# OVERSTRAND MUNICIPALITY

## EXECUTIVE SUMMARY

## WATER SERVICES DEVELOPMENT PLAN FOR

## 2010/2011

**DESCRIPTION** **PAGE**

## ABBREVIATIONS AND DEFINITIONS

| | |
|---|---|
| ADWF | Average Dry Weather Flow |
| AMP | Asset Management Plan |
| BD | Backyard Dwellers |
| BHL | Borehole |
| BWP | Bulk Water Pipeline |
| CAFES | Conserving, Adequate, Fair, Enforceable, Simple |
| CBO | Community Based Organisations |
| CCP | CAFES Cost and Pricing Strategy |
| COD | Chemical Oxygen Demand |
| CRC | Current Replacement Cost |
| DEA&DP | Department of Environmental Affairs and Development Planning |
| DLG&H | Department of Local Government and Housing |
| DM | District Municipality |
| DMA | District Metered Areas |
| DMO | Destination Marketing Organisation |
| DRC | Depreciated Replacement Cost |
| DWA | Department of Water Affairs |
| DWQ | Drinking Water Quality |
| DWQM | Drinking Water Quality Management |
| EC | Electric Conductivity |
| EMS | Environmental Management Services |
| EPWP | Expanded Public Works Programme |
| GDPR | Regional Gross Domestic Product |
| GAMAP | General Accepted Municipal Accounting Practices |
| GRAP | General Recognised Accounting Practices |
| HL | High Level |
| IDP | Integrated Development Plan |
| JE | Job Evaluation |
| KPI | Key Performance Indicator |
| LED | Local Economic Development |
| LL | Low Level |
| LLPP | Local Labour Promotion Project |
| LMP | Leakage Management Programme |
| LOFLOS | Low Flow on Site |
| MBH | Monitoring Borehole |
| MIG | Municipal Infrastructure Grant |
| Ml | Mega litre |
| MM | Municipal Manager |
| NGO | Non Governmental Organisation |
| OHS | Occupational Health and Safety |
| OM | Overstrand Municipality |
| P&G | Preliminary and General |
| PDA | Previously Disadvantage Area |
| PMS | Performance Management System |

| | |
|---|---|
| PSP | Professional Service Provider |
| PST | Pump Station |
| RDP | Reconstruction and Development Programme |
| RES | Reservoir |
| RM | Rand Million |
| ROD | Record of Decision |
| RPMS | Regulatory Performance Management System |
| RUL | Remaining Useful Life |
| RWW | Reuse of Waste Water |
| SAMC | Stanford Aquifer Monitoring Committee |
| SANS | South African National Standards |
| SDA | Service Delivery Agreement |
| SDBIP | Service Delivery and Budget Implementation Plan |
| SDF | Spatial Development Framework |
| SFWS | Strategic Framework for Water Services |
| SMME | Small Medium Micro Enterprise |
| SPP | Socio-political Programme |
| TP | Technical Plan |
| UV | Ultra Violet |
| WC | Water Conservation |
| WCC | Water Consumer Connection |
| WC/WDM | Water Conservation / Water Demand Management |
| WCP | Water Conservation Products |
| WDM | Water Demand Management |
| WMA | Water Management Area |
| WPSP | Workplace Skills Plan |
| WR | Water Resource |
| WRP | Water Reticulation Pipeline |
| WSA | Water Services Authority |
| WSDP | Water Services Development Plan |
| WSP | Water Services Provider |
| WTP | Water Treatment Plant |
| WTW | Water Treatment Works |
| WWTW | Waste Water Treatment Works |

| KEY TERMS | INTERPRETATION |
|---|---|
| Basic Water Supply Facility | The infrastructure necessary to supply 25 litres of potable water per person per day supplied within 200 metres of a household and with a minimum flow of 10 litres per minute (in the case of communal water points) or 6 000 litres of potable water supplied per formal connection per month (in the case of yard or house connections). |
| Basic Water Supply Service | The provision of a basic water supply facility, the sustainable operation of the facility (available for at least 350 days per year and not interrupted for more than 48 consecutive hours per incident) and the communication of good water-use, hygiene and related practices. |
| Basic Sanitation Facility | The infrastructure necessary to provide a sanitation facility which is safe, reliable, private, protected from the weather and ventilated, keeps smells to the minimum, is easy to keep clean, minimises the risk of the spread of sanitation-related diseases by facilitating the appropriate control of disease carrying flies and pests, and enables safe and appropriate treatment and/or removal of human waste and wastewater in an environmentally sound manner. |
| Basic Sanitation Service | The provision of a basic sanitation facility which is easily accessible to a household, the sustainable operation of the facility, including the safe removal of human waste and wastewater from the premises where this is appropriate and necessary, and the communication of good sanitation, hygiene and related practices. |
| 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. |
| 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. |
| RUL | The time remaining over which an asset is expected to be used. |
| IDP | A municipal plan as defined in the Municipal Systems Act. |
| MIG | A conditional grant from national government to support investment in basic municipal infrastructure. |
| SFWS | 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. |
| WSA | A water services authority is any municipality that has the executive authority to provide water services within its area of jurisdiction in terms of the Municipal Structures Act 118 of 1998 or the ministerial authorisations made in terms of this Act. 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. |
| WSDP | A plan for water and sanitation services in terms of the Water Services Act. |

| KEY TERMS | INTERPRETATION |
|---|---|
| WSP | A Water services provider is<br>• Any person who has a contract with a water services authority or another water services provider to sell water to, and/or accept wastewater for the purpose of treatment from, that authority or provider (bulk water services provider); and / or<br>• Any person who has a contract with a water services authority to assume operational responsibility for providing water services to one or more consumers (end users) within a specific geographic area (retail water services provider); or<br>• A water services authority which provides either or both of the above services itself |
| 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. |

## EXECUTIVE SUMMARY

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

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. The DWA 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 business elements included in the guidelines and addressed in detail in Overstrand Municipality's (OM's) WSDP are as follows:

- Socio Economic Profile
- Service Level Profile
- Water Resources Profile
- Water Conservation / Demand Management Profile
- Water Services Infrastructure Profile
- Water Balance Profile
- Water Services Institutional Arrangements Profile
- Customer Services Profile
- Financial Profile

The primary instrument of planning in the water services sector is the Water Services Development Plan (WSDP). The following principles apply to the WSDP as taken from the Strategic Framework for Water Services (September 2003):

- 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 expenditure 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 be integrated 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 DWA.
- A WSA must report annually and in a public way on progress in implementing the plan.

The primary purpose of the WSDP is to assist WSAs to carry out their mandate effectively. It is an important tool to assist the WSA to develop a realistic long-term investment plan which prioritises the provision of basic water services, promotes economic development and is affordable and sustainable over time.

| VISION STATEMENT |
| --- |
| **TO BE A CENTRE OF EXCELLENCE FOR THE COMMUNITY** |

| MISSION STATEMENT |
| --- |
| **TO DELIVER OPTIMAL SERVICES IN SUPPORT OF SUSTAINABLE ECONOMIC, SOCIAL AND ENVIRONMENTAL GOALS** |

**The following Strategic Objectives forms the basis of OM's new IDP cycle**

- Provision of democratic and accountable governance.
- Provision and maintenance of municipal services.
- Management and conservation of the natural environment.
- Creation and maintenance of a safe and healthy environment.
- Promotion of tourism, economic and rural development.

Functional Strategies to ensure efficient, affordable, economical and sustainable access to water services that promote sustainable livelihoods and economic development form an integrated part of OM's new IDP. Key Performance Areas, Strategic Objectives and specific targets / indicators with regard to sustainable water services sub-goals, integrated water resource management sub-goals and efficient and effective institutional arrangement sub-goals are also included in OM's SDBIP.

This WSDP is for the 2010/2011 financial year and is an update of OM's 2009/2010 WSDP. The WSDP is aligned and integrated with the 2010/2011 IDP of OM and needs to form an integrated part of the IDP public participation and consultation process. The IDP is predominantly strategic as opposed to the WSDP that are more operationally orientated.

Part of the WSDP is to identify strategic approaches that need to be developed to address the information shortfalls and other constraints, which impact on service delivery. The implementation strategies should not constitute a wish-list, but must be reasonable and achievable within the capital and operational budget and staff constraints of OM. The WSDP should be revised regularly, reporting the information for the previous five years and the projected future requirements. It is not a stagnant document, but rather a living process reliant on improvement and enhancement through the input provided by councillors, officials and technical assistants.

The 2010/2011 WSDP consists of two volumes. The first volume is the report section that was drafted following the DWA's WSDP preparation guidelines (26 January 2006, Revision 10), which was issued to all the WSAs to assist them with their WSDP process. The second volume contains all the Annexures (Maps, models, etc.). The Executive Summary of the WSDP was put together separately so that it can easily be submitted to Council for approval and issued to the public for their comment.

OM falls within the Breede Water Management Area (WMA) and OM's Management Area includes the towns Rooi Els, Pringle Bay, Betty's Bay, Kleinmond, Greater Hermanus, Stanford, Greater Gansbaai, Pearly Beach, Buffeljags Bay, Viljoenshof, Baardskeerdersbos and the farms in the rural areas. Hermanus is the administrative centre of the OM and makes a large economic contribution in terms of tourism, fishing, aquaculture and agriculture.

## ESSENTIAL QUESTIONS

### What are the backlogs and the cost to eradicate the backlogs? (Basic services):

| Area | Water Needs to RDP Level | | | Sanitation Needs to RDP Level | | |
|---|---|---|---|---|---|---|
| | Number of households below RDP standard | % of total households | Cost to provide Water Services | Number of households below RDP standard | % of total households | Cost to provide Sanitation Services |
| Towns | 0 | 0 | R0 | 0 | 0 | R0 |
| Farms | 203 | 11.73 | R1 218 000 | 382 | 22.07 | R2 292 000 |
| **TOTAL** | **203** | **0.71** | R1 218 000 | **382** | **1.33** | **R2 292 000** |

The Western Cape Sanitation Backlog Study (Final Report - January 2007) was undertaken by the DWA and the DLG&H in order to determine the most critical service delivery backlogs to attend to. The backlogs for OM, as identified through this study, are included in the table below.

| Name of town | Households | | | | | Growth as % of existing backlog |
|---|---|---|---|---|---|---|
| | Informal Housing with no access to basic sanitation (Excl. BD) | Informal housing with access to shared service (Excl. BD) | Backyard dwellers (BD) with access to shared service | Total existing backlog | Estimated future backlog due to growth | |
| Rooi Els | 0 | 0 | 0 | 0 | 0 | 0 |
| Pringle Bay | 0 | 0 | 0 | 0 | 0 | 0 |
| Betty's Bay | 0 | 0 | 14 | 14 | 12 | 4 |
| Kleinmond | 0 | 20 | 600 | 620 | 620 | 5 |
| Fisherhaven | 0 | 0 | 0 | 0 | 0 | 0 |
| Hawston | 0 | 0 | 600 | 600 | 960 | 8 |
| Vermont | 0 | 0 | 0 | 0 | 0 | 0 |
| Onrus | 0 | 0 | 0 | 0 | 0 | 0 |
| Sandbaai | 0 | 0 | 0 | 0 | 0 | 0 |
| Zwelihle | 0 | 1 365 | 2 400 | 3 765 | 2 259 | 3 |
| Hermanus | 0 | 0 | 0 | 0 | 0 | 0 |

| Name of town | Households | | | | | Growth as % of existing backlog |
|---|---|---|---|---|---|---|
| | Informal Housing with no access to basic sanitation (Excl. BD) | Informal housing with access to shared service (Excl. BD) | Backyard dwellers (BD) with access to shared service | Total existing backlog | Estimated future backlog due to growth | |
| Voëlklip | 0 | 0 | 0 | 0 | 0 | 0 |
| Stanford | 0 | 177 | 254 | 431 | 690 | 8 |
| Die Kelders | 0 | 0 | 0 | 0 | 0 | 0 |
| Gansbaai | 0 | 1 020 | 781 | 1 801 | 2 880 | 8 |
| Franskraal | 0 | 0 | 0 | 0 | 0 | 0 |
| Kleinbaai | 0 | 0 | 0 | 0 | 0 | 0 |
| Pearly Beach | 0 | 101 | 100 | 201 | 80 | 4 |
| **TOTALS** | **0** | **2 683** | **4 749** | **7 432** | **7 501** | |

Note: Baardskeerdersbos, Buffeljags Bay and Viljoenshof (Wolvengat) were not included in the Western Cape Sanitation Backlog Study that was undertaken by the DWA and the DLG&H, but will form part of OM's future planning.

## What is the status of supply of higher levels of service?

## Present service levels:

| Area | Water | | Sanitation | |
|---|---|---|---|---|
| | Basic RDP | Higher than RDP | Basic RDP | Higher than RDP |
| Towns | 2 353 | 24 570 | 2 353 | 24 570 |
| Farms | 145 | 1 383 | 90 | 1 259 |
| **TOTAL** | **2 498** | **25 953** | **2 443** | **25 829** |

The Western Cape Sanitation Backlog Study indicated that the following capital funding is needed to address the basic services and housing backlogs in the towns in OM's Management Area.

| Name of town | Total cost for water infrastructure | Total cost for sewer infrastructure | Total cost for internal water and sewer infrastructure | Total cost to eradicate sanitation backlog |
|---|---|---|---|---|
| Betty's Bay | R6 524 000 | R50 000 | R112 000 | R6 686 000 |
| Kleinmond | R11 730 000 | R33 704 000 | R4 960 000 | R50 394 000 |
| Hawston | R19 869 472 | R10 798 933 | R4 800 000 | R35 468 405 |
| Zwelihle | R5 557 888 | R0 | R30 120 000 | R35 677 888 |
| Stanford | R8 024 974 | R16 412 000 | R3 448 000 | R27 884 974 |
| Gansbaai | R33 252 382 | R36 339 620 | R14 408 000 | R84 000 002 |
| Pearly Beach | R3 126 600 | R50 000 | R1 608 000 | R4 784 600 |
| **TOTALS** | **R88 085 316** | **R97 354 553** | **R59 456 000** | **R244 895 869** |

Note: Baardskeerdersbos, Buffeljags Bay and Viljoenshof (Wolvengat) were not included in the Western Cape Sanitation Backlog Study that was undertaken by the DWA and the DLG&H, but will form part of OM's future planning.

## What is the strategy to eradicate backlogs?

All households in informal areas are provided with minimum basic water and sanitation services (Communal standpipes and toilets shared between households) as a temporary solution. Appropriate health and hygiene education are also provided to the households in order to minimise the risk of health related problems.

OM is committed to determine the current service levels (quality and quantity) on the farms in the rural areas, to ensure that private land owners provide at least basic water and sanitation services to the households with existing services below RDP standard and to assist where appropriate.

## IMPACTING FACTORS
## (Associated services, economic growth and social and environmental (health) issues).

OM, like all other WSAs countrywide, faces a series of challenges with respect to the delivery of efficient, affordable, economical and sustainable services:

- Provision of basic services on a sustainable basis.
- Stimulating local economic development.
- Sound management of its financial affairs.
- Strengthening continued community participation in the affairs of Local Government.
- Provision of subsidised / low cost housing.
- Development of a social strategy.
- Growing population, unemployment and poverty.
- Continued reformation in local government.
- Backlogs in infrastructure.

Associated services:

The Strategic Framework for Water Services (SFWS) places an appropriate focus on the imperative of ensuring universal access by households to at least a basic water supply and sanitation service. However, the provision of effective and efficient water services to meet the economic demand of all consumers (domestic and non-domestic) is equally important.

One of the visions of the Sector is that all people living in South Africa have access to adequate, safe, appropriate and affordable water and sanitation services, use water wisely and practise safe sanitation (SFWS).

One of the goals of the Sector is that water and sanitation services are provided (SFWS):

- Equitably (adequate services are provided fairly to all people);
- Affordably (no one is excluded from access to basic services because of their cost);
- Effectively (the job is done well);
- Efficiently (resources are not wasted);
- Sustainably (services are financially, environmentally, institutionally and socially sustainable; and
- Gender sensitively (taking into account the different needs and responsibilities of women and men with regard to water services and sanitation).

The following types of sanitation technology options will be investigated by OM when they develop their sanitation service level policy.

- VIP latrines and approved Eco-San dry, on-site sanitation systems.
- Low flow on site (LOFLOS) systems
- Septic tanks

- LOFLOS or septic tanks with solids-free sewers also referred to as septic tank effluent drainage (STED) systems.
- Full water-borne sanitation.

OM works towards providing all households in the towns with a water connection inside the yard or inside the house and connecting all households in the towns to a waterborne sanitation system in order to prevent any possible pollution of the groundwater and to prevent any future grey water problems that might occur.

Economic growth:

The region is internationally famous for the abundance of whales which visit Walker Bay on an annual basis. The Hermanus area has been given the tag of "The best land based whale-watching site in the world". Internationally, it is now also increasingly becoming known for shark-cage diving in the Gansbaai area where Great White Sharks are a major attraction.

The Arabella luxury resort with the international championship Arabella golf course, international award winning AltiraSPA health spa and five star hotel is found at the Bot River estuary.

The long coastline of the Overstrand is still an underutilized resource with great potential for aquaculture. The rapid decline in conventional fishing places emphasis on this alternative for the traditional fishing community. Commercial abalone farming has already made the Overstrand a leader in the field.

There are two dominant features of the local economy that merit high level attention. First, the future of the Overstrand economy cannot be separated from the region's natural heritage. The physical beauty of the area is its single biggest asset, but the natural resource base may also limit growth if resources are not effectively managed. In Overstrand the economy and its ecology are inseparable. OM has a fairly diversified economy and a great potential for tourism.

The second is the highly racialised and geographically concentrated poverty of the area. Economic forces (e.g. the decline in fishing and the seasonality of tourism and agriculture) impact negatively on the semi-skilled and unskilled workforce of Overstrand, while the growth sectors have benefited mainly the wealthy. In migration of poor and unskilled people to the area is associated with rising rates of poverty and inequality. Other than the formal safety nets of grants, the poor depend on informal work (construction) or on the third economy of illegal livelihoods (e.g. abalone poaching).

Social issues:

Social responsibility is demonstrated in the annual contributions given by OM to the National Sea Rescue Institute, Overstrand Conservation Foundation and several institutions working with skills development, adult education, the elderly, HIV/Aids victims, job creation, animal welfare, etc. The table below gives an overview of OM's Socio-economic trends and indicators.

| Socio-economic indicators: | Overstrand Municipality | Overberg District |
|---|---|---|
| GDPR 2004 | R1 billion | R3.3 billion |
| Unemployment rate 2001 | 21.7% | 18.6% |
| Number of unemployed 2001 | 5 171 | 16 539 |
| Proportion of households with no income 2001 | 11.7% | 9.7% |
| Number of Households with no income 2001 | 2 202 | 5 686 |

| Socio-economic indicators: | Overstrand Municipality | Overberg District |
|---|---|---|
| **Education:** | | |
| Number of schools (Primary & High) | 21 | 77 |
| Percentage of illiterate people over 14 (less than grade 7) | 19.0% | 27% |
| Educator – learner ratio | 39 | 37 |
| **Crime measures (reported crime):** | | |
| Number of police stations (2004/05) | 4 | 13 |
| Number of murders (2004/05) | 31 | 118 |
| Drug related crimes (2002/03) | 176 | 843 |
| Drug related crimes (2004/05) | 459 | 1 976 |
| Total number of cases reported (2004/05) | 5 484 | 15 294 |
| Number of rapes (2004/05) | 74 | 272 |
| **Strengths** | **Challenges** | |
| Fairly diversified economy and room for further growth. | Escalating drug-related crimes | |
| Potential for tourism growth. | High TB prevalence | |
| Room for capital expenditure | Growing population, unemployment and poverty | |
| Less exposed to agriculture | Limited human and natural resources | |
| Dependent on own revenue generation | Ageing infrastructure accompanied by backlogs | |

*Socio Economic Profile: Overberg District 2006: Provincial Treasury*

## Health issues:

The table below gives an overview of the health indicators in OM's Management Area, compared to the Overberg District.

| Health Indicators | Overstrand Municipality | Overberg District |
|---|---|---|
| Number of medical facilities | 11 | 47 |
| Percentage births under 2,5 kg (National target < 10%) | 12% | 16% |
| TB prevalence per 100 000 people | 1 092 | 1 142 |
| HIV / Aids prevalence rate (2005) | 4.5% | 4.1% |
| Number of HIV/AIDS deaths (2005) | 897 | 2 527 |
| Nurse : patient ratio | 37 | 29 |
| Proportion under 1 with 1$^{st}$ measles immunisation (National target: 90%) | 80% | 75% |
| TB Cure rate % (National target: 85%) | 73% | 74% |
| HIV/AIDS prevalence rate (2010) | 5.2% | 4.9% |
| Number of HIV/Aids deaths (2010) | 1 168 | 3 108 |

*Source: Department of Health (2005)*

The number of Hospital and Clinic facilities within the OM's Management Area is as follows:

- Hermanus Hospital and District Hospital
- Clinics in Hermanus, Hawston, Mount Pleasant, Onrus, Zwelihle, Stanford, Gansbaai and Kleinmond.
- Satellite clinics in Baardskeerdersbos and Eluxolweni.

*Strategic Gap:* OM has identified the need for more hospitals and clinics. The following issues / actions were identified through engagements with the Department of Health.

| Stanford | Gansbaai | Greater Hermanus | Kleinmond | Overstrand |
|---|---|---|---|---|
| New Clinic was recently built | No hospital facilities exist in Gansbaai and the need for at least a day hospital was registered for the past 10 years.<br>No permanent ambulance services are available and the turn-out time from Hermanus is unacceptable. | Relocate Hermanus Clinic to Provincial Hospital<br>Upgrading / additional clinic in Zwelihle<br>HIV/Aids centre – Zwelihle | Hospital with 24 hours emergency service<br>Extension of clinic service to include residents in Betty's Bay and Pringle Bay and upgrading of Kleinmond clinic | Need for more ambulances.<br>Need for separate transport from the ambulance.<br>The Department of Health is currently embarking on hiring more officials. |

It is important that the backlogs that still exist on the farms, with regard to basic sanitation services, be eradicated. 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 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.

*Implementation Strategies:* Emphasis is placed on infant care, family planning, HIV/Aids and TB treatment. Processes are in place to manage the transition as well as functioning of the health care sector in line with the laid down Provincial protocols and guidelines.

OM will 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 Environmental Health Practitioners.

Environmental issues:

The stretch of coastline includes three remarkable blue flag beaches, namely Kleinmond, Grotto and Hawston. The Grotto beach received the prestigious international "Blue Flag" award for four consecutive years.

The Management Area also includes the Kogelberg Biosphere Reserve which is only one of two such areas in the Republic. It is commonly referred to as the heart of the Cape floral kingdom as roughly one fifth of all known fynbos species occurs here.

An Environmental Management Services Section (EMS) was created to advise Council on environmental concerns. The EMS section addresses the concerns of environmental management policy, public participation, scientific decision support and compliance with the provisions of Environmental Legislation. This focus will guide and promote continual improvement in the management of the natural environment within the municipal region.

Environmental Education are undertaken (also in collaboration with NGOs) on dedicated environmental days e.g. Arbor Day. A monthly dedicated article on environmental issues is published in the monthly municipal newsletter as an awareness tool. The department displays their activities at the yearly Whale Festival as a token of their commitment towards sustainability awareness in the community.

The functional strategies of the EMS Section are as follows:

- Biodiversity planning;
- Promotion of cooperative governance;
- Development of management plans & implementation schedules;
- Environmental management auditing;
- Promotion of a better understanding of the natural environment;
- Initiation of environmental management projects to address threats to the environment.

*Global warming:* The risk of global warming that is likely to strike the Western Cape poses threats in rainfall amounts and changing seasonality of rain. Future projections of climate show that there is going to be fewer strong or deeper low-pressure systems in winter months (June, July and August) resulting in less rainfall. In addition to predicted decline in rainfall, increased temperatures in the Western Cape would further result in increased evaporation and an increase in irrigation requirements. Although this has no impact on current water requirement estimates, the impact of climate change must be taken into consideration when developing planning scenarios for future water requirements.

Shortage of rain or changing seasonal patterns will not only affect dam levels, but will also severely hamper agricultural production as crops currently produced are based on the current season of rain.

*Water Management:* The climate change has serious implications for the competing interests of environmental integrity and socio-economic development. It is therefore important for WSAs to develop coping strategies to increase efficiency in water use.

In order to ensure efficient and effective water services delivery, it is essential for OM to ensure adequate operation and maintenance of their existing infrastructure. The development and implementation of an Asset Management Plan is therefore critical.

## WHAT IS THE STATUS OF ALL WATER INFRASTRUCTURE? (Effective water resource management)

OM has been one of the more proactive municipalities in the Western Cape Province in responding to the call from many quarters to improve the management of municipal infrastructure assets. OM compiled a comprehensive Asset Register of all their infrastructure during 2009.

Water Infrastructure: The current and depreciated replacement cost of the water infrastructure of OM is summarised in the table below:

| Current and depreciated replacement cost of the water infrastructure | | | | |
|---|---|---|---|---|
| **Asset Type** | **GIS ID** | **CRC** | **DRC** | **% DRC/CRC** |
| Dams | DAM | R18 935 000 | R12 507 990 | 66.1 |
| Boreholes | BHL | R5 295 080 | R4 282 403 | 80.9 |
| Monitoring Boreholes | MBH | R1 300 000 | R229 635 | 17.7 |
| Bulk Water Pipelines | BWP | R101 463 687 | R28 838 111 | 28.4 |
| Pump Stations | PST | R27 443 778 | R10 322 743 | 37.6 |
| Reservoirs | RES | R134 305 108 | R73 839 700 | 55.0 |
| Water Reticulation Pipelines | WRP | R481 640 341 | R77 581 952 | 16.1 |
| Consumer Connections | WCC | R247 919 000 | R18 900 378 | 7.6 |
| Buffels River WTWs | WTP 04 | R38 771 556 | R7 417 329 | 19.1 |
| Kleinmond WTWs | WTP 03 | R15 113 385 | R2 666 011 | 17.6 |
| Preekstoel WTWs | WTP 02 | R41 994 344 | R23 614 532 | 56.2 |
| Franskraal New WTWs | WTP 01 | R33 189 585 | R32 177 002 | 96.9 |
| Franskraal Old WTWs | WTP 01 | R9 050 902 | R6 628 009 | 73.2 |
| **Totals** | | **R1 156 421 766** | **R299 005 794** | **25.9** |

The above table means that 74.1% of the value of the water supply network has been consumed.

The following table gives an overview of the remaining useful life and the age distribution by facility type for the water infrastructure (CRC):

| Overview of the remaining useful life by facility type for the water infrastructure (CRC) | | | | | | |
|---|---|---|---|---|---|---|
| **Asset Type** | **GIS ID** | **0 – 5 yrs** | **5 – 10 yrs** | **10 – 15 yrs** | **15 – 20 yrs** | **> 20 yrs** |
| | | | **RUL** | | | |
| Dams | DAM | R80 000 | R0 | R225 000 | R0 | R18 630 000 |
| Boreholes | BHL | R210 000 | R1 175 574 | R2 698 716 | R160 000 | R1 050 790 |
| Monitoring Boreholes | MBH | R450 000 | R150 000 | R700 000 | R0 | R0 |
| Bulk Water Pipelines | BWP | R60 587 042 | R0 | R22 933 | R0 | R40 853 712 |
| Pump Stations | PST | R11 719 724 | R10 255 658 | R3 722 796 | R165 000 | R1 580 600 |
| Reservoirs | RES | R8 216 362 | R2 607 508 | R9 248 785 | R13 943 778 | R100 288 675 |
| Water Reticulation Pipelines | WRP | R373 252 613 | R0 | R5 160 852 | R0 | R103 226 876 |
| Consumer Connections | WCC | R195 517 000 | R26 474 000 | R25 928 000 | R0 | R0 |
| Buffels River WTWs | WTP 04 | R33 087 654 | R932 798 | R0 | R0 | R4 751 104 |
| Kleinmond WTWs | WTP 03 | R9 437 722 | R2 576 040 | R0 | R0 | R3 099 623 |
| Preekstoel WTWs | WTP 02 | R4 882 413 | R20 145 650 | R7 186 788 | R1 403 988 | R8 375 505 |
| Franskraal New WTWs | WTP 01 | R0 | R207 000 | R17 354 671 | R0 | R15 627 914 |
| Franskraal Old WTWs | WTP 01 | R0 | R4 543 060 | R0 | R0 | R4 507 842 |
| **Totals** | | **R697 440 530** | **R69 067 288** | **R72 248 541** | **R15 672 766** | **R301 992 641** |

| Overview of the age distribution by facility type for the water infrastructure (CRC) | | | | | | |
|---|---|---|---|---|---|---|
| **Asset Type** | **GIS ID** | **0 – 5 yrs** | **5 – 10 yrs** | **10 – 15 yrs** | **15 – 20 yrs** | **> 20 yrs** |
| **Age distribution by Facility Type** | | | | | | |
| Dams | DAM | R0 | R0 | R8 000 | R6 266 000 | R12 589 000 |
| Boreholes | BHL | R3 568 146 | R1 323 184 | R0 | R0 | R403 750 |
| Monitoring Boreholes | MBH | R0 | R0 | R0 | R0 | R1 300 000 |
| Bulk Water Pipelines | BWP | R0 | R607 248 | R24 102 666 | R5 651 276 | R71 102 497 |
| Pump Stations | PST | R6 067 870 | R8 041 276 | R2 717 120 | R1 172 796 | R9 444 716 |
| Reservoirs | RES | R11 617 928 | R8 746 892 | R12 882 064 | R24 683 744 | R76 374 479 |
| Water Reticulation Pipelines | WRP | R11 665 271 | R8 173 026 | R43 937 690 | R12 802 162 | R405 062 192 |
| Consumer Connections | WCC | R0 | R0 | R0 | R0 | R247 919 000 |
| Buffels River WTWs | WTP 04 | R5 683 902 | R0 | R0 | R0 | R33 087 654 |
| Kleinmond WTWs | WTP 03 | R0 | R0 | R0 | R0 | R15 113 385 |
| Preekstoel WTWs | WTP 02 | R19 571 875 | R1 631 809 | R4 520 693 | R14 505 750 | R1 764 217 |
| Franskraal New WTWs | WTP 01 | R33 189 585 | R0 | R0 | R0 | R0 |
| Franskraal Old WTWs | WTP 01 | R0 | R9 050 902 | R0 | R0 | R0 |
| **Totals** | | **R91 364 577** | **R37 574 337** | **R88 168 233** | **R65 081 728** | **R874 160 890** |

The condition grading per water facility type is summarised in the table below:

| Condition grading per water facility type | | | | | | |
|---|---|---|---|---|---|---|
| **Asset Type** | **GIS ID** | **Very Good** | **Good** | **Fair** | **Poor** | **Very Poor** |
| Dams | DAM | R0 | R16 452 000 | R2 003 000 | R400 000 | R80 000 |
| Boreholes | BHL | R3 227 794 | R990 819 | R576 823 | R289 644 | R210 000 |
| Monitoring Boreholes | MBH | Unknown | Unknown | Unknown | Unknown | Unknown |
| Bulk Water Pipelines | BWP | R11 624 495 | R18 736 695 | R7 043 911 | R3 448 611 | R60 609 975 |
| Pump Stations | PST | R3 952 508 | R3 423 977 | R3 762 570 | R5 739 339 | R10 565 384 |
| Reservoirs | RES | R11 220 969 | R35 770 171 | R56 792 643 | R25 097 082 | R5 424 243 |
| Water Reticulation Pipelines | WRP | R38 436 238 | R38 428 226 | R1 094 852 | R25 267 560 | R378 413 465 |
| Consumer Connections | WCC | Unknown | Unknown | Unknown | Unknown | Unknown |
| Buffels River WTWs | WTP 04 | R4 751 104 | R932 798 | R0 | R0 | R33 087 654 |
| Kleinmond WTWs | WTP 03 | R0 | R0 | R3 099 623 | R2 576 040 | R9 437 722 |
| Preekstoel WTWs | WTP 02 | R406 788 | R34 090 837 | R1 579 569 | R1 310 985 | R4 606 165 |
| Franskraal New WTWs | WTP 01 | R33 189 585 | R0 | R0 | R0 | R0 |
| Franskraal Old WTWs | WTP 01 | R0 | R4 507 842 | R4 543 060 | R0 | R0 |
| **Totals** | | **R106 809 481** | **R153 333 365** | **R80 496 051** | **R64 129 261** | **R502 434 608** |

About 80.2% of the water supply network (Bulk and Reticulation Water Pipelines) is in a poor and very poor condition and the condition backlog is in the order of R567M. The bulk of the backlog is made up of bulk water pipeline and water reticulation pipeline assets.

Sanitation Infrastructure: The current and depreciated replacement cost of the water infrastructure of OM is summarised in the table below:

| Current and depreciated replacement cost of the water infrastructure | | | | |
|---|---|---|---|---|
| **Asset Type** | **GIS ID** | **CRC** | **DRC** | **% DRC/CRC** |
| Sanitation Pump Stations | SPS | R46 566 690 | R26 856 558 | 57.7% |
| Sewer Reticulation Pipelines | SRP | R306 422 671 | R240 834 979 | 78.6% |
| Sewer Consumer Connections | WCC | R177 085 000 | R13 500 270 | 7.6% |
| Stanford WWTWs | STW02 | R11 051 703 | R6 817 751 | 61.7% |
| Hermanus WWTWs | STW03 | R32 146 838 | R18 402 452 | 57.2% |
| Hawston WWTWs | STW04 | R8 564 664 | R4 566 997 | 53.3% |
| Kleinmond WWTWs | STW05 | R7 405 568 | R5 854 421 | 79.1% |
| Gansbaai WWTWs | STW06 | R20 070 512 | R16 559 715 | 82.5% |
| **Totals** | | **R609 313 646** | **333 393 143** | **54.7%** |

The above table means that 45.3% of the value of the sewage supply network has been consumed.

The following table gives an overview of the remaining useful life and the age distribution by facility type for the sanitation infrastructure (CRC):

| Overview of the remaining useful life by facility type for the water infrastructure (CRC) | | | | | | |
|---|---|---|---|---|---|---|
| **Asset Type** | **GIS ID** | **0 – 5 yrs** | **5 – 10 yrs** | **10 – 15 yrs** | **15 – 20 yrs** | **> 20 yrs** |
| **RUL** | | | | | | |
| Sanitation Pump Stations | SPS | R3 933 063 | R30 525 150 | R6 218 222 | R576 250 | R5 314 005 |
| Sewer Reticulation Pipelines | SRP | R0 | R0 | R0 | R0 | R306 422 671 |
| Sewer Consumer Connections | WCC | R139 655 000 | R18 910 000 | R18 520 000 | R0 | R0 |
| Stanford WWTWs | STW02 | R27 119 | R5 777 489 | R653 398 | R347 100 | R4 246 597 |
| Hermanus WWTWs | STW03 | R6 717 556 | R7 499 730 | R3 163 767 | R3 938 057 | R10 827 728 |
| Hawston WWTWs | STW04 | R3 826 780 | R0 | R0 | R1 072 000 | R3 665 884 |
| Kleinmond WWTWs | STW05 | R165 600 | R3 148 206 | R0 | R0 | R4 091 762 |
| Gansbaai WWTWs | STW06 | R0 | R3 328 783 | R4 614 552 | R172 080 | R11 955 097 |
| **Totals** | | **R154 325 118** | **R69 189 358** | **R33 169 939** | **R6 105 487** | **R346 523 744** |

| Overview of the age distribution by facility type for the water infrastructure (CRC) | | | | | | |
|---|---|---|---|---|---|---|
| **Asset Type** | **GIS ID** | **0 – 5 yrs** | **5 – 10 yrs** | **10 – 15 yrs** | **15 – 20 yrs** | **> 20 yrs** |
| **Age distribution by Facility Type** | | | | | | |
| Sanitation Pump Stations | SPS | R14 324 405 | R26 074 466 | R1 135 662 | R3 652 292 | R1 379 865 |
| Sewer Reticulation Pipelines | SRP | R21 992 579 | R24 370 068 | R244 119 120 | R15 940 904 | R0 |
| Sewer Consumer Connections | WCC | R0 | R0 | R0 | R0 | R177 085 000 |
| Stanford WWTWs | STW02 | R3 233 276 | R3 574 740 | R0 | R3 997 620 | R246 067 |
| Hermanus WWTWs | STW03 | R9 104 289 | R10 928 717 | R2 094 960 | R4 847 368 | R5 171 504 |
| Hawston WWTWs | STW04 | R0 | R0 | R8 564 664 | R0 | R0 |
| Kleinmond WWTWs | STW05 | R7 405 568 | R0 | R0 | R0 | R0 |
| Gansbaai WWTWs | STW06 | R12 465 949 | R3 438 763 | R0 | R2 150 800 | R2 015 000 |
| **Totals** | | **R68 526 066** | **R68 386 754** | **R255 914 406** | **R30 588 984** | **R185 897 436** |

The condition grading per water facility type is summarised in the table below:

| Condition grading per water facility type | | | | | | |
|---|---|---|---|---|---|---|
| **Asset Type** | **GIS ID** | **Very Good** | **Good** | **Fair** | **Poor** | **Very Poor** |
| Sanitation Pump Stations | SPS | R6 859 000 | R11 094 810 | R23 948 392 | R3 187 148 | R1 477 340 |
| Sewer Reticulation Pipelines | SRP | R46 362 647 | R260 060 025 | R0 | R0 | R0 |
| Sewer Consumer Connections | WCC | Unknown | Unknown | Unknown | Unknown | Unknown |
| Stanford WWTWs | STW02 | R777 808 | R6 563 088 | R3 582 188 | R128 619 | R0 |
| Hermanus WWTWs | STW03 | R6 145 749 | R6 580 944 | R7 757 733 | R8 173 433 | R3 488 979 |
| Hawston WWTWs | STW04 | R86 040 | R4 651 844 | R0 | R3 819 880 | R6 900 |
| Kleinmond WWTWs | STW05 | R4 091 762 | R3 148 206 | R165 600 | R0 | R0 |
| Gansbaai WWTWs | STW06 | R12 403 849 | R3 416 939 | R4 249 724 | R0 | R0 |
| **Totals** | | **R76 726 855** | **R295 515 856** | **R39 703 637** | **R15 309 080** | **R4 973 219** |

About 3.4% of the sewage supply network is in a poor and very poor condition and the condition backlog is in the order of R20.3M. The bulk of the backlog is made up of sewer pump stations and sewage treatment works assets.

**Effective management**

The management of the existing water and sanitation services is being undertaken to the absolute best ability of OM, within the considerable financial and technical constraints which prevail. The most pressing need of OM is to improve capacity and access to finances in order to ensure adequate rehabilitation and maintenance of their existing infrastructure and funds to address the existing and future infrastructure backlogs.

The table below gives a summary of the potential renewal projects for water and sanitation infrastructure, as included in the recent developed Asset Register of OM. All assets with a condition grading of “poor” and “very poor” are included in the table below (For the individual items please refer to the Municipality’s Asset Register).

| WATER INFRASTRUCTURE | | | | |
|---|---|---|---|---|
| **GIS ID** | **Refurbishment Needs** | **CRC** | **Condition Grade** | **RUL** |
| DAM02 | Buffels river dam bridge | R80 000 | Very Poor | 3 |
| DAM03 | Disakloof concrete dam wall | R400 000 | Poor | 36 |
| BHL10, 11, 12 | De Kelders, Stanfords Bay and Perlemoen Bay borehole sump | R210 000 | Very Poor | 1 |
| BHL 2, 9 | Buffeljags Bay pump, motor, Cylinder, pressure gauge, Light and Stanford Spring channel | R289 645 | Poor | 6, 18 |
| BWP | Refurbishment of bulk pipelines | R60 609 975 | Very Poor | 1, 11 |
| BWP | Refurbishment of bulk pipelines | R3 448 611 | Poor | 21 |
| PST 1-8, 10, 12 | Motor, pump, pressure gauge, fence, light, building, distribution board | R10 565 383 | Very Poor | 1, 3, 10 |
| PST 4, 5, 12, 15, 17, 18, 20 | Motor, pump, pressure gauge, fence, light, building, distribution board | R5 739 339 | Poor | 4-7, 10, 11, 15 |
| RES 1-3, 8-11, 13, 15, 22, 24-26 | Valve Chamber, Pump, Motor, Fence, Cylinder, Light, Telemetry | R5 424 242 | Very Poor | 1-4, 6, 10 |
| RES 1, 4, 5, 8, 9, 11, 13, 14, 16-18, 21, 22, 24, 27, 37 | Valve Chamber, Pump, Motor, Fence, Cylinder, Light, Telemetry | R25 097 082 | Poor | 1, 4, 5, 10, 12, 13, 15, 18 |
| WRP | Refurbishment of water reticulation pipelines | R378 413 465 | Very Poor | 1, 11 |
| WRP | Refurbishment of water reticulation pipelines | R25 267 560 | Poor | 21 |
| WTP 04 | Lights, pressure gauge, pumps, valve chambers, mixing tank, motor, telemetry, distribution board, filters | R33 087 654 | Very Poor | 1, 5 |

| WATER INFRASTRUCTURE | | | | |
|---|---|---|---|---|
| **GIS ID** | **Refurbishment Needs** | **CRC** | **Condition Grade** | **RUL** |
| WTP 03 | Lights, pressure gauge, pumps, valve chambers, mixing tank, motor, telemetry, distribution board, filters | R9 437 722 | Very Poor | 1 |
| WTP 03 | Lights, pressure gauge, pumps, valve chambers, mixing tank, motor, telemetry, distribution board, filters | R2 576 040 | Poor | 7 |
| WTP 02 | Lights, pressure gauge, pumps, valve chambers, mixing tank, motor, telemetry, distribution board, filters | R4 606 166 | Very Poor | 2, 3, 10 |
| WTP 02 | Lights, pressure gauge, pumps, valve chambers, mixing tank, motor, telemetry, distribution board, filters | R1 310 985 | Poor | 5, 18 |
| **Total** | | **R566 563 869** | | |

| SANITATION INFRASTRUCTURE | | | | |
|---|---|---|---|---|
| **GIS ID** | **Refurbishment Needs** | **CRC** | **Condition Grade** | **RUL** |
| SPS 1, 9, 10, 27, 28, 36 | Motor, pump, distribution board, telemetry, valve chambers, sump | R1 477 340 | Very Poor | 2, 3, 6, 10 |
| SPS 7, 9, 12, 1-18, 20, 26, 34, 35 | Motor, pump, distribution board, fence, valve chambers, sump | R3 187 148 | Poor | 5, 18 |
| STW02 | Valve chamber, pump sump, clarifier sludge pump | R128 619 | Poor | 5, 18 |
| STW03 | Mechanical screen, pump, motor, degritter, inlet, building | R3 488 979 | Very Poor | 3, 6, 10 |
| STW03 | Pump, screen, reactor, drying bed | R8 173 433 | Poor | 4, 5, 11, 12, 18 |
| STW04 | Access road | R6 900 | Very Poor | 1 |
| STW04 | Mechanical screen, light, pumps, distribution board, fence, bioreactor | R3 819 880 | Poor | 4 |
| **Total** | | **R20 282 299** | | |

The WSDP for the OM is a business plan setting out the way in which OM must effectively manage, plan and deliver services to individuals and businesses in its area of jurisdiction, as summarized in the water services business element summary below:

## WATER SERVICES BUSINESS ELEMENT SUMMARY (Status quo, gaps and implementation strategies)

A summary of each of the ten business elements is provided below. Focus is placed on the status quo, current gaps and implementation strategies for each of the ten business elements. The Report and Annexure Sections of the WSDP need to be referred to for more detail.

## SOCIO-ECONOMIC PROFILE

Status quo:

OM's population grew by 4% per annum compared to the District average of 2.5% (Socio Economic Profile: Overberg District 2006, Provincial Treasury) for the period 2001 to 2006. The 2009 population of OM is currently estimated at approximately 83 126 persons. The table below gives a summary of the various population projection figures:

| Source | Calculated Growth for 2001 to 2007 (%) | Estimated 2007 Population | Estimated 2009 Population with same growth |
|---|---|---|---|
| Community Survey, 2007 | 5.06 | 74 574 | 82 312 |
| 2008/09 IDP | 4.60 | 73 031 | 79 904 |
| OM's 2007/08 IDP: Estimated population for 2012 is 82 773 persons (Growth of 2.54% for 2007 to 2012). | | | |
| ASSA model estimates a growth rate to 3.1% per annum in the period 2007 to 2012. | | | |

Total net migration in the OM's Management Area was high in 2003, but declined thereafter relatively steady but slow. This trend suggests that migration has already peaked and there are no expectations of any huge influxes of people into the OM's Management Area in the near future. Whites are projected to have the highest net migration numbers across the years, followed by Coloureds, whereas Black Africans are projected to show the lowest net migration (2001-2025). Net migration for Black Africans is expected to taper-off faster than the other racial groups (Socio Economic Profile, Overberg District 2006, Provincial Treasury).

Children form a large portion of OM's population, with approximately 8% of the total population being under 4 years old. The youthful population trend is forecast to continue, but the population is expected to age marginally, reflecting a smaller proportion of people under the age of 25 by 2012. The youth (15-35 years) accounts for 31% of OM's total population (OM's IDP Revision 2009/10).

The aged (75-89) currently account for 3% of OM's population, reflecting the large number of retirees in the region. The age dependency ratio ({Total number of 0-14 year olds plus 65+-year olds} / working-age population, i.e. number of 16-64 year olds) for the Overstrand is projected to increase from 55.7% in 2001 to 57.81% in 2006 (the highest in the Overberg District), rising to 60.61% by 2010. The high dependence ratio implies that more than half the Municipality's population are too young and too old to look after themselves, thereby placing a huge burden on the working-age population.

OM has a very high proportion of people who are considered skilled (44.4%) and the proportion of highly skilled individuals is also fairly high (18.1%) for 2001. The high percentage of skilled workforce in OM can be attributed to the well-diversified economic base.

The contribution to GDPR by individual sectors indicates that the Overstrand economy is well represented in the fastest growing services sectors in the Western Cape and is fairly well diversified. OM has very limited mining, and water and electricity sector activities though. The Agriculture, forestry and fishing sector is relatively small in the Overstrand, contributing only 6.2% to the GDPR in 2004, compared to the District average of 21.1%. Major agricultural activities include mixed farming (production of crops and animals), fishing, fruits, beverage crops production and aquaculture.

Gaps:

It is important that the residential, commercial and industrial water usages and the number of consumer units for each of these categories be recorded separately under a unique tariff code in OM's financial system. This will be done from the 2010/2011 financial year.

The negative trend in learner enrolment needs to be addressed as soon as possible, as the current crop of learners will become the future labour force of the region. Additionally, as the economy continues to develop, the emphasis on skilled labour will only increase, which will make it even more difficult for learners without appropriate qualifications to obtain employment.

Investing in infrastructure creates an enabling environment for economic growth and is an important precondition for sustainable growth. OM has harbours at Hermanus and Gansbaai that are predominantly used by small and medium-sized fishing vessels. These harbours are relatively underdeveloped but have the potential to boost economic growth in the Overstrand if they are further developed.

Although the Overstrand has a potential for growth at much higher rates, failure to improve the current state of infrastructure poses a serious threat to the local economy. The deterioration of networks in the coastal areas and rapid development, which is not matched by growing capital expenditure, further exacerbates the situation. Adequate rehabilitation and maintenance of the existing infrastructure is critical in order to ensure the medium to long term sustainability of the existing infrastructure. OM is currently also busy with the development of groundwater sources for the Greater Hermanus area, in order to address the water shortages threat of the area.

Implementation strategies:

OM acknowledges its role in the lives of the youth, by supporting projects and capacity building initiatives of various Non Governmental Organisations (NGOs) and Community Based Organisations (CBOs) – Junior Town Council. A special effort is made to engage the school-going youth through the Junior Council, which is fully representative of all Overstrand Communities. The Enlighten Education Trust, an Overstrand based non-governmental organization, is facilitating the Junior Council as an educational project on behalf of the OM. OM has entered into a partnership with the Umsobomvu Youth Fund to establish a Youth Advisory Centre to assist young people to gain access to resources including entrepreneurial opportunities. Through this programme the youth will be well prepared to take advantage of services and resources available to them to improve their livelihoods. OM also support projects initiated in support of the aged by different NGOs and CBOs.

OM collaborated with the private sector and local non-profit organizations to provide needed skills at all levels, commissioned a skills audit and gap assessment and a skills development exercise focusing on specific priorities. The table below gives an overview of the various skills activities:

| Skills Audit and GAP Assessment with specific focus on low skilled and less educated communities | Skills Development Plan and Strategy to address gaps – Roles and Responsibilities | Provision of priority skills focusing on upliftment and improvement of skills |
|---|---|---|
| • Existing skills and how they can be utilized<br>• Skills needed and how they can be developed.<br>• Private sector needs and future developments in terms of skills to be utilized.<br>• Existing institutions (proximity, availability and potential) and provision of skills.<br>• Priority skills and provision thereof. | • Relevant partnerships as vehicles to deliver on skills development.<br>• Private sector involvement to identify priorities, needs and funding thereof<br>• Identifying the need for appropriate institutions – FET<br>• Implementation plan to deal with outcomes of the audit. | • Early childhood learning approach and support of ABET.<br>• Sharing of outcomes with other institutions.<br>• Department of Education building of needed schools.<br>• FET opportunity according to the market and skills.<br>• Partnering and collaborating with local NGOs to upskill communities. |

The Local Labour Promotion Project (LLPP) of OM was initiated with the view to reduce outstanding municipal debt and provides income opportunities to communities with high unemployment and poverty levels. This is achieved by allowing the unemployed, those who are in service payment arrears and other needy groups within the communities to be part of the delivery of municipal services and the construction of new public facilities.

The project was devised as a means of effecting socio-economic upliftment, as part of the local authority's strategy to bring about poverty alleviation through job creation whilst enhancing the prospects of reducing outstanding municipal consumer debt. This concept embarked on an initiative in terms of which debtors, particularly those who were unemployed, were targeted for participation in a local capital project aimed at addressing a communal backlog in terms of facilities. Participants earn a weekly wage whilst contributing financially towards the reduction of their outstanding municipal debts. The main objectives of the LLPP are as follows:

- Create employment.
- Reduce poverty.
- Reduce outstanding municipal debts.
- Transfer / develop skills.
- Create facilities, build infrastructure and improve service delivery.
- Draw people into the economy (opening bank accounts).
- Build pride of ownership in the community.
- Involve communities in developing their areas.

Various social upliftment projects are also executed as LLPPs e.g.

- Paving of cul-de-sacs in previously disadvantaged areas.
- Development of play parks.
- Paving of sidewalks.
- Beautification of residential areas through planting of trees etc.
- Improvement / development of informal trading areas.
- Upgrading of clubhouses, community halls and other public amenities.
- En-suite toilets for elderly people in Zwelihle.
- Toilets and wash-basins in informal settlements in Zwelihle.

The proposed goals of OM's economic development strategy are as follows:

- Increase economic growth to 6% per annum by 2014.
- Sustain the natural resource base for future generations
- Broaden participation in the economy.
- Halve official unemployment and poverty by 2014.
- Build the human capital of the residents of Overstrand, especially the poor, in line with the changing needs of the economy.

The LED Strategy comprises of the following eight strategic interventions:

- Facilitate the development of the priority economic sectors in Overstrand, by utilizing all resources at its disposal including sector development interventions being driven by other spheres of Government to grow the priority sectors identified as tourism, creative industries, fishing and agriculture.
- Facilitate connectivity between different types of communities, different interests and the various towns in the Overstrand with a focus on public transport.
- Develop the infrastructural capacity of the Overstrand and ensure an enabling spatial framework by utilising inter alia municipality assets.

- Develop “and deploy” a marketing strategy for the Overstrand. The Destination Marketing Organisation (DMO) was established during February 2008.
- Create an enabling environment for business development and growth with a focus on SMME support.
- Manage the natural resources and state assets with the assistance of other spheres of government in a manner that ensures the long-term transformation and sustainability of the economy.
- Promote the development of the economies of the poor through job creation programmes.
- Assist with developing the human resource and skills base of the people of Overstrand with the creation of training capacity.

The proposed interventions to propel Local Economic Development include the following (The interventions are comprehensively discussed in OM’s IDP):

- Tourism sector support
- Creative industries sector support
- Fishing industry sector support
- Agriculture
- Connectivity (Bridging the divisions between places and people)
- Infrastructure development
- Marketing
- Enabling business environment
- Resource and asset management
- Economies of the poor
- Human resource development

OM also identified partnership programmes with high potential impact on provision of job opportunities, small enterprise development and skills development, which include the following Special projects:

- The Cape Film Commission
- Umthimkhulu Village {Kleinmond}
- The Neighbourhood Development Programme Grant
- Destination Marketing
- The Development Agency known as the Overstrand Local Economic Development Agency
- Youth Advisory Centre
- LED Projects
- Broad Based Black Economic Empowerment

## SERVICE LEVEL PROFILE

Status quo:

The current service levels within OM's Management Area are as follows:

| Distribution System | 1. None or inadequate | 2. Communal water supply | 3. Controlled volume supply | 4. Uncontrolled volume supply: yard tap or house connection | 5. Total served (2+3+4) | 6. Total (1+5) |
|---|---|---|---|---|---|---|
| Buffels River | 0 | 0 | 0 | 2 058 | 2 058 | 2 058 |
| Kleinmond | 0 | 350 | 0 | 2 139 | 2 489 | 2 489 |
| Greater Hermanus | 0 | 1 008 | 0 | 14 164 | 15 172 | 15 172 |
| Stanford | 0 | 145 | 0 | 880 | 1 025 | 1 025 |
| Greater Gansbaai | 0 | 750 | 0 | 4 951 | 5 701 | 5 701 |
| Pearly Beach | 0 | 100 | 0 | 378 | 478 | 478 |
| Farms | 203 | 145 | 0 | 1 383 | 1 528 | 1 731 |
| **Total** | **203** | **2 498** | **0** | **25 953** | **28 451** | **28 654** |

| Distribution System | 1. None or inadequate : below RDP : Pit | 2. None or inadequate : below RDP : Bucket | 3. Consumer installation : On site (Ablution Blocks) | 4. Consumer installations: Wet (Septic tanks, digester or tanker desludge, etc.) | 5. Discharge to water treatment works (intermediate or full waterborne) | 6. Total served (3+4+5) | 7. Total (1+2+6) |
|---|---|---|---|---|---|---|---|
| Buffels River | 0 | 0 | 0 | 2 058 | 0 | 2 058 | 2 058 |
| Kleinmond | 0 | 0 | 350 | 1 020 | 1 119 | 2 489 | 2 489 |
| Greater Hermanus | 0 | 0 | 1 008 | 1 774 | 12 390 | 15 172 | 15 172 |
| Stanford | 0 | 0 | 145 | 611 | 269 | 1 025 | 1 025 |
| Greater Gansbaai | 0 | 0 | 750 | 4 027 | 924 | 5 701 | 5 701 |
| Pearly Beach | 0 | 0 | 100 | 378 | 0 | 478 | 478 |
| Farms | 255 | 127 | 90 | 1 259 | 0 | 1 349 | 1 731 |
| **Total** | **255** | **127** | **2 443** | **11 127** | **14 702** | **28 272** | **28 654** |

The clinics and hospitals in OM's Management Area have adequate and safe water supply and sanitation services. All the schools in OM's Management Area also have adequate and safe water supply and sanitation services.

Gaps:

OM has eradicated the existing water and sanitation backlogs that existed in their Management Area to a great extent and it is clear that the number of households with service levels below RDP standard is far less in OM than some of the other Municipalities in the Western Cape.

All the households in the urban areas of OM's Management Area are provided with water connections inside the houses. Informal areas are supplied with shared services as an intermediary measure. It is important for OM to determine the current service levels on the farms and to ensure that once the number of households below RDP standard is known at least basic water and sanitation services are provided to these households.

The current services backlogs (Below RDP standard) with regard to water and sanitation services in OM's Management Area are as follows:

**Water**: Towns – 0 Households Farms – 203 Households Overall Percentage – 0.71%

**Sanitation**: Towns – 0 Households Farms – 382 Households Overall Percentage – 1.33%

*Sludge disposal:* All the screenings grit and dried or dewatered sludges at the five WWTWs should be disposed of off-site. An investigation into a suitable treatment option for Betty's Bay, Pringle Bay and Rooi Els will be undertaken in the near future.

It is important for the schools in OM's Management Area to focus on Water Demand Management activities and for OM to support the schools with a WDM programme. It is also important for OM to work with the large industrial water users to identify ways in which they can lower their current water demand by means of improved practices or re-use of waste water. Such processes can include the following:

- Good practices
- Grey water recycled to toilets (by means of biological sterilization)
- Wash water inside factory (by means of biological infiltration)

A "Form of Application for Permission to Discharge Industrial Effluent into the Municipality's sewer" is included in OM's water services by-laws and all persons now need to formally apply for the discharge of industrial effluent into the sewer system.

The following gaps with regard to industrial consumers and their discharge of effluent into OM's sewer system were identified:

- Industrial effluent discharge into the sewer system needs to be metered.
- All persons need to formally apply for the discharge of industrial effluent into the sewer system.
- Regular sampling of the quality of industrial effluent discharged into the sewer system is necessary.
- Any returns from the industries direct to the WR System needs to be metered.

<u>Implementation strategies:</u>

OM is committed to support the private landowners on the farms, as far as possible, with regard to the provision of basic water and sanitation services to those households with existing services below RDP standard.

OM's commitment with regard to the eradication of the current water and sanitation backlogs in their Management Area can be summarised as follows:

- To develop a water and sanitation service level policy.
- Determine the current service levels on the farms (Water and Sanitation) and assist private landowners to put together an action plan to provide services to those households with existing service levels below RDP standards.

It is important for the schools in OM's Management Area to focus on Water Demand Management activities and for OM to support the schools with a WDM programme.

It is important for OM to promote WDM activities at the wet industrial and large commercial consumers in order for them to potentially lower their current water demand by means of improved practices or reuse of waste water. The revenue could potentially decrease as a result of re-use practices. It is suggested that a detailed financial analysis should be conducted as part of the investigation into wastewater re-use. OM can set up meetings with the large industrial and commercial water users, which should include the following:

- Explain the environmental benefits on water resources.
- Explain the financial benefits to the consumer.
- Be informative on the current water consumption status.
- Present the potential water saving.
- Cultivate a water saving awareness within each large user.
- Involve at least 50% of large users in the municipality.

OM can encourage the large users to implement suggested re-use practices by means of incentives, informative billing to communicate monthly water consumption and monitoring and communicating actual savings achieved.

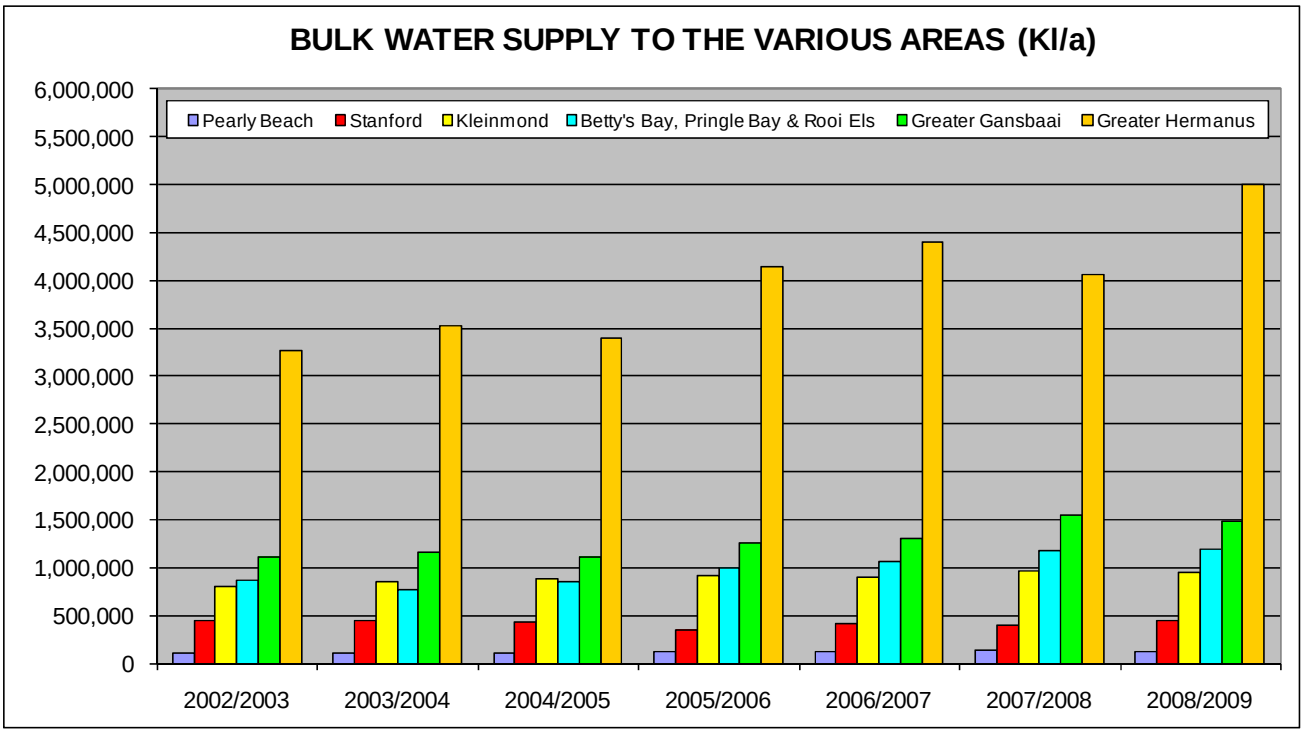
OM is committed to ensure that all persons apply for the discharge of industrial effluent into the sewer system, to monitor the quality and volume of industrial effluent discharged and to implement the set of by-laws with regard to the discharge of industrial effluent into OM's sewer system.

OM needs to adopt a system through which the various parameters at all industrial consumers are monitored, as well as volumetric monitoring at the larger users. Adaptation of the procedures must be undertaken in accordance with any changes to the wastewater discharge criteria set by DWA. 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.

## WATER RESOURCE PROFILE

Status quo:

*Resources:* The graph below gives an indication of OM's total annual bulk water supply over the last seven years to the various areas.




Detail water demand models were developed for every town. The models include the future projections up to 2034 and were calibrated by using historic consumption data and bulk abstraction data. Water losses were determined for each of the distribution systems and growth in demand was based on agreed population and growth figures. The following reduction of water losses was taken into account for the future projected water demands:

| Distribution System | Towns | 2009 (%/a) | 2014 (%/a) | 2034 (%/a) |
|---|---|---|---|---|
| Buffels River | Betty's Bay, Pringle Bay & Rooi Els | 63.9 | 35 | 25 |
| Kleinmond | Kleinmond | 34.2 | 20 | 15 |
| Greater Hermanus | Greater Hermanus | 18.5 | 10 | 10 |
| Stanford | Stanford | 42.7 | 20 | 15 |
| Greater Gansbaai | Greater Gansbaai | 32.7 | 20 | 15 |
| Pearly Beach | Pearly Beach | 16.6 | 10 | 10 |
| Baardskeerdersbos | Baardskeerdersbos | 17.7 | 10 | 10 |
| Buffeljags Bay | Buffeljags Bay | 15.0 | 10 | 10 |
| **Overstrand Average** | | | **15.6** | **13.7** |

| Distribution System | Towns | PROJECTED FUTURE WATER DEMANDS FROM WSDP MODEL (Mλ / year) | | | | |
|---|---|---|---|---|---|---|
| | | 2014 | 2019 | 2024 | 2029 | 2034 |
| Buffels River | Rooi Els, Pringle Bay & Betty's Bay | 914.880 | 1 206.992 | 1 618.750 | 2 204.348 | 3 043.651 |
| Kleinmond | Kleinmond | 1 004.105 | 1 237.676 | 1 530.717 | 1 899.112 | 2 363.107 |
| Greater Hermanus | Greater Hermanus | 5 631.604 | 6 817.882 | 8 273.306 | 10 062.084 | 12 264.252 |
| Stanford | Stanford | 452.949 | 561.422 | 698.219 | 871.025 | 1 089.659 |
| Greater Gansbaai | Greater Gansbaai | 1 668.073 | 2 227.337 | 3 000.723 | 4 076.321 | 5 579.883 |
| Pearly Beach | Pearly Beach | 144.928 | 192.941 | 259.021 | 350.537 | 478.018 |
| Baardskeerdersbos | Baardskeerdersbos | 9.552 | 10.439 | 11.411 | 12.477 | 13.646 |
| Buffeljags Bay | Buffeljags Bay | 2.708 | 2.960 | 3.237 | 3.541 | 3.874 |
| **Overstrand Total** | | **9 828.799** | **12 257.649** | **15 395.384** | **19 479.445** | **24 836.090** |

Water and Wastes Utilisation Solutions assessed the registered and authorised water uses for OM during 2009 and identified non compliance regarding the legal water use for the Municipality as described in the National Water Act. OM is currently busy to register all water usage with the DWA.

*Stanford:* To support the monitoring aspect of the project a Stanford Aquifer Monitoring Committee (SAMC) was set up in April 2008. A Monitoring Protocol was adopted at the meeting of the SAMC, held on 30 September 2008. The protocol requires that groundwater users monitor abstraction and groundwater level using available means and supply this data to Umvoto on a monthly basis to be collated into annual monitoring reports. Although the protocol was accepted in principal, implementation is on-going. Monitoring points were refined in the SAMC's June 2009 meeting to prioritise which private users are requested to become involved in monitoring.

*Greater Hermanus Area:* OM appointed PSPs to proceed with groundwater investigation and exploration projects. Umvoto Africa (Pty) Ltd was appointed in 2001 to establish and manage the Gateway wellfield in the town of Hermanus, and SRK Consulting was appointed to establish the Camphill wellfield in the Hemel en Aarde Valley in 2007, and to carry out further exploration in a third potential wellfield site. The investigations were carried out in several steps and focused on an integrated approach for the water supply problem of OM, with particular focus on the exploration of the groundwater resources in the close proximity of the Onrus River Catchment area (G40H).

After completing the drilling and testing programme in the Gateway wellfield a monitoring programme was developed to establish baseline/datum information on the aquifer system and the groundwater component in relation to the hydrological cycle. The monitoring system was based upon the existing infrastructure of surface and subsurface water utilisation, which is documented in the hydrocensus report (Umvoto, 2003), undertaken in the Greater Hermanus area. The comprehensive monitoring programme was developed to increase the understanding of the aquifer response to abstraction and the interconnections between surface water, primary aquifer and fractured-rock aquifer. Furthermore, the monitoring programme serves to detect the impact of natural changes in the hydrological cycle on ecosystems and other water users.

The table below gives an overview of the current status for the Gateway and Camphill Wellfieds:

| Gateway Wellfield | Camphill Wellfield |
|---|---|
| • 3 Production holes in Peninsula Aquifer.<br>• 18 Monitoring holes, 6 in Peninsula Aquifer.<br>• 2 Ground based ecological monitoring sites.<br>• Regional ecological monitoring.<br>• Private Skurweberg use at Hemel en Aarde Estate monitored. | • 4 Proposed production holes in Peninsula Aquifer.<br>• Monitoring boreholes: 1 in Peninsula, 2 in Bokkeveld.<br>• Ground based ecological sites under consideration.<br>• Regional ecological monitoring<br>• Monitoring of private Peninsula users planned. |

The licensing status for the Gateway Wellfield is as follows:

- DEA&DP – ROD was awarded
- Reserve awarded
- Final license to be awarded during March 2010.
- Conditions require: Monitoring protocol followed (V.2.1) and Aquifer Management Strategy to be followed (5 mamsl drawdown cut off, Early Warning System and Emergency Response System).

The following work was completed in the Hemel-en-Aarde Valley during the 2008/2009 financial year:

- The siting and drilling of four production and three monitoring boreholes at Target Area 3.
- Single and wellfield test at Target Area 3.
- The siting of four exploration boreholes at Target Area 4
- Initiated monitoring programme

The work planned for the 2009/2010 financial year include the drilling and testing of the Target 4 boreholes and to conduct basic assessment and Water Use License Application.

*Water Quality:* OM drafted their first Water Safety Plan during 2009/2010. A qualified, dedicated team was established by OM to compile the Water Safety Plan. Detailed flow diagrams of the distribution systems and the water treatment processes were completed for each of the systems. A detailed risk assessment was executed and the existing control measures implemented by OM was summarised. An Improvement / Upgrade Plan was also developed with relevant Water and Safety Management Procedures.

The Water Safety Plan Team of OM is committed to meet regularly to review all aspects of the Water Safety Plan to ensure that they are still accurate. In addition to the regular three year review, the Water Safety Plan will also be reviewed when, for example, a new water source is developed, major treatment improvements are planned and brought into use, or after a major water quality incident.

The percentage compliance of the water quality samples taken over the last twelve months (Febr 09 to Jan 2010), as loaded onto DWA's DWQM system, is as follows.

- E.Coli (Health), Sample Count 254, Compliance 96.5% (WC Compliance 98.8%)
- Total Coliforms (Operational), Sample Count 257, Compliance 90.3% (WC Compliance 94.5%)
- pH (Aesthetic / Operational), Sample Count 256, Compliance 88.3% (WC Compliance 97.2%)
- Turbidity (Aesthetic / Operational / Indirect Health), Sample Count 185, Compliance 78.9% (WC Compliance 80.9%)
- Electrical Conductivity (Aesthetic), Sample Count 97, Compliance 99.0% (WC Compliance 99.3%)
- Aluminium (Health), Sample Count 253, Compliance 53.8% (WC Compliance 81.6%)
- Iron (Aesthetic / Operational), Sample Count 253, Compliance 85.0% (WC Compliance 85.0%)

The EMS Section of OM is currently undertaking an extensive water monitoring programme on recreational waters to determine the severity of faecal pollution in the Klein River Estuary. Data collected and assimilated from the monthly samples will form the basis of a monthly Water Quality Report which will be used to recommend actions to address health hazards in the Estuarine and marine recreational environment. The long-term goal is to extend the monitoring programme to embrace estuarine and marine environments throughout the municipal region. This will enable the department to establish accurate data and to recommend best practice in the management of these systems to ensure appropriate water quality.

*Pollution Contingency Measures:* OM has and will continue to undertake the following measures to prevent pollution of the WR Systems.

- Investigating all sewage pump stations to ensure that emergency storage capacities and backup generators are available at the sewage pump stations, to prevent any possible spillages.
- Timeous upgrading of the WWTWs, to handle both volume and nutrient loading, in order to reduce the risk of spills and sub-standard effluent.
- Regular monitoring of treated effluent discharged to the WR System at all the WWTWs.
- Water Services By-laws which include "Approval to discharge industrial effluent", "Quality standards for disposal of industrial effluent" and "Conditions for the discharge of industrial effluent". Industrial effluent discharged into the sewer system will be monitored regularly by OM.

A Formal Pollution Contingency Plan is not yet in place and OM is committed to draft a Plan for their Management Area.

Gaps:

*Resources:* The table below gives an overview of the years in which the annual water demand will exceed the sustainable yield from the various resources:

| Distribution System | Total sustainable Yield (x $10^6$ $m^3$/a) | 3% or 4% Annual Growth on 2009 Demand | 5% or 6% Annual Growth on 2009 Demand | WSDP Projection Model |
|---|---|---|---|---|
| Buffels River | 1.617 | 2018 (3%) | 2015 (5%) | 2024 |
| Kleinmond | 2.589 | > 2034 (3%) | 2029 (5%) | > 2034 |
| Greater Hermanus | 7.060 | 2017 (4%) | 2014 (6%) | 2019 |
| Stanford | 0.396 | Yield already exceeded during 2007 | | |
| Greater Gansbaai | 2.931 | 2026 (4%) | 2020 (6%) | 2023 |
| Pearly Beach | 0.212 | 2028 (3%) | 2020 (5%) | 2020 |
| Baardskeerdersbos | 0.090 | > 2034 (3%) | > 2034 (5%) | > 2034 |
| Buffeljags Bay | 0.013 | > 2034 (3%) | > 2034 (5%) | > 2034 |

Note: Viljoenshof (Wolvengat) is addressed as part of the Groundwater Study with which OM is currently busy.

The yield of the present resources and the historical measured annual demands for the period 2003/2004 to 2008/2009 are summarised in the table below (Ml/a):

| Towns | Source | Yield | 08/09 | 07/08 | 06/07 | 05/06 | 04/05 | 03/04 |
|---|---|---|---|---|---|---|---|---|
| Rooi Els, Pringle Bay & Betty's Bay | Buffels River Dam | **1 500** | 1189.339 | 1175.136 | 1055.810 | 993.071 | 853.805 | 772.740 |
| | Disakloof Cascades | **117** | 7 | 7 | 7 | 7 | 7 | 7 |
| Kleinmond | Palmiet River (Allocation) | **2 246** | 839.468 | 897.898 | 855.616 | 862.653 | 866.266 | 770.981 |
| | Dorpsfontein & Borehole | **342** | 114.193 | 66.821 | 50.048 | 60.229 | 16.177 | 85.746 |
| Greater Hermanus | De Bos Dam | **2 800** | 4 846.278 | 3 936.711 | 4 268.983 | 4 018.963 | 3 292.465 | 3 415.748 |
| | Peninsula Aquifer | **4 260** | - | - | - | - | - | - |
| Stanford | Spring | **396** | 448.820 | 398.800 | 412.552 | 350.630 | 430.203 | 453.580 |
| Gansbaai | Klipgat | **480** | 586.735 | 547.139 | 504.645 | 480.411 | 484.296 | 509.767 |
| | De Kelders Grotte | **153** | 204.939 | 195.856 | 152.570 | 184.111 | 170.362 | 195.515 |
| | Stanfords Bay | **35** | 8.187 | 57.174 | 42.597 | 47.113 | 35.149 | 21.546 |
| | Perlemoen Bay | **44** | 26.182 | 53.624 | 56.819 | 61.758 | 43.644 | 63.781 |
| | Klipfontein Borehole | **89** | 57.675 | 90.476 | 41.576 | 0 | 0 | 0 |
| | Franskraal Dam | **2 135** [1)] | 592.025 | 596.383 | 510.085 | 477.296 | 379.377 | 369.940 |
| Pearly Beach | Springs | **212** [2)] | 126.760 | 133.059 | 122.981 | 117.653 | 106.451 | 99.201 |
| Baardskeerdersbos | Stream & Borehole | **90** | 12.489 | 9.173 | 12.795 | 4.642 | | |
| Buffeljags Bay | Borehole | **13** | 2.572 | 2.933 | 3.841 | 2.142 | | |
| **Overstrand Total** | | **14 912** | **9055.669** | **8161.190** | **8090.925** | **7660.679** | **6678.202** | **6758.552** |

Note: 1) Include the Kraaibosch Dam, yields in the previous WSDP were estimated at 135 Ml/a for the Franskraal Dam and 2 000 Ml/a for the Kraaibosch Dam.

2) Yield estimated at 580 Kl/day (SRK – Nov 2000)

*Water Quality:* The DWA launched the blue and green drop certification, with regard to drinking water quality and the quality of treated effluent discharged from WWTWs, at the Municipal Indaba during September 2008. Blue drop status is awarded to those towns that comply with 95% criteria on drinking water quality management. Green drop status is awarded to those WSAs that comply with 90% criteria on key selected indicators on waste water quality management.

The blue drop performance of OM is summarised as follows in the DWA's 2009 Blue Drop Report:

| **Average Blue Drop Score** | | **42.5%** | **Average DWQ Compliance** | | **98.2%** |
|---|---|---|---|---|---|
| **Regulatory Impression:** While OM is displaying an ability to provide tap water which complies with the health parameters of the national standard, improvement is required in DWQ management in its entirety to ensure that the supply of safe tap water be sustained. The WSA can take encouragement out of the good performance of Hermanus. | | | | | |
| **BLUE DROP REPORT CARD** | | | | | |
| **Criteria** | **Franskraal** | **Stanford** | **Buffels River** | **Kleinmond** | **Hermanus** |
| Process Controlling | E | A | E | B | E |
| DWQ Monitoring Programme Efficiency | B | B | B | B | B |
| Credibility of Sample Analysis | A | A | A | D | A |
| Regular submission of DWQ data to DWA | A | G | G | G | A |
| DWQ compliance | E | E | E | E | A |
| Response to failures | G | G | G | G | G |
| Blue Drop Score | 41% | 38% | 31% | 33.5% | 69% |
| Actual DWQ compliance with Health Parameters of the National Standard | 96.6% | 99% | Information not available | Insufficient data | 99% |

The Improvement / Upgrade Plan of OM's Water Safety Plan gives a summary of all the existing gaps within OM's Management Area with regard to Drinking Water Quality Management. The Plan is included in the Annexure Report of the WSDP.

*Pollution Contingency Measures:* OM needs to develop a Formal Pollution Contingency Plan for all possible point and diffuse sources of pollution.

Implementation strategies:

*Resources: T*he bulk water supply for the Buffels River, Kleinmond, Greater Gansbaai and Pearly Beach distribution systems will be adequate for the next five years, if OM actively implement their WC Programme and WDM Strategy in order to obtain the reduction in water losses as allowed for in the water balance models for the various systems.

Bulk water supply for the Stanford and Greater Hermanus distribution systems is the most critical at this stage.

**Stanford:** OM appointed Umvoto Africa (Pty) Ltd in October 2007 to undertake a study regarding water resource development and management of the Stanford Aquifer to augment the water supply to Stanford. The main aim of the programme is to secure groundwater as a long-term option to augment the town's water supply and to establish an aquifer management plan.

Monitoring data is analysed as part of the monitoring process and used to revise estimates of groundwater recharge rate, the sustainable yield from the "Eye" and any impact of the two boreholes at Birkenhead Brewery on flow from the "Eye". In addition, Umvoto revised its policy for data downloading and processing to ensure that any anomalies in groundwater level data are immediately dealt with. In order to better manage the Stanford Aquifer, further monitoring is required. The following actions were identified in the Stanford Monitoring Report, January 2010:

- Re-install V-notch 2 and logger;
- fix / replace the logger at the "Eye";
- v-notch weir at Springfontein; and
- survey boreholes

***Greater Hermanus Area:*** To ensure that the groundwater abstraction from the Peninsula Aquifer at the Gateway wellfield does not impact negatively on the Reserve, the environment and existing users, the following license conditions are considered necessary:

- Development of a numerical aquifer and wellfield model, which can simulate different scenarios and forms the basis for wellfield operation procedures. This needs to be based on a sound conceptual model and the data collected to date.

- The Monitoring Programme needs to be implemented prior to commencing full scale abstraction from the wellfield.

- The monitoring during operation needs to be automated as far as possible, to avoid unnecessary data gaps and unreliable data.

The following Resource Quality Objectives and threshold values need to become license conditions:

- The pumping capacity of the abstraction works need to be limited to 60 l/s and abstraction needs to be limited to 5 000 m³/day.
- Records need to be kept of, as specified in the Monitoring Programme:
  - Water levels in the abstraction boreholes at an hourly interval;
  - Water levels in specified monitoring boreholes at an hourly interval;
  - Pumping rates, pumping times and daily volumes abstracted;
  - Electric conductivity (EC) in the abstracted groundwater from each abstraction borehole separately at an hourly interval;
  - EC in specified monitoring boreholes at a daily to weekly interval;
  - Chemical analysis of water samples from abstraction and monitoring boreholes, as specified in the Monitoring Programme, at a monthly interval;
  - Weather data from automated weather stations in the vicinity of the wellfield at an hourly interval.
- The records, the data analysis and reporting need to be made available to the Responsible Authority and other relevant organisations.
- Pumping needs to be ceased automatically, using appropriate technology, if
  - The water level in the abstraction boreholes drops below 5m above mean sea level; or
  - The EC in the abstracted water increases above 200 mS/m
- Pumping needs to be ceased or reduced, if negative impacts on the environment or other existing users are encountered during monitoring.
- Pumping needs to be ceased or reduced, if the water quality decreases due to seawater intrusion or pollution from sewage works, landfill site or others.

During the Rapid and Intermediate Reserve Determination the following issues were identified, which need to be addressed and followed up with fieldwork:

- Groundwater use: A detailed hydrocensus needs to be undertaken to verify the groundwater use in the Hemel en Aarde Valley, as well as to update the hydrocensus results for the Hermanus area.
- Base flow: Spring hydrocensus along the escarpment to verify baseflow calculations, especially the groundwater discharge from the Peninsula Aquifer into the Mossel River; Use of environmental tracers and or isotopes to estimate the groundwater contribution to baseflow.
- Comprehensive Reserve Determination: A comprehensive Reserve Determination should be undertaken in resource units, once the applications for groundwater abstraction exceed 75% of the allocatable water with respect to the classification of the desired ecological status.

The recommendations included in Umvoto's Report "Results of Gateway and Camphill Wellfield Monitoring Programme, April 2009 to September 2009" for the Development and Management Plan for the Greater Hermanus Area are as follows:

| Importance | Recommendation | Status | Responsibility |
|---|---|---|---|
| **Monitoring Network** | | | |
| Critical | The leaking artesian borehole HAV2 requires re-sealing | Planned for the first half of 2010 | OM, SRK |
| Critical | The following additional monitoring boreholes are recommended: The proposed monitoring boreholes FK02 and GWM11 need to be drilled as extension of the Gateway monitoring network to provide for early warning monitoring sites towards the sea (GWM11) and towards the recharge area in the Fernkloof Nature Reserve (FK02). If HAV2, HAV3 and HAV4 all become production holes an additional dedicated monitoring hole which penetrates the confined Peninsula is recommended. | Funding was agreed from DWA but is currently on hold. Drilling may commence in April 2010. | OM, Umvoto, SRK |
| Critical | There are a number of private users in the Camphill valley and it is not appropriate that the municipality funds monitoring for all private users. It is recommended that the municipal by laws in Camphill area be enforced to require all private abstractions to monitor water level and flow. | | OM, Umvoto |
| Critical | The monitoring point Chanteclaire is un-impacted by the Gateway wellfield as it is in a separate fault compartment. The monitoring point is within the same fault compartment as the Camphill wellfield and so it is necessary as a monitoring point for the effects of pumping at Camphill. It is recommended that monitoring equipment is re-installed at Chanteclaire. | Re-equipping is accommodated for in the next financial year from July 2010 (not yet approved) | OM, Umvoto |
| Critical | The following ecological monitoring recommendations are made: Use SRK hydrocensus and the original CVA analysis to identify perennial sites in the Camphill area and conduct 'ground truthing' in mid summer 2010. Visit the potential ecological monitoring site in Vogelgat highlighted in CVA, during mid summer 2010 to 'ground truth' the vegetation, geological setting, and whether it is perennial. Re analyse the NDVI calculation with verified ground coordinates | Planned for January – February 2010 | OM, Umvoto |
| Medium Term | Monitoring points in Camphill will require linking to the telemetry system in order to facilitate real time monitoring | Upgrades are accommodated for in next financial year from July 2010 (not yet approved) | OM, Umvoto |
| Medium Term | The impact of the wellfield on other aquifers is imperative to understand so that the influence of other wellfields e.g. Camphill, can be quantified. The current assumptions about the intersected aquifers in the boreholes west of Gateway (HAE3, HAE5), and also GWM05 need to be verified and confirmed, if possible. This would require geophysical logging of the holes and geological re-mapping if necessary. | Geophysics is accommodated for in next financial year from July 2010 (not yet approved) | OM, Umvoto |
| **Aquifer Management** | | | |
| Medium Term | Recharge estimates can now be updated with improved geological understanding, and with isotope and chloride data. | Planned for 2010-2011 financial year as part of wellfield management guidelines | OM, Umvoto |
| **Wellfield Management** | | | |
| Critical | Wellfield monitoring infrastructure (flow meters) be reinstalled immediately in order to facilitate re-starting the long term pump test. | | OM |

*Water Quality:* The following commitments are set by OM with regard to water quality:

- Implementation of the Improvement / Upgrade Plan as included in the Water Safety Plan.

- Motivate and register all water use entities with the DWA, using the existing and immediate future capacities, because most of the water uses needs registering and formal authorisation.

- Classify all treatment works and operators along the lines of the regulations by establishing a programme for certification of works, operators, technicians and managers. The process will include reviewing the skills needed and aligning resources to these needs as well as reviewing total staff numbers necessary to meet all the objectives in the National Water Act.

- Establish a mentoring role for operators ensuring an adequately trained and classified workforce with dedicated training programmes for supervisors and operators. Establish budgets to address the shortfall of skilled staff, rethink methods to retain qualified personnel and plan for succession and clear career paths for experienced staff. With such a program a source of specific resources of skilled operators, technicians and managers will be established.

- Regular sampling (Operational and Compliance Monitoring) and reporting on water quality, quality of treated sewage effluent and industrial effluent discharged into OM's system.

- Continue with the upgrading of WWTWs when necessary, in order to reduce the risk of source contamination. WWTWs will be managed and operated to comply with the permitted standards.

- OM is committed to manage and operate sewage pump stations effectively to prevent any possible spillages.

- De Kelders currently experience lime problems and OM will investigate the possibility of supplying De Kelders with treated water from Franskraal WTWs through a new pipeline.

## WATER CONSERVATION AND DEMAND MANAGEMENT PROFILE

Status quo:

OM embarked on a WC Programme, when the water shortage in 1995 was predicted, which successfully reduced consumption by about 20%. The aim of the ongoing programme is a reduction of 30%. The twelve (12) components of the WC Programme are as follows:

- Intensive communication
- Education and water audits at schools
- Water loss management
- Clearing of invasive alien plants in the catchment area
- Water wise gardening
- Water wise food production
- Initiatives to save water in the home
- Water regulations
- Assurance of supply tariffs
- Informative billing approach
- Security / prepaid metering system

The following key water conservation principles have been practiced over recent years since the Council Resolution taken by the former Hermanus Municipality on a twelve point plan for Water Conservation:

- Owners of all building alterations and new buildings, as well as municipal buildings, are encouraged to equip with water conserving plumbing fittings (retrofitting of existing buildings at own choice).
- Waterwise gardening is promoted amongst consumers.
- Step water tariffs, designed for water conservation has been applied.
- Municipal properties and caravan parks have been retrofitted with water saving conserving fittings.
- School water audits were promoted to educate the consumers.
- Aggressive communications and informative billing was key to improve public attitudes towards water conservation.

Further to OM's WC Programme the DWA appointed Community Engineering Services Consulting in 2007 to compile a WDM Strategy for OM, by also taking into account future water saving at the end-user level. The study entails an overview of the current state of WDM Strategy in the OM's Management Area and an analysis of water consumption data by means of computer models to identify strategic areas of importance. The proposed WDM Strategy for OM comprises of the following five components:

- Leakage Management Programme
- CAFES-pricing policy programme
- Socio-political programme.
- Water Conservation products.
- Reuse of wastewater.

The goals of the proposed WDM Strategy are as follows:

- To reduce water loss.
- To achieve conservation oriented and fair water pricing.
- To promote social development and equity while influencing consumers to conserve water.
- To achieve water savings at point of use.

OM also compiled a Water Demand Management Strategic Implementation Plan during 2008, as summarized in the table below:

| Mechanism | | Driver | Actions |
|---|---|---|---|
| **Tariffs** | | Finance | Number of steps can be reduced in line with the CES WDM report. |
| **Awareness Campaign** | | Environmental Management | Media: Overstrand Conservation Forum Newsletter, Hermanus Times (Weekly), Overstrand Bulletin (With the monthly bills), Customer Relations Desk (Pamphlets etc. available) |
| **Network Water Loss Management** | | | |
| Enablers | Bulk meter consumption | Infrastructure | Status of bulk meters to be investigated |
| | Zoning and zone meters | Infrastructure | There is a R400 000 contract with Flotron to upgrade the meters and the telemetry system. Further zoning needs to be investigated. |
| | Low & zero Consumptions | Finance | Generate a list of low and zero consumption regularly. Identify those that have been low or zero for more than 6 months. Check usual usage pattern on IMQS. Replace meters at those properties outside the normal usage pattern and monitor. |
| | Properties without meters | Finance | Compare financial system with GIS and properties with electricity meters but no water meters and identify all properties that do not have meters. |
| | Meter replacement programme | Operation | Identify all meters older than 10 years and start replacement program from the oldest to the youngest. Test meters for accuracy as they are removed to obtain information on accuracy versus age. Meters that are removed should be re-furbished, tested and re-used. |
| | Monthly water balance | Infrastructure | Get monthly water balances in place for all the distribution systems. |
| | Identify areas | Infrastructure | Prioritize areas and ensure that they have operating meters and loggers. |
| | Analysis of minimum night flows | Infrastructure | Analyze the night flows and determine the potential for pressure management. Prioritize areas of high night flow and ease of installation of pressure management. Log the pressures at supply and critical points and determine savings that can be achieved. |
| Water loss reduction | Pressure management | Infrastructure | Identify where PRVs can be installed and size them. Determine cost/benefit, budget, put out to tender and install. |
| | Network leak detection & repair | Operation | Once areas for pressure management installation have been identified and there is a process in place to ensure that they will be installed, prioritize areas for leak detection and repair. Where there are areas of known poor network conditions and high losses but no or inadequate meters these areas can be prioritized. |
| **Customer Water Wastage Management** | | | |
| Enablers | Report on large users | CES WDM Report | List in CES WDM report |
| | High consumption list | Finance | Report generated from Financial system |
| | Indigent high consumption list | Finance | Report generated from Financial system |
| | Schools consumption | Finance | Report generated from Financial system |
| Wastage reduction | Team to visit large users | Infrastructure | Follow up, raise awareness and take appropriate action on Large Water Users. The customers would need to be visited and encouraged to do water audits and look at ways to reduce their consumption. |
| | Team to visit high consumption properties | Infrastructure, Debtpack | Follow up, raise awareness and take appropriate action on high domestic consumption. The customers would need to be visited and encouraged to look at ways to reduce their consumption. Where there are leaks the customer would be instructed to fix them immediately. |
| | Leak repair project | Infrastructure | Follow up, raise awareness, repair water leaks and institute mechanism to prevent future wastage at poor/indigent properties with consumption > 15Kl/month. |
| | Schools program | Infrastructure | Schools must be encouraged to do water audits and look for ways of reducing consumption. |
| | Customer care and debt management | Finance | Effective customer care and debt management will lead to a reduction in water demand as those that pay their bills become more aware of what they are using. |

| Mechanism | | Driver | Actions |
|---|---|---|---|
| **Treated Effluent and Grey Water Recycling** | | | |
| Enablers | Identify potential consumers | CES WDM Report | List in CES WDM report |
| | Visit potential consumers | Infrastructure | Potential customers need to be visited to see if they are interested in recycling water. Municipality should lead by example. |
| Increase re-cycling | Extend pipelines and effluent recycling plant | Infrastructure, Consultant & Contractor | An existing scheme feeds the golf course and schools and sports fields on-route. There is currently a process to get the schools and sports fields to use the water. Identify other potential users and prioritize those closest to the existing pipeline first. |
| | New connections | Operation | Provide new connection as and when new infrastructure is in place. |
| **Removal of Alien Vegetation** | | DWA | The Municipality currently funds the alien vegetation removal project managed by DWA |

The following detail studies were completed during the 2008/2009 financial year as part of the implementation of the above WDM Strategic Implementation Plan.

- Leaks at domestic properties in poor areas with consumption above 15 kl/month were investigated and repaired.
- A bulk metering and telemetry investigation was carried out for the Greater Hermanus Area.
- The internal water network of the Greater Hermanus Area was investigated and the condition and status of the existing reticulation network were determined.

The table below gives a summary of the percentage and quantity water losses for the various distribution networks (Ml/a):

| Town (Infrastructure Leakage Index for 2009) | Losses | 08/09 | Estimate 2014 | Record : Prior (Ml/a) | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 07/08 | 06/07 | 05/06 | 04/05 | 03/04 |
| Buffels River – Rooi Els, Pringle Bay & Betty's Bay | Treatment & Network | 740.302 | 320.208 | 715.850 | 615.698 | 594.893 | 509.444 | 407.551 |
| | | 62.2% | 35.0% | 60.9% | 58.3% | 59.9% | 59.7% | 52.7% |
| Kleinmond | Treatment & Network | 306.879 | 200.821 | 296.338 | 229.620 | 270.590 | 264.262 | 147.534 |
| | | 32.2% | 20.0% | 30.7% | 25.4% | 29.3% | 29.9% | 17.2% |
| Greater Hermanus | Network | 805.122 | 563.160 | 311.620 | 734.043 | 829.864 | 539.296 | |
| | | 16.6% | 10.0% | 7.9% | 17.2% | 20.6% | 16.4% | |
| Stanford | Network | 163.496 | 90.590 | 123.058 | 140.626 | 100.437 | 200.304 | |
| | | 36.4% | 20.0% | 30.9% | 34.1% | 28.6% | 46.6% | |
| Greater Gansbaai | Treatment & Network | 492.048 | 333.615 | 482.079 | 194.253 | 301.124 | 266.998 | |
| | | 33.3% | 20.0% | 31.3% | 14.8% | 24.1% | 24.0% | |
| Pearly Beach | Treatment & Network | 27.326 | 14.493 | 34.163 | 24.281 | 15.536 | 24.952 | |
| | | 21.6% | 10.0% | 25.7% | 19.7% | 13.2% | 23.4% | |
| Baardskeerdersbos | Treatment & Network | 4.915 | 0.955 | 2.869 | 6.692 | 0.831 | | |
| | | 39.4% | 10.0% | 31.3% | 52.3% | 17.9% | | |
| Buffeljags Bay | Treatment & Network | 0.112 | 0.271 | 0.360 | 0.453 | 1.864 | | |
| | | 4.4% | 10.0% | 12.3% | 11.8% | 87.0% | | |
| **TOTAL** | | **2 540.200** | **1 524.113** | **1 966.337** | **1 945.666** | **2 115.139** | **1 805.256** | |
| | | **27.59%** | **15.51%** | **23.74%** | **23.66%** | **27.17%** | **26.63%** | |

Notes: 1) Viljoenshof (Wolvengat) will be included in the future planning.

Gaps:

Water is scarce and it is important that water be used wisely and that due attention be paid to water conservation and demand management. One of the visions of the Sector is that water is used effectively, efficiently and sustainably in order to reduce poverty, improve human health and promote economic development.

OM must actively implement the recently developed WDM Strategy. The priority areas, as included in the proposed WDM Strategy (CES, March 2008), can be summarised as follows:

| Town | Tariff adjustment | Water loss management | Pressure Management | Schools WDM | Reuse of Wastewater |
|---|---|---|---|---|---|
| Betty's Bay | Medium | **High** | Medium | **High** | Low |
| Kleinmond | | Medium | **High** | | Low |
| Hermanus Line | | Low | Medium | | **High** |
| Coastal Line | | Medium | Medium | | **High** |
| Stanford | | **High** | Low | | Low |
| Greater Gansbaai | | **High** | Low | | Medium |
| Rooi Els | | Low | Low | | Low |
| Pringle Bay | | Low | Medium | | Low |
| Pearly Beach | | Low | Low | | Low |

**Note: OM investigated the possibility of Pressure Management for Kleinmond, but it was found to be financially unviable.**

The Strategy includes the following items:

| COMPONENT | CHRONOLOGICAL STEPWISE APPROACH |
|---|---|
| CAFES cost and pricing strategy (CPP) | 1) Clean billing data, update SWIFT, verify / address metering and non-payment<br>2) Introduce IBR structure to all residential consumers, but limit price change<br>3) Set IBR structure = 6 blocks, min / max steps for 6 kl / month / 100 kl / month<br>4) Set price of water in max block (above 60 kl/month) to at least R17 / kl<br>5) Introduce informative billing |
| Leakage management programme (LMP) | 1) Measure water volume that is lost<br>1a) Raw water supply and treatment<br>1b) Distribution system<br>1c) End user meter problems<br>2) Identify and quantify losses<br>2a) Raw water supply and treatment<br>2b) Distribution system<br>2c) End user meter problems<br>3) Conduct operational and network audit<br>3a) Raw water supply and treatment<br>3b) Distribution system<br>3c) End user meter problems<br>4) Improve performance: upgrade network, design action plans<br>5) Sustain performance with good staffing / organisation structures |
| Socio-political programme (SPP) | 1) Schools WDM programme<br>2) Public awareness programme<br>3) Non-payment issues<br>4) Encourage users to implement WCP at their own expense |
| Water conservation products (WCP) | 1) Repair on-site (plumbing) leaks<br>2) Reduced toilet flush volume<br>3) Xeriscaping garden areas (water wise gardening)<br>4) Other methods to reduce consumption by changing human habits |
| Reuse of waste water (RWW) | 1) Identify large water consumers<br>2) Communicate advantages / incentives of reuse practice to large consumers<br>3) Information gathering on current status of reuse measures |

| COMPONENT | CHRONOLOGICAL STEPWISE APPROACH |
|---|---|
| | 4) Installation of reuse practice<br>5) Monitor future water consumption |

Implementation strategies:

The following implementation procedure for WDM measures is proposed.

1. Address water use and waste at municipal properties and record savings achieved.
2. Initiate a WC/WDM communication campaign.
3. Conduct a detailed financial analysis and implement proposed tariffs
4. Design and implement a water loss management programme.
5. Focus on relations with large water users to encourage re-use of wastewater practices.
6. Residential water users could be encouraged to implement water saving techniques by setting an example at Municipal properties (e.g. gardens and ablution facilities that are visible to the public or used by the public) and by focusing on the following WC/WDM measures in a communication campaign:
   a. Xeriscape gardens (water wise gardening techniques).
   b. Dual flush and/or low flow toilets.

The following implementation phases of the WDM Strategy are recommended:

| IN PLACE | FIRST PHASE | SECOND PHASE | LATER |
|---|---|---|---|
| CPP1, CPP2 | CPP3 | CPP4 | CPP5 |
| LMP1, LMP2 | LMP3 | LMP4, LMP5 | - |
| - | SPP1 | SPP2 | SPP3, SPP4 |
| - | - | WCP1 | WCP2, WCP3, WCP4 |
| RWW1 | RWW2, RWW3 | RWW4 | RWW5 |

The following items of the WDM Strategy are considered to hold significant promise. These items should receive priority and are the backbone of OM's WDM Strategy.

- Meter and record bulk water supply (monthly).
- Implement district metered areas (DMAs).
- Improve quality of data regarding consumer use (monthly).
- Initiate a WDM communication campaign to report on what the Municipality has achieved (Lead by example).
- Implement a 24 hour leak reporting line.
- Immediately implement the CAFES-pricing policy programme for residential use by conducting a detailed price elasticity study.

- Extend the implementation of the CAFES-pricing policy by a) evaluating the impact of price changes in different Western Cape municipalities and b) implementing a new pricing / tariff structure where the first block is free and the last block is charged at a rate which severely discourages use above 100 kl/month.

- Implement a schools WDM programme.

- Implement water saving by individual large water users through reuse of wastewater.

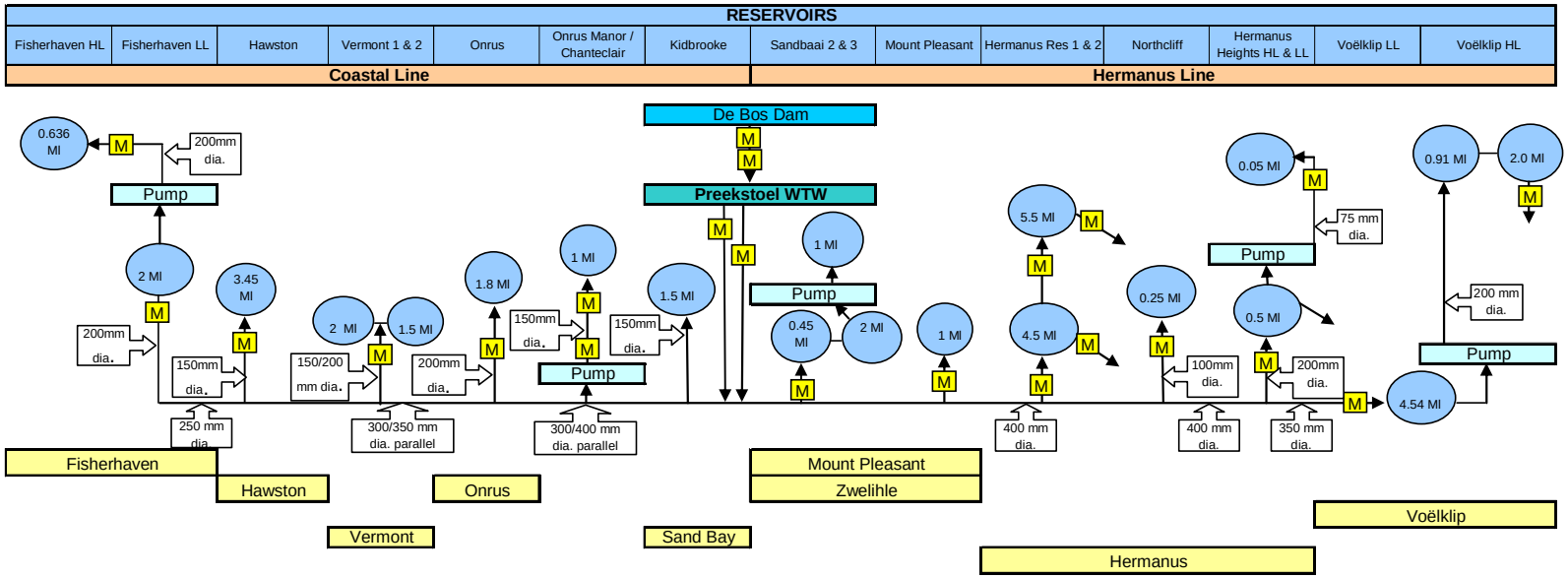
- Monitor progress of the WDM process.

The WDM strategy can only be effective if it is implemented correctly and effectively. Institutional resources (Staff) and training are essential in this regard.

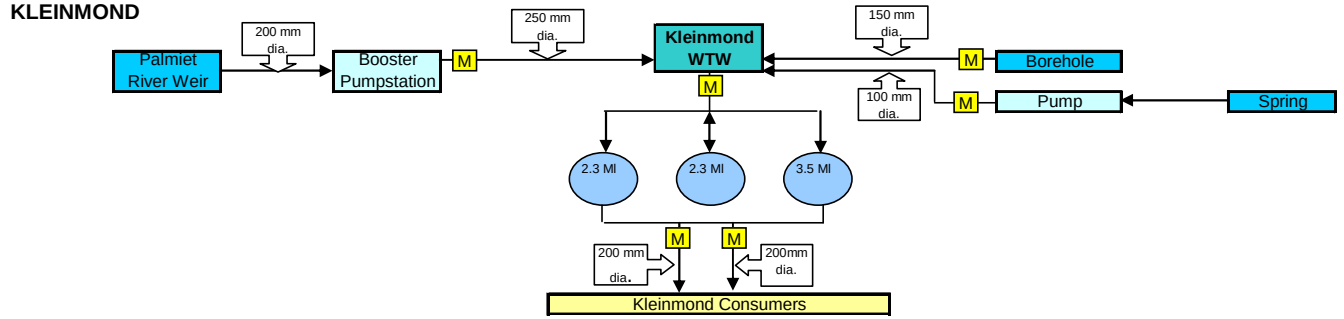
# WATER SERVICES INFRASTRUCTURE PROFILE

## Status quo:

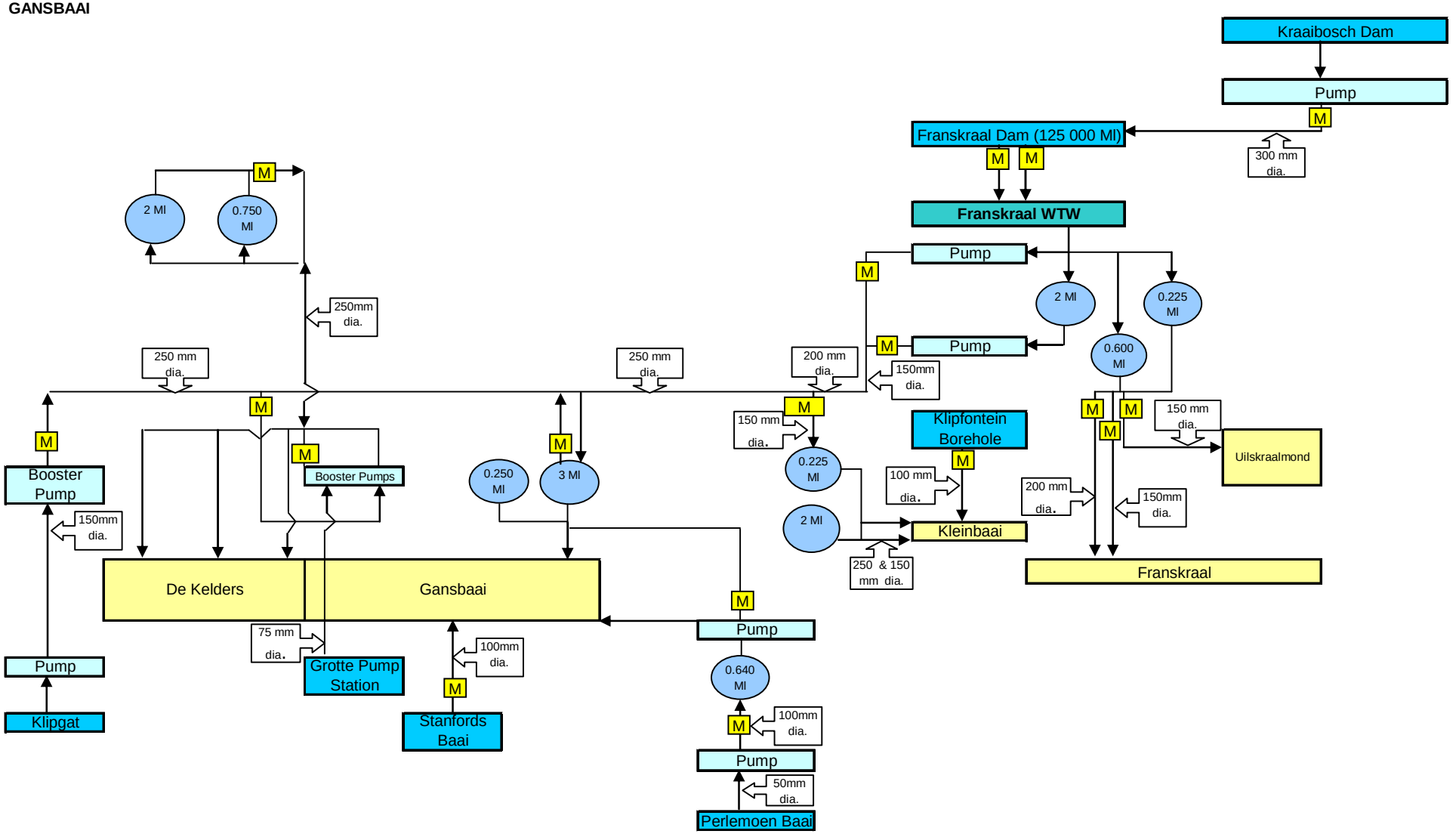
### HERMANUS



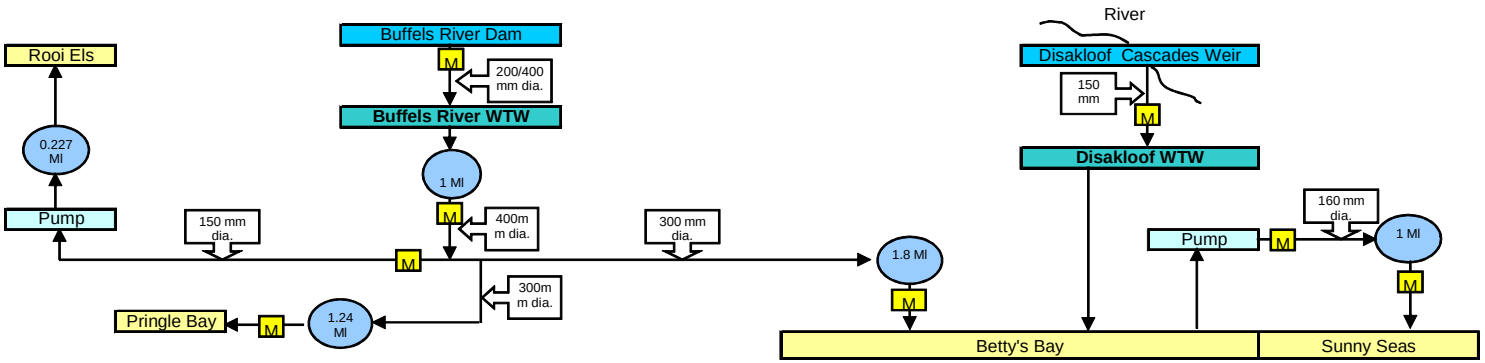

### KLEINMOND



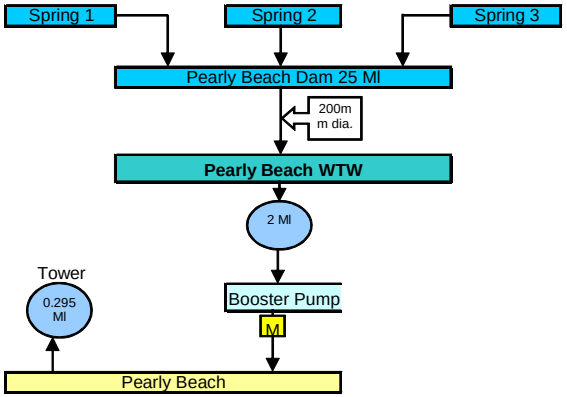
**GANSBAAI**


Kraaibosch Dam
Pump
M
Franskraal Dam (125 000 Ml)
300 mm dia.
M
M
Franskraal WTW
Pump
M
2 Ml
0.225 Ml
Pump
M
0.600 Ml
2 Ml
0.750 Ml
M
250mm dia.
250 mm dia.
250 mm dia.
200 mm dia.
150mm dia.
M
M
M
150 mm dia.
Klipfontein Borehole
M
M
M
150 mm dia.
Uilskraalmond
M
Booster Pump
M
Booster Pumps
0.250 Ml
3 Ml
0.225 Ml
100 mm dia.
150mm dia.
2 Ml
200 mm dia.
150mm dia.
Kleinbaai
250 & 150 mm dia.
Franskraal
De Kelders
Gansbaai
M
Pump
0.640 Ml
75 mm dia.
Grotte Pump Station
100mm dia.
M
Stanfords Baai
M
100mm dia.
Pump
50mm dia.
Perlemoen Baai
Pump
Klipgat

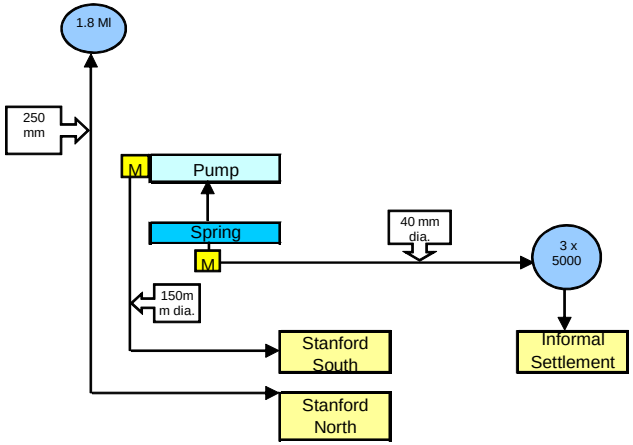
## BUFFELS



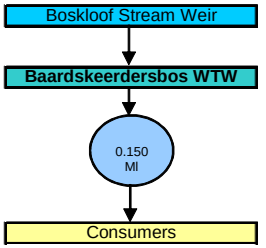

## PEARLY BEACH



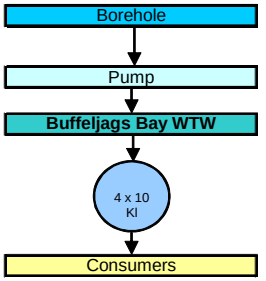

## STANFORD




## BAARDSKEERDERSBOS




## BUFFELJAGS BAY



*Asset Management:* It is essential for any service delivery organisation 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. The purpose of the AMP is to:

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

An AMP 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.

It is important for OM to now develop an AMP from the recent developed 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.

Gaps:

**Water Treatment Works**

The WTWs at Buffels River was upgraded in 2006/07 and has sufficient capacity until 2012 (At 3% annual growth on 2009 demand). Kleinmond WTWs has sufficient capacity until 2021 (At 3% annual growth on 2009 demand). The Franskraal WTWs were upgraded during 2009 and now have sufficient capacity until 2025 (At 4% annual growth on 2009 demand and 55% of total demand supplied from Franskraal WTWs).

The Preekstoel WTWs currently operates at maximum capacity and the capacity of the WTWs is inadequate to meet the future demands and needs to be upgraded over the next three years. The upgrading of the lime dosing system and electrical control panels is the first step in the upgrading of the Preekstoel WTWs and will be done during 2009/2010. The capacity of the WTWs will be upgraded during 2010/2011, 2011/2012 and 2012/2013. The lime dosing system and electrical control panels forms an integral part of the whole treatment process and it is imperative that upgrading of the system takes place to ensure properly treated water and proper working conditions for site staff.

A detailed water quality assessment of the De Kelders and Gansbaai Fountains were carried out during 2008 and it was recommended that a nano-filtration process be used to treat the water supplied from the Klipgat and De Kelders Grotte fountains. The water supplied from Klipgat and De Kelders Grotte fountains can be classified as “hard”. The water is over saturated with respect to calcium carbonate and precipitate calcium carbonate in pipelines, hot water cylinders and kettles which result in pressure problems in the water reticulation system and less efficient use of electrical power for associated domestic appliances. The water quality also does not fully comply with the SANS 241: Class I standard.

All the disinfection / chlorination installations in OM’s Management Area were investigated during October 2009. The aim was to determine whether or not the installations comply with the relevant regulations and legislation e.g. OHS Act, Environmental Act, National Water Act, SANS Codes, correct working and servicing of chlorination installations and the conduct of safe working procedures. The recommendations of the study were also included in the Improvement / Upgrade Plan of OM’s Water Safety Plan and needs to be implemented.

The Improvement / Upgrade Plan of OM’s Water Safety Plan are included in Annexure D. The Plan was compiled for all the existing significant risks, where the existing controls were not effective or absent and needs to be implemented.

The water for Stanford is obtained from a spring which is not chlorinated due to its excellent water quality.

## Reservoirs

The condition of all the reservoirs in OM’s Management Area is good and the reservoirs are well maintained. The table below gives a summary of the reservoir capacity requirement for the various distribution systems (Water Master Plans, March 2006)

| Water District / Sub-District | Occupied Existing ADD | Future ADD | Reservoir Capacity (kl) | | | | | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | Present | Required For | | Spare Capacity For | | |
| | | | | Occupied Existing | Future | Occupied Existing | Future | |
| **BUFFELS RIVER SYSTEM** | | | | | | | | |
| Betty’ Bay Sunny Seas Reservoir | 845 | 953 | 1 000 | 1 268 | 1 429 | - 268 | -429 | Operated as tower |
| Betty’s Bay Voorberg Reservoir | 2 743 | 2 782 | 1 800 | 4 114 | 4 605 | -2 314 | -2 805 | New Reservoir required |
| Proposed Betty’s Bay Booster | n.a | 288 | | | | | | |
| Pringle Bay Reservoir | 2 050 | 2 109 | 1 240 | 3 074 | 3 164 | -1 834 | -1 924 | New Reservoir required |
| Rooi Els Booster | 13 | 13 | 227 | 600 | 623 | -373 | -396 | Monitor situation |
| Rooi Els Reservoir | 387 | 402 | | | | | | |
| **Buffels River Total** | **6 038** | **6 547** | **4 267** | **9 056** | **9 821** | **-4 789** | **-5 554** | |
| **PALMIET RIVER SYSTEM** | | | | | | | | |
| Kleinmond Protearand Reservoir | 3 956 | 4 357 | 8 100 | 5 934 | 6 843 | 2 166 | 1 257 | |
| Proposed Kleinmond Booster | n.a | 205 | | | | | | |
| **Palmiet River Total** | **3 956** | **4 562** | **8 100** | **5 934** | **6 843** | **2 166** | **1 257** | |
| **GREATER HERMANUS** | | | | | | | | |
| Fisherhaven LL Reservoir | 999 | 1 572 | 2 000 | 1 498 | 2 358 | 502 | -358 | Monitor situation |
| Hawston Reservoir | 1 299 | 6 545 | 3 450 | 1 948 | 10 773 | 1 502 | -7 323 | New Reservoir required |
| Proposed Hawston Booster | n.a | 637 | | | | | | |
| Fisherhaven HL Reservoir | 89 | 89 | 636 | 134 | 134 | 502 | 502 | |
| Kidbrook Reservoir | 250 | 250 | 208 | 375 | 375 | -167 | -167 | Monitor situation |
| Vermont Reservoir | 1 582 | 2 020 | 4 700 | 2 373 | 4 050 | 2 327 | 650 | |
| Proposed Vermont Booster | n.a | 680 | | | | | | |
| Onrus Reservoir | 2 023 | 2 144 | 1 800 | 3 034 | 3 216 | -1 234 | -1 416 | New reservoir required |

| Water District / Sub-District | Occupied Existing ADD | Future ADD | Reservoir Capacity (kl) | | | | | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | Present | Required For | | Spare Capacity For | | |
| | | | | Occupied Existing | Future | Occupied Existing | Future | |
| Onrus Manor Reservoir | 358 | 378 | 1000 | 536 | 567 | 464 | 433 | |
| Sandbaai Reservoir | 2 278 | 2 691 | 2 200 | 3 416 | 4 036 | -1 216 | -1 836 | New Reservoir required |
| Sandbaai Hemel & Aarde Reservoir | 392 | 415 | 1 000 | 587 | 623 | 413 | 377 | |
| Mount Pleasant Reservoir | 580 | 608 | 1 000 | 871 | 912 | 129 | 88 | |
| Zwelihle Hermanus 2 Reservoir | 2 192 | 6 224 | 10 000 | 8 776 | 9 336 | 1 224 | 664 | |
| Hermanus 1 Reservoir | 3 659 | | | | | | | |
| Northcliff Reservoir | 225 | 528 | 250 | 337 | 792 | -87 | -542 | Monitor situation |
| Hermanus Heights HL Reservoir | 90 | 184 | 50 | 15 | 31 | 35 | 19 | |
| Hermanus Heights LL Reservoir | 566 | 1 533 | 500 | 849 | 2 630 | -349 | -2 130 | Construct 2.5 ML Reservoir |
| Proposed Hermanus Heights LL Booster | n.a | 220 | | | | | | |
| Voëlklip HL Reservoir | 1 742 | 1 742 | 1 910 | 290 | 290 | 1 620 | 1 620 | |
| Voëlklip LL Reservoir | 3 329 | 2 931 | 4 500 | 4 993 | 4 397 | -493 | 103 | |
| Direct Feed | 107 | n.a | | | | | | |
| **Greater Hermanus Total** | **21 760** | **31 391** | **35 204** | **30 032** | **44 520** | **5 172** | **-9 316** | |
| **STANFORD** | | | | | | | | |
| Stanford PRV | 1 176 | 1 238 | 1 250 | 3 473 | 4 321 | -2 223 | -3 071 | Construct 2 ML Reservoir |
| Stanford Reservoir | 1 139 | 1 599 | | | | | | |
| Proposed Stanford Booster | n.a | 43 | | | | | | |
| **Stanford Total** | **2 315** | **2 880** | **1 250** | **3 473** | **4 321** | **-2 223** | **-3 071** | |
| **GREATER GANSBAAI** | | | | | | | | |
| De Kelders Reservoir | 1 994 | 3 319 | 2 750 | 2 991 | 4 978 | -241 | -2 228 | New Reservoir required |
| Gansbaai Reservoir | 2 436 | 3 277 | 3 250 | 3 654 | 4 915 | -404 | -1 665 | New Reservoir required |
| Kleinbaai Reservoir | 910 | 2 124 | 1 225 | 1 365 | 3 186 | -140 | -1 961 | New Reservoir required |
| Franskraal Reservoir | 1 993 | 2 597 | 2 550 | 2 989 | 3 896 | -439 | -1 346 | New Reservoir required |
| **Greater Gansbaai Total** | **7 333** | **11 317** | **9 775** | **10 999** | **16 975** | **-1 224** | **-7 200** | |
| **PEARLY BEACH** | | | | | | | | |
| Pearly Beach Tower / Booster | 1 041 | 1 590 | 2 000 | 1 562 | 2 386 | 438 | -386 | Monitor situation |
| **Pearly Beach Total** | **1 041** | **1 590** | **2 000** | **1 562** | **2 386** | **438** | **-386** | |

Note: Baardskeerdersbos, Buffeljags Bay and Viljoenshof (Wolvengat) will be included in future Master Planning

OM has the capacity to store 60Ml of purified water. There is a shortage of 30 Ml storage space to cater for peak demands, emergencies and future developments. Reservoir capacity at Kleinmond and Pringle Bay is sufficient, but shortages exist at Rooi Els and Betty's Bay. The shortage in reservoir storage capacity for the Greater Hermanus area is 13 Ml. A second reservoir for Stanford is currently under construction. The shortage in reservoir storage capacity for the Greater Gansbaai is 7 Ml. New reservoirs are required for De Kelders, Gansbaai, Kleinbaai and Franskraal.

### Pump Stations and Water Reticulation Network (Potable)

Approximately 30% (230 km) of the water reticulation network is in a very poor condition (Betty's Bay, Pringle Bay, Fisherhaven, Onrusrivier, Hermanus Central and Voëlklip) and will have to be replaced in the foreseeable future. The shortage of fire hydrants (Industrial areas and CBD) is currently investigated as part of the Hermanus Study and will also be addressed as part of the future Master Planning Processes. The Manager of Gansbaai Marine indicated that they experience inadequate pressures. OM will address the problem through future Master Planning and the Municipality's pipeline replacement programme.

Various parts of the reticulation systems, as identified through the Water Master Planning process, need to be upgraded as new developments take place in the various urban areas. Bulk levies were introduced for developers to contribute significantly to infrastructure development.

The operational staff indicated the following operational problems during the Water Master Planning process:

- Greater Hermanus: The flow rate into the reservoirs is operator controlled. High peak flows and resulting head losses are sometimes experienced in the main supply pipelines. The higher and furthest located reservoirs from the WTWs sometimes experience insufficient water supply.

- Low residual pressures are experienced during peak demand periods in various towns such as Pringle Bay, Hangklip, Betty's Bay, Kleinmond, Sandbaai, Hermanus, Gansbaai, Kleinbaai and Pearly Beach.

- The water reticulation systems consist mainly of 50 – 150 mm dia AC mains. Bursts occur mostly in the oldest areas and provision is annually made for replacement of those sections where serious problems are experienced.

The table below gives an overview of the master planning items as calculated through the Water Master Planning process for the various distribution systems:

| **BUFFELS RIVER DISTRIBUTION SYSTEM** |
|---|
| • It is recommended that the Disakloof Cascades Weir be decommissioned to decrease the risk of water quality problems. The present Buffels River WTW will then not meet the present peak week demand without the Disakloof Cascades Weir as an additional source.<br>In order to accommodate full development of existing stands and to implement the decommissioning of the Disakloof Cascades Weir (Item BR1.16) reinforcing of the water distribution system will be required.<br>• Items BR1.1 – BR1.6, BR1.9 – BR1.11 and BR1.15 are proposed parallel reinforcement of existing pipes and should be implemented to improve the supply to the Betty's Bay Voorberg Reservoir District when unacceptable low residual pressures occur in the district.<br>• Booster pump (Item BR1.13) be implemented to improve the supply to the eastern part of the Betty's Bay Voorberg Reservoir District as well as the Sunny Seas Reservoir supply pump when the Disakloof Cascades Weir is decommissioned. The booster pump is also recommended to elevate the pressures in the higher lying areas in the eastern part, currently experiencing low residual pressures due to low static conditions.<br>• Item BR1.7 is proposed to improve the supply to the eastern part of the Betty's Bay Voorberg Reservoir District as well as the Sunny Seas Reservoir supply pump.<br>• It is proposed that a 2 Ml and 3 Ml Reservoir be constructed at the existing 1.24 Ml Pringle Bay and at the existing 1.8 Ml Voorberg Reservoirs respectively to accommodate the future water demands. |
| **KLEINMOND RESERVOIR DISTRICT** |
| • Items KM1.1 – KM1.4 are proposed parallel reinforcement of existing pipes and should be implemented to improve the supply to the Kleinmond Reservoir District when unacceptable low residual pressures occur in the district. It is further proposed to implement a new booster sub-district with booster pump (Item KM1.6) when higher lying future areas KM-A and KM-B develop. |
| **GREATER HERMANUS DISTRIBUTION SYSTEM** |
| ***Hermanus Bulk Pipeline:***<br>• Item GHB1.1 is a 200mm dia parallel reinforcement pipe to improve the supply to the Sandbaai Reservoir District.<br>• Item GHB1.2 is a 2 Ml reservoir to increase the storage capacity for the Sandbaai Reservoir District to accommodate the future water demands.<br>• The 400mm dia reinforcement pipe (Item GHB1.3) is proposed to augment the supply to the Hermanus Reservoir District as well as the districts to the east of Hermanus (Completed by OM).<br>• Item GHB1.4 is a 2.5 Ml reservoir to increase the storage capacity for the Hermanus Heights LL Reservoir District to accommodate the future water demand. The additional storage capacity is required to accommodate the Golf Course development as well as the area previously supplied directly from the Hermanus Bulk Pipeline. It is proposed that this area be disconnected from the bulk line and connected to the Hermanus Heights LL Reservoir through proposed Item HHLL1.4 (Completed by OM). |

**GREATER HERMANUS DISTRIBUTION SYSTEM / Continue**

- It is recommended that the Voëlklip HL pump station be upgraded (Item GHB1.5) and the status of the valves separating the Voëlklip LL Reservoir District be checked to ensure that a discrete zone is formed and that the Voëlklip HL Reservoir does not run empty.

***Coastal Bulk Line***

- Item GHB2.1 is a 200mm dia parallel reinforcement pipe to improve the supply to the Onrus Reservoir District.
- Item GHB2.2 is a 2 Ml reservoir to increase the storage capacity for the Onrus Reservoir District to accommodate the future water demands.
- The booster pump (Item GHB2.3) is proposed to improve the supply to the Vermont, Hawston and Fisherhaven Reservoir Districts (OM indicated that it is not necessary).
- The 400mm dia reinforcement pipe (Item GHB2.4) is also proposed to augment the supply to the Hawston and Fisherhaven Reservoir Districts.
- It is also recommended that 6.5 Ml reservoir capacity be constructed at the existing 3.45 Ml Hawston Reservoir to create additional storage capacity to accommodate the anticipated future developments.
- Items GHB2.5 and GHB2.6 are proposed to supply the Fisherhaven HL Pump from the Fisherhaven LL Reservoir and not from bulk line directly. This will ensure that the suction head of the pump will not vary because of the proposed pump station at Vermont (GHB2.3).

***Fisherhaven LL Reservoir District***

- Item FH1.1 is proposed to augment the supply when anticipated future developments occur. Items FH1.2 – FH1.4 are proposed to serve the anticipated future developments.

***Hawston Reservoir District***

- The proposed items pertain to pipes required to serve anticipated future developments.

***Vermont Reservoir District***

- It is proposed that a new booster sub-district be implemented to serve the higher lying development GH-G in Vermont North. To implement this sub-district a booster pump (Item VM1.2) and a 200mm dia future main pipe will be required. Item VM1.3 will be required when low residual pressures occur.

***Onrus Reservoir District***

- Item ON11 is proposed to augment the supply when high flow velocities and low residual pressures occur.

***Sandbaai Reservoir District***

- All proposed items are required to augment the existing distribution system to serve anticipated densification and future developments.

***Mount Pleasant Reservoir District***

- Items MP1.1 and MP1.2 are proposed to augment existing pipes when high flow velocities and low residual pressures occur.

***Hermanus / Zwelihle Reservoir District***

- Items HM1.1 – HM1.3 are proposed parallel reinforcement of existing pipes and should be implemented to improve the supply to the Hermanus 1 Reservoir District when unacceptable low residual pressures occur in the district.
- Items ZW1.1 – ZW1.5 pertain to pipes required to augment the existing system when anticipated future developments occur.
- Item ZW1.6 is proposed to augment the existing system when low residual pressures occur in the northern part of Zwelihle.

***Northcliff Reservoir District***

- It is proposed that the higher lying areas in the Hermanus Reservoir District be included in the Northcliff Reservoir District to alleviate low residual pressures due to low static conditions. This can be implemented by changing the district boundaries by opening existing closed valves and closing of valves (Item NC1.2). Item NC1.1 will be required to augment supply when the new boundary is implemented.

***Hermanus Heights HL Reservoir District***

- Item HHHL1.1 is proposed to serve future development area GH-J.

***Hermanus Heights LL Reservoir District***

- Item HHLL1.1 – HHLL1.3 and HHLL1.6 are proposed to serve the future Golf Course development. Item HHLL1.6 is a variable speed booster pump to ensure acceptable residual pressures for the higher lying future area GH-K.

The two proposed changes to the existing district boundary are as follows:

- The area currently fed directly from the Hermanus Bulk Pipeline be incorporated with the Hermanus Heights LL Reservoir District through implementing Item HHLL1.4.
- The higher lying area of the Voëlklip LL Reservoir District currently experiencing low residual pressures be incorporated with the Hermanus Heights LL Reservoir District.

***Voëlklip HL Reservoir District***

- Items VKHL1.1 and VKHL1.2 are proposed to augment existing pipes when high flow velocities and low residual pressures occur.

***Voëlklip LL Reservoir District***

- The district boundary needs to be changed to incorporate a high lying area currently experiencing low residual pressures with the Hermanus Heights LL Reservoir District.

**STANFORD RESERVOIR DISTRICT**

- Items SF1.1 – SF1.9 and SF1.14 are required to reinforce the existing system. The only change to the operation of the existing system is to construct a new 350mm dia outlet/supply pipe (ItemSF1.2) from the existing 1.25 Ml Stanford Reservoir to ensure that the existing 250mm dia inlet/outlet pipe from the Stanford Spring can be used as a dedicated supply to the Stanford Reservoirs. It is also proposed to construct a 2.5 Ml Reservoir to increase the existing storage capacity to accommodate anticipated future water demands.

**GREATER GANSBAAI DISTRIBUTION SYSTEM**

***De Kelders Water District***

- The existing De Kelders and Stanfords Bay sources will be augmented with the Klipgat source in the future, once the new pipeline from the Franskraal WTWs to Gansbaai is completed. Additional reservoir capacity of 2.2 Ml will be required for the anticipated full development to accommodate the anticipated future water demand.

***Gansbaai Water District***

- No changing of the existing distribution operation is proposed. Additional reservoir capacity of 1.6 Ml will be required for the anticipated full development to accommodate the anticipated future water demand.

***Kleinbaai Water District***

- Presently low pressure problems in the water distribution system occur already. Therefore, further development or occupancy of already developed vacant stands will require additional pipe and reservoir capacity to be established. All the items proposed are to augment the existing system to accommodate anticipated future water demands.

***Franskraal Water District***

- All the items proposed are to augment the existing system to accommodate anticipated future water demands.

**PEARLY BEACH TOWER / BOOSTER DISTRICT**

The available static head in areas in existing and potential future developments is as low as 9m, while supplied from the tower. Two options are available to increase the minimum head to 24m.

- Upgrade the existing pump station by installing 2 x variable speed pumps to deliver 45m head for flows up to 55 l/s. Operation of these pumps can be alternated to sustain pressures. For this option the tower should be decommissioned, as water will become stagnant.
- The second option is to upgrade the pump station as for Option 1, but to also supply Pearly Beach from the tower when the pump station is switched off during low flow periods when a head of 24m is not essential. In this case the flow should be controlled at the tower inlet. It is assumed that a non-return valve is installed on the outlet. This is required to sustain pressure in the system when the pumps are in operation.

The table below gives an overview of the required pumping capacity for the various distribution systems, as identified through the Water Master Planning Process:

| Pumps | Water District / Sub – District / Location | Capacity (l/s) required for | | Head (m) |
|---|---|---|---|---|
| | | Fully Occupied Existing | Future | |
| **BUFFELS RIVER SYSTEM** | | | | |
| Rooi Els Booster | Rooi Els Booster Sub-District | 2 | 2 | 20 |
| Betty's Bay Sunny Seas Reservoir Supply | Betty's Bay Sunny Seas Reservoir District | 22 | 22 | 70 |
| Proposed Betty's Bay Booster | Proposed Betty's Bay Booster District | n.a | 30 | 30 |
| **PALMIET RIVER SYSTEM** | | | | |
| Proposed Kleinmond Booster | Proposed Kleinmond Booster Sub-District | n.a | 10 | 50 |
| **GREATER HERMANUS** | | | | |
| Fisherhaven HL | Fisherhaven HL Reservoir District | 2.5 | 2.5 | 55 |
| Onrus Manor | Onrus Manor Reservoir District | 8.5 | 10 | 90 |
| Hermanus Heights HL | Hermanus Heights HL Reservoir District | 2.5 | 9 | 20 |
| Proposed Hermanus Heights HL Booster | Proposed Hermanus Heights LL Booster Sub-District | n.a | 10.0 | 30 |
| Voëlklip HL | Voëlklip HL Reservoir District | 40 | 40 | 40 |
| Hemel & Aarde | Sandbaai Hemel & Aarde Reservoir District | 10 | 10 | 70 |
| Proposed Vermont Booster | Proposed Vermont Booster Sub-District | n.a | 25 | 55 |
| Proposed Hawston Booster | Proposed Hawston Booster Sub-District | n.a | 25 | 50 |
| Proposed Bulk Supply Booster | Greater Hermanus Bulk Supply – Coastal Line | n.a | 270 | 50 |
| **STANFORD** | | | | |
| Stanford Booster | Proposed Stanford Booster District | n.a | 1.5 | 35 |
| Stanford Supply | Stanford Reservoir Supply | 54 | 70 | 55 |
| **PEARLY BEACH** | | | | |
| Pearly Beach Booster | Pearly Beach Supply | 25 | 55 | 45 |

The proposed future distribution systems are indicated on Figures OVW 7.1.a to OVW 7.1.f under CES Water Plans in Annexure A of the Annexure Report. The required future works are also indicated on Figures OVW 7.2.a to OVW 7.2.f and the master plan items are summarised in Table A.1 in the same Annexure.

**Sewer Reticulation Network**

The sewerage reticulation network serves approximately 54% of the households in the OM's Management Area. The remaining 46% are serviced by conservancy and septic tanks. Due to concerns about groundwater pollution, it would be advisable to phase out conservancy and septic tanks systematically. It is however not feasible to implement waterborne systems everywhere. Alternative and innovative methods will have to be found to address the problem.

Anticipated full development and existing developed areas not currently served by a sewer reticulation system were incorporated into the existing sewer systems for each town or drainage area in the Sewer Master Plans. The items identified as part of the Sewer Master Planning process, to accommodate the anticipated future sewer flows, are summarised under Table A.2. in Annexure A of the Annexure Report.

**Waste Water Treatment Works and Sewage Pump stations**

The table below gives a summary of the capacity of the existing WWTWs (kl/day):

| WWTWs | Existing Capacity | ADWF during the peak month (Jan. 09 to Dec. 09) | Future projected flow ADWF (Report on Overstrand Wastewater Treatment, SSI) |
|---|---|---|---|
| Kleinmond | 2 000 | 1 081 (December 2009) | 1 810 |
| Hawston | 1 000 | 432 (July 2009) | 3 380 |
| Hermanus | 7 300 | 5 919 (September 2009) | 11 400 |
| Stanford | 500 | 270 (SSI, Holiday Peak) | 1 220 |
| Gansbaai | 4 000 | 928 (December 2009) | 6 480 |

SSI was appointed by OM to prepare a report on the capacity of the WWTWs in OM's Management Area. The table below gives a summary of the effluent quality, operational problems and improvements required for each of the WWTWs.

| **Kleinmond WWTWs** |
|---|
| Effluent Quality |
| The plant is not designed to remove nutrients. The final effluent COD and ammonia nitrogen exceeded the general standard during the period January to May 2008 due to two aerators being unserviceable. However subsequent to the repairs of the aerators the quality of the effluent has improved and is now complying with the general standard. |
| Operational Problems |
| • The efficiency of the aerators should be investigated as they may require upgrading in order not to limit the treatment capacity of the Works.<br>• The supernatant from the sludge lagoons should be returned to the reactor for treatment.<br>• The tanker discharge structure at pump station No.5 is causing odour complaints and an enclosed discharge facility was constructed. |
| Improvements Required |
| • UV disinfection – Was implemented<br>• Upgrading tanker discharge facility – Was implemented<br>• Pumping of supernatant from the sludge lagoons to the reactor for treatment R150 000.<br>• Investigation into the treatment options for Betty's Bay, Pringle Bay and Rooi Els R250 000. |

| Hermanus WWTWs |
|---|
| Effluent Quality |
| The plant has performed well over the past year. The ammonia concentration measured after settling has generally complied with the DWA standard. The high ammonias in the final effluent are due to periods when the plant experienced power stoppages and untreated sewage was discharged into the maturation ponds. Sludge settle ability has been poor. Very high Diluted Sludge Volume Indices at times have been recorded, indicating bulking sludge. |
| Operational Problems |
| • Inlet Works – Mechanical screen and the vortex degritting equipment have not been operating for a number of years and are beyond repair.<br>• Biological Reactor – The influent is under-aerated and effluent at the outlet is over-aerated causing the sludge to bulk. It may be necessary to split the inflow equally to each of the tanks in order to overcome this problem. The MCC board has been in service for eight years and requires a major overhaul (Aerators are tripping out continually).<br>• Only two of the settling tanks are operational. Repairs should be undertaken to the two larger unserviceable settling tanks to provide additional settling capacity.<br>• Waste sludge is presently being pumped into one of the maturation ponds. This practice cannot be continued for too long and alternative sludge disposal methods should be addressed.<br>• In future all screenings, grit and dewatered sludge should be disposed of off-site. |
| Improvements Required (Amounts excl. 10% Contingencies, Prof fees and VAT) |
| • Inlet Works – Mechanical screen, conveyor, washer and compactor, vortex degritters and associated equipment R2 000 000.<br>• Biological Reactor – Convert to parallel operation of tanks, aerators and mixers checked, overhauled where necessary and bolted to platforms, replace two aerator gear boxes and MCC overhauled R650 000.<br>• Settling Tanks – Civil and Mechanical repairs to settling tanks R600 000.<br>• Sludge Handling – Repairs to desludging valves, providing sludge thickening and dewatering facilities and dewatering shed and loading area R7 850 000.<br>• Chlorine dosing of final effluent is necessary.<br>• Present day costs for upgrading the aeration and settling tank capacity to 12 000 m³/day is estimated to be R12 000 000 |
| **Hawston WWTWs** |
| Effluent Quality |
| The plant was designed to comply with the general DWA effluent quality standard. The average recorded loads are about 40% of the design loading and thus the ammonias should comply favourably with the required standard. |
| Operational Problems |
| • The sludge concentration retained in the bioreactor has been excessive. Additional sludge beds are urgently required. The high sludge mass also affects the aeration capacity in the reactor and the settling capability of the settling tank.<br>• The high ammonias in the effluent indicate inadequate aeration which is probably a combination of the high mixed liquor concentration and inefficient oxygen transfer. The condition of the aerators should be investigated to establish if replacement is necessary.<br>• Screening, grit and dried sludges should be disposed of off-site. |
| Improvements Required (Amounts excl. 15% Contingencies, Prof fees and VAT) |
| • Additional four drying beds R1 200 000.<br>• Replace impellers of surface aerators R160 000. |
| **Stanford WWTWs** |
| Effluent Quality |
| The treatment works has generally produced an effluent complying with the general standard required by DWA. The odd occasions where the final effluent has not met the required standard the non-compliance has been due to failure of mechanical plant and equipment. The inlet pumping plant is being replaced at present which will give a more consistent operation. The power stoppages over the last few years have resulted in overflows of raw sewage into the adjacent water course. |
| Operational Problems |
| • The new inlet works when commissioned, should improve the removal of rags and detritus from the influent particularly when the mechanical screen is installed.<br>• Unserviceable plant must be repaired as soon as possible in order to limit the effect on plant operation.<br>• OM proposes to replace the sludge lagoons with either drying beds or mechanical dewatering. If mechanical dewatering is undertaken, the lagoons could be retained and used for storage of raw sewage in the event of power failures or stoppages.<br>• Tanker discharges provide large pulse loads at the works which do not appear to have an effect on the effluent quality at this stage, but may do so in the future when the plant is operating at full capacity. |

| Stanford WWTWs / Continue |
|---|
| Improvements Required (Amounts excl. 15% Contingencies, Prof fees and VAT) |
| • The sludge handling is presently under investigation and a mobile mechanical sludge dewatering plant has been proposed and could also be used as a temporary measure at the Gansbaai Works R1 500 000.<br>• Increase capacity of Tecroveer plant R500 000.<br>• Converting quarry to reedbeds R250 000. |
| **Gansbaai WWTWs** |
| Effluent Quality |
| The existing plant was severely overloaded both hydraulically and organically resulting in poor quality effluent particularly with regard to COD and ammonia. The sludge mass in the Tecroveer reactor was generally low resulting in low sludge ages and high ammonias in the effluent. The new Nereda Plant should result in a significant improvement in the quality of the effluent. The Nereda Plant is designed to comply with the DWA general effluent discharge standard with the special soluble ortho-phosphates standard. |
| Operational Problems |
| • It is essential that any problems with screening the effluent are given immediate attention by the site staff in order to prevent downstream blockages (Duty-standby screens have been provided).<br>• The vortex degritters have been oversized (duty/standby) in order to remove the expected high grit loads which is essential for the operation of the plant. Any problems with the grit removal system must be given immediate attention.<br>• The system must be monitored particularly regarding dissolved oxygen in the effluent and suspended solids.<br>• Waste sludge will be thickened in the existing Tecroveer plant before discharge onto the drying beds. This operation will require supervision particularly in the wet periods when sludge drying is problematic.<br>• All screenings, grit and dried sludge should be disposed of off site. |
| Improvements Required (Amounts excl. 10% Contingencies, Prof fees and VAT) |
| • Sludge handling should be upgraded to an equivalent capacity of 5 000 m³/d. Cost for mechanical thickening and dewatering is estimated at R9 000 000. |

Implementation strategies:

It is essential for OM to protect their assets by ensuring that an appropriate maintenance and rehabilitation plan (AMP) is developed and implemented. 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. OM 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.

The cost estimates for the proposed future extensions, as determined through the completed Water and Sewer Master Plans for OM, are included in Annexure A of the Annexure Report. OM needs to identify funds in advance for the proposed projects and should only approve new developments once the necessary bulk infrastructure and the upgrading of the existing infrastructure, as identified in the Master Plans, are in place. OM needs to prioritize from the list of projects those items which can be implemented from the available funding for a particular financial year. OM needs to undertake revised master planning at least every three to five years and use the master plans to list the desired infrastructure development requirements, and reflect these in the IDP.

It is important for OM to place a high priority on demand management 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 (Implementation of the WC Programme and WDM Strategy).

It is also important for OM to 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.

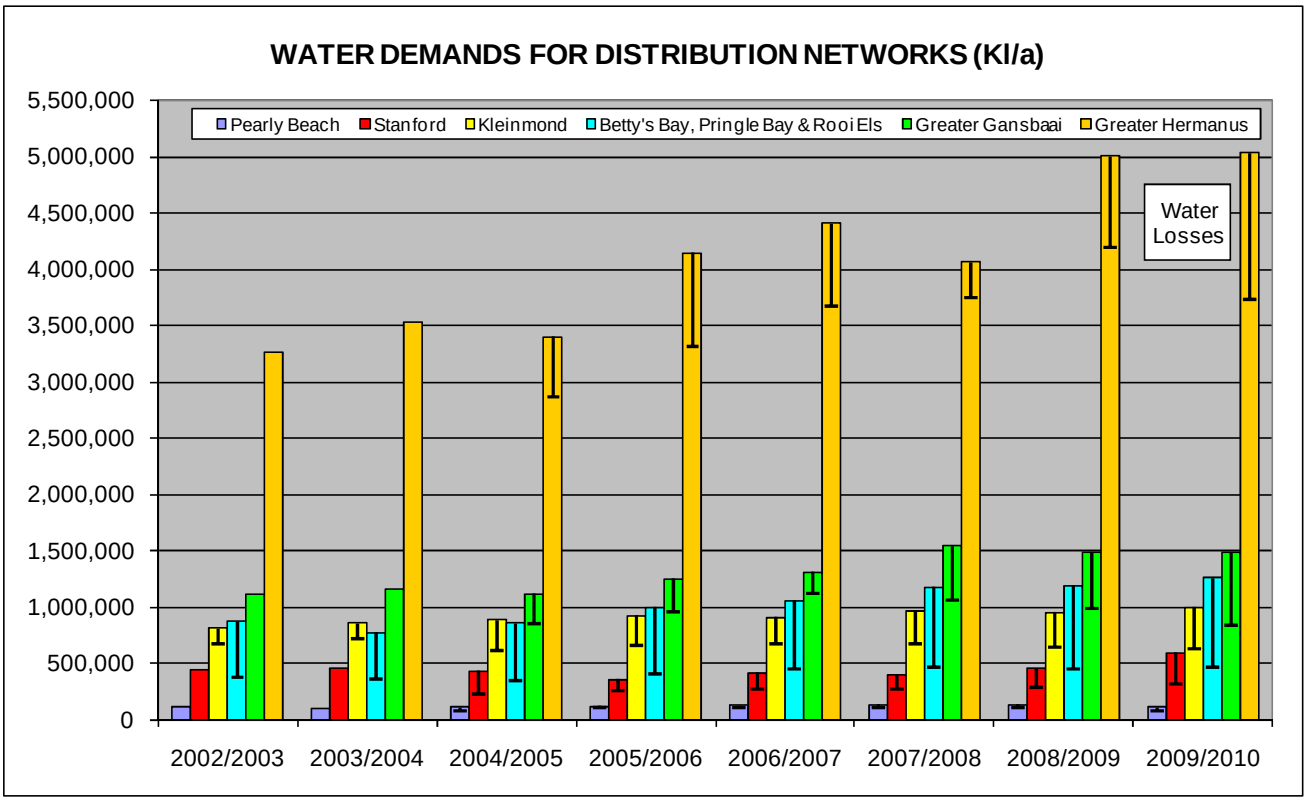
The infrastructure functional strategies of OM, as included under the "Functional Areas of Municipal Activities" chapter of the IDP, are as follows:

- Master planning of engineering infrastructure (Water, sewerage, roads, stormwater and electricity).
- Procurement of consulting and contracting services for infrastructure projects.
- Project management of infrastructure projects.
- Management of grant funding i.e. MIG, DWA (Masibambane), EPWP and LOTTO.
- Engineering comments on town planning and applications.
- Approval of engineering services designs and standards for new developments.
- Compilation of services agreements for new developments.
- Liaison with consultants, developers and contractors.
- In-house design and support for Local Labour Promotion Projects (LLPP).
- Special studies like desalination and groundwater.

## WATER BALANCE PROFILE

Status quo:

The graph below indicates the amount of bulk water supplied to the various towns within the OM's Management Area and the total water losses.



The total physical water losses for OM from July 2008 to June 2009 were 2 540 Ml (27.59%). OM will be able to reduce their total water losses to below 15.5 % over the next five years, through the effective implementation of their developed Water Demand Strategic Implementation Plan and WDM Strategy. This is considered a realistic target for OM.

Gaps:

OM's current water information database appears adequate from a water services management perspective. The influent at the WWTWs and the quantity of treated effluent re-used are also metered at the WWTWs and the information is recorded in a database. The primary gap is the availability and assurance of water supplied to farm dwellers residing on private land.

Implementation strategies:

OM is committed to keep record of all bulk meter readings, flows at WWTWs and to update the water balance models on a monthly basis in order to determine locations of wastage and to enable OM to actively implement their WDM Strategy to reduce losses. 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.

The following goals and strategies are set by OM with regard to their water balance.

- OM will keep record of all bulk water meter readings in order to enable them to update their water losses and water demand models on a monthly basis.
- The existing water losses will be reduced as far as possible through the implementation of the WC Programme, Water Demand Strategic Implementation Plan and the WDM Strategy.
- OM will ensure that all water utilized is metered (parks, standpipes, etc).
- OM will keep on monitoring the influent at all their WWTWs.
- OM will factor in the committed water conservation and demand management targets in their future projected water requirements.

## WATER SERVICES INSTITUTIONAL ARRANGEMENTS

Status quo:

OM acts as both WSA and WSP to the consumers in their Municipal Management Area and therefore does not manage other WSPs.

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

The Performance Indicators / Targets for Water Services and Project Management and Development Control, as included in OM's SDBIP for 2009/2010, are as follows:

| KPA | Related Goal / Programme | Baseline | Outputs | Performance Indicator / Target |
|---|---|---|---|---|
| Human Resources | Staff Management | Directors responsible for optimum functioning of staff, motivation of staff and promoting good relations amongst staff | Well functioning staff establishment | Ongoing management of staff |
| | Job Descriptions | Job descriptions 95% finalised – new appointees outstanding | Finalised job descriptions submitted to the Job Evaluation Committee | Liaise and work with Directors to finalise and submit outstanding job descriptions to the JE Committee |
| | Training | Ongoing training of personnel essential including multi-skilling to fill in for absentees | Well trained staff, effective waste services delivery | Related skills needs and courses identified and included in WPSP. |
| Customer Care | Customer Care | Responsive to residents queries, requests | Response to all citizen complaints / enquiries within acceptable period. | Daily recording of enquiries / requests on EDMS / EIMS, incoming mail within 24 hours to central registry & response to consumer / public enquiries / requests within 14 days |
| Skills Development | Needs Analysis | All directorates must identify the training needs of their staff and provide such to Management Services to include on an annual basis in the WPSP submitted to the SETA and serving as the base document of courses' initiation | Participation in training audit updates, using performance management as an identifying factor of training needs and making inputs as required into the WPSP | |
| Capital Projects | Various projects and programmes | OM has a large number of capital projects mostly ito community services and infrastructure and planning | Effective project management of capital projects, including contract management of service providers, ensuring realisation of projected spending per quarter | 12% Spending ito capital budget with full quality, cost, time and health and safety control exercised. |
| | | Responsibility of MM to ensure capital spending is in line with the capital budget and the SDBIP. Current spending 91% of capital budget by June 2010. | Monthly and quarterly monitoring of targets as set. | 40% (2nd Quarter), 75% (3rd Quarter) and 98% (4th Quarter) ito capital budget with full quality, cost, time and health and safety control exercised. |
| New Developments | Engineering Approval | Design approval & comments on TP applications | Design drawings approvals within 21 days | Engineering design approvals within 21 days |
| | | | SDA entered into with developers | Conclusion of SDAs |
| | | | Comments on TP applications within 25 days | Comments provided on TP applications within 25 days. |
| Water Services | WSA - WSP | Division of the WSA-WSP roles to be clearly defined in organisational structure. | Clear differentiation between WSA & WSP obligations and roles | Role definition in line with amended organisational structure |
| | WSDP | Approved WSDP | Updated WSDP | WSDP audit |
| | Water Quality | WSA regulation | Monitoring of water quality compliance | Ongoing monitoring of laboratory results |
| | Licenses | 4 WTWs and 5 WWTWs of which the licenses are in various stages of non-compliance, i.e. some already expired and other about to expire | Licenses of all the WTWs and WWTWs revised ito current volumes treated and renewed | Liaise with DWA to revise volumes and renew licenses |
| | Masterplan | Water and sanitation master plan in place | Updated water and sanitation master plan | Ongoing updating of water and sanitation master plan |
| | Authority regulation | Authority regulation | Monitoring of water quality compliance | Ongoing monitoring of laboratory results |
| | | | | Review of water quality sampling regime |

| KPA | Related Goal / Programme | Baseline | Outputs | Performance Indicator / Target |
|---|---|---|---|---|
| | Water Demand & Water Conservation – Loss Management | Introduce water conservation, demand management, loss management and awareness | Various programmes to enable water demand and loss management | Consumer meter replacement programme – focus areas identified and work scheduled |
| | | | | Progressive replacement of meters and installation of telemetry |
| | | | | Statistics and reports to DWA |
| | | Water losses on average not excessively high but substantial difference in water losses from town to town | Reduce water losses to 20% through pipe replacement, pipeline maintenance and leak detection programme on which pressure management will follow | Contractor on site – monitoring of project |
| | | Customer wastage must be addressed | Various programmes to be implemented, i.e. high, low, zero consumption follow-up, large users, high consumption and leaks in poor areas, awareness programme, schools programme, retrofitting, debt management | Red flag management and replacement of meters where identified, education on waterwise gardening, pamphlets, education at schools, etc. |
| | | | | Monitoring of municipal usage – parks and buildings |
| | Sustainable Water | Water catchment agency established | Full participation in water catchment area management | Ongoing involvement |
| | | Water resources development essential | Planning for sustainable water resource development and management | Ongoing preliminary feasibility studies |

Gaps:

OM needs to focus strongly on the rehabilitation and the maintenance of the existing infrastructure, augmentation of their existing water sources (Greater Hermanus and Stanford area) and all planning for new services should be guided by the Water and Sewer Master Plans. Water and sanitation services are currently effectively managed by OM.

OM's progress with regard to the above free basic services and institutional development and performance targets are as follows:

- The first 6kl of water usage per month is provided free of charge to all domestic consumers within OM's Management Area. Free basic water services are also linked to OM's Indigent Policy and basic water services are provided free of charge to all Indigent households.

- Free basic sanitation services are linked to OM's Indigent Policy and basic sanitation services are provided free of charge to all Indigent households.

- OM report within four months after the end of each financial year on the implementation of their previous year's WSDP (Water Services Audit Report).

- The RPMS was used to report on the KPIs for water and sewerage services (Included in the Water Services Audit Report of 2008/2009) OM will ensure that they report annually of the KPIs.

Implementation strategies:

It is important for OM to report annually on the KPIs as listed in the SFWS and included in DWA's Water Services Regulation Strategy.

That the necessary mechanisms are put in place to effectively monitor the compliance of consumers with regard to the Water Supply, Sanitation Services and Industrial Effluent By-laws. The Water

Services Act No.108 of 1997 requires Municipalities to make water services by-laws. By-laws are the legislative instrument through which Municipalities give effect to their policies and are a critical instrument in ensuring the Municipalities' sustainability.

The managerial priorities of OM, as included under the "Functional Areas of Municipal Activities" chapter of the IDP for Supply Chain Management, are as follows:

- Capacity building of functional staff.
- Improvement of internal control measures and systems.
- Promote work ethics.
- Review and implementation of workflow processes and manuals.
- Review and implement effective policies and by-laws.

OM's objectives for Strategic Planning and Performance Management and Supply Chain Management, as included under the "Functional Areas of Municipal Activities" chapter of the IDP, are as follows:

- To provide a process of participation in the drafting of an IDP.
- To plan and process integration of the IDP, PMS and SDBIP.
- To promote effective PMS management.
- To ensure that the Annual Report be completed according to prescribed legislation.
- To provide a completed and approved SDBIP / PMS.
- To involve the community in consultation and participation in strategic processes.
- To ensure effective co-ordinating supply chain management processes.
- To ensure proper control and management of the municipal stores function.
- To develop and establish a database and skills list of existing and prospective suppliers / tenderers.

## CUSTOMER SERVICES PROFILE

Status quo:

OM developed help-desks at all 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 mail or works-order system to ensure execution thereof. All help desks were equipped with Batho Pele picture signage.

The quality of potable water (Chemical & Biological) is monitored at the various locations within the water distribution systems by an appointed accredited laboratorium as well as the EHPs of Overberg DM.

Disruptions to water supply at the consumer's end are minimal, with an average of less than one disruption in water supply per annum. The only exception is the older areas of Betty's Bay, where due to the aged condition of the pipe reticulation, a consumer could experience as many as five disruptions per annum.

The table below gives a summary of the Customer Services records that are kept by OM and the maintenance work that was carried out over the last financial year in OM's Management Area (2008/2009).

| Service | Definition | Gansbaai | Hermanus | Kleinmond | Stanford | Total |
|---|---|---|---|---|---|---|
| Sewerage connection | Provision of connection or inspection of existing connections | 13 | 124 | 2 | 2 | **141** |
| Sewer blockages | Repair blockages on main sewer pipelines up to connection points | 46 | 1249 | 74 | 25 | **1394** |
| Investigate sewer reticulation network | Investigate network | 2 | 10 | 0 | 0 | **12** |
| Manholes sewer reticulation | Inspection and installation of manholes | 0 | 0 | 0 | 0 | **0** |
| Other sewer reticulation | Any other sewer reticulation inspections | 0 | 0 | 0 | 0 | **0** |
| PDA toilets repairs | Previously disadvantaged toilets repaired | Community members were appointed to carry out the repairs | | | | |
| Pipeline sewer | Installation of sewer pipelines or repair of pipelines | 0 | 0 | 0 | 0 | **0** |
| Investigate sewer reticulation pump stations | Work carried out at sewer pump stations | 0 | 21 | 11 | 0 | **32** |
| Test water meter | Testing of water meter for accuracy | Not previously captured, but was recently put on the system | | | | |
| Disconnect water connection | Disconnect supply | Managed Externally (Debt Pack) | | | | |
| Install drip system | Installation and inspection of drip systems | Managed Externally (Debt Pack) | | | | |
| Inspect water connections | Inspect connections | 659 | 467 | 323 | 112 | **1 561** |
| Other water connections | Inspections and work carried out at water connections | 69 | 167 | 35 | 93 | **364** |
| Pipelines water | Installation or repair of water pipelines | 1 | 11 | 1 | 1 | **14** |
| Pressure | Complaints with regard to pressure in the system | 26 | 80 | 15 | 5 | **126** |
| Water Pump Stations | Inspections and work carried out at water pump stations. | 0 | 21 | 11 | 0 | **32** |
| Repair pipe bursts | Repair of burst water pipelines | 60 | 243 | 49 | 14 | **366** |
| Reservoirs | Inspection of reservoirs and work carried out at reservoirs | 2 | 47 | 5 | 2 | **56** |
| Water Routine Inspections | Any water related inspections | 1 | 5 | 2 | 10 | **18** |
| Water Valves | Inspection of valves and work carried out on valves | 2 | 21 | 12 | 2 | **37** |

The table below gives a summary of the number of pipe bursts in Rooi Els, Pringle Bay, Betty's Bay and Kleinmond over the last few years (A – Rooi Els, B – Pringle Bay, C – Betty's Bay and D - Kleinmond).

| Month | 2009 | | | | 2008 | | | | 2007 | | | | 2006 | | | | 2005 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | A | B | C | D | A | B | C | D | A | B | C | D | A | B | C | D |
| Jan | 1 | 12 | 27 | 3 | 2 | 4 | 11 | 6 | 0 | 16 | 20 | 4 | 0 | 13 | 19 | 5 | 1 | 4 | 9 | 9 |
| Febr | 0 | 6 | 13 | 5 | 1 | 10 | 29 | 10 | 0 | 3 | 27 | 2 | 0 | 1 | 19 | 0 | 1 | 2 | 8 | 7 |
| Mar | 0 | 12 | 23 | 10 | 0 | 11 | 27 | 8 | 0 | 1 | 7 | 1 | 1 | 0 | 9 | 4 | 1 | 0 | 8 | 3 |
| Apr | 0 | 6 | 21 | 1 | 0 | 10 | 17 | 4 | 0 | 2 | 6 | 2 | 0 | 0 | 5 | 1 | 0 | 9 | 25 | 4 |
| May | 0 | 2 | 7 | 6 | 0 | 6 | 21 | 3 | 2 | 6 | 10 | 5 | 0 | 0 | 2 | 4 | 0 | 0 | 4 | 0 |
| Jun | 0 | 6 | 27 | 4 | 1 | 2 | 8 | 3 | 0 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 9 |
| Jul | 2 | 9 | 22 | 3 | 1 | 4 | 20 | 8 | 0 | 2 | 5 | 10 | 0 | 3 | 10 | 11 | 1 | 3 | 11 | 4 |
| Aug | 0 | 5 | 12 | 4 | 0 | 2 | 12 | 8 | 1 | 3 | 31 | 2 | 0 | 5 | 21 | 8 | 1 | 14 | 17 | 5 |
| Sept | 0 | 1 | 9 | 3 | 0 | 2 | 5 | 6 | 0 | 3 | 11 | 6 | 0 | 5 | 1 | 8 | 0 | 4 | 16 | 3 |
| Oct | 0 | 4 | 4 | 1 | 1 | 2 | 16 | 13 | 1 | 4 | 6 | 5 | 0 | 0 | 6 | 3 | 0 | 1 | 2 | 2 |
| Nov | 0 | 0 | 8 | 1 | 2 | 4 | 27 | 3 | 2 | 0 | 7 | 2 | 0 | 5 | 13 | 9 | 0 | 1 | 9 | 1 |
| Dec | 0 | 0 | 2 | 3 | 1 | 3 | 6 | 8 | | | | | 0 | 11 | 8 | 4 | 1 | 4 | 6 | 2 |
| **TOTAL** | **3** | **63** | **175** | **44** | **9** | **60** | **199** | **80** | **6** | **40** | **138** | **41** | **1** | **43** | **113** | **57** | **6** | **43** | **122** | **49** |

Standby pumps and motors are kept in storage by OM in order to minimise the risk of interruption in water supply from pump stations over the peak seasons (Specific reference to De Kelders / Gansbaai / Kleinbaai)

Gaps:

OM's progress with regard to the quality of services provided and education and health performance targets, as included in the SFWS, are as follows:

*Water quality and continuity of supply:* All households in the urban areas receive water of an adequate drinking quality. It is estimated that approximately 11.73% of the households on the farms does not receive water of adequate quality and experience inadequate continuity of water supply. The figure is based on the 2001 Census data and will be verified once OM has completed a service level survey on the farms.

*Hygiene education and the wise use of water are taught* in *all schools by 2005*: Not yet in place.

*Households with access to at least a basic sanitation facility know how to practise safe sanitation:* The status with regard hereto is still unknown and needs to be verified. There are no households in the urban areas with sanitation services below RDP standard and it is estimated that approximately 22.07% of the households on the farms are still supplied with sanitation services below RDP standard.

Implementation strategies:

OM's implementation strategies with regard to customer services are to maintain the high level of customer service satisfaction and to keep record of all the necessary customer services information and to link the customer services KPIs to their Performance Management System, in order to ensure that the following goals are met:

- To monitor the number of consumers experiencing greater than 7 day interruptions in water supply per year and also the number of consumers receiving a flow-rate of less than 10 litres per minute.

- To ensure that private landowners provide at least basic water services to those households with current water service levels below RDP standard, once the current backlog with regard water services (quantity, quality and sustainability) on the farms is known. OM will then be in a better position to monitor the quality of services for water on the farms.

- To keep record of the number of water queries received and to monitor the number of complaints with regard to water quality and the number of major or visible leaks. To respond within 24 hours to all queries and to repair all leaks within 48 hours after being reported.

- To do a survey in order to verify the current service levels on the farms and to ensure that private landowners provide at least basic sanitation services to those households with current sanitation service levels below RDP standard (Health and hygiene education / awareness to be part of the process).

- To keep record of the number of sanitation queries/complaints received per year, the number of blockages, number of calls received for pit/tank emptying and the number of calls received for emergency maintenance to pits/tanks. To respond within 24 hours to all sanitation complaints and to repair all sanitation blockages on the networks within 48 hours. To respond within 48 hours to all requests for pit/tank emptying.

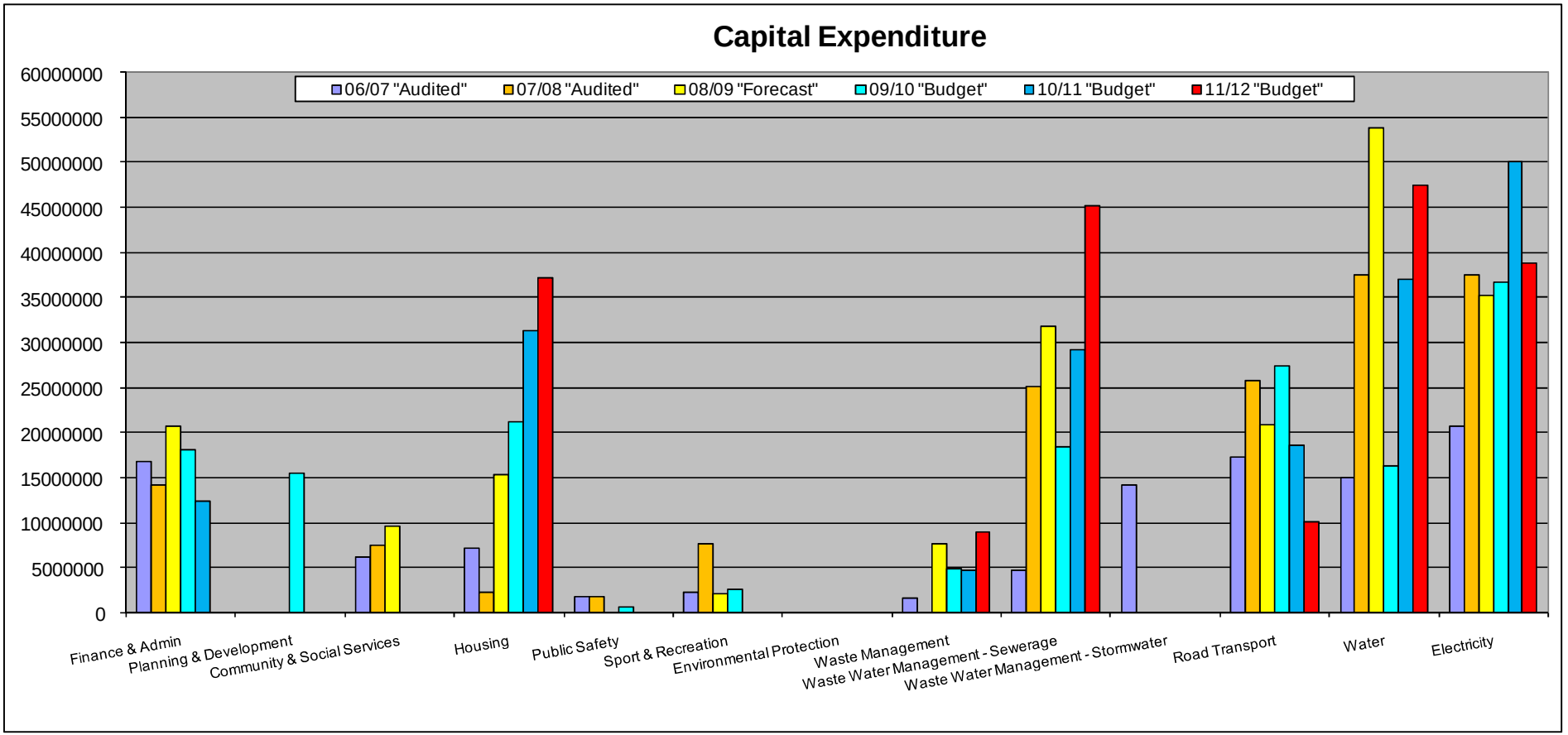
- To evaluate the health and hygiene awareness and water education programmes and to incorporate these programmes in their future planning. To ensure that health and hygiene awareness is part of the process of providing VIPs on the farms, for those households with current sanitation facilities below RDP standard. To focus on public awareness and school education programmes through the implementation of their WC Programme and WDM Strategy.

- To have a Formal Pollution Contingency Plan for the Management Area and to ensure that pollution awareness is part of the Plan.

## FINANCIAL PROFILE

Status quo:

*Capital Budget:* The following graph indicates the projected capital expenditure for all water and sanitation capital projects for OM.



84% of the proposed water and sewerage capital budget of R25.610M for 2009/2010 will be funded by the Council (Council capital funds for Sewerage R7.310M and Water R14.170M). OM's 2008/2009 MIG allocation was R7.368 million and the 2009/2010 and 2010/2011 allocations are R10.194 million and R8.334 million respectively.

The total Council Funded Capital Budget proposed for the 2009/2010 financial year was R116M. It was intended to finance the 2009/2010 Council funded capital budget with an external loan of R70M, R36M from the Capital Replacement Reserve and R10M from accumulated Development Contributions. OM has a backlog both in investing in new and upgrading of existing bulk infrastructure that has been partially addressed since the 2007/08, 2008/09 and the 2009/10 and future capital budgets.

The construction industry (housing) is currently experiencing a downturn, though the local population continues to grow (Estimated at 45% over the last 7 years). It is anticipated to grow over the medium term by 5% annually. This puts pressure on both the capital and operational budgets. Forth flowing from the above-mentioned demand for urgent capital services the Executive Mayoral Committee has kept the capital budget spend for 2009/2010 over R120M, to further improve infrastructure. The future capital budgets would have to carefully balance cost and affordability as external borrowing cannot continue indefinitely.

*Tariffs:* The first 6 kl of water is provided free to all consumers. OM reduced the number of blocks in their block step tariff system from six (6) to four (4) for the 2009/2010 financial year. OM's current four (4) block step tariff system discourages the wasteful or inefficient use of water. It is expected that this tariff structure will continue to be implemented in the future.

The sustainable supply of potable water is becoming an ever increasing challenge. This scarce commodity has to be optimally managed. The increase in the price of electricity and chemicals for purification (average increase in excess of 150% over the last two years) 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 30 kl per household per month. It should be noted that this tariff still relates to a under recovery on the actual purification and distribution cost per kilolitre in this category.

Punitive tariffs are introduced for excessive water consumption and to equalize the under recovery. When the culture of water consumption conservation filters through from consumers, the lower end of the block tariff will have to be reviewed to balance the recovery cost of water supply.

The table below gives some comments on the specific blocks, with regard to OM's 2008/2009 block step tariff structure.

<table>
<tr><th>Block (kl/month)</th><th>2007/2008</th><th>2008/2009</th><th>09/10</th><th>Comments</th></tr>
<tr><td>0 - 6</td><td>R0-00</td><td>R0-00</td><td>R0-00</td><td>Free Basic Water</td></tr>
<tr><td>7 - 10</td><td>R1-46</td><td rowspan="2">R2-28</td><td rowspan="5">R6-84</td><td rowspan="2">Low volume use</td></tr>
<tr><td>11 - 15</td><td>R1-94</td></tr>
<tr><td>16 - 20</td><td>R2-90</td><td rowspan="3">R5-70</td><td rowspan="3">Typical use volume, including garden irrigation</td></tr>
<tr><td>21 - 25</td><td>R3-83</td></tr>
<tr><td>26 - 30</td><td>R4-78</td></tr>
<tr><td>31 - 40</td><td>R6-42</td><td rowspan="2">R9-12</td><td rowspan="3">R17-10</td><td rowspan="3">Above average use, including garden irrigation</td></tr>
<tr><td>41 - 45</td><td rowspan="2">R7-85</td></tr>
<tr><td>46 - 60</td><td>R12-54</td></tr>
<tr><td>61 - 80</td><td>R9-36</td><td rowspan="3">R17-10</td><td rowspan="3">R22-80</td><td>Wasteful use and/or severe garden irrigation</td></tr>
<tr><td>81 - 100</td><td>R11-69</td><td rowspan="2">Significant waste and/or unnecessary garden irrigation</td></tr>
<tr><td>> 100</td><td>R15-64</td></tr>
</table>

*Operational Budget:* The operational budget for water and sanitation services are summarised in the table below:

The operational budget for water and sanitation services are summarised in the table below:

| Service | Expenditure / Income | 09/10 Budget | 08/09 Actual | 07/08 Actual | 06/07 Actual |
|---|---|---|---|---|---|
| Water | Expenditure | R54 991 290-00 | R48 040 492-36 | R30 485 238-87 | R30 702 360-91 |
| | Income | R73 432 500-00 | R66 998 742-40 | R43 820 070-79 | R41 210 879-97 |
| | Difference | **-R18 441 210-00** | **-R18 958 250-04** | **-R13 334 831-92** | **-R10 508 519-06** |
| Sewerage | Expenditure | R37 379 280-00 | R25 170 345-76 | R25 091 607-04 | R23 032 344-36 |
| | Income | R40 802 700-00 | R32 056 044-09 | R20 710 387-65 | R25 415 443-81 |
| | Difference | **-R3 423 420-00** | **-R6 885 698-33** | **R4 381 219-39** | **-R2 383 099-45** |
| **Total** | | **-R21 864 630-00** | **-R25 843 948-37** | **-R8 953 612-53** | **-R12 891 618-51** |

Gaps:

*Capital Budget:* The table below gives a summary of the proposed future works necessary for OM, as identified through the recent completed Water and Sewer Master Plans (Amounts include P&Gs, Contingencies, Fees, excl. VAT).

| Distribution System | Water (2008/2009) | Sewer (2008/2009) |
|---|---|---|
| Buffels River | R20 658 018 | R103 642 000 |
| Kleinmond | R2 474 872 | R34 039 000 |
| Greater Hermanus | R106 922 302 | R60 346 000 |
| Stanford | R12 108 057 | R15 978 000 |
| Greater Gansbaai | R77 560 571 | R87 204 000 |
| Pearly Beach | R1 085 840 | R18 777 000 |
| **TOTALS** | **R220 809 660** | **R319 986 000** |

Note: The development of additional water sources and the upgrading of WTWs and WWTWs capacities are not included in the above table.

The water supply system is under increasing threat of widespread failure of the reticulation. About 85.3% of the reticulation network (555.484 km of the total of 651.326 km) and 62.8% of the bulk water pipelines (38.175 km of the total of 60.832 km) are in a poor or very poor condition. This is placing considerable strain on OM's maintenance operations, but the real solution is for the municipality to commit to a substantial and sustained programme of capital renewal works. The problem is not restricted to the reticulation, and will soon include pump stations, WWTWs and WTWs.

The replacement value of the water infrastructure that is expected to come to the end of its useful life over the next 20 years is around R854.4M (an average of R42.7M per year) and for sanitation infrastructure the value is R262.7M (an average of R13.1M per year). The renewals burden is set to increase sharply over the next 20 years. Water and sanitation infrastructure assets with a total current replacement value of about R766.5M and R223.5M will be reaching the end of their useful lives over the first 10 years and will need to be replaced, rehabilitated or reconstructed. In the following 10 years the amounts are estimated to be R87.9M and R39.3M.

The extent to which each type of water and sanitation asset portfolio has been consumed was summarised previously in the tables under the "What is the Status of all Water Infrastructure" Section. The low percentage figures for the bulk pipelines, reticulation networks, pump stations and WTWs points to the need for a dedicated renewals programme targeting these assets. If this is not done, there is the risk that the ongoing deterioration will escalate to uncontrolled proportions, with considerable impact on consumers, the economy of the area and the image of OM.

*Tariffs:* The water tariff structure of OM should remain a rising block tariff system, which discourages wasteful or inefficient use of water. The determination of tariff policies should seek to address both commercial and social welfare concerns. The **CAFES**-principles (Sansom et al. 2002) are outlined below:

- **C**onserving. Tariffs should encourage consumers to purchase enough water to meet their needs without being wasteful.
- **A**dequate. Future investment should also be considered when setting the tariffs.
- **F**air. The utility should achieve financial sustainability while maintaining access for poor communities.
- **E**nforceable. Tariffs that cannot be enforced are unlikely to be sustained.
- **S**imple. The tariffs should be easy for the Municipality to administer and easy for customers to understand. Consumers generally show greater willingness to pay water bills that they understand.

The quantity of wastewater discharged from the industrial consumers into OM's sewer system needs to be metered and the quality needs to be monitored regularly by OM.

*Operational Budget:* Key risk areas in the operational budget of OM, which need to be closely monitored over the course of the 2009/2010 financial year, include the following:

- Changes in seasonal weather patterns from the norm can decrease the consumption of water and/or electricity services and whilst this is beneficial in environmental terms it does put at risk the achievement of the revenue budget.
- Although load shedding has temporarily been averted, failure by the Eskom supply network can result in a loss of income and other related costs (such as the hiring of generators, additional labour costs, etc.) to Council.
- A cut-back on the level of overtime payments will require active management by the Managers and Directors to keep the expenditure within the new budget as vacant posts are filled.
- No appropriation for a contingency budget as a zero based budget methodology was applied.
- The impact of the 2010 Soccer World Cup on the infrastructure and resources of the area as a whole.
- The full impact of the implementation of GRAP and the new accounting standards that arose since it's inception from 1 July 2004 and further revisions of accounting standards and issuing of further new accounting standards by the Accounting Standards Board has already had a impact on the operational budget. To name a few, post retirement benefits, provisions for alien vegetation clearing, rehabilitation for tip sites, etc. have since been factored into the budget. The impact of impairment of assets and the accounting treatment thereof could still further negatively impact on the budget and / or accumulated surplus.
- The uncertainty of the final Eskom price increase remains a concern. A higher than anticipated increase will further burden consumers and increase operating costs for the delivery of essential services.

- The sharp increase in the cost of chemicals used for the treatment of waste water and for purification of potable water over the past two years has not abated.

OM got a comprehensive Customer Care, Credit Control and Debt Collection Policy in place.

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.

An integrated AMP 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 OM 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. It is estimated that the budget requirements will double over this period.

Implementation Strategies

*Capital Budget:* OM's objective is to keep rates and tariff increases affordable and sustainable by limiting the increases. The following needs to be looked at:

- All services will need to be reviewed in order to assess whether the service is "core business" or whether the service is either low priority or non-statutory.
- The service levels that the Municipality will work to an can afford will need to be agreed by Council and the community and be published.
- Alternative ways of providing services need to be actively investigated. Further Business Process Re-engineering reviews should be undertaken to identify both more efficient and cost-effective ways of delivering services.
- The housing development plan should be compiled to determine total financial implication and impact of future housing projects on the operational and capital budgets. The benefits / contribution / liability of these projects towards local economic development should also be investigated.

Other implementation strategies with regard to capital funds are as follows:

- To actively implement the Customer Care, Credit Control and Debt Collection Policy in order to minimize the percentage of non-payment of municipal services.
- Identify all possible sources of funding for capital projects.
- Develop Asset Management Plans, which will indicate the real replacement values and service lives of the assets and the funds required to provide for adequate asset replacement.

The objectives with regard to the Accounting Services and Budget Office and Expenditure and Assets of OM, as included under the "Functional Areas of Municipal Activities" chapter of the IDP, are as follows:

- Proper co-ordinating of annual budget process.
- Ensure timeous annual closedown of accounts and preparation and completion of annual financial statements, attend to auditors during annual audit and financial aspects of annual report (including response to Auditor-General report).
- To produce regular financial reports as required by Council, National and Provincial treasuries, in accordance with applicable legislation.
- Effective management investments.
- Introduce and update applicable policies.
- To ensure effective co-ordinating creditors and payroll management processes.
- Effective capital asset administration.
- To produce regular information relating to payroll and creditors.

*Tariffs:* Implementation Strategies with regard to Tariffs are as follows**:** Wasteful or inefficient use of water is discouraged through increased tariffs. It is suggested that the following tariff structure characteristics should remain in OM's Structure in order to ensure efficient water use (WDM Strategy, March 2008):

- 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 of high water use. Six blocks in a tariff often make good sense.
- The volumetric steps should be kept the same for all the areas within OM'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 could be 60 kl/month, above which residential water use could be considered to be wasteful or unnecessary. Garden use requiring in excess of this volume should be reduced in accordance with xeriscape practices.

OM's existing tariff system can be adjusted to an even more conservation oriented and holistically designed system to include also the following:

- Uniquely describe Municipal use with a distinction between use types (e.g. parks, sports, fire fighting, etc.)
- Use codes to uniquely describe at least single residential use, water use by schools, business, commercial and industrial use.

The schools' consumptions need to be recorded under a unique billing code in the treasury system, in order to monitor their water usages and the success with the implementation of specific WDM activities more effectively.

Large users indentified in the WDM Strategy should be encouraged by OM to implement suggested reuse practices by means of

- Incentives
- Informative billing to communicate monthly water consumption
- Monitoring and communicating actual savings achieved

OM needs to put a system in place whereby the discharge of industrial effluent from the industrial consumers is metered and the quality monitored. The Water Services By-laws and Tariff Structure need to include a formula for the calculation of the extraordinary treatment cost to industrial consumers for the industrial effluent they discharged into OM's sanitation system. The necessary mechanisms to effectively monitor the compliance of consumers with regard to the discharge of industrial effluent into OM's sewer system need to be put in place.

*Operational Budget:* Implementation strategies with regard to the Operational Budget of OM are as follows:

- Develop a comprehensive AMP, 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.
- The depreciation charges will have to form part of the operating budget and subsequent tariffs, linked to a ring-fenced asset replacement fund.
- Water services operational surpluses have to be allocated to essential water services requirements.

The objectives for Income, as included under the "Functional Areas of Municipal Activities" chapter of the IDP, are as follows:

- To provide and maintain an effective customer focused service to deal with Client queries.
- To ensure a sustainable implementation of the Municipality's indigent policy.
- To ensure proper administration with regards to the annual review and calculation of property rates and tariffs.
- To effectively administrate and maintain debt management including the writing off, of irrecoverable debts.
- To ensure the monthly reading of electricity and water meters.

## LIST OF PROJECTS

Status quo:

Projects recorded in the table below refer to new infrastructure to be built, as included in the draft capital budget of OM for 2010/2011.

| Project name | Local Area | Water/ Sanitation | Project type (e.g. bulk, reticulation, etc.) | Schedule Date, Estimated Cost | | |
|---|---|---|---|---|---|---|
| | | | | 09/10 | 10/11 | 11/12 |
| Emergency power generators at pump stations and treatment works Phase 2 | Overstrand | Water & Sanitation | Pump Stations & Treatment Works | R1 500 000 | R1 500 000 | R1 500 000 |
| Telemetry system upgrade | Hermanus | Water & Sanitation | Telemetry | R500 000 | R500 000 | R500 000 |
| Upgrading of disinfection systems for legislative compliance | Overstrand | Water & Sanitation | WTWs & WWTWs: Disinfection | R200 000 | R200 000 | R200 000 |
| Lime dosing equipment upgrade at Preekstoel WTWs | Hermanus | Water | WTWs | R1 860 000 | - | - |
| Upgrade capacity of Preekstoel WTWs | Hermanus | Water | WTWs | R17 900 000 | R36 900 000 | R3 480 000 |
| Hemel en Aarde wellfields development | Hermanus | Water | Groundwater Sources | R1 010 000 | R1 000 000 | R1 000 000 |
| Augmentation of water sources for the Buffels River supply area | Rooi Els / Betty's Bay | Water | Sources | R850 000 | R670 000 | R730 000 |
| Gateway wellfield development, management and monitoring (Incl. Hemel en Aarde) | Hermanus | Water | Groundwater Sources | R3 688 000 | R2 250 000 | R1 020 000 |
| Wellfield development, monitoring and infrastructure | Stanford | Water | Groundwater Sources | R4 085 000 | R5 945 000 | R980 000 |
| Bulk water pipeline from borehole to reservoir | Buffeljags Bay | Water | Bulk Pipeline | R250 000 | - | - |
| Water Conservation / Loss Control / Demand Management | Rooi Els, Bettys Bay, Stanford, Hermanus, Pearly Beach | Water | WC / WDM | R1 000 000 | R1 000 000 | R1 000 000 |
| Treated effluent re-used | Hermanus & Gansbaai | Water | Re-use of treated effluent | R500 000 | R500 000 | R500 000 |
| New 300 Kl reservoir | Baardskeer-dersbos | Water | Reservoir | R960 000 | - | - |
| Upgrading of WTWs | Baardskeer-dersbos | Water | WTWs | - | R630 000 | - |
| Borehole water treatment system (Peak Demand) | Kleinmond | Water | WTWs | R2 000 000 | R500 000 | - |
| Bulk water pipeline Franskraal WTWs to Gansbaai Phase 2 | Gansbaai | Water | Bulk Pipeline | R3 280 000 | - | - |
| Bulk water pipeline Franskraal WTWs to Gansbaai Phase 2 | Gansbaai | Water | Bulk Pipeline | - | R4 520 000 | - |
| Nano filtration plant for Klipgat & De Kelders Grotte | Gansbaai | Water | WTWs | R6 140 000 | R2 690 000 | - |
| New Reservoir | Onrus | Water | Reservoir | - | R3 000 000 | - |
| New Reservoir | Bettys Bay Pringle Bay | Water | Reservoir | - | R4 500 000 | R4 000 000 |
| Replacement of concrete water pipes | Pearly Beach | Water | Reticulation | R1 000 000 | R1 000 000 | R1 000 000 |
| Dam safety compliance | Pearly Beach | Water | Management | R50 000 | | |
| Replacement of water pipe network Phase 6 | Rooi Els, Pringle Bay, Bettys Bay | Water | Reticulation | R2 000 000 | R2 000 000 | R2 000 000 |
| Hermanus WWTW Upgrading | Hermanus | Sanitation | WWTWs | R19 760 000 | R16 400 000 | R1 900 000 |

| Project name | Local Area | Water/ Sanitation | Project type (e.g. bulk, reticulation, etc.) | Schedule Date, Estimated Cost | | |
|---|---|---|---|---|---|---|
| | | | | 09/10 | 10/11 | 11/12 |
| Sewerage network extension: Phase 3 | Stanford | Sanitation | Reticulation | R1 500 000 | R1 500 000 | R1 500 000 |
| Implementation of WWTW options | Rooi Els, Pringle Bay, Bettys Bay | Sanitation | WWTWs | - | R450 000 | R4 500 000 |
| Sewerage network extension CBD: Phase 3 | Gansbaai CBD | Sanitation | Reticulation | R2 500 000 | - | - |
| Sewerage network extension Blompark | Gansbaai | Sanitation | Reticulation | R2 500 000 | R2 500 000 | R2 500 000 |
| Sewerage network extension Masakhane | Gansbaai | Sanitation | Reticulation | R2 500 000 | R2 500 000 | R2 500 000 |
| Sewer rising main rehabilitation | Kleinmond | Sanitation | Bulk pipeline | R1 700 000 | - | - |
| Vacuum sewerage system | Betty's Bay | Sanitation | Reticulation | R3 500 000 | R3 500 000 | - |
| Upgrading of WWTW capacity | Hawston | Sanitation | WWTWs | - | R800 000 | R2 000 000 |
| Stormwater detention ponds upgrade: Franskraal | Gansbaai | Stormwater | Detention Ponds | R200 000 | - | - |
| **TOTAL** | | | | **R82 933 000** | **R96 955 000** | **R32 810 000** |

*WSA sustainability project list:*

| Project name | Settlement type | Water/ sanitation | Key issues to be addressed | Amount | Funding source | Year |
|---|---|---|---|---|---|---|
| **Sustainability projects (state)** | | | | | | |
| See list of proposed Master Plan items as included in Annexure A of the Annexure Report | | | | | | |
| List of proposed projects as included in the Improvement / Upgrade Plan of the Water Safety Plan (Also included in Annexure E of the Annexure Report of the WSDP) | | | | | | |
| Updating of MPs, IMQS, SWIFT | Urban Areas | Water | Management | R250 000 | Identify Funds | 2010/2011 |
| Develop AMP for Water and Sanitation Infrastructure | Urban Areas | Water & Sanitation | AMP | R200 000 | Identify Funds | 2010/2011 |
| Survey the current service levels on the farms | Farm Areas | Water & Sanitation | Management | R180 000 | Identify Funds | 2010/2011 |
| Develop a Water and Sanitation Service Level policy | Management Area | Water & Sanitation | Management | R100 000 | Identify Funds | 2010/2011 |
| Develop a Pollution Contingency Plan | Management Area | Water & Sanitation | Management | R150 000 | Identify Funds | 2010/2011 |
| **Description WSA capacity development** | **Key issues to be addressed** | | | **Amount** | **Funding source** | **Year** |
| A Work Place Skills Plan for OM for 2009/2010 is in place | | | | | | |

Gaps:

It is important for OM to focus over the next few years on the following key capital infrastructure projects:

- Augmentation of the bulk water supply for Stanford and the Greater Hermanus Area (Gateway and Hemel en Aarde wellfields).
- Upgrading of the WWTWs (Hermanus and Hawston) and the WTWs (Hermanus, Kleinmond – Borehole and Gansbaai - Klipgat and De Kelders Grotte fountains).
- Additional reservoir storage capacity for Onrus, Betty's Bay/Pringle Bay and Baardskeerderbos.
- Upgrading / Replacement of the existing water and sewer networks, rising mains and pump stations as identified through the Water and Sewer Master Plans.

- Adequate rehabilitation and maintenance of the existing infrastructure.

Implementation strategies:

OM's implementation strategies, with regard to new water and sanitation infrastructure, 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.

- To update the existing Water Master Plans and to 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 provision of basic water and sanitation services in the rural areas.

- Assign a high priority to the implementation of OM's WC Programme and the WDM Strategy (Demand Management) 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.

- 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.