% Annual Growth from 16/17 to 24/25**
Buffels River	16/17	3 362	118	0	30	**3 510**	2.21%
	17/18	3 416	118	0	30	**3 564**	
	18/19	3 501	119	0	30	**3 650**	
	19/20	3 558	119	0	30	**3 707**	
	20/21	3 665	119	0	30	**3 814**	
	21/22	3 773	118	0	30	**3 921**	
	22/23	3 880	118	0	30	**4 028**	
	23/24	3 988	117	0	30	**4 135**	
	24/25	4 035	117	0	30	**4 182**	
Kleinmond	16/17	3 585	292	0	66	**3 943**	0.61%
	17/18	3 606	295	0	70	**3 971**	

Table A.2.16: Number of Billed Metered Consumers in each User Sector for the Last Nine Financial Years and Annual Percentage Growth over the period 2016/2017 to 2024/2025							
Water Distribution System	**Year**	**Residential**	**Commercial**	**Industrial**	**Other**	**Total**	**% Annual Growth from 16/17 to 24/25**
	18/19	3 625	297	0	71	**3 993**	
	19/20	3 633	307	1	71	**4 012**	
	20/21	3 663	307	1	68	**4 038**	
	21/22	3 692	306	1	65	**4 064**	
	22/23	3 722	306	1	62	**4 091**	
	23/24	3 751	306	1	59	**4 117**	
	24/25	3 773	306	1	59	**4 139**	
	16/17	18 788	1 004	37	346	**20 175**	
	17/18	19 460	1 039	38	499	**21 036**	
	18/19	19 819	1 161	38	532	**21 550**	
	19/20	20 099	1 209	38	541	**21 887**	
Greater Hermanus	20/21	20 266	1 219	39	535	**22 058**	1.47%
	21/22	20 432	1 228	40	530	**22 230**	
	22/23	20 599	1 238	41	524	**22 401**	
	23/24	20 765	1 247	42	519	**22 573**	
	24/25	20 866	1 248	31	525	**22 670**	
	16/17	1 187	55	2	18	**1 262**	
	17/18	1 227	56	3	18	**1 304**	
	18/19	1 260	65	3	20	**1 348**	
	19/20	1 269	76	3	18	**1 366**	
Stanford	20/21	1 321	76	3	19	**1 418**	6.27%
	21/22	1 374	76	3	19	**1 471**	
	22/23	1 426	75	3	20	**1 524**	
	23/24	1 479	75	3	20	**1 577**	
	24/25	1 952	74	3	22	**2 051**	
	16/17	5 091	234	3	202	**5 530**	
	17/18	5 213	286	5	197	**5 701**	
	18/19	5 761	346	9	196	**6 312**	
	19/20	5 917	375	9	198	**6 499**	
Greater Gansbaai	20/21	6 332	378	9	186	**6 905**	5.22%
	21/22	6 746	381	10	174	**7 310**	
	22/23	7 160	384	10	162	**7 716**	
	23/24	7 574	387	10	150	**8 121**	
	24/25	7 765	388	10	145	**8 308**	
	16/17	1 500	3	0	7	**1 510**	
	17/18	1 691	5	0	8	**1 704**	
	18/19	1 647	8	0	8	**1 663**	
	19/20	1 657	9	0	8	**1 674**	
Pearly Beach	20/21	1 698	9	0	8	**1 715**	2.51%
	21/22	1 739	9	0	8	**1 756**	
	22/23	1 780	9	0	8	**1 797**	
	23/24	1 821	9	0	8	**1 838**	
	24/25	1 826	9	0	7	**1 842**	
	16/17	64	0	0	3	**67**	
	17/18	64	0	0	3	**67**	
	18/19	64	1	0	3	**68**	
	19/20	65	2	0	3	**70**	
Baardskeerdersbos	20/21	72	2	0	3	**77**	5.13%
	21/22	79	2	0	3	**84**	
	22/23	86	2	0	3	**91**	
	23/24	93	2	0	3	**98**	
	24/25	95	2	0	3	**100**	
	16/17	30	0	0	6	**36**	
	17/18	30	0	0	6	**36**	
Buffeljags Bay	18/19	30	0	0	6	**36**	-2.25%
	19/20	30	0	0	6	**36**	

Table A.2.16: Number of Billed Metered Consumers in each User Sector for the Last Nine Financial Years and Annual Percentage Growth over the period 2016/2017 to 2024/2025							
Water Distribution System	**Year**	**Residential**	**Commercial**	**Industrial**	**Other**	**Total**	**% Annual Growth from 16/17 to 24/25**
	20/21	30	0	0	5	**35**	
	21/22	30	0	0	4	**33**	
	22/23	29	0	0	2	**32**	
	23/24	29	0	0	1	**30**	
	24/25	30	0	0	0	**30**	
All Systems	**16/17**	**33 607**	**1 706**	**42**	**678**	**36 033**	**2.33%**
	17/18	**34 707**	**1 799**	**46**	**831**	**37 383**	
	18/19	**35 707**	**1 997**	**50**	**866**	**38 620**	
	19/20	**36 228**	**2 097**	**51**	**875**	**39 251**	
	20/21	**37 046**	**2 108**	**52**	**853**	**40 060**	
	21/22	**37 864**	**2 120**	**54**	**832**	**40 870**	
	22/23	**38 682**	**2 131**	**55**	**811**	**41 679**	
	23/24	**39 500**	**2 143**	**56**	**790**	**42 489**	
	24/25	**40 342**	**2 144**	**45**	**791**	**43 322**	

Note: Number of billed metered consumers for 2020/2021, 2021/2022 and 2022/2023 were estimated.

The graphs below give an overview of the number of billed metered consumers per water distribution system and Overstrand Municipality's overall billed metered consumers per category for the financial years 2016/2017 onwards.

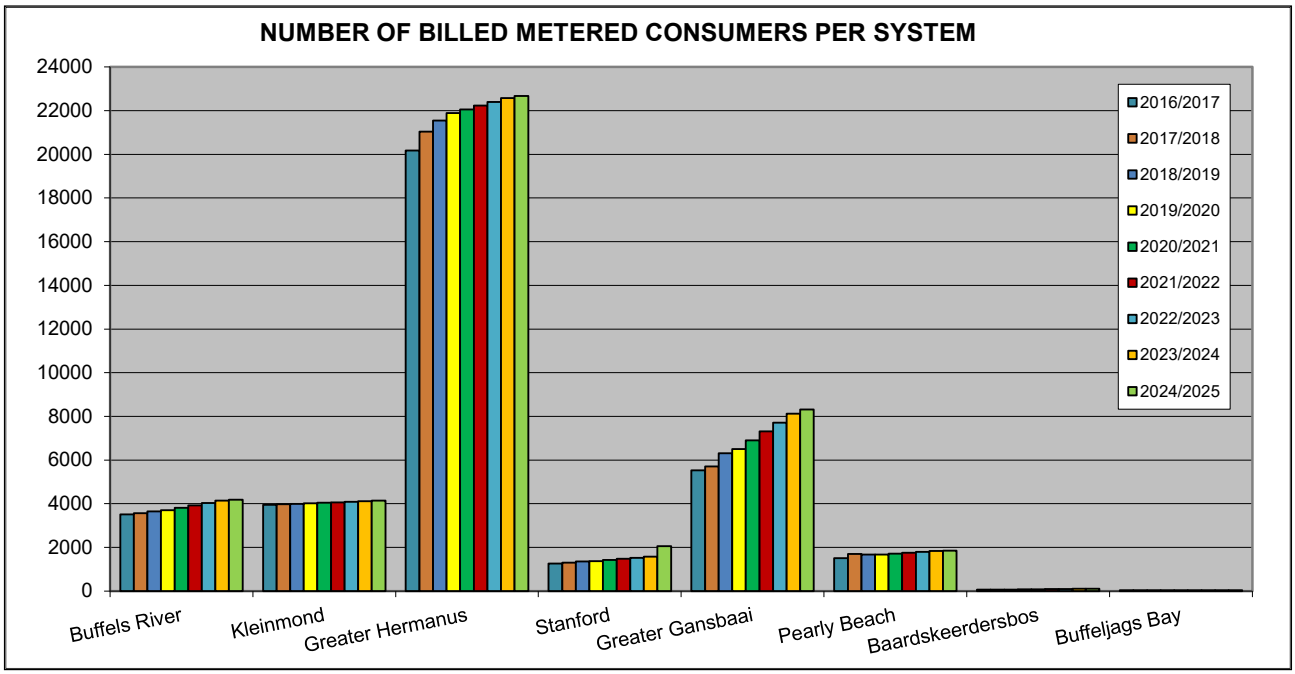


Figure A.2.3: Number of Billed Metered Consumption Units per System for each of the Financial Years

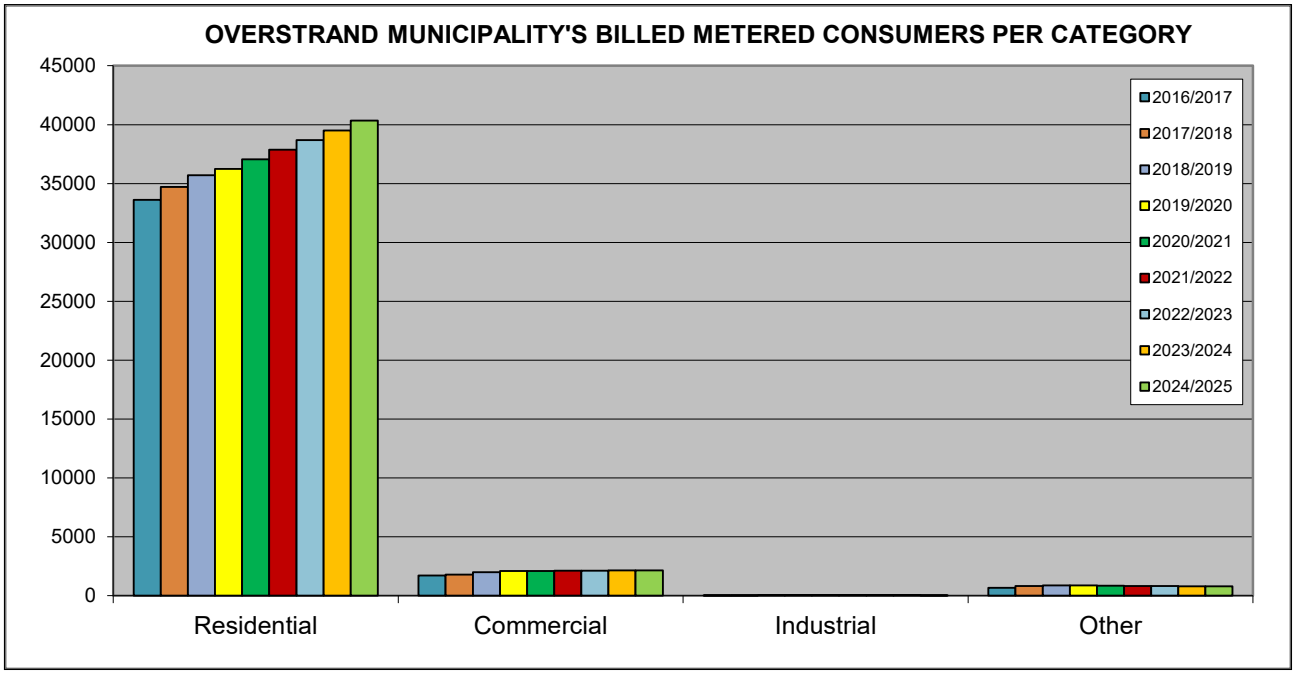


Figure A.2.4: Overstrand Municipality's Consumers per Category Type

Public Amenities

All schools and medical facilities in Overstrand Municipality's Management Area are supplied with a higher level of water and sanitation services. The existing water and sanitation service levels for all the schools and medical facilities in Overstrand Municipality's Management Area are summarised in the tables below.

Table A.2.17: Water Service Levels: Education and Health Facilities

Associated services facility	Number of facilities	Facilities with No Services	Facilities with Inadequate Services	Total Potential Cost (basic level) (RM)
Education Plan				
Primary school	17	0	0	R0
Secondary school	4	0	0	R0
Tertiary	-	-	-	-
Combined	4	0	0	R0
Special needs	1	0	0	R0
Other	13	0	0	R0
Total	**39**		**0**	**R0**
Health Plan				
Hospitals	2	0	0	R0
Community Day Centres	1	0	0	R0
Clinics	4	0	0	R0
Satellite Clinics	4	0	0	R0
Total	**11**	**0**	**0**	**R0**

Source: Number of medical facilities - 2024 Socio Economic Profile of Overstrand Municipality, Western Cape Government

Table A.2.18: Sanitation Service Levels: Education and Health Facilities

Associated services facility	Number of facilities	Facilities with No Services	Facilities with Inadequate Services	Total Potential Cost (basic level) (RM)
Education Plan				
Primary school	17	0	0	R0
Secondary school	4	0	0	R0
Tertiary	-	-	-	-
Combined	4	0	0	R0
Special needs	1	0	0	R0

Table A.2.18: Sanitation Service Levels: Education and Health Facilities				
Associated services facility	**Number of facilities**	**Facilities with No Services**	**Facilities with Inadequate Services**	**Total Potential Cost (basic level) (RM)**
Other	13	0	0	R0
Total	**39**	**0**	**0**	**R0**
Health Plan				
Hospitals	2	0	0	R0
Community Day Centres	1	0	0	R0
Clinics	4	0	0	R0
Satellite Clinics	4	0	0	R0
Total	**11**	**0**	**0**	**R0**

Source: Number of medical facilities - 2024 Socio Economic Profile of Overstrand Municipality, Western Cape Government

TOPIC 3: WATER SERVICES ASSET MANAGEMENT

A Water and Wastewater Bulk Works Contract was signed during the 2018/2019 financial year between Overstrand Municipality and an External Service Provider to operate and maintain the bulk infrastructure in Overstrand Municipality's Management Area for a period of fifteen (15) years starting on the 8th of December 2018. The Municipality also has the right to extend the contract for a further five (5) years. The Municipality will ensure the long-term efficient operation and maintenance of their bulk water and sewerage infrastructure through the Contract. The operation and maintenance of the following bulk infrastructure forms part of the Contract:

- Hawston, Hermanus, Stanford, Gansbaai, Kleinmond and Eluxolweni WWTWs;
- Preekstoel (Hermanus), Buffels River, Franskraal, Pearly Beach, De Kelders, Stanford, Kleinmond, Baardskeerdersbos and Buffeljags Bay WTWs;
- Resources;
- Surface water pump stations and borehole pumps;
- Bulk water and sewer pipelines;
- Reservoirs; and
- Water and sewer pump stations and rising main pipelines.

Table A.3.1: Infrastructure Components										
Assets	**Boreholes**	**Abstraction Points**	**WTW**	**Water Pump Stations**	**Sewer Pump Stations**	**Water Pipelines**	**Sewer Pipelines**	**Reservoirs**	**WWTW**	**Assessment Score**
Total number of components / km of pipeline / units	20	12	8	26	53	858.592 km	395.616 km	46	6	80%

The table below gives an overview of the resources and the WTWs and treatment processes for the various water distribution systems in Overstrand Municipality's Management Area.

Table A.3.2: Existing Water Infrastructure (Resources and WTWs)			
Water Distribution System	**Bulk Supply**	**WTWs and Treatment Processes**	
	(Resources)	**WTW (Capacity in Ml/d)**	**Processes**
Buffels River	Buffels River Dam	Buffels River (5.500)	Chemical dosing (Aluminium Chlorohydrate), flocculation, sedimentation, filtration (Rapid gravity sand filters), stabilization (Soda Ash) and disinfection (Chlorine Gas)
Kleinmond	Palmiet River, Kleinmond Borehole and Dorpsfontein Spring	Kleinmond (5.800)	Chemical dosing (Aluminium Chlorohydrate and Soda Ash), flocculation, sedimentation, filtration (Rapid gravity sand filters), stabilization (Soda Ash) and disinfection (Chlorine Gas).
Greater Hermanus	De Bos Dam and Gateway, Camphill and Volmoed wellfields	Preekstoel (21.000)	Chemical dosing (Aluminium Sulphate and Sodium Aluminate), flocculation, sedimentation, filtration (Rapid gravity sand filters), stabilization (Lime) and Disinfection (Chlorine Gas)

Table A.3.2: Existing Water Infrastructure (Resources and WTWs)			
Water Distribution System	**Bulk Supply**	**WTWs and Treatment Processes**	
	(Resources)	**WTW (Capacity in Ml/d)**	**Processes**
		Groundwater Hemel & Aarde (10.000)	Biological WTW for iron and manganese removal by contact filtration, Caustic Soda dosing and Aeration (Hemel & Aarde wellfields of Camphill and Volmoed).
		Groundwater Gateway (7.000)	Chemical oxidation treatment plant with Potassium Permanganate and Aeration (Gateway Wellfield).
Stanford	Stanford Spring and two Kouevlakte Boreholes	Stanford RO plant (1.000)	Ultrafiltration plus Reverse Osmosis Plant and disinfection (Sodium Hypochlorite)
Greater Gansbaai	Franskraal and Kraaibosch Dams	Franskraal (6.500)	Chemical dosing (Aluminium Chlorohydrate), flocculation, sedimentation, filtration (Rapid gravity sand filters), disinfection (Chlorine Gas) and stabilization (Soda Ash)
	Klipgat Fountain and De Kelders Caves Fountain.	De Kelders (1.600)	Ultrafiltration plus Reverse Osmosis Plant and disinfection (Sodium Hypochlorite)
Pearly Beach	Pearly Beach Springs and Koekemoer Dam	Pearly Beach (1.440)	Clarifier, Ultrafiltration Modules from Memcor, Chemical dosing (Sudfloc K300) and disinfection (Sodium Hypochlorite)
Baardskeerders-bos	Two Boreholes	Baardskeerdersbos (0.185)	pH adjustment, oxidation, settling, ultrafiltration and disinfection (Sodium Hypochlorite).
Buffeljags Bay	Borehole	-	Disinfection (Chlorine Tablets)

The existing water reticulation networks, pump stations and reservoirs are summarised in the table below for each of the water distribution systems.

Table A.3.3: Existing Water Infrastructure (Reticulation, Pump Stations and Reservoirs)						
Water Distribution System	**Water Distribution Networks**		**Number of Water PS**		**Reservoirs and Water Towers**	
	Bulk	**Internal**	**Raw Water**	**Potable Water**	**Number of Reservoirs & Water Towers**	**Total Storage in Ml**
	km	**km**	**Number of PS**	**Number of PS**		
Buffels River	15.326	123.859	-	4	6	6.267
Kleinmond	5.400	75.053	3	1	3	8.100
Greater Hermanus	41.586	328.807	1	6	21	38.446
Stanford	5.564	34.501	-	2	2	2.750
Greater Gansbaai	35.299	140.970	3	3	10	13.050
Pearly Beach	12.404	30.969	-	2	2	2.300
Baardskeerdersbos	0.858	4.952	-	1	1	0.150
Buffeljags Bay	2.575	0.469	-	-	1	0.096
Total Overstrand	**119.012**	**739.580**	**7**	**19**	**46**	**72.544**

The table below gives an overview of the major sewerage infrastructure components, for the various drainage systems, in Overstrand Municipality's Management Area.

Table A.3.4: Existing Sewerage Infrastructure							
Sewer Drainage Systems	**WWTWs and Treatment Processes**			**Sewer Drainage Network**		**Number of Sewer PS**	
	Hydraulic Capacity	**Organic Capacity**	**Treatment Processes**	**Rising**	**Gravity**	**Mun**	**Private**
	Ml/d	**kg COD/d**		**km**	**km**		
Buffels River	-	-	-	-	-	-	-
Kleinmond	2.000	2 906	Kleinmond Activated Sludge System	6.841	29.902	6	1
Greater Hermanus	0.700	968	Hawston Activated Sludge System	33.041	257.684	31	2
	12.000	9 000	Hermanus Activated Sludge System				
Stanford	1.200	1 200	Stanford Activated Sludge System	3.242	29.752	4	2
Greater Gansbaai	2.000	3 600	Gansbaai Nereda System	4.282	24.686	5	-
Pearly Beach	0.259	198	Eluxolweni Oxidation Pond System	0.941	5.245	1	1
Baardskeerdersbos	-	-	-	-	-	-	-
Buffeljags Bay	-	-	-	-	-	-	-
Total Overstrand				**48.347**	**347.269**	**47**	**6**

Rooi Els, Pringle Bay, Betty's Bay, De Kelders, Franskraal, Baardskeerdersbos and Buffeljags Bay are not currently serviced by a sewer reticulation system. The towns of Kleinmond, Fisherhaven, Hawston, Stanford, Gansbaai and Pearly Beach are partially serviced by a sewer system.

Table A.3.5: Refurbishment Need and O&M Occurrence

Component	Refurbishment Need				O&M Occurrence				Observation			
	High	Medium	Low	None	Regular	Periodic	Sporadic	None	Dysfunctional	Operational	Prime Condition	Vandalised
Boreholes	1	2	13	4	20	0	0	0	0	18	2	0
Abstraction points	0	2	4	6	12	0	0	0	0	7	5	0
Bulk water pipelines	0	2	6	0	8	0	0	0	0	8	0	0
Reservoirs	0	9	22	15	46	0	0	0	0	41	5	0
Water pump stations	1	9	10	6	26	0	0	0	0	25	1	0
WTW	0	2	5	1	8	0	0	0	0	6	2	0
Bulk sewer pipelines	0	0	5	0	5	0	0	0	0	5	0	0
Sewer pump stations	2	13	21	17	53	0	0	0	0	51	2	0
WWTW	0	3	3	0	6	0	0	0	0	5	1	0

Asset Management: An Asset Management Policy and a Maintenance Management Policy are in place for Overstrand Municipality. The objectives of the Asset Management Policy are to ensure the effective and efficient control of the municipality's assets. The Maintenance Management Policy applies to the ongoing maintenance of infrastructure assets, which include all water and sanitation assets.

An Asset Maintenance Plan was completed with the 2014 asset register used as the basis for the plan. The maintenance plans developed provide the municipality with a basis for establishing a planned maintenance approach for the municipality's full asset base. Funding requirements for the maintenance needs are based on the guidelines of the National Infrastructure Maintenance Strategy, which is based on a % of the value of the assets of the respective services.

Overstrand Municipality updated their current Asset Register after June 2025, in order to include the new assets constructed during the 2024/2025 financial year. The tables and graphs below give an overview of the current water and sewerage infrastructure included in Overstrand Municipality's Asset Register.

Water Infrastructure: The current replacement cost and carrying value of the water infrastructure of Overstrand Municipality is summarised in the table below (June 2025).

Table A.3.6: Current Replacement Cost and Carrying Value of the Water Infrastructure (June 2025)

Asset Type	CRC	CV	% CV / CRC
Dams	R11 119 399	R4 253 604	38.3%
Boreholes	R11 161 486	R14 305 618	128.2%
Bulk Water Pipelines	R123 598 903	R43 251 078	35.0%
Pump Stations	R49 252 052	R13 510 440	27.4%
Reservoirs	R120 153 764	R61 214 416	50.9%
Water Reticulation Pipelines	R672 015 685	R258 430 535	38.5%
Buffels River WTW	R13 813 820	R3 956 784	28.6%
Kleinmond WTW	R27 568 183	R9 719 158	35.3%
Preekstoel WTW	R78 510 492	R57 225 910	72.9%
Franskraal New WTW	R36 298 367	R16 219 659	44.7%
Franskraal Old WTW	R20 036 738	R2 167 076	10.8%
Baardskeerdersbos WTW	R6 724 089	R2 928 069	43.5%
Pearly Beach WTW	R8 154 514	R6 153 849	75.5%
De Kelders WTW	R18 982 042	R6 883 141	36.3%
Totals	**R1 197 389 534**	**R500 219 337**	**41.8%**

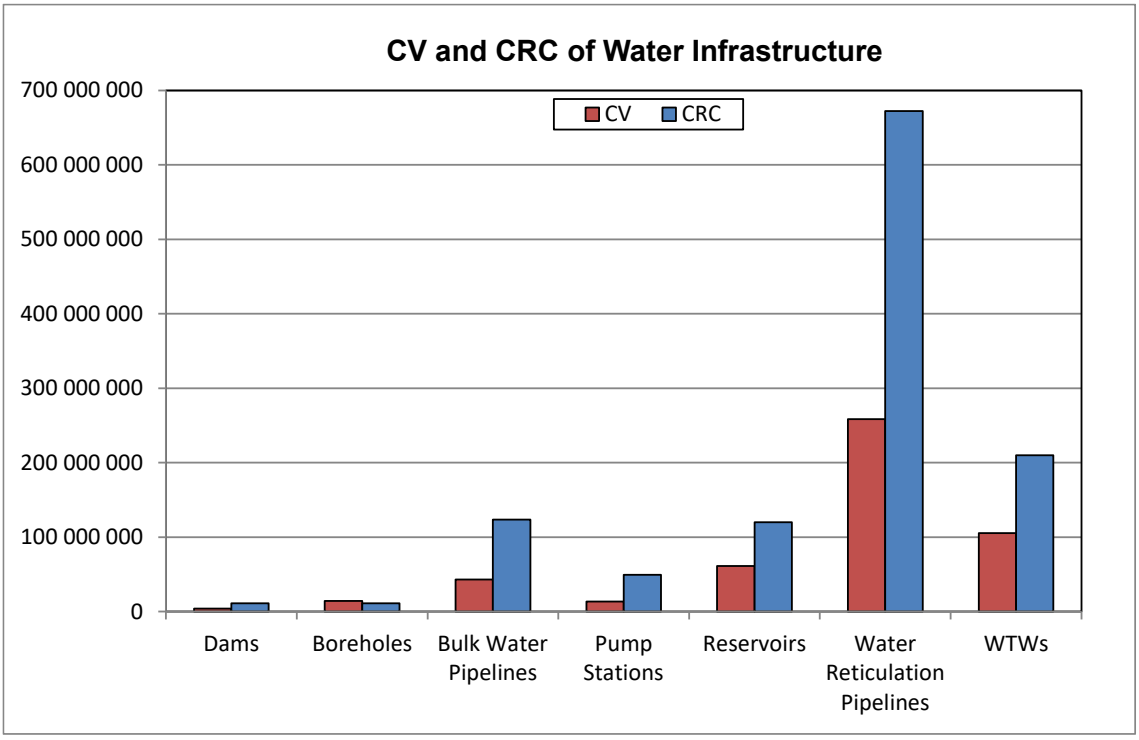


Figure A.3.1: CV and CRC of the Water Infrastructure

The information in the previous table indicates that 58.2% of the value of the water infrastructure has been consumed.

The following table and graph give an overview of the RUL by facility type for the water infrastructure (CRC).

Table A.3.7: Overview of the Remaining Useful Life by Facility Type for the Water Infrastructure – June 2025 (CRC)

Asset Type	0 – 5 yrs	6 – 10 yrs	11 – 15 yrs	16 – 20 yrs	> 20 yrs
Dams	R683 837	R0	R9 355 486	R0	R1 080 076
Boreholes	R6 276 361	R16 106	R472 226	R3 831	R4 392 962
Bulk Water Pipelines	R66 198 631	R1 975 841	R0	R15 095 773	R40 328 658
Pump Stations	R30 545 841	R376 639	R9 799 210	R42 141	R8 488 221
Reservoirs	R16 965 347	R414 640	R74 528 115	R22 986	R28 222 676
Water Reticulation Pipelines	R430 530 394	R21 023 530	R0	R15 986 449	R204 475 312
Buffels River WTW	R5 818 205	R0	R7 990 365	R0	R5 250
Kleinmond WTW	R3 945 863	R18 819	R16 563 102	R0	R7 040 399
Preekstoel WTW	R15 606 908	R976 366	R1 210 941	R1 252 606	R59 463 671
Franskraal New WTW	R14 426 952	R63 424	R446 210	R0	R21 361 781
Franskraal Old WTW	R7 581 351	R6 955	R12 448 432	R0	R0
Baardskeerdersbos WTW	R5 208 877	R65 430	R0	R163 880	R1 285 902
Pearly Beach WTW	R2 760 811	R2 652 030	R279 874	R2 198	R2 459 601
De Kelders WTW	R13 161 873	R0	R242 892	R213 953	R5 363 324
Totals	**R619 711 251**	**R27 589 780**	**R133 336 853**	**R32 783 817**	**R383 967 833**

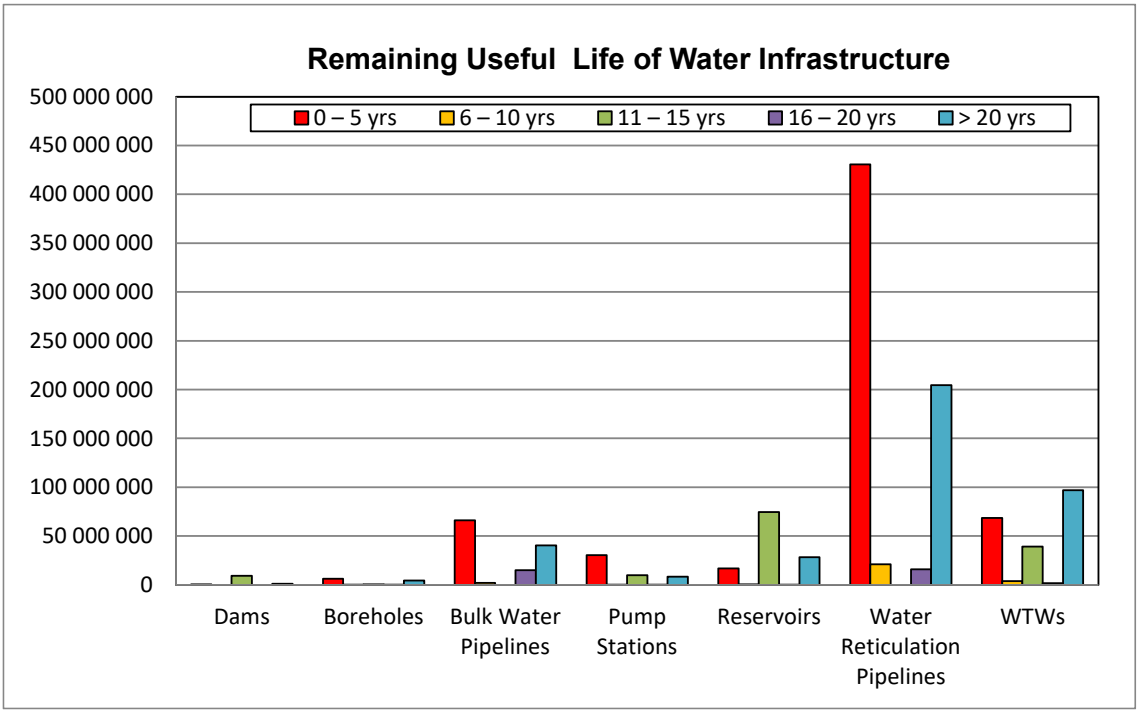


Figure A.3.2: Remaining Useful Life of the Water Infrastructure

The following table and graph give an overview of the age distribution by facility type for the water infrastructure (CRC).

Table A.3.8: Overview of the Age Distribution by Facility Type for the Water Infrastructure – June 2025 (CRC)

Asset Type	0 – 5 yrs	6 – 10 yrs	11 – 15 yrs	16 – 20 yrs	> 20 yrs
Dams	R0	R549 065	R0	R134 772	R10 435 562
Boreholes	R0	R0	R4 407 505	R6 043 603	R 710 378
Bulk Water Pipelines	R0	R0	R7 543 865	R17 231 912	R98 823 126
Pump Stations	R0	R0	R5 413 056	R20 393 630	R23 445 366
Reservoirs	R0	R186 225	R1 914 833	R14 444 297	R103 608 409
Water Reticulation Pipelines	R0	R17 743 627	R42 011 620	R226 026 175	R386 234 263
Buffels River WTW	R0	R364 073	R0	R4 099 423	R9 350 324
Kleinmond WTW	R0	R0	R0	R5 138 930	R22 429 253
Preekstoel WTW	R0	R0	R76 023 040	R1 955 146	R532 306
Franskraal New WTW	R0	R31 823	R36 266 544	R0	R0
Franskraal Old WTW	R0	R0	R0	R562 970	R19 473 768
Baardskeerdersbos WTW	R0	R0	R6 724 089	R0	R0
Pearly Beach WTW	R0	R0	R0	R6 851 773	R1 302 741
De Kelders WTW	R0	R0	R18 982 042	R0	R0
Totals	**R0**	**R18 874 813**	**R199 286 594**	**R302 882 631**	**R676 345 496**

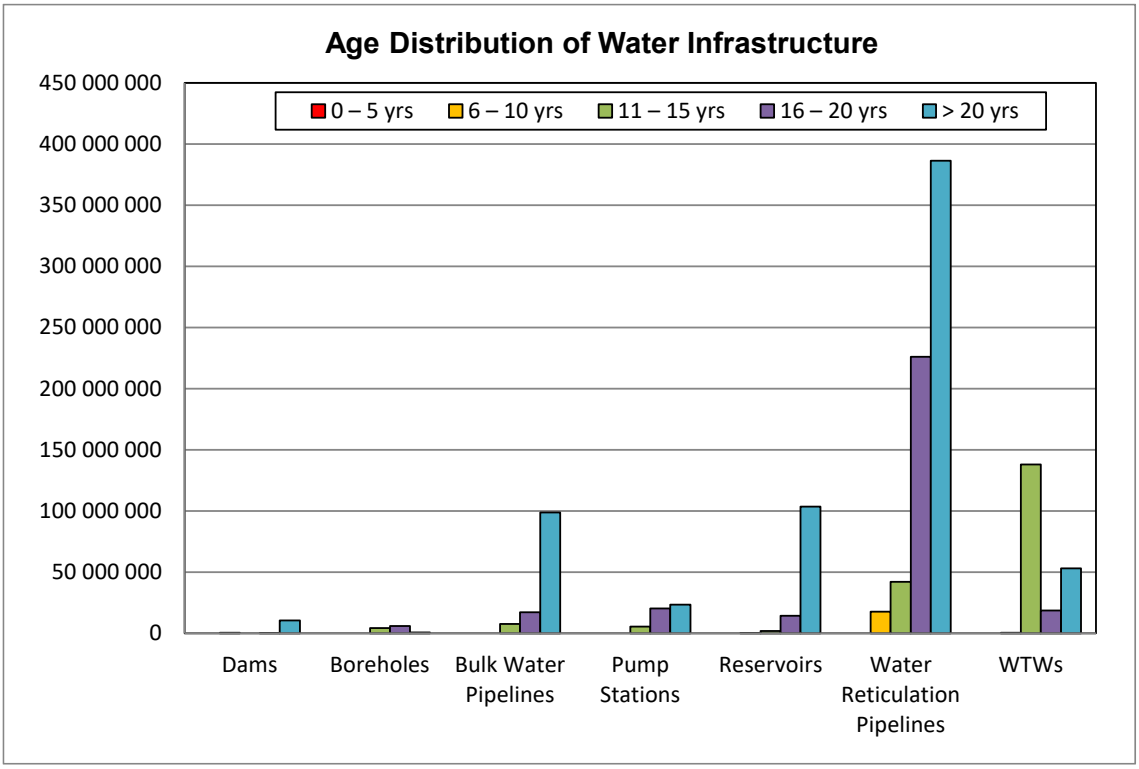


Figure A.3.3: Age Distribution of the Water Infrastructure

The following table and graph give an overview of the condition grading by facility type for the water infrastructure (CRC).

Table A.3.9: Overview of the Condition Grading by Facility Type for the Water Infrastructure – June 2025 (CRC)

Asset Type	Very Poor	Poor	Fair	Good	Very Good
Dams	R0	R0	R10 570 334	R0	R549 065
Boreholes	R186 545	R78 365	R8 468 951	R2 411 330	R16 295
Bulk Water Pipelines	R66 198 631	R1 975 841	R22 840 656	R9 505 682	R23 078 093
Pump Stations	R921 951	R6 103 315	R31 217 742	R10 752 696	R256 348
Reservoirs	R5 006 986	R3 691 538	R80 415 707	R30 254 328	R785 205
Water Reticulation Pipelines	R298 456 471	R21 611 487	R183 014 720	R34 586 097	R134 346 910
Buffels River WTW	R0	R409 206	R12 947 079	R93 462	R364 073
Kleinmond WTW	R7 164	R3 168	R20 299 016	R5 851 745	R1 407 090
Preekstoel WTW	R0	R550 608	R16 234 675	R40 817 863	R20 907 346
Franskraal New WTW	R0	R0	R17 242 946	R18 219 366	R836 055
Franskraal Old WTW	R817 309	R6 142 278	R13 077 151	R0	R0
Baardskeerdersbos WTW	R0	R0	R555 518	R2 244 433	R3 924 138
Pearly Beach WTW	R0	R0	R914 226	R3 061 412	R4 178 876
De Kelders WTW	R0	R0	R5 815 836	R1 969 276	R11 196 930
Totals	**R371 595 057**	**R40 565 806**	**R423 614 557**	**R159 767 690**	**R201 846 424**

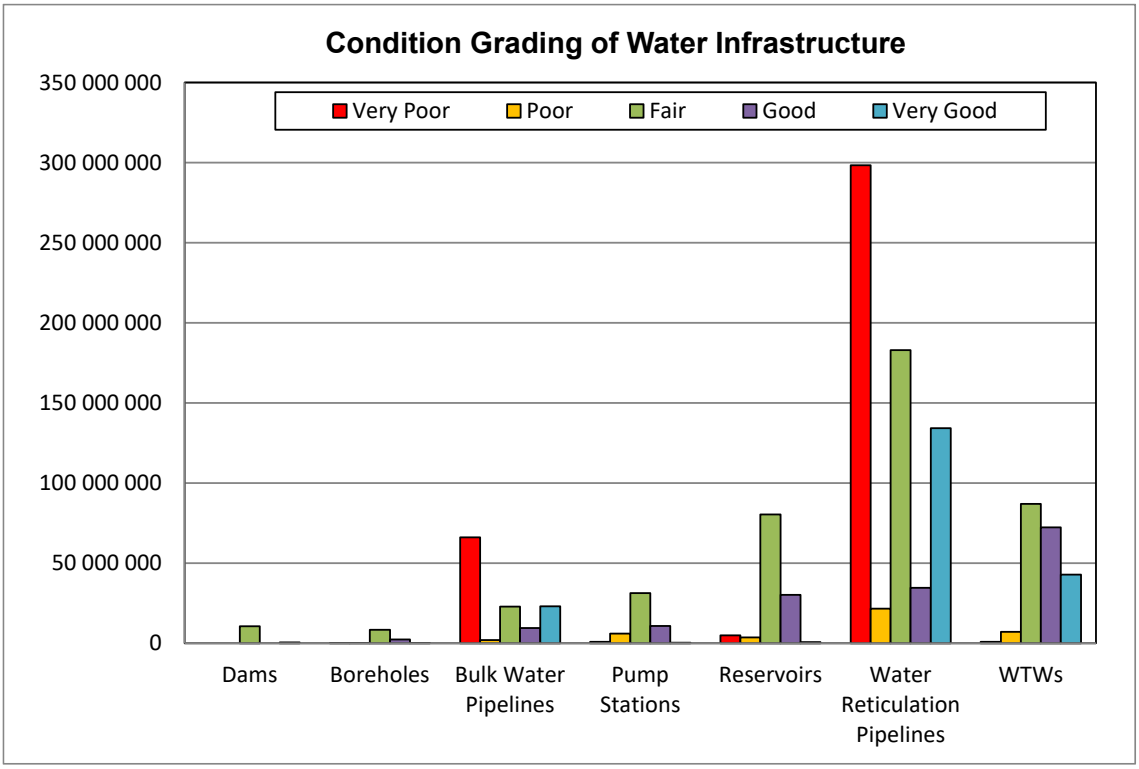


Figure A.3.4: Condition Grading of the Water Infrastructure

Sewerage Infrastructure: The current replacement cost and carrying value of the sewerage infrastructure of Overstrand Municipality is summarised in the table below (June 2025).

Table A.3.10: Current Replacement Cost and Carrying Value of the Sewerage Infrastructure (June 2025)

Asset Type	CRC	CV	% CV / CRC
Sanitation Pump Stations	R36 815 888	R34 542 677	93.8%
Sewer Reticulation Pipelines	R417 612 440	R309 663 146	74.2%
Stanford WWTW	R18 563 529	R19 481 113	104.9%
Hermanus WWTW	R75 734 100	R51 665 078	68.2%
Hawston WWTW	R13 438 372	R3 489 222	26.0%
Kleinmond WWTW	R13 430 196	R51 855 541	386.1%
Gansbaai WWTW	R34 135 896	R7 041 861	20.6%
Pearly Beach WWTW	R11 060 449	R6 531 578	59.1%
Totals	**R620 790 870**	**R484 270 216**	**78.0%**

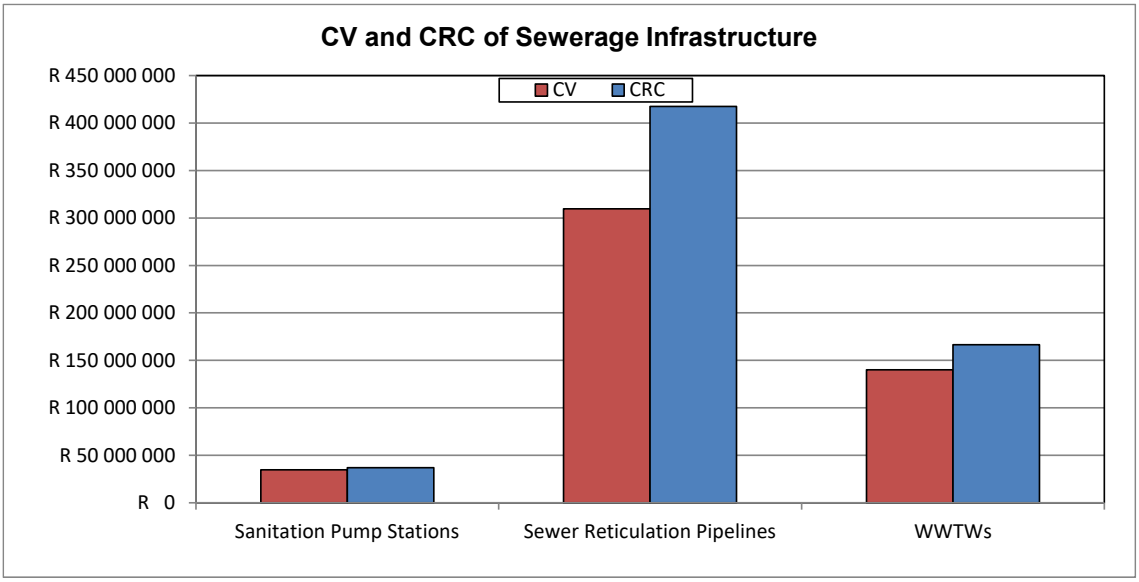


Figure A.3.5: CV and CRC of the Sewerage Infrastructure

The information in the previous table indicates that 22.0% of the value of the sewerage infrastructure has been consumed.

The following table and graph give an overview of the RUL by facility type for the sewerage infrastructure (CRC):

Table A.3.11: Overview of the Remaining Useful Life by Facility Type for the Sewerage Infrastructure – June 2025 (CRC)

Asset Type	0 – 5 yrs	6 – 10 yrs	11 – 15 yrs	16 – 20 yrs	> 20 yrs
Sanitation Pump Stations	R21 899 673	R1 255 725	R10 464 745	R0	R3 195 745
Sewer Reticulation Pipelines	R14 852 744	R47 237 847	R20 256 058	R26 104 631	R309 161 160
Stanford WWTW	R11 235 991	R277 773	R5 697 748	R0	R1 352 017
Hermanus WWTW	R51 318 492	R1 558 568	R10 161 476	R26 072	R12 669 492
Hawston WWTW	R7 819 304	R923 731	R2 066 358	R0	R2 628 979
Kleinmond WWTW	R9 157 208	R131 212	R1 816 069	R0	R2 325 707
Gansbaai WWTW	R24 017 522	R782 672	R3 575 748	R0	R5 759 954
Pearly Beach WWTW	R787 053	R2 975	R0	R0	R10 270 421
Totals	**R141 087 987**	**R52 170 503**	**R54 038 202**	**R26 130 703**	**R347 363 475**

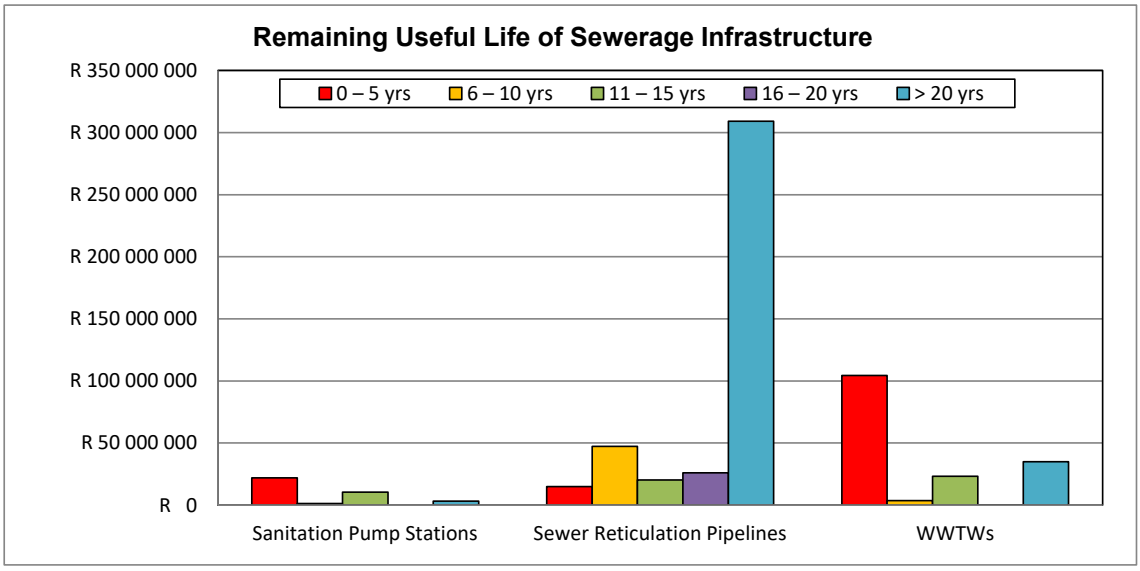


Figure A.3.6: Remaining Useful Life of the Sewerage Infrastructure

The following table and graph give an overview of the age distribution by facility type for the sewerage infrastructure (CRC).

Table A.3.12: Overview of the Age Distribution by Facility Type for the Sewerage Infrastructure – June 2025 (CRC)					
Asset Type	**0 – 5 yrs**	**6 – 10 yrs**	**11 – 15 yrs**	**16 – 20 yrs**	**> 20 yrs**
Sanitation Pump Stations	R0	R1 698 747	R7 750 910	R15 406 886	R11 959 345
Sewer Reticulation Pipelines	R0	R10 815 049	R21 142 544	R40 807 580	R344 847 267
Stanford WWTW	R0	R0	R1 039 451	R9 639 650	R7 884 428
Hermanus WWTW	R0	R35 182	R50 033 091	R5 003 820	R20 662 007
Hawston WWTW	R0	R0	R1 634 987	R7 057 145	R4 746 240
Kleinmond WWTW	R0	R0	R2 840 619	R6 310 638	R4 278 939
Gansbaai WWTW	R0	R0	R7 925 135	R13 396 202	R12 814 559
Pearly Beach WWTW	R0	R11 060 449	R0	R0	R0
Totals	**R0**	**R23 609 427**	**R92 366 737**	**R97 621 921**	**R407 192 785**

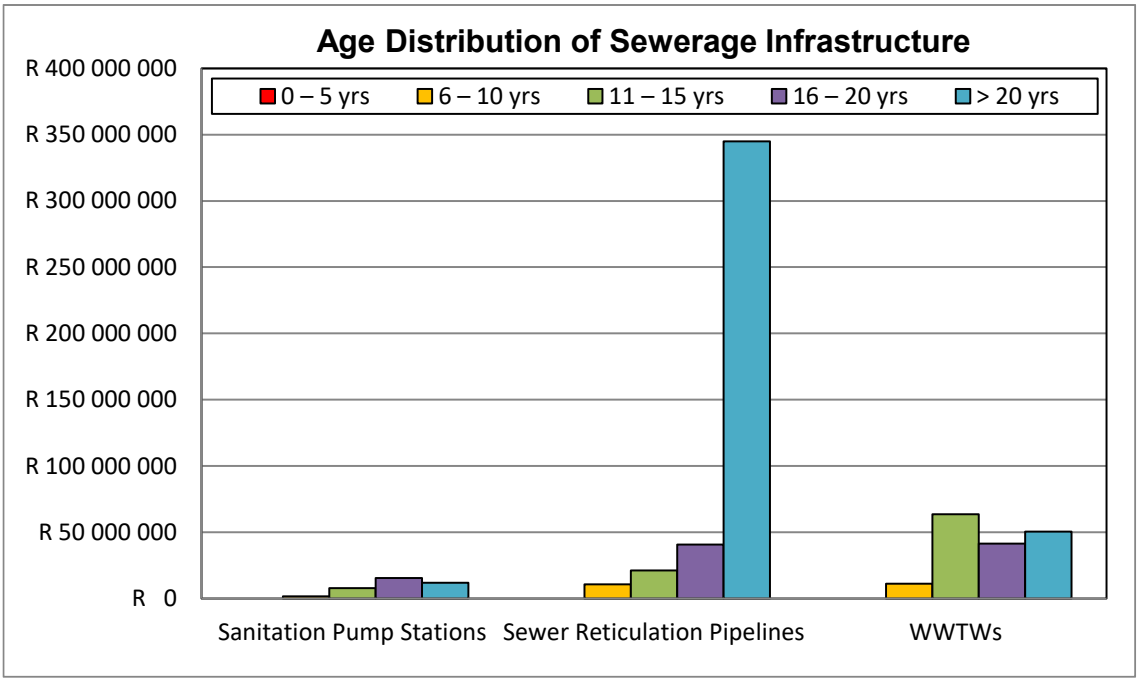


Figure A.3.7: Age distribution of the Sewerage Infrastructure

The following table and graph give an overview of the condition grading by facility type for the sewerage infrastructure (CRC).

Table A.3.13: Overview of the Condition Grading by Facility Type for the Sewerage Infrastructure – June 2025 (CRC)					
Asset Type	**Very Poor**	**Poor**	**Fair**	**Good**	**Very Good**
Sanitation Pump Stations	R14 990	R882 871	R32 375 817	R2 625 619	R916 591
Sewer Reticulation Pipelines	R4 663 675	R60 105 948	R164 745 682	R143 290 758	R44 806 377
Stanford WWTW	R0	R531 791	R15 306 978	R2 724 760	R0
Hermanus WWTW	R5 223 413	R5 777 044	R36 523 882	R21 672 302	R6 537 459
Hawston WWTW	R0	R711 930	R12 221 462	R504 980	R0
Kleinmond WWTW	R 25 913	R247 615	R8 888 853	R4 267 815	R0
Gansbaai WWTW	R3 435 802	R307 842	R17 963 942	R12 428 310	R0
Pearly Beach WWTW	R0	R58 022	R634 266	R6 775 369	R3 592 792
Totals	**R13 363 793**	**R68 623 063**	**R288 660 882**	**R194 289 913**	**R55 853 219**

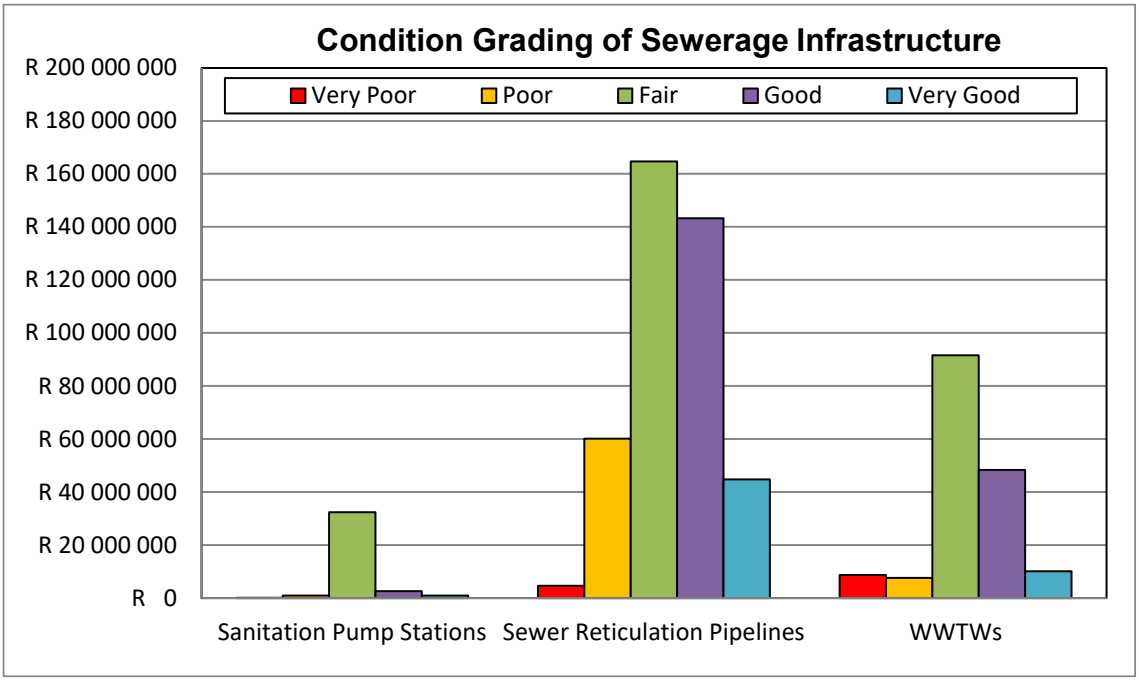


Figure A.3.8: Condition Grading of the Sewerage Infrastructure

The CRC of the water and sewerage infrastructure that will need to be replaced over the next five years (RUL <5 yrs) is R760.799 million. The asset renewal needs for the water infrastructure assets over the next ten years is R64.730 million per year. The reinvestment required is R619.711 million in the first five years and R27.590 million in the second five-year period. The age of 56.5% of the water infrastructure assets is greater than twenty years. The CRC of the water infrastructure with a condition grading of "Very Poor" is R371.595 million. The asset renewal needs for the sewerage infrastructure assets over the next ten years is R19.326 million per year. The reinvestment required is R141.088 million in the first five years and R52.171 million in the second five-year period. The age of 65.6% of the sewerage infrastructure assets is greater than twenty years. The CRC of the sewerage infrastructure with a condition grading of "Very Poor" is R13.364 million.

Some of the key challenges of Overstrand Municipality are to secure adequate funds for the rehabilitation and maintenance of their existing infrastructure, which is critical to ensure the sustainability of the services that are provided by the Municipality. The Water and Wastewater Bulk Works Contract ensures that the new technology installed is adequately maintained and operated in order to prevent a massive increase in maintenance in the future due to backlog being created (Objective is asset preservation). This Bulk Works Contract addresses the capacity constraints, the Municipality previously experienced, with regard to the operation and maintenance of the WTWs and WWTWs (Objectives are skills development and retention and long-term improvement of efficiency of operations).

It is however still important for the Municipality to secure adequate funding for major refurbishment and maintenance work, the provision of bulk infrastructure and development of additional sources to keep up with the high demand for services.

Disaster Management Plan: An updated 2025/2026 Disaster Management Plan is available for Overstrand Municipality, which forms an integral part of the Municipality's IDP and anticipate the types of disasters that are likely to occur in the municipal area as well as their possible effects. The Disaster Management Plan place emphasis on measures that reduce the vulnerability of disaster prone areas, communities and households.

Overstrand Municipality has a functional Fire and Disaster management Department within the Directorate: Protection Services. A Joint Operation Centre (JOC) is activated as and when the need arises. The JOC is operated from the Fire station in Hermanus. No Disaster Management Advisory Forum is established, because such a committee already exists which plays a similar role.

Untreated Effluent Management Plan: All effluent discharged in the urban areas in Overstrand Municipality are treated at the existing WWTWs and there is no known untreated effluent discharged to the environment. A W_2RAP is in place for all the wastewater treatment systems.

TOPIC 4: WATER SERVICES OPERATION AND MANAGEMENT

Maintenance is usually practiced in two forms, preventative maintenance and corrective maintenance. A third form is called design-out maintenance, which is rather an aspect of the design considerations when the infrastructure is planned.

The existing Water and Wastewater Bulk Works Contract assists Overstrand Municipality with the operation and maintenance of their bulk water and sewerage infrastructure. Pipe bursts and other serious damage to pipes immediately interrupts services to the affected area and is rapidly addressed by Overstrand Municipality. O&M is a continuous process for Overstrand Municipality involving various activities, with the ultimate purpose of delivering good quality services to all customers at all times and keeping the percentage of water lost through pipe bursts and other serious damage to pipes as low as possible. Overstrand Municipality's O&M Plan depends on a range of factors such as the age and condition of the water supply system, requirements of the Municipality and DWS as the regulating authority, the availability of staff, plant, equipment, spares, money and other resources.

Operation and Maintenance Manuals and Emergency Preparedness Plans were drafted for the Mossel River Dam and the De Bos Dam during the 2021/2022 financial year.

Overstrand Municipality and the Contractor responsible for the Bulk Works Contract also have standby teams available after hours and over weekends, besides the planned and scheduled O&M activities, in order to allow for unscheduled responses to service breakdowns due to mal-functioning equipment, vandalism, emergency situations, etc. This allows Overstrand Municipality to be able to quickly assess service breakdowns and re-allocate staff and resources to do unscheduled repairs, and then quickly return to the regular and scheduled O&M activities. The Municipality and the Contractor also ensure that sufficient repair materials, consumables and back-up equipment are also readily available for any potential breakdowns.

Table A.4.1: Operation and Maintenance

Compliancy	Existing Groundwater Infrastructure	Existing Surface Water Infrastructure	Existing WTW Infrastructure	Existing WWTW Infrastructure	Existing Pump Station Infrastructure	Existing Bulk Pipeline Infrastructure	Existing Tower & Reservoir Infrastructure	Existing Reticulation Infrastructure
Resources	Above min. requirement	Above min. requirement	Above min. requirement	Above min. requirement	Above min. requirement	Above min. requirement	Above min. requirement	Above min. requirement
Information	Above min. requirement	Above min. requirement	Above min. requirement	Above min. requirement	Above min. requirement	Above min. requirement	Above min. requirement	Above min. requirement
Activity Control & Management	Above min. requirement	Above min. requirement	Above min. requirement	Above min. requirement	Above min. requirement	Above min. requirement	Above min. requirement	Above min. requirement

TOPIC 5: CONSERVATION AND DEMAND MANAGEMENT

Overstrand Municipality's 2024/2025 performance with regard to the Key Performance Indicators included in the Revised Compulsory National Water and Sanitation Standards, as published in the Government Gazette No.52814 of 6 June 2025, is indicated in the table below for the various water distribution systems.

Table A.5.1: Overstrand Municipality's performance with regard to the WC/WDM KPIs for 2024/2025

Water Distribution System	NRW 20%-30%	Water Losses 10% - 20%	ILI 2 - 4	Per Capita Usage 120 – 180 l/c/d
Buffels River	37.33%	31.37%	2.36	295
Kleinmond	42.67%	41.75%	4.58	132
Greater Hermanus	27.00%	26.43%	3.14	95
Stanford	40.93%	40.43%	4.66	100
Greater Gansbaai	31.68%	31.06%	3.23	84
Pearly Beach	25.80%	25.25%	1.13	205
Baardskeerdersbos	34.71%	33.65%	1.72	223
Buffeljags Bay	68.17%	67.94%	64.38	45
Overstrand Municipality	**31.21%**	**30.15%**	**3.05**	**103**

Note: Comply with KPI / Do not comply with KPI

The implementation of the Municipality's WDM Strategy and Action Plan have been extremely successful, with the overall raw water requirements for all the systems decreasing from 9 206 Ml in 2008/2009 to 7 028 Ml in 2011/2012 (annual decrease of -8.6% over three-year period), due to the severe drought in 2010 and 2011. There was a steady increase in raw water requirements over the last thirteen years from the 7 028 Ml in 2011/2012 to 9.879 Ml in 2024/2025 (average annual increase of 2.65% over last thirteen years). The overall NRW for all the systems for the 2024/2025 financial year was 2 864 Ml (31.21%) and the overall water losses were 2 766 Ml (30.15%).

The table below give a summary of the Treatment Losses, NRW, Water Losses and ILIs for the various distribution systems, as calculated through the WSDP process.

Table A.5.2: Treatment Losses, NRW, Water Losses and ILIs for the Various Water Distribution Systems

System	Component	Unit	Record: Prior (Ml/a)					24/25
			19/20	20/21	21/22	22/23	23/24	
Buffels River	Treatment Losses	Volume	79.606	14.959	51.005	26.640	12.232	10.516
		Percentage	10.37%	1.94%	6.47%	3.97%	1.56%	1.35%
	NRW	Volume	335.271	383.457	358.678	232.091	345.377	285.971
		Percentage	48.70%	50.60%	48.65%	35.99%	44.83%	37.33%
	Water Losses	Volume	302.971	330.845	295.471	169.546	286.476	240.348
		Percentage	44.01%	43.66%	40.08%	26.29%	37.19%	31.37%
	ILI		3.00	3.44	3.04	1.73	2.83	2.36
	The current treatment losses of below 5% are at an excellent level. The NRW and Water Losses decreased over the last financial year, which are excellent. The NRW percentage is above the DWS's target of 30% and the Municipality needs to continue with the implementation of specific WC/WDM measures to reduce the NRW and water losses. The Municipality needs to work towards a NRW target below 30% and a water losses target below 25% for the Buffels River system. The ILI value of 2.36 indicates a good system and no urgent action is required, but the NRW and Water Losses should however be monitored carefully.							
Kleinmond	Treatment Losses	Volume	73.584	75.267	61.360	86.275	63.585	54.624
		Percentage	8.19%	8.55%	7.04%	9.40%	6.29%	5.11%
	NRW	Volume	276.922	289.372	281.074	287.316	392.380	433.103
		Percentage	33.57%	35.94%	34.69%	34.54%	41.43%	42.67%
	Water Losses	Volume	273.090	282.963	269.958	283.332	384.712	423.765
		Percentage	33.11%	35.15%	33.32%	34.06%	40.62%	41.75%
	ILI		3.30	3.11	2.96	3.09	4.17	4.58
	The current treatment losses of below 10% are at an acceptable level. The NRW and water losses increased slightly over the last financial year. The NRW percentage is above the DWS's target of 30% and the Municipality needs to continue with the implementation of specific WC/WDM measures to reduce the NRW and water losses. The Municipality needs to work towards a NRW target below 30% and a water losses target below 25% for Kleinmond. The current ILI value above 4.0 indicates a poor management system, which require specific NRW and water loss reduction interventions.							
Greater Hermanus	Treatment Losses	Volume	445.591	217.909	194.527	113.774	196.668	255.258
		Percentage	10.79%	5.14%	4.56%	2.67%	4.12%	4.75%
	NRW	Volume	430.532	960.986	753.296	816.989	1 186.105	1 380.614
		Percentage	11.69%	23.88%	18.50%	19.67%	25.90%	27.00%
	Water Losses	Volume	416.581	947.239	702.134	782.891	1 155.771	1 351.655
		Percentage	11.31%	23.54%	17.25%	18.85%	25.23%	26.43%
	ILI		0.98	2.23	1.62	1.77	2.70	3.14
	The current treatment losses of below 5% are at an excellent level. The NRW and water losses increased during the last financial year, but are still below DWS's target of 30% for NRW. The Municipality needs to work towards a NRW target below 25% and a water losses target below 20% for Hermanus. The ILI value between 2.0 and 4.0 indicates a good management system and no urgent action is required, but the NRW and Water Losses should however be monitored carefully.							
Stanford	Treatment Losses	Volume	40.381	143.545	197.305	235.534	134.894	115.904
		Percentage	11.05%	32.15%	42.08%	47.26%	24.59%	18.36%
	NRW	Volume	93.141	79.613	17.035	13.485	129.046	210.916
		Percentage	28.65%	26.28%	6.27%	5.13%	31.19%	40.93%
	Water Losses	Volume	91.463	78.036	13.758	11.884	126.448	208.328
		Percentage	28.14%	25.76%	5.07%	4.52%	30.57%	40.43%
	ILI		4.31	2.27	0.39	0.33	3.39	4.66
	The treatment losses of the RO plant is closely monitored by the Municipality to ensure that it is at acceptable levels. The NRW and water losses for the 21/22 and 22/23 financial years were very low for Stanford. The Municipality recently installed a new bulk water meter in order to ensure that readings for the calculation of the							

Table A.5.2: Treatment Losses, NRW, Water Losses and ILIs for the Various Water Distribution Systems								
System	Component	Unit	Record: Prior (Ml/a)					24/25
			19/20	20/21	21/22	22/23	23/24	
	NRW and Water are accurate. The 23/24 NRW were just above DWS's target of 30%, but the NRW for the last financial year increased drastically, which is a concern. The Municipality needs to work towards a NRW target below 30% and a water losses target below 25% for Stanford. The current ILI value above 4.0 indicates a poor management system, which require specific NRW and water loss reduction interventions.							
Greater Gansbaai	Treatment Losses	Volume	64.025	97.49	120.239	83.200	115.808	73.405
		Percentage	5.45%	8.69%	10.64%	6.55%	9.17%	5.58%
		Volume	69.012	79.262	69.131	83.545	114.187	165.799
		Percentage	19.68%	22.89%	19.71%	23.11%	25.11%	33.13%
	NRW	Volume	390.657	308.492	308.847	455.188	454.827	499.286
		Percentage	28.07%	23.89%	23.92%	31.08%	30.56%	31.68%
	Water Losses	Volume	384.859	303.451	294.694	450.605	444.798	489.460
		Percentage	27.66%	23.50%	22.82%	30.77%	29.89%	31.06%
	ILI		3.03	2.26	2.13	3.16	2.90	3.23
	The treatment losses of the De Kelders RO plant are closely monitored by the Municipality to ensure that it is at acceptable levels. The current treatment losses of below 10% for the Franskraal plant are at an acceptable level. The NRW and water losses increased slightly during the last financial year and is just above the DWS's NRW target of 30%. The Municipality needs to continue with the implementation of specific WC/WDM measures to reduce the NRW and water losses. The Municipality needs to work towards a NRW target below 30% and a water losses target below 25% for the Greater Gansbaai system. The ILI value between 2.0 and 4.0 indicates a good management system and no urgent action is required, but the NRW and Water Losses should however be monitored carefully.							
Pearly Beach	Treatment Losses	Volume	4.891	4.756	-6.419	7.263	18.823	26.221
		Percentage	3.15%	3.10%	-4.35%	4.89%	10.93%	13.94%
	NRW	Volume	46.005	44.318	41.065	25.787	43.359	41.758
		Percentage	30.57%	29.81%	26.65%	18.25%	28.28%	25.80%
	Water Losses	Volume	45.166	43.574	39.415	25.284	42.463	40.864
		Percentage	30.02%	29.31%	25.58%	17.89%	27.69%	25.25%
	ILI		2.81	1.26	1.12	0.70	1.18	1.13
	The current treatment losses are between 10% and 15%, which are still at an acceptable level. The NRW and Water Losses decreased over the last financial year, which is excellent. The current NRW percentage is below DWS's target of 30% for NRW. The Municipality needs to work towards a NRW target below 25% and a water losses target below 20% for Pearly Beach. The ILI value indicates an excellent system, with no immediate intervention required and the Municipality needs to keep the ILI level below 2.							
Baardskeerdersbos	Treatment Losses	Volume	2.637	2.603	3.202	2.229	3.078	2.188
		Percentage	14.40%	14.67%	19.02%	11.56%	13.45%	10.09%
	NRW	Volume	6.941	7.918	5.883	8.125	8.546	6.771
		Percentage	44.28%	52.31%	43.14%	47.67%	43.14%	34.71%
	Water Losses	Volume	6.834	7.871	5.738	7.640	8.243	6.565
		Percentage	43.60%	52.00%	42.08%	44.82%	41.61%	33.65%
	ILI		2.12	2.35	1.71	2.26	2.17	1.72
	The current treatment losses are between 10% and 15%, which are still at an acceptable level. The NRW and water losses decreased during the last financial year, which are excellent. The current NRW and water losses are however still high. The NRW percentage is above the DWS's target of 30% and the Municipality needs to continue with the implementation of specific WC/WDM measures to reduce the NRW and water losses. The Municipality needs to work towards a NRW target below 30% and a water losses target below 25% for Baardskeerdersbos. The ILI value indicates an excellent system, with no immediate intervention required and the Municipality needs to keep the ILI level below 2.							
Buffeljags Bay	Treatment Losses	Volume	-0.139	-0.220	0.247	0.182	0.063	0.060
		Percentage	-2.77%	-3.89%	4.49%	3.10%	0.89%	0.74%
	NRW	Volume	0.930	3.156	2.299	1.998	3.417	5.467
		Percentage	18.03%	53.68%	43.73%	35.11%	48.56%	68.17%
	Water Losses	Volume	0.901	3.127	2.243	1.986	3.381	5.449
		Percentage	17.46%	53.19%	42.67%	34.90%	48.05%	67.94%
	ILI		4.95	33.80	24.25	21.47	39.94	64.38
	The bulk distribution losses of below 5% are at an excellent level. The NRW and Water Losses increased drastically over the last financial year, which is of concern. The current NRW and water losses are extremely high and above the DWS's NRW target of 30%. The Municipality needs to continue with the implementation of specific WC/WDM measures to reduce the NRW and water losses. The Municipality needs to work towards a NRW target below 40% and a water losses target below 30% for Buffeljags Bay. The current ILI value of 64.38 is extremely high, which requires immediate water loss reduction interventions.							

Table A.5.2: Treatment Losses, NRW, Water Losses and ILIs for the Various Water Distribution Systems								
System	Component	Unit	Record: Prior (Ml/a)					24/25
			19/20	20/21	21/22	22/23	23/24	
TOTAL	NRW	Volume	1 580.399	2 077.312	1 768.177	1 840.979	2 563.057	2 863.886
		Percentage	22.31%	28.26%	24.04%	24.48%	30.59%	31.21%
	Water Losses	Volume	1 521.865	1 997.106	1 623.411	1 733.168	2 452.293	2 766.435
		Percentage	21.48%	27.17%	22.07%	23.04%	29.27%	30.15%
	ILI		1.83	2.32	1.85	1.94	2.73	3.05
	The NRW and water losses for all the systems combined increased slightly during the last financial year. The overall NRW is just above DWS's target of 30%. The Municipality needs to work towards a NRW target below 30% and a water losses target below 25%. The ILI value between 2.0 and 4.0 indicates good management systems and no urgent action is required, but the NRW and Water Losses should however be monitored carefully.							

Infrastructure Leakage Index (ILI) for Developed Countries = **1 – 2 Excellent (Category A)**, **2 – 4 Good (Category B)**, **4 – 8 Poor (Category C)** and > **8 – Very Bad (Category D)**

Category A = No specific intervention required.

Category B = No urgent action required although should be monitored carefully.

Category C = Requires attention

Category D = Requires immediate water loss reduction interventions

The Billed Metered Consumption figures up to 2019/2020 included the raw water volumes supplied from the different raw water pipelines to consumers, as well as the volume of treated effluent re-used by consumers. These volumes were excluded from the 2020/2021 financial year onwards and therefore the drastic increase in the NRW and Water Losses from the 2020/2021 financial year onwards, especially for the Greater Hermanus system.

The Infrastructure Leakage Index (ILI) in the above table is the most recent and preferred performance indicator for comparing leakage from one system to another. It is a non-dimensional index representing the ratio of the current real leakage and the "Unavoidable Annual Real Losses". A high ILI value indicates a poor performance with large potential for improvement while a small ILI value indicates a well-managed system with less scope for improvement. Attaining an ILI = 1 is a theoretical limit, which is the minimum water loss in an operational water reticulation system. A value of less than 1 should not occur since this implies that the actual leakage is less than the theoretical minimum level of leakage.

The table below gives an overview of the System Input Volume, Average Billed Metered Consumption and NRW in litre per connection per day for the various water distribution systems for the 2024/2025 financial year.

Table A.5.3: System Input Volume, Average Billed Metered Consumption and NRW in Litre per Connection per Day for the various Water Distribution Systems for 2024/2025									
Water Balance Component	Buffels River	Kleinmond	Greater Hermanus	Stanford	Greater Gansbaai	Pearly Beach	Baardskeer-dersbos	Buffeljags Bay	Overstrand Municipality
System Input Volume	483	672	618	688	520	241	534	732	**580**
Average Billed Metered Cons.	315	385	451	407	355	179	349	233	**399**
Non-Revenue Water	168	287	167	282	165	62	186	499	**181**

The system with the highest system input volume and NRW per connection per day is Buffeljags Bay. The system with the highest average billed metered consumption per connection per day is Hermanus.

The table below gives an overview of the various WC/WDM measures and whether the measures are adequately addressed by Overstrand Municipality.

Table A.5.4: Resources available to reduce water losses and water inefficiencies		
Reducing water losses and water inefficiencies	**In Place**	**Assessment Score**
Night flow metering	Yes	80%
Day flow metering	Yes	80%
Reticulation leaks	Yes	80%
Illegal connections	Yes	80%
Un-metered connections	Yes	80%
Leak and meter repair programmes. Consumer units targeted by:		
Leak repair assistance programme	Yes	80%
Retro-fitting of water inefficient toilets	Yes	80%
Meter repair programme	Yes	80%
Consumer/end-use demand management: Public Information & Education Programmes		
Schools targeted by education programmes	Yes	80%
Consumers targeted by public information programmes	Yes	80%

Note: The score of 80% in the above table is Excellent, which is the highest score in DWS's eWSDP website.

Overstrand Municipality is committed to reduce the percentage of NRW for the various water distribution systems to below DWS target of 30%. The Municipality's WDM Strategy and Action Plan include the following key activities (June 2025 progress in brackets):

- Continue with pipe replacement in priority areas with old reticulation networks and history of frequent pipe failures (2018/2019 to 2024/2025 phases included Rooi-Els, Pringle Bay, Betty's Bay, Kleinmond, Northcliff, Vermont, Zwelihle and Voëlklip);
- Continued operation and maintenance of intelligent pressure management systems in Stanford, Kleinmond and Betty's Bay. Municipality is implementing pressure management in De Kelders in 2025/2026;
- The phased pro-active replacement of older water meters to be continued in 2025/2026;
- Review and improve efficiency of remote monitoring of minimum night flows in all zones (On-going maintenance and extension of SCADA and telemetry systems).
- Link properties with distribution zones in financial data base to enable water balance in smaller areas (ongoing in all areas);
- Enhance public awareness on general water and water demand management issues, e.g. the watering of gardens as determined by the bylaws, rainwater harvesting, dam levels, and general water saving tips; regular publication of water and wastewater quality in local media and on Overstrand Municipality's website and primary school learners are reached with water awareness puppet shows as well as live shows;
- Identify users on financial data base with regular abnormal high or abnormal low water use, and physically inspect the causes (on-going);
- Sourcing of external funds, e.g. from the DWS WSIG program and MIG and SIDAFF grants for water projects, as well as exploring innovative private funding mechanisms;
- Tariffs structured to discourage excessive use of water, including volumetric sewerage tariffs, and specific water restriction tariffs implemented for specific water restriction levels (implemented and on-going);
- Continue with removal of alien vegetation in catchment areas (ongoing);
- Maximum use of treated effluent for irrigation (Implemented and extended in Hermanus and Gansbaai).

The Long-Term WC/WDM Strategy does not only refer to measures that reduce water wastage and inefficient use, but also include measures to effectively manage and sustain efficiency targets. Some of the priority requirements are to install systems that measure and identify certain key parameters such as minimum night flows and systems to enable detailed and regular water audits and water balances.

DWS's scorecard for assessing the potential for WC/WDM efforts was completed for Overstrand Municipality. The aim of the scorecard was to establish areas where the municipality has made good progress in relation to WC/WDM and where there is still room for improvement. It can be seen from the Scorecard that there are 25 questions each of which carries a maximum of 4 points providing a possible maximum score of 100. If the Municipality has the specific item completely under control, it receives the maximum points and if it is neglecting the item completely it receives no points. There are various levels between the maximum and the minimum number of points assigned to the municipality for each item depending on the level of completeness or lack thereof. **The status quo score for Overstrand Municipality is 85 out of 100 suggesting that the Municipality is making good progress with regard to the implementation of specific WC/WDM activities.**

TOPIC 6: WATER RESOURCES

Overstrand Municipality experienced severe droughts over the periods 2010 to 2011 and 2015 to 2017, with some relief during the winter months of the following years. The droughts reduced the safe yields of the Municipality's own existing surface and groundwater resources. The Municipality therefore continued with the implementation of various WC/WDM measures to lower the current and future water requirements and investigations of augmentation options for the existing water resources. The municipality took a pro-active approach some years ago by firstly implementing a WC/WDM programme and secondly diversifying its water resources.

The table below gives an overview of the current water resources, the current volumes abstracted and the authorised volumes.

Table A.6.1: Current Water Sources and Volumes

Source Type	Source	Number of Sources	Current 24/25 Abstraction or Returns (Mm^3/a)	Licensed Abstraction / Returns (Mm^3/a)	Community Water Supply		Assessment Score
					Rural	Urban	
Groundwater	Baardskeerdersbos	2	0.022	0.060 (License)	NA	100%	80%
	Buffeljags Bay	1	0.008	-	NA	100%	40%
Surface Water	Buffels River dam	1	0.777	0.900 (WARMS)	NA	100%	60%
	Franskraal and Kraaibosch dams	2	1.315	2.000 (WARMS)	NA	100%	60%
	Klipgat fountain	1	0.305	-	NA	100%	40%
	De Kelders fountain	1	0.196	-	NA	100%	40%
	Pearly Beach and Koekemoer dams	1	0.188	0.257 (WARMS) 0.095 (Agreement)	NA	100%	60%
Conjunctive use	Palmiet River	1	1.070	0.949 (WARMS)	NA	100%	60%
	Dorpsfontein	1	0.000	0.110 (WARMS)	NA	100%	60%
	Kleinmond Borehole	1	0.000		NA	100%	60%
	Gateway Well Field	5	0.880	1.600 (License)	NA	100%	80%
	Camphill and Volmoed Well Fields	7	1.013	1.600 (License)	NA	100%	80%
	De Bos	1	3.824	2.800 (Court Ruling)	NA	100%	60%
	Stanford Fountain	1	0.348	1.600 (License)	NA	100%	80%
	Stanford Boreholes	2	0.284		NA	100%	80%
External Sources (Bulk Purchase)	-	-	-	-	-	-	-
Water Returned to Source	Kleinmond WWTW	1	0.389	0.730 (GA)	-	-	80%
	Hawston WWTW	1	0.234	0.365 (GA)	-	-	80%
	Hermanus WWTW	1	2.129	4.380 (Permit)	-	-	80%
	Stanford WWTW	1	0.401	0.730 (GA)	-	-	80%
	Gansbaai WWTW	1	0.022	0.730 (GA)	-	-	80%
	Pearly Beach WWTW	1	0.000	0.091 (GA)	-	-	80%

The table below indicates the potential additional future water resources for Overstrand Municipality. These resources are with regard to the Greater Hermanus system.

Table A.6.2: Additional Water Sources and Volumes				
Source Type	**Schemes**	**Number of Sources**	**Potential Volume (Mm³/a)**	**Licensed Abstraction (Mm³/a)**
Ground Water	Camphill and Volmoed boreholes, Third Phase	4	0.400	1.600
Surface Water	Desalination First Phase	1	1.825	Not yet done
	Desalination Second Phase	1	1.095	Not yet done
	Desalination Third Phase	1	1.460	Not yet done
External Sources (Bulk Purchase)	-	-	-	-

Overstrand Municipality has an established monitoring plan to monitor the volumes abstracted from all the various surface and ground water resources and quality of the water abstracted.

Table A.6.3: Monitoring of Abstraction Volumes, Water Levels and Water Quality		
Monitoring of water abstracted	**Assessment Score**	
% of water abstracted monitored: Surface water	100%	
% of water abstracted monitored: Ground water	100%	
Monitoring of water levels and water quality	**Interval**	**Assessment Score**
Surface water levels (1: daily, 2: weekly, 3: monthly, 4: annually, 5: never)	Monthly	80%
Ground water levels (1: daily, 2: weekly, 3: monthly, 4: annually, 5: never)	Daily	80%
Water quality for formal schemes? (1: daily, 2: weekly, 3: monthly, 4: annually, 5: never)	Daily and Monthly	80%
Water quality for rudimentary schemes? (1: daily, 2: weekly, 3: monthly, 4: annually, 5: never)	Not Applicable	-
Borehole abstraction? (1: daily, 2: weekly, 3: monthly, 4: annually, 5: never)	Daily	80%

Detail IWA Water Balances are available for each of the water distribution systems (towns) in Overstrand Municipality's Management Area. The graph below gives an overview of the average daily raw water supply volume to all the towns.

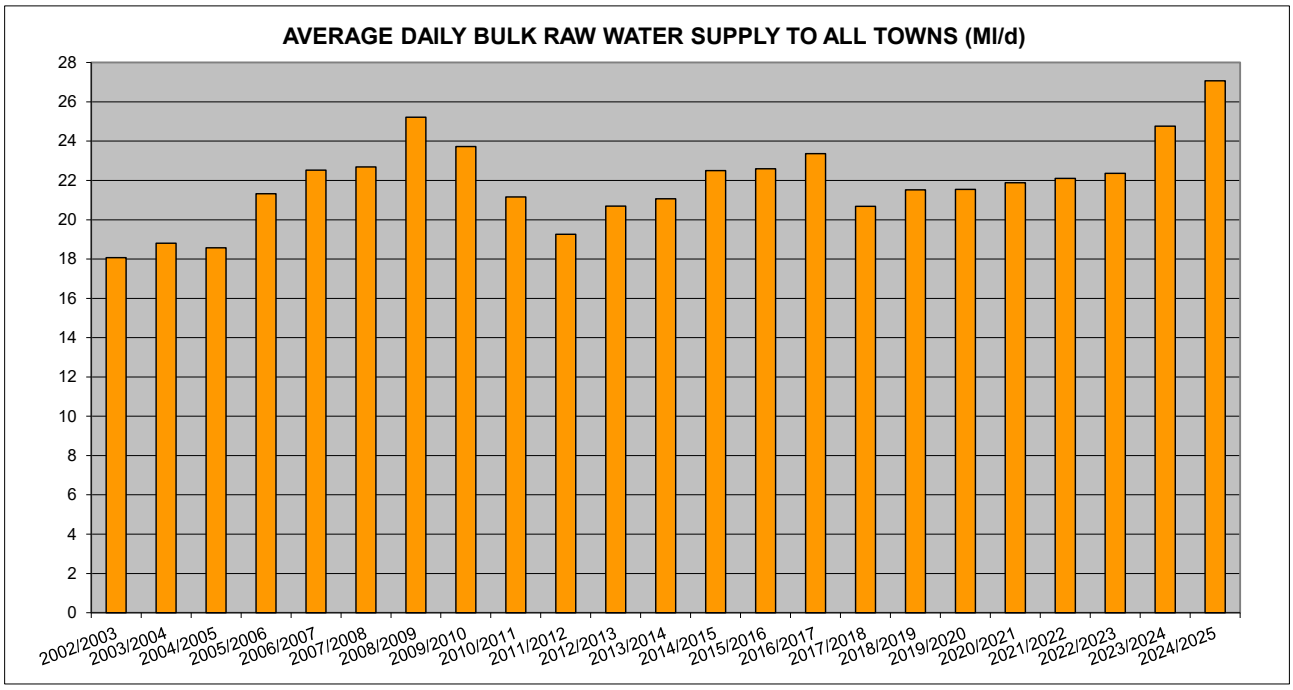


Figure A.6.1: Average Daily Bulk Raw Water Supply Volume to all the Towns in Overstrand Municipality

The graph below gives an overview of the annual system input volumes and NRW for the various water distribution systems in Overstrand Municipality's Management Area.

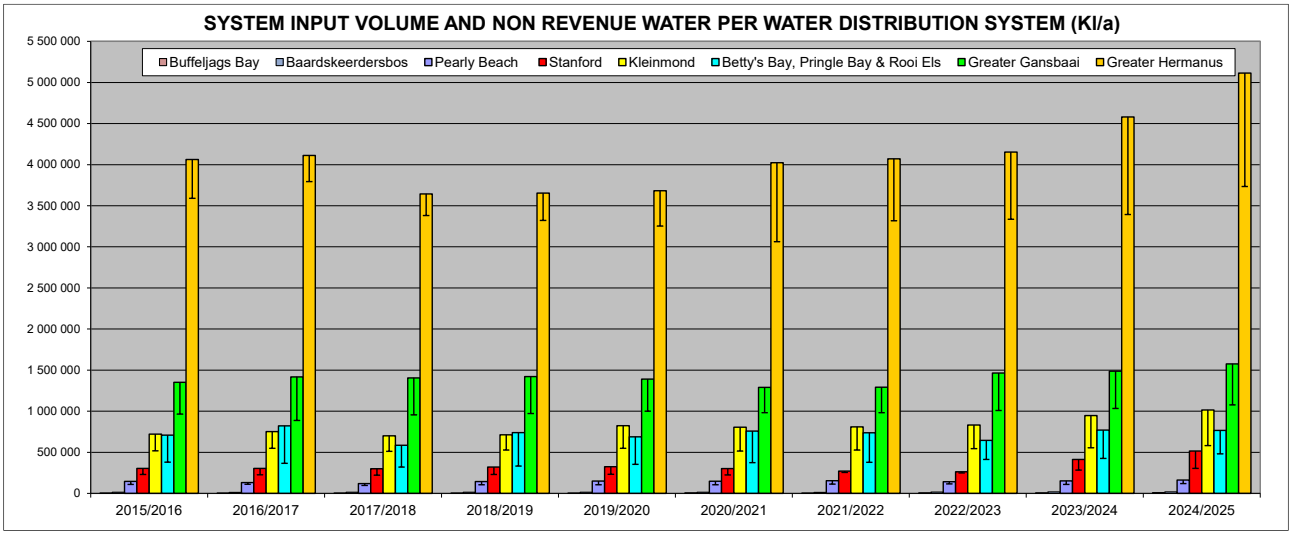


Figure A.6.2: System Input Volume and Non-Revenue Water for the Various Water Distribution Systems

All water sources are supplied with bulk water meters and accurate records are kept of all bulk water meter readings. The table below gives a summary of the total annual raw water volume supplied to the various towns within Overstrand Municipality's Management Area.

Table A.6.4: Annual Bulk Raw Water Volume Supplied to the Various Towns

Distribution System	Source	Record : Prior (Ml/a)					24/25
		19/20	20/21	21/22	22/23	23/24	
Buffels River	Buffels River Dam	767.993	772.751	788.232	671.598	782.579	776.600
Kleinmond	Palmiet River and Dorpsfontein spring	898.489	880.390	871.522	918.124	1 010.616	1 069.747
Greater Hermanus	De Bos Dam and Groundwater	4 128.705	4 242.199	4 265.761	4 267.244	4 776.898	5 369.338
Stanford	Stanford spring and two Boreholes	365.453	446.512	468.903	498.341	548.595	631.166
Greater Gansbaai	Kraaibosch and Franskraal Dam Klipgat, De Kelders Grotte	1 524.604	1 467.816	1 480.781	1 631.362	1 718.103	1 815.037
Pearly Beach	Pearly Beach Springs and Koekemoer Dam	155.368	153.406	158.837	148.586	172.150	188.066
Baardskeerdersbos	Two Boreholes	18.311	17.741	16.838	19.274	22.888	21.695
Buffeljags Bay	Borehole	5.019	5.879	5.504	5.872	7.100	8.080
Total Supply to all towns		**7 863.942**	**7 986.694**	**8 056.378**	**8 160.401**	**9 038.929**	**9 879.729**

Raw water is also supplied by Overstrand Municipality from their Fisherhaven dam and the Mossel River dams in Fernkloof to a number of users. The untreated raw water supply from the Fisherhaven dam is for the Karwyderskraal Landfill (Overberg District Municipality), Benguela Cove and a number of properties along the pipeline route for irrigation and non-potable use. The untreated raw water supply from the Mossel River dams is for the irrigation of the golf course and for the Fernkloof nature reserve. These dams are not part of the Municipality's water sources utilised for the treatment of the raw water to potable standards.

Water Quality: Overstrand Municipality makes use of an accredited external laboratory to conduct the drinking water compliance sampling and analysis. Samples are taken at various locations in each system and analysed to evaluate the compliance. The water quality results are loaded onto DWS's IRIS system via the internet. Once entered the data is automatically compared to the SANS241 Drinking Water Quality Standards. This real-time system allows for immediate intervention to rectify any problems.

The table below gives an overview of the various water quality monitoring measures and whether it is in place for Overstrand Municipality.

Table A.6.5: Water Quality			
Water Quality	**In place**	**Status Quo**	**Assessment Score**
Is there a Water Safety Plan in Place?	Yes	80%	80%
Reporting on quality of water taken from source: urban & rural	Yes	80%	80%
Quality of water returned to the resource: urban	Yes	80%	80%
Quality of water returned to the resource: rural	No	Not Applicable	80%
Is there a Pollution contingency measures plan in place?	Yes	80%	80%
Quality of water taken from source: urban - % monitored by WSA self?	Yes	80%	80%
Quality of water taken from source: rural - % monitored by WSA self?	No	Not Applicable	80%
Quality of water returned to the source: urban - % monitored by WSA self?	Yes	80%	80%
Quality of water returned to the source: rural - % monitored by WSA self?	No	Not Applicable	80%
Are these results available in electronic format? (Yes/no)	Yes	80%	80%
% Time (days) within SANS 241 standards per year	Yes	80%	80%

Note: The score of 80% in the above table is Excellent, which is the highest score in DWS's eWSDP website.

The water quality of all the water distribution systems in Overstrand Municipality was categorised as "Excellent" for the 2024/2025 financial year, except for the Operational Efficiency indicator for Baardskeerdersbos, which was categorised as "Unacceptable" (According to the SANS 241:2015 classification). The overall percentage of compliance of the water quality samples taken over the period July to June for the last two financial years is summarised in the table below per distribution system. The additional monitoring required by Overstrand Municipality for determinands identified during the risk assessment exceeding the SANS 241:2015 numerical limits are also included in the table.

Table A.6.6: Percentage Compliance of the Water Quality Samples for the Last Two Financial Years						
Performance Indicator	**Performance Indicator categorised as unacceptable Yes / No (Table 4 of SANS 241-2:2015)**		**% Sample Compliance according to SANS 241-2015 Limits**		**Frequency of Additional Monitoring due to failure (Table 3 of SANS 241-2:2015)**	
	23/24	**24/25**	**23/24**	**24/25**	**23/24**	**24/25**
Buffels River						
Acute Health Microbiological	No (Excellent)	No (Excellent)	99.4%	100.0%	-	-
Acute Health Chemical	No (Excellent)	No (Excellent)	100.0%	100.0%	-	-
Chronic Health	No (Excellent)	No (Excellent)	100.0%	99.7%	-	-
Aesthetic	No (Excellent)	No (Excellent)	99.8%	99.8%	-	-
Operational Efficiency	No (Excellent)	No (Good)	94.4%	91.3%	-	-
Kleinmond						
Acute Health Microbiological	No (Excellent)	No (Excellent)	100.0%	100.0%	-	-
Acute Health Chemical	No (Excellent)	No (Excellent)	100.0%	100.0%	-	-
Chronic Health	No (Excellent)	No (Excellent)	100.0%	100.0%	-	-
Aesthetic	No (Excellent)	No (Excellent)	99.0%	99.5%	-	-
Operational Efficiency	No (Excellent)	No (Excellent)	96.8%	98.6%	-	-
Greater Hermanus						
Acute Health Microbiological	No (Excellent)	No (Excellent)	100.0%	100.0%	-	-
Acute Health Chemical	No (Excellent)	No (Excellent)	100.0%	100.0%	-	-
Chronic Health	No (Excellent)	No (Excellent)	100.0%	99.8%	-	-
Aesthetic	No (Excellent)	No (Excellent)	99.2%	99.7%	-	-
Operational Efficiency	No (Excellent)	No (Excellent)	93.7%	97.2%	-	-
Stanford						
Acute Health Microbiological	No (Excellent)	No (Excellent)	99.2%	99.2%	-	-
Acute Health Chemical	No (Excellent)	No (Excellent)	100.0%	100.0%	-	-
Chronic Health	No (Excellent)	No (Excellent)	98.8%	98.8%	-	-
Aesthetic	No (Excellent)	No (Excellent)	100.0%	99.6%	-	-
Operational Efficiency	No (Excellent)	No (Excellent)	95.1%	99.5%	-	-
Greater Gansbaai						
Acute Health Microbiological	No (Excellent)	No (Excellent)	99.6%	100.0%	-	-

Table A.6.6: Percentage Compliance of the Water Quality Samples for the Last Two Financial Years						
Performance Indicator	**Performance Indicator categorised as unacceptable Yes / No (Table 4 of SANS 241-2:2015)**		**% Sample Compliance according to SANS 241-2015 Limits**		**Frequency of Additional Monitoring due to failure (Table 3 of SANS 241-2:2015)**	
	23/24	**24/25**	**23/24**	**24/25**	**23/24**	**24/25**
Acute Health Chemical	No (Excellent)	No (Excellent)	100.0%	100.0%	-	-
Chronic Health	No (Excellent)	No (Excellent)	100.0%	100.0%	-	-
Aesthetic	No (Excellent)	No (Excellent)	99.9%	99.8%	-	-
Operational Efficiency	No (Excellent)	No (Excellent)	96.6%	97.4%	-	-
Pearly Beach						
Acute Health Microbiological	Yes (Unacceptable)	No (Excellent)	94.3%	100.0%	Monthly	-
Acute Health Chemical	No (Excellent	No (Excellent)	100.0%	100.0%	-	-
Chronic Health	No (Excellent	No (Excellent)	98.4%	99.0%	-	-
Aesthetic	No (Excellent	No (Excellent)	98.9%	100.0%	-	-
Operational Efficiency	Yes (Unacceptable)	No (Excellent)	88.4%	97.8%	Monthly	-
Baardskeerdersbos						
Acute Health Microbiological	No (Excellent)	No (Excellent)	100.0%	100.0%	-	-
Acute Health Chemical	No (Excellent)	No (Excellent)	100.0%	100.0%	-	-
Chronic Health	No (Excellent)	No (Excellent)	97.8%	99.4%	-	-
Aesthetic	No (Excellent)	No (Excellent)	94.9%	98.0%	-	-
Operational Efficiency	Yes (Unacceptable)	Yes (Unacceptable)	87.9%	85.1%	Monthly	Monthly
Buffeljags Bay						
Acute Health Microbiological	No (Excellent)	No (Excellent)	98.8%	100.0%	-	-
Acute Health Chemical	No (Excellent)	No (Excellent)	100.0%	100.0%	-	-
Chronic Health	No (Excellent)	No (Excellent)	100.0%	98.6%	-	-
Aesthetic	No (Excellent)	No (Excellent)	95.7%	100.0%	-	-
Operational Efficiency	No (Excellent)	No (Excellent)	95.8%	98.1%	-	-

The table below gives an overview of the four categories under which the risks posed by micro-organism, physical or aesthetic property or chemical substance of potable water is normally classified.

Table A.6.7: Four Categories under which the Risks Posed by Micro-organism, Physical or Aesthetic Property or Chemical Substance of Potable Water is Normally Classified	
Category	**Risk**
Acute Health	Determinand that poses an immediate unacceptable health risk if present at concentration values exceeding the numerical limits specified in this part of SANS 241.
Aesthetic	Determinand that taints water with respect to taste, odour and colour and that does not pose an unacceptable health risk if present at concentration values exceeding the numerical limits specified in SANS 241.
Chronic Health	Determinand that poses an unacceptable health risk if ingested over an extended period if present at concentration values exceeding the numerical limits specified in SANS 241.
Operational	Determinand that is essential for assessing the efficient operation of treatment systems and risks from infrastructure

The table below indicates the compliance of the E.Coli monitoring frequency in the water distribution systems of Overstrand Municipality, in terms of the minimum requirements of SANS:241-2: 2015 (Table 2). The period assessed was for samples taken from July 2024 to June 2025.

Table A.6.8: Overstrand Municipality's Compliance of the Monthly E.Coli Monitoring Frequency in the Water Distribution Systems in Terms of the Minimum Requirements of SANS 241-2:2015 (Table 2).			
Distribution System	**Population served**	**Required number of monthly samples (SANS 241-2:2015: Table 2)**	**Number of monthly E.Coli samples taken by Municipality during 2024/2025**
Buffels River	3 897	2.0	12.5
Kleinmond	9 138	2.0	8.3
Greater Hermanus	83 361	16.7	25.0
Stanford	6 717	2.0	10.3
Greater Gansbaai	24 788	5.0	22.8
Pearly Beach	1 374	2.0	8.3
Baardskeerdersbos	130	2.0	8.3
Buffeljags Bay	157	2.0	6.4

It can be noted from the previous table that the number of monthly E.Coli samples taken by the Municipality during the 2024/2025 financial year was far more than the required number of samples for all the water distribution systems.

Effluent quality: The final effluent quality complies with the authorised Microbiological, Chemical and Physical limits for most of the WWTWs. The overall Microbiological, Chemical and Physical compliance percentages of the final effluent samples taken over the last three financial years at the Kleinmond-, Hawston-, Hermanus-, Stanford-, Gansbaai- and Pearly Beach WWTW are summarised in the tables below.

Table A.6.9: Percentage Microbiological (Faecal Coliforms) Compliance of the Compliance Samples Taken at the Various WWTWs for the Last Three Financial Years

WWTW	2022/2023	2023/2024	2024/2025
Kleinmond	91.7%	75.0%	75.0%
Hawston	100.0%	83.3%	85.7%
Hermanus	91.7%	41.7%	54.2%
Stanford	33.3%	75.0%	75.0%
Gansbaai	16.7%	66.7%	63.2%
Pearly Beach	83.3%	91.7%	85.7%
Total	**69.4%**	**72.2%**	**70.9%**

Note: Where parameters were resampled, due to failures, the resampled results were used to calculate the above compliance percentages.

Table A.6.10: Percentage Chemical Compliance of the Compliance Samples Taken at the Various WWTWs for the Last Three Financial Years

WWTW	2022/2023					2023/2024					2024/2025				
	Ammonia	Nitrites & Nitrates	COD	Ortho Phosphate	Overall	Ammonia	Nitrites & Nitrates	COD	Ortho Phosphate	Overall	Ammonia	Nitrites & Nitrates	COD	Ortho Phosphate	Overall
Kleinmond	16.7%	100.0%	0.0%	100.0%	**54.2%**	8.3%	100.0%	0.0%	75.0%	**45.8%**	16.7%	100.0%	58.3%	100.0%	**68.8%**
Hawston	33.3%	100.0%	16.7%	66.7%	**54.2%**	66.7%	100.0%	41.7%	66.7%	**68.8%**	50.0%	91.7%	37.5%	78.6%	**58.8%**
Hermanus	83.3%	83.3%	100.0%	91.7%	**89.6%**	75.0%	100.0%	100.0%	100.0%	**93.8%**	52.9%	100.0%	73.3%	84.6%	**74.4%**
Stanford	91.7%	100.0%	100.0%	100.0%	**97.9%**	58.3%	100.0%	83.3%	83.3%	**81.3%**	92.3%	100.0%	100.0%	100.0%	**98.0%**
Gansbaai	41.7%	66.7%	66.7%	91.7%	**66.7%**	91.7%	83.3%	91.7%	91.7%	**89.6%**	85.7%	64.7%	66.7%	80.0%	**73.4%**
Pearly Beach	91.7%	100.0%	0.0%	100.0%	**72.9%**	100.0%	100.0%	0.0%	100.0%	**75.0%**	83.3%	100.0%	0.0%	100.0%	**70.8%**
Total	**59.7%**	**91.7%**	**47.2%**	**91.7%**	**72.6%**	**66.7%**	**97.2%**	**52.8%**	**86.1%**	**75.7%**	**62.8%**	**90.9%**	**54.8%**	**89.7%**	**73.4%**

Note: Where parameters were resampled, due to failures, the resampled results were used to calculate the above compliance percentages.

Table A.6.11: Percentage Physical Compliance of the Compliance Samples Taken at the Various WWTWs for the Last Three Financial Years.

WWTW	2022/2023				2023/2024				2024/2025			
	pH	Electrical Conductivity	Total Suspended Solids	Overall	pH	Electrical Conductivity	Total Suspended Solids	Overall	pH	Electrical Conductivity	Total Suspended Solids	Overall
Kleinmond	100.0%	100.0%	50.0%	**83.3%**	100.0%	100.0%	41.7%	**80.6%**	100.0%	100.0%	83.3%	**94.4%**
Hawston	91.7%	50.0%	75.0%	**72.2%**	100.0%	41.7%	83.3%	**75.0%**	100.0%	41.7%	100.0%	**80.6%**
Hermanus	100.0%	100.0%	100.0%	**100.0%**	100.0%	100.0%	91.7%	**97.2%**	100.0%	100.0%	84.6%	**94.6%**
Stanford	100.0%	83.3%	100.0%	**94.4%**	100.0%	83.3%	83.3%	**88.9%**	100.0%	66.7%	100.0%	**88.9%**
Gansbaai	100.0%	75.0%	91.7%	**88.9%**	100.0%	100.0%	91.7%	**97.2%**	100.0%	100.0%	70.6%	**87.8%**
Pearly Beach	50.0%	25.0%	0.0%	**25.0%**	41.7%	50.0%	8.3%	**33.3%**	75.0%	75.0%	50.0%	**66.7%**
Total	**90.3%**	**72.2%**	**69.4%**	**77.3%**	**90.3%**	**79.2%**	**66.7%**	**78.7%**	**95.8%**	**80.6%**	**80.8%**	**85.6%**

Note: Where parameters were resampled, due to failures, the resampled results were used to calculate the above compliance percentages.

The trend of the wastewater quality compliance for the various WWTWs are summarised in the table below.

Table A.6.12: Trend of Microbiological, Chemical and Physical Compliance Percentages for the various WWTWs.

WWTW	2018/2019 to 2020/2021			2020/2021 to 2022/2023			2022/2023 to 2024/2025		
	Micro.	Chemical	Physical	Micro.	Chemical	Physical	Micro.	Chemical	Physical
Kleinmond	Increase	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease	Increase	Increase
Hawston	Same	Decrease	Decrease	Same	Decrease	Same	Decrease	Increase	Increase
Hermanus	Same	Same	Same	Decrease	Decrease	Same	Decrease	Decrease	Decrease
Stanford	Increase	Decrease	Decrease	Decrease	Increase	Increase	Increase	Same	Decrease
Gansbaai	Same	Same	Same	Decrease	Decrease	Decrease	Increase	Increase	Decrease
Pearly Beach	-	-	-	Decrease	Increase	Decrease	Increase	Increase	Increase

Industrial Consumers: The Municipality completed the updating of their Water Supply and Sanitation Services By-law. The updating includes the reviewing of the charges that need to be paid by the industrial consumers for the quality of final effluent discharged into the municipality's sewer system by them. The Municipality liaise with the industrial consumers from time to time with regard to the quality of final effluent discharged by them. Industrial effluent quality sample results are received by the Municipality for private package plants that discharge effluent into the Municipality's sewer system or into the environment.

TOPIC 7: FINANCIAL

Capital Budget: The table below gives an overview of Overstrand Municipality's historical water and sewerage capital expenditure over the last ten financial years.

Table A.7.1: Historical Capital Expenditure of the Water and Sewerage Infrastructure Budgets

Financial Year	Water Infrastructure			Sewerage Infrastructure		
	Budget	Expenditure	% Spend	Budget	Expenditure	% Spend
2015/2016	R16 390 184	R14 232 323	86.83%	R8 360 500	R6 418 821	76.78%
2016/2017	R15 588 846	R15 772 309	101.18%	R14 848 519	R14 821 358	99.82%
2017/2018	R1 447 495	R1 432 532	98.97%	R12 252 782	R8 294 387	67.69%
2018/2019	R21 945 225	R12 270 442	55.91%	R44 868 863	R34 962 591	77.92%
2019/2020	R39 982 374	R24 903 681	62.29%	R20 240 106	R15 641 239	77.28%
2020/2021	R50 035 705	R34 573 765	69.10%	R41 458 465	R30 513 335	73.60%
2021/2022	R37 333 918	R36 630 152	98.11%	R50 890 147	R40 005 632	78.61%
2022/2023	R35 789 052	R31 607 552	88.32%	R31 285 030	R31 123 018	99.48%
2023/2024	R31 124 472	R29 091 572	93.47%	R60 943 822	R39 441 838	64.72%
2024/2025	R40 700 470	R33 097 110	81.32%	R44 186 830	R43 627 942	98.74%
Average over last 10 years	**R29 033 774**	**R23 361 144**	**80.46%**	**R32 933 506**	**R26 485 016**	**80.42%**

Operational Budget: The actual operational and maintenance expenditure and income for the last five financial years for water and sanitation services is summarised in the table below (Unaudited figures).

Table A.7.2: Summary of Operational and Maintenance Expenditure and Income for Water and Sanitation Services

Service	Expenditure / Income	20/21	21/22	22/23	23/24	24/25
Water	Expenditure	R137 409 799	R145 142 796	R153 152 405	R177 529 628	R185 746 525
	Income	R153 115 215	R156 425 649	R173 298 233	R196 172 749	R219 425 768
	Surplus / Deficit	**R15 705 416**	**R11 282 853**	**R20 145 828**	**R18 643 121**	**R33 679 243**
Sanitation	Expenditure	R99 329 089	R112 745 218	R140 730 503	R146 961 935	R142 095 942
	Income	R109 567 538	R123 712 658	R117 561 435	R123 696 261	R143 832 722
	Surplus / Deficit	**R10 238 449**	**R10 967 440**	**R23 169 068**	**R23 265 674**	**R1 736 780**

Tariff and Charges: The first ten (10) kl of water is provided free to all indigent registered households. Overstrand Municipality's tariffs support the viability and sustainability of water supply services to the poor through cross-subsidies (where feasible). Free basic water and sanitation services are linked to the Municipality's Indigent Policy and all indigent registered households therefore receive free basic water and sanitation services. This implies that either the equitable share is used to cover this cost, or higher consumption blocks are charged at a rate greater than the cost in order to generate a surplus to cross-subsidise indigent consumers who use up to ten (10) kilolitres per month.

Tariffs often comprise both a fixed charge and a variable charge based on consumption. The cost residential consumers had to pay for their water services in Overstrand Municipality's Management Area, for the various financial years, is presented on the graph below (Normal residential water tariffs).

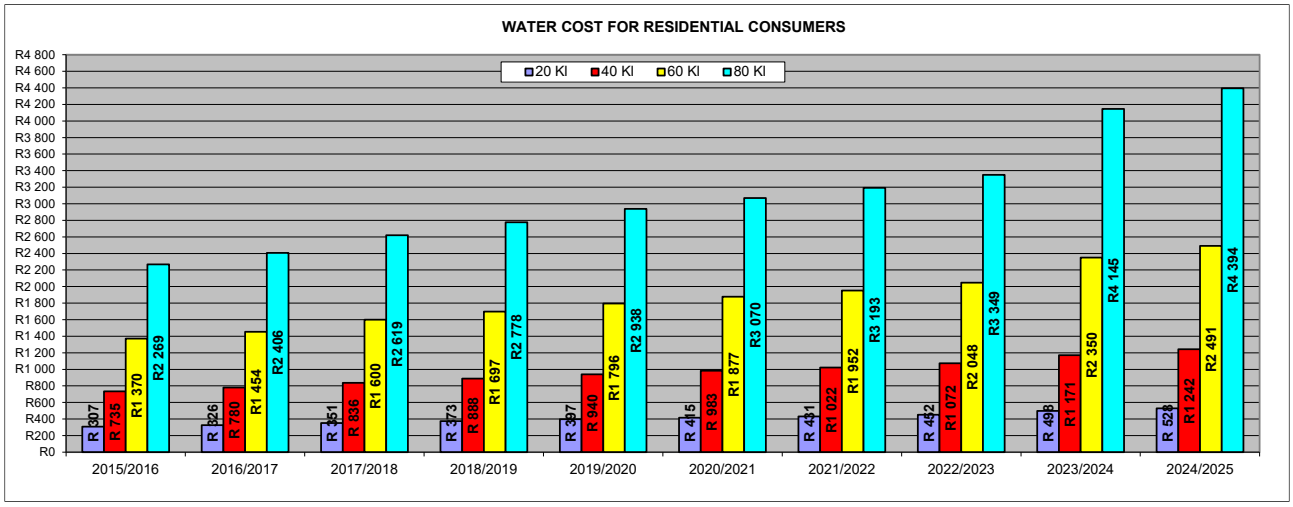


Figure A.7.1: Water Cost for Residential Consumers

TOPIC 8: WATER SERVICES INSTITUTIONAL ARRANGEMENTS AND CUSTOMER SERVICES

Overstrand Municipality is the official WSA for the entire Municipal Management Area and act as the WSP for the whole area. Current water services are delivered by way of an internally operated and managed mechanism. A Water and Wastewater Bulk Works Contract commenced on the 8th of December 2018 between Overstrand Municipality and Veolia Services Southern Africa (Pty) Ltd to operate and maintain the bulk infrastructure in Overstrand Municipality's Management Area for a period of fifteen (15) years. The Municipality also has the right to extend the contract for a further five (5) years.

The updated Water Supply and Sanitation Services By-law was approved by Council on 26 April 2022.

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 overall performance of the municipality is managed and evaluated by a municipal scorecard (Top Layer SDBIP) at organisational level and through monitoring and evaluation of the detailed Departmental SDBIP at directorate and departmental (HOD) levels. The municipal scorecard (Top Layer SDBIP) sets out consolidated service delivery targets for senior management and provides an overall picture of performance for the municipality as a whole, reflecting the performance on each strategic objective and service delivery priorities. The SDBIP includes non-financial KPIs.

The Municipal personnel and the bulk water services contractor's personnel are continuously exposed to training opportunities, skills development and capacity building at a technical, operations and management level in an effort to create a more efficient overall service to the users. A Workplace Skills Plan is compiled every year and the specific training needs of the personnel, with regard to water and wastewater management are determined annually.

Municipal Strategic Self-Assessment (MuSSA): Overseen by the DWS the MuSSA conveys an overall business health of municipal water business and serves as a key source of information around municipal performance. The MuSSA also identifies key municipal vulnerabilities that are strategically important to DWS, the Department of Cooperative Government (DCoG), National Treasury, the planning Commission/Office of the Presidency, the South African Local Government Association (SALGA) and the municipalities themselves. The MuSSA team continues to engage (1) DWS directorates and their associated programmes (e.g. Water Services Development Plan, Water Services Regulation), and (2) other sector departments and their associated programmes (e.g. LGTAS, MISA) to minimize duplication and ensure alignment. Through the tracking of current and likely future performance, the key areas of vulnerability identified, allow municipalities to effectively plan and direct appropriate resources that will also enable DWS and the sector to provide more effective support.

The Spider Diagram below effectively indicates the vulnerability levels of Overstrand Municipality across the eighteen key service areas, as identified through the Municipal Strategic Self-Assessment of Water Services process.

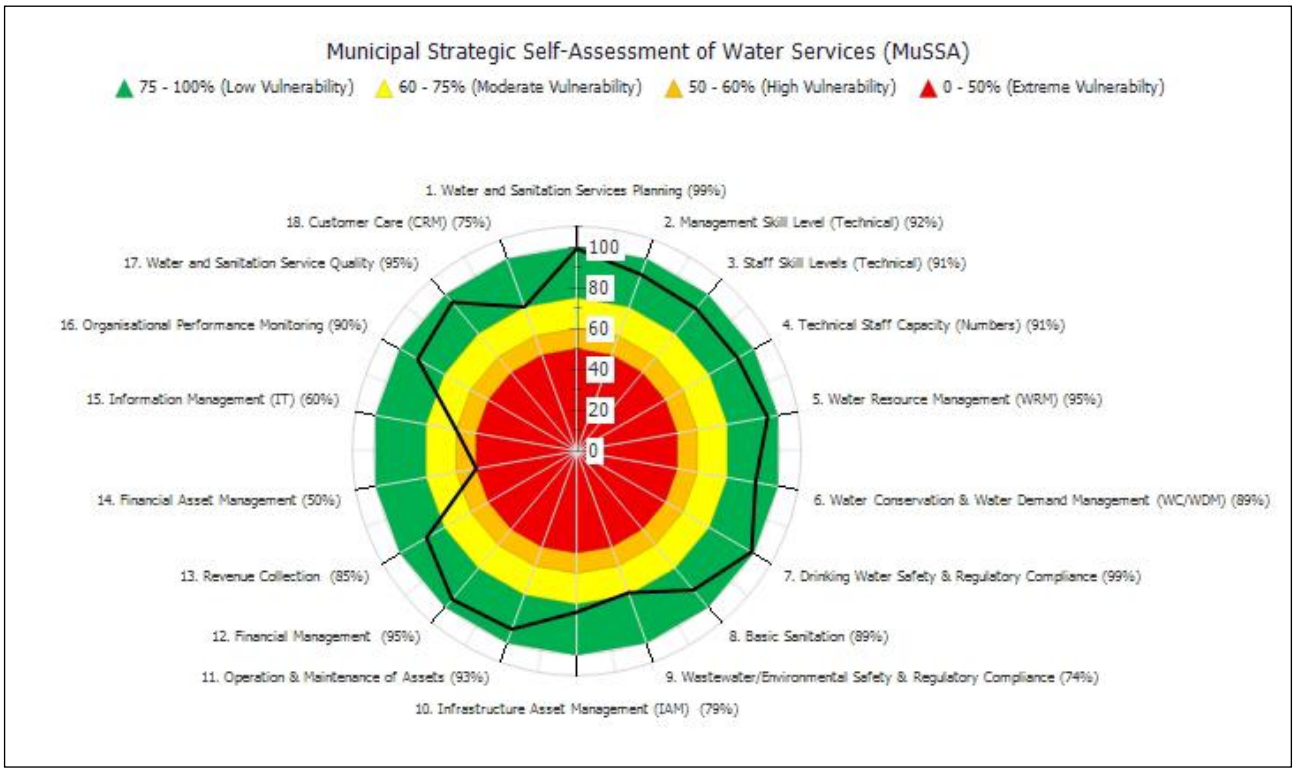


Figure A.8.1: Spider Diagram of the Vulnerability Levels of Overstrand Municipality for 2025

Overstrand Municipality's Vulnerability Index for 2025 was indicated as 0.21 "Low Vulnerability". The only area of concern evident from the 2025 assessment is Financial Asset Management (High Vulnerability, 50.0%).

In line with Overstrand Municipality's Vision – **to be a centre of excellence to the community** – the Municipality has developed a comprehensive customer care strategy. The strategy has now rolled out into consumer services charters for the following departments: electricity, water and sanitation, solid waste management and roads and storm water.

Overstrand Municipality completed a snap community survey during the 2021/2022 financial year. 2 574 People participated in the structured questionnaire. The performance indicated as satisfactory were 67% for water supply and 75% for sewerage provision. The percentage indicates the proportion of those surveyed that believed that the relevant performance was at least satisfactory.

The consumer services charter for water and sanitation includes the following commitments with regard to water services quality and service standards.

Our Purpose: To provide consumers with potable water and appropriate sanitation services.

Water Services Quality:

- We commit ourselves to supply – where the infrastructure allows – water that meets the standards set out for drinking water (SANS 0241) and treat effluent to a standard prescribed by law before disposal thereof into our water sources.
- We have a water quality management programme in terms of which potable water is frequently sampled at various places and tested by an independent accredited laboratory. The results of our treated water and effluent analyses are reported monthly to the Department of Water and Sanitation and thus monitored nationally.
- We strive to obtain Blue Drop status for all our water supply systems and Green Drop status for all our wastewater systems when the National Department continues with these programs.

Vacuum Tanker Service:

- Overstrand Municipality is rendering a vacuum tanker service to properties in Gansbaai, Stanford, Hermanus and Kleinmond areas where no sewer networks are installed.
- Affected clients must monitor the sewer levels of their conservancy tanks and submit a request for service at least 72 hours before capacity of a tank is reached.
- Last-mentioned action will also promote the scheduling of requests (jobs) to be executed by the Administration.

Our Service Standards: We will

- Respond to any reports about poor water quality within 12 business hours;
- Ensure that prolonged water supply interruptions (12 hours) are not more than 3 times per annum;
- Give 2 days prior notice in case of planned interruptions;
- Have an alternative supply of water available to meet basic needs in case of unplanned interruptions that last longer than 24 hours;
- Install new connections within 30 days or receiving the application and all prescribed requirements have been met;
- Clean up sewer overflows due to blockages in our system failure within 24 hours;
- Report the spillage of sewerage in a watercourse or sea to the relevant authorities within 24 hours of such occurrence;
- Promote the use of alternative water sources for irrigation and industry. Note that the use of grey water is allowed, but we may inspect such use and impose conditions;
- Upgrade and monitor telemetry systems, to act as an early warning system for e.g. pipe failures, reservoir overflows and sewer pump stations failures;
- Replace old consumer water meters in phases;
- Test water meters on request. If the meter complies with the specifications the consumer will be liable for the cost thereof. If the meter is faulty, there will be no cost for the consumer;
- Monitor and investigate individual municipal users, consumption on a monthly basis; and
- Monitor and investigate abnormal high or low water consumption of consumers.
- Ensure that all requests for vacuum tanker services are rendered within 72 hours of receipt of requests by the Administration.
- Requests for vacuum tanker services received by the Administration after 15:00 to be executed after 16:30 on the same day must receive preference and will be charged at the applicable after hour tariffs.

A comprehensive Customer Services and Complaints system is in place at Overstrand Municipality. The Municipality has maintained a high and a very consistent level of service to its urban water consumers. Help-desks were developed at all the municipal administrations with the objective to assist customers. Disabled people are supported to do business from the help-desks. Requests by the illiterate are being captured and forwarded to the relevant official / section. All municipal buildings are accessible and wheel-chair friendly.

After hour emergency requests are being dealt with by the control room on a twenty-four hour basis. Requests are furthermore captured on an electronic works-order system to ensure execution thereof. All help desks were equipped with Batho Pele picture signage.

The table below gives an overview of logged queries/complaints responded to within 24 hours for the last three financial years by the various Departments (July to June).

Table A.8.1: Queries/Complaints Responded within 24 Hours by the Various Departments for the last three financial years

Department	2022/2023			2023/2024			2024/2025		
	Total received	Completed within 24 hours	Percentage completed within 24 hours	Total received	Completed within 24 hours	Percentage completed within 24 hours	Total received	Completed within 24 hours	Percentage completed within 24 hours
Sewer	913	940	97.1%	978	942	96.3%	1 036	921	88.9%
Tankers	647	890	72.7%	-	-	-	1 538	1 307	85.0%
Water	1 260	1 314	95.9%	1 421	1 350	95.0%	2 574	2 228	86.6%

The table below gives a summary of the water and sanitation records that are kept by Overstrand Municipality and the maintenance work that was carried out over the last five financial years.

Table A.8.2: Water and Sanitation Indicators Monitored by Overstrand Municipality with regard to Customer Services and Maintenance Work

Service	Definition	All Areas				
		20/21	21/22	22/23	23/24	24/25
Sewerage connection	Provision of connection or inspection of existing connections	-	22	101	95	76
Smallbore Connections	Test new tanks smallbore	-	-	-	-	-
Sewer blockages	Repair blockages on main sewer pipelines up to connection points	2 032	1 904	2 006	2077	2444
Sewer spillages	Clean-up of sewer spillages	-	-	-	231	203
Other sewer reticulation	Any other sewer reticulation inspections	156	204	248	286	58
PDA toilets repairs	Previously disadvantaged toilets repaired	151	165	274	229	26
Pipeline sewer	Installation of sewer pipelines or repair of pipelines	167	209	232	-	-
Investigate sewer reticulation pump stations	Work carried out at sewer pump stations	1	2	2	-	-
Replace water meters	Replace water meters	25	1 782	79	165	117
Test water meter	Testing of water meter for accuracy	23	17	11	7	19
Disconnect water connection	Disconnect supply	34	23	17	44	23
Install drip system	Installation and inspection of drip systems	0	5	1	-	1
Inspect water connections	Inspect connections	21	21	31	30	24
New water connections	New water connections	284	536	678	875	448
Other water connections	Inspections and work carried out at water connections	31	16	64	19	15
Pipelines water	Installation or repair of water pipelines	48	16	9	2	5
Pressure	Complaints with regard to pressure in the system	135	190	158	182	214
Water Pump Stations	Inspections and work carried out at water pump stations.	3	-	2	-	-
Repair pipe bursts	Repair of burst water pipelines	267	333	307	386	577
Reservoirs	Inspection of reservoirs and work carried out at reservoirs	7	2	2	-	-
Water Routine Inspections	Any water related inspections	0	1	-	-	-
Water Valves	Inspection of valves and work carried out on valves	14	21	11	-	1

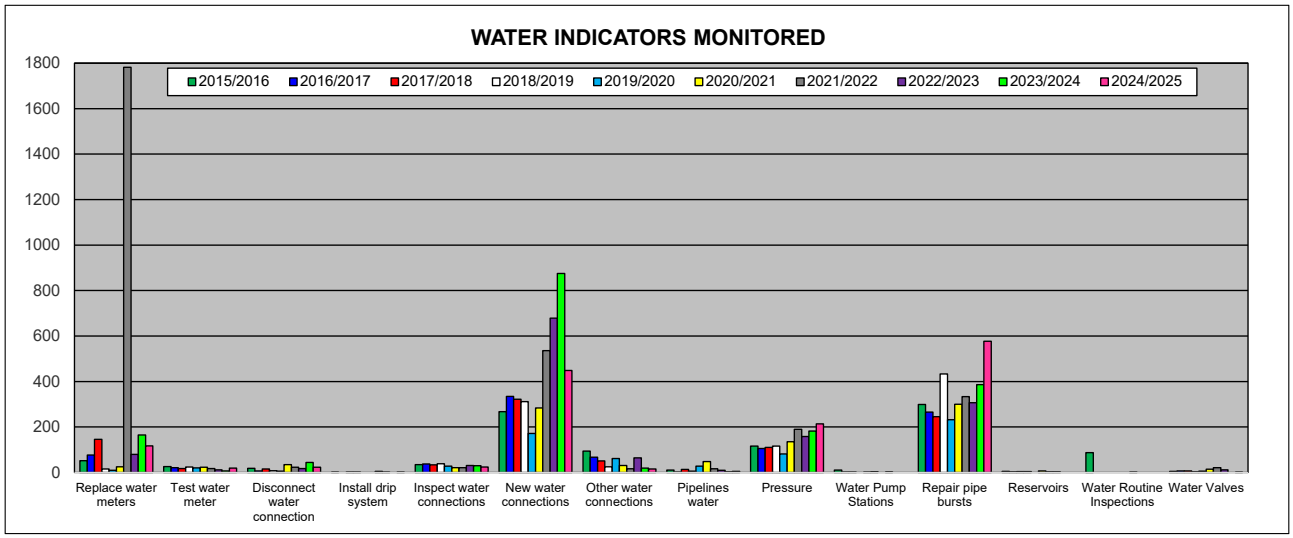


Figure A.8.2: Water Indicators Monitored by Overstrand Municipality

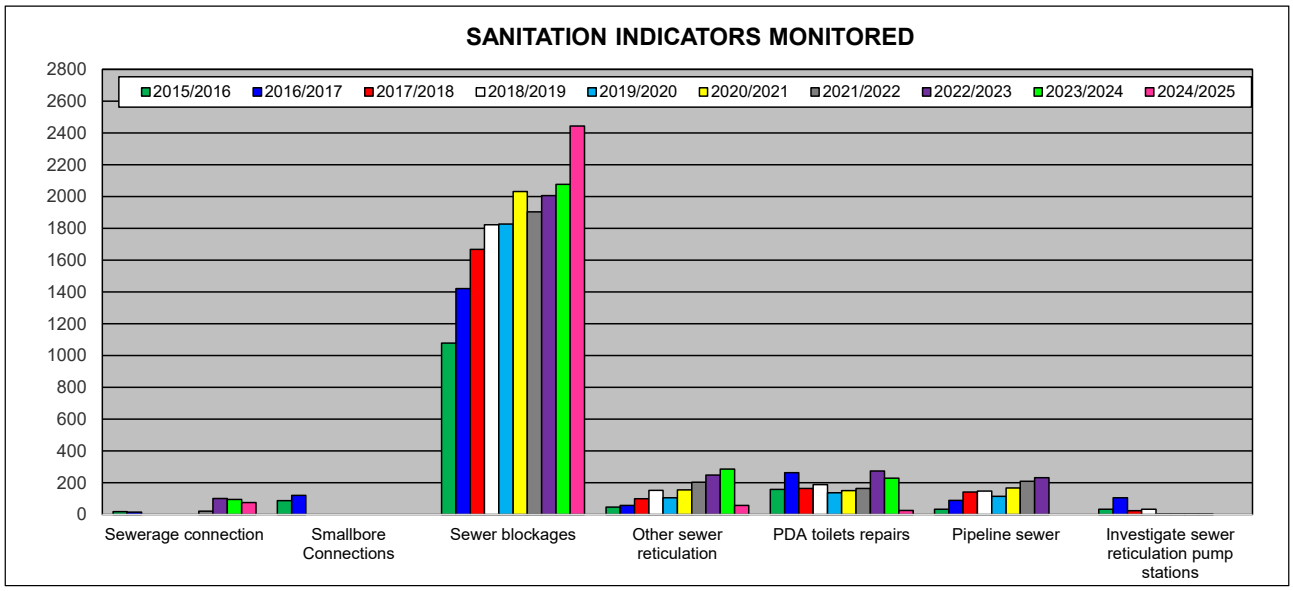


Figure A.8.3: Sanitation Indicators Monitored by Overstrand Municipality

The 2025 No Drop Score for Overstrand Municipality is not yet available and the 2023 No Drop Score is still the latest score, as published by the DWS. The 2023 No Drop assessments were performed using a reduced set of No Drop Criteria. These criteria were selected to assess a WSA's understanding of their WC/WDM status, the plans, strategies, budgets, and implementation of remedial projects. Below is a brief description of the Criteria used for the 2023 assessment.

Table A.8.3: Description of No Drop Criteria	
Criteria 1	WC/WDM status quo, plans and strategies, budgets, and implementation of projects (Water Resource Diagram, Water Balance, Council approved WC/WDM strategies and budgets).
Criteria 2	Asset management as it relates to meter replacement. Monitoring, analysis, and action of high loss District Metered Areas (DMAs) in metropolitan municipalities.
Criteria 3	Technical skills of WC/WDM team.
Criteria 5	Compliance and Performance based on the water loss and efficiency Key Performance Indicators (KPI) and year on year improvement there-of.

The purpose of the 2023 No Drop Assessments was twofold:

- To complete the consultative assessment of the 144 WSAs as per the No Drop Requirements based on the 2021/22 financial year.
- To update the water balance and water loss benchmarking for the 2022/23 financial year. This is reported on in the Status of Water Loss, Water Use Efficiency and Non-Revenue Water in South African Municipalities (2012/13 to 2022/23).

The No Drop results for Overstrand Municipality are presented in the table below.

Table A.8.4: No Drop Performance of the Municipality (DWS's 2023 No Drop Report)		
No Drop Score (2021/2022)		**101%**
Criteria	**Weight**	**Score**
1: WC/WDM Strategy, Planning and Implementation	45%	100% (Excellent)
2: Asset Management	10%	100% (Excellent)
3: Technical Skills	10%	100% (Excellent)
5: Compliance and Performance	35%	74% (Average)
Weighted Sub-Total		**91%**
Bonus		10%
Score		**101% (Excellent)**
Penalty 1: No evidence of approved budget		0.0%
Penalty 2: Section 82 of the Water Servies Act		0.0%
Criteria 1 Sub-Items: WC/WDM Strategy, Planning and Implementation		
Item		**Score (Max = 1)**
1.1: Water Resources		1.0 (Excellent)
1.2: Water Balance		1.0 (Excellent)
1.2: WC/WDM Strategy and Business Plan		1.0 (Excellent)
Penalty 1: No evidence of approved budget		0.0
Criteria 5 Sub-Items: Compliance and Performance		
Item		**Score (Max = 1)**
5.1: Reticulation Leak Repair		0.3 (Poor)
5.2: Physical Water Losses		0.9 (Excellent)
5.3: Commercial Water Losses		1.0 (Excellent)
5.4: Non-Revenue Water		0.8 (Good)
5.5: Water Use Efficiency		0.7 (Average)
Water Balance Integrity		**High (Excellent)**

Regulatory Impression: Overstrand Municipality achieved an excellent score of 101% and should be congratulated on their WC/WDM efforts.

- The WSA is encouraged to ensure that the score is sustained. Overstrand Municipality has demonstrated an excellent understanding of its water use situation and WC/WDM Strategy.
- The IWA water balance included all the required components and covered the supply area. The integrity of the water balance was considered to be high.
- Proof was provided that enough consumer meters were maintained or replaced during the 2021/22 audit period.
- There is a competent and qualified water loss management team at the WSA. Qualifications and an organogram were provided. Leak repairs were proven, but an insufficient number of repairs were completed in the 48-hour response time.
- The regulator calculated the key performance indicators for physical water losses (ILI), commercial water losses, NRW, water use efficiencies based on the water balance.

DWS's Blue Drop Process: The 2025 Blue Drop PAT results are not yet available. DWS's previous completed Blue Drop Assessment process for the WSAs was in 2023. Blue drop status is awarded to those towns that comply with 95% criteria on drinking water quality management. The blue drop performance of Overstrand Municipality was summarised as follows in the DWS's 2023 Blue Drop Report.

Table A.8.5: Blue Drop Performance of the Municipality (DWS's 2023 Blue Drop Report)	
Municipal Blue Drop Score	**2011 – 90.56%, 2012 – 96.82%, 2014 - 90.79% and 2023 – 99.99%**

Introductions: The Overstrand Local Municipality (OLM) supplies approximately 109 703 people with potable water through its 8 water supply systems, with a total SIV of 20.33 Ml/day and a combined design capacity of 61.11 Ml/day. The OLM is the Water Services Authority responsible for 100% of the total SIV and sub-contracts the operation of all the treatment plants to VEOLIA (water service provider). The distribution network is solely maintained by the Overstrand Local Municipality:

- The Baardskeerdersbos Supply system abstracts raw water from boreholes for treatment at the Baardskeerdersbos WTP (OLM) which serves 128 people, delivered at an SIV of 37 kl/d.
- The Buffeljags Bay Supply system abstracts raw water from boreholes for treatment at the Buffeljags Bay WTW (OLM) which serves 154 people, delivered at an SIV of 14 kl/d.
- The Buffels River Supply system abstracts raw water from the Buffels River Dam for treatment at the Buffels River WTP (OLM) which serves 3 312 people, delivered at an SIV of 2 020 kl/d.
- The Greater Gansbaai Supply system serves 20 479 people, delivered at a total SIV of 3 743 kl/d. The system abstracts raw water from the Klipgat & De Kelders Grotte Fountain for treatment at the De Kelders WTP (OLM) at an SIV of 763 kl/d, and the Kraaibosch and Franskraal Dams for treatment at the Franskraal WTP (OLM) at an SIV of 2 980 kl/d.
- The Greater Hermanus Supply system abstracts raw water from the De Bos Dam, Gateway Borehole Field (5 boreholes) and Volmoed and Camphill borehole fields (7 boreholes) for treatment at the Preekstoel WTP (OLM) which serves 70 038 people, delivered at an SIV of 11 154 kl/d.
- The Kleinmond Supply system abstracts raw water from the Palmiet River and Dorpsfontein for treatment at the Kleinmond WTP (OLM) which serves 8 279 people, delivered at an SIV of 2 260 kl/d.
- The Pearly Beach Supply system abstracts raw water from the Pearly Beach and Koekemoer Dams for treatment at the Pearly Beach WTP (OLM) which serves 1 263 people, delivered at an SIV of 380 kl/d.
- The Stanford Supply system abstracts raw water from the Stanford Spring Kouevlakte Boreholes for treatment at the Stanford Water Treatment Works (OLM) which serves 6 050 people, delivered at an SIV of 720 kl/d.

Regulatory Impression: The Overstrand Local Municipality (OLM) was represented by the Director of Engineering planning and accompanied by two technical managers as well as the operations manager from VEOLIA appointed for the operation of all the treatment works for the OLM. The WSI representatives were very well prepared for the Blue Drop assessment, well informed of all aspects of their systems, and provided an outstanding portfolio of evidence which made the audit process easy and efficient. The OLM had a significant decline in its Blue Drop score history from 93.70% in 2011 to 63.90% in 2014.

The regulator would like to applaud the OLM for their commitment to a high standard of service delivery by taking the initiative in appointing VEOLIA for the operation of their treatment plants. With very-low risk ratings, and excellent compliance for both microbiological and chemical acute health across all their systems it is plain to see the value added by this appointment, which resulted in a praiseworthy overall Blue Drop score of 99.99%.

The WSI completed comprehensive high-quality water safety plans for all their systems including extensive proof of implementation and monthly reports on the performance and O&M expenditures on all their plants. Their operational monitoring, data capturing, and analysis is commendable, and they have well-defined and implemented compliance monitoring and risk-based monitoring programs. The team was questioned on their knowledge of the risks identified in the WaSP and was able to readily identify the major risk in the catchments, at the treatment works and within the network including the mitigation measures and status of implementation thereof.

The WSI provided detailed system assessments informed by high-quality process audits including technical site assessments, water reticulation inspections/assessments, and IWA water balances.

The maintenance teams are sufficiently capacitated and managed with competent staff and term contracts are in place for outsourcing of specialised maintenance.

A capital budget was provided together with a five-year forecast. The budget for the audit year was R7.17 million for bulk (delivery and treatment) projects and R30.16 million for network/distribution with respective expenditures of R7.15 million and R29.48 million. The projects were listed as follows:

Table A.8.5: Blue Drop Performance of the Municipality (DWS's 2023 Blue Drop Report)

Capital works executed under bulk contract:

- Security Fencing Water Facilities. Hawston and Pearly Beach Booster WPS (budget R1.0 mil; spent: R0.99 mil)
- Replace Kraaibosch Booster Pump; Replace membranes at Pearly Beach WTW; Replace Membranes at De Bos WTW; Refurbish sand filters; install solar pump and DAF upgrade at Pearly Beach (budget R 2.18 mil; spent: R 2.17 mil)
- Refurbishment of Bulk Water Pipelines (All systems) (budget R1.988 mil; expenditure: R1.986 mil).
- Upgrade access roads to Kleinmond and Buffels River WTW (budget R2.0 mil; expenditure: R1.99 mil)

Capital projects implemented by the Municipality:

- Replacement of Overstrand water pipes (f1/3) - (budget R7.05 mil; expenditure: R7.05 mil).
- Replacement of Overstrand water pipes (f2/3) - (budget R8.00mil; expenditure: R8.00 mil).
- Replacement of Overstrand water pipes (f3/3) - (budget R3.62 mil; expenditure: R3.62 mil).
- Upgrade Hermanus well fields phase 2- (budget R3.59 mil; expenditure: R3.58 mil).
- Water master plan implementation- (budget R7.22 mil; expenditure: R7.22 mil).

Blue Drop Findings: The OLM, across all their system, has very few shortcomings.

- The WSI should ensure that all their Water Use Licenses are in place for Raw Water Abstraction.
- The WSI to ensure up-to-date proof of accuracy for flow meters of the Buffeljags WSS.
- Although the WSI are complying with the regulations for Process controllers and supervisors required for this audit period, the WSI should ensure compliance with the newly promulgated requirement of regulation 3630 for future.

Technical Site Assessment:

The ***Preekstoel WTP*** was inspected to verify the Blue Drop audit findings and received a technical site assessment score of 94%. The plant is owned by the Overstand LM and operated by a private company, Veolia. The works comprises of 3 plants, a 21 Ml/d conventional treatment, a 7 Ml/d chemical oxidation plant ($KMnO_4$), and a 10 Ml/d biological filter plant for Fe & Mn removal giving a combined treatment capacity of 38 Ml/d. The works was found to be in prime condition, excellently managed and maintained and only required some minor general concrete repairs and general upkeep of the buildings. The inspected raw water pump station requires refurbishment of corroded valves and pipes, and a gland leakage sump / pump should be considered. Due to the chemical oxidation process, non-corrosive materials should be considered in areas. All considered the total VROOM amount comes to R56 679/Ml. The final water quality produced by the treatment plant is excellent with a Microbiological (Acute Health) compliance of 98.53% (samples taken fortnightly), and a Chemical compliance (Acute and Chronic Health) of >99.90% and 99.75% respectively. The Operational, Aesthetic and Risk Def compliance monitoring are also excellent, scoring 99.23%, 99.91% and 99.59% respectively. The team on site is aware of what is listed in the safety plan on risks associated from the catchment to the reticulation system. Workplace satisfaction has been indicated as 90% with training identified as the only aspect to improve.

Performance Area		Baardskeerdersbos	Buffeljags Bay	Buffels River	Greater Gansbaai	Greater Hermanus	Kleinmond	Pearly Beach	Stanford
Bulk/WSP		-	-	-	-	-	-	-	-
Capacity Management	15%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
DWQ Risk Management	20%	96.00%	95.00%	96.00%	95.29%	96.00%	96.00%	96.00%	96.00%
Financial Management	10%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Technical Management	20%	98.50%	83.50%	100.00%	98.81%	100.00%	98.50%	98.50%	98.50%
DWQ Compliance	35%	98.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Bonus	10%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Penalties	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Disqualifiers		None	None	None	None	None	None	None	None
Blue Drop Score (2023)	**%**	**99.70%**	**98.20%**	**99.99%**	**99.99%**	**99.99%**	**99.99%**	**99.99%**	**99.99%**
Blue Drop Score (2014)	%	63.87%	71.83%	87.20%	88.30%	96.44%	86.59%	87.35%	90.94%
Blue Drop Score (2012)	%	91.60%	93.80%	95.00%	97.10%	97.90%	95.00%	95.20%	92.70%
Blue Drop Score (2011)	%	93.70%	75.40%	95.10%	95.10%	87.20%	93.10%	94.30%	95.20%
System Design Capacity	kl/d	185	80	5 500	8 100	38 000	5 800	1 440	1 000
System Available Capacity	kl/d	185	28	5 500	8 100	38 000	5 800	1 440	2 000
System Input Value	kl/d	37	14	2 020	3 743	11 154	2 260	380	720
Capacity Utilization	%	20.00%	50.00%	36.73%	46.22%	29.35%	38.97%	26.39%	36.00%
Average Daily Consumption	l/p/d	289	92	610	183	159	273	301	119
Resource Abstracted From		Boreholes	Borehole	Buffels River Dam	Klipgat & De Kelders Grotte Fountain, Kraaibosch & Franskraal Dams	De Bos Dam; Gateway Borehole Field (5 boreholes); Volmoed and Camphill borehole fields (7 boreholes)	Palmiet River and Dorpsfontein	Pearly Beach Dam & Koekemoer Dam	Stanford Spring Kouevlakte Boreholes
Microbiological Compliance	%	98.70%	99.99%	99.99%	99.05%	98.53%	99.99%	97.30%	98.77%
Chemical Health Compliance	%	98.51%	98.28%	99.47%	98.85%	99.76%	98.73%	98.80%	98.11%
Risk Defined Compliance	%	97.97%	98.04%	96.79%	99.70%	99.59%	99.71%	99.43%	99.05%
VROOM	Rand	-	-	R311 735	-	R2 153 802	-	-	-
BDRR 2023	%	9.57%	14.21%	15.08%	19.97%	18.44%	14.53%	13.39%	15.98%
BDRR 2022	%	12.80%	16.20%	16.70%	17.00%	20.70%	16.20%	13.80%	17.80%

The average daily consumption (l/p/d) for the last four financial years are summarised in the table below.

Table A.8.6: Average Residential Daily Consumption (l/p/d) for the Last Four Financial Years.

Distribution System	2021/2022			2022/2023			2023/2024			2024/2025		
	Estimated Permanent Population	Aver. Daily Billed Metered Res. Consump-tion (kl)	Aver. Daily consump-tion (l/p/d)	Estimated Permanent Population	Aver. Daily Billed Metered Res. Consump-tion (kl)	Aver. Daily consumption (l/p/d)	Estimated Permanent Population	Aver. Daily Billed Metered Res. Consump-tion (kl)	Aver. Daily consump-tion (l/p/d)	Estimated Permanent Population	Aver. Daily Billed Metered Res. Consump-tion (kl)	Aver. Daily consump-tion (l/p/d)
Buffels River	3 449	931	**270**	3 593	893	**249**	3 742	961	**257**	3 897	1 151	**295**
Kleinmond	8 486	1 076	**127**	8 698	1 089	**125**	8 915	1 125	**126**	9 138	1 206	**132**
Greater Hermanus	73 154	7 113	**97**	76 410	7 067	**92**	79 810	7 420	**93**	83 361	7 920	**95**
Stanford	6 210	487	**78**	6 375	482	**76**	6 544	564	**86**	6 717	673	**100**
Greater Gansbaai	21 480	1 778	**83**	22 531	1 829	**81**	23 632	1 911	**81**	24 788	2 086	**84**
Pearly Beach	1 290	266	**206**	1 317	263	**200**	1 345	242	**180**	1 374	281	**205**
Baardskeerdersbos	128	19	**148**	129	19	**147**	130	26	**200**	130	29	**223**
Buffeljags Bay	155	6	**39**	155	7	**45**	156	9	**58**	157	7	**45**
All Systems	**114 352**	**11 676**	**102**	**119 208**	**11 649**	**98**	**127 274**	**12 258**	**96**	**129 562**	**13 353**	**103**

Note: The average residential billed metered consumption in the above table is for the period July to June each financial year, excluding the period November to February

DWS's Green Drop Process

The 2025 Green Drop Assessment results are not yet available. DWS's previous complete Green Drop assessment for the WSAs was in 2021 and the results were received early in 2022. Green drop status is awarded to those WSAs that comply with 90% criteria on key selected indicators on wastewater quality management. The green drop performance of Overstrand Municipality is summarised as follows in the DWS's 2022 Green Drop Report.

Table A.8.7: Green Drop Performance of the Municipality (DWS's 2022 Green Drop Report)	
Average Green Drop Score	**2009 – 63%, 2011 – 89%, 2013 - 89%, 2021 – 89%**

Regulatory Impression: Overstrand Municipality and WSP Veolia delivered a sterling performance that was awarded with an overall 89% Green Drop score. The municipality continues to maintain a remarkable record of 89% over 10 years, marked by a highlight committed, competent team. In addition, Gansbaai, Hermanus and Stanford were serious contenders for Green Drop Certification, which regrettably had to be waived due to not achieving excellent standards (>90%) on their final microbiological and/or chemical qualities. The WSA should be able to attain Certification status in 2023 if this matter can be resolved.

The Regulator is impressed with the level of preparation and professional conduct during the audit, represented by managers in various roles, supported by Veolia Water. All required information was loaded onto IRIS for various KPAs prior which ensure a seamless preliminary assessment. The team then used the main audit and verification audit events to maximise their scores by providing clarification and further evidence on sludge classification (landfilling), stormwater- and water demand management and capital projects. The striking performance and sustained services are not surprising if noting the strength of the engineering, technical, scientific, and laboratory competence, supported by committed senior management and municipal leadership. Perfect score (100%) were achieved for KPA Capacity Management for the expertise, supported by comprehensive operation, maintenance and monitoring plans and records, including financials and energy management. Human capacity is optimised via the adoption of automation and telemetry. This aspect must be taken up with the Regulator to align with capacity requirements to ensure that any risks associated with such innovations are managed. Flow monitoring is in place for inflow and outflow, and online monitoring for night flows (Mycity) is in place. Energy optimisation via LED is standard procedure and CO_2 equivalents are calculated to monitor the benefit. Well done. These best practices set a high standard for wastewater services in South Africa.

In a nutshell, the municipality performed exceptionally well in all KPA (>90%), with the exception of Effluent and Sludge Compliance. Areas for improvement include the laboratory turn-around time, monitoring of dedicated sludge streams and performance evaluation against design expectations, flow meter calibration / verification, sludge classification according to the WRC guidelines (noting new landfill regulations).

The adoption of site specific W_2RAP process is an encouraging; notably that risk management is informed and influenced by a process audit, sewer master plan and supported by budget for implementation. Improvement should focus on having (independent) Risk Reviews every 6 months to monitor (quantify) risk movement. The Regulator congratulates Overstrand and hope the 2023 audit cycle will result in an exponential improvement until Green Drop excellence is achieved for all six systems.

Green Drop Findings:

1. All WWTW achieved a full score for capacity management, thereby verifying the availability of registered and qualified process controllers, maintenance teams (inhouse and outsourced services), engineering, technical (technicians and technologists) and scientific expertise tied to wastewater management and asset planning.
2. W_2RAPs are in place and implemented and its impact monitored through operational monitoring and compliance monitoring.
3. All systems presented financial evidence viz. allocated budgets and expenditure, treatment cost (R/m³ treated), energy costs (R/kWh) and contracts for external services.
4. Six of six WWTWs logged full records for compliance monitoring, including biomonitoring.
5. Operational monitoring with online meters for most process streams are implemented. Gaps are still noted with regard to sludge monitoring of dedicated streams, e.g. in and output from settlers and thickeners, anaerobic digesters, belt presses, drying beds, etc.
6. High quality reports were presented for process audits, sewage inspection reports and sewer master planning.
7. Bylaws are updated and enforced.
8. Twelve months of data uploaded on IRIS for all six WWTWs, supported by relevant site-specific water use authorisation and general authorisations.
9. Sludge classification for landfill disposal is done, but not complemented by WRC classification – the latter not only intending to guide disposal but also to monitor the quality of biosolids produced by the site.
10. No penalties and no directives were issued for any systems.
11. No plants in the critical or high-risk positions.
12. Capital projects are part of a three-year plan, with 2021 projects listed as follows:
    - R6 700 000: Sewer network extension in Gansbaai WWTWs and associated infrastructure
    - R16 154 000: Hawston WWTW refurbishment on civil and mechanical equipment's for various unit processes.
    - R8 836 000: Hermanus WWTW refurbishments and associated infrastructure.
    - R1 645 000: Kleinmond WWTW refurbishments and associated infrastructure.
    - R1 797 000: Stanford WWTW refurbishments and associated infrastructure.

The Hermanus WWTW was inspected to verify the Green Drop audit findings **(Technical Site Assessment for the Hermanus WWTW 74%):**

- The network and pumpstation was in good condition, noticed for routine maintenance and adequate response to sewage blockages.

Table A.8.7: Green Drop Performance of the Municipality (DWS's 2022 Green Drop Report)

- Trespassing seems to be a risk at the WWTW, compounded by land invasion close to the site. Neighbours to the WWTW resort to jumping over the fence to access their residence. Overstrand has plans to raise the wall to secure the facility and mitigate security risks.
- Plant infrastructure is aging; however, its lifespan is extended via preventative maintenance strategies. All equipment is functional.
- The site office displays certificates for PCs and WWTW – a satisfactory working environment is observed.
- Operational monitoring, daily logbook or maintenance records were in place.
- Safety signs were displayed at various unit processes i.e., chlorination, belt presses, lime storage, reactors, etc.
- Parts of the site was untidy and not evident of good groundskeeping - used as storage whilst network upgrades/refurbishments underway. Good housekeeping was evident at the maturation ponds.
- Sludge drying beds were not well kept and used only during emergency. Belt presses are used for primary sludge handling.
- Veolia Water developed a reactor control- and sludge management plan.
- All required documents were presented on site including comprehensive O&M manual with manufacturers specs, PFD and model of plant, and record of all maintenance issues (job cards, works orders, tracking of outstanding jobs).

GREEN DROP REPORT CARD							
Key Performance Area	**Weight**	**Gansbaai**	**Hawston**	**Hermanus**	**Kleinmond**	**Pearly Beach**	**Stanford**
A: Capacity Management	15%	100%	100%	100%	100%	100%	100%
B: Environmental Management	15%	91.0%	85.0%	85.0%	86.0%	98.8%	92.0%
C: Financial Management	20%	98.0%	98.0%	98.0%	78.0%	97.5%	98.0%
D: Technical Management	20%	97.5%	97.5%	97.5%	93.5%	97.1%	97.5%
E: Effluent & Sludge Management	30%	70.0%	50.0%	85.0%	64.0%	62.5%	50.0%
F: Bonus		94.0%	94.0%	94.0%	94.0%	56.0%	94.0%
G: Penalties		0.0%	0.0%	0.0%	0.0%	-25.0%	0.0%
H: Disqualifiers		None	None	None	None	None	None
2021 Green Drop Score		**89% - 96%**	**89%**	**89% - 96%**	**88%**	**88%**	**89% - 90%**
2013 Green Drop Score		**92%**	**90%**	**91%**	**78%**	**NA**	**93%**
2011 Green Drop Score		**76%**	**88%**	**92%**	**83%**	**NA**	**83%**
2009 Green Drop Score		**66%**	**57%**	**66%**	**66%**	**NA**	**61%**
System Design Capacity (Ml/d)		2.000	1.000	12.000	2.000	0.259	1.200
Design Capacity Utilisation (%)		43%	61%	54%	76%	31%	89%
Resource Discharged into		Irrigation Sports Complex	Maturation Pond into Wetland	Ocean and Irrigation	Reed-bed / wetland area lined to sea	An aquifer	Constructed reed bed to Klein River
Microbiological Compliance (%)		68%	80%	87%	91%	100%	82%
Chemical Compliance (%)		86%	74%	98%	51%	58%	78%
Physical Compliance (%)		95%	62%	100%	88%	27%	82%
Wastewater Risk Rating (CRR% of CRR max)							
2011 CRR (%)		**31.0%**	**33.0%**	**35.0%**	**44.0%**	**NA**	**44.0%**
2013 CRR (%)		**35.3%**	**29.0%**	**45.0%**	**47.0%**	**NA**	**29.0%**
2021 CRR (%)		**41.2%**	**52.9%**	**36.4%**	**47.1%**	**52.9%**	**64.7%**

Overstrand Municipality also received their 2023 Green Drop Risk Ratings, as calculated from the 2023 assessment done by the DWS.

Table A.8.8: Green Drop Risk Rating of the Overstrand Municipality (DWS's 2023 Green Drop Progress Report)

CRR 2023 (%CRR/CRRmax)	**51.3%**

Introduction:

Overstrand LM has six (6) WWTWs which are owned by the WSA, and operated and maintained by Veolia Southern Africa, a private company. The systems design capacities range in size, from 250 -12 000 kl/day.

Regulator's Comments: The Overstrand LM has impressed with their preparedness for the GD PAT. It is commendable to note that all the WWTWs design information is available (Criteria A) and that all WWTWs are operating well within their design capacities (Criteria B). Kleinmond is running at 82.4% of capacity however it is encouraging to note than there is a refurbishment and upgrade planned at this site along with the sewer network extension. In addition to this capital work, the Gansbaai region is upgrading the sewer networks and supply lines while significant refurbishment is noted at Hermanus with a new inlet screw pump station belt press and RAS upgrade. Therefore, all the systems have provided sufficient supporting data to allow for the calculation of the Cumulative Risk Rating (CRR). Many of the sites have improved their CRR scores from 2022 to 2023 except for Hawston and Hermanus where the scores have increased slightly. The upcoming refurbishment of the Hermanus site will improve the status of the CRR score for the Hermanus WWTW.

Effluent compliance is generally good at all systems although the Hawston site has a total of 6 non-compliant parameters measured

Table A.8.8: Green Drop Risk Rating of the Overstrand Municipality (DWS's 2023 Green Drop Progress Report)

which requires technical intervention to improve the situation. The WSA is applauded for the technical skills and Supervisor competence evident at all sites which is indicative of good planning and infrastructure maintenance. There are some gaps in the availability of technical and operational staff which should be prioritized to ensure effective operation of the WWTWs, especially evident at Hermanus and Pearly Beach where process controller and technical skill availability is lower than desired. The WSA must address the final effluent non-compliance in the Hawston WWTW to improve the CRR scores. The WSA is encouraged to work on decreasing the risks by reviewing their W_2RAP documentation to address all risks as well as ensure that the GDIP is fully implemented in order to reduce the CRR score for all systems, by targeting the poor performing KPIs, especially effluent quality.

All Overstrand systems have W_2RAPs in place and the WSA is encouraged to continually update and implement the available W_2RAPs as they are a vital management tool for effective wastewater management. The WSA has GDIPs in place for all systems and the WSA are evidently making sure that the wastewater generated in the Overstrand LM is managed by competent staff with budgets in place for refurbishment and upgrade work. Overstrand LM is commended for their good performance during this GDPAT, and the regulator will be looking forward to their future performance during the next round of GD Audits.

Risk Assessment Areas	Weight	Gansbaai	Hawston	Hermanus	Kleinmond	Pearly Beach	Stanford
Class of Works		D: Approved	D: Approved	C: Approved	D: Approved	E: Approved	D: Approved
Treatment Technology		Activated Sludge	Activated Sludge	Activated Sludge	Activated Sludge	Oxidation ponds	Activated Sludge
A: Total Design Capacity	Kl/d	2 000	1 000	12 000	2 000	250	1 200
B: Operational Capacity (% inflow / design)	%	41.2%	61.0%	54.1%	82.4%	41.6%	70.8%
C: Effluent Quality Non-compliance	#	2	6	3	3	3	1
% Microbiological Compliance	%	76.5%	86.7%	78.6%	91.7%	100.0%	100.0%
% Physical Compliance	%	100.0%	63.4%	100.0%	91.2%	50.0%	97.2%
% Chemical Compliance	%	84.2%	34.6%	90.9%	35.3%	63.9%	100.0%
D: Technical Skills Compliance	%	100.0%	100.0%	77.8%	100.0%	83.3%	100.0%
Process Controller Compliance	%	100%	100%	33%	100%	50%	100.0%
Supervisor Compliance	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Maintenance Team Compliance	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
CRR (2023)	%	**31.3%**	**62.5%**	**57.1%**	**43.8%**	**50.0%**	**29.4%**
CRR (2022)	%	**41.2%**	**52.9%**	**36.4%**	**47.1%**	**52.9%**	**64.0%**
CRR (2013)	%	**35.3%**	**29.0%**	**45.0%**	**47.0%**	**-**	**29.0%**
CRR (2011)	%	**31.0%**	**33.0%**	**35.0%**	**44.0%**	**-**	**44.0%**
W_2RAP Status: 2022 Green Drop Report		Final document (approved by Council)	Final document (approved by Council)	Final document (approved by Council)	Final document annual review no. 3	Draft document (unapproved by Council)	Final document (approved by Council)
W_2RAP Status: 2023 Green Drop PAT		Final document annual review no. 3	Final document (approved by Council)	Final document (approved by Council)	Final document annual review no. 3	Final document annual review no. 1	Final document annual review no. 3
Capital & Refurbishment Projects (Rand)		18 200 479	0	14 675 201	2 735 289	0	0
Description of Capital & Refurbishment Projects		1. Masakhane Bulk Sewer Supply Line. 2. Gansbaai CBD Sewer Network Extension.	No projects for this financial year, but refurbishments and upgrades has been planned for 2024/25 and 2025/26.	1) New Inlet Screw Pump station. 2) New Belt Press. 3) RAS Upgrade.	1) Kleinmond WWTW Refurbishment & Upgrade. 2) Kleinmond Sewer Network Extension.	Non-Available. No capital projects were undertaken for the 2022/23 financial year.	No capital projects undertaken for the 2022/23 financial year.
2022 GD Score	%	89.0%	89.0%	89.0%	88.0%	88.0%	89.0%
GD Improvement Plan (GDIP)	Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Corrective Action Plan (CAP)	Y/N	No	No	No	No	No	No

SECTION B: STATE OF WATER SERVICES PLANNING

A 2022-2027 five-year WSDP is in place, which was approved by Council on the 31st of May 2022. The Municipality annually compile the WSDP Performance- and Water Services Audit Report, which is submitted to Council with the Annual Report. The WSDP Performance- and Water Services Audit Report gives an overview of the implementation of the Municipality's previous year's WSDP and can be seen as an annexure to Overstrand Municipality's Annual Report. The 2024/2025 WSDP Performance- and Water Services Audit Report will be approved by Council as part of the Municipality's Annual Report.

The Municipality updated their existing Water Supply and Sanitation Services By-law during the 2021/2022 financial year. The updated Water Supply and Sanitation Services By-law was advertised for public comment, where after it was finalised and gazetted.

Water Safety Plans are in place for all the WTWs and water distribution systems. W_2RAPs 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 W_2RAP 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 W_2RAP is used by Overstrand Municipality to manage the identified risks according to its potential impacts on the receiving environment / community / resources.

Detail 2023/2024 Process Audits were compiled for all the WTWs and the WWTWs (Dec 2024).

The Water and Sewer Master Plans were updated during the 2020/2021 financial year and were incorporated into the WSDP. The Water and Sewer Master Plan process entails the establishment of computer models for the water systems and the sewer systems in Overstrand Municipality, 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 Water and Sewer Master Plans lists the analyses and findings of the study on Overstrand Municipality's water distribution and sewer drainage systems. All forward planning for water and sanitation services and water and sewerage infrastructure is guided by the Water and Sewer Master Plans. The Water and Sewer Master Plans are currently being reviewed, in parallel with the review of the municipality's Spatial Development Framework.

The existing Water and Sewer Master Plans, which were available for inclusion in Overstrand Municipality's WSDP, were as follows:

- Water Master Plan, Overstrand Municipality, June 2021, GLS Consulting
- Sewer Master Plan, Overstrand Municipality, June 2021, GLS Consulting

The following water and sanitation related reporting and investigations were successfully completed during or for the 2024/2025 financial year.

- The Water Services Audit Report for 2024/2025 was finalised and approved by Council as part of the Annual Report. The NRW water balance models were updated for each of the distribution systems (Up to the end of June 2025) as part of the Water Services Audit Process.
- Overstrand Municipality continues with the implementation of their Drinking Water Quality and Effluent Quality Sampling Programmes (Both Operational and Compliance Monitoring). Sample results are loaded monthly onto DWS's IRIS. All the WTWs and WWTWs were registered on the IRIS website, according to the new Regulation 3630 requirements. The quality of the treated effluent re-used for irrigation purposes from the Hermanus- and Gansbaai WWTW is also sampled monthly.

- Overstrand Municipality is continuing with their Groundwater Monitoring and Management Programmes. The following Groundwater Monitoring Reports were compiled during the last financial year:
  - Gansbaai Groundwater Monitoring at the WWTW and Communal Sports Centre. Gansbaai Annual Groundwater Monitoring Report October 2024 to October 2025.
  - Water Source Development and Management Plan for the Hermanus Area. Gateway, Camphill and Volmoed Wellfields Interim Monitoring Report: October 2024 to March 2025 and Fernkloof Groundwater Ecological Monitoring Report for April 2024 to March 2025.
  - Water Source Development and Management Plan for the Overstrand Local Municipality. Kouevlakte Wellfield Interim Monitoring Report October 2024 to March 2025.
  - Water Source Development and Management Plan for the Overstrand Local Municipality. Baardskeerdersbos Wellfield Interim Monitoring Report October 2024 to March 2025.
- Detail Plant and Process Audits were done for all the WTWs and WWTWs, Enviro Metsi, December 2024.
- The Asset Register was updated to include all the water and sewerage capital projects completed during the 2024/2025 financial year.
- The following Technical investigations were completed during the 2024/2025 financial year:
  - Upgrade of Hawston Wastewater Treatment Works: Preliminary Design Report. WEC Consult, July 2024.
  - Upgrade and Refurbishment of Buffels Rivier Water Treatment Works: Preliminary Design Repot, Bigen, March 2025.
  - Marine Ecological Monitoring Report for Hermanus Wastewater Treatment Works (WWTW), WEC Consult, May 2025.
  - Upgrade of Hawston Wastewater Treatment Works: WSIG Technical Report. WEC Consult, June 2025.
  - De Bos Dam: Dam Safety Report: Fifth Dam Safety Evaluation Report, Zutari, June 2025.

Overstrand Municipality completed or continued with the following key water and sewerage capital infrastructure projects during the 2024/2025 financial year (Capital expenditure above R1 000 000).

- Various sections of the water reticulation networks and sewer drainage networks and pump stations were upgraded as recommended in the Water and Sewer Master Plans. Sections of the old water reticulation networks were also replaced in Proteadorp (Implementation of the Pipeline Replacement Programme).
- The Municipality continued with the Hermanus Wellfield Phase 2 upgrade project, including the basic assessment process for the upgrade of the wellfields in the Hemel-en-Aarde valley and the successful drilling of two (2) new production boreholes.
- The Municipality started with the installation of alternative new disinfection systems for the Preekstoel WTW and Hermanus WWTW and the refurbishment of the Buffels River WTW.
- The refurbishment of the Pearly Beach water tower was completed.
- The refurbishment / upgrade of the Kleinmond WWTW was completed.
- Disinfection facilities at some of the WWTWs were upgraded.
- Vehicles were purchased to improve service delivery for sewerage services.
- The Municipality continued with the upgrading work at the Hermanus WWTW (Additional Sludge Dewatering facilities).

SECTION C: WATER SERVICES EXISTING NEEDS PERSPECTIVE

The existing needs perspective as presented below was developed through a systematic and comprehensive review of the water services function in terms of the WSDP Guide Framework. The output from this process is presented below and includes compliance assessment in terms of:

- The intervention required to address the gap;
- The proposed solution to address the gap; and
- The Future plan / identified project that would meet the requirement.

The water services situation analysis prompted the development of problem statements which formed the input for the development of the water services objectives and strategies which follows in Section D.

The Vision and Mission statements of Overstrand Municipality are as follows:

Vision: "To be a centre of excellence for the community"

Mission: "Creation of sustainable communities by delivering optimal services to support economic, social and environmental goals in a politically stable environment as an **Overstrand for all**"

Overstrand Municipality's **Strategic Goals** are as follows:

- The provision of democratic, accountable and ethical governance.
- The provision and maintenance of municipal services.
- The encouragement of structured community participation in the matters of the municipality.
- The creation and maintenance of a safe and healthy environment.
- The promotion of tourism, economic and social development.

The Breede-Olifants Catchment Management Agency was established by extending the boundary and area of operation of the Breede-Gouritz CMA Water Management Area (Government Gazette No.47559, 25 November 2022).

The area of operation of the Breede-Olifants Catchment Management Agency includes the previous Breede-Gouritz and Berg-Olifants water management areas as pronounced in the National Water Resource Strategy second edition, 2013.

A Catchment Management Strategy is not yet available for the Breede-Olifants Water Management Area (BOWMA), but the Catchment Management Strategy of the former Breede-Gouritz Water Management Area (BGWMA), July 2017, included the following Vision and three Strategic Focus Areas.

"Healthy water resources, for all, forever,"

- **Strategic Area 1: Protecting for People and Nature:** Focusing primarily on management of streamflow, water quality, habitat and riparian zones related to riverine, wetland, estuarine and groundwater resources, to maintain important ecosystem goods and services and biodiversity.
- **Strategic Area 2: Sharing for Equity and Development:** Focusing primarily on management of water use from surface and groundwater resources through the operation of infrastructure, in order to provide water for productive and social purposes within and outside of the WMA.
- **Strategic Area 3: Co-operating for Compliance and Resilience:** Focusing primarily on co-operation and management of institutional aspects to enable and facilitate the protection and sharing of water, including the more co-operative stakeholders, partnerships, information sharing, disaster risk and adaptation elements of the strategy.

TOPIC 1: SETTLEMENTS AND DEMOGRAPHICS

Topic C.1.1: Settlement Demographics and Public Amenities						
Section	**Intervention Required**	**% (1)**	**Solution description as identified by Master Plan**	**% (2)**	**Is there an Existing project/activity addressing this problem?**	**Current Demand Overall Scoring % (3)**
Settlements Summary	Yes	100.0	All resources, especially surface water resources, need to be re-evaluated, especially where demand is close to the safe one in twenty-year yields. Establish assurance of supply levels of all water sources. Continue with the implementation of the SDF and Growth Management Strategy for each of the towns and ensure that new developments are in line with these priority action plans. Ensure that the provision of bulk water and sewerage infrastructure are aligned with the Housing Strategy and that housing projects only continue once the required bulk water and sewerage infrastructure are in place.	100.0	Yes	92.9
Summary by Settlement Group	No	100.0				100.0
Assessment Score by Settlement Type	No	100.0				100.0
Amenities Summary	No	100.0				100.0

Notes: (1) Is this section addressed in the WSDP?
(2) Were solutions identified for the possible gaps?
(3) Percentage calculated based on the above two percentages and whether there is an existing project/activity addressing this problem? Does this current listed project/activity address the problem totally? Project/Activity approved by Council as part of WSDP database? Approved by Council in project activity database and part of 5yr IDP cycle projects? Project/Activity listed in 3yr MTEF Cycle?

The seven key strategies that should underpin all spatially related decision making in the Overstrand Municipality's Management Area, as included in Overstrand Municipality's Spatial Development Framework (May 2020), are as follows:

Table C.1.2: Seven Key Strategies that should Underpin all Spatially Related Decision Making (SDF)	
Spatial Development Strategy	**Strategy**
Managing Population Growth and In-migration	Adopt a selective "supply driven" approach by only providing for housing growth and related community facilities in the urban areas where the highest potential for sustained economic growth exists.
Mixed Use Densification	Implement a bold mixed use densification policy which earmarks densification areas within urban settlement in order to accommodate growth in the Overstrand based on the extremely limited amount of greenfield land available for development.
Housing Strategy	Eliminate the current housing need based on the revision of the Overstrand Human Settlement Plan. The key principle of this plan being the establishment of human settlements which include the required community facilities, are located in proximity to economic opportunities etc.
Bulk Service Infrastructure Provision	Compile a co-ordinated bulk infrastructure supply provision policy, which prioritises the implementation of bulk infrastructure based on the municipality spatial development concept – Growth Management Framework.
Initiate – Place specific key economic development projects / drivers	Stimulate economic growth and development linked to the comparative locational advantage. Municipality must identify and actively facilitate key catalyst projects in conjunction with strategic partnerships with business / investors.
Priority areas for biodiversity conservation	All public owned land (including State property, Municipal and Provincial property) that is of high conservation importance is to be included in a formal municipal protection area network. The mechanism being to establishing contract nature reserves negotiated in conjunction with the WCNCB conservation stewardship programme, providing legally binding guidelines for land use.
Rural development strategy	Rural development to be informed by the DEADP Rural Development Guidelines (2017), where applicable.

The concept of using a Growth Management Strategy to promote the long-term sustainability of the municipal area and its sub-region is strongly supported by the Overstrand Municipality's Council. The Growth Management Strategies for the various areas identifies and discusses the factors that affect densification within the context of the Overstrand Municipal Area and include the proposed strategies and associated policies.

Recommendations were also made in the Growth Management Strategies regarding the proposed densification priority areas for the next five years and the strategic actions required for the implementation thereof.

A Housing Strategy is in place and the main vision of the Strategy is to not only eradicate the current housing backlog, but to develop and plan for future integrated communities and settlements that would be able to sustain the growing needs for housing in such a way that all people will benefit from the housing developments.

The table below gives an overview of the Objectives of the Housing Strategy, as well as the Housing Programmes and Related Projects (2025/2026 IDP).

Table C.1.3: Objectives of the Housing Strategy and Housing Programmes and Related Projects

Objectives	Housing Programmes and Related Projects
• Upscale provision and implementation of serviced sites. • Increasing densities of new human settlement developments on well-located land. • Reduce bulk infrastructure as a constraint to human settlement development. • Acquiring well-located land for well-planned integrated Human Settlements. • Provide a fair allocation of housing opportunities. • Increase beneficiary involvement in the development of housing opportunities. • Enhancing supply of new rental housing opportunities and encourage improved property management of rental stock. • Increase sustainable resource use by exploring alternative technologies and building methodologies. • Implement Overstrand Municipal Growth Management Strategy.	• Integrated Residential Development Programme (IRDP) • Upgrading of Informal Settlements • Upgrading of Informal Settlement Programme (UISP) • Provision of Economic and Social Facilities • Institutional Subsidies • Enhanced People's Housing Process (EPHP) • Emergency Housing Programme (EHP) • Social Housing Programme in Restructuring Zones • Social Housing Programme • Community Residential Units (CRU) • Finance Linked Individual Subsidy Programme

A detailed action plan has been set in place to reduce the backlog and address the current and future housing need. The Housing Strategy Five-Year Plan will incorporate several housing programmes, each focused on and addressing different needs. The Overstrand Municipality has compiled a comprehensive 5 Year Human Settlement Programme to guide and improve housing development and is specifically focused on delivery within the Municipality. The Programme is updated and revised on a six-monthly basis due to the rapid changing environment in which it operates. Funding allocations from the Provincial Department of Housing are amended from time to time and subsidy amounts are also revised from time to time.

TOPIC 2: SERVICE LEVELS

Topic C.2.1: Service Levels Profile

Section	Intervention Required?	% (1)	Solution description as defined by topic situation assessment	% (2)	Is there an Existing project/activity addressing this problem?	Current Demand Overall Scoring % (3)
Direct Backlog Water	Yes	100.0	Assist private landowners as far as possible with the provision of basic water services to all the households in the Municipality's Management Area with existing water service levels below RDP standard, once practical guidelines and funding become available from the DWS.	100.0	No	28.6
Direct Backlog Sanitation	Yes	100.0	Assist private landowners as far as possible with the provision of basic sanitation services to all the households in the Municipality's Management Area with existing sanitation service levels below RDP standard, once practical guidelines and funding become available from the DWS.	100.0	No	28.6
Water Services Infrastructure Supply Level Profile	No	100.0				100.0
Water Reliability Profile	Yes	100.0	Continue with the provision of communal services in informal areas in order to ensure that the ratio of number of households per facility complies with the target of 25 or less households per tap. Assist private landowners as far as possible with the provision of basic water services to all the households on the farms in the rural areas with existing water service levels still below RDP standard, once practical guidelines and funding become available from DWS.	100.0	Partially	92.9

Topic C.2.1: Service Levels Profile						
Section	**Intervention Required?**	**% (1)**	**Solution description as defined by topic situation assessment**	**% (2)**	**Is there an Existing project/activity addressing this problem?**	**Current Demand Overall Scoring % (3)**
Sanitation Service Infrastructure Supply Level Profile	No	100.0				100.0
Sanitation Reliability Profile	Yes	100.0	Continue with the provision of communal services in informal areas in order to ensure that the ratio of number of households per facility complies with the target of 5 or less households per toilet facility. Assist private landowners as far as possible with the provision of basic sanitation services to all the households on the farms in the rural areas with existing sanitation service levels still below RDP standard, once practical guidelines and funding become available from DWS.	100.0	Partially	92.9
Water Services: Education	No	100.0				100.0
Water Services: Health	No	100.0				100.0
Sanitation Services: Education	No	100.0				100.0
Sanitation Services: Health	No	100.0				100.0
Health and Educational Facilities	No	100.0				100.0

Notes: (1) Is this section addressed in the WSDP?
(2) Were solutions identified for the possible gaps?
(3) Percentage calculated based on the above two percentages and whether there is an existing project/activity addressing this problem? Does this current listed project/activity address the problem totally? Project/Activity approved by Council as part of WSDP database? Approved by Council in project activity database and part of 5yr IDP cycle projects? Project/Activity listed in 3yr MTEF Cycle?

As a priority it is the responsibility of Overstrand Municipality to make sure that adequate and appropriate investments are made to ensure the progressive realisation of the right of all people in its area of jurisdiction to receive at least a basic level of water and sanitation services. Whilst the provision of basic water services is the most important and immediate priority, WSAs are expected to provide intermediate and higher levels of services (for example, water on-site) wherever it is practical and provided it is financially viable and sustainable to do so.

The service levels to be provided by Overstrand Municipality to the consumers in their Management Area are included in the Consumer Charter and also in the Water Supply and Sanitation Services By-law. All water and sanitation services provided by Overstrand Municipality to consumers within the Municipal Management Area are linked to the Municipality's Tariff Policy and Rates Policy and poor households are incorporated through Overstrand Municipality's Indigent Policy.

The large number of residents in the lowest income groups (living in informal areas) places a major challenge on Overstrand Municipality to provide suitable housing.

Overstrand Municipality acknowledges the fact that communal standpipes represent probably the weakest part of a network's water supply services. Standpipes must be constructed in ways that can withstand excessive use and should not be neglected in terms of operation and maintenance. Malfunctioning standpipes may adversely affect the health of its already vulnerable and poor users. Communal standpipes are also used by poor households who normally don't pay for water. Therefore a contract was awarded for the maintenance of these facilities.

Water and Sanitation Services on Privately Owned Land Policy (November 2023)

The roles and responsibilities of the WSA are as follows:

- The role of the WSAs is to comply with the regulatory and support mandates of DWS over provision of water services and resources to residents living on privately owned land.
- WSAs must integrate this policy with their respective local mandates in terms of the Strategic Framework for Water Services.
- WSAs must ensure Water Service Providers perform their responsibilities, which include Operation, maintenance and capital development of water and sanitation services infrastructure outside the boundary and / or within the servitude / of the end user.
- WSAs must identify, register and regulate Water Service Intermediaries / Providers according to their policies, bylaws, national norms and standards.

The roles and responsibilities of the Private Landowner / Water Services Intermediary are as follows:

- Private landowners must provide basic water services to their employees (and the families of employees) living on their land.
- WSAs must ensure that this policy is implemented and must identify, register and regulate water services intermediaries according to their bylaws and national norms and standards.
- Landowners must make an appropriate contribution to the capital cost of basic services.
- While water and sanitation assets, which WSAs install, remain under the ownership of the State, landowners will however have economic rights to the infrastructure once they become intermediaries, and those economic rights will be linked to a contract term.
- Operations and maintenance (and capital development of water and sanitation services on privately owned land) remain the responsibility of property owners.
- The private landowner is encouraged to enter into a contract with the WSA and perform the duties of a Water Services Provider as stipulate din Section 25(1) and (2) of the Water Services Act.
- Private Landowners / Water Services Intermediaries / Water Services Providers should:
  - Support the regulatory and support mandates of DWS over the water services and resources provided to residents living on privately owned land.
  - Integrate and implement this policy in terms of their planning and implementation to ensure compliance with all relevant legislation concerning provision of water services on private land; and to
  - Ensure that this policy is communicated to any person, party or organization affiliated to the “private land” sector.
  - The employers is responsible for providing water and sanitation services to their labourers / employees as per Section 8(1) of the Occupational Health and Safety Act (Act 85 of 1993).

National Sanitation Policy, 2016.

Problem Statement: The ineffectual interpretation and implementation of the Section 78 of the Municipal Systems Act (No. 32 of 2000) process has contributed to municipalities primarily keeping the sanitation provision function in-house, even when the capacity to do so adequately was lacking. They are not appropriately implementing Section 78 provisions. WSAs are not responding to key responsibilities assigned to them in legislation and the SFWS.

Where a WSA has contracted a WSP to provide sanitation services, the responsibility of the two parties is not always clear in the contracts. There is a need for effective contract regulation.

A WSA have the following responsibility:

- Implementation of the Municipal Systems Act (Act 32 of 2000) and Water Services Act (Act 108 of 1997) provisions.
- Prepare sanitation plans such as WSDPs etc., aligned to national sanitation planning.
- Ensure the realisation of the right to access to sanitation services, particularly basic sanitation services, subject to available resources. This includes people living on privately-owned land, in recognised permanent informal settlements and vulnerable groups and others who are provided services by Water Services Intermediaries. Wherever practical and sustainable, Water Services Authorities are expected to plan for and provide higher levels of service.
- Ensure the provision of effective, efficient and sustainable sanitation services. The provision of sanitation services also includes communication activities related to, amongst other things, Hygiene Education, end-user education and the wise use of water.
- Develop an asset management strategy, a maintenance and rehabilitation plan and a register of sanitation services assets and must then put in place a system to manage these assets.
- Provide information concerning the provision of sanitation services as reasonably requested by the Provincial or National governments, end-users and / or organisations.
- Develop an appropriate institutional structure to adequately respond to key WSA functions and responsibilities.
- Account, as per the Municipal Finance Management Act (No. 56 of 2003), to the province and National Treasury for resource allocation (financial, human etc.).
- Provide sanitation hygiene and end user education.

WSAs have a right but not an obligation to accept industrial, agricultural and mining wastewater within their area of jurisdiction.

WSAs must adhere to the following requirements in a transparent manner and in close contact with end-users:

- Sanitation services must be designed, planned and implemented to consider operations and maintenance requirements and to reduce the environmental impact of unmanaged grey-water, human excreta and wastewater disposal.
- Sanitation services must be appropriate and minimise impact on and use of water resources. WSA should strive for systems which utilise minimal water resources.
- Sanitation technologies which consider settlement types.
- Geo-hydrological testing before use of on-site groundwater sources or on-site sanitation services. Exceptional situations may require independent review and advice.
- Technology choices must be appropriate and affordable.
- Roles and responsibility for payments for operations and maintenance must be clear.
- Only appropriate sanitation technologies must be adopted.
- The quality of all building materials used for construction must be durable and fully compliant with the requirements, norms and standards
- Local availability of materials and skills must be part of the choice of technology or construction method. The design of sanitation services facilities must maximise the use of local resources.

- Sanitation technology selection should include resources to develop the necessary local institutional capacity to manage the day to day and future operational needs. In some circumstances there may be considerable merit in engaging a sanitation services provider to carry out certain functions on behalf of a local authority. Government does encourage local authorities to consider various options in this regard.

- Social and cultural practices and preferences should be considered in the selection of appropriate sanitation technology.

WSA must have the billing systems in place to raise sufficient revenue for sanitation services.

WSA must ensure sufficient funds are transferred for a WSP to perform the agreed functions.

WSA must regulate all aspects of sanitation services provision locally.

The WSA is accountable to its citizens.

Sanitation services planning by WSAs should be in conjunction with municipal Environmental Health Practitioners, as well as other stakeholders and departments involved in the sector.

The Revised Compulsory National Water and Sanitation Standards, as published in the Government Gazette No.52814 of 6 June 2025, make provision for the following standards for basic water and sanitation supply services.

Table C.2.2: Basic water and sanitation supply services

Basic water supply services

- A WSA is responsible for the provision of basic water supply services to all consumers or potential consumers in its jurisdictional area inclusive of people residing on privately owned land as guided by the Water and Sanitation Services Policy on Privately Owned Land (2023).
- The minimum standard for basic water services must consist of:
  - Within two years of promulgation of these regulations an access or delivery point which must be at least at the end boundary of the yard (user connection point) of the existing settlement.
  - A minimum quantity of drinking water of 6 kl/household per month -
    - at a minimum flow rate of not less than 10 litres per minute.
    - with an effectiveness such that water is made available for at least 358 days per year.
    - not interrupted for longer than 48 consecutive hours.
    - at no cost to indigent households, upon depletion of the initial 6 kl per month allocation, qualifying indigent household will be subject to usage restrictions and will be responsible for payment based on the adopted tariff policy for any additional water consumed.
  - Water provided which complies with the requirements of SANS 241.
- Maintenance of the infrastructure up to the user connection is the responsibility of the Water Services Institution and the maintenance of the infrastructure within the boundary of the property is the responsibility of the owner.
- All new users applications for water connections must be completed within 21 calendar days by a WSA in areas where the infrastructure allows or exist.
- All user connections for water supply must be metered or measured, controlled and tariffed by the relevant Water Services Institution.
- A Water Services Institution must replace stolen meters and or repair or replace damaged meters within 30 days of it being reported or detected.
- Water meters must be managed and replaced within their asset lifespan.
- The Water Services Institution must ensure the provision of appropriate education in respect of safe, effective and efficient water use, hygiene and groundwater use management.
- Within two years after promulgation of these Regulations, WSA must submit plans to the Department, using the WSDP platform as part of their WSDP on how they are going to upgrade all consumers in formal settlements to basic services (yard connection; user connection point).

Basic sanitation supply services

- A WSA is responsible for the provision of basic sanitation services to all consumers or potential consumers in its jurisdictional area inclusive of people residing on privately owned land as guided by the Water and Sanitation Services Policy on Privately Owned Land (2023).
- The standard for basic sanitation services must include the provision of a toilet with functional hand washing facility in the yard, which is safe, reliable for 24 hours a day, environmentally sound, easy to keep clean, provides privacy and protection against the

Table C.2.2: Basic water and sanitation supply services
Basic water supply services
weather, well ventilated, keeps smells to a minimum and prevents the entry and exit of flies and other disease-carrying pests, providing for an effective and acceptable sanitation technology. • A WSA must ensure that human excreta and wastewater is safely contained at all times, throughout the sanitation service chain. • Faecal sludge management must be an integral part of the sanitation service. • Each household must have uninterrupted access to an adequate, appropriate sanitation facility. • Hygiene and user education must be an integral part of sanitation service. Households should be supported with knowledge and any other relevant resources to take responsibility for the correct and consistent use of the sanitation service, including but not limited to the toilet facility. • In providing basic sanitation service, a WSA must consider the following requirements: ➢ The need for everyone, including persons with a disability to have a reasonable quality of life. ➢ Water efficient sanitation solutions. ➢ Groundwater pollution risks in accordance with the Protocol to manage the potential groundwater contamination from on-site sanitation (2003). ➢ Water use authorisation in terms of the NWA. ➢ Surface water pollution risks and the management thereof. ➢ Population density. ➢ Economies of scale. • Subject to the above, a WSA must consider- ➢ In high and medium density formal settlements: ▪ waterborne sewered sanitation provided that the wastewater treatment system and works have adequate capacity and is performing to acceptable standards under the National Water Act (read with regulation 10); or ▪ alternative water efficient sanitation solutions instead of waterborne sewered systems in areas of dense formal and medium settlement where there is resource scarcity and or inadequate capacity or functionality in the sewer system and or the wastewater treatment works. ➢ In low density or sparsely populated settlements: water efficient sanitation solutions. • Water efficient sanitation solutions, as described above, must be shown to include off-grid, on-site sanitation options such as Non-sewered Sanitation Systems (NSSS) as well as Decentralised Wastewater Treatment Systems (DWWTS). • A WSA may not unreasonably decline a property development to have a water efficient sanitation solution that is not connected to the central system where development will manage the system as a Water Services Intermediary and where the water uses of the system is authorised under the National Water Act. • Whenever a Water Services Institution is providing new innovative non-sewered sanitation systems, such must be guided by the requirements of SANS 30500 for Non-Sewered Sanitation Systems or the "SANS 24521:2020 Guidelines for the management of basic on-site domestic wastewater services", whichever is applicable. • WSA must monitor and regulate safe emptying, transportation, treatment and disposal of faecal sludge to faecal sludge treatment facilities or any other authorised facility. • Faecal sludge treatment plants must be guided by ISO 31800 for prefabricated units or similar standards for non-prefabricated faecal sludge treatment units. • WSA must have community participation procedures of informing communities about the emptying processes, routes and health risks. • Within two years after promulgation of these Regulations, the WSA must submit plans as part of their WSDP, using the WSDP platform, on measures to eradicate unimproved pit toilets and open defaecation in human settlements.

The Revised Compulsory National Water and Sanitation Standards, as published in the Government Gazette No.52814 of 6 June 2025, also make provision for the following standards for interim water and sanitation supply services.

Table C.2.3: Interim water and sanitation supply services
Interim water supply services
• A WSA must take reasonable measures to provide interim water supply services in informal settlements. • Upon realisation of a new informal settlement, the WSA must provide interim water supply services within 90 days of becoming aware thereof. • A WSA is responsible for the capital, operation, maintenance and refurbishment actions and cost pertaining to interim water services. • Where an informal settlement is formalised, a WSA must ensure access to basic water services. • The minimum standard for interim water services must consist of:

Table C.2.3: Interim water and sanitation supply services
Interim water supply services
➢ An access or delivery point which must be a communal standpipe, within a reasonable walking distance of no more than 200m from the furthest household. ➢ A minimum quantity of drinking water of 6 kl/household per month - ▪ at a minimum flow rate of not less than 10 litres per minute. ▪ with an effectiveness such that water is made available for at least 358 days per year. ▪ not interrupted for longer than 48 consecutive hours. ➢ Water provided which complies with the requirements of SANS 241. • All areas supplied with interim water supply services must have zonal meters and measured by the relevant Water Services Institution. • Whenever interim water supply services are provided through water tankers, it must not exceed 12 consecutive months and WSAs need to keep accurate records as specified in Regulation 4(3)(c).
Interim sanitation supply services
• A WSA is responsible for the capital, operation, maintenance and refurbishment actions and cost pertaining to interim sanitation services including the management of faecal sludge in the entire sanitation service chain. • A WSA must take reasonable measures to provide appropriate interim sanitation services in informal settlements and during a disaster. • Upon realisation of a new informal settlement, the WSA must provide interim sanitation services within 90 days. • Interim sanitation services must provide at least the following: ➢ Communal and shared facilities in accordance with the following: ▪ Communal toilet: Toilet seat – 1 seat per 10 households; Urinal units – 1 unit per 20 households; Hand washing – 1 basin per 10 households. ▪ Shared toilets: Toilet seat – 1 unit per 4 households; Urinal units – 1 unit per 10 households; Hand washing – 1 basin per 4 households. ➢ The WSA must put measures in place to keep the toilets hygienic. ➢ The toilets must be separated according to gender to meet the needs for women, girls and persons with disability. ➢ All portable and mobile toilets must be emptied at least twice a week to appropriate licensed facilities for treatment. • If the sanitation facility is communal, the maximum walking distance should be 100m, wherever possible. • Parents and care givers must be provided with information by the Water Services Institution regarding safe disposal of infant's faeces, laundering practices and use of nappies, potties or scoops for effectively managing safe disposal. • A WSA through its Environmental Health Practitioners are responsible for promoting hygiene and user education for ensuring an environmentally safe approach to sanitation and for monitoring the impact of sanitation processes on the environment.

Overstrand Municipality is committed to support the private landowners as far as possible with regard to addressing the basic water services backlog that might still exist on the farms in the rural areas once clear and practical policy guidelines are available from the DWS and funding is made available.

Overstrand Municipality is however faced with various challenges with regard to the provision of services on private owned land in a financial sustainable manner (enabling the ongoing operation of services and adequate maintenance and rehabilitation of the assets), which include the following:

Free basic water policy:

- The provision of the infrastructure (facilities) necessary to provide access to water to all households in a sustainable and economically viable manner.
- The development of subsidy mechanisms which benefit those who need it most.

Free basic sanitation policy:

- Provision of the most appropriate sanitation facility to the poor households.
- Health and hygiene promotion must be provided in a co-ordinated manner and must be properly managed and adequately funded if free basic sanitation is to become a reality. This requires close collaboration between the EHPs of the Overberg District Municipality responsible for environmental health and Overstrand Municipality.
- Subsidising the operating and maintenance costs. If the basic service is to be provided free to the poor then Overstrand Municipality must ensure that the costs of providing the service are covered by the local

government equitable share and / or through cross-subsidies within Overstrand Municipality's Management Area.

The ownership of water services assets may be in the hands of the person owning the land where an "on-site" water or sanitation facility is provided to a household. There is no legal impediment to the use of government grants to fund infrastructure for a poor household on private land not owned by that household, provided that the intermediary (the private landowner) makes a financial contribution (this is because the intermediary becomes the owner of the infrastructure once it is installed). Government is looking at specific policies with regard to the appropriate level of contribution.

Overstrand Municipality needs to put the following measures in place with regard to water and sanitation services in their Management Area:

- A Water and Sanitation Service Level Policy needs to be compiled, which is aligned with the requirements of the National Sanitation Policy (2016), Water and Sanitation Services on Privately Owned Land Policy (November 2023) and the Compulsory National Water and Sanitation Services Standards, 2024 (Gazette No.52814, 6 June 2025).

- Overstrand Municipality must comply with the regulatory and support mandates of DWS over provision of water services and resources to residents living on privately owned land.

- Overstrand Municipality must ensure that the "Water and Sanitation Services on Privately Owned Land Policy" is implemented and must identify, register and regulate Water Service Intermediaries / Providers according to their policies, bylaws, national norms and standards.

- Overstrand Municipality must make provision for private landowners to enter into a contract with them to perform the duties of a Water Services Provider as stipulated in Section 25(1) and (2) of the Water Services Act.

- Overstrand Municipality must comply with the Basic water and sanitation supply services requirements as included in Table C.2.2 and the Interim water and sanitation supply services requirements as included in Table C.2.3 (Compulsory National Water and Sanitation Services Standards, 2024, Gazette No.52814, 6 June 2025).

- Overstrand Municipality must ensure the realisation of the right to access to water and sanitation services, particularly basic water and sanitation services, subject to available resources. This includes people living on privately-owned land, in recognised permanent informal settlements and vulnerable groups and others who are provided services by Water Services Intermediaries. Wherever practical and sustainable, WSAs are expected to plan for and provide higher levels of service.

- Overstrand Municipality must ensure the provision of effective, efficient and sustainable water and sanitation services. The provision of sanitation services also includes communication activities related to, amongst other things, hygiene education, end-user education and the wise use of water.

- Provide information concerning the provision of water and sanitation services as reasonably requested by the Provincial and National governments, end-users and / or organisations.

- Provide sanitation hygiene and end user education.

- Overstrand Municipality must adhere to the sanitation requirements listed on page 2.7 of the "Revised Compulsory National Water and Sanitation Services Standards" in a transparent manner and in close contact with end-users.

- The billing system must make provision for the sufficient raising of revenue for water and sanitation services. Overstrand Municipality must ensure sufficient funds are transferred for a WSP to perform the agreed functions when it becomes applicable.

- Overstrand Municipality must regulate all aspects of water and sanitation services provision locally and is accountable to their citizens.

- The provision or distribution of bucket toilets to communities in both formal and informal settlements are prohibited.

- Overstrand Municipality is prohibited from approving bulk user connections to existing water and wastewater systems without having the necessary capacity to service such user connections. This means that a municipality may not approve new / additional bulk user connections to an existing water or wastewater treatment system unless that system has the capacity to deal with the additional load (ability to operate according to technical specifications).

- Overstrand Municipality may not approve any new developments that will connect to an existing wastewater treatment system unless such a system has the capacity to deal with the load from the development.

- Overstrand Municipality must only accept the quantity and quality of industrial wastewater or any other substance into a sewerage system that the sewage treatment works linked to that system is capable of purifying or treating to ensure that any discharge to a water resource complies with the required authorisation and standard prescribed under the National Water Act.

- Overstrand Municipality shall prescribe pre-treatment of any effluent to the required standard its wastewater treatment systems can process prior to it being disposed into municipal infrastructure.

Public Amenities Education: All education facilities in Overstrand Municipality's Management Area are provided with adequate water services and no specific strategies, with regard to the provision of water services to these facilities, were therefore identified. Overstrand Municipality is however committed to work with the Education Department to address any possible shortcomings with regard to the provision of water services that might exist at any school or tertiary education facilities. It is important for the schools in Overstrand Municipality's Management Area to focus on Water Demand Management activities and for Overstrand Municipality to continue to support the schools with WC/WDM initiatives.

Public Amenities Health: All medical facilities in Overstrand Municipality's Management Area are provided with adequate water services and no specific strategies, with regard to the provision of water services to these facilities, were therefore identified.

Overstrand Municipality will strive to continue to ensure that the minimum required SANS241:2015 water quality standards are met through proper management, operation and maintenance of their WTWs and the systematic upgrading of their WTWs when required. The monitoring of provision of basic minimum services to farm dwellers remains a challenge, in view of the limited funding and human resources.

The environmental health function is currently with the Overberg District Municipality. The Municipal Health Services of the Overberg District Municipality also report monthly to the Department of Health on water quality. The quality of life of the people within a Municipality is influenced by the available health care. Various factors influence the health conditions of people in any region, for example access to clean water, good sanitation, proper nutrition and adequate housing.

It is important that a co-operative relationship be maintained between the Overberg District Municipality and Overstrand Municipality with regard to environmental health issues and that a good communication protocol is followed between the District Municipality and Overstrand Municipality to report on health issues.

The health profile in relation to treated water is excellent. Within the urban context, drinking water throughout the municipal area is considered to be of a high quality. The most vulnerable groups within Overstrand Municipality's Management Area are the persons living in informal areas with shared services. It is therefore of outmost importance that the communal standpipes are properly maintained, to promote better health and hygiene among users. It is necessary to:

- keep the standpipe area clean and free from stagnant water;
- avoid water spillage by keeping the tap closed when not in use;
- report and rectify leakages immediately;
- keep straying animals away from standpipe area; and

- keep the tap outlet, standpipe slab and soak away clean.

Overstrand Municipality further needs to promote health and hygiene awareness amongst standpipe users by focusing on the following:

- users must use the standpipe only for the filling of containers;
- no body or clothes washing is allowed at standpipes;
- no house pipes or other objects may be attached to the standpipes;
- use clean containers and close containers with a suitable lid when transporting water;
- disinfect containers when necessary; and
- immediately report any irregularities, contamination, tampering or vandalism at standpipes

The rehabilitation and maintenance of the basic services in informal areas have also had positive results, in that the installations appear neater, a healthier environment has been created and less pollution takes place. It is believed that this played a significant role in reducing disease previously caused by unhygienic conditions and absence of basic services.

The supply of basic sanitation services on the farms needs to be linked to the provision of health and hygiene education. Improved health requires behaviour change, which also cannot be achieved with a single health education talk given by an outside expert. Behaviour change requires sustained monitoring and promotion within the community. This is the key-function of the community health workers employed on sanitation projects.

Overstrand Municipality needs to continue to actively engage with service providers and NGO's in the fight against illnesses such as HIV/Aids and TB. A solution to the sustainability of the community health worker's position and employment within the community has been to link their position and function to the activities of the Department of Health. In addition support can be provided to the Community Health Workers through local clinics and through the programmes of the EHPs. Education on the HIV/Aids pandemic would play a key role in stemming the spread of the disease.

Overstrand Municipality will therefore endeavour to improve their efforts to foster partnership-driven development in planning and implementation where partnerships include community members, CBOs, NGOs, the private sector and other spheres of government. In this regard the Department of Health is considered a particularly important partner whose collaboration is much needed.

TOPIC 3: WATER SERVICES ASSET MANAGEMENT

Topic C.3.1: Water Services Asset Management						
Section	**Intervention Required?**	**% (1)**	**Solution description as defined by topic situation assessment**	**% (2)**	**Is there an Existing project/activity addressing this problem?**	**Current Demand Overall Scoring % (3)**
General Information	No	100.0				100.0
Operation	No	100.0	Implement recommendations from the Water Safety Plans and WTW Process Audits. Improvement/Upgrade plans to be implemented.	100.0	Partially	92.9
	No	100.0	Implement recommendations from the W_2RAPs and WWTW Process Audits. Improvement/Upgrade plans to be implemented.	100.0	Partially	92.9
Functionality Observation	No	100.0	Provide additional reservoir storage capacity for the towns with inadequate storage capacity. Upgrade existing water pump stations and provide new water pump stations for the identified areas. Upgrade existing WTWs and WWTWs as recommended. Upgrade existing sewer pump stations and provide new sewer pump stations for the identified areas.	100.0	Partially	92.9
Asset Assessment Spectrum	No	100.0	Increase O&M budget for repairs and maintenance of infrastructure. A budget of approximately 2% of the total asset value per annum should be allocated towards the replacement of the existing water and sewerage infrastructure (Best Practice). In the case of operations and maintenance of the system, a budget of approximately 1% to 2% of the value of the system is typically required to ensure that the system remains in good condition (Best Practice).	100.0	Partially	92.9
Water and Sanitation schemes	No	100.0	Upgrade sections of the water reticulation network and sewer drainage network as proposed in the Water and Sewer Master Plan	100.0	Partially	92.9

Notes: (1) Is this section addressed in the WSDP?
(2) Were solutions identified for the possible gaps?
(3) Percentage calculated based on the above two percentages and whether there is an existing project/activity addressing this problem? Does this current listed project/activity address the problem totally? Project/Activity approved by Council as part of WSDP database? Approved by Council in project activity database and part of 5yr IDP cycle projects? Project/Activity listed in 3yr MTEF Cycle?

Asset Management Plan: It is believed that the technology and the expansion of infrastructure and the personnel capacity has not been developed in the same manner, accordingly the human resources previously found it difficult to operate and maintain the infrastructure and did not necessarily have the skills to operate the infrastructure optimally. The Water and Wastewater Bulk Works Contract ensures the adequate operation and maintenance of the WTWs and WWTWs and the other bulk water and sewerage infrastructure.

The Municipality's current Asset Register is adequate for the information required for the WSDP. An Asset Management Policy is also in place to ensure efficient, effective and optimal management, operation and maintenance of all assets, which includes treatment plants, reservoirs, structures, buildings, pipelines, sites, etc. An Asset Management Plan also needs to be drafted with the following purpose.

- Ensure the operation and maintenance functions are well planned.
- Demonstrate responsible management.
- Justify and communicate funding requirements.
- Service provisioning complies with regulatory requirements.

An Asset Management Plan normally includes the following:

- documents the nature, extent, age, utilisation, condition, performance and value of the infrastructure work;
- identifies existing and target levels of service, as well as expected changes in demand;
- identifies the life-cycle management needs of the infrastructure (development, renewal, operations and maintenance);
- assesses capital and operational budget needs; and
- identifies infrastructure asset management improvement needs.

Overstrand Municipality needs to differentiate between budget allocated towards the operation and maintenance of the water and sewerage infrastructure and the budget allocated towards the replacement of the water and sewerage infrastructure. A budget of approximately 2% of the total asset value per annum should be allocated towards the replacement of the existing water and sewerage infrastructure (Best Practice). In the case of operations and maintenance of the system, a budget of approximately 1% to 2% of the value of the system is typically required to ensure that the system remains in good condition (Best Practice).

The objective of an Asset Management Plan is to support the achievement of the strategic goals of the Municipality and facilitate prudent technical and financial decision-making. It is also a vehicle for improved internal communication and to demonstrate to external stakeholders the Municipality's ability to effectively maintain its existing infrastructure as well as the new infrastructure to be developed over the next 20 years.

Priority should be given to rehabilitating existing infrastructure as this generally makes best use of financial resources and can achieve an increase in (operational) services level coverage's most rapidly. The preparation of maintenance plans and the allocation of sufficient funding for maintenance are required to prevent the development of a large condition backlog. The potential renewal projects for water and sanitation infrastructure need to be identified from the Asset Register. All assets with a condition grading of "poor" and "very poor" need to be prioritised.

The Asset Management Plan must be based on the principle of preventative maintenance in order to ensure that, as far as this is practical, damage to assets is prevented before it occurs. Overstrand Municipality must ensure that the maintenance and rehabilitation plan is part of the WSDP and that the plan is implemented. Assets must be rehabilitated and / or replaced before the end of their economic life and the necessary capital funds must be allocated for this purpose.

One of the key challenges of Overstrand Municipality is to identify adequate funds for the rehabilitation and maintenance of their existing infrastructure, which is critical to ensure the sustainability of the services that are provided by the Municipality. It is important for the Municipality to secure adequate funding for major refurbishment and maintenance work, the provision of bulk infrastructure and the development of additional sources in order to keep up with the high demand for services.

Disaster Management Plan: An updated Disaster Management Plan is available for Overstrand Municipality. The role of the Disaster Management Unit include the following.

- To compile and adopt a disaster management policy;
- Compile and maintain disaster management plans / framework;
- Establish a disaster management committee; and
- Establish community partnerships that combine the access and attributes of everyone with a stake in disaster resistance.

Risk reduction includes: Risk awareness programs; Risk prevention programs; Formal and informal training about emergency services and disaster relief; Research in formal and informal settlements about location, growth and development and Upgrading of vehicles, equipment and protective clothing.

The 2025/2026 IDP include the following Disaster Management Analysis for Overstrand Municipality.

Table C.3.2: Disaster Management Analysis for Overstrand Municipality

Functions		Yes	No	Comments, if No
A Hazard, Risk and Vulnerability Assessment have been performed.	For the Municipal Area		X	Budget and capacity constraints
	For projects identified in the IDP		X	New function, no projects in place. No budget for projects.
The identified disaster risks have been prevented or mitigated through the implementation of risk reduction programmes.	For the Municipal Area	X		
	For projects identified in the IDP		X	New function, no projects in place. No budget for projects.
Appropriate disaster preparedness, response and recovery plans have been developed for a risk that cannot be prepared or mitigated.	For the Municipal Area	X		
	For projects identified in the IDP		X	New function, no projects in place. No budget for projects.
The Municipality has instituted the following disaster management requirements.	Establish a functional Disaster Management Centre		X	Budget Constraints
	Appoint a Head of Centre		X	Do not have a Centre

Table C.3.2: Disaster Management Analysis for Overstrand Municipality				
Functions		**Yes**	**No**	**Comments, if No**
	A functional Disaster Management Advisory Forum		X	DMAF to be established. Provincial Government hosted presentation on importance of DMAF.
	A Disaster Management Plan has been developed	X		
	This DM Plan does include Sectoral Plans.	X		
Disaster Management has functional systems that comply with the following.	GIS data for disaster management		X	Limited DM Capacity
	Risk reduction planning		X	Limited DM Capacity
	Early warning system		X	Budget Constraints
	Preparedness, response and recovery planning (Generic Plan)	X		
These systems are linked to:	Other line functions in the Municipality		X	Overberg District
	Other Municipalities	X		
	Security Forces (SAPS and SANDF)		X	Overberg District DMC
	Provincial MES		X	Overberg District DMC
	Provincial Departments		X	Overberg District DMC
	The National Disaster Management Centre		X	Overberg District DMC
The Municipal Disaster Management Plan is completed, submitted and approved by:	Other Municipalities in District Municipal Area	X		
	District Municipal Disaster Management Centre	X		
	Provincial Disaster Management Centre	X		

Untreated Effluent Management Plan: There are no known untreated effluent discharges to the environment. The W_2RAP include Management Procedures and Incident Response and Emergency Protocols to respond to incidents.

Future Water and Sewerage Infrastructure Requirements: The Water and Sewer Master Plans (June 2021) for the various distribution and drainage systems in Overstrand Municipality's Management Area recommends upgrades of the water and sewerage infrastructure to the values indicated in the table below in the foreseeable future in order to accommodate development and population growth according to the SDF.

Table C.3.3: Summary of the Future Water and Sewerage Infrastructure Requirements for Overstrand Municipality, as included in the 2021 Water and Sewer Master Plans			
Zone / Area	**Water Infrastructure (R million)**	**Sewerage Infrastructure (R million)**	**Total Cost (R million)**
Buffels River	R54.209	R458.221	R512.431
Kleinmond	R7.099	R82.642	R89.741
Greater Hermanus	R241.230	R235.078	R476.309
Stanford	R21.182	R16.990	R38.172
Greater Gansbaai	R225.879	R397.079	R622.958
Pearly Beach	R12.607	R69.225	R81.832
Baardskeerdersbos	R5.246	R6.848	R12.093
Buffeljags Bay	R0.063	R0.678	R0.741
Overberg Water	*R465.346*	-	*R465.346*
Total (Excluding Overberg Water)	**R567.515**	**R1 266.762**	**R1 834.277**

Notes: 1) Costs include P&G's, Contingencies & Fees, but exclude EIA studies, registration of servitudes and/or land acquisition and VAT.
2) The above requirements do not include the cost for the upgrading or the refurbishment of the WTWs and WWTWs or the cost for the augmentation of the water resources for the various towns.
3) Estimated costs of 2021 Water Master Plan were escalated at 6%/a for four years.

GROUNDWATER INFRASTRUCTURE

Overstrand Municipality will continue with the implementation of their Groundwater Monitoring Programmes for areas where groundwater is abstracted. The groundwater monitoring data is regularly processed, analysed and reported on by experienced hydrogeologists in order to ascertain whether the resources are being sustainably utilised and to ensure compliance with the approved Groundwater Monitoring Programmes and water use licenses.

Managing groundwater for water supply purposes should have the following three main functions.

- Ensure that the aquifer is used optimally: The aquifer should not be over-pumped as that would negatively impact on its long-term sustainable yield or on the environment. It also means that if the aquifer is being under-utilised, this will become known. Over-abstraction close to the coastline can also result in seawater intrusion into the aquifer, and irreversible damage to the system.

- Ensure that the water quality in the aquifer is not negatively affected: This may be as a result of high abstraction from the aquifer, or from poor groundwater protection (from latrines, animal enclosures, etc.).

- Optimise borehole pumping rates so that the pumping equipment operates efficiently: Pumping rates are frequently set too high and this cause unnecessarily high pumping heads, a waste of energy, and at times, pump failure.

An additional function, which is usually captured in the first two points, is to ensure that environmental integrity is maintained. A botanical and streamflow monitoring programme is therefore also in place. It is important for Overstrand Municipality to continue to focus on aquifer protection, groundwater monitoring and wellfield management, in order to meet the town's future water requirements.

The table below gives an overview of the key groundwater management functions.

Table C.3.4: Key Groundwater Management Functions (Best Practice)

Activity	Responsible Person	Skills and qualifications required	Resources, tools and equipment	Remarks
Measuring and recording of water levels.	Pump operator	Literacy, numeracy, trained in taking water levels	Dip meter, ruler, logbook, pen.	Done as part of operators' regular O&M activities.
Measuring and recording abstraction	Pump operator	Literacy, numeracy, trained in reading water meters.	Logbook, pen	Done as part of operators' regular O&M activities.
Providing data to the authority that is responsible for water supply on a regular basis.	Pump operator and pump operator supervisor	Literacy, numeracy, keeping records.	Postal service or public transport.	Include as part of the reporting requirements of the pump operator.
Taking water samples	The authority that is responsible for water supply.	Trained in taking water samples, driving license.	Transport, sample bottles, cooler box.	Sampling routine defined by sampling plan.
Sending water samples for testing.	The authority that is responsible for water supply.	Keeping records.	Transport to laboratory	Sent to nearest accredited laboratory.
Defining the monitoring requirements of an individual borehole.	Technical manager of operations or hydrogeologist.	Hydrogeological degree or diploma, experience of hydrogeological conditions.	Reports and records on borehole, monitoring data.	
Ensuring that boreholes are equipped with piezometer tubes for measuring water levels and water meters for measuring abstraction.	The authority that is responsible for water supply.	Project management	In house technical staff, suppliers, contractors, specifications.	
Ensuring that operators have the equipment and skills to do monitoring.	The authority that is responsible for water supply.	Project management	Trainers, suppliers, specifications.	
Monitoring the pump operator's competence to collect and record data.	Pump operator supervisor	Staff supervision, knowledge of pump operators' tasks.	Transport	Done as part of the supervision of O&M activities.
Processing data collected at the local level	Data clerk	Data capture, record keeping, filing, trained in operating software.	Computer, spreadsheet or groundwater management software, files.	Maintains an electronic and physical record of data.
Studying water level, water quality and abstraction data on a regular basis.	Technical manager of operations.	Technical training, operations experience.	Project files, monitoring data	Done as part of the management of O&M
Revising pumping recommendations and adjusting the monitoring requirements. Ensuring the recommendations are carried out and monitoring the implementation of the recommendations.	Technical manager with hydrogeologist as required.	Technical training, operations experience.	Reports and records on borehole, monitoring data, operational information.	Ongoing management of operations and groundwater resources.

Table C.3.4: Key Groundwater Management Functions (Best Practice)				
Activity	**Responsible Person**	**Skills and qualifications required**	**Resources, tools and equipment**	**Remarks**
Reporting to council and pump operator, providing summary data to the CMA.	Data clerk with supervision from technical manager.	Training in operating software.	Computer, spreadsheet or groundwater management software, printer.	Summary data defined by license (frequency, what data, form of data)

WATER TREATMENT WORKS INFRASTRUCTURE

The existing capacities and current flows at each of the WTWs are summarised in the table below.

Table C.3.5: Existing Capacities, Flows and Water Quality Failures at each of the WTWs						
WTW	**Existing Hydraulic Capacity**	**Peak Month Average Daily Flow**	**Average Daily Flow (Jul 2024 – Jun 2025)**	**Average Daily Flow as a % of Capacity**	**Required Treatment Capacity (1.5 x AADD10yr)**	**2024/2025 Water Quality Failures at WTW (SANS0241:2015)**
	Ml/d	**Ml/d**	**Ml/d**	**%**	**Ml/d**	
Buffels River	5.500	2.687 (Dec)	2.128	38.7%	4.085	Turbidity (Operational)
Kleinmond	5.800	3.630 (Dec)	2.931	50.5%	5.628	-
Preekstoel	38.000	17.347 (Jan)	14.711	38.7%	29.655	-
Stanford	2.710 *	2.221 (Jan)	1.729	63.8%	3.320	Total Organic Carbon
Franskraal	6.500	4.152 (Dec)	3.601	55.4%	7.260	Turbidity (Operational)
De Kelders	1.600	1.761 (Apr)	1.371	85.7%	1.600	-
Pearly Beach	1.440	0.784 (Dec)	0.515	35.8%	0.989	-
Baardskeerdersbos	0.185	0.080 (Feb)	0.059	31.9%	0.114	Turbidity (Operational), Manganese (Aesthetic), Heterotrophic Plate Count

Note: * The Stanford RO Plant has a hydraulic design capacity of 1.250 Ml/d. The water from the RO plant is however blended with the raw water and the level of blending is controlled through the monitoring of the hardness of the water. The overall treatment capacity for the Stanford system is therefore 2.710 Ml/d.

Buffels River WTW: The WTW treats water from the nearby Buffels River dam for usage in the Rooi Els, Betty's Bay and Pringle Bay areas. Under normal circumstances the plant is operated below its design capacity and is only in operation for approximately eight (8) hours per day. There is therefore considerable spare capacity available by operating the plant for longer duration per day and no capacity increase will be required in the near future. The Buffels River distribution system received a Blue Drop score of 99.99% in 2023 (highest in the country). The 2023 Blue Drop Risk Rating for the Buffels River supply system was 15.08% (Low).

The recommendations from the detail Buffels River WTW Process Audit (Dec 2024), as completed during the 2024/2025 financial year, are summarised in the table below.

Table C.3.6 Recommendations from the detail Buffels River WTW Process Audit
• Continue monitoring flocculant dosing rate very closely. • Continue monitoring turbidity values for the individual settling tanks. • Develop reservoir flushing schedule. • Install a formal, fixed treated water sampling point. • There should be 30 days' Sodium Hypochlorite stock on site. • Ensure spreadsheet is being kept up to date and not only populated once a month. • Process Controllers to interact with the data collected on site - draw graphs etc. to track operational changes (quality & quantities). • Process Controllers should receive feedback from both the internal lab and the independent laboratory. • The calibration of the equipment used on site should be verified by the internal lab. • Ensure Process Controllers are to be aware of the Preventative Maintenance Schedule. • Ensure records / logbooks pertaining to preventative maintenance are also available on site. • Start sensitising Process Controllers to take more responsibility for aspects related to risk management pertaining to the operation of the Works.

The WTW structure is 35 to 45 years old except for the new flocculation and sedimentation tanks that were added in 2008. The WTW comfortably meets the coagulation, flocculation and sedimentation requirements given the oversized flocculation and settling tanks. The Refurbishment Investigation (Conditional Assessment) of the Buffels River WTW, as completed in August 2020, indicated the following challenges:

- Filtration was identified as the bottle neck limiting the capacity of the WTW. Due to the low driving head, the filters are effectively limited to an average filtration rate of 45 l/s (160 m^3 /h over 20 hours, or 3.2 Ml/d). This can be remedied by increasing the driving head by lowering the outlet weir level. Further, the current filter backwash is inadequate to clean the filters. This can be fixed by increasing the size of the header tank to provide the necessary backwash water volumes.

- The WTW chlorine dosing facilities appear to be undersized and there is no chlorine contact tank. Baffles can be introduced to the reservoir on site to increase the dispersion factor to avoid constructing a new chlorine contact tank. The chlorine room which does not meet SANS health and safety standards and poses a health risk.

- The water is aggressive and there is no provision for stabilisation of the water. Hydrated lime or limestone contact tanks are proposed with the latter being recommended.

- Process monitoring and chemical optimisation can also be improved by adding in-line pH meters and monitoring chemical dosages.

- The waste streams from the WTW are poorly managed and sludge currently overflows into the environment. There is no dedicated backwash recovery system, and the sludge settling tank is not operational. It is proposed that a new backwash recovery system is introduced and the existing sludge settling tank be dedicated to sedimentation desludging streams only.

The majority of the mechanical equipment on site is in working order but requires ongoing maintenance. A few valves need to be replaced along with the modifications to the flowmeter.

In general, the electrical infrastructure is in a working condition aside from some minor problems. These can be fixed by testing and repairing all electrical panels and wiring. In the long term, the MCC should be replaced along with the electrical and instrument cabling. The control system and SCADA should also be upgraded.

A structural conditional assessment along with core sample testing revealed that the majority of the structures are generally safe and there is no urgent need to condemn any of them. A few key areas were highlighted that need immediate repair such as the chemical dosing area, the steel conveyor belt and all places with spalling. There will be ongoing maintenance and repair work required, in particular to ensure leaks do not arise in the structure and removal of the asbestos superstructure but these do not pose immediate risks to the operators or surroundings.

A professional service provider was appointed to complete the detailed planning of refurbishing and upgrading the Buffels River WTW. The project is included in the approved Capital Budget for the next 3 years. Construction commenced early in 2026.

Kleinmond WTW: The WTW treats water from the Palmiet River for usage in Kleinmond. The plant operates well within its design capacity. The Kleinmond WTW is generally operated and maintained satisfactorily. The Kleinmond distribution system received a Blue Drop score of 99.99% in 2023 (highest in the country). The 2023 Blue Drop Risk Rating for the Kleinmond supply system was 14.53% (Low).

The recommendations from the detail Kleinmond WTW Process Audit (Dec 2024), as completed during the 2024/2025 financial year, are summarised in the table below.

Table C.3.7: Recommendations from the detail Kleinmond WTW Process Audit
• Monitor (and record) turbidity values for the individual settling tanks in order to optimise the operation of this Process Unit. • Provide flow control to the individual settling tank inlets (currently isolation sluice gates are provided). • Control flow to the filters as to ensure they are equally loaded. • Install a second Backwash Pump & Blower. • Theoretically, the plant should be able to cope with only 2 filters in operation. • Perform Specific Deposit –determination on filter media – refer to Chapter B3 of “Handbook for the Operation of Water Treatment Works”. • Ensure spreadsheet is being kept up to date and not only populated once a month. • Process Controllers to interact with the data collected on site - draw graphs etc. to track operational changes (quality & quantities). • Process Controllers should receive feedback from both the internal lab and the independent laboratory. • The calibration of the equipment used on site should be verified by the internal lab.

Table C.3.7: Recommendations from the detail Kleinmond WTW Process Audit
• Ensure Process Controllers are to be aware of the Preventative Maintenance Schedule. • Ensure records / logbooks pertaining to preventative maintenance are also available on site. • Start sensitising Process Controllers to take more responsibility for aspects related to risk management pertaining to the operation of the Works.

The Conditional Assessment of the Kleinmond WTW, as completed in June 2021, indicated the following conclusions and way forward for the plant.

- The treated water currently meets all SANS:241 (2015) criteria.
- All process units can meet criteria at 61 l/s.
- Sedimentation was identified as the bottleneck limiting the capacity of the WTW to 61 l/s followed by filtration with a capacity of 64 l/s. Modifications to the inlet configuration at the lamellas to improve settlement thereby improving operation would theoretically increase sedimentation capacity to 85 l/s. This results in filtration as the limiting capacity
- Both filter backwash and sedimentation sludge is directed to a backwash holding tank where it gravitates to the Kleinmond WWTW. There is no recovery system. It is recommended to add pumps in the backwash holding tank to recover filter backwash and to direct sedimentation sludge to the sewer directly bypassing the backwash holding tank.
- Process monitoring and chemical optimisation can also be improved by adding in-line pH meters and monitoring chemical dosages.
- From theoretical calculations, the water is aggressive, but clearwell and reservoir walls should be inspected more thoroughly before dosing additional chemicals.
- An additional water source is used on an ad hoc basis called Dorpsfontein fountain. When used, the source is added directly into the treated water reservoir. No water quality data could be sourced, and it is highly recommended to test this water as it bypasses the WTW when used.

A majority of the mechanical equipment on site is in working order but requires general valve and pump maintenance.

In general, the electrical infrastructure is in a working condition. The WTW does not have a SCADA system but rather a SCADA mimic. All equipment at the WTW is controlled by switching them on and off on the MCC panels next to the equipment. The high-lift pumps were previously controlled using radio telemetry, but this stopped functioning forcing the operators to drive to the pumpstation. In the short term, the telemetry can be fixed and testing and repairing of all electrical panels and wiring is recommended. In the long run (and in the interest of the municipality) the electrical and electronic infrastructure can be upgraded to allow for all equipment to be controlled through a centralised SCADA system. This upgrade may help optimise the WTW, but not necessary for the operation of the works.

The high, medium and low refurbishment priorities for the Kleinmond WTW and the estimated costs are indicated in the table below.

Table C.3.8: High, Medium and Low Refurbishment Priorities for the Kleinmond WTW

Criteria	High Priority	Medium Priority	Low Priority
Plant performance	• Condition assessment of the rising main • Sedimentation tank lamella plates		• Treated water stability. • Additional chlorinator. • Improve Dorpsfontein fountain disinfection.
Improved operations and control	• Backwash water recovery system. • Sedimentation sludge bypass system.	• Fix flow measurement at the Palmiet Booster pump station. • Allowance to start and stop booster pumps from WTW. • Blower and backwash pump redundancy.	• Chemical dose monitoring. • In-line pH meter. • Electrical control and instrument upgrade.

Table C.3.8: High, Medium and Low Refurbishment Priorities for the Kleinmond WTW			
Criteria	**High Priority**	**Medium Priority**	**Low Priority**
Safety	• Fix safety shower in chemical storage and add a new shower in the dosing area. • Improve chlorine dosing facility. • Filter float valve access. • Testing Dorpsfontein fountain water quality.		
Longevity	• Inspect reservoir internal walls		• Brick plaster in flocculation tanks.
Operator comfort			• Reconfigure admin area
General maintenance		• Valve maintenance. • Pump maintenance. • EC&I maintenance.	
Total Cost (Excl. VAT)	**R2 247 209**	**R2 083 087**	**R8 016 729**

Preekstoel WTWs: The Preekstoel WTWs include the following treatment processes.

- The Preekstoel WTW treats water from the De Bos dam for usage in the Greater Hermanus area.
- The bio-filtration plant treats groundwater from the Hemel en Aarde boreholes (Camphill and Volmoed wellfields), before it is further disinfected at the Preekstoel WTW.
- The chemical oxidation treatment plant treats water from the Gateway boreholes, before it is further treated at the conventional plant.

The Preekstoel WTW was upgraded from 24 Ml/d to 28 Ml/d during the 2011/2012 financial year. A new 10 Ml/day biological WTW for iron and manganese removal was also constructed at the Preekstoel WTW during the 2012/2013 financial year, in order to treat the newly developed groundwater sources and to increase the overall treatment capacity for the Greater Hermanus to 38 Ml/d. Both plants are operated well within the design capacities. The distribution system received a Blue Drop score of 99.99% in 2023 (highest in the country). The 2023 Blue Drop Risk Rating for the Hermanus supply system was 18.44% (Low).

The recommendations from the detail Preekstoel WTW Process Audit (Dec 2024), as completed during the 2024/2025 financial year, are summarised in the table below.

Table C.3.9: Recommendations from the detail Preekstoel WTW Process Audit
• Housekeeping - clean off some of the residue that accumulates on the dosing equipment. • Monitor (and record) turbidity values for the individual settling tanks in order to optimise the operation of this Process Unit. • Consider moving the inlet to the centre of the distribution box as to establish better flow distribution between the two basins. • Control flow to the filters as to ensure they are equally loaded. • Monitor (and record) turbidity values for the individual filters in order to optimise the operation of this Process Unit. • Theoretically, the plant should be able to cope with only 2 filters per bank in operation. • Perform Specific Deposit –determination on filter media – refer to Chapter B3 of “Handbook for the Operation of Water Treatment Works”. • Continue with maintenance on equipment. • Perform Specific Deposit –determination on filter media – refer to Chapter B3 of “Handbook for the Operation of Water Treatment Works”. • Monitor (and record) turbidity values for the individual Process Units. • Ensure spreadsheet is being kept up to date and not only populated once a month. • Process Controllers to interact with the data collected on site - draw graphs etc. to track operational changes (quality & quantities). • Process Controllers should receive feedback from both the internal lab and the independent laboratory. • The calibration of the equipment used on site should be verified by the internal lab. • Ensure Process Controllers are to be aware of the Preventative Maintenance Schedule. • Ensure records / logbooks pertaining to preventative maintenance are also available on site. • Start sensitising Process Controllers to take more responsibility for aspects related to risk management pertaining to the operation of the Works.

Stanford WTW: The ultrafiltration and reverse osmosis plant treats water from the spring and the two Kouevlakte boreholes. The Stanford distribution system received a Blue Drop score of 99.99% in 2023 (highest in the country). The 2023 Blue Drop Risk Rating for the Stanford supply system was 15.98% (Low).

The recommendations from the detail Stanford WTW Process Audit (Dec 2024), as completed during the 2024/2025 financial year, are summarised in the table below.

Table C.3.10: Recommendations from the detail Stanford WTW Process Audit
• As there is only 1 x RO Feed Pump, it is recommended that a standby unit be installed / available in storage. • Ensure maintenance of dosing pumps are scheduled. • Closely monitor residual chlorine levels – maintain a balance between providing additional residual protection in the network and raising levels to a point where a "chlorine taste and smell" become evident to consumers. • Ensure all parameters and frequencies as per SANS241 – Table 1 are adhered to. • Ensure spreadsheet is being kept up to date and not only populated once a month. • Process Controllers to interact with the data collected on site - draw graphs etc. to track operational changes (quality & quantities). • Process Controllers should receive feedback from both the internal lab and the independent laboratory. • The calibration of the equipment used on site should be verified by the internal lab. • Ensure Process Controllers are to be aware of the Preventative Maintenance Schedule. • Ensure records / logbooks pertaining to preventative maintenance are also available on site. • Start sensitising Process Controllers to take more responsibility for aspects related to risk management pertaining to the operation of the Works.

Franskraal WTW*:* The WTW treats water from the Franskraal and Kraaibosch dams for usage in the Greater Gansbaai area. The WTW was completely rebuilt in 2009 and is currently well equipped and well-operated. The plant operates well within its design capacity under normal conditions. The Greater Gansbaai distribution system received a Blue Drop score of 99.99% in 2023 (highest in the country). The 2023 Blue Drop Risk Rating for the Greater Gansbaai supply system was 19.97% (Low).

The recommendations from the detail Franskraal WTW Process Audit (Dec 2024), as completed during the 2024/2025 financial year, are summarised in the table below.

Table C.3.11: Recommendations from the detail Franskraal WTW Process Audit
• Monitor (and record) turbidity values for the individual settling tanks in order to optimise the operation of this Process Unit. • Being able to control the flow to the individual settling tanks would allow more operational flexibility. • Control flow to the filters as to ensure they are equally loaded. • Theoretically, the plant should be able to cope with only 2 filters in operation. • Perform Specific Deposit –determination on filter media – refer to Chapter B3 of "Handbook for the Operation of Water Treatment Works". • Current stacking practices related to cylinders needs to be addressed – both full and empty cylinders should be securely chained. • Confirm units used to capture dosing rate records. • Ensure spreadsheet is being kept up to date and not only populated once a month. • Process Controllers to interact with the data collected on site - draw graphs etc. to track operational changes (quality & quantities). • Process Controllers should receive feedback from both the internal lab and the independent laboratory. • The calibration of the equipment used on site should be verified by the internal lab. • Ensure Process Controllers are to be aware of the Preventative Maintenance Schedule. • Ensure records / logbooks pertaining to preventative maintenance are also available on site. • Start sensitising Process Controllers to take more responsibility for aspects related to risk management pertaining to the operation of the Works.

De Kelders WTW: The WTW treats water from the Klipgat fountain and The Grotte fountain for usage in the De Kelders area. This Reverse Osmosis WTW was constructed during 2011 at De Kelders

The recommendations from the detail De Kelders WTW Process Audit (Dec 2024), as completed during the 2024/2025 financial year, are summarised in the table below.

Table C.3.12: Recommendations from the detail De Kelders WTW Process Audit
• Maintenance of the membranes are crucial – ensure all schedules are adhered to. • It is noted that proposals for the replacement of membranes have already been made and replacement eminent. • Ensure maintenance of dosing pumps are scheduled. • Ensure spreadsheet is being kept up to date and not only populated once a month. • Process Controllers to interact with the data collected on site - draw graphs etc. to track operational changes (quality & quantities).

Table C.3.12: Recommendations from the detail De Kelders WTW Process Audit
• Process Controllers should receive feedback from both the internal lab and the independent laboratory. • The calibration of the equipment used on site should be verified by the internal lab. • Ensure Process Controllers are to be aware of the Preventative Maintenance Schedule. • Ensure records / logbooks pertaining to preventative maintenance are also available on site. • Start sensitising Process Controllers to take more responsibility for aspects related to risk management pertaining to the operation of the Works.

Pearly Beach WTW: The WTW treats water from the Pearly Beach and Koekemoer dams for usage in Pearly Beach. The Pearly Beach WTW uses state-of-the-art ultrafiltration membrane technology to ensure a high quality final effluent. The plant operates at its design treatment rate, but does not operate for 24 hours per day. It is only operated for approximately 4 – 6 hours per day and therefore does not exceed the rated capacity of the plant. The Pearly Beach distribution system received a Blue Drop score of 99.99% in 2023 (highest in the country). The 2023 Blue Drop Risk Rating for the Pearly Beach supply system was 13.39% (Low).

The recommendations from the detail Pearly Beach WTW Process Audit (Dec 2024), as completed during the 2024/2025 financial year, are summarised in the table below.

Table C.3.13: Recommendations from the detail Pearly Beach WTW Process Audit
• Maintain sludge lagoon in a clean condition. • Maintenance of the membranes are crucial – ensure all schedules are adhered to. • Ensure spare membranes are available, either on site or in storage. • Ensure maintenance of dosing pumps are scheduled. • Provide a containment barrier around the dosing station to prevent any spillages or leaks from becoming a hazard to plant personnel. • Closely monitor residual chlorine levels – maintain a balance between providing additional residual protection in the network and raising levels to a point where a “chlorine taste and smell” become evident to consumers. • Ensure spreadsheet is being kept up to date and not only populated once a month. • Process Controllers to interact with the data collected on site - draw graphs etc. to track operational changes (quality & quantities). • Process Controllers should receive feedback from both the internal lab and the independent laboratory. • The calibration of the equipment used on site should be verified by the internal lab. • Ensure Process Controllers are to be aware of the Preventative Maintenance Schedule. • Ensure records / logbooks pertaining to preventative maintenance are also available on site. • Start sensitising Process Controllers to take more responsibility for aspects related to risk management pertaining to the operation of the Works.

Baardskeerdersbos WTW: The WTW treats water from the two boreholes for usage in Baardskeerdersbos. The plant operates well within its design capacity. The Baardskeerdersbos distribution system received a Blue Drop score of 99.70% in 2023 (second highest in the country). The 2023 Blue Drop Risk Rating for the Baardskeerdersbos supply system was 9.57% (Low).

The recommendations from the detail Baardskeerdersbos WTW Process Audit (Dec 2024), as completed during the 2024/2025 financial year, are summarised in the table below.

Table C.3.14: Recommendations from the detail Baardskeerdersbos WTW Process Audit
• As deficiencies in the removal of manganese has been noted, it is recommended that alternative technologies / processes be considered to augment the current treatment. • Automate desludging of the second settler. • Ensure sludge disposal records are kept. • Ensure water quality results from the sludge drainage water, flowing back into the natural water course, are kept on site. • Maintenance of the membranes are crucial – ensure all schedules are adhered to. • Ensure spare membranes are available, either on site or in storage. • Ensure maintenance of dosing pumps are scheduled. • Ensure spreadsheet is being kept up to date and not only populated once a month. • Process Controllers to interact with the data collected on site - draw graphs etc. to track operational changes (quality & quantities). • Process Controllers should receive feedback from both the internal lab and the independent laboratory. • The calibration of the equipment used on site should be verified by the internal lab. • Ensure Process Controllers are to be aware of the Preventative Maintenance Schedule. • Ensure records / logbooks pertaining to preventative maintenance are also available on site. • Start sensitising Process Controllers to take more responsibility for aspects related to risk management pertaining to the operation of the Works.

Buffeljags Bay WTW: No water treatment is done, except for disinfection. The Buffeljags Bay distribution system received a Blue Drop score of 98.20% in 2023. The 2023 Blue Drop Risk Rating for the Buffeljags Bay supply system was 14.21% (Low). The only recommendation from the Buffeljags Bay WTW Process Audit (Dec 2024), as completed during the 2024/2025 financial year, was that the Municipality needs to ensure that monitoring is done in accordance with SANS241:2015 (Table 1), which is the case.

Table C.3.15: Recommendations from the detail Buffeljags Bay WTW Process Audit
• Ensure monitoring is done in accordance with SANS241:2015 – Table 1. • Ensure spreadsheet is being kept up to date and not only populated once a month. • Process Controllers to interact with the data collected on site - draw graphs etc. to track operational changes (quality & quantities). • Process Controllers should receive feedback from both the internal lab and the independent laboratory. • The calibration of the equipment used on site should be verified by the internal lab. • Ensure Process Controllers are to be aware of the Preventative Maintenance Schedule. • Ensure records / logbooks pertaining to preventative maintenance are also available on site. • Start sensitising Process Controllers to take more responsibility for aspects related to risk management pertaining to the operation of the Works.

The WTWs to be upgraded in Overstrand Municipality are summarised in the table below.

Table C.3.16: WTWs to be Upgraded or New WTWs for the Future

WTW	Short, Medium, Long Term	Estimated Cost (Vat Excluded)
Refurbishment of Buffels River WTW (High Priority)	Short	R66 289 000
Refurbishment of the Kleinmond WTW (High Priority)	Short	R2 247 209
Refurbishment of the Kleinmond WTW (Medium Priority)	Medium	R2 083 087
Refurbishment of the Kleinmond WTW (Low Priority)	Medium	R8 016 729
Hermanus 3 Ml/d desalination plant (Phase 1)	Short	R113 622 926
Hermanus 3 Ml/d desalination plant (Phase 2)	Medium	R113 622 926
Hermanus 4 Ml/d desalination plant (Phase 3)	Long	R151 497 235
New disinfection system at Preekstoel WTW and Office Space	Short	R9 000 000
Pearly Beach WTW Process upgrade	Short	R1 483 490
Baardskeerdersbos WTW additional storage capacity	Short	R500 000
Total		**R468 362 602**

BULK WATER PIPELINE INFRASTRUCTURE

The Water Master Plan (June 2021) has indicated that based on the most likely land-use development scenario, it will be necessary to upgrade the following bulk water supply systems.

- **Buffels River, Greater Hermanus, Greater Gansbaai, Pearly Beach and Baardskeerdersbos:** The existing bulk water supply systems (Bulk pipelines) have insufficient capacity to supply the future water demands for the fully occupied scenario and the additional future development areas.

- **Kleinmond, Stanford, Pearly Beach and Buffeljags Bay:** The existing bulk water supply systems (Bulk pipelines) have sufficient capacity to supply the future water demands for the fully occupied scenario and the additional future development areas.

Table C.3.17: Future bulk water supply pipelines required					
Scheme	**New feeder mains that are proposed or existing feeder mains that require upgrading in the future**	**Year**	**Distance (m)**	**Diameter (mm)**	**Cost (R million)**
Buffels River	Restrict flow into the sump of the Sunny Seas bulk PS in order to sustain pressure in the upstream Voorberg reservoir zone network, install 14 l/s FCV (item OBW.B8).	2029	-	150	R0.304
	The remaining section of 300 mm dia. bulk pipeline from Buffels River WTP to the Pringle bay draw-off point supplying Pringle Bay and Voorberg reservoirs. (item OBW.B6).	2030	104	400	R0.755
	Subtotal		**104**	**-**	**R1.059**
Greater Hermanus	New 500 mm dia. parallel reinforcement of the existing 300 mm dia. bulk supply pipeline to the Mount Pleasant take-off in order to augment supply to the reservoirs on the Hermanus bulk line (item OHW.B24).	2029	665	500	R5.576
	Replace the existing 100 mm dia. bulk supply pipeline to the Mount Pleasant reservoir with a 200 mm dia. pipeline (item OHW.B34).	2029	142	200	R0.379
	New 160 mm dia. connection pipe from the main pipelines downstream of the Preekstoel WTP to the Sandbaai and Mount Pleasant reservoirs as an alternative supply (items OHW.B41 & OHW.B42).	2029	160	160	R0.328
		2029	265	160	R0.514
	Connect existing Gateway pipeline to existing 600 mm dia. Hermanus bulk pipeline (alternative option in order to supply bulk water to Sandbaai reservoir) (item OHW.B40).	2029	4	160	R0.052
	New 315 mm dia. parallel reinforcement of the existing 150 mm dia. bulk supply pipeline to the Hawston LL reservoir in order to augment supply to the reservoir (item OHW.B20).	2029	296	315	R0.568
	New 250 mm dia. parallel reinforcement of the existing 150 mm dia. bulk supply pipeline to the Sandbaai reservoir in order to augment supply to the reservoir (item OHW.B14).	2029	193	250	R0.659
	New 200 mm dia. parallel reinforcement of the existing 160 mm dia. bulk supply pipeline to the Onrus reservoir in order to augment supply to the reservoir (item OHW.B28).	2029	236	200	R0.596
	Install inter-connection pipe between 200 mm dia. bulk and 200 mm dia. network pipe as part of bulk system (after item OHW1.1 is implemented) (item OHW.B22c).	2030	1	200	R0.030
	Insert and close valve between network and bulk system (after item OHW1.1 is implemented) (item OHW.B22d).	2030	-	200	R0.153
	It is proposed that the existing 200 mm dia. supply pipeline from the Fisherhaven LL reservoir to the existing network is replaced with a new 315 mm dia. pipe (item OHW1.1) in order to transfer the existing 200 mm dia. network pipe to the existing bulk system (Items OHW.B22a & OHW.B22b). This will improve bulk supply from the Coastal bulk system to Fisherhaven LL reservoir.	2030	19	200	R1.361
		2030	-	200	R0.153
	New 400 mm dia. parallel reinforcement of the existing 400 mm dia. bulk supply pipeline when the 400 mm dia. pipe reaches capacity (item OHW.B25).	2035	1 387	400	R9.108
	New 315 mm dia. parallel reinforcement of the existing 250 mm dia. Vermont to Hawston bulk pipeline when the existing 250 mm dia. bulk pipe reaches capacity (item OHW.B19).	2040	3 329	355	R17.273
	New 500 mm dia. parallel reinforcement of the existing 400 & 600 mm dia. bulk pipelines (from the Preekstoel WTP to the Coastal & Hermanus bulk pipelines) when the existing 400 & 600 mm dia. bulk pipes from the Preekstoel WTP reaches capacity (item OHW.B23).	2045	472	500	R4.013
	New 355 mm dia. bulk supply pipeline from the Fisherhaven HL reservoir to the existing bulk water infrastructure at the Hawston reservoir (item OHW.B35).	2045	2 611	355	R13.567
	Install pipeline when Overberg pipeline is constructed, to feed Fisherhaven LL from HL reservoir (item OHW.B37).	2045	39	200	R0.144
	Insert and close valve when Overberg pipeline is constructed, to feed Fisherhaven LL from HL reservoir (item OHW.B38).	2045	-	200	R0.153
	Install Flow Control Valve (41 l/s) when Overberg pipeline is constructed, to feed Fisherhaven LL from HL reservoir (item OHW.B39).	2045	-	200	R0.352
	Install Flow Control Valve (67 l/s) to transfer bulk water from Fisherhaven HL reservoir to the Hawston reservoir (item OHW.B43).	2045	-	400	R1.793
	Subtotal		**9 961**	**-**	**R56.771**
Greater Gansbaai	Dedicate the existing 250 mm dia. pipeline between the Greater Gansbaai bulk system and the De Kelders reservoirs as 'n bulk supply pipeline to the De Kelders reservoirs (item OGW.B24).	2035	59	250	R0.189
	New 600 dia. mm bulk supply pipeline from the Franskraal WTP clearwell reservoir to the main Franskraal bulk PS (item OGW.B9).	2035	42	600	R1.565
	Reinforce existing Franskraal WTP raw water supply (item OGW.B23	2035	203	500	R1.836
	New 500 mm dia. bulk supply pipeline from the main Franskraal bulk PS to the existing 355 mm dia. and future 400 mm dia. pipeline bulk pipes to Kleinbaai, Gansbaai and De Kelders (item OGW.B19).	2035	205	500	R1.851

Table C.3.17: Future bulk water supply pipelines required					
Scheme	**New feeder mains that are proposed or existing feeder mains that require upgrading in the future**	**Year**	**Distance (m)**	**Diameter (mm)**	**Cost (R million)**
	Replace the existing 200 mm dia. bulk pipeline with a 400 mm dia. pipeline when the existing 200 and 355 mm dia. bulk pipes reaches capacity (items OGW.B2 & B3).	2040	715	400	R1.573
		2040	2 169	400	R4.689
	New 315 mm dia. bulk supply pipeline from the main Franskraal bulk PS to the proposed Franskraal HL reservoir (item OGW.B16).	2045	864	315	R3.349
	New 355 mm dia. dedicated bulk supply pipeline from the main Franskraal bulk PS to the existing Franskraal LL reservoirs (item OGW.B21).	2045	182	355	R1.030
	Subtotal		**4 439**	**-**	**R16.083**
Baardskeerders-bos	A new dedicated bulk pipeline is proposed when master plan item OBBW.B2 (new reservoir) is implemented.	2035	939	110	R1.246
	Subtotal		**939**	**-**	**R1.246**
Overberg Water	*New bulk supply pipeline to Hermanus (item RVW5.1)*	*2039*	*7 229*	*450*	*R58.759*
	New bulk supply pipeline to Hermanus (item RVW5.4)	*2040*	*34 547*	*450*	*R280.094*
	Subtotal		***41 776***	**-**	***R338.854***
Total (Excluding Overberg Water)			**15 443**	**-**	**R75.159**

Note: Estimated costs of 2021 Water Master Plan were escalated at 6%/a for four years

WATER PUMP STATIONS

The water pump stations are well maintained and all the motors and pumps are operational. The Water Master Plan (June 2021) has indicated that based on the most likely land-use development scenario, it will be necessary for the following water pump stations.

Table C.3.18: Future Water Pump Stations Required					
Scheme	**Recommendations included in the Water Master Plan**	**Year**	**Capacity (l/s)**	**Head (m)**	**Cost (R Million)**
Buffels River	A new booster pump station is proposed on the 300 mm Ø Betty's Bay Voorberg reservoir supply pipeline in order to augment bulk water supply to Betty's Bay in the future (item OBW.B7).	2030	75	12	R3.445
	A new booster pump station for the higher lying areas in the Voorberg reservoir zone is proposed (item OBW.B4).	2035	10	25	R2.248
	Subtotal				**R5.694**
Greater Hermanus	A new booster pump station to augment water supply through the Coastal bulk pipeline (item OHW.B17) to Hawston and Fisherhaven.	2029	90	20	R3.834
	Upgrading of the existing bulk pump station to augment bulk water supply from the Fisherhaven LL to the Fisherhaven HL reservoir is proposed for when future areas GH1, GH5,1 & GH50 develop (item OHW.B3).	2030	40	70	R0.790
	Subtotal				**R4.624**
Greater Gansbaai	New booster pump station when future area GG30 develops (item OGW5.1).	2029	30	20	R0.000
	New booster pump station to supply sufficient water pressure Masakhane informal area (Item OGW7.1)	2030	30	15	R2.612
	New bulk pump station to supply water from the Gansbaai reservoirs to the De Kelder reservoirs (item OGW.B7).	2035	45	60	R3.213
	New dedicated bulk PS to Kleinbaai & Gansbaai when existing bulk supply reaches capacity (item OGW.B18).	2035	220	35	R6.944
	Dedicated PS to Franskraal reservoirs when existing bulk PS reaches capacity (item OGW.B20).	2045	130	5	R4.343
	New dedicated pump station from the Franskraal clearwater reservoir to the proposed Franskraal HL reservoir (item OGW.B15).	2045	60	65	R3.640
	Subtotal				**R20.751**
Pearly Beach	Upgrading of the existing Pearly Beach pump system (item OPW.B3).	2040	75	45	R0.875
	Subtotal				**R0.875**
Baardskeerdersbos	Pump station to augment bulk supply to Baardskeerdersbos reservoir (item OBBW.B3)	2065	6	100	**R2.228**
	Subtotal				**R2.228**
Overberg Water	*Pump station for new bulk supply to Hermanus (item RVW5.3)*	*2040*	*250*	*250*	*R14.351*
	Subtotal				***R14.351***
Total (Excluding Overberg Water)					**R34.172**

Note: Estimated costs of 2021 Water Master Plan were escalated at 6%/a for four years

RESERVOIR INFRASTRUCTURE

The condition of most of the reservoirs in Overstrand Municipality's Management Area is good and the reservoirs are well maintained. New security fences were also recently installed at some of the reservoir sites to reduce possible vandalism.

Overstrand Municipality's overall storage factors of the reservoirs for the various schemes for 2024/2025, based on 1 x PDD (24 hours storage capacity), are 1.65 for Buffels River, 1.75 for Kleinmond, 1.63 for Greater Hermanus, 0.96 for Stanford, 1.71 for Greater Gansbaai, 2.17 for Pearly Beach, 1.32 for Baardskeerdersbos and 2.46 for Buffeljags Bay.

Even though the town's overall storage capacity might be adequate there might be some distribution zones within the town's network with inadequate storage capacity, as identified through the 2021 Water Master Planning process and indicated in the table below.

Table C.3.19: Future Reservoir Storage Capacities Required

Area	Recommendations included in the Water Master Plan	Year	Capacity (Ml)	Cost (R Million)
Buffels River	A new 3.0 Ml reservoir is proposed at the existing Voorberg reservoir site to augment reservoir storage for Betty's Bay (item OBW.B3).	2027	3.000	R13.839
	A new 1.0 Ml reservoir is proposed at the existing Sunny Seas reservoir site to augment reservoir storage for Betty's Bay (item OBW.B9).	2035	1.000	R6.590
	A new 1.5 Ml reservoir is proposed at the existing Pringle Bay reservoir site to augment reservoir storage for Pringle Bay (item OBW.B2).	2055	1.500	R8.696
	Subtotal			**R29.125**
Greater Hermanus	A new 3.0 Ml reservoir is proposed at the existing Sandbaai reservoir site to augment reservoir storage in Sandbaai (item OHW.B11).	2029	3.000	R13.839
	A new 1.5 Ml reservoir is proposed at the existing Onrus reservoir site to augment reservoir storage in Onrus (item OHW.B9).	2026	1.500	R8.696
	12.0 Ml reservoir storage is proposed at the existing Fisherhaven HL reservoir site to augment reservoir storage for the Fisherhaven HL reservoir zone. It is proposed that this is phased in 2 x 6 Ml reservoirs (item OHW.B30a).	2035	6.000	R22.736
	A new 3.5 Ml reservoir is proposed at the existing Hawston LL reservoir site to augment reservoir storage in Hawston (item OHW.B2).	2035	3.500	R15.585
	A new 1.0 Ml reservoir is proposed at the existing Vermont reservoir site to augment reservoir storage for the Vermont reservoir zone (item OHW.B36).	2035	1.000	R6.590
	A new 0.5 Ml reservoir is proposed at the existing Chanteclair reservoir site to augment reservoir storage in the Onrus Manor reservoir zone (item OHW.B27).	2035	0.500	R4.193
	A new 2.0 Ml reservoir is proposed at the existing Hermanus 1 & 2 reservoir site to augment reservoir storage for the zone when the AADD for the Hermanus reservoir zone exceeds 5 000 kl/d (item OHW.B32).	2035	2.000	R10.471
	A new 2.0 Ml reservoir is proposed at the existing Fisherhaven LL reservoir site to augment reservoir storage for the Fisherhaven LL reservoir zone (item OHW.B1).	2040	2.000	R10.471
	A new 0.25 Ml reservoir is proposed at the existing Northcliff reservoir site to augment reservoir storage in the Northcliff reservoir zone (item OHW.B12).	2040	0.250	R2.526
	12.0 Ml reservoir storage is proposed at the existing Fisherhaven HL reservoir site to augment reservoir storage for the Fisherhaven HL reservoir zone. It is proposed that this is phased in 2 x 6 Ml reservoirs (item OHW.B30b).	2050	6.000	R22.736
	Subtotal			**R117.843**
Stanford	A new 3.0 Ml reservoir is proposed at the existing Stanford reservoir site to augment reservoir storage for Stanford when the AADD for the town exceeds 1 350 kl/d (item OSW.B1).	2035	3.000	R13.839
	Subtotal			**R13.839**
Greater Gansbaai	A new 4.0 Ml reservoir (item OGW.B10) is proposed at the existing Franskraal reservoir site to augment reservoir storage for Franskraal.	2035	4.000	R17.171
	A new 3.5 Ml reservoir (item OGW.B11) is proposed at the existing Kleinbaai reservoir site to augment reservoir storage for Kleinbaai, Romans Bay and the Birkenhead area.	2040	3.500	R15.585
	A second 4.0 Ml reservoir (item OGW.B22) is proposed at the existing Gansbaai reservoir site to augment reservoir storage for the future.	2040	4.000	R17.171
	A new 1.5 Ml reservoir (item OGW.B13) is proposed at the existing De Kelders reservoir site to augment reservoir storage for De Kelders.	2040	1.500	R8.696
	A new 5.5 ML reservoir (item OGW.B17) is proposed to accommodate future development area GG32 and the higher lying erven of future development area GG33.	2045	5.500	R21.345
	A new 4.5 Ml (item OGW.B14) is proposed at the existing Franskraal reservoir site to augment reservoir storage for Franskraal. The reservoir will only be required	2055	4.500	R18.598

Table C.3.19: Future Reservoir Storage Capacities Required				
Area	**Recommendations included in the Water Master Plan**	**Year**	**Capacity (Ml)**	**Cost (R Million)**
	when future development area GG31 & the lower lying erven of future development area GG33 start to develop.			
	Subtotal			**R98.565**
Pearly Beach	A new 1.5 Ml reservoir is proposed at the existing Pearly Beach reservoir site to augment reservoir storage for Pearly Beach when the AADD reaches 1 000 kl/d (item OPW.B2).	2040	1.500	R8.696
	Subtotal			**R8.696**
Baardskeerdersbos	A new 0.150 Ml tank is proposed to augment reservoir storage capacity for Baardskeerdersbos when the AADD exceeds 75 kl/d (item OBBW.B2)	2055	0.150	R1.516
	Subtotal			**R1.516**
Overberg Water	*To augment balancing volume of Ruensveld West WTW (Item RVW1.8)*	*2040*	*5.500*	*R21.345*
	Balancing volume for supply to Hermanus (item RVW5.2)	*2040*	*10.000*	*R33.317*
	Balancing volume for supply to Hermanus (item RVW5.5)	*2040*	*20.000*	*R57.481*
	Subtotal			***R112.142***
Total (Excluding Overberg Water)				**R269.584**

Note: Estimated costs of 2021 Water Master Plan were escalated at 6%/a for four years

WATER RETICULATION INFRASTRUCTURE

The Water Master Plan (June 2021) has indicated that based on the most likely land-use development scenario, it will be necessary for the following water reticulation infrastructure.

Table C.3.20: Future Water Reticulation Infrastructure Required					
Scheme	**Year**	**Recommendations included in the Water Master Plan**	**Distance (m)**	**Diameter (mm)**	**Cost (R Million)**
Buffels River	2029	Upgrade existing 75 and 100 mm pipelines (Item OBW5.1)	91	200	R0.144
		New dedicated feeder main for high lying erven (Items OBW5.2 and OBW5.3)	109	200	R0.306
			363	110	R0.502
	2030	Replace existing 75 mm to improve network conveyance (Item OBW1.1)	330	200	R0.391
		Replace existing 50 mm to improve network conveyance (to be verified, potentially already upgraded) (Item OBW1.2)	691	160	R0.614
		Replace existing 50 mm to improve network conveyance (Item OBW1.3)	428	110	R0.391
		Replace existing 75 mm and connect to Disa Kloof 160 mm pipeline to improve network conveyance (including main road crossing) (Item OBW4.3)	292	160	R2.052
	2035	Replace existing 75 and 100 mm pipelines to improve network conveyance (Item OBW4.1)	57	160	R0.100
		Replace existing 75 mm to improve network conveyance (Item OBW7.3)	177	160	R0.225
		Required to augment supply to Sunny Seas reservoir when supply problems occur (Item OBW2.2)	602	200	R1.434
		Required to rezone network when Betty's Bay booster zone is implemented (Item OBW2.3)	1 887	200	R4.380
		Replace existing 75 mm to improve network conveyance when Voorberg booster zone is implemented (Item OBW3.1)	155	110	R0.191
		Inter-connection pipe to improve network redundancy (including main road crossing) (Item OBW3.2)	17	110	R0.053
		Required to rezone network, check valve to install (Item OBW3.3)	-	100	R0.177
		Required to rezone network, valve to insert and close (Item OBW3.4a)	-	75	R0.129
		Required to rezone network, valve to insert and close (Item OBW3.4b)	-	160	R0.144
		Required to rezone network, check valve to install (Item OBW3.5)	-	150	R0.191
	2045	To improve network conveyance (Item OBW2.1)	1 736	315	R6.657
	Subtotal		**6 935**	**-**	**R18.079**
Kleinmond	2029	Required soon for pressure requirements (Item OKW1.2)	502	315	R1.975
		To improve network conveyance (Item OKW1.9)	7	160	R0.056
		To improve network conveyance (Item OKW1.10)	4	160	R0.050
		75 mm and 100 mm valves to close and 160 mm valve to open	-	-	-
	2030	To improve network conveyance (Item OKW1.8)	863	200	R2.031
	2040	Replace existing 50 mm required when future areas KM3 and KM4 develop (Item OKW1.6)	356	200	R0.331
		Required when future areas KM3 and KM4 develop (Item OKW1.7)	369	200	R0.900

Table C.3.20: Future Water Reticulation Infrastructure Required					
Scheme	**Year**	**Recommendations included in the Water Master Plan**	**Distance (m)**	**Diameter (mm)**	**Cost (R Million)**
		Replace existing 75 mm with 200 mm when future area KM20 develops (Item OKW1.11)	750	200	R0.848
		Required when future area KM16 develops (Item OKW1.12)	452	160	R0.845
	Subtotal		**3 303**	**-**	**R7.036**
Greater Hermanus	2029	Replace existing 75mm pipes and reinforce network when future areas GH32 and GH33 develop (Item OHW8.3)	277	160	R0.399
		To improve network redundancy (Item OHW8.4)	80	110	R0.136
		Replace existing 225 mm to improve network conveyance (Item OHW9.2)	111	315	R0.408
		Required to rezone network, valve to insert and close (Item OHW10.1b)	-	75	R0.129
		Required to rezone network, open and close various valves (Items OHW10.1a, OHW10.2a-c, OHW10.3a-d)	-	-	-
		To improve network conveyance (Item OHW10.4)	185	110	R0.222
		To improve network conveyance (with implementation of item OHWB.20) (Item OHW2.1)	313	400	R2.153
		Inter-connection pipe to improve network redundancy (Item OHW9.5)	105	110	R0.169
		Replace existing 75 mm to improve network conveyance (Item OHW9.9)	572	160	R0.655
		To improve network conveyance (Item OHW9.12)	324	160	R0.617
		To improve network conveyance (Item OHW9.13)	117	110	R0.183
		Required to improve network conveyance (Item OHW9.14)	1 534	400	R10.059
		To improve network conveyance (Item OHW9.15)	92	160	R0.141
		To improve network conveyance (Item OHW9.16)	25	110	R0.066
		Required when Zwelihle informal area is formalized (Item OHW9.3)	431	200	R1.043
		Required when Zwelihle informal area is formalized (Item OHW9.6)	621	160	R1.053
		Required when Zwelihle informal area is formalized (Item OHW9.10)	449	160	R0.774
		Required to improve network conveyance (Item OHW9.11)	591	160	R1.091
	2030	Required when future area GH5.2 develops (Item OHW2.3)	610	200	R1.452
		Replace existing 50 mm to improve network conveyance when GH6.2 and GH6.6 develops (Item OHW2.6)	580	110	R0.520
		To improve network conveyance when future area GH5.1 develops (Item OHW13.1)	466	355	R2.281
		To improve network conveyance (Item OHW5.1)	80	75	R0.120
		Required when future area GH28.1 develops (Item OHW7.4)	212	110	R0.223
		New supply pipe from reservoir to network (when AADD of Fisherhaven LL reaches 1 000 kl/d) (Item OHW1.1)	976	315	R5.403
		To improve network conveyance (including main road crossing) (Item OHW6.1)	432	200	R1.044
		Required for even withdrawal from existing network, flow control valve to install (Item OHW14.1)	-	75	R0.230
		Fernkloof tank internal water network (Item OHW14.2)	200	110	R0.290
	2035	Replace existing 50 mm required to improve network conveyance (Item OHW1.5)	492	110	R0.482
		Replace existing 75 mm required to improve network conveyance (Item OHW1.6)	623	110	R0.711
		Replace existing 150 mm Ø to improve network conveyance (Item OHW2.2)	287	315	R0.552
		Replace existing 150 mm Ø to improve network conveyance (Item OHW2.4)	252	315	R0.491
		Required to manage static pressures in zone, install PRV (Item OHW3.6)	-	110	R0.304
		Required when future area GH5.1 develops (Item OHW13.2)	397	355	R1.957
		Required when future area GH5.1 develops (Item OHW13.3)	1 391	315	R5.348
		Required when future area GH5.1 develops (Item OHW13.4)	623	250	R2.328
		Required when future area GH5.1 develops (Item OHW13.5)	1 905	160	R3.195
		Required when future areas GH6.3, GH6.4 & GH6.5 develop (including main road crossing) (Item OHW13.8)	1 052	250	R3.290
		Required when future area GH11 develops (Item OHW7.6)	522	160	R0.968
	2040	Replace existing 50 and 75 mm to improve network redundancy when future area GH2 develops (Item OHW1.2)	650	160	R0.590
		Required when future area GH2 develops (Item OHW1.3)	932	160	R1.696
		Required when future area GH6.6 develops (Item OHW2.10)	590	110	R0.749
		Replace existing 50 mm required to improve network conveyance (Item OHW2.11)	1 224	250	R1.095
		Required when future area GH6.4 develops (Item OHW3.8)	325	200	R0.735
		Required when future area GH6.1 develops (Item OHW5.2)	378	160	R0.715

Table C.3.20: Future Water Reticulation Infrastructure Required					
Scheme	**Year**	**Recommendations included in the Water Master Plan**	**Distance (m)**	**Diameter (mm)**	**Cost (R Million)**
		To improve network conveyance (Item OHW12.1)	473	200	R1.139
	2045	Required when future area GH3 develops (Item OHW1.4)	148	250	R0.523
		To improve network redundancy (Item OHW12.2)	194	110	R0.284
	2050	Replace existing 100 mm required to improve network conveyance (Item OHW2.5)	423	315	R0.726
		Required when future areas GH1 & GH50 develop (Item OHW13.12)	152	400	R1.111
	2055	Required when future area GH1 develops (Item OHW13.13)	285	315	R1.259
	Subtotal		**22 701**	**-**	**R61.108**
Stanford	2029	To improve network conveyance (when future area SF7 develops) (Item OSW1.6)	614	250	R1.837
		Replace existing 100 mm pipeline to improve network conveyance (Item OSW2.5)	264	200	R0.374
		Replace existing 50 and 75 mm pipelines to improve network conveyance (Item OSW2.8)	261	160	R0.297
		Required for isolating of Stanford PRV and reservoir zones, close valves (Items OSW2.9a and OSW2.9b)	-	110	-
		Replace existing 50 and 75 mm pipelines and connect lower lying erven of LCH area to PRV zone (Item OSW2.10)	110	160	R0.140
		Required for isolating of Stanford PRV and reservoir zones, install PRV (Item OSW2.2)	-	110	R0.304
	2030	To improve network redundancy (Item OSW1.8)	100	110	R0.163
		Replace existing 50 mm to improve network conveyance (Item OSW2.6)	564	110	R0.506
	2035	Required when future areas SF1, SF3, SF4 and SF5 develop (Item OSW1.3)	1 147	200	R2.684
	2040	Required when future areas SF1, SF3 and SF4 develop (Item OSW1.4)	374	200	R0.912
	Subtotal		**3 434**	**-**	**R7.216**
Greater Gansbaai	2029	Replace existing 50 mm to improve network conveyance (Item OGW1.3)	76	110	R0.093
		To improve network redundancy (Item OGW1.6)	119	75	R0.163
		To improve network redundancy (OGW1.8)	296	110	R0.415
		To improve network conveyance (Item OGW2.1)	1 006	450	R6.826
		To improve network conveyance (Item OGW2.2)	200	355	R1.033
		To improve network conveyance (Item OGW2.16)	155	160	R0.318
		To improve network conveyance (Item OGW2.17)	52	160	R0.136
		To improve network conveyance (Item OGW2.3)	398	200	R0.966
	2030	To improve network conveyance (Item OGW3.1a)	83	315	R0.298
		To improve network conveyance (Item OGW3.4)	134	110	R0.207
		Required when future areas GG25 and GG34 develop (Item OGW3.10)	733	110	R0.910
		Required when future area GG34 develops (Item OGW3.12)	1 405	110	R1.713
		To improve network conveyance (Item OGW7.2)	139	200	R0.372
		To isolate booster zone from reservoir zone, insert two 75 mm valves and close (Items OGW7.3 and OGW7.4)	-	75	R0.258
		Required when future area GG8.2 develops (Item OGW2.13)	399	160	R0.751
		To improve network conveyance and redundancy (Item OGW2.14)	703	160	R1.289
	2035	Required when future area GG2 develops (Item OGW1.5)	94	160	R0.210
		To improve network conveyance (Item OGW2.8a)	332	200	R0.816
		Replace existing 50 mm to improve network conveyance (Item OGW2.8b)	486	200	R0.441
		To improve network conveyance (Item OGW2.9)	612	160	R1.129
		To improve network conveyance (Item OGW3.1b)	601	200	R1.741
		Required when future areas GG12, 16, 17 and 18 develop (Item OGW3.2)	1 308	200	R3.051
		To improve network conveyance (Item OGW4.1)	204	160	R0.404
	2040	Required when future area GG1 develops (Item OGW1.2)	782	200	R1.847
		Replace existing 75 mm when future area GG28 develops (Item OGW1.12)	238	110	R0.255
		Required when future areas GG16, 17 and 18 develop (Item OGW3.3)	1 105	160	R2.001
	2045	Required when future area GG1 develops (Item OGW1.13)	1 022	160	R1.856
		Required when future area GG10.2 develops (Item OGW2.18)	512	160	R0.951
		Required when future area GG31 and lower lying erven of GG33 develops (Item OGW4.3)	801	550	R7.569
		Inter-connection pipe to improve network conveyance when MP item OGW4.3 is constructed (Item OGW4.4)	20	355	R0.188
		Required when lower lying erven of future area GG33 develops (Item OGW4.8)	1 762	315	R6.757

Table C.3.20: Future Water Reticulation Infrastructure Required					
Scheme	**Year**	**Recommendations included in the Water Master Plan**	**Distance (m)**	**Diameter (mm)**	**Cost (R Million)**
		New supply pipe when Franskraal HL reservoir is constructed (Item OGW6.1)	572	400	R3.498
		Required when higher lying erven of future area GG33 develops (Item OGW6.4)	1 043	400	R6.278
		Required when higher lying erven of future area GG33 develops (Item OGW6.5)	814	315	R3.157
	2050	Required when future area GG25 develops (Item OGW3.6)	640	110	R0.798
		Required when future area GG25 develops (Item OGW3.7)	1 347	110	R1.642
		Required when future area GG25 develops (Item OGW3.8)	1 120	110	R1.372
		Required when future area GG25 develops (Item OGW3.9)	1 517	110	R1.847
		To improve network conveyance (Item OGW4.2)	1 171	160	R2.120
		Required when future area GG31 develops (Item OGW4.5)	1 176	315	R4.531
		Required when lower lying erven of future area GG33 develops (Item OGW4.9)	771	250	R2.221
		Required when lower lying erven of future area GG33 develops (Item OGW4.10)	597	200	R1.304
		Required when lower lying erven of future area GG33 develops (Item OGW6.6)	1 008	250	R2.882
	2055	Required when future area GG31 develops (Item OGW4.6)	1 613	250	R4.570
	2060	Required when future area GG31 develops (Item OGW4.7)	805	200	R1.738
	Subtotal		**29 971**	**-**	**R82.923**
Pearly Beach	2040	To improve network conveyance when capacity of the booster PS is upgraded (Item OPW1.4)	595	250	R1.890
	2045	Required when future area PB4 develops (Item OPW1.3)	817	110	R1.020
	Subtotal		**1 412**	**-**	**R2.910**
Baardskeer-dersbos	2035	Dedicated bulk water supply to Baardskeerdersbos reservoir, valve to insert and close (Item OBBW1.1)	-	90	R0.129
	Subtotal		**-**	**-**	**R0.129**
Total			**67 756**		**R179.401**

Note: Estimated costs of 2021 Water Master Plan were escalated at 6%/a for four years

The Water Master Plan (June 2021) indicated the following Water Demand Management infrastructure requirements.

Table C.3.21: Future Water Demand Management Infrastructure Required			
Scheme	**Year**	**Project**	**Cost (R Million)**
Buffels River	-	Telemetry at reservoirs, pumping stations and bulk water meters	R0.252
Kleinmond	-	Telemetry at reservoirs, pumping stations and bulk water meters	R0.063
Greater Hermanus	-	Telemetry at reservoirs, pumping stations and bulk water meters	R0.884
Stanford	-	Telemetry at reservoirs, pumping stations and bulk water meters	R0.126
Greater Gansbaai	2029	Various pipelines and valves, PRJ-OGW002	R6.675
	2040	Various valves, PRJ-OGW016	R0.250
	-	Telemetry at reservoirs, pumping stations and bulk water meters	R0.631
Pearly Beach	-	Telemetry at reservoirs, pumping stations and bulk water meters	R0.126
Baardskeerdersbos	-	Telemetry at reservoirs, pumping stations and bulk water meters	R0.126
Buffeljags Bay	-	Telemetry at reservoirs, pumping stations and bulk water meters	R0.063
Total			**R9.196**

Note: Estimated costs of 2021 Water Master Plan were escalated at 6%/a for four years

BULK SEWER PIPELINE AND SEWER DRAINAGE NETWORK INFRASTRUCTURE

The waterborne sewerage drainage networks need to be extended in Kleinmond, Greater Gansbaai, Greater Hermanus, Hawston and Pearly Beach, while the entire towns of Betty's Bay, Pringle Bay, Rooi-Els, Baardskeerdersbos and Buffeljags Bay are still dependent on the sewerage tanker truck service. Some of the bulk sewer rising main pipelines need to be refurbished.

The Sewer Master Plan (June 2021) has indicated that based on the most likely land-use development scenario, it will be necessary for the following bulk sewer pipeline and sewer drainage network infrastructure.

Table C.3.22: Future Bulk Sewer Pipeline and Sewer Drainage Network Infrastructure Required

Scheme	Year	Project	Cost (R Million)
Buffels River	2035	New outfall sewer for unserviced erven in Betty's Bay (Item OBS8.1 – OBS15.1)	R187.989
		New rising main when Betty's Bay Main pump station no. 1 is constructed (Item OBS.B6)	R27.642
		New rising main when Betty's Bay Main pump station no. 2 is constructed (Item OBS.B8)	R15.323
		New rising main when Betty's Bay Main pump station no. 3 is constructed (Item OBS.B10)	R22.271
		New rising main when future Betty's Bay pump station 1 is constructed (Item OBS8.3)	R0.484
		New rising main when future Betty's Bay pump station 2 is constructed (Item OBS9.6)	R2.982
		New rising main when future Betty's Bay pump station 3 is constructed (Item OBS10.4)	R1.114
		New rising main when future Betty's Bay pump station 4 is constructed (Item OBS11.3)	R0.574
		New rising main when future Betty's Bay pump station 5 is constructed (Item OBS12.3)	R0.433
		New rising main when future Betty's Bay pump station 6 is constructed (Item OBS13.3)	R0.713
		New rising main when future Betty's Bay pump station 7 is constructed (Item OBS14.5)	R0.963
		New rising main when future Betty's Bay pump station 8 is constructed (Item OBS15.3)	R0.129
	2040	New gravity outfall sewers for unserviced erven in Pringle Bay (Items OBS5.1, OBS5.2, OBS6.1, OBS6.2 and OBS7.1))	R87.280
		New rising main when future Pringle Bay pump station 1 is constructed (Item OBS5.4)	R3.227
		New rising main when future Pringle Bay pump station 2 is constructed (Item OBS6.4)	R1.185
		New rising main when future Pringle Bay pump station 3 is constructed (Item OBS7.3)	R0.976
		New rising main when future Rooi Els pump station 1 is constructed (Item OBS1.3)	R0.391
		New rising main when future Rooi Els pump station 2 is constructed (Item OBS2.4)	R0.659
		New rising main when future Rooi Els pump station 3 is constructed (Item OBS3.6)	R0.356
		New rising main when future Rooi Els pump station 4 is constructed (Item OBS4.3)	R0.418
		New rising main when Pringle Bay Main pump station is constructed (Item OBS.B4)	R13.463
	2045	New gravity outfall sewers for unserviced erven in Rooi Els (Item OBS1.1, OBS2.1, OBS2.2, OBS3.1, OBS3.2, OBS3.3, OBS3.4 and OBS4.1)	R25.266
		New rising main when Rooi Els Main pump station is constructed (Item OBS.B2)	R8.970
	Subtotal		**R402.808**
Kleinmond	2029	New gravity outfall sewer for unserviced erven in Kleinmond (Item OKS2.1)	R49.421
		Upgrade existing 160 mm dia. outfall gravity sewer when it reaches capacity (Investigate first) (Item OKS2.4)	R1.627
	2030	New gravity outfall sewer for unserviced erven in Kleinmond (Item OKS1.1)	R26.056
		New gravity outfall sewer for future development area KM9 (Item OKS2.6)	R0.633
		Upgrade existing 100 mm dia. gravity sewer when it reaches capacity (Item OKS5.1)	R0.937
	2035	New gravity sewer required when future area KM3 develops (Item OKS2.3)	R0.728
	2040	Upgrade existing rising main when Kleinmond PS5 is upgraded (Item OKS6.2)	R0.713
		Upgrade existing gravity sewer when future area KM20 develops (Item OKS6.3)	R1.141
	Subtotal		**R81.257**
Greater Hermanus	2029	Upgrade existing rising main. Verify diameter of rising main (Item OHS22.2)	-
		Upgrade existing 225 mm dia. outfall gravity sewer when it reaches capacity (Item OHS13.1)	R3.165
		Upgrade existing 450 & 525 mm dia. bulk gravity outfall sewer when it reaches capacity (Item OHS13.4)	R4.325
		New gravity sewer when existing 525 mm dia. outfall sewer reaches capacity (Item OHS13.2)	R5.689
		Upgrade existing gravity (Investigate first). Verify the capacity of the Onrus Milkwood pump station first (Item OHS11.8)	R1.488
		Upgrade existing gravity when overflow problems occur when Whale Rock PS is upgraded (Item OHS19.1)	R2.020
	2030	Abandon existing Peach House rising main when outfall sewer is constructed to divert flow to Whale Rock PS (Item OHS30.2)	R0.010
		Decommission existing Hemel-en-Aarde rising main (Item OHS29.4)	R0.010
		New outfall gravity sewer for future areas GH1, GH5.1, GH5.2 & GH50 (Item OHS8.3)	R4.939
		New outfall gravity sewer for unserviced erven in Fisherhaven (Item OHS2.1)	R10.951
		New outfall gravity sewers for unserviced erven in Hawston (Item OHS6.3, Item OHS8.1, Item OHS8.10)	R13.199
		New outfall gravity sewer for unserviced erven in Onrus (Item OHS11.1)	R5.056
		New outfall gravity sewer to divert flow from Peach House PS to Whale Rock PS. Abandon existing gravity sewer (Item OHS30.3, Item OHS30.4)	R0.989
		New gravity sewer to divert flow from existing Hemel en Aarde PS to Sandbaai PS (Item OHS29.1)	R0.346

Table C.3.22: Future Bulk Sewer Pipeline and Sewer Drainage Network Infrastructure Required			
Scheme	**Year**	**Project**	**Cost (R Million)**
		Upgrade existing gravity sewer when existing Hemel en Aarde drainage area is diverted to Sandbaai PS (Item OHS29.2)	R2.781
		New rising main when future Greater Hermanus PS 1 is constructed (Item OHS2.3)	R0.417
		New rising main when future Greater Hermanus PS 12 is constructed (Item OHS24.3)	R1.520
		New rising main when future Greater Hermanus PS 3 is constructed (cost to the developer) (Item OHS4.2)	-
		New rising main when future Greater Hermanus PS 4 is constructed (Item OHS6.5)	R1.868
		New rising main when future Greater Hermanus PS 7 is constructed (Item OHS9.2)	R0.446
		New rising main when future pump station GH15 is constructed (cost to the developer (Item OHS28.2)	-
	2035	New outfall gravity sewer for future area GH2 (Item OHS3.2)	R1.858
		New outfall gravity sewer for future areas GH6.3 and GH6.5 (Item OHS7.5)	R1.982
		New outfall gravity sewers for unserviced erven in Fisherhaven (Item OHS1.1, OHS1.2, OHS1.4, OHS3.1)	R29.978
		New outfall gravity sewer for unserviced erven in Hawston (Item OHS6.1)	R20.203
		New outfall gravity sewers for unserviced erven in Hermanus (Item OHS15.1, Item OHS16.1, Item OHS17.1 and OHS18.1)	R23.419
		Upgrade existing 200 mm dia. outfall gravity sewer when it reaches capacity (Investigate first), modelled on minimum slope (Item OHS11.3)	R0.798
		Upgrade existing 400 mm dia. outfall gravity sewer when it reaches capacity (when Onrus Main PS is upgraded) (Item OHS13.5)	R3.212
		Upgrade existing outfall gravity sewer when it reaches capacity, modelled on minimum slope and diameter of 90 mm (Item OHS11.7)	R0.499
		Upgrade existing gravity sewer when future areas GH13 and GH28.1 develops (Item OHS12.4)	R0.896
		Upgrade existing gravity sewer when future areas GH8.3 - GH8.6 develop (Item OHS11.12)	R1.350
		Upgrade existing gravity when future areas GH8.5 and GH8.6 develop (Item OHS11.11)	R0.763
		New rising main when future Greater Hermanus PS 10 is constructed (Item OHS17.3)	R0.540
		New rising main when future Greater Hermanus PS 2 is constructed (Item OHS3.4)	R0.384
		New rising main when future Greater Hermanus PS 5 is constructed (Item OHS7.4)	R0.462
		New rising main when future Greater Hermanus PS 9 is constructed (Item OHS18.3)	R0.510
		Upgrade existing rising main when Sandbaai pump station 1 reaches capacity (Item OHS12.6)	R6.542
	2040	Upgrade existing rising main when Fisherhaven pump station reaches capacity (Item OHS1.6)	R5.927
		New outfall gravity sewer for future areas GH1, GH5.1 & GH50 (including main road crossing) (Item OHS8.2)	R5.605
		New outfall gravity sewer for unserviced erven in Hawston (Item OHS7.1)	R8.065
		New outfall gravity sewer for unserviced erven in Voëlklip (Item OHS14.1)	R7.259
		Upgrade existing gravity sewers when existing 250 mm dia. outfall sewer reaches capacity (Item OHS1.3, OHS1.7)	R1.613
		Upgrade existing 300 mm dia. outfall gravity sewer when it reaches capacity (Item OHS8.6)	R2.059
		Upgrade existing outfall gravity sewer when it reaches capacity (Item OHS8.5)	R2.743
		Upgrade existing outfall gravity sewers when it reaches capacity, modelled on minimum slope (Item OHS12.7, OHS12.8)	R3.103
		New gravity sewer when future area GH6.4 develops (Item OHS9.3)	R0.568
		New gravity sewer when future area GH6.6 develops (Item OHS9.4)	R0.564
		New gravity sewer when future areas GH8.3 - GH8.6 develop (Item OHS11.13)	R1.641
		Upgrade existing gravity sewers when overflow problem occur (Investigate first) (Item OHS8.8, OHS8.9)	R1.572
	2045	New outfall gravity sewer for future area GH46 (Item OHS27.1)	R1.644
		New outfall gravity sewer for future areas GH1 and GH50 (Item OHS8.7)	R5.737
	2050	Upgrade existing 315 mm dia. outfall gravity sewer when it reaches capacity (Item OHS27.2)	R7.192
		New rising main when future Greater Hermanus PS 6 is constructed (Item OHS5.2)	R3.073
	2055	New rising main when future areas GH1 and GH50 develop (Item OHS20.2)	R1.850
		New gravity sewer when future areas GH1 and GH50 develop (Item OHS20.3)	R1.659
	2065	New rising main when future areas GH1 and GH50 develop (Item OHS20.4)	R1.547
	Subtotal		**R216.036**
Stanford	2035	New gravity sewer required when future Stanford PS1 is constructed (Item OSS2.2)	R0.280
		New rising main when future Stanford PS 1 is constructed (Item OSS3.3)	R0.360
		New gravity outfall sewer for unserviced erven in Stanford South (Item OSS3.1)	R3.079
		Upgrade existing gravity outfall sewer (Investigate first) when it reaches capacity, modelled on minimum slope (Item OSS2.4)	R1.073

Table C.3.22: Future Bulk Sewer Pipeline and Sewer Drainage Network Infrastructure Required			
Scheme	**Year**	**Project**	**Cost (R Million)**
	2040	Upgrade existing gravity sewers (Investigate first) when it reaches capacity, modelled on minimum slope (Item OSS1.3. OSS2.3)	R2.424
		Upgrade existing 200 mm dia. gravity outfall sewer when it reaches capacity (Item OSS1.4)	R4.496
	2045	Upgrade existing gravity outfall sewer (Investigate first) when it reaches capacity, modelled on minimum slope, verify capacity of Sunrise Estate PS first (Item OSS1.2)	R1.606
	2050	Upgrade existing gravity (Investigate first). Modelled on minimum slope and diameter of 160 mm, verify capacity of Sunrise Estate PS first (Item OSS1.1)	R0.555
	2055	New rising main when future Stanford PS 2 is constructed (Item OSS5.3)	R0.559
	Subtotal		**R14.433**
Greater Gansbaai	2029	Upgrade existing outfall gravity sewers when it reaches capacity, modelled on minimum slope (Investigate first) (Item OGS8.2, Item OGS8.3)	R2.323
	2030	New outfall gravity sewer for future area GG30 (Item OGS24.1)	R1.269
		New outfall gravity sewers for unserviced erven in Gansbaai (Item OGS7.2, Item OGS7.3, Item OGS8.1)	R10.023
		New gravity sewer required to decommission Conservancy Tank no. 1 (Item OGS14.2)	R0.733
		New gravity sewer required to decommission Conservancy Tank no. 2 (Item OGS15.3b)	R0.109
		Upgrade existing outfall gravity sewers when it reaches capacity, modelled on minimum slope (Item OGS7.10, Item OGS7.11)	R0.496
		New rising main when future De Kelders Main PS is constructed (Item OGS.B4)	R6.651
		New rising main when future De Kelders PS 4 is constructed (Item OGS4.7)	R1.634
		New rising main when future Kleinbaai Main PS is constructed (Item OGS.B2)	R10.232
		New rising main when future Kleinbaai PS 1 is constructed (Item OGS14.4)	R0.569
		New rising main when future Kleinbaai PS 2 is constructed (Item OGS15.11)	R3.856
		New rising main when Future PS KB 6 is constructed (Item OGS22.2)	R0.747
		New gravity sewer when Kleinbaai PS 1 and rising main is constructed (Item OGS15.7)	R1.130
	2035	New outfall gravity sewer for Birkenhead (Item OGS24.4)	R1.995
		New outfall gravity sewer for future area GG2 (Item OGS4.5)	R1.264
		New outfall gravity sewer for future area GG3 (Item OGS7.5)	R0.616
		New outfall gravity sewers for unserviced erven in De Kelders (Item OGS3.2, Item OGS4.2, Item OGS4.3, Item OGS4.4)	R6.969
		New outfall gravity sewers for unserviced erven in Gansbaai (Item OGS7.1, Item OGS7.4, Item OGS7.9a, Item OGS12.1, Item OGS13.1, Item OGS13.2)	R29.518
		New outfall gravity sewer for unserviced erven in Kleinbaai (Item OGS14.1)	R12.298
		New rising main when Birkenhead Main pump station is constructed (Item OGS24.2)	R1.880
		New gravity sewers required to decommission Conservancy Tank no. 2 (Item OGS15.2, Item OGS15.3a)	R3.471
		New gravity sewer required to decommission Conservancy Tank no. 3 (Item OGS15.4)	R2.213
		New gravity sewer when future area GG2 develops (Item OGS3.3)	R0.850
		New gravity sewer when future area GG6 develops (Item OGS7.6)	R1.531
		New rising main when future De Kelders PS 3 is constructed (Item OGS3.5)	R1.035
		New rising main when future Gansbaai PS 2 is constructed (Item OGS9.2)	R0.446
		New rising main when future Gansbaai PS 4 is constructed (Item OGS12.3)	R0.309
		Upgrade existing rising main when Kolgans pump station 2 reaches capacity (Item OGS10.2)	R0.717
	2040	New outfall gravity sewer for future area GG16.2 (Item OGS15.12)	R0.490
		New outfall gravity sewer for future area GG17 (Item OGS15.6)	R0.625
		New outfall gravity sewer for future area GG18 (Item OGS17.3)	R3.654
		New outfall gravity sewer for future areas GG22.1 and GG23.2 (Item OGS7.9b)	R0.640
		New outfall gravity sewers for unserviced erven in De Kelders (Item OGS2.2, Item OGS4.1, Item OGS5.1)	R27.161
		New outfall gravity sewers for unserviced erven in Franskraal (Item OGS17.2, OGS18.3)	R1.327
		New outfall gravity sewer for unserviced erven in Gansbaai (Item OGS6.1)	R16.280
		New outfall gravity sewers for unserviced erven in Kleinbaai (Item OGS15.1, 16.1)	R10.682
		New gravity sewer required to decommission Conservancy Tank no. 3 (Item OGS15.5)	R0.452
		New gravity sewer required when future area GG12 develops (Item OGS15.8)	R0.547
		New gravity sewer required when future area GG13 develops (Item OGS15.9)	R0.566
		Upgrade existing outfall gravity sewers when it reaches capacity (Investigate first), modelled on minimum slope (Item OGS7.7, OGS8.10, OGS8.8)	R3.362
		New gravity sewers when future area GG1 develops (Item OGS2.6, OGS3.6)	R1.781
		New gravity sewer when future area GG28 develops (Item OGS1.4)	R0.852
		New rising main when future De Kelders PS 1 is constructed (Item OGS1.3)	R0.073

Table C.3.22: Future Bulk Sewer Pipeline and Sewer Drainage Network Infrastructure Required			
Scheme	**Year**	**Project**	**Cost (R Million)**
		New rising main when future De Kelders PS 2 is constructed (Item OGS2.5)	R0.596
		New rising main when future De Kelders PS 5 is constructed (Item OGS5.3)	R0.395
		New rising main when future Franskraal PS 1 is constructed (Item OGS17.5)	R5.775
		New rising main when future Gansbaai PS 1 is constructed (Item OGS6.3)	R0.292
		New rising main when future Kleinbaai PS 3 is constructed (Item OGS16.3)	R0.462
	2045	New rising sewer for Birkenhead (Item OGS20.1)	R0.756
		New outfall gravity sewers for unserviced erven in De Kelders (Item OGS1.1, OGS3.1)	R19.467
		New gravity sewers for unserviced erven in Franskraal (Item OGS17.1, OGS18.2, OGS19.5)	R13.279
		New gravity sewers for unserviced erven in Franskraal, when future area GG19 develops (Item OGS18.4, OGS19.2)	R2.437
		New gravity sewer required to transfer sewage flow from Uilenskraalmond to future Franskraal PS no. 9 (Item OGS32.1)	R0.805
		New gravity sewer when future area GG1 develops (Item OGS2.3)	R0.697
		New gravity sewers when future area GG31 develops (Item OGS27.1, OGS27.2, OGS28.1)	R8.719
		New rising main when future area GG33 develops (Item OGS33.2)	R0.569
		Upgrade existing gravity sewers when future area GG33 develops and existing system reaches capacity (Item OGS8.4, OGS8.6)	R6.599
		New gravity sewers when future area GG33 develops and existing system reaches capacity (Item OGS8.7)	R14.180
		New gravity when future areas GG32 and GG33 develop (Item OGS31.1)	R3.636
		New rising main when future Franskraal PS 2 is constructed (Item OGS18.6)	R1.709
		New rising main when future Franskraal PS 3 is constructed (Item OGS19.4)	R1.087
		New rising main when future Franskraal PS 6 is constructed (Item OGS28.3	R1.331
		New rising main when future Franskraal PS 7 is constructed (Item OGS29.2)	R1.288
		New rising main when future Franskraal PS 8 is constructed (Item OGS31.3)	R2.695
		New rising main when future Franskraal PS 9 is constructed (Item OGS32.3)	R4.479
		New rising main when future Gansbaai PS 5 is constructed (Item OGS23.2)	R0.549
	2050	New outfall gravity sewers for Birkenhead (Item OGS20.3, OGS21.1)	R8.034
		New outfall gravity sewer for unserviced erven in De Kelders (Item OGS2.1)	R9.885
		New outfall gravity sewers for unserviced erven in Franskraal (Item OGS18.1, OGS19.1)	R17.863
		New rising main when future Franskraal PS 4 is constructed (Item OGS25.4)	R0.538
		New rising main when Future PS KB 5 is constructed (Item OGS21.3)	R1.130
	2055	New outfall gravity sewers for unserviced erven in Franskraal (Item OGS25.1, OGS25.2)	R11.222
		New rising main when future Franskraal PS 5 is constructed (Item OGS26.3)	R0.476
	2060	New outfall gravity sewer for unserviced erven in Franskraal (Item OGS26.1)	R13.132
	Subtotal		**R327.456**
Pearly Beach	2029	New rising main when Package plant is decommissioned (Item OPS4.5)	R0.972
	2035	New gravity outfall sewer for unserviced erven in Pearly Beach (Item OPS1.4b, OPS1.5, OPS1.6, OPS1.7)	R4.451
		New gravity sewer required when future area PB1.3 develops (Item OPS1.4a)	R0.495
		New rising main when future Pearly Beach PS 1 is constructed (Item OPS1.3)	R2.844
	2040	New gravity outfall sewers for unserviced erven in Pearly Beach (Item OPS1.1, OPS2.1, OPS3.2, OPS4.2)	R15.689
		New rising main when future Pearly Beach PS 2 is constructed (Item OPS2.3)	R0.218
		New rising main when future Pearly Beach PS 3 is constructed (Item OPS3.4)	R1.899
		New rising main when future Pearly Beach PS 4 is constructed (Item OPS4.4)	R0.620
		New gravity outfall sewers for unserviced erven in Pearly Beach (Item OPS3.1, OPS4.1)	R32.655
	Subtotal		**R59.844**
Baardskeerdersbos	2045	New gravity outfall sewer for unserviced erven in Baardskeerdersbos (ItemOBaS1.1)	R6.848
	Subtotal		**R6.848**
Buffeljags Bay	2050	New gravity outfall sewer for unserviced erven in Buffeljags Bay (Item OBJS1.1)	R0.678
	Subtotal		**R0.678**
Total			**R1 109.360**

Note: Estimated costs of 2021 Water Master Plan were escalated at 6%/a for four years

SEWER PUMP STATIONS

The Sewer Master Plan (June 2021) has indicated that based on the most likely land-use development scenario, it will be necessary for the following sewer pump stations.

Table C.3.23: Future Sewer Pump Stations Required

Scheme	Year	Project	Cost (R Million)
Buffels River	2035	New pump stations for Betty's Bay (Items OBS8.2, OBS9.5, OBS10.3, OBS11.2, OBS12.2, OBS13.2, OBS14.4, OBS15.2)	R16.956
		New pump stations required to pump sewage from Betty's Bay to Kleinmond WWTW (Items OBS.B5, OBS.B7, OBS.B9)	R17.436
	2040	New pump stations for Pringle Bay (Item OBS5.3, OBS6.3, OBS7.2)	R7.202
		Required to pump sewage from Pringle Bay to Betty's Bay (Item OBS.B3)	R3.755
	2045	New pump stations for Rooi Els (Item OBS1.2, OBS2.3, OBS3.5, OBS4.2)	R7.769
		New pump station required to pump sewage from Rooi Els to Pringle Bay (Item OBS.B1)	R2.294
	Subtotal		**R55.413**
Kleinmond	2029	Upgrade existing pump station when it reaches capacity, verify existing pump capacity first (Item OKS1.3)	R0.030
	2030	Upgrade existing pump station when it reaches capacity (Item OKS3.1)	R1.232
	2040	Upgrade existing pump station when it reaches capacity with development of future area KM20 (Item OKS6.1)	R0.122
	Subtotal		**R1.385**
Greater Hermanus	2029	Upgrade existing pump station when it reaches capacity, verify existing pump capacity first (Item OHS22.1)	R0.030
		Upgrade existing PS when it reaches capacity. Investigate existing capacity and operation of system from WWTW Main PS to Hermanus WWTW first (Item OHS19.2)	R0.030
		Upgrade existing PS capacity in order to reach scouring velocity through rising main (Item OHS23.1)	R0.813
	2030	Abandon existing Peach House PS when outfall sewer is constructed to divert flow to Whale Rock PS (Item OHS30.1)	R0.273
		Decommission existing Hemel-en-Aarde PS (Item OHS29.3)	R0.273
		New pump station for Fisherhaven (Item OHS2.2)	R1.904
		New pump station for Hawston (Item OHS6.4)	R2.712
		New PS when future area GH49 develops (cost to the developer) (Item OHS4.1)	*
		New PS when future areas GH6.2 and GH6.5 develop (Item OHS9.1)	R0.783
		New PS when future development area GH6.1 develops (cost to the developer) (Item OHS28.1)	R0.523
		Upgrade existing PS (Investigate first) when overflow problems occur (capacity of upstream PS more than Hermanus PS 4) (Item OHS21.1)	R0.030
		New PS when Zwelihle informal area is formalized (Item OHS24.2)	R0.783
	2035	New pump station for Fisherhaven (Item OHS3.3)	R2.055
		New pump station for Hawston (Item OHS7.3)	R1.993
		New pump stations for Hermanus (Item OHS17.2, OHS18.2)	R3.909
		Upgrade existing PS (Investigate first) when it reaches capacity (Item OHS11.10)	R0.030
		Upgrade existing PS when it reaches capacity, verify existing pump capacity first (Item OHS12.5)	R0.030
	2040	Upgrade existing PS when it reaches capacity, verify existing pump capacity first (Item OHS1.5)	R0.030
	2050	New PS when future area GH4 develops (Item OHS5.1)	R2.841
	2055	New PS when future areas GH1 & GH50 develop (Item OHS20.1)	-
	2065	New PS when Future areas GH1 & GH50 develop (Item OHS20.5)	-
	Subtotal		**R19.042**
Stanford	2035	New pump station for Stanford South (Item OSS3.2)	R1.904
	2055	New pump station for Stanford North (Item OSS5.2)	R0.654
	Subtotal		**R2.558**
Greater Gansbaai	2029	New pump station required to pump sewage from Kleinbaai and Franskraal to Gansbaai WWTW (Item OGS.B1)	R6.691
	2030	New pump station for De Kelders (Item OGS4.6)	R3.209
		New pump stations for Kleinbaai (Item OGS14.3, OGS15.10)	R5.619
		New pump station required to pump sewage from De Kelders to Gansbaai Hawe pumping station (Item OGSB.3)	R3.575
		New pump station when lower lying erven of Perlemoenpunt develop (Item OGS22.1)	R2.093
	2035	New Main pump station for Birkenhead drainage area (Item OGS24.3)	R2.055
		New pump station for De Kelders (Item OGS3.4)	R2.656
		New pump stations for Gansbaai (Item OGS12.2, OGS9.1)	R3.006

Table C.3.23: Future Sewer Pump Stations Required			
Scheme	**Year**	**Project**	**Cost (R Million)**
		Upgrade existing pump station when existing pump station reaches capacity, verify existing pump capacity first (Item OGS.B5, OGS10.1)	R0.804
	2040	New pump stations for De Kelders (Item OGS1.2, OGS2.4, OGS5.2)	R5.595
		New pump stations for Franskraal (Item OGS17.4, OGS18.5)	R5.682
		New pump station for Gansbaai (Item OGS6.2)	R2.017
	2045	New pump station for Birkenhead drainage area (Item OGS20.2)	R1.980
		New pump station for Franskraal (Item OGS19.3)	R2.356
		New pump station for Kleinbaai (Item OGS16.2)	R1.904
		New pump station when future area GG31 develops (Item OGS28.2, OGS29.1)	R4.561
		New pump stations when future area GG33 develops (Item OGS32.2, OGS33.1)	R4.646
		New pump station when future areas GG10.2 & GG11.2 develop (Item OGS23.1)	R0.679
		New pump station when future areas GG32 & GG33 develop (Item OGS31.2)	R4.821
	2050	New pump station for Birkenhead drainage area (Item OGS21.2)	R1.523
		New pump station for Franskraal (Item OGS25.3)	R2.169
	2055	New pump station for Franskraal (Item OGS26.2)	R1.980
	Subtotal		**R69.623**
Pearly Beach	2035	New pump station for Pearly Beach (Item OPS1.2)	R2.841
	2040	New pump stations for Pearly Beach (Item OPS2.2, OPS3.3, OPS4.3)	R6.541
	Subtotal		**R9.381**
Total			**R157.402**

Note: Estimated costs of 2021 Water Master Plan were escalated at 6%/a for four years

WASTE WATER TREATMENT INFRASTRUCTURE

The table below gives a summary of the existing hydraulic design capacities and current flows at each of the WWTWs, as well as the final effluent quality compliance percentages for the 2024/2025 financial year.

Table C.3.24: Existing Hydraulic Design Capacities, Flows and Final Effluent Compliance percentages at each of the WWTWs						
WWTW	**Existing Hydraulic Capacity**	**Peak Month Average Daily Flow**	**Average Daily Flow (2024/2025)**	**Average Wet Weather Flow (Jul'24, Aug'24, Jun'25)**	**Average Daily Flow as a % of Design Capacity**	**Final Effluent Compliance for 2024/2025 against *Authorisation***
	Ml/d	**Ml/d**	**Ml/d**	**Ml/d**	**%**	
Kleinmond	2.000	2.766 (Aug)	1.776	2.358	88.8%	Microbiological: 75.0% Chemical: 68.8% Physical: 94.4% *General Limits*
Hawston	0.700	0.796 (Apr)	0.563	0.652	80.4%	Microbiological: 85.7% Chemical: 58.8% Physical: 80.6% *General Limits*
Hermanus	12.000	15.383 (Jul)	10.110	12.949	84.3%	Microbiological: 54.2% Chemical: 75.4% Physical: 94.6% *Licence 17 October 2016*
Stanford	1.200	1.405 (Feb)	1.108	1.131	92.3%	Microbiological: 75.0% Chemical: 98.0% Physical: 88.9% *General Limits*
Gansbaai	2.000	1.252 (Dec)	1.187	1.199	59.4%	Microbiological: 63.2% Chemical: 73.4% Physical: 87.8% *General Limits*
Eluxolweni	0.259	0.224 (Apr)	0.150	0.124	57.9%	Microbiological: 85.7% Chemical: 70.8% Physical: 66.7% *General Limits*

The organic design capacities of the WWTWs and the current loadings at the WWTWs are indicated in the table below.

Table C.3.25: Existing Organic Design Capacities and Historical Loads at the WWTWs

WWTW	Organic Design Capacity (kg COD/d)	2022/2023		2023/2024		2024/2025	
		Average Load (kg COD/d)	% of Design Capacity	Average Load (kg COD/d)	% of Design Capacity	Average Load (kg COD/d)	% of Design Capacity
Kleinmond	2 906	1 050 *	124.6%	1 015	120.4%	1 226	42.2%
Hawston	968	850	87.8%	1 107	114.4%	614	63.4%
Hermanus	9 000	6 221	69.1%	6 371	70.8%	7 016	78.0%
Stanford	1 200	1 033	86.1%	973	81.1%	641	53.4%
Gansbaai	3 600	1 405	39.0%	1 113	30.9%	1 174	32.6%
Euvolemia	198	267	134.8%	107	54.0%	113	57.1%

Note: Extremely high COD readings of March 2023 for Kleinmond WWTW were not taken into account

The projected future WWTW flows are included in the future water requirement projection models. The table below gives an overview of the average daily future projected WWTW flows.

Table C.3.26: Average Daily and Peak Month Future Projected WWTW Flows (Ml/d)

WWTW	Existing Hydraulic Capacity	Average Daily Future Projected WWTW Flows					Peak Month Average Daily Future Projected WWTW Flows				
		2029	2034	2039	2044	2049	2029	2034	2039	2044	2049
Kleinmond	2.000	0.753	0.888	1.048	1.237	1.381	0.964	1.137	1.341	1.583	1.768
Hawston	0.700	4.869	6.265	8.052	9.803	11.992	6.184	7.957	10.226	12.450	15.230
Hermanus	12.000										
Stanford	1.200	0.484	0.583	0.704	0.854	0.980	0.639	0.770	0.929	1.127	1.294
Gansbaai	2.000	0.604	0.835	1.138	1.537	2.062	0.640	0.885	1.206	1.629	2.186
Eluxolweni	0.259	0.076	0.107	0.149	0.206	0.284	0.103	0.144	0.201	0.278	0.383

Note: The peak month factors used in the above table are 1.28 for Kleinmond, 1.27 for Hawston and Hermanus, 1.32 for Stanford, 1.06 for Gansbaai and 1.35 for Eluxolweni (Average PMF over last three years).

Kleinmond WWTW: The 2021 Green Drop score for the WWTW was 88% and the wastewater risk rating decreased from 47.1% in 2022 to 43.8% in 2023. The Kleinmond WWTW was upgraded over the last two financial years and the current capacity of 2.000 Ml/d is adequate for the future treatment requirements.

The recommendations from the detail Kleinmond WWTW Process Audit (Dec 2024), as completed during the 2024/2025 financial year, are summarised in the table below.

Table C.3.27: Recommendations from the detail Kleinmond WWTW Process Audit

- Monitor and maintain alkalinity above 600 mg/l.
- Ensure spreadsheet is being kept up to date and not only populated once a month.
- Process Controllers to interact with the data collected on site - draw graphs etc. to track operational changes (quality and quantities).
- Process Controllers should receive feedback from both the internal lab and the independent laboratory.
- The calibration of the equipment used on site should be verified by the internal lab.
- Consider expanding the spreadsheet to provide operational feedback and not act as database only.
- Ensure Process Controllers are to be aware of the Preventative Maintenance Schedule.
- Ensure records / logbooks pertaining to preventative maintenance are also available on site.
- Start sensitising Process Controllers to take more responsibility for aspects related to risk management pertaining to the operation of the works.

Hawston WWTW: The 2021 Green Drop score for the WWTW was 89% and the wastewater risk rating increased from 52.9% in 2022 to 62.5% in 2023. It can be noted from Tables C.3.25 that the Hawston WWTW needs to be upgraded in the nearby future. The approved 2025/2026 Capital Budget of the Municipality include a total budget of R62.850 million for the 2025/2026 to 2027/2028 financial years for the upgrading of the Hawston WWTW. A service provider was appointed for the planning and environmental requirements linked to the proposed upgrade of the plant.

The recommendations from the detail Hawston WWTW Process Audit (Dec 2024), as completed during the 2024/2025 financial year, are summarised in the table below.

Table C.3.28: Recommendations from the detail Hawston WWTW Process Audit

- As there is no grit removal prior to the transfer pumpstation scheduled cleaning of the sump should be prioritised.
- Provide a dedicated area for vacuum tanker discharge / secure the operation by providing a built-in quick-couple connection for discharge (eliminate the need to open and close the manhole. As an interim measure, ensure the team follows a Standard Operating Procedure which includes securing the area while they are working and ensure the manhole cover is replaced once they leave.
- Reduce the MLSS concentration to no more than 3 500 mg/l and then maintain these levels by daily wasting.
- Measure Alkalinity and ensure it remains in excess of 800 mg/l.
- Ensure MLSS is maintained as not to overload the clarifier.
- Install standby dosing pump / ensure standby unit is available (in safe storage) for quick installation should the need arise.
- Waste 37m^3/d from the clarifier underflow.
- Ensure the drying beds are cleaned as to allow sufficient capacity for wasting in the event of the Screw Press failing. The Press was out of order for around 4 months during the audit period.
- Ensure spreadsheet is being kept up to date and not only populated once a month.
- Process Controllers to interact with the data collected on site - draw graphs etc. to track operational changes (quality and quantities).
- Process Controllers should receive feedback from both the internal lab and the independent laboratory.
- The calibration of the equipment used on site should be verified by the internal lab.
- Consider expanding the spreadsheet to provide operational feedback and not act as database only.
- Ensure Process Controllers are to be aware of the Preventative Maintenance Schedule.
- Ensure records / logbooks pertaining to preventative maintenance are also available on site.
- Start sensitising Process Controllers to take more responsibility for aspects related to risk management pertaining to the operation of the works.

The Refurbishment of the Hawston WWTW Report, March 2018, recommended the following Operation-, Refurbishment- and Upgrade interventions for the Hawston WWTW.

Operation Interventions: Operation interventions include changing or optimising sludge age, recycle rates, etc. The capacity assessment in Section 8 of the Report showed that operating at 20 days sludge age can provide compliant wastewater treatment of up to 700 m^3/d ADWF capacity.

However, the 700 m^3/d ADWF capacity can only be achieved under average influent concentrations and with adequate sludge wasting. The latter requirement is approximately 253 kg DS/d, or 4.3 m^3/h @ 0.58% TSS sludge feed to dewatering plant for 9.8 hours per day. Operating the dewatering plant under these conditions is not practical and thus the Municipality should consider upgrading the entire dewatering system.

No other operation interventions were identified that can improve plant performance as there is limited flexibility in the disinfection system and RAS recycle pumps.

Refurbishment Interventions: These interventions are primarily civil and mechanical in nature. The table below gives an overview of the recommended refurbishment items.

Table C.3.29: Refurbishment Interventions for the Hawston WWTW

Process Area	Refurbishment	Comment / Description
Priority 1: Critical: Failure will result in complete process failure or cause plant shutdown or increased risk of severe health and safety events.		
Sludge Treatment	New sludge feed pump (2 No)	Feed pump and conveyer is undersized for the capacity of the screw press.
	Maintenance of screw press (see note on right)	Screw press capacity is not adequate for activated sludge plant. Recommended to service current press and relocate to a more suitable works.
	New wash water pump and intake location reconfiguration	Provide new sludge belt-press sized sufficiently for this application.
	New belt press 2m wide	
	Dewatering MCC and related cabling	The intake sump is a collection point for scum and debris.
General	New MCC building for bioreactor, dosing system and dewatering MCC	New building to house all MCC equipment
Bioreactor	Replace aerator (22kW)	Has exceeded operational lifespan
	Replace aerator (30kW)	
	Replace two mixers	
	Bioreactor MCC and related cabling	Mixer shafts are damaged/bent
	New disinfection system – Contact Tank	Age of MCC is a concern

Table C.3.29: Refurbishment Interventions for the Hawston WWTW		
Process Area	**Refurbishment**	**Comment / Description**
Disinfection	New disinfection system – Pumps and Equipment	A disinfection system does not exist on site, operators are dosing chemicals manually.
	Disinfection system MCC and related cabling.	
	Reconfiguration of pipework at pump station (Separate RAS / WAS and ML Recycle)	
RAS / WAS / ML Recycle	New pipework for RAS / WAS and ML Recycle	The combined RAS / WAS / Mixed liquor pump station and pipe work is undesirable. System is difficult to operate and flooding issues are occurring. Standby pumps are not available and valves show signs of deterioration. It is proposed that a new pump station with a new pipework configuration and standby pumps be installed.
	New ML pump station	
	Second RAS / WAS Pump	
	Second ML Recycle Pump	
	New valves for RAS / WAS / ML Recycle	
Priority 2: Urgent: Failure will result in reduced plant capacity, or poor effluent compliance or difficult process control and operation. Such failure will however not cause plant shutdown or severe health and safety events.		
Inlet works	Additional hand-rake screen at lower inlet works	Screening facility is difficult to operate. A drying slab and second hand-screen will improve operation.
	Improve screening removal and disposal and concrete repairs/adjustments	
SCADA	Integrate reporting of influent, effluent and sludge flow into telemetry system at inlet works	Better reporting will assist in plant monitoring, operation and control.
Settling Tank	Settling bridge motor	General maintenance on settling tank is needed. Emphasis on scum box and the discharge chamber.
	Settling tank inspection of scraper blades	
	Settling tank emptying and cleaning	
	Scum box repair	
Priority 3: Moderate: Items or issues that do not pose imminent plant failure or health and safety risks.		
Inlet works	Replace hand stops with sluice gates	
Sludge Treatment	Drying beds repairs and refurbishment	Repairs to concrete and sand-layer is needed
General	Site perimeter fence repairs	

Upgrade Interventions: The activated sludge system does not need an upgrade as the bioreactor and settling tank are sufficiently sized. Improvements to the sludge dewatering plant and RAS/WAS pump station are however recommended.

Hermanus WWTW: The 2021 Green Drop score for the WWTW was 89% - 96% and the wastewater risk rating increased from 36.4% in 2022 to 57.1% in 2023. The capacity of the WWTW is adequate to meet the short term future treatment requirements. The approved 2025/2026 Capital Budget of the Municipality include a total budget of R1.310 million for the 2025/2026 financial year for the upgrading of the screens, RAS and sludge dewatering facilities.

The recommendations from the detail Hermanus WWTW Process Audit (Dec 2024), as completed during the 2024/2025 financial year, are summarised in the table below.

Table C.3.30: Recommendations from the detail Hermanus WWTW Process Audit
• Ensure tankers keep on discharging in the same way that they are currently doing. It would however be advisable to do periodic spot-check analyses on the contents being discharged. • The practice of discharging pumpstation contents onto the drying beds needs to be re-visited and a more permanent solution found. A Standard Operating Procedure dealing with the rotation of beds being used, when these are to be cleared, etc. should be instituted while infrastructure solutions are investigated. • Maintain, calibrate / verify in-line DO meters should be done on a routine basis. • Maintain the MLSS concentration at no more than 3 500 mg/l by daily wasting. • Monitor and maintain raw alkalinity at levels above 420 mg/l. • Monitor the scum sprayer system. • Increase RAS Pump capacity, i.e. provide bigger motors for pumps. • Investigate options of dealing with back-flow from maturation ponds after heavy rains. • Do not be over-reliant on the automated system – Process Controllers should be encouraged to closely monitor the performance of this section of their Works. • Operate press for 3.7 hours per day, every day. • Clean drying beds as per the schedule to allow for use as and when required. Various Belt Press related challenges were recorded during the year under review and the fact that the beds are being cleaned and prepared for use after they have been used is commendable. • Ensure spreadsheet is being kept up to date and not only populated once a month. • Process Controllers to interact with the data collected on site - draw graphs etc. to track operational changes (quality and quantities). • Process Controllers should receive feedback from both the internal lab and the independent laboratory. • The calibration of the equipment used on site should be verified by the internal lab. • Consider expanding the spreadsheet to provide operational feedback and not act as database only.

Table C.3.30: Recommendations from the detail Hermanus WWTW Process Audit
• Ensure Process Controllers are to be aware of the Preventative Maintenance Schedule. • Ensure records / logbooks pertaining to preventative maintenance are also available on site. • Start sensitising Process Controllers to take more responsibility for aspects related to risk management pertaining to the operation of the works.

The Hermanus Clarifier Flow Balance Investigation, June 2020, recommended the following mitigation measures for the Hermanus WWTW.

- Fixed V-notch weirs should be introduced to the splitter boxes to ensure a proportional distribution of flows to the SSTs is achieved across the range of flows that the clarification system would need to handle. Alternatively the system could be left as it is as even though flow is distributed unevenly the SSTs performance would remain within guideline values, with the exception that SST2 would be borderline at PWWF.

- V-notch sluice gates should be introduced at the discharge point of the RAS return lines to the RAS WAS pumpstation sump. The V-notch weirs would allow the operators to approximate the RAS flows and thus optimise them, while the sluice gates would enable the operators to flush the sludge collection lines to discourage blockages from forming.

- The provision of additional facilities to enable the operators to service the SSTs more readily such as a portable centrifugal pump to drain the SSTs more readily and an eductor to enable the operators to prime the siphon more easily.

- The pumpstation itself requires ongoing maintenance. In particular the handrailing at the RAS WAS pumpstation sump needs to be repaired.

- The pumpstation inspection revealed that the RAS pumps are in good condition and are performing as per the original design intent. A RAS flow meter should be introduced on the RAS pipeline. This would require a flow meter chamber with connections into the existing AC pipeline. This would enable the operators to optimise the RAS return flow and better maintain the pumps.

- The removal of scum was considered, but the authors experience is that scum removal mechanisms merely provide another layer of complexity to the plant and tend to become an operational headache. It is thus preferable to address the source of the scum, which is likely to either be biological, or due to the presence of fats, oils and grease (FOG). To determine this the samples of the MLSS was sent for analysis to determine the presence FOG, as well as a microbiological analysis report to describe the bacterial composition of the sludge to confirm if the source of scum accumulation is biological.

- The analysis indicated that there was no bulking sludge which could cause scum, but nor could it demonstrate that FOG was present in appreciable quantities. This will need to be investigated further through a sampling campaign for FOG.

Stanford WWTW: The 2021 Green Drop score for the WWTW was 89% - 90% and the wastewater risk rating decreased from 64.0% in 2022 to 29.4% in 2023. The capacity of the WWTW is adequate to meet the short term future treatment requirements.

The recommendations from the detail Stanford WWTW Process Audit (Dec 2024), as completed during the 2024/2025 financial year, are summarised in the table below.

Table C.3.31: Recommendations from the detail Stanford WWTW Process Audit
• Use only 1 grit channel at a time. • Implement a Standard Operating Procedure for the removal of grit. This could include providing grating over the channels to ensure staff have safe access to the channels. • Clean out the downstream pump sump on a routine basis. • Maintain MLSS concentration at 3 500 mg/l by daily wasting. • Monitor and maintain alkalinity above 600 mg/l. • Monitor COD:TKN -ratio when nitrification is problematic. • Consider changing pumps feeding from raw sewage sump to reactor to one with a maximum capacity of 99 m^3/h (meet the 1 m/h upflow velocity).

Table C.3.31: Recommendations from the detail Stanford WWTW Process Audit
• Clean out the Chlorine Contact Channel on routine basis as to minimise secondary contamination and/or additional chlorine demand. • Run the press 1 hour per day, every day. • Clean out the sludge lagoons as to provide capacity for sludge disposal, should the need arise. Given the fact that the Sludge Press was out of operation on numerous occasions, this additional capacity is recommended. • Process Controllers should be encouraged to fully interact with the PLC/HMI. • Ensure spreadsheet is being kept up to date and not only populated once a month. • Process Controllers to interact with the data collected on site - draw graphs etc. to track operational changes (quality and quantities). • Process Controllers should receive feedback from both the internal lab and the independent laboratory. • The calibration of the equipment used on site should be verified by the internal lab. • Consider expanding the spreadsheet to provide operational feedback and not act as database only. • Ensure Process Controllers are to be aware of the Preventative Maintenance Schedule. • Ensure records / logbooks pertaining to preventative maintenance are also available on site. • Start sensitising Process Controllers to take more responsibility for aspects related to risk management pertaining to the operation of the works.

Gansbaai WWTW: The 2021 Green Drop score for the WWTW was 89% - 96% and the wastewater risk rating decreased from 41.2% in 2022 to 31.3% in 2023. The capacity of the WWTW is adequate to meet the short term future treatment requirements.

The recommendations from the detail Gansbaai WWTW Process Audit (Dec 2024), as completed during the 2024/2025 financial year, are summarised in the table below.

Table C.3.32: Recommendations from the detail Gansbaai WWTW Process Audit
• Maintain the MLSS concentration at 3 500 mg/l by continuing the current WAS program. • Measure Alkalinity and ensure it remains in excess of 700 mg/l. • Clean out Chlorine Contact Channel on a routine basis. • Run the drying press 3.5 hours per day, every day. • Keep the drying beds maintained as to ensure spare capacity as / when required. Various Belt Press failures were recorded during the audit period and it is commendable to see the beds clean after use. • Ensure spreadsheet is being kept up to date and not only populated once a month. • Process Controllers to interact with the data collected on site - draw graphs etc. to track operational changes (quality and quantities). • Process Controllers should receive feedback from both the internal lab and the independent laboratory. • The calibration of the equipment used on site should be verified by the internal lab. • Consider expanding the spreadsheet to provide operational feedback and not act as database only. • Ensure Process Controllers are to be aware of the Preventative Maintenance Schedule. • Ensure records / logbooks pertaining to preventative maintenance are also available on site. • Start sensitising Process Controllers to take more responsibility for aspects related to risk management pertaining to the operation of the works.

Pearly Beach WWTW: The 2021 Green Drop score for the WWTW was 88% and the wastewater risk rating for the plant decreased from 52.9% in 2022 to 50.0% in 2023. The capacity of the WWTW is still adequate to meet the short to medium term future treatment requirements. The approved 2025/2026 Capital Budget of the Municipality include a total budget of R0.500 million for the 2025/2026 financial year for the upgrading of the WWTW.

The recommendations from the detail Pearly Beach WWTW Process Audit (Dec 2024), as completed during the 2024/2025 financial year, are summarised in the table below.

Table C.3.33: Recommendations from the detail Pearly Beach WWTW Process Audit

- Clean screen on a regular basis (as the plant is left unattended this should not be neglected).
- Ensure screenings are periodically removed from the primary pond (Anaerobic Pond).
- Ensure the grit channels are cleaned on a routine basis (as the plant is left unattended this should not be neglected).
- Check grit channel flow velocity during tanker discharge – velocity not to exceed 0.3 m/s.
- Ensure that screenings are periodically removed from the primary pond.
- Investigate grit accumulation in the primary pond / Clean out the primary pond.
- Check Residual Chlorine readings on regular basis.
- Ensure grit is removed, screenings are cleared, required readings recorded and grounds are maintained.
- Ensure operational monitoring, including flowmeter readings and residual chlorine testing is done on a frequent basis.
- Filtered COD analyses could provide a different perspective on the system's compliance.
- Ensure records pertaining to maintenance are in line with best-practice principles.
- Ensure spreadsheet is being kept up to date and not only populated once a month.
- Process Controllers to interact with the data collected on site - draw graphs etc. to track operational changes (quality and quantities).
- Process Controllers should receive feedback from both the internal lab and the independent laboratory.
- The calibration of the equipment used on site should be verified by the internal lab.
- Consider expanding the spreadsheet to provide operational feedback and not act as database only.
- Ensure Process Controllers are to be aware of the Preventative Maintenance Schedule.
- Ensure records / logbooks pertaining to preventative maintenance are also available on site.
- Start sensitising Process Controllers to take more responsibility for aspects related to risk management pertaining to the operation of the works.

The WWTWs to be upgraded in Overstrand Municipality are summarised in the table below.

Table C.3.34: WWTWs to be Upgraded in the Future

WWTW	Short, Medium, Long Term	Estimated Cost (Vat Excluded)
Upgrade Hawston WWTW to 2.0 Ml/d	Short	R62 850 000
Hermanus WWTW upgrade screens, RAS and Sludge Dewatering	Short	R1 310 000
Eluxolweni WWTW upgrade	Short	R500 000
New disinfection systems at the WWTWs	Short	R6 000 000
Total		**R70 660 000**

TOPIC 4: WATER SERVICES OPERATION AND MANAGEMENT

Topic C.4.1: Water Services O&M

Section	Intervention Required?	% (1)	Solution description as defined by topic situation assessment	% (2)	Is there an Existing project / activity addressing this problem?	Current Demand Overall Scoring % (3)
O & M Plan Is There an O & M Plan?	No	100.0	All required O&M tasks for the various water and sewerage infrastructure components should be implemented. Ensure the required O&M schedules are in place and signed off on a monthly basis at least.	100.0	Partially	92.9
Resources	No	100.0	A budget of approximately 2% of the total asset value per annum should be allocated towards the replacement of existing water and sewerage infrastructure (Best Practice). In the case of operations and maintenance of the system, a budget of approximately 1% to 2% of the value of the system is typically required to ensure that the system remains in good condition (Best Practice).	100.0	Partially	92.9
	No	100.0	The External Service Provider is responsible to ensure that the number of process controllers at each of the WTWs and WWTWs and the class of process controller complies with the required number of process controllers and class of process controller per plant. Overstrand Municipality will monitor the External Service Provider's compliance with regard hereto.	100.0	Partially	92.9
Information	No	100.0	All incidents at the WTWs and WWTWs and on the water reticulation networks and sewer drainage networks need to be recorded and the Incident Management Protocols, as included in the Water Safety Plan and W_2RAPs, need to be followed.	100.0	Yes	100.0
	No	100.0	Ensure that the required O&M Manuals are in place for all the water and sewerage infrastructure.	100.0	Partially	92.9

Topic C.4.1: Water Services O&M						
Section	**Intervention Required?**	**% (1)**	**Solution description as defined by topic situation assessment**	**% (2)**	**Is there an Existing project / activity addressing this problem?**	**Current Demand Overall Scoring % (3)**
Activity Control & Management	No	100.0	Groundwater: Implement recommended daily, weekly, monthly and six monthly O&M activities for the boreholes.	100.0	Yes	100.0
	No	100.0	Surface water infrastructure: Implement preventative maintenance procedures.	100.0	Partially	92.9
	No	100.0	Bulk and water reticulation networks and fittings: Compile daily, weekly, monthly and annual maintenance checklists for the maintenance activities for the water reticulation networks and fittings.	100.0	Partially	92.9
	No	100.0	WTWs: Evaluate the existing O&M schedules for the WTWs against the recommended O&M tasks and ensure all required activities are adequately monitored and recorded.	100.0	Partially	92.9
	No	100.0	Water PSs: Compile weekly and monthly maintenance checklists for the recommended activities for all the water PSs and continue to inspect all PSs on at least a weekly basis.	100.0	Partially	92.9
	No	100.0	Reservoirs: Compile maintenance checklists for the recommended reservoir maintenance activities and document all inspections.	100.0	Partially	92.9
	No	100.0	Remote monitoring and Control Systems: Ensure adequate maintenance is carried out on the SCADA systems and compile maintenance checklists for the recommended activities.	100.0	Partially	92.9
	No	100.0	Sewer PSs: Compile weekly and quarterly maintenance checklists for the recommended activities for all the sewer PSs and all centrifugal pump stations need to be inspected on at least a weekly basis.	100.0	Partially	92.9
	No	100.0	Bulk and sewer drainage networks: Annual, monthly and weekly schedules for maintenance should be drawn up for the bulk and sewerage networks. Regular cleaning of sewer lines and all blockages and their precise locations should be recorded.	100.0	Partially	92.9
	No	100.0	WWTWs: Evaluate the existing O&M schedules for the WWTWs against the recommended O&M tasks and ensure all required activities are adequately monitored and recorded.	100.0	Partially	92.9

Notes: (1) Is this section addressed in the WSDP?
(2) Were solutions identified for the possible gaps?
(3) Percentage calculated based on the above two percentages and whether there is an existing project/activity addressing this problem? Does this current listed project/activity address the problem totally? Project/Activity approved by Council as part of WSDP database? Approved by Council in project activity database and part of 5yr IDP cycle projects? Project/Activity listed in 3yr MTEF Cycle?

It is important for Councils to understand the value of maintenance and provide the necessary funding to properly operate and maintain infrastructure. It is the responsibility of the municipal and technical managers to educate and inform Councils on this and help councillors explain these issues to their communities. **Successful municipalities depend to a large extent on a single principle – effective and efficient management!**

Much of the routine work of technical departments involves managing and undertaking the O&M of services that is done in-house by municipal staff. A second major aspect of work is managing O&M undertaken by external service providers. The third major area is new or capital projects, also usually undertaken by external service providers.

Each service area in Overstrand Municipality needs an O&M system that monitors and assesses infrastructure condition and plans for the required preventative maintenance, and when necessary, rehabilitation, upgrading or replacement of the infrastructure. This is a major part of an overall Asset Management System, which

- records and describes all infrastructure assets;
- monitors and assesses their condition;
- plans and monitors maintenance;
- plans upgrading, rehabilitation and replacement; and
- values assets and the costs of maintenance, upgrading, rehabilitation and replacement.

There is a wide range of **desirable objectives** that should be achieved with the help of maintenance.

- Retain an asset in a serviceable condition during its designed life span.
- Optimize the reliability of equipment and infrastructure.
- Ensure that the equipment and infrastructure are kept in a good condition.
- Ensure prompt emergency repair of equipment and infrastructure to sustain service delivery.
- Take action before repair costs become too high.
- Ensure operation by eliminating breakdown risks or limiting them as much as possible.
- Improve delivery by upgrading infrastructure.
- Enable repairs under the best possible conditions.
- Improve operational safety and remove causes of accidents.
- Reduce the overall management burden through better work preparation and reduced unforeseen production stoppages.
- Protect the environment.

To achieve these objectives, it is necessary to train personnel in specific maintenance skills and to influence their attitudes, as better operational results depend on motivated staff who are committed to proper maintenance procedures and standards.

Setting up a preventative maintenance programme is one of the most effective ways of reducing breakdowns and keeping equipment and infrastructure in good condition. It is important to implement such a programme as soon as new equipment or infrastructure is put into service.

Implementing a preventative maintenance programme requires a **maintenance plan**, with particular emphasis placed on the following:

- Periodic inspection of equipment according to a pre-established programme so that working conditions may be checked.
- Systematic servicing – the first step in devising this programme is to forecast the life of parts and components subject to wear, i.e. the study of reliability, failure modes and effects and fault analysis.
- Overhauls, which often require considerable work, should be planned during low production periods.

The Water and Wastewater Bulk Works Contract of Overstrand Municipality includes both Operational services and Maintenance services for the bulk water and sewerage infrastructure.

The complexity of maintenance activities should be analysed to set up an efficient maintenance plan and to take management decisions, e.g. regarding use of own resources and unskilled or skilled resources. **Five levels of maintenance** can be distinguished, depending on the complexity of the work and the urgency of action.

- Simple adjustments are generally applicable to accessible components and require no dismantling or opening of the equipment. These adjustments involve the completely safe replacement of accessible consumable components such as signal lights or some types of fuses. Servicing of this type may be performed by the operator on site, without tools, following the instructions for use. The stock of consumable parts required is very small.

- Troubleshooting entails minor preventative maintenance operations such as greasing or checking for proper functioning. Servicing of this type may be performed on site by an authorised technician. An authorised technician has received training that enables him/her to perform such maintenance work safely and is well aware of potential problems.

- Breakdowns require identification, diagnosis and repairs by replacing components or working parts. Servicing of this type must be carried out by trained persons, on site or in the maintenance shop, using the documentation (manuals, spare part lists, etc.) necessary for maintenance of equipment.

- Major maintenance work covers all major corrective or preventative work except modernization and rebuilding. Servicing of this type must be carried out by a team that comprises highly skilled technical specialists, using the relevant documentation.

- Modernising and rebuilding equipment or executing major repairs is usually done by the manufacturer or builder. Resources are specified and usually very similar to those used in the original manufacturing or construction.

In order to ensure **good quality O&M**, technical managers firstly need to ensure that staff responsible for in-house O&M

- understand equipment and infrastructure;
- understand and implement the proper O&M requirements and procedures;
- understand the required service and operating standards;
- have and develop the necessary O&M skills;
- assess equipment and infrastructure conditions;
- understand and identify typical defects and problems;
- solve problems and make necessary repairs, or engage experts to do so; and
- record all activities to provide data for planning and analysis of O&M.

Secondly technical managers must ensure that they contract competent external service providers.

The bulk of O&M activities should be of a preventative nature. That is regular checking all the water and sewerage infrastructure and ensuring that everything is in good operational condition. Overstrand Municipality and the Contractor appointed for the Water and Wastewater Bulk Works Contract need to continue to implement the standard recommended O&M tasks, for the various water and sewerage infrastructure components.

A budget of approximately 2% of the total asset value per annum should be allocated towards the replacement of existing infrastructure. In the case of the operations and maintenance of the systems, a budget of approximately 1% to 2% of the value of the system is typically required to ensure that the systems remain in good condition (Best Practice).

The table below gives an overview of the CRC and CV of the water and sewerage infrastructure included in Overstrand Municipality's Asset Register (June 2025). The recommended budgets for the replacement of the existing infrastructure and the operation and maintenance of the existing infrastructure, based on the CRC, are also indicated.

Table C.4.2: Recommended Budgets for the Replacement and the Operation and Maintenance of the existing Water and Sewerage Infrastructure.

Asset Type	Asset Register June 2025		CRC (Escalated from WSDP and Master Plans)	Required Annual Replacement Budget	Required Annual O&M Budget	Overstrand Actual O&M Expenditure
	CRC	CV		2.00%	1.50%	2024/2025
Dams	R11 119 399	R4 253 604	R16 813 668	R336 273	R252 205	R21 710 206
Boreholes	R11 161 486	R14 305 618	R16 371 801	R327 436	R245 577	
Bulk Water Pipelines	R123 598 903	R43 251 078	R352 243 697	R7 044 874	R5 283 655	
Pump Stations	R49 252 052	R13 510 440	R55 023 796	R1 100 476	R825 357	
Reservoirs	R120 153 764	R61 214 416	R376 723 125	R7 534 463	R5 650 847	
Water Reticulation Pipelines	R672 015 685	R258 430 535	R1 331 799 570	R26 635 991	R19 976 994	
Buffels River WTW	R13 813 820	R3 956 784	R110 000 000	R2 200 000	R1 650 000	
Kleinmond WTW	R27 568 183	R9 719 158	R116 000 000	R2 320 000	R1 740 000	
Preekstoel WTW	R78 510 492	R57 225 910	R760 000 000	R15 200 000	R11 400 000	
Franskraal New WTW	R36 298 367	R16 219 659	R130 000 000	R2 600 000	R1 950 000	
Franskraal Old WTW	R20 036 738	R2 167 076	-	-	-	

Table C.4.2: Recommended Budgets for the Replacement and the Operation and Maintenance of the existing Water and Sewerage Infrastructure.						
Asset Type	**Asset Register June 2025**		**CRC (Escalated from WSDP and Master Plans)**	**Required Annual Replacement Budget**	**Required Annual O&M Budget**	**Overstrand Actual O&M Expenditure**
	CRC	**CV**		**2.00%**	**1.50%**	**2024/2025**
Baardskeerdersbos WTW	R6 724 089	R2 928 069	R3 700 000	R74 000	R55 500	
Pearly Beach WTW	R8 154 514	R6 153 849	R28 800 000	R576 000	R432 000	
De Kelders WTW	R18 982 042	R6 883 141	R32 000 000	R640 000	R480 000	
Sub Total Water	**R1 197 389 533**	**R500 219 337**	**R3 329 475 657**	**R66 589 513**	**R49 942 135**	**R21 710 206**
Sanitation Pump Stations	R36 815 888	R34 542 677	R58 927 375	R1 178 548	R883 911	R19 565 569
Sewer Reticulation Pipelines	R417 612 440	R309 663 146	R1 193 406 846	R23 868 137	R17 901 103	
Stanford WWTW	R18 563 529	R19 481 113	R30 000 000	R600 000	R450 000	
Hermanus WWTW	R75 734 100	R51 665 078	R300 000 000	R6 000 000	R4 500 000	
Hawston WWTW	R13 438 372	R3 489 222	R17 500 000	R350 000	R262 500	
Kleinmond WWTW	R13 430 196	R51 855 541	R50 000 000	R1 000 000	R750 000	
Gansbaai WWTW	R34 135 896	R7 041 861	R50 000 000	R1 000 000	R750 000	
Pearly Beach WWTW	R11 060 449	R6 531 578	R6 475 000	R129 500	R97 125	
Sub Total Sewerage	**R620 790 871**	**R484 270 215**	**R1 706 309 221**	**R34 126 184**	**R25 594 638**	**R19 565 569**
Total Water and Sewerage	**R1818 180 405**	**R984 489 553**	**R5 035 784 878**	**R100 715 698**	**R75 536 773**	**R41 275 775**

TOPIC 5: CONSERVATION AND DEMAND MANAGEMENT

Topic C.5.1: Conservation and Demand Management - Water Resource Management						
Section	**Intervention Required?**	**% (1)**	**Solution description as defined by topic situation assessment**	**% (2)**	**Is there an Existing project/activity addressing this problem?**	**Current Demand Overall Scoring % (3)**
Reducing unaccounted water and water inefficiencies	Yes	100.0	The Municipality will continue with the implementation of their WDM Strategy and Action Plan and the proposed WC/WDM Strategy to further reduce the NRW and Water Losses for the various water distribution systems.	100.0	Partially	92.9
	Yes	100.0	Continue with the implementation of the pipeline replacement programme. The location of pipe failures is recorded with accurate GPS coordinates. This improves the integrity of the output of the pipe failure model. It was recommended in the pipe replacement study that the pipe replacement in Overstrand Municipality is performed in accordance with the PRP values calculated in the study. Pipes with the highest PRP values should be considered to be replaced first.	100.0	Partially	92.9
Leak and meter repair programmes.	Yes	100.0	Continue with the monitoring of the MNFs for specific zones in order to identify areas for the implementation of specific WDM activities (Pressure Management, Repair of leaks, etc.).	100.0	Partially	92.9
	Yes	100.0	The Municipality will continue with the repairing of leaks at all the indigent households and the phased pro-active replacement of the old water meters, as identified through the detail water meter audit.	100.0	Partially	92.9
Consumer/end-use demand management: Public Information & Education Programmes	Yes	100.0	Continue to focus on the installation of water saving devices (specific water efficient toilets) and raising awareness regarding conservation projects and the installation of these products in order to reduce water demand. The use and installation of these fittings should be included as a condition for the approval of building plans as well as provided for in the Water Services By-law.	100.0	Partially	92.9
	Yes	100.0	Continue to support schools with WDM initiatives (Especially during Water Week). Raise awareness amongst the public of water efficient devices and water conservation projects.	100.0	Partially	92.9
Conjunctive use of surface - and groundwater	No	100.0				100.0
Working for Water	No	100.0				100.0

Notes: (1) Is this section addressed in the WSDP?

(2) Were solutions identified for the possible gaps?

(3) Percentage calculated based on the above two percentages and whether there is an existing project/activity addressing this problem? Does this current listed project/activity address the problem totally? Project/Activity approved by Council as part of WSDP database? Approved by Council in project activity database and part of 5yr IDP cycle projects? Project/Activity listed in 3yr MTEF Cycle?

Topic C.5.2: Conservation and Demand Management - Water Balance						
Section	Intervention Required?	% (1)	Solution description as defined by topic situation assessment	% (2)	Is there an Existing project/activity addressing this problem?	Current Demand Overall Scoring % (3)
Water Balance	No	100.00				100.00

Notes: (1) Is this section addressed in the WSDP?
(2) Were solutions identified for the possible gaps?
(3) Percentage calculated based on the above two percentages and whether there is an existing project/activity addressing this problem? Does this current listed project/activity address the problem totally? Project/Activity approved by Council as part of WSDP database? Approved by Council in project activity database and part of 5yr IDP cycle projects? Project/Activity listed in 3yr MTEF Cycle?

The Revised Compulsory National Water and Sanitation Standards, as published in Government Gazette No.52814 of 6 June 2025, include the following WC/WDM requirements:

- Where spillages or leaks in its water supply network are detected or reported, a Water Services Institution must record such cases and ensure that they repair all leaks within 48 hours of becoming aware thereof.
- A Water Services Institution must isolate 95% of detected or reported water pipe bursts in its water supply system within a maximum of four (4) hours of becoming aware thereof.
- Where spillages or sewer blockages in its wastewater collection network are detected or reported, a Water Services Institution must record such cases and ensure that they are contained and must be repaired within 24 hours of becoming aware thereof. The affected surface area must be cleaned and or disinfected.
- A Water Services Institution must have a 24-hour consumer care facility supported by the system to which leaks, spillages or water service related enquiries and complaints can be reported and feedback be given to the consumer.
- Whenever emergency or alternative water supply is provided in terms of Regulation 4(1), the Water Services Institution must ensure that taking of water from a bulk line, if applicable, is appropriately metered and recorded (i.e. if alternative water is provided through tankering the number of tankers and their volume must be recorded when taking from a bulk metered pipeline).
- A Water Services Institution must implement a Pressure Management Programme allowing water reticulation systems to be operated at a minimum pressure of 20 m and maximum of 90 m.
- Where water pressure in a water reticulation system could rise above 90 m, a Water Services Institution must install a pressure control device to prevent the pressure at any domestic consumer connection from rising above 90m.
- A Water Services Institution must take steps to measure and progressively reduce losses, maintain the water use efficiency KPIs including the quantity of water losses, the quantity of NRW, ILI and per capita usage to within international accepted standards as follows:
  - NRW 20% – 30%;
  - Water Losses 10% - 20%;
  - Infrastructure Leakage Index 2 – 4; and
  - Per Capita Usage 120 l/c/d – 180 l/c/d
- Water Services Institutions must develop and implement a 10-year Council approved WC/WDM Strategy and an Annual Plan within 6 months of the publication to be uploaded on the IRIS system and must consist of at least the following:
  - Situation Assessment;
  - Key issues and challenges;
  - Focus areas of interventions;
  - List of proposed interventions;

- Set targets for demand, NRW, water losses (commercial and real losses), ILI and per capita usage in line with subsection above; and
- Budgets and Multi-year Implementation timelines.

- WSAs must require greenfield developments or major brownfield redevelopments, prior to planning approval, to indicate the manner and extent in which WC/WDM and water efficient sanitation solutions (WESS) has been accommodated and accounted for in their selected technology options, in terms of efficient water use and off-grid sanitation.

A WDM Strategy and Implementation Plan is in place for Overstrand Municipality. DWS's Municipal Scorecard for assessing the potential for WC/WDM efforts in Municipalities was used to assess the potential for WC/WDM efforts in Overstrand Municipality. The proposed WC/WDM Strategy for Overstrand Municipality is based on the 25 items included in the Scorecard and the sections below discuss each of these items in detail.

Table C.5.3: Proposed WC/WDM Strategy Items for Overstrand Municipality

Item 1: Development of a Standard Water Balance

Recommendation and Strategy:

- Continue with the monthly updating of the IWA Water Balances for all the systems and reporting on the NRW and Water Losses for each of the systems to management.
- Continue with the drafting of the annual WSDP Performance and Water Services Audit Report, which include the IWA Water Balances, as required by the Water Services Act.
- Implement the recommended WC/WDM activities in order to reduce the NRW and Water Losses further.
- Continue to calculate and quantify all unbilled authorized consumption by firstly identifying all the relevant consumers, e.g. Municipal buildings, parks, fire services, sport fields, etc. Unbilled consumption does not generate income but will enable the municipality to better quantify their actual water losses.

Funding and Budget Requirements:

The IWA Water Balances for the systems are updated on a monthly basis by the municipality.

Item 2: Pressurised System at all times

Recommendation and Strategy:

- Adequate human resources, technical skills and O&M budgets need to be allocated towards the operation, maintenance and refurbishment of the existing infrastructure, in order to ensure that systems are always pressurised.
- Existing water pump stations that are in a poor condition needs to be refurbished.

Funding and Budget Requirements:

Budgets as indicated under the individual items of the WC/WDM Strategy. Increase O&M budget allocations towards the refurbishment and replacement of old water infrastructure.

Items 3 and 4: Metering System

Recommendation and Strategy:

- All un-metered water connections need to be provided with water meters. Meters need to be read on a monthly basis and consumers need to be billed monthly according to their actual water usage. In addition to water theft, many water accounts go unnoticed in the system or have some type of data inconsistency that results in no revenue being generated for the particular water use event. Overstrand Municipality therefore needs to continue with the cleaning of the Treasury data and the municipality needs to identify and correct any inaccurate data in the system (See Table 7.5.1 of the Administration, Information and Comprehensive Overview Report for the 2021 Swift results).
- Consumer consumption checks / investigations need to be carried out where water usage is very low, but there are households on the property. This project will give a clear indication of where illegal or unregistered connections is being made and whether the meter is under reading the actual consumption, thus water is being used but not billed or recorded.
- The Municipality needs to continue with their meter audits for all the towns. All illegible / broken / old meters should be replaced. Any un-metered stands should be metered and meter readings in the billing system should be updated where required. All meter boxes should also be cleaned as part of the audits.
- Municipality needs to continue with the implementation of their Meter Management / Replacement program. An effective Meter Management / Replacement Program needs to achieve the following objectives:
  - Determine the on-going meter replacement programme;
  - Determine exception reports on meters which are suspected to be faulty;
  - Test and replace faulty meters; and
  - Size meters correctly.

  The activities of this program that needs to be budgeted for are as follows:
  - Research and development of a meter replacement policy and meter management / replacement programme;
  - Implementation of a uniform meter management information system;
  - Testing and replacing faulty meters reported by consumers (Part of reticulation function).
  - Replacement of domestic meters with AMR enabled format (where appropriate) in accordance with meter management / replacement programme.

Funding and Budget Requirements:

Table C.5.3: Proposed WC/WDM Strategy Items for Overstrand Municipality

Continue to install water meters for all un-metered water connections. Estimated annual budget requirement for the installation of individual water meters is R1 000 000.

Item 5: Effective and Informative Billing System

Recommendation and Strategy:

- Municipality needs to continue to ensure that all customer's meters are read on a monthly basis and that the customers are billed on a monthly basis according to the actual volume of water used for the specific month.
- Municipality needs to continue with the commercial data analysis done on the billed metered consumption data, which include the identification of un-metered erven, investigating meters with zero consumption, investigating abnormal low and high consumption readings, oversized / undersized meters, etc.
- The Municipality should continue with measures to keep the consumer bills informative and to improve on it.
  - Overstrand Municipality provides a moving 24-month water consumption graph on each account on a monthly basis. Hints on water usage are included on the accounts from time to time.
  - Alert consumers of possible leaks on their properties. For instance if the consumption for a particular month is >25% more than the average consumption of the previous months the consumer may be alerted of a possible leak on the property.
  - Monitor trends and follow up telephonically.

Funding and Budget Requirements:

Estimated cost to enhance the user friendliness of the municipal bill is R450 000.

Items 6 and 7: General Complaints System

Recommendation and Strategy:

The municipality needs to continue to ensure that all consumers are familiar with the telephone numbers to lodge complaints and report leaks. Telephone numbers to lodge complaints and report leaks are included on the monthly water bills and on the Municipality's website. Suggestions would be to also include it on strategically located notice boards, radio broadcasts, etc.

The projects and measures that can be implemented for passive leakage control are as follows:

- Improve the help-line and install an automated answering system.
- Advertise the help-line.
- Investigate current problems in responding to leaks and allocate adequate resources to avoid lengthy delays.
- Review and develop a policy regarding responses to leaks with the aim of reducing response time, prioritising and keeping consumers informed.
- Develop a monitoring system and quality assurance measures to ensure problems are resolved adequately. Link such a KPI to the SDBIP.

The Customer Services Charter should include the following information:

- Commitment to deliver excellent services to our clients (Executive Mayor and Municipal Manager).
- Standards of services (Enquiries written and telephonic; Accounts enquiries and distribution of accounts).
- Response times for different services (Water: Repairs to networks, installation of new household water connections, etc.)
- Contact details for different areas.

Funding and Budget Requirements:

Budget requirement for improved customer awareness raising with regard to the Municipality's Complaints System R150 000/annum.

Item 8: Asset Register for Water Infrastructure

Recommendation and Strategy:

Continue to ensure that all the existing water and sewerage infrastructure are included in the Asset Register.

Funding and Budget Requirements:

None - To be done as part of the annual updating of the Asset Register by the municipality.

Item 9: Asset Management Capital Works

Recommendation and Strategy:

Allocate a budget of at least 2% of the total water asset value per annum towards the replacement of existing infrastructure. Municipality needs to differentiate in their capital budget between new projects and projects that are for the replacement of existing infrastructure, in order to accurately calculate the annual percentage allocated towards the replacement of existing infrastructure (Best Practice).

Funding and Budget Requirements:

Capital budget of at least 2% of the total water and sewerage asset value allocated annually towards the replacement of the existing water and sewerage infrastructure (Best Practice).

Item 10: Asset Management Operation and Maintenance

Recommendation and Strategy:

The municipality needs to continue to differentiate between the budget allocated towards the operation and maintenance of the water infrastructure and the budget allocated towards the replacement of the water and sewerage infrastructure. A budget of approximately 1% to 2% of the value of the system is typically required for the operations and maintenance of the system to ensure that the system remains in good condition (Best Practice).

The municipality needs to compile an Asset Management Plan (AMP) to ensure efficient, effective and optimal management, operation and maintenance of all assets, which includes treatment plants, reservoirs, structures, buildings, pipelines, sites, etc.

Table C.5.3: Proposed WC/WDM Strategy Items for Overstrand Municipality

It is important for the municipality to develop an AMP from their Asset Register. The objective of an AMP is to support the achievement of the strategic goals of the Municipality and facilitate prudent technical and financial decision-making. It is also a vehicle for improved internal communication and to demonstrate to external stakeholders the Municipality's ability to effectively manage its existing infrastructure as well as the new infrastructure to be developed over the next 20 years.

This plan must be based on the principle of preventative maintenance in order to ensure that, as far as this is practical, damage to assets is prevented before it occurs. The municipality needs to ensure that the maintenance and rehabilitation plan is part of the WSDP and that the plan is implemented. Assets must be rehabilitated and / or replaced before the end of their economic life and the necessary capital funds must be allocated for this purpose. Priority should be given to rehabilitating existing infrastructure as this generally makes best use of financial resources and can achieve an increase in (operational) services level coverage's most rapidly. The preparation of maintenance plans and the allocation of sufficient funding for maintenance are required to prevent the development of a large condition backlog. The potential renewal projects for the water infrastructure need to be identified from the Asset Register. All assets with a condition grading of "poor" and "very poor" need to be prioritised.

The O&M Budget allocated towards repairs and maintenance should include the replacement of malfunctioning and old bulk water meters and consumer water meters, clearing of meter chambers, buying replacement mechanisms for bulk water meters, speedy repair of leaks, leak detection in areas with high water losses and NRW and higher than expected night flows, etc.

Funding and Budget Requirements:

Municipality needs to continue to allocate adequate budget towards the repairs and maintenance of the existing water and sewerage infrastructure. A budget of approximately 1% to 2% of the value of the system is typically required for the operations and maintenance of the system to ensure that the system remains in good condition (Best Practice).

An estimated budget for the drafting of an AMP for all the water and sewerage infrastructure is R750 000.

Item 11: Dedicated WC/WDM Support

Recommendation and Strategy:

The municipality should allocate at least one (1) person to head WC/WDM for a start. The number of people involved with WC/WDM measures can later be increased as and when required.

Funding and Budget Requirements:

The municipality may be able to use one of their existing staff members. If a new person has to be appointed the municipality can determine the costs involved with such an appointment.

Item 12: Active Leakage Control

Recommendation and Strategy:

The following process needs to be followed for active leakage control of the reticulation network:

Decide on how the work will be undertaken:

- Option 1: The appointment and training of additional staff.
- Option 2: The training of existing staff.
- Option 3: Appoint an external contractor in the first few years with the objective of using this contractor to train the internal teams and build capacity to do all work internally.
- Option 4: Complete outsourcing of the activity.

The first three options need to include the purchase or re-allocation of equipment.

Leak detection: Identify areas with highest leaks and send teams into the field to detect leaks.

Repair of leaks once identified: Once leaks were detected they will need to be repaired. Depending on the extent of the leaks and other workloads, the leak repairs need to be carried out by either the internal teams or a contractor.

Funding and Budget Requirements:

R1 000 000 to undertake leak detection in zones with high excess night flows. In addition allocate approximately R300 000 per year for general visual leak inspections.

Item 13: Sectorization of Reticulation Systems

Recommendation and Strategy:

The billed metered data currently linked to the various water distribution systems should also be linked to the different reservoir zones in the future where possible, in order to accurately determine the NRW and water losses for the specific reservoir zones in the future. Faulty bulk water meters need to be replaced and new meters need to be installed for the reservoirs with no bulk water meters.

The Financial Department needs to provide the billed metered consumption data separately for the different zones in the future in order to assist with the following:

- Clear indication of how much water is being used per area / zone.
- Areas with high NRW and water losses can easily be identified.
- Leakage and pressure control can be better managed.
- Water demand per area / zone can be determined.

Night flows need to be measured for zones with expected high water losses. It is recommended to re-log the night flows every few years to determine if there was an increase in leakage.

Funding and Budget Requirements:

The estimated cost for the logging of flows and pressures for zones with expected high water losses is R1 000 000. The logging exercise should be repeated at least every three years.

Table C.5.3: Proposed WC/WDM Strategy Items for Overstrand Municipality
A budget should be allocated to investigate and resolve possible zone interconnections. It is however difficult to price such investigations at this stage.
Item 14: Effective Bulk Metering Management System
Recommendation and Strategy: • Continue to read and record all the bulk water meter readings at the existing WTWs, reservoirs and pump stations on at least a weekly basis. • Broken bulk water meters need to be repaired or replaced. • Meter chambers need to be cleaned. • All bulk water meters need to be installed in lockable meter chambers and reservoir sites and water pump stations need to be secured in order to prevent unauthorised access and possible damage to the water meters. • New bulk water meters need to be correctly installed. Ideally a straight pipe section upstream of the meter of at least 5x the meter diameter and 3x the meter diameter downstream of the meter. Strainers need to be installed to protect the meters. These strainer elements must be removable from the top, for ease of cleaning. Gate valves are required for maintenance before and after meters. • Every informal area with unmetered communal services to be supplied with a bulk water meter in order to determine the unbilled metered consumption. All discrete zones are to be supplied with a bulk water meter. The meter readings must be recorded on at least a weekly basis. The readings can be used to quantify both the water supplied and the leakage for a specific area.
Funding and Budget Requirements: Allow an annual budget of approximately R500 000 for the installation of new bulk water meters, the replacement of faulty bulk water meters and to adequately protect existing bulk water meters.
Item 15: Effective Zone Meter Management and Assessment of Night Flows
Recommendation and Strategy: See recommendations under Item “Effective Bulk Metering Management System” above.
Funding and Budget Requirements: See funding and budget requirements included under Item “Effective Bulk Metering Management System” above.
Item 16: Pressure Management
Recommendation and Strategy: The reticulation networks need to be divided into pressure zones, prior to implementing pressure management, and the pressures and flows need to be metered and logged. The activities of such a programme are as follows: • Undertake feasibility studies to determine the ranking of areas / projects (Desktop Study, Logging of pressures and flows, Analysis of data). • Implement advanced pressure management in areas identified (Design PRV Chambers, Pressure management implementation of new PRVs, Supply and installation of smart electronic pressure controllers for existing PRVs). • Impact assessment (Post pressure management logging to determine impact of new PRVs and / or installation of smart pressure controllers on existing PRVs). • The on-going operation, maintenance and optimisation of advanced pressure management installations.
Funding and Budget Requirements: Funding and Budget requirements for pressure management to be determined once a decision is taken on the further areas prioritised for pressure management (From recommended flow and pressure logging exercise).
Item 17: As-built Drawings of Bulk and Reticulation Infrastructure
Recommendation and Strategy: Continue with the current record system for all “as-built” drawings and the regular updating of the Water and Sewer Master Plans with this information.
Funding and Budget Requirements: The Municipality currently adequately budgeted for the updating of their Water and Sewer Master Plans with the most recent “As-built” drawings.
Item 18: Schematic Layouts of Water Reticulation Systems
Recommendation and Strategy: Municipality needs to continue to update the schematic layouts and the Aerial Maps on a regular basis, in order to ensure they remain accurate.
Funding and Budget Requirements: None
Item 19: Regulation and Bylaws
Recommendation and Strategy: The updated Water Supply and Sanitation Services By-law needs to be enforced and adequate human resources need to be allocated for this purpose.
Funding and Budget Requirements: No additional budget and funding requirements.
Item 20: Tariffs
Recommendation and Strategy: See Section 7.3 under Topic 7 of the Future Demand and Functionality Requirements WSDP Report.
Funding and Budget Requirements:

Table C.5.3: Proposed WC/WDM Strategy Items for Overstrand Municipality
None
Item 21: Technical Support to Customers
Recommendation and Strategy: The objective of a Technical Support programme is not limited to assisting consumers in reducing their water demand, but is also to look at wastewater, monitor compliance with by-laws and service conditions and offer general customer support. Once a dedicated person has been allocated to WC/WDM it is recommended to engage with large customers and to identify areas where the municipality can provide assistance. The proposed activities of this programme that can be budgeted for are as follows: • Train existing staff; • Identify and visit large consumers (Checking that large consumers are correctly metered and billed, providing tips on WC/WDM, test the accuracy of all large consumer meters, install data-loggers on all large consumer meters and informing consumers of any sudden change in consumption patterns). • Arrange leakage inspections in public buildings; • Provide assistance and technical know-how for large consumers; and • Introduce compulsory water management plan for large consumers.
Funding and Budget Requirements: No additional funding – pending the appointment of a dedicated person for WC/WDM.
Item 22: Removal of Un-authorised Connections
Recommendation and Strategy: Meters need to be installed at the unmetered erven, as identified through the regular Swift analyses.
Funding and Budget Requirements: See items 3 and 4
Item 23: Community Awareness on WDM
Recommendation and Strategy: See Section 5.1.3 of the Future Demand and Functionality Requirements WSDP Report.
Funding and Budget Requirements: It is estimated that R250 000 / year should be allocated for WC/WDM awareness campaigns and activities, material to be included with monthly water bills, placing notices in newspapers, billboards, competitions, etc.
Item 24: Schools Education on WDM
Recommendation and Strategy: See Section 5.1.3.1 of the Future Demand and Functionality Requirements WSDP Report.
Funding and Budget Requirements: Continue with the current schools education programme in Overstrand Municipality. The DWS can also assist the municipality with pamphlets and posters on WC/WDM initiatives.
Item 25: Retrofitting
Recommendation and Strategy: See Sections 5.1.2.1 and 5.1.2.2 of the Future Demand and Functionality Requirements WSDP Report.
Funding and Budget Requirements: Leak repair assistance programmes: R500 000 per annum for ongoing exercise to repair leakages at indigent properties using in excess of 18 kl/month. WSIG funding or “War on Leaks” funding from DWS can be requested in this regard.

The way forward for Overstrand Municipality with the implementation of the proposed WC/WDM Strategy is as follows:

- Develop a detailed methodology for measuring the performance criteria for each of the twenty-five (25) WC/WDM Strategy items;
- Allow for budget required to implement the various measures;
- Monitor the impact of all WC/WDM measures on an on-going basis;
- Develop key benchmarks for all KPIs and categories and assign responsibility; and
- Review WC/WDM Strategy as necessary.

Overstrand Municipality needs to ensure that adequate funding is allocated under their Capital and Operational budgets towards the implementation of the WC/WDM Strategy. Key WDM projects to be taken into account during Overstrand Municipality’s capital and operational budgeting process are as follows:

- Replacement of old water networks (Areas with regular pipe bursts);
- Replacement of old bulk and consumer water meters (Meter replacement programme);

- Telemetry systems to provide for early warning;
- Installation of zone meters;
- Pressure Management;
- Leak detection; and
- Data loggers to establish MNFs

The WDM initiatives can deliver excellent return on investment if well implemented and well managed. All external funding that could be utilised by Overstrand Municipality for this purpose should be sourced. The O&M Budget allocated to repairs and maintenance should be increased to address amongst other tasks the following:

- Replacement of malfunctioning and old bulk water meters and consumer meters;
- Construction of meter chambers for all bulk water meters not adequately protected against vandalism;
- Cleaning of bulk water meter boxes;
- Buying replacement mechanisms for bulk meters;
- Speedy repair of leaks; and
- Leak detection in areas with higher than expected night flows.

Overstrand Municipality has responded to the need to address NRW and water losses within their jurisdiction by implementing various WC/WDM initiatives. The Municipality will continue with the active implementation of their WDM Strategy and Implementation Plan in order to reduce the percentage of NRW and Water Losses and improve water use efficiency within the various schemes as follows.

Table C.5.4: Commitment to Reduce NRW (Include Bulk Distribution, Treatment and Internal Distribution)

Distribution System	2024/2025		Committed Future NRW	
	NRW (%/a)	Water Losses (%/a)	2029 (%/a)	2049 (%/a)
Buffels River	37.33%	31.37%	30.0	20.0
Kleinmond	42.67%	41.75%	35.0	25.0
Greater Hermanus	27.00%	26.43%	25.0	15.0
Stanford	40.93%	40.43%	35.0	15.0
Greater Gansbaai	31.68%	31.06%	25.0	15.0
Pearly Beach	25.80%	25.25%	20.0	15.0
Baardskeerdersbos	37.71%	33.65%	30.0	30.0
Buffeljags Bay	68.17%	67.94%	60.0	20.0

IWA Water Balance: The Revised Compulsory National Water and Sanitation Standards, as published in Government Gazette No.52814 of 6 June 2025, include the following water and wastewater balance analysis and determination of water losses requirements:

- A Water Services Institution must install and monitor appropriate water measuring devices or volume controlling devices to measure, detect and account for the volume of water abstracted (surface or groundwater), treated and consumed, as applicable to the technical configuration of infrastructure and the water use authorisation conditions.

- A Water Services Institution must install and monitor appropriate water measuring devices or volume controlling devices to measure, detect and account for the volume of water consumed to all user connections as applicable to the technical configuration of infrastructure.

- A Water Services Institution must install and monitor appropriate measuring devices or volume controlling devices to measure, detect and account for the volume of wastewater received at pump stations and the inlet of the WWTW. A WSA shall record minimum night flows, peak wet weather flow and average dry weather flow received at the inlet of a WWTW received from all user connections conveyed, as applicable to the technical configuration of infrastructure and the water use authorisation conditions.

- A Water Services Institution must install and monitor appropriate measuring devices or volume controlling devices to measure, detect and account for the volume of wastewater discharged into the water resource as applicable to the technical configuration of infrastructure and the water use authorisation conditions.
- A Water Services Institution must ensure that all measuring devices or meters are properly maintained and in good working order, implementing a programme for meter in-situ verification and / or calibration.
- A Water Services Institution must account for its water balance on a monthly basis as follows:
  - Measure the daily volume abstracted and treated; and
  - Measure the quantity of water provided to each supply zone within its supply area.
- A Water Services Institution must account for its wastewater balance on a monthly basis as follows:
  - daily inflows in Ml/d; and
  - daily outflows in Ml/d.
- A Water Services Institution must determine the quantity of water losses and NRW in accordance with the Guideline for the preparation of an IWA Water Balance to determine NRW and Water Losses.
- The results of the water balance analysis and the records of the quantities of water measured must be reported to the Department's National Regulatory Information Management System on a quarterly basis.

A segregated single variable future water requirement model was developed for the WSDP and is available in electronic format. The future water requirement for each of the schemes is obtained by means of this model. It is used in this analysis to estimate the future water requirement for each of the distribution systems. The model differentiates between the different income levels.

Water services must be provided in a manner that is consistent with the broader goals of integrated water resources management. There is therefore a need for an integrated planning approach between the development of water services and water resources.

The Infrastructure Leakage Index (ILI) can be used by Overstrand Municipality to determine an appropriate benchmark for managing the water losses according to their own specific circumstances. This ILI can also be compared with the averages for other towns within South Africa. The annual water losses within the various towns' distribution networks are therefore important indicators of the performance of the water supply and distribution systems.

The current water balance information database is adequate from a water services management perspective and Overstrand Municipality is committed to continue to record all flows, both water and sewerage, that are strategic in terms of medium and long term planning.

Overstrand Municipality is committed to keep record of all bulk meter readings, flows at WWTWs and to continue to update their IWA water balance models on a monthly basis in order to determine locations of wastage and to enable Overstrand Municipality to actively implement the WC/WDM Strategy in order to reduce their current NRW and water losses even further. The water balance will not directly lead to the reduction of the demand, but is an imperative management tool that will inform the implementation of demand side management initiatives.

Overstrand Municipality needs to focus on the following for the IWA water balances of all the systems.

- Continue to use IMQS (Swift analysis) to identify treasury records that cannot be linked to GIS data, occupied stands with water meters, but with no water demand, occupied stands with no water meters, occupied stands with very low consumption and stands where the water demands have reduced or increased substantially in recent months.
- Each water distribution zone to be supplied with a bulk water meter, which needs to be read on at least a monthly basis.

- All sewer pump stations to be supplied with flow meters, as specified in the Compulsory National Water and Sanitation Services Standards.

The following areas need to be focused on for the IWA water balances of each of the systems.

- Buffels River: Quantify the monthly volume of effluent discharged at the Kleinmond WWTW from Betty's Bay, Pringle Bay and Rooi Els.
- Kleinmond: Adequate
- Greater Hermanus:
  - Sum of monthly abstraction volumes per individual borehole for the Gateway, Camphill and Volmoed wellfields to be monitored against the total supply volume at the WTW, in order to identify any potential bulk raw water distribution losses.
  - Groundwater abstraction volumes per individual borehole to be included in water balance model, in order to monitor abstraction volumes against safe yields of boreholes and licence volumes (Results from current Groundwater Monitoring Programme to be incorporated where possible).
- Stanford: Repair vandalised cables and display unit of the Magflow meter at the balancing tank.
- Greater Gansbaai: Adequate
- Pearly Beach: Calibrate raw water meters at the Koekemoer and Pearly Beach dams, in order to accurately calculate the bulk raw water distribution losses between the dams and the treatment plant.
- Baardskeerdersbos: Adequate
- Buffeljags Bay: Adequate

TOPIC 6: WATER RESOURCES

Topic C.6.1: Water Resource						
Section	**Intervention Required?**	**% (1)**	**Solution description as defined by topic situation assessment**	**% (2)**	**Is there an Existing project/activity addressing this problem?**	**Current Demand Overall Scoring % (3)**
Current Water Sources	No	100.0				100.0
Additional Sources Available	Yes	100.0	Continue with the further augmentation of the Greater Hermanus water resources.	100.0	Yes	92.9
Monitoring	Yes	100.0	Ensure that all industries apply for the discharge of industrial effluent into the sewer system, to monitor the quality and volume of industrial effluent discharged and to implement the set of by-laws with regard to the discharge of industrial effluent into Overstrand Municipality's sewer system in order to determine whether the quality comply with the standards and criteria.	100.0	Yes	57.1
Water Quality	No	100.0				100.0
Operation	Yes	100.0	Ensure all surface and groundwater resources are registered with the DWS.	100.0	Yes	92.9

Notes: (1) Is this section addressed in the WSDP?
(2) Were solutions identified for the possible gaps?
(3) Percentage calculated based on the above two percentages and whether there is an existing project/activity addressing this problem? Does this current listed project/activity address the problem totally? Project/Activity approved by Council as part of WSDP database? Approved by Council in project activity database and part of 5yr IDP cycle projects? Project/Activity listed in 3yr MTEF Cycle?

Groundwater sources were developed successfully in Hermanus, Stanford, Baardskeerdersbos and Buffeljags Bay, resulting in a significant reduction in the Municipality's dependence on surface water sources. The drilling of additional productions boreholes for Hermanus was completed at Gateway during 2020 (Two additional production boreholes) and Hemel-en-Aarde Valley during 2025 (Two additional production boreholes). Another production borehole is to be drilled at Gateway during 2026. The first phase of a seawater desalination scheme is planned for the Greater Hermanus area in the short term (next 3 to 5 years), to assist in providing for the future water requirements of the growing population.

Metering of all water supplied is one of the most significant steps in order to properly plan and manage water sources. Without metering no management is possible. Overstrand Municipality needs to continue with the monthly reading of all their existing bulk water meters, which is a valuable source of information.

The uncertainty in projected water-related climate change impacts is one of the biggest challenges facing water managers. The managers must understand how this uncertainty influences the management decisions to be made and that decisions must be appropriate to a possible range of scenarios. A critical tool in this regard is adaptive management, in which water resource systems are carefully monitored and management actions are tailored and revised in relation to the measured changes on the ground. One cannot predict climate change impacts with any certainty, and the recognition of this uncertainty must be built into all climate change response strategies.

Detail future water requirement projection models were developed for each of the water distribution systems in Overstrand Municipality's Management Area. These models include the future projections up to 2049 and were calibrated by using historic billed metered consumption data and bulk metered abstraction data. The percentage NRW was determined for each of the distribution systems and growth in demand was based on agreed population and growth figures.

The table below gives an overview of the future water requirement projections for the various water distribution systems and the yield / licence volume surplus or shortfall, based on the WSDP projection.

Table C.6.2: Projected Future Water Requirements and Yield / Licence Surplus / Shortfall based on WSDP Model

Distribution System	Projection	POJECTED FUTURE WATER REQUIREMENTS (Ml/a)				
		2029	2034	2039	2044	2049
Buffels River	2.5% Annual Growth	878.652	994.114	1 124.748	1 272.550	1 439.773
	3.5% Annual Growth	922.357	1 095.471	1 301.076	1 545.270	1 835.296
	WSDP Model	**878.887**	**1 035.919**	**1 227.165**	**1 460.613**	**1 746.190**
	Yield surplus / shortfall	**838.113**	**681.081**	**489.835**	**256.387**	**29.190**
Kleinmond	2.5% Annual Growth	1 210.321	1 369.367	1 549.313	1 752.905	1 983.251
	3.5% Annual Growth	1 270.524	1 508.984	1 792.199	2 128.571	2 528.074
	WSDP Model	**1 076.385**	**1 184.632**	**1 310.077**	**1 455.723**	**1 625.176**
	Yield surplus / shortfall	**1 512.985**	**1 404.738**	**1 279.293**	**1 133.647**	**964.194**
Greater Hermanus	3.0% Annual Growth	6 224.534	7 215.941	8 365.254	9 697.622	11 242.201
	4.0% Annual Growth	6 532.621	7 947.932	9 669.874	11 764.881	14 313.776
	WSDP Model	**6 492.206**	**7 820.562**	**9 472.441**	**11 532.394**	**14 107.922**
	Licence surplus / shortfall	**492.206**	**1 820.562**	**3 472 441**	**5 532 394**	**8 107 922**
Stanford	2.5% Annual Growth	714.106	807.946	914.117	1 034.239	1 170.146
	3.5% Annual Growth	749.627	890.322	1 057.423	1 255.887	1 491.600
	WSDP Model	**691.619**	**777.229**	**880.453**	**1 004.444**	**1 153.072**
	Licence surplus / shortfall	**908.381**	**822.771**	**719.547**	**595.556**	**446.928**
Greater Gansbaai	3.0% Annual Growth	2 104.125	2 439.258	2 827.769	3 278.159	3 800.284
	4.0% Annual Growth	2 208.270	2 686.698	3 268.779	3 976.970	4 838.592
	WSDP Model	**2 012.867**	**2 385.593**	**2 845.820**	**3 415.980**	**4 124.523**
	Yield surplus / shortfall	**755.114**	**382.388**	**77.839**	**647.999**	**1 356.542**
Pearly Beach	2.5% Annual Growth	212.779	240.740	272.376	308.168	348.664
	3.5% Annual Growth	223.363	265.286	315.076	374.212	444.446
	WSDP Model	**218.535**	**268.457**	**331.916**	**412.893**	**516.588**
	Yield surplus / shortfall	**88.365**	**38.443**	**25.016**	**105.993**	**209.688**
	2.5% Annual Growth	24.546	27.771	31.421	35.550	40.221

Table C.6.2: Projected Future Water Requirements and Yield / Licence Surplus / Shortfall based on WSDP Model						
Distribution System	**Projection**	**POJECTED FUTURE WATER REQUIREMENTS (Ml/a)**				
		2029	**2034**	**2039**	**2044**	**2049**
Baardskeer-dersbos	3.5% Annual Growth	25.767	30.603	36.347	43.168	51.271
	WSDP Model	**21.048**	**21.954**	**22.958**	**24.078**	**25.336**
	Yield surplus / shortfall	**68.952**	**68.046**	**67.042**	**65.922**	**64.664**
Buffeljags Bay	2.5% Annual Growth	9.142	10.343	11.702	13.240	14.980
	3.5% Annual Growth	9.597	11.398	13.537	16.077	19.095
	WSDP Model	**6.509**	**5.302**	**4.499**	**3.927**	**3.499**
	Yield surplus / shortfall	**21.874**	**23.080**	**23.884**	**24.456**	**24.884**

The table below gives an overview of the years in which the annual water requirements are likely to exceed the sustainable yields / license volumes from the various resources.

Table C.6.3: Years in which the Annual Water Requirement will Exceed the Sustainable Yields / License Volumes from the Various Resources				
Distribution System	**Total Sustainable Yield (Y) / License Volume (L) (x 10^6 m^3/a)**	**Annual Growth on 2024/2025 requirement (2.5% or 3.0%)**	**Annual Growth on 2024/2025 requirement (3.5% or 4.0%)**	**WSDP Projection Model**
Buffels River	1.717 (Y)	>2049 (2.5%)	2047 (3.5%)	2048
Kleinmond	2.589 (Y)	>2049 (2.5%)	>2049 (3.5%)	>2049
Greater Hermanus	6.000 (L) *	2027 (3.0%)	2026 (4.0%)	2026
Stanford	1.600 (L)	>2049 (2.5%)	>2049 (3.5%)	>2049
Greater Gansbaai	2.768 (Y)	2038 (3.0%)	2034 (4.0%)	2038
Pearly Beach	0.307 (Y)	2043 (2.5%)	2038 (3.5%)	2037
Baardskeerdersbos	0.090 (Y)	>2049 (2.5%)	>2049 (3.5%)	>2049
Buffeljags Bay	0.028 (Y)	>2049 (2.5%)	>2049 (3.5%)	>2049

Note * With Gateway, Camphill and Volmoed Well Fields fully operational according to the licensed volumes.

Overstrand Municipality continues with their groundwater monitoring programmes for Hermanus (Gateway and Hemel & Aarde Wellfields), Stanford and Baardskeerdersbos. **The water resources for the different systems are all considered to be adequate for the projected population and future growth until at least 2035, except for the Greater Hermanus system, where additional sources will have to be developed within the next 3 to 5 years to satisfy the growing demand.** Exploration for groundwater is in progress in Pearly Beach as potential supplement to the existing surface water sources which are under pressure due to changes in water quality in recent years.

The DWS is currently busy with the updating of the All Towns Reconciliation Strategies for the Western Cape, but updated strategies for Overstrand Municipality are not yet available. The table below gives an overview of the recommended potential future water resources, as included in the 2015 All Towns Reconciliation Strategies, for the towns in Overstrand Municipality **(Additional comments by Municipality).**

Table C.6.4: Potential Future Water Resources for the Various Towns (Summary of DWS's All Towns Reconciliation Strategies)	
Distribution System	**Recommended Summary Options**
Betty's Bay, Rooi Els and Pringle Bay	**The current water sources have adequate supply to cater for the medium and longer term future water requirements. The following sources are identified as potential sources to augment the water supply (In order of priority and implementation sequence):** • Continue with the implementation of the WC/WDM Strategy and measures. • Groundwater development in the TMG Aquifer. • Raising of Buffels River dam wall • Abstraction from the Palmiet River • Abstraction from the Rooi Els River
Kleinmond	**The current water sources have adequate supply to cater for the medium and longer term future water requirements. The following sources are identified as potential sources to augment the water supply in the future if required (In order of priority and implementation sequence):** • Continue with the implementation of the WC/WDM Strategy and measures. • Increase allocation from the Palmiet River, when required.

Table C.6.4: Potential Future Water Resources for the Various Towns (Summary of DWS's All Towns Reconciliation Strategies)	
Distribution System	**Recommended Summary Options**
	• **Regional scheme with Overberg Water for possible bulk supply from the Theewaterskloof Dam.**
Hermanus	**Hermanus will experience a shortfall by 2030 in water supply under all growth scenarios. This will increase to 2.874 million m^3/a by 2040 under the low-growth scenario and to 8.632 million m^3/a under the high-growth scenario. The following sources are identified as potential sources to augment the water supply in the future if required (In order of priority and implementation sequence):** • Full implementation of the WC/WDM Strategy and measures. • **Develop groundwater to its full potential (Licenced volumes).** • **Desalination of seawater.** • **Regional scheme with Overberg Water for possible bulk supply from the Theewaterskloof Dam or the Palmiet River.** • Direct and indirect potable water re-use.
Stanford	**The current water sources have adequate supply to cater for the medium and longer term future water requirements, if the Municipality continues with the full implementation of their WC/WDM Strategy. The following sources are identified as potential sources to augment the water supply in the future (In order of priority and implementation sequence):** • Continue with the implementation of the WC/WDM Strategy and measures. • Further Kouevlakte Wellfield development, if required.
Greater Gansbaai	**The current water sources have adequate supply to cater for the medium and longer term future water requirements. The Kraaibosch Dam will provide for Gansbaai until 2030. The following sources are identified as potential sources to augment the water supply in the future if required (In order of priority and implementation sequence):** • Continue with the implementation of the WC/WDM Strategy and measures. • Groundwater development in the TMG Aquifer. • Re-use of water
Pearly Beach	**The current water sources have adequate supply to cater for the medium and longer term future water requirements up to 2030. The following sources are identified as potential sources to augment the water supply in the future if required (In order of priority and implementation sequence):** • Continue with the full implementation of the WC/WDM Strategy and measures. • Groundwater development, if required. **Exploration in progress.**
Baardskeer-dersbos	**The current water sources have adequate supply to cater for the medium and longer term future water requirements. If the town may require alternative water resource options in the future, the following sources were identified as potential sources to augment future water requirements (In order of priority and implementation sequence):** • Continue with the full implementation of the WC/WDM Strategy and measures. • Further groundwater development, if required.
Buffeljags Bay	**The current water sources have adequate supply to cater for the medium and longer term future water requirements. If the town may require alternative water resource options in the future, the following sources are identified as potential sources to augment future requirements (In order of priority and implementation sequence):** • Continue with the full implementation of the WC/WDM Strategy and measures. • Further groundwater development, if required.

Buffels River and Kleinmond Areas: Overstrand Municipality completed a detail investigation during 2010/2011 of the water resources for the area from Rooi Els to Kleinmond and the recommendations from the Study will be implemented.

Greater Hermanus Area: The Gateway, Camphill and Volmoed wellfields were developed by Overstrand Municipality as additional groundwater resources for the greater Hermanus Area. These boreholes are in production and the Municipality is maintaining their Groundwater Monitoring Programmes for all their wellfields, in order to comply with the License conditions. The License for the 2nd stage of the Camphill and Volmoed wellfields was received from the DWS and the municipality is currently applying for approval to move into the 3rd (final) stage of the license. The Municipality obtained environmental authorisation for the augmentation of the Hemel & Aarde (Camphill and Volmoed well fields) boreholes and two new production boreholes were commissioned in 2024/25.

A Scoping Report was also completed during August 2018 for the "Augmentation of potable water supplies to Hermanus". The report discusses various potable water augmentation schemes for the provision of 3 Ml/d of potable water to Hermanus. The following augmentation schemes were considered:

- Seawater reverse osmosis.

- Desalination-based direct reuse scheme.
- Non-desalination based direct reuse scheme.
- Remix scheme.
- Palmiet River abstraction and transfer scheme.
- Aquifer recharge.

In considering various potable water augmentation schemes for Hermanus, the following conclusions were made:

- Managed aquifer recharge does not seem to be a viable water augmentation solution for Hermanus as the process required to render the reclaimed wastewater suitable for aquifer recharge will be very similar to that of a direct potable water reuse scheme. This makes the option particularly unattractive due to the relatively high treatment costs which would be further compounded by the additional cost of abstracting the water and treating for consumption at a later date. On this basis, it will be better to rather implement a direct potable water reuse scheme before aquifer recharge is considered. In addition, the shallow water levels of the porous media aquifer in the area indicate that the aquifer will be unable to accept the required yield and there is a risk of flooding due to the limited available volume of unsaturated sands;

- The basis of financially ranking the various treatment options will be the cost of delivering a unit volume of treated water. Based on this criterion, abstraction of water from the Palmiet River seems to be most feasible option with a treated water delivery cost of R9.61/m^3 and a capital cost of ~R99,5 million. Included in the treated water delivery cost is the cost of treatment at Preekstoel WTW, which was estimated at R2.50/m^3. Of particular concern to the implementation of such a scheme is the reliability of this water source as the Palmiet river flow is too low during the summer months to accommodate the required 3.6 Ml/d of abstracted water, and during drought periods it can result in a lack of water security. In addition to the possibility of inadequate water supply, the pipeline route from the abstraction point to the De Bos dam covers extremely sensitive environmental areas and the need to route the pipeline through the coastal town of Kleinmond. Environmental & public approval for construction of such a pipeline may well be a stumbling block for implementation of this option. In addition, a new Water Use License Application (WULA) may well also be required for this option, while it will trigger a need for environmental authorisation from the Department of Environmental Affairs and Development Planning (DEADP). The latter will be difficult to obtain;

- Seawater desalination is the second most feasible solution with a treated water delivery cost of R16.10/m^3 and a capital cost of ~R88.5 million. However, there is an additional surcharge cost that Abagold may charge for using their facilities (seawater intake and brine discharge infrastructure), which is unknown at this moment. This cost may be charged per volume of abstracted water or as a flat rate, but this is still to be determined. Therefore, Overstrand Municipality will have to discuss this with Abagold and come to an agreement. Once this cost is determined, it will have to be added to the R16.10/m^3 operating cost figure of the seawater desalination process to determine the real cost of this scheme. From an environmental perspective, this option will require an amendment to Abagold's Coastal Water Discharge Permit (CWDP) for brine disposal, while it will trigger a need for environmental authorisation from the Department of Environmental Affairs and Development Planning (DEADP);

- The non-desalination-based reuse scheme has a capital cost of ~R122.5 million and an operating cost of R19.45/m^3. This cost could however be reduced if the reclaimed water is not pumped to the Preekstoel WTW for re-treatment via the Preekstoel WTW but rather introduced directly into the reticulation system via the Hermanus Reservoirs 1 & 2, similar to the desalination-based re-use scheme. If so, the capital cost would reduce to ~R118.5 million with an operational cost of R16.35/m^3. This could make it the most feasible scheme after the Palmiet River abstraction option. From a water quality perspective, the treated water from the non-desalination-based reuse scheme will comply with potable water standards, but the salinity will be on the high side. For this reason, blending with an alternative low salinity water source is recommended. Provided that the public perception of the potential risks associated with the elimination of a RO plant barrier as part of the treatment process can be addressed, the water does not require additional treatment and can be directly introduced into the reticulation system. The option of feeding the water to the Preekstoel WTW was made based on the fact that part of the pipeline was already constructed and further knowing that the additional barriers at Preekstoel WTW will give further comfort to the negative stigma of water reuse. From an environmental perspective, the reuse scheme options will require an

amendment to Overstrand's Coastal Water Discharge Permit (CWDP), while it will trigger the need for environmental authorisation from the Department of Environmental Affairs and Development Planning (DEADP);

- The desalination-based reuse scheme requires a capital investment of ~R151 million and an operating cost of R21.53/m^3. The operational cost would increase with ~R3.00/m^3 to R24.53/m^3 if the water cannot be introduced into the Hermanus reservoirs 1 & 2 but is pumped to the Preekstoel WTW for introduction into the balancing reservoir at Preekstoel. From an environmental perspective, the desalination-based reuse scheme option will require an amendment to Overstrand's Coastal Water Discharge Permit (CWDP), while it will trigger a need for environmental authorisation from the Department of Environmental Affairs and Development Planning (DEADP);

- Despite having a slightly lower capital cost (~R147 million) than the desalination-based reuse scheme, the Remix scheme is the most expensive scheme to operate at R21.77/m^3. The operational cost would increase further with ~R3.00/m^3 to R24.77/m^3 if the treated water is not introduced into the Hermanus reservoirs 1 & 2 but rather pumped to the Preekstoel WTW for introduction into the balancing reservoir at Preekstoel. From an environmental perspective, the remix scheme option will require an amendment to Overstrand's Coastal Water Discharge Permit (CWDP), while it will trigger a need for environmental authorisation from the Department of Environmental Affairs and Development Planning (DEADP);

- The Hermanus wastewater treatment plant site assessment has identified the need for maintenance activities on certain components of the wastewater treatment plant. When considering a reuse scheme, the need to undertake maintenance on the wastewater treatment plant that feeds the reuse plant should also be considered as part of the capital outlay for a reuse scheme as the latter would rely on a stable source water supply. The site assessment undertaken by Zutari has identified the need to spend at least ~R17 million on maintenance activities. Whilst one can argue that maintenance on the wastewater treatment plant would be required in any event, it would not be that critical if the wastewater is discharged to sea. A reuse plant on the other hand relies on a stable quality water and without a proper functioning wastewater treatment plant, it would not be an option to consider.

- It was recommended that a further investigation is undertaken to explore the feasibility of utilising renewable energy as a potential energy source to support a seawater desalination plant. This would be the only way to reduce the operation cost of a SWRO plant. Some of the available renewable energy technologies have already been tested in Hermanus and although there is not excess energy available for the desalination or reuse plants from these sources, it is worth looking into it as a potential source (or partial source). There has also been significant technology development in harvesting wave energy and if such a system can be installed, SWRO may well just prove to be a very cost-effective solution for Hermanus;

- Overstrand Municipality completed a separate seawater sampling program over a 12-month period to confirm the design parameters for a SWRO plant.

The following additional work was completed during October 2019, after the completion of the previously mentioned "Augmentation of potable water supplies to Hermanus" Scoping Report.

- Sea water quality tests.
- Renewable energy options.
- Electricity cost sensitivity analysis.
- Contracting modes.
- Recommended water price plan.
- Suitability of earmarked SWRO site.

Provision was made in the Draft 2026/27 MTEF budget for the construction of a seawater desalination plant for Hermanus and more detailed planning commenced.

Stanford: The Municipality explored the groundwater potential of the Kouevlakte area since 2009, through exploration borehole siting and drilling. Two newly drilled boreholes were put into operation and new bulk supply pipelines were constructed during the 2011/2012 financial year in order to connect the two newly drilled boreholes to the existing water reticulation network. Irrigation of sports fields with treated effluent from the Stanford WWTW was also investigated. The current supply from the Spring and the two boreholes are adequate to meet the medium- and long-term future water requirements of Stanford.

Greater Gansbaai: A Reverse Osmosis Filtration Plant was constructed during the 2010/2011 financial year in order to fully utilise the Klipgat and Grotte resources and improve the quality of the water. Resource augmentation options will be investigated in the future in order to meet the medium- and long-term future water requirements for the greater Gansbaai area.

Pearly Beach: Overstrand Municipality is committed to manage the dam efficiently. Other future resource options include groundwater development and the possible Kraaibosch scheme. An investigation into potential groundwater use in Pearly Beach was completed and drilling will commence in 2026.

Baardskeerdersbos: Two boreholes were commissioned and the supply from these boreholes will be adequate to meet the medium- and long-term future water requirements. The supply from the stream will only be utilised as a back-up supply when necessary.

Buffeljags Bay: The current supply from the borehole is adequate to supply the medium- and long-term future water requirements of Buffeljags Bay.

Existing Lawful Use: Volumes are registered on the DWS's WARMS for the various resources. A registered water use however does not guarantee that the water use is accurate or lawful. Validation and verification of the accuracy and lawfulness of the water use is needed to qualify as an Existing Lawful Use. **It is important for the municipality to confirm the correct registration volumes and existing lawful use volumes for all their sources. This information, with the safe yields of the surface and groundwater sources, is critical to accurately determine which sources need to be augmented for the different schemes. Overstrand Municipality further needs to continue to ensure that all the individual sources are metered and that the abstraction volumes are recorded on at least a monthly basis.**

Water Quality: The operational water sampling programmes of Overstrand Municipality complies with the minimum monitoring requirements of the SANS 241-2:2015 (Table 1: Minimum monitoring for prescribed process risk indicators) for the various WTWs and distribution systems, as summarised below.

Table C.6.5: Minimum Monitoring Frequency for Process Risk Indicators (SANS241-2:2015: Table 1)

Determinand	Raw Water	Final Water	Distribution System
Conductivity or total dissolved solids	Daily	Daily	Not applicable
pH value	Daily	Once per shift [a]	Fortnightly
Turbidity	Daily	Once per shift [a]	Fortnightly
Disinfectant residuals	Not applicable	Once per shift [a]	Fortnightly
E.Coli (or faecal coliforms) [b]	Not applicable	Weekly	Fortnightly but dependent on population served [d]
Heterotrophic plate count [c]	Not applicable	Weekly	Fortnightly
Treatment chemicals [d]	Not applicable	Monthly	Not applicable

a: A shift is defined as an eight-hour work period.

b: If non-compliant with the numerical limits specified in SANS 241-1, implement corrective action and immediate follow-up sampling at an increased sampling frequency.

c: If non-compliant with the numerical limits specified in SANS 241-1, implement corrective action and follow-up sampling.

d: Includes all risk determinands that are added or formed as a result of the use of treatment chemicals (for example aluminium, iron and chlorine). If non-compliant with the numerical limits specified in SANS 241-1 in the final water, the distribution system monitoring frequencies of Table 3 in SANS241-2:2015 apply.

Comprehensive Compliance Sampling Programmes are also implemented for all the WTWs and water distribution systems.

Effluent Quality: Comprehensive Operational and Compliance Sampling programmes of the wastewater at the WWTWs are implemented by Overstrand Municipality. The Compliance Monitoring Programme includes the monthly sampling of the final effluent at the various WWTWs and analyses of all the main quality criteria. Results of the samples taken are loaded onto DWS's IRIS system. Monthly monitoring and inspection reports are also compiled by the external Service Provider for all the WWTWs. The Municipality and the Contractor appointed for the Water and Wastewater Bulk Works Contract takes immediate action to rectify problems and / or improve operational aspects as and when may be required. For serious failures, an Incident Response Management Protocol is followed to ensure rapid remedying of the problems, which includes notification to the DWS as may be necessary.

Operational Alert Levels are also in place for the various WWTWs in order to ensure that the various unit processes in the plant performs optimally. If these pre-determined Alert Levels are exceeded at any of the control points where samples are taken for operational purposes, then certain actions are taken by the Process Controllers to bring the operational parameters back to within the target ranges.

Industrial Consumers: Overstrand Municipality is committed to ensure that all industries apply for the discharge of industrial effluent into the sewer system, to monitor the quality and volume of industrial effluent discharged and to implement the set of by-laws with regard to the discharge of industrial effluent into Overstrand Municipality's sewer system in order to determine whether the quality comply with the standards and criteria.

Overstrand Municipality needs to adopt an approach whereby the various parameters at all the industrial consumers are monitored, as well as volumetric monitoring at the larger users. Adaptation of procedures must be undertaken in accordance with any changes to the wastewater discharge criteria set by DWS. It will also be necessary to consider limits above which volumetric monitoring will be necessary at new industries and existing smaller industries, where expansion is likely to take place.

All current industrial consumers will need to apply for discharge permits and they will have to supply and maintain a flow meter measuring the volume of water that is discharged into Overstrand Municipality's sewerage system. It is also recommended that the accounts generated by the Municipality include for each cycle a summary of the COD and flow results to enable industries to keep a record and look at ways of improving where possible.

TOPIC 7: FINANCIAL

The 2025/2026 IDP list the following key long term financial considerations to be considered by Overstrand Municipality in order to remain financially sound.

- Key factors for achieving faster economic growth and creating much-needed jobs include greater collaboration with the private sector in energy and transport, rapid implementation of structural reforms, easing of regulatory constraints and increased infrastructure investment.

- It is crucial for municipalities to provide essential services such as electricity, water and sanitation efficiently. The efficient provision of these services is crucial for attracting private investment, fostering economic growth and promoting a conducive environment for businesses to thrive. Therefore, National Treasury urges municipalities to prioritise the provision of these services to enhance economic development and improve the quality of life for their residents.

- The world economy is experiencing extreme levels of uncertainty. Trade tensions have escalated and longstanding geopolitical relationships are shifting abruptly. In these circumstances, the global economic outlook is unpredictable.

- The Municipality is able to service its liabilities due to a strong liquidity ratio of 2.47 achieved in FY 2024.

- Overstrand is in the fortunate position of having sufficient reserves and was able to absorb much of the pressure exerted by the fallout of the COVID pandemic and subsequent economic conditions.

- Household formation in the Overstrand indicates the longer-term trend of urbanisation, which adds additional pressure on the municipality to deliver municipal services.

- The household bill is currently toward the lower end of the scale when compared to its peers and can thus be regarded as reasonable.

A Long Term Financial Plan is in place for Overstrand Municipality, which is updated annually since 2015 with the latest financial information. The independent financial assessment list the following strengths and weaknesses (2025/2026 IDP).

Strengths:

- Although the collection of outstanding consumers accounts regressed during 2024/2025, the status at 30 June 2024 still indicated a healthy collection rate of 95.9%.
- A healthy liquidity ratio, which increased from the previous financial period.
- Strong financial performance indicated as the outcome of the 2024/2025 financial period.
- A proven ability to generate cash from operations.
- Maintaining a balanced funding mix over review period.

Weaknesses:

- Excessive expenditure on contracted services.
- Employee related expenditure profile exceeding upper limits.

The table below gives an overview of the Financial Strategies of Overstrand Municipality to ensure sound financial management over the medium to long term (2025/2026 IDP).

Table C.7.1: Financial Strategies

Strategy	Status of the Strategy
Revenue Raising Strategies	The Municipality's revenue streams will be maximised: • Assessment rates; • Revenue from trading services; • Agency fees and fines; • Sundry revenue e.g. property management and other revenue; • Grants; • Donor funding from international agencies; • Public Private Partnership; and • Applying strict credit control measures.
Asset Management Strategies	• Asset conservation and supply of basic services as a constitutional obligation. • Ensure that assets are properly accounted for and safeguarded, as averaging on the municipal assets will drive the economic growth and sustainable development of the Municipality.
Financial Management Strategies	• Compliance with GRAP standards; • Prepare annual financial statements timeously; • Compliance with the municipal Standard Chart of Accounts; • Maintain an effective financial management system, to ensure proper reporting; • Sustainable multi-year forecasts.
Capital Financing Strategies	Municipal infrastructure has a long term economic life and the general principle will be applied that future users of infrastructure should contribute towards the payment for capital expenditure by servicing the loans taken up to provide adequate infrastructure as required. • Overstrand will maintain its process of utilizing the following main sources of financing to fund CAPEX, e.g. Grants, External Borrowing and Internal Revenue generated. • Bulk infrastructure contributions as might be available, to fund applicable capital projects. • The scope for acceleration of borrowing will be key to maintaining the optimal funding mix.
Operational Financing Strategies	• Business planning links back to priority needs and master planning, and informs the detail operating budget appropriations. • Consideration of the economic realities and the subsequent prioritisation criteria for compilation of the Operational budget. • Requirement of Top Management to discuss budget proposals and affordability.

Table C.7.1: Financial Strategies	
Strategy	**Status of the Strategy**
	• A strong focus on strict management of the MTREF expenditure budget is required to ensure healthy cashflows. • Increased operational efficiency and strong focus on funded mandates, basic service rendering considerations will thus be required continuously, to ensure limitation of uncontrolled budget increases.
Strategies that would enhance cost effectives	• Further operational efficiencies to be identified. • Reduction in non-core expenditure and consideration of reviewing service levels standards.

Expenditure:

Operational: The future planned expenditure by type for Overstrand Municipality, as included in the approved 2025/2026 Budget, is as follows.

Table C.7.2: Expenditure Items by Type, as Included in the Approved 2025/2026 Budget					
Expenditure Items	**% of total 2024/2025 Expenditure**	**2024/2025 Full Year Forecast**	**2025/2026 Budget**	**2026/2027 Budget**	**2027/2028 Budget**
Employee related costs	29.0%	R593 181 000	R618 840 000	R642 014 000	R672 999 000
Remuneration of Councillors	0.7%	R13 506 000	R14 012 000	R15 062 000	R16 151 000
Bulk purchases - Electricity	24.4%	R499 605 000	R556 160 000	R585 970 000	R622 242 000
Inventory consumed	3.2%	R64 368 000	R76 168 000	R75 536 000	R82 189 000
Debt Impairment	3.3%	R67 400 000	R70 770 000	R74 309 000	R78 024 000
Depreciation and Asset Impairment	7.8%	R158 441 000	R167 211 000	R176 609 000	R186 617 000
Interest	2.4%	R49 814 000	R51 227 000	R44 657 000	R45 526 000
Contracted Services	16.8%	R342 450 000	R356 644 000	R375 949 000	R400 663 000
Transfers and Subsidies	0.8%	R16 717 000	R16 770 000	R17 487 000	R18 128 000
Irrecoverable Debts written off	2.3%	R47 709 000	R20 000 000	R20 000 000	R20 000 000
Operational costs	9.3%	R189 643 000	R164 538 000	R142 209 000	R130 139 000
Total	**100.0%**	**R2 042 834 000**	**R2 112 340 000**	**R2 169 802 000**	**R2 272 678 000**

Source: Medium Term Revenue and Expenditure Framework for Overstrand 2025/2026: Table A4 – Budgeted Financial Performance (Revenue and Expenditure)

Maintenance activities have been increasingly focused on reactive maintenance as a result of the progressive deterioration and failure of old infrastructure. Consequently, there has been dilution of preventative maintenance of other infrastructure. Expenditure on repairs and maintenance does not keep track with the increase in asset values as well as the ageing of the infrastructure.

An Integrated Maintenance Plan is necessary that optimises maintenance activities, appropriate to its specific needs and the local environment, and identifies the systems and resources required to support this. A regime of planned preventative maintenance should be established for all infrastructure assets classified as critical and important in the Asset Register. Consideration should be given to the establishment of a maintenance management system to enable Overstrand Municipality to better manage its risks, and more effectively plan and prioritise the wave of renewals that are going to be required over the next 20 years.

It is important to note that the maintenance budget requirements are going to increase substantially over the next twenty years in real terms, in line with the envisaged pace of development and the upgrading of the treatment works that were completed over the last number of years. It is estimated that the budget requirements will double over this period.

The recommendations for Overstrand Municipality, with regard to their Operational Budgets, are as follows:

- Continue with the implementation of the Asset Maintenance Plan, which will indicate the real replacement values and service lives of the assets and the funds required to provide for adequate operation and maintenance of the infrastructure. Current gaps include unrealistically low depreciation charges, which have to be rectified and ring-fenced into an asset replacement fund, as well as additional budget requirements above inflation for infrastructure development.

- The new depreciation charges will have to form part of the operating budget and subsequent tariffs, linked to a ring-fenced asset replacement fund.

- It is critical for Overstrand Municipality to ensure that sufficient funding is allocated towards an asset replacement fund, in order to ensure adequate rehabilitation and maintenance of the existing infrastructure.

- Water services operational surpluses have to be allocated to essential water services requirements in the future.

- Overstrand Municipality needs to ensure that the Credit Control and Debt Collection By-laws are strictly enforced.

Capital: The future estimated capital expenditure per functional classification are summarised in the table below.

Table C.7.3: Estimated Capital Expenditure per Functional Classification of Overstrand Municipality's Future Capital Budget

Capital Expenditure Standard	2024/2025 Full Year Forecast	2025/2026 Budget	2026/2027 Budget	2027/2028 Budget
Executive and Council	R70 000	R70 000	R0	R0
Finance and Administration	R3 3 85 000	R3 430 000	R0	R0
Internal Audit	R0	R0	R0	R0
Community and Social Services	R1 351 000	R6 625 000	R0	R0
Sport and Recreation	R17 509 000	R33 901 000	R2 000 000	R9 392 000
Public Safety	R6 650 000	R7 452 000	R0	R0
Housing	R31 445 000	R24 543 000	R13 000 000	R13 000 000
Health	R0	R0	R0	R0
Planning and Development	R2 875 000	R1 554 000	R0	R0
Road Transport	R4 600 000	R17 400 000	R9 400 000	R5 000 000
Environmental Protection	R0	R0	R0	R0
Energy Sources	R51 031 000	R60 218 000	R30 551 000	R38 983 000
Water Management	R40 700 000	R63 653 000	R51 142 000	R23 800 000
Wastewater Management	R58 723 000	R34 560 000	R38 850 000	R38 300 000
Waste Management	R4 880 000	R4 940 000	R2 100 000	R3 900 000
Total Capital Expenditure Functional	**R223 219 000**	**R258 346 000**	**R147 043 000**	**R132 375 000**

Source: Medium Term Revenue and Expenditure Framework for Overstrand 2025/2026: Table A5 - Capital Expenditure by Vote, Functional Classification and Funding Source

The Water and Sewer Master Plans (June 2021) for the various towns in Overstrand Municipality's Management Area recommends upgrades to the water and sewer networks to the value of R567.515 million and R1 266.762 million respectively in the foreseeable future in order to accommodate development and population growth according to the SDF. Most of the capital projects for water and sewerage are currently funded through the Municipality's own budget.

The recommendations for Overstrand Municipality, with regard to their Capital Funding, are as follows:

- Take the recommended projects, as identified through the Water and Sewer Master Plans and the WSDP, into account during the planning and prioritization process for new infrastructure. Prioritize from the desired list, those items which can be implemented from available funding in the particular financial year.

- Undertake revised master planning at least every three to five years and to use the Master Plans to list the desired infrastructure development requirements and reflect these in the IDP.

- Assign a high priority to the implementation of the WC/WDM Strategy in order to postpone additional capital investment for as long as possible, both from the water availability perspective as well as from the treatment of increased effluent volumes. The costs of physical water loss, the capital requirements for new water resources infrastructure, and the constraints of poor water availability on water dependent economic growth means that WC/WDM is a critical management priority for stretching the financial

resources of the Municipality. WC/WDM is almost always a more cost-effective solution than the implementation of new infrastructure, and no new infrastructure should be developed until unauthorized water has been reduced to manageable volumes.

- To adopt appropriate technology solutions for the water and sewerage infrastructure challenges. Techniques such as value engineering should also be adopted to ensure that investments in infrastructure and other solutions are cost effective over the full life-cycle and designed to be fit for purpose.

- To ensure adequate funding for the full lifecycle cost of the new water and sewerage infrastructure, which will include funds for the operation and maintenance of the infrastructure and regular refurbishment.

- Balance land-use and development planning (SDFs) in accordance with the availability of water and the capacity of WTWs and WWTWs that are in place or that will be implemented.

- To focus strongly on revenue collection, in order to improve the Municipality's own funding sources, over and above the Grants received from National and Provincial Government. The Municipality also needs to actively implement their Customer Care, Credit Control and Debt Collection Policy in order to minimize the percentage of non-payment for municipal services.

- To identify all possible sources of external funding over the next three years to assist Overstrand Municipality to address the bulk infrastructure backlogs that exist in the various towns.

- Continue with the implementation of the Asset Maintenance Plan for all the water and sewerage infrastructure, which indicates the real replacement values, the service life of the assets and the funds required to provide for adequate asset replacement. The renewals burden is set to increase sharply over the next 20 years and it is therefore important for Overstrand Municipality to commit to a substantial and sustained programme of capital renewal works.

Income:

Operational: The future planned revenue sources for Overstrand Municipality, as included in the approved 2025/2026 Budget, are as follows.

Table C.7.4: Revenue Items by Source, as Included in the 2025/2026 Budget

Revenue Item	2024/2025 Full Year Forecast	2025/2026 Budget	2026/2027 Budget	2027/2028 Budget
Service Charges – Electricity	R679 000 000	R745 540 000	R791 153 000	R838 623 000
Service Charges – Water	R197 000 000	R209 109 000	R221 026 000	R234 288 000
Service Charges – Waste Water Man.	R126 600 000	R129 533 000	R140 980 000	R149 439 000
Service Charges – Waste Man.	R108 946 000	R115 444 000	R122 552 000	R129 905 000
Sale of Goods & Rendering of Services	R97 788 000	R63 725 000	R40 330 000	R23 509 000
Agency Services	R7 103 000	R7 500 000	R7 950 000	R8 427 000
Interest	R0	R0	R0	R0
Interest earned from receivables	R11 500 000	R12 500 000	R13 250 000	R14 045 000
Interest earned from current and non-current assets	R59 250 000	R55 000 000	R58 300 000	R61 798 000
Dividends	R0	R0	R0	R0
Rent on land	R1 889 000	R452 000	R479 000	R508 000
Rental from fixed assets	R7 176 000	R7 544 000	R7 996 000	R8 475 000
Licences and Permits	R779 0000	R780 000	R827 000	R876 000
Special rating levies	R0	R15 420 000	R16 037 000	R16 678 000
Operational revenue	R8 544 000	R5 554 000	R5 886 000	R6 238 000
Property Rates	R367 000 000	R383 976 000	R407 017 000	R431 438 000
Surcharges and taxes	R0	R0	R0	R0
Fines, penalties and forfeits	R52 460 000	R52 537 000	R52 636 000	R52 741 000
Licences and Permits	R2 000 000	R2 000 000	R2 120 000	R2 247 000
Transfers and subsidies – Operational	R199 400 000	R205 957 000	R210 874 000	R218 553 000

Table C.7.4: Revenue Items by Source, as Included in the 2025/2026 Budget				
Revenue Item	**2024/2025 Full Year Forecast**	**2025/2026 Budget**	**2026/2027 Budget**	**2027/2028 Budget**
Interest	R2 110 000	R2 300 000	R2 438 000	R2 584 000
Gains on disposal of Assets	R10 807 000	R0	R0	R0
Other gains	R7 650 000	R3 000 000	R3 180 000	R3 371 000
Total	**R1 947 003 000**	**R2 017 871 000**	**R2 105 031 000**	**R2 203 743 000**

Source: Medium Term Revenue and Expenditure Framework for Overstrand 2025/2026: Table A4 – Budgeted Financial Performance (Revenue and Expenditure)

Capital: Capital funding will have to increase substantially if existing service levels are to be sustained, which has to be the goal. In this regard Overstrand Municipality's own funding, as well as the grant funding must significantly exceed inflation. Other possible sources of funding and innovative funding mechanisms have to be explored.

It is important for Overstrand Municipality to manage their charges for water and sanitation services and the control of consumer payments effectively, in order to ensure that adequate income is generated to fund their water and sewerage capital projects.

The future funding sources of Overstrand Municipality's total capital budget are summarised in the table below.

Table C.7.5: Sources of Funding for the Future Capital Budgets of Overstrand Municipality				
Capital Funding Source	**2024/2025 Full Year Forecast**	**2025/2026 Budget**	**2026/2027 Budget**	**2027/2028 Budget**
National Government	R54 176 000	R76 207 000	R64 043 000	R39 375 000
Provincial Government	R32 560 000	R25 342 000	R13 000 000	R13 000 000
District Municipality	R0	R0	R0	R0
Transfers and Subsidies	R3 763 000	R0	R0	R0
Public contributions and Donations	R0	R0	R0	R0
Borrowing	R89 511 000	R106 337 000	R70 000 000	R80 000 000
Internally generated funds	R43 209 000	R50 460 000	R0	R0
Total Capital Funding	**R223 219 000**	**R258 346 000**	**R147 043 000**	**R132 375 000**

Source: Medium Term Revenue and Expenditure Framework for Overstrand 2025/2026: Table A5 - Capital Expenditure by Vote, Standard Classification and Funding

Tariff and Charges: The state of the economy has an adverse effect on the consumers and their ability to pay for services. As a result municipalities' revenues and cash flows are expected to remain under pressure. Furthermore municipalities should carefully consider affordability of tariff increases, especially as it relates to domestic consumers while considering the level of services versus the associated cost. Water tariffs should always be cost reflective and the water tariff structure must therefore ensure that:

- Water tariffs are fully cost-reflective, including the cost of maintenance and renewal of purification plants, water networks and the cost associated with reticulation expansion;
- Water tariffs are structured to protect basic levels of service and ensure the provision of free water to the poorest of the poor (indigent); and
- Water tariffs are designed to encourage efficient and sustainable consumption.

Overstrand Municipality's current five (5) block step tariff system discourages the wasteful or inefficient use of water. It is expected that this tariff structure will continue to be applied in the future. The sustainable supply of potable water is however becoming an ever-increasing challenge. This scarce commodity has to be optimally managed. The continued increase in the price of electricity and chemicals for purification and load shedding has contributed to the cost of delivering the service. The water usage block tariff has been structured for a basic affordable tariff for up to 18 kl per household per month. Punitive tariffs are in place for excessive water consumption.

The table below gives some comments on the specific blocks, with regard to Overstrand Municipality's residential block step tariff structure, for the various years for water services.

Table C.7.6: Comments on the Municipality's Residential Block Step Water Tariff Structure

Block (kl/month)	2021/2022	2022/2023	2023/2024	2024/2025	2025/2026	Comments
0 - 6	R6-08	R6-38	R6-81	R7-22	R7-67	Free Basic Water
7 - 15	R12-47	R13-08	R13-97	R14-81	R15-73	Low volume use
16 - 18						Typical use volume, including garden irrigation
19 - 30	R20-23	R21-22	R29-28	R31-04	R32-96	
31 - 45	R31-15	R32-68				Above average use, including garden irrigation
46 - 60	R40-45	R42-43	R58-55	R62-06	R65-91	Wasteful use and/or severe garden irrigation
61 - 70	R53-94	R56-58	R78-08	R82-76	R87-90	
> 70						Significant waste and/or unnecessary garden irrigation

Overstrand Municipality will continue with their stepped block tariff system for water supply services. Wasteful or inefficient use of water is discouraged through increased tariffs. Overstrand Municipality also started in 2010/2011 with the implementation of volumetric sewerage tariffs.

The following tariff structure characteristics should remain in Overstrand Municipality's water tariffs in order to ensure efficient water use.

- Maintain a rising block tariff structure.
- Keep number of blocks in the tariff to a minimum. One block to address free basic water (the first step) and another to address the "cut-off" volume where consumers are discouraged to use water above this monthly volume (highest block) are required. In addition another three blocks could be used to distinguish between low users, typical use or high water use.
- The volumetric steps should be kept the same for all the areas within Overstrand Municipality's Management Area.
- The cost of water in the maximum step should severely discourage use in this category. The volumetric use for the highest category is 60 kl/month, above which residential water use is considered to be wasteful or unnecessary. Garden use requiring in excess of this volume should be reduced in accordance with xeriscape practices.

The MFMA Circular No.78 of 7 December 2015 stipulated the following with regard to the water and sanitation tariff increases:

"Municipalities should consider the full cost of rendering the water and sanitation services when determining tariffs related to these two services. If the tariffs are low and result in the municipality not recovering their full costs, the municipality should develop a pricing strategy to phase-in the necessary tariff increases in a manner that spreads the impact on consumers over a period of time."

"Municipalities are urged to design an Inclining Block Tariff (IBT) structure that is appropriate to its specific circumstances and ensures an appropriate balance between low income consumers and other domestic, commercial and business customers, and the financial interests of the municipality. While considering this structure, municipalities are advised to evaluate if the IBT system will be beneficial to them depending on consumption patterns in their areas."

"In light of the current drought being experienced across large parts of the country, and to mitigate the need for water tariff increases, municipalities must put in place appropriate strategies to limit water losses to acceptable levels. In this regard municipalities must ensure that water used by its own operations is charged to the relevant service, and not simply attributed to water losses."

The recommendations for the water and sewerage tariffs of Overstrand Municipality are as follows:

- Overstrand Municipality will continue to re-evaluate the tariffs they charge for their water and sanitation services on an annual basis in order to put the Municipality in a better financial position and to ensure that all the O&M expenditure for water and sanitation services are always recovered through their water and sanitation services income, to address the bulk infrastructure backlogs and to ensure the adequate rehabilitation and maintenance of all existing water and sewerage infrastructure within the various towns.

- The large commercial and industrial consumers could lower their current water demand by means of improved practices or re-use of wastewater. Overstrand Municipality should note that revenue could potentially decrease as a result of reuse practices.

- Overstrand Municipality needs to start with the monitoring of the volume and nutrient loading of all industrial effluent discharged by industrial consumers into the sewer system. A formula for the calculation of the extraordinary treatment cost to industrial consumers for the industrial effluent they discharge into Overstrand Municipality's sewer system needs to be put in place to form part of the existing tariff structure. The performance of WWTWs in general can be severely compromised by certain industrial effluent discharges. It is therefore also important for Overstrand Municipality to recalculate their treatment costs annually, in order to ensure that there is no under or over recovery of costs from industrial consumers.

  Regular sampling of the quality of industrial effluent discharged into the sewer system needs to be done and all industrial consumers need to be charged according to the quality of the effluent discharged into the Municipality's sewer system.

- The current water tariff codes adequately differentiate between the different types of consumers and their water usage.

TOPIC 8: WATER SERVICES INSTITUTIONAL ARRANGEMENTS AND CUSTOMER SERVICES

Sections 12 and 13 of the Water Services Act (Act No 108 of 1997) place a duty on WSAs to prepare and maintain a WSDP, as part of the process of preparing an IDP. Overstrand Municipality's current WSDP was approved by Council and is for the 2022-2027 WSDP cycle. The WSDP needs to be updated again for the 2027-2032 five year WSDP cycle, after 2027.

The Municipality will also continue to report annually and in a public way on progress in implementing the plan (WSDP Performance- and Water Services Audit Report), as part of Overstrand Municipality's Annual Report, as required in terms of Section 18 of the Water Services Act, 1997 (Act No.108 of 1997), as well as the "Revised Compulsory National Water and Sanitation Services Standards" in terms of Section 9(1) of the Water Services Act, as included in Gazette No.52814 of 6 June 2025.

The Water Safety Plans for the various WTWs and water distribution systems and the W_2RAPs for the WWTWs and drainage networks need to be updated regularly. The WTW and WWTW Process Audits also needs to be updated regularly.

The 2021 Water and Sewer Master Plans of Overstrand Municipality summarise the projects (Master Plan Items) necessary in order to cope with the increased future demands and developments within the Overstrand Municipality's systems. The Water and Sewer Master Plans need to be updated at least once every three to five years.

It is important for Overstrand Municipality to allocate adequate funding for the rehabilitation and maintenance of the existing infrastructure and all forward planning for new infrastructure should be guided by the new Water and Sewer Master Plans. Water and sanitation services are currently effectively managed by Overstrand Municipality.

Overstrand Municipality will continue with their mentoring role for operational personnel ensuring an adequately trained and DWS classified workforce with dedicated training programmes for supervisors and operational personnel. A Work Place Skills Plan for 2025/2026 is in place, which lists the training to be provided during the current financial year.

The effective management and monitoring of Veolia Services Southern Africa (Pty) Ltd, who was appointed for the Water and Wastewater Bulk Contract, is a very important factor that will determine the ability of Overstrand Municipality to sustainably deliver safe and reliable water and to treat the effluent at the WWTWs to an acceptable standard. Monitoring the Contractor's compliance with the KPIs related to treatment processes and quality monitoring and control is essential because the Contractor's actions (or failure to act) will have a major impact on the well-being of the communities and the environment as well as the reputation of the municipality.

Overstrand Municipality will continue to actively focus on training, which requires the identification of trainers (from senior operators / officers / professional ranks) for the development and facilitation of courses which relate to specific organizational knowledge and systems requirements. Overstrand Municipality's internal reports such as the Water Safety Plan, W_2RAP and this WSDP contain some information on which the courses can be based. This will assist Overstrand Municipality's Human Resources Department in general and the skills development facilitator in particular to develop and implement effective workplace skills plans relevant to Human Capacity Development requirements.

Overstrand Municipality is committed to maintain the existing high levels of customer service in their urban areas and to record all the necessary information for the WSDP on an annual basis. The present Customer Services and Complaints System adequately allow for the recording and management of all water and sanitation related complaints. The Municipality is committed to ensure that all water and sanitation related complaints are recorded and that the complaints are addressed within the time period stipulated in the Client Service Charter.

Access to safe drinking water is essential to health and is a human right. Safe drinking water that complies with the SANS:241 Drinking Water specification does not pose a significant risk to health over a lifetime of consumption, including different sensitivities that may occur between life stages. Overstrand Municipality is therefore committed to ensure that their water quality always complies with national safety standards.

The Water Safety Plans and W_2RAPs of Overstrand Municipality includes Improvement / Upgrade Plans. The purpose of the Improvement / Upgrade Plans is to address the existing significant risks where the existing controls were not effective or absent.

SECTION D: WATER SERVICES OBJECTIVES AND STRATEGIES

The water services strategies presented below were derived from the 2025/2026 Top Layer SDBIP and the water services situational analysis as summarized in Section C: Water Services Existing Needs Perspective and presents the 5-year Water Services strategies as established in the WSA's WSDP.

Table: Table D.1: Water Services Objectives and Strategies							
Objective / Strategy	Key Performance Indicator	Baseline (FY2024/2025 status quo)	WSDP FY2025/26 TARGET	WSDP FY2026/27 TARGET	WSDP FY2027/28 TARGET	WSDP FY2028/29 TARGET	WSDP FY2029/30 TARGET
Topic 1: Settlement Demographics & Public Amenities							
Sustainable Integrated Human Settlements	*Implement SDF and Growth Management Strategy for each of the towns and ensure new developments are in line with these priority action plans.*	*Targets to be set by other Department.*	*Targets to be set by other Department.*	*Targets to be set by other Department.*	*Targets to be set by other Department.*	*Targets to be set by other Department.*	*Targets to be set by other Department.*
Topic 2: Service Levels							
Ensure all households on the farms are provided with at least basic water services, subject to DWS guidance and provision of resources.	*Support all applications received for basic water services on the farms (Subject to availability of financial resources and sustainability of type of service).*	-	-	*100% of applications received are supported (Subject to availability of funding and sustainability of type of service).*	*100% of applications received are supported (Subject to availability of funding and sustainability of type of service).*	*100% of applications received are supported (Subject to availability of funding and sustainability of type of service).*	*100% of applications received are supported (Subject to availability of funding and sustainability of type of service).*
Ensure all households on the farms are provided with at least basic sanitation services, subject to DWS guidance and provision of resources.	*Support all applications received for basic sanitation services on the farms (Subject to availability of financial resources and sustainability of type of service).*	-	-	*100% of applications received are supported (Subject to availability of funding and sustainability of type of service).*	*100% of applications received are supported (Subject to availability of funding and sustainability of type of service).*	*100% of applications received are supported (Subject to availability of funding and sustainability of type of service).*	*100% of applications received are supported (Subject to availability of funding and sustainability of type of service).*
Provision of water to informal households based on the standard of 1 water point to 25 households.	Number of taps installed in relation to the number of informal households.	396	262	Provide at least 1 water point to every 25 households in informal areas.	Provide at least 1 water point to every 25 households in informal areas.	Provide at least 1 water point to every 25 households in informal areas.	Provide at least 1 water point to every 25 households in informal areas.
Provision of cleaned piped water to all formal households within 200m from the household.	Number of formal households that meet agreed service standards for piped water.	33 753	32 888	Target to be set in future year.	Target to be set in future year.	Target to be set in future year.	Target to be set in future year.
The provision of sanitation services to informal households based on the standard of 1 toilet to 5 households.	Number of toilet structures provided in relation to the number of informal households.	726	785	Provide at least 1 toilet to every 5 households in informal areas.	Provide at least 1 toilet to every 5 households in informal areas.	Provide at least 1 toilet to every 5 households in informal areas.	Provide at least 1 toilet to every 5 households in informal areas.
Provision of sanitation services to formal residential households.	Number of formal households which are billed for sewerage in accordance to the SAMRAS financial system.	34 685	33 562	Target to be set in future year.	Target to be set in future year.	Target to be set in future year.	Target to be set in future year.
Provision of sanitation services to informal households on invaded land with available funding.	The number of toilets provided for informal households on invaded land with available funding.	133	105	Target to be set in future year.	Target to be set in future year.	Target to be set in future year.	Target to be set in future year.
Provision of water to informal households on invaded land with available funding.	The number of taps installed for informal households on invaded land with available funding.	81	80	Target to be set in future year.	Target to be set in future year.	Target to be set in future year.	Target to be set in future year.
Topic 3: Water Services Asset Management							

Table: Table D.1: Water Services Objectives and Strategies							
Objective / Strategy	Key Performance Indicator	Baseline (FY2024/2025 status quo)	WSDP FY2025/26 TARGET	WSDP FY2026/27 TARGET	WSDP FY2027/28 TARGET	WSDP FY2028/29 TARGET	WSDP FY2029/30 TARGET
The provision and maintenance of municipal services.	*Ensure adequate storage capacity for all towns (At least 48hrs AADD).*	-	-	*All eight areas with an overall storage capacity above 48hrs AADD.*	*All eight areas with an overall storage capacity above 48hrs AADD.*	*All eight areas with an overall storage capacity above 48hrs AADD.*	*All eight areas with an overall storage capacity above 48hrs AADD.*
Implement projects included in the Water Master Plan	*Ensure adequate water pump station and water reticulation capacity.*	-	-	*Upgrade existing water pump stations and provide new pump stations as identified in the Water Master Plan. Upgrade water reticulation networks as proposed in the Water Master Plan.*	*Upgrade existing water pump stations and provide new pump stations as identified in the Water Master Plan. Upgrade water reticulation networks as proposed in the Water Master Plan.*	*Upgrade existing water pump stations and provide new pump stations as identified in the Water Master Plan. Upgrade water reticulation networks as proposed in the Water Master Plan.*	*Upgrade existing water pump stations and provide new pump stations as identified in the Water Master Plan. Upgrade water reticulation networks as proposed in the Water Master Plan.*
Implement projects included in the Sewer Master Plan	*Ensure adequate sewer pump station and drainage network capacity.*	-	-	*Upgrade existing sewer pump stations and provide new pump stations as identified in the Sewer Master Plan. Upgrade sewer drainage networks as proposed in the Sewer Master Plan.*	*Upgrade existing sewer pump stations and provide new pump stations as identified in the Sewer Master Plan. Upgrade sewer drainage networks as proposed in the Sewer Master Plan.*	*Upgrade existing sewer pump stations and provide new pump stations as identified in the Sewer Master Plan. Upgrade sewer drainage networks as proposed in the Sewer Master Plan.*	*Upgrade existing sewer pump stations and provide new pump stations as identified in the Sewer Master Plan. Upgrade sewer drainage networks as proposed in the Sewer Master Plan.*
The provision and maintenance of municipal services	*Ensure all water and sewerage infrastructure assets are included in the Asset Register, with accurate CRC, DRC, RUL and Age.*	-	-	*Annual reporting to the Financial Department on water and sewerage assets not yet included in the Asset Register and assets for which the CRC, DRC, RUL and Age in the Asset Register is not correct.*	*Annual reporting to the Financial Department on water and sewerage assets not yet included in the Asset Register and assets for which the CRC, DRC, RUL and Age in the Asset Register is not correct.*	*Annual reporting to the Financial Department on water and sewerage assets not yet included in the Asset Register and assets for which the CRC, DRC, RUL and Age in the Asset Register is not correct.*	*Annual reporting to the Financial Department on water and sewerage assets not yet included in the Asset Register and assets for which the CRC, DRC, RUL and Age in the Asset Register is not correct.*
Topic 4: Water Services Operation and Maintenance							
The provision and maintenance of municipal services.	*% Of recommendations, as included in the WTW Process Audits, implemented.*	-	-	*60% of recommendations implemented.*	*70% of recommendations implemented.*	*80% of recommendations implemented.*	*90% of recommendations implemented.*
The provision and maintenance of municipal services.	*% Of recommendations, as included in the WWTW Process Audits, implemented.*	-	-	*60% of recommendations implemented.*	*70% of recommendations implemented.*	*80% of recommendations implemented.*	*90% of recommendations implemented.*
The provision and maintenance of municipal services.	*% Of recommendations, as included in the Improvement / Upgrade Plan of the Water Safety Plan, implemented.*	-	-	*60% of recommendations implemented.*	*70% of recommendations implemented.*	*80% of recommendations implemented.*	*90% of recommendations implemented.*

Table: Table D.1: Water Services Objectives and Strategies							
Objective / Strategy	Key Performance Indicator	Baseline (FY2024/2025 status quo)	WSDP FY2025/26 TARGET	WSDP FY2026/27 TARGET	WSDP FY2027/28 TARGET	WSDP FY2028/29 TARGET	WSDP FY2029/30 TARGET
The provision and maintenance of municipal services.	*% Of recommendations, as included in the Improvement / Upgrade Plan of the W_2RAP, implemented.*	-	-	*60% of recommendations implemented.*	*70% of recommendations implemented.*	*80% of recommendations implemented.*	*90% of recommendations implemented.*
The provision and maintenance of municipal services	*Ensure a budget of at least 1% of the total value of the water and sewerage assets is allocated towards the annual O&M of the systems.*	-	-	*A budget of 1% or more of the value of the water and sewerage assets is allocated towards the O&M of the systems.*	*A budget of 1% or more of the value of the water and sewerage assets is allocated towards the O&M of the systems.*	*A budget of 1% or more of the value of the water and sewerage assets is allocated towards the O&M of the systems.*	*A budget of 1% or more of the value of the water and sewerage assets is allocated towards the O&M of the systems.*
The provision and maintenance of municipal services.	*Ensure a budget of at least 2% of the total value of the water and sewerage assets is allocated towards the replacement of existing infrastructure per annum.*	-	-	*A budget of 2% or more of the value of the water and sewerage assets is allocated towards the replacement of existing infrastructure.*	*A budget of 2% or more of the value of the water and sewerage assets is allocated towards the replacement of existing infrastructure.*	*A budget of 2% or more of the value of the water and sewerage assets is allocated towards the replacement of existing infrastructure.*	*A budget of 2% or more of the value of the water and sewerage assets is allocated towards the replacement of existing infrastructure.*
Reporting on water quality and wastewater quality compliance percentages.	*Report at least annually on the percentage of water quality and wastewater quality compliance.*	-	-	*At least annual publication of water quality and wastewater quality compliance percentages.*	*At least annual publication of water quality and wastewater quality compliance percentages.*	*At least annual publication of water quality and wastewater quality compliance percentages.*	*At least annual publication of water quality and wastewater quality compliance percentages.*
Monthly monitoring of water and waste water quality results of all treatment plants and reporting to DWS via website.	Number of months monitored.	12	12	12	12	12	12
Quality of effluent comply 75% with general or special limit in terms of the Water Act.	% Compliance	78.3%	75%	80%	85%	90%	95%
Quality of potable water comply 95% with SANS241.	% Compliance with SANS241.	98.3%	95%	95%	95%	95%	95%
Topic 5: Conservation and Demand Management (Topic 5.1: Water Resources)							
Limit unaccounted water to less than 25%.	% of water unaccounted for	31.21%	32%	Target to be set in future year.	Target to be set in future year.	Target to be set in future year.	Target to be set in future year.
Topic 5: Conservation and Demand Management (Topic 5.2: Water Balance)							
The provision and maintenance of municipal services.	*Ensure all bulk water is metered at source, at WTW (incoming and outgoing) and at bulk storage reservoirs and the meters are read and recorded on at least a monthly basis.*	-	-	*95% of all sources metered and bulk water meters read and recorded at least monthly.*	*96% of all sources metered and bulk water meters read and recorded at least monthly.*	*97% of all sources metered and bulk water meters read and recorded at least monthly.*	*98% of all sources metered and bulk water meters read and recorded at least monthly.*
The provision and maintenance of municipal services.	*Ensure all incoming and outgoing flows at WWTWs are metered, as*	-	-	*95% of all flows at WWTWs metered and*	*96% of all flows at WWTWs metered*	*97% of all flows at WWTWs metered*	*98% of all flows at WWTWs metered and*

Table: Table D.1: Water Services Objectives and Strategies							
Objective / Strategy	**Key Performance Indicator**	**Baseline (FY2024/2025 status quo)**	**WSDP FY2025/26 TARGET**	**WSDP FY2026/27 TARGET**	**WSDP FY2027/28 TARGET**	**WSDP FY2028/29 TARGET**	**WSDP FY2029/30 TARGET**
	well as final effluent re-used for irrigation purposes and that meters are read and recorded on at least a monthly basis.			*meters read and recorded at least monthly.*	*and meters read and recorded at least monthly.*	*and meters read and recorded at least monthly.*	*meters read and recorded at least monthly.*
Topic 6: Water Resources							
The provision and maintenance of municipal services.	*% Of abstraction from sources registered and authorized by the DWS.*	-	-	*70% Compliance*	*80% Compliance*	*90% Compliance*	*95% Compliance*
The provision and maintenance of municipal services.	*Ensure yields and allocations are adequate to meet at least the projected five year water requirements for all eight areas.*	-	-	*100% adequate supply to meet water requirements for all eight areas.*	*100% adequate supply to meet water requirements for all eight areas.*	*100% adequate supply to meet water requirements for all eight areas.*	*100% adequate supply to meet water requirements for all eight areas.*
The provision and maintenance of municipal services.	*% Monitoring of effluent discharged by industrial consumers (Quantity and Quality)*	-	-	*50% of all industrial consumers monitored w.r.t. quality and quantity of effluent discharged by them.*	*60% of all industrial consumers monitored w.r.t. quality and quantity of effluent discharged by them.*	*70% of all industrial consumers monitored w.r.t. quality and quantity of effluent discharged by them.*	*80% of all industrial consumers monitored w.r.t. quality and quantity of effluent discharged by them.*
Topic 7: Financial							
Topic 8: Institutional Arrangements and Customer Care							
Maintenance of sanitation services (tankers and networks) measured by the daily recording/completion of enquiries within 30 days.	% completed	119.78%	92%	92%	92%	92%	92%
Maintenance of water services measured by the daily recording/completion of enquiries/completed within 30 days	% completed	90.40%	92%	92%	92%	92%	92%
Report on the implementation of the WSDP annually by the end of October.	Report submitted.	1	1	1	1	1	1

SECTION E: WATER SERVICES MTEF PROJECTS

The draft 2026/2027 Water Services Medium-Term Expenditure Framework (MTEF) projects are presented below and outline the water services projects which might be funded for implementation within the next three financial years. Table E.2a provides the projects identified for implementation in FY2026/27, Table E.2b provides the projects identified for implementation in FY2027/28 and Table E2c provides the projects identified for implementation in FY2028/29.

It should be highlighted that the projects included herein, represents only projects for which funding might be secured, and therefore does not comprise the comprehensive water services project requirements of Overstrand Municipality.

The summary of the draft MTEF water services projects are presented as follows.

Table E.1: Summary of MTEF Projects

Project Main Category	FY2026/27		FY2027/28		FY2028/29		MTEF Total	
	Nr	Value (R'000)	Nr	Value (R'000)	Nr	Value (R'000)	Nr	Value (R'000)
Water Projects	12	R74 742	11	R81 900	10	R84 300	**15**	**R240 942**
Sanitation Projects	6	R17 700	6	R57 230	7	R65 663	**8**	**R140 593**
Combined Water & Sanitation Projects	**18**	**R92 442**	**17**	**R139 130**	**17**	**R149 963**	**23**	**R381 535**

Table E.2a: Water Services MTEF Projects - FY2026/27 (1st year MTEF period)

Nr	Project Reference Number (Dept)	Project Name	Description	Project Driver	Main Category "W" or "S"	Sub Category	Component type	Project Budget / Funding Sources									MTEF Project Source
								Prev spent FY2025/26	FY2026/27 Budget	Own	MIG	RBIG	WSIG	DR	MWIG	Other	Total Cost	
1. Infrastructure Projects								**R0**	**R21 500**								**R21 500**	
1.1		Fencing at water installations	Install fencing at water infrastructure	Theft and Vandalism	Water	Other	Security		**R500**	R500							**R500**	WSDP
1.2		Water Facilities (Contingency)	Ensure adequate equipment at water facilities.	Water Quality	Water	Bulk	WTW		**R500**	R500							**R500**	WSDP
1.3		New Reservoir Onrus River	New reservoir to ensure adequate storage capacity	Storage capacity	Water	Internal	Reservoir		**R1 500**	R1 500							**R1 500**	WSDP and Water Master Plan
1.4		New Reservoir Voorberg	New reservoir to ensure adequate storage capacity	Storage capacity	Water	Internal	Reservoir		**R1 500**	R1 500							**R1 500**	WSDP and Water Master Plan
1.5		Sewerage Facilities (Contingency)	Ensure adequate equipment at sewerage facilities.	Effluent Quality	Sewerage	Bulk	WWTW		**R700**	R700							**R700**	WSDP
1.6		Fencing at sewerage installations	Install fencing at sewerage infrastructure	Theft and Vandalism	Sewerage	Other	Security		**R800**	R800							**R800**	WSDP
1.7		Upgrading of pump stations and rising mains	Upgrade pump stations and rising mains	Waterborne sanitation	Sewerage	Bulk	Pump stations and rising mains		**R10 740**	R10 740							**R10 740**	WSDP and Sewer Master Plan
1.8		Hawston Sewer Network Extension	Installation of sewer drainage network	Higher level of sanitation services	Sewer	Internal	Drainage network		**R2 000**	R2 000							**R2 000**	Sewer Master Plan
1.9		Hawston WWTW refurbishment and upgrade (F1/2 and F2/2).	Upgrade and refurbish WWTW	Effluent Quality	Sewerage	Bulk	WWTW		**R3 260**	R2 260	R1 000						**R3 260**	WSDP and WWTW Process Audit
2. Source Development Projects								**R0**	**R9 000**								**R9 000**	
2.1		Upgrade Hermanus Wellfields Phase 2	Further groundwater development for Hermanus	Assurance of Supply	Water	Bulk	Sources		**R6 000**	R6 000							**R6 000**	WSDP and Geohydrological Investigations
2.2		Pearly Beach Groundwater Development	Groundwater development for Pearly Beach	Assurance of Supply	Water	Bulk	Sources		**R3 000**	R3 000							**R3 000**	WSDP and Geohydrological Investigations
3. Demand Management projects								**R0**	**R13 300**								**R13 300**	
3.1		Replacement of Overstrand water pipelines	Replace old sections of water reticulation network	Refurbishment	Water	Internal	Water reticulation		**R12 600**	R12 600							**R12 600**	Implementation of Pipeline Replacement Programme, according to PRP Model.
3.2		Replacement of water main Pearly Beach	Replace old sections of water reticulation network	Refurbishment	Water	Internal	Water reticulation		**R700**	R700							**R700**	Implementation of Pipeline Replacement Programme, according to PRP Model.
4. O&M Commitments								**R0**	**R48 642**								**R48 642**	
Operations																		
4.1		Preekstoel WTW Office Space	Provide additional office space at plant	Work Environment	Water	Bulk	WTW		**R1 250**	R1 250							**R1 250**	Operations
4.2		Telemetery System Upgrade -Water	Upgrade telemetry system	Monitoring	Water	Internal	Reticulation		**R300**	R300							**R300**	Operations and Management
4.3		Telemetery System Upgrade -Sewer	Upgrade telemetry system	Monitoring	Sewerage	Internal	Operations		**R200**	R200							**R200**	Operations and Management
Maintenance																		
4.4		Refurbishment of bulk water infrastructure	Refurbish old water infrastructure	Refurbishment	Water	Bulk	Bulk pipelines		**R1 000**	R1 000							**R1 000**	O&M Plan and WSDP
4.5		Refurbishment of Buffels River WTW (F1/2, F2/2)	Refurbishment of WTW	Refurbishment	Water	Bulk	WTW		**R45 892**	R19 650			R26 242				**R45 892**	WTW Process Audit and WSDP
5. Institutional								**R0**	**R0**								**R0**	
6. Water Services Programmes								**R0**	**R0**								**R0**	
Awareness Programs																		
									R0								**R0**	
WASH Programs																		
									R0								**R0**	
		Total						**R0**	**R92 442**								**R92 442**	

Note: Projects Water Facilities (Contingency) and Sewerage Facilities (Contingency) in the above table include the installation of standby generators in phases at critical water and sanitation facilities to ensure continuous operation during electricity supply interruptions.

Table E.2b: Water Services MTEF Projects - FY2027/28 (2nd year MTEF period)

Nr	Project Reference Number (Dept)	Project Name	Description	Project Driver	Main Category "W" or "S"	Sub Category	Component type	Project Budget / Funding Sources									Total Cost	MTEF Project Source
								Prev spent FY2026/27	FY2027/28 Budget	Own	MIG	RBIG	WSIG	DR	MWIG	Other		
1. Infrastructure Projects								**R0**	**R73 430**								**R73 430**	
1.1		Fencing at water installations	Install fencing at water infrastructure	Theft and Vandalism	Water	Other	Security		**R500**	R500							**R500**	WSDP
1.2		Water Facilities (Contingency)	Ensure adequate equipment at water facilities.	Water Quality	Water	Bulk	WTW		**R500**	R500							**R500**	WSDP
1.3		New Reservoir Onrus River	New reservoir to ensure adequate storage capacity	Storage capacity	Water	Internal	Reservoir		**R6 500**	R6 500							**R6 500**	WSDP and Water Master Plan
1.4		New Reservoir Voorberg	New reservoir to ensure adequate storage capacity	Storage capacity	Water	Internal	Reservoir		**R6 500**	R6 500							**R6 500**	WSDP and Water Master Plan
1.5		New Booster Pump Station and Pipeline Gansbaai to De Kelders	New Booster PS and Water Pipeline	Services	Water	Internal	Reticulation		**R1 000**	R1 000							**R1 000**	Water Master Plan
1.6		New Reservoir Kidbrooke	New reservoir to ensure adequate storage capacity	Storage capacity	Water	Internal	Reservoir		**R500**	R500							**R500**	WSDP and Water Master Plan
1.7		Preekstoel WTW Sludge handling system	Installation of new sludge handling system	Environmental compliance	Water	Bulk	WTW		**R1 000**	R1 000							**R1 000**	WTW Process Audit
1.8		Sewerage Facilities (Contingency)	Ensure adequate equipment at sewerage facilities.	Effluent Quality	Sewerage	Bulk	WWTW		**R700**	R700							**R700**	WSDP
1.9		Fencing at sewerage installations	Install fencing at sewerage infrastructure	Theft and Vandalism	Sewerage	Other	Security		**R600**	R600							**R600**	WSDP
1.10		Upgrading of pump stations and rising mains	Upgrade pump stations and rising mains	Waterborne sanitation	Sewerage	Bulk	Pump stations and rising mains		**R10 000**	R10 000							**R10 000**	WSDP and Sewer Master Plan
1.11		Hawston WWTW refurbishment and upgrade (F1/2 and F2/2).	Upgrade and refurbish WWTW	Effluent Quality	Sewerage	Bulk	WWTW		**R28 630**	R16 000	R12 630						**R28 630**	WSDP and WWTW Process Audit
1.12		Hawston Sewer Network Extension	Installation of sewer drainage network	Higher level of sanitation services	Sewer	Internal	Drainage network		**R17 000**	R17 000							**R17 000**	Sewer Master Plan
2. Source Development Projects								**R0**	**R4 000**								**R4 000**	
2.1		Upgrade Hermanus Wellfields Phase 2	Further groundwater development for Hermanus	Assurance of Supply	Water	Bulk	Sources		**R4 000**	R4 000							**R4 000**	WSDP and Geohydrological Investigations
3. Demand Management projects								**R0**	**R60 000**								**R60 000**	
3.1		Replacement of Overstrand water pipelines	Replace old sections of water reticulation network	Refurbishment	Water	Internal	Water reticulation		**R60 000**	R60 000							**R60 000**	Implementation of Pipeline Replacement Programme, according to PRP Model.
4. O&M Commitments								**R0**	**R1 700**								**R1 700**	
Operations																		
4.1		Telemetery System Upgrade -Water	Upgrade telemetry system	Monitoring	Water	Internal	Reticulation		**R400**	R400							**R400**	Operations and Management
4.2		Telemetery System Upgrade -Sewer	Upgrade telemetry system	Monitoring	Sewerage	Internal	Operations		**R300**	R300							**R300**	Operations and Management
Maintenance																		
4.3		Refurbishment of bulk water infrastructure	Refurbish old water infrastructure	Refurbishment	Water	Bulk	Bulk pipelines		**R1 000**	R1 000							**R1 000**	O&M Plan and WSDP
									R0								**R0**	
5. Institutional								**R0**	**R0**								**R0**	
6. Water Services Programmes								**R0**	**R0**								**R0**	
Awareness Programs																		
									R0								**R0**	
WASH Programs																		
									R0								**R0**	
		Total						**R0**	**R139 130**								**R139 130**	

Note: Projects Water Facilities (Contingency) and Sewerage Facilities (Contingency) in the above table include the installation of standby generators in phases at critical water and sanitation facilities to ensure continuous operation during electricity supply interruptions.

Table E.2c: Water Services MTEF Projects - FY2028/29 (3rd year MTEF period)

Nr	Project Reference Number (Dept)	Project Name	Description	Project Driver	Main Category "W" or "S"	Sub Category	Component type	Project Budget / Funding Sources									MTEF Project Source
								Prev spent FY2027/28	FY2028/29 Budget	Own	MIG	RBIG	WSIG	DR	MWIG	Other	Total Cost	
1. Infrastructure Projects								**R0**	**R90 363**								**R90 363**	
1.1		Water Facilities (Contingency)	Ensure adequate equipment at water facilities.	Water Quality	Water	Bulk	WTW		**R500**	R500							**R500**	WSDP
1.2		New Reservoir Onrus River	New reservoir to ensure adequate storage capacity	Storage capacity	Water	Internal	Reservoir		**R7 000**	R7 000							**R7 000**	WSDP and Water Master Plan
1.3		New Reservoir Voorberg	New reservoir to ensure adequate storage capacity	Storage capacity	Water	Internal	Reservoir		**R7 000**	R7 000							**R7 000**	WSDP and Water Master Plan
1.4		New Booster Pump Station and Pipeline Gansbaai to De Kelders	New Booster PS and Water Pipeline	Services	Water	Internal	Reticulation		**R7 000**	R7 000							**R7 000**	Water Master Plan
1.5		New Reservoir Kidbrooke	New reservoir to ensure adequate storage capacity	Storage capacity	Water	Internal	Reservoir		**R1 500**	R1 500							**R1 500**	WSDP and Water Master Plan
1.6		Preekstoel WTW Sludge handling system	Installation of new sludge handling system	Environmental compliance	Water	Bulk	WTW		**R2 000**	R2 000							**R2 000**	WTW Process Audit
1.7		Sewerage Facilities (Contingency)	Ensure adequate equipment at sewerage facilities.	Effluent Quality	Sewerage	Bulk	WWTW		**R700**	R700							**R700**	WSDP
1.8		Fencing at sewerage installations	Install fencing at sewerage infrastructure	Theft and Vandalism	Sewerage	Other	Security		**R600**	R600							**R600**	WSDP
1.9		Upgrading of pump stations and rising mains	Upgrade pump stations and rising mains	Waterborne sanitation	Sewerage	Bulk	Pump stations and rising mains		**R10 000**	R10 000							**R10 000**	WSDP and Sewer Master Plan
1.10		Hawston WWTW refurbishment and upgrade (F1/2 and F2/2).	Upgrade and refurbish WWTW	Effluent Quality	Sewerage	Bulk	WWTW		**R25 663**	R9 000	R16 663						**R25 663**	WSDP and WWTW Process Audit
1.11		Hawston Sewer Network Extension	Installation of sewer drainage network	Higher level of sanitation services	Sewer	Internal	Drainage network		**R17 000**	R17 000							**R17 000**	Sewer Master Plan
1.12		Hermanus WWTW Capacity upgrade	Upgrade capacity of WWTW	Effluent Quality	Sewer	Bulk	WWTW		**R11 400**	R11 400							**R11 400**	Sewer Master Plan
2. Source Development Projects								**R0**	**R0**								**R0**	
									R0								**R0**	
3. Demand Management projects								**R0**	**R55 000**								**R55 000**	
3.1		Replacement of Overstrand water pipelines	Replace old sections of water reticulation network	Refurbishment	Water	Internal	Water reticulation		**R55 000**	R55 000							**R55 000**	Implementation of Pipeline Replacement Programme, according to PRP Model.
4. O&M Commitments								**R0**	**R4 600**								**R4 600**	
Operations																		
4.1		Telemetery System Upgrade -Water	Upgrade telemetry system	Monitoring	Water	Internal	Reticulation		**R300**	R300							**R300**	Operations and Management
4.2		Telemetery System Upgrade -Sewer	Upgrade telemetry system	Monitoring	Sewerage	Internal	Operations		**R300**	R300							**R300**	Operations and Management
Maintenance																		
4.3		Refurbishment of bulk water infrastructure	Refurbish old water infrastructure	Refurbishment	Water	Bulk	Bulk pipelines		**R1 000**	R1 000							**R1 000**	O&M Plan and WSDP
4.4		Refurbishment of Buffels River WTW (F1/2, F2/2)	Refurbishment of WTW	Refurbishment	Water	Bulk	WTW		**R3 000**				R3 000				**R3 000**	WTW Process Audit and WSDP
5. Institutional								**R0**	**R0**								**R0**	
6. Water Services Programmes								**R0**	**R0**								**R0**	
Awareness Programs																		
									R0								**R0**	
WASH Programs																		
									R0								**R0**	
		Total						**R0**	**R149 963**								**R149 963**	

Note: Projects Water Facilities (Contingency) and Sewerage Facilities (Contingency) in the above table include the installation of standby generators in phases at critical water and sanitation facilities to ensure continuous operation during electricity supply interruptions.

SECTION F: WSDP PROJECTS

Overstrand Municipality's 2025/2026 IDP list the following major water services projects, which are planned for the short to medium term (2022-2027).

- Expansion of the well fields in Hermanus;
- New reservoirs at Sandbaai, Onrus River and Betties Bay;
- Phased replacement and upgrade of the bulk and reticulation water supply systems in high priority areas, including grey water irrigation infrastructure;
- Refurbishment of the Buffels River Water Treatment Plant and phased replacement of membranes at De Kelders, Baardskeerdersbos and Pearly Beach treatment plants;
- Seawater Desalination scheme for the Greater Hermanus area;
- Installation of alternative disinfection systems at water treatment facilities;
- Installation of standby power generators at treatment facilities and pumpstations;
- Water Treatment Plant for Buffeljags Bay;
- Upgrade of telemetry systems;
- Improved security systems at water facilities;
- Refurbishment of the water tower at Pearly Beach and development of groundwater sources there;
- New pumpstation and rising main for transfer of water from Gansbaai to De Kelders; and
- Alternative energy and energy efficiency projects at treatment plants.

The following major sanitation services projects are planned for the short to medium term.

- Upgrade of the Kleinmond and Hawston Wastewater Treatment Works (WWTW) and some processes at the Hermanus WWTW;
- Upgrade of sewerage pumpstations at e.g. Zwinglers Corner, Peach Houses, Zwelihle Sports Grounds, inlet of Hermanus WWTW and Onrus Main;
- Extension of sewer networks in Kleinmond, Gansbaai and Hawston;
- Replacement of sewer rising main pipelines in Kleinmond and Greater Hermanus, including treated effluent irrigation pipelines;
- Installation of generators at several sewerage pump stations;
- Improvement of security systems at wastewater facilities (e.g. fencing and CCTV cameras);
- Upgrade of telemetry systems; and
- Alternative energy and energy efficiency improvement projects at wastewater treatment plants.

The NWRS 2 list the following steps to raise the water profile in development planning:

- Water must be placed at the centre of integrated planning and decision-making, with a specific aim to respond to and support the achievement of national development and sector goals.
- Current budgets need to adequately provide for water, which might mean they have to be doubled to cater for the present needs.
- Current financial values need to appreciate water as a scarce resource and should thus reflect the real value of water. This requires a new value system across all sectors and stakeholders.
- Water efficiency and curbing water losses should be high on the agenda of each individual and institution in the country.
- Water management must be formally embedded in the sector businesses with associated accountability.

The DWS will insist in the future that all water infrastructure which they fund is value engineered against the life-cycle cost with a specific emphasis on energy costs. Evidence will be required that the technical design is appropriate for the nature of the resource and that operation and maintenance of the assets is reasonably within the capability of the responsible institution. New water resources infrastructure will also not be developed or authorized unless effective WC/WDM interventions have been put in place in the affected area.

The identification of projects necessary to ensure the provision of adequate levels of water and sanitation services is based primarily, but not limited to, on the findings of the Water and Sewer Master Plans. Master Planning is typically based on a forward planning horizon of 20 years, but is usually updated every three to five years, taking into account improved water demand estimates and subsequent infrastructure developments which may have taken place. The recommended projects from the 2021 Master Plans were incorporated into the WSDP.

The Master Plans represent the ideal infrastructure development required to meet projected water demands over the next few years, while realistic capital investment in infrastructure projects is determined by budget availability. As a result, prioritization of projects is necessary to identify what can be done within the available and projected budget constraints. The prioritization of projects is done through the IDP and annual budget planning process.

Recommended infrastructure projects for implementation in the future will be based on the following plans and processes:

- Water and Sewer Master Plans and Water and Wastewater Treatment Works Master Plans/studies;
- Infrastructure replacement needs (Asset Register);
- Ad hoc technical investigations;
- Budget proposals; and
- Asset Management Plans.

The current needs projects are estimated at R423.880 million of which 90% are funded over the next three years, as included in the MTEF project list. It should however be emphasised that additional funding will be required to address the full achievement of the water services strategies as outlined in Section D, but that the extent of such additional funding can only be determined once initial investigations and activities have been concluded.

WSDP-IDP WATER SECTOR INPUT REPORT FOR 2026/2027

Table F.1: WSDP FY2026/27: LIST OF CONCEPTUAL PROJECTS

Nr	Situation Assessment (Problem Definition)	Solution description as defined by topic situation assessment (Strategy)	Conceptual project	Is there an existing project addressing this problem?	Existing Projects Information			Does this current listed project address the problem totally?	Approved by Council, in project database and part of 5 year IDP cycle projects?	Project listed in 3yr MTEF - cycle?
					Project Number (Dept)	Project Title	Project Cost R'000			
CURRENT NEEDS										
Topic 1: Settlements and Demographics										
	Done by other Department									
Topic 2: Service Levels										
2.1	Some of the households on the farms without basic water services.	Ensure all households on farms are provided with at least basic water services, DWS guidance. (As soon as funding is provided by DWS)	WSDP	No	OS2526001	Provide basic water services on the farms in the rural areas without basic water services.	R1 245	Yes	No	No
2.2	Some of the households on the farms without basic sanitation services.	Ensure all households on farms are provided with at least basic sanitation services, DWS guidance. (As soon as funding is provided by DWS)	WSDP	No	OS2526002	Provide basic sanitation services on the farms in the rural areas without basic sanitation services.	R4 050	Yes	No	No
Topic 3: Water Services Asset Management (Infrastructure)										
3.1	Security at water installations not adequate	Ensure all water installations are adequately secured	MTEF Project	Yes	OS2526003	Fencing at water installations	R1 000	Partly	Yes	Yes
3.2	Shortcomings were identified wrt the sludge handling system at Preekstoel WTW	Improved WTW sludge handling system to ensure environmental compliance	MTEF Project	Yes	OS2526004	Preekstoel WTW Sludge Handling System	R3 000	Yes	Yes	Yes
3.3	Existing reservoir storage capacity is inadequate	Ensure adequate reservoir storage capacity (2xAADD)	MTEF Project	Yes	OS2526005	New reservoir Onrus River	R15 000	Yes	Yes	Yes
3.4	Existing reservoir storage capacity is inadequate	Ensure adequate reservoir storage capacity (2xAADD)	MTEF Project	Yes	OS2526006	New reservoir Voorberg	R15 000	Yes	Yes	Yes
3.5	Existing reservoir storage capacity is inadequate	Ensure adequate reservoir storage capacity (2xAADD)	MTEF Project	Yes	OS2526007	New reservoir Kidbrooke	R2 000	Partly	Yes	Yes
3.6	Existing PS and bulk water pipeline capacities are inadequate.	Ensure adequate bulk water pipeline capacity and assurance of supply.	MTEF Project	Yes	OS2526008	New booster PS and pipeline Gansbaai to De Kelders	R8 000	Yes	Yes	Yes
3.7	Some equipment at water facilities needs to be replaced	Ensure compliance with water quality standards SANS241	MTEF Project	Yes	OS2526009	Water Facilities (Contingency)	R1 500	Partly	Yes	Yes
3.8	Some equipment at sewerage facilities needs to be replaced	Ensure compliance with final effluent quality standards	MTEF Project	Yes	OS2526010	Sewerage Facilities (Contingency)	R2 100	Partly	Yes	Yes
3.9	Security at sewerage installations not adequate	Ensure all sewerage installations are adequately secured	MTEF Project	Yes	OS2526011	Fencing at sewerage installations	R2 000	Partly	Yes	Yes
3.10	Inadequate pump and bulk rising mains capacity	Upgrade capcity of sewer pump stations and rising mains	MTEF Project	Yes	OS2526012	Upgrading of pump stations and rising mains	R30 740	Partly	Yes	Yes
3.11	Not all consumers connected to the waterborne sewer system	Installation of waterborne sewer drainage networks, in order to phase out conservancy and septic tanks.	MTEF Project	Yes	OS2526013	Hermanus sewer network extension	R34 000	Partly	Yes	Yes
3.12	Capacity of existing WWTW is inadequate	Ensure adequate treatment capacity	MTEF Project	Yes	OS2526014	Hawston WWTW refurbishment and upgrade.	R57 553	Yes	Yes	Yes
3.13	Not all consumers connected to the waterborne sewer system	Installation of waterborne sewer drainage networks, in order to phase out conservancy and septic tanks.	MTEF Project	Yes	OS2526015	Hawston sewer network extension	R2 000	Yes	Yes	Yes
3.14	Capacity of existing WWTW is inadequate	Ensure adequate treatment capacity	MTEF Project	Yes	OS2526016	Hermanus WWTW Upgrade	R11 400	Yes	Yes	Yes
Topic 4: Water Services Operation and Maintenance										
4.1	Current office space at Preekstoel WTW is inadequate	Ensure adequate office space for Process Controllers and Operators	MTEF Project	Yes	OS2526017	Preekstoel WTW Office Space	R1 250	Yes	Yes	Yes
4.2	Existing telemetry system for the water infrastructure needs to be upgraded	Ensure adequate telemetry for the monitoring and management of the water usage	MTEF Project	Yes	OS2526018	Telemetery System Upgrade -Water	R1 000	Partly	Yes	Yes
4.3	Some of the bulk water infrastructure are in a poor or very poor condition and needs to be refurbished.	Refurbish all bulk water infrastructure that are in a poor or very poor condition.	MTEF Project	Yes	OS2526019	Refurbishment of bulk water infrastructure	R3 000	Partly	Yes	Yes
4.4	Some of the components of the Buffels River WTWs need to be refurbished	Refurbish existing WTWs	MTEF Project	Yes	OS2526020	Refurbishment of Buffels River WTW (F1/2, F2/2)	R48 892	Yes	Yes	Yes
4.5	Existing telemetry system for the sewerage infrastructure needs to be upgraded	Ensure adequate telemetry for the monitoring and management of the sewage	MTEF Project	Yes	OS2526021	Telemetery System Upgrade -Sewer	R800	Partly	Yes	Yes
4.6	Asset Management Plan is not in place.	Ensure sufficient budget allocation toward refurbishment of existing water and sewerage infrastructure.	WSDP	No	OS2526022	Compile an Asset Management Plan	R850	Yes	No	No
4.7	WTW Process Audits need to be done annually	Sustainable operation of WTW	WSDP	Yes	OS2526023	Annual WTW Process Audits	-	Yes	Yes	O&M
4.8	WWTW Process Audits need to be done annually	Sustainable operation of WWTW	WSDP	Yes	OS2526024	Annual WWTW Process Audits	-	Yes	Yes	O&M
Topic 5: Conservation and Demand Management (Topic 5.1 Water Resources)										
5.1	WC/WDM measures need to be implemented to further reduce NRW and Water Losses.	Implementation of WC/WDM Strategy measures	WSDP	No	OS2526025	Implement propopsed WC/WDM Strategy measures as included in WSDP (1-3 yrs)	R10 400	Yes	Partially	Partially
5.2	WC/WDM measures need to be implemented to further reduce NRW and Water Losses.	Implementation of WC/WDM Strategy measures	WSDP	No	OS2526026	Implement propopsed WC/WDM Strategy measures as included in WSDP (4-7 yrs)	R14 900	Yes	Partially	Partially
5.3	WC/WDM measures need to be implemented to further reduce NRW and Water Losses.	Implementation of WC/WDM Strategy measures	WSDP	No	OS2526027	Implement propopsed WC/WDM Strategy measures as included in WSDP (8-10 yrs)	R10 900	Yes	Partially	Partially
Topic 5: Conservation and Demand Management (Topic 5.2 Water Balance)										
5.4	Sections of the existing water reticulation networks are in a poor or very poor condition and need to be replaced.	Refurbish all water reticulation pipelines that are in a poor or very poor condition, with regular pipeline failures.	MTEF Project	Yes	OS2526028	Replacement of Overstrand water pipelines	R127 600	Partly	Yes	Yes
5.5	Sections of the existing water reticulation networks are in a poor or very poor condition and need to be replaced.	Refurbish all water reticulation pipelines that are in a poor or very poor condition, with regular pipeline failures.	MTEF Project	Yes	OS2526029	Replacement of water main Pearly Beach	R700	Yes	Yes	Yes
5.6	Meter Replacement Programme	Replace old / broken / leaking meters	WSDP	Yes	OS2526030	Replacement of Overstrand water meters (Part of O&M Budget)	-	Partly	Yes	O&M
5.7	WC/WDM programmes are required at schools to raise awareness	Schools Awareness Programme	WSDP	Yes	OS2526031	WC/WDM Awareness Raising Programmes for Schools (Part of O&M Budget)	-	Partly	Yes	O&M
Topic 6: Water Resources										
6.1	Capacity of existing water resources is inadequate to meet projected future water requirements	Ensure yields of existing sources are adequate to meet future water requirements	MTEF Project	Yes	OS2526032	Upgrade Hermanus Wellfields Phase 2	R10 000	Yes	Yes	Yes
6.2	Capacity of existing water resources is inadequate to meet projected future water requirements	Ensure yields of existing sources are adequate to meet future water requirements	MTEF Project	Yes	OS2526033	Pearly Beach Groundwater Development	R3 000	Yes	Yes	Yes
Topic 7: Financial										
	Done by other Department									
Topic 8: Institutional Arrangements and Customer Care										
TOTAL: CURRENT NEEDS							**R423 880**			
	Funded						R381 535			
	% funded						90%			

Table F.1: WSDP FY2026/27: LIST OF CONCEPTUAL PROJECTS

Nr	Situation Assessment (Problem Definition)	Solution description as defined by topic situation assessment (Strategy)	Conceptual project	Is there an existing project addressing this problem?	Existing Projects Information			Does this current listed project address the problem totally?	Approved by Council, in project database and part of 5 year IDP cycle projects?	Project listed in 3yr MTEF - cycle?
					Project Number (Dept)	Project Title	Project Cost R'000			
FUTURE NEEDS										
Infrastructure										
F.1	Inadequate capacity of existing internal water reticulation networks	Ensure adequate internal water reticulation capacity	Water Master Plan	No	OS2526034	Future internal reticulation network items for Buffels River	R18 079	Yes	No	No
F.2			Water Master Plan	No	OS2526035	Future internal reticulation network items for Kleinmond	R7 036	Yes	No	No
F.3			Water Master Plan	No	OS2526036	Future internal reticulation network items for Greater Hermanus	R61 108	Yes	No	No
F.4			Water Master Plan	No	OS2526037	Future internal reticulation network items for Stanford	R7 216	Yes	No	No
F.5			Water Master Plan	No	OS2526038	Future internal reticulation network items for Greater Gansbaai	R82 923	Yes	No	No
F.6			Water Master Plan	No	OS2526039	Future internal reticulation network items for Pearly Beach	R2 910	Yes	No	No
F.7			Water Master Plan	No	OS2526040	Future internal reticulation network items for Baardskeerdersbos	R129	Yes	No	No
F.8	Inadequate bulk water pipeline distribution capacity	Ensure adequate bulk water pipeline distribution capacity	Water Master Plan	No	OS2526041	Future bulk water pipeline items for Buffels River	R1 059	Yes	No	No
F.9			Water Master Plan	No	OS2526042	Future bulk water pipeline items for Greater Hermanus	R56 771	Yes	No	No
F.10			Water Master Plan	No	OS2526043	Future bulk water pipeline items for Greater Gansbaai	R16 083	Yes	No	No
F.11			Water Master Plan	No	OS2526044	Future bulk water pipeline items for Baardskeerdersbos	R1 246	Yes	No	No
F.12	Inadequate reservoir storage capacity to meet future requirements	Ensure adequate reservoir storage capacity	Water Master Plan	Partly	OS2526045	Future reservoirs for Buffels River	R29 125	Yes	Partly	Partly
F.13			Water Master Plan	Partly	OS2526046	Future reservoirs for Greater Hermanus	R117 843	Yes	Partly	Partly
F.14			Water Master Plan	No	OS2526047	Future reservoirs for for Stanford	R13 839	Yes	No	No
F.15			Water Master Plan	No	OS2526048	Future reservoirs for Greater Gansbaai	R98 565	Yes	No	No
F.16			Water Master Plan	No	OS2526049	Future reservoirs for Pearly Beach	R8 696	Yes	No	No
F.17			Water Master Plan	No	OS2526050	Future reservoirs for Baardskeerdersbos	R1 516	Yes	No	No
F.18	Inadequate water pump station capacity to meet future requirements	Ensure adequate water pump station capacity	Water Master Plan	No	OS2526051	Future pump stations for Buffels River	R5 694	Yes	No	No
F.19			Water Master Plan	No	OS2526052	Future pump stations for Greater Hermanus	R4 624	Yes	No	No
F.20			Water Master Plan	No	OS2526053	Future pump stations for Greater Gansbaai	R20 751	Yes	No	No
F.21			Water Master Plan	No	OS2526054	Future pump stations for Pearly Beach	R875	Yes	No	No
F.22			Water Master Plan	No	OS2526055	Future pump stations for Baardskeerdersbos	R2 228	Yes	No	No
F.23	Water losses and NRW need to be reduced further	Implement WDM infrastructure on internal water reticulation networks	Water Master Plan	No	OS2526056	Future WDM items for Buffels Rivier	R252	Yes	No	No
F.24			Water Master Plan	No	OS2526057	Future WDM items for Kleinmond	R63	Yes	No	No
F.25			Water Master Plan	No	OS2526058	Future WDM items for Greater Hermanus	R884	Yes	No	No
F.26			Water Master Plan	No	OS2526059	Future WDM items for Stanford	R126	Yes	No	No
F.27			Water Master Plan	No	OS2526060	Future WDM items for Greater Gansbaai	R7 556	Yes	No	No
F.28			Water Master Plan	No	OS2526061	Future WDM items for Pearly Beach	R126	Yes	No	No
F.29			Water Master Plan	No	OS2526062	Future WDM items for Baardskeerdersbos	R126	Yes	No	No
F.30			Water Master Plan	No	OS2526063	Future WDM items for Buffeljags Bay	R63	Yes	No	No
F.31	Inadequate capacity of existing bulk and internal sewer drainage network	Ensure adequate bulk and internal sewer drainage capacity	Sewer Master Plan	No	OS2526064	Future bulk and internal sewer drainage network items for Buffels River	R402 808	Yes	No	No
F.32			Sewer Master Plan	No	OS2526065	Future bulk and internal sewer drainage network items for Kleinmond	R81 257	Yes	No	No
F.33			Sewer Master Plan	No	OS2526066	Future bulk and internal sewer drainage network items for Greater	R216 036	Yes	No	No
F.34			Sewer Master Plan	No	OS2526067	Future bulk and internal sewer drainage network items for Stanford	R14 433	Yes	No	No
F.35			Sewer Master Plan	No	OS2526068	Future bulk and internal sewer drainage network items for Greater	R327 456	Yes	No	No
F.36			Sewer Master Plan	No	OS2526069	Future bulk and internal sewer drainage network items for Pearly Beach	R59 844	Yes	No	No
F.37			Sewer Master Plan	No	OS2526070	Future bulk and internal sewer drainage network items for	R6 848	Yes	No	No
F.38			Sewer Master Plan	No	OS2526071	Future bulk and internal sewer drainage network items for Buffeljags Bay	R678	Yes	No	No
F.39	Inadequate capacity of existing sewer pump stations	Ensure adequate pump station capacity	Sewer Master Plan	No	OS2526072	Future sewer pump stations for Buffels River	R55 413	Yes	No	No
F.40			Sewer Master Plan	No	OS2526073	Future sewer pump stations for Kleinmond	R1 385	Yes	No	No
F.41			Sewer Master Plan	No	OS2526074	Future sewer pump stations for Greater Hermanus	R19 042	Yes	No	No
F.42			Sewer Master Plan	No	OS2526075	Future sewer pump stations for Stanford	R2 558	Yes	No	No
F.43			Sewer Master Plan	No	OS2526076	Future sewer pump stations for Greater Gansbaai	R69 623	Yes	No	No
F.44			Sewer Master Plan	No	OS2526077	Future sewer pump stations for Pearly Beach	R9 381	Yes	No	No
F.45	Existing WTW needs to be refurbished	Ensure adequate treatment capacity	WSDP	Partly	OS2526078	Refurbish Kleinmond WTW	R12 347	Yes	Partly	Partly
F.46	No sewer dainage network or plant	Ensure adequate treatment capacity	Sewer Master Plan	No	OS2526079	New conservancy tank or package plant for existing erven (Baardskeerdersbos)	R7 500	Yes	No	No
F.47	No sewer dainage network or plant	Ensure adequate treatment capacity	Sewer Master Plan	No	OS2526080	New conservancy tank or package plant for existing erven (Buffeljags Bay)	R5 000	Yes	No	No
Resources										
F.48	Capacity of existing water resources is inadequate to meet projected future water requirements	Ensure yields of existing sources are adequate to meet future water requirements	WSDP	No	OS2526081	Augmentation of Greater Gansbaai existing sources	R30 000	Yes	No	No
F.49	Capacity of existing water resources is inadequate to meet projected future water requirements	Ensure yields of existing sources are adequate to meet future water requirements	WSDP	No	OS2526082	Augmentation of Pearly Beach existing sources	R10 000	Yes	Partly	Partly
F.50	Capacity of existing water resources is inadequate to meet projected future water requirements	Ensure yields of existing sources are adequate to meet future water requirements	WSDP	Yes	OS2526083	3Ml/day Seawater desalination plant (Phase 1)	R113 623	Yes	Partly	Partly
F.51	Capacity of existing water resources is inadequate to meet projected future water requirements	Ensure yields of existing sources are adequate to meet future water requirements	WSDP	No	OS2526084	3Ml/day Seawater desalination plant (Phase 2)	R113 623	Yes	No	No
F.52	Capacity of existing water resources is inadequate to meet projected future water requirements	Ensure yields of existing sources are adequate to meet future water requirements	WSDP	No	OS2526085	4Ml/day Seawater desalination plant (Phase 3)	R151 497	Yes	No	No
F.53	Capacity of existing water resources is inadequate to meet projected future water requirements	Ensure yields of existing sources are adequate to meet future water requirements	WSDP	No	OS2526086	Bulk provision to Hermanus by Overberg Water (Theewaterskloof Dam)	Not part of Overstrand Budget	Yes	No	No
TOTAL: FUTURE NEEDS							**R2 277 864**			