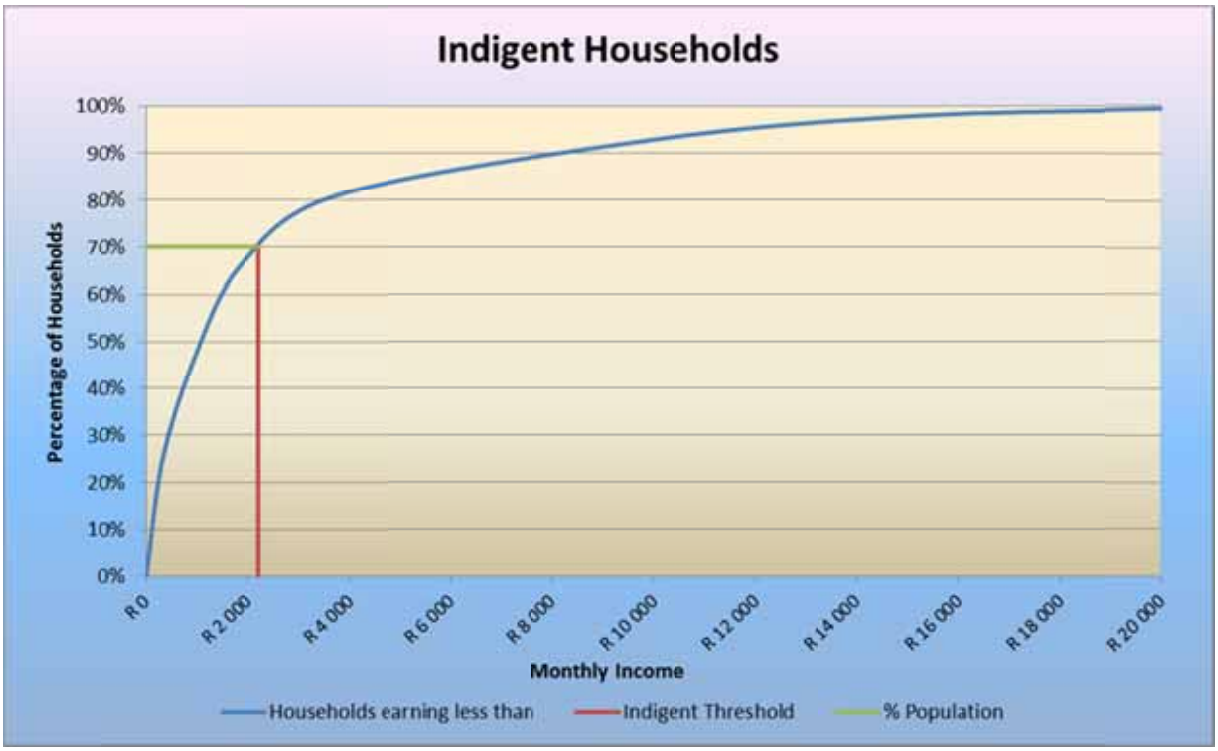
EMTHANJENI MUNICIPALITY WSDP: EXECUTIVE SUMMARY

This Water Services Development Plan (WSDP) for Emthanjeni Municipality is intended to support the Department of Water Affairs' specified format WSDP by providing a narrative document with supporting tables and charts that can be used as a reference document by municipal officials.

DEMOGRAPHICS

The basis of planning of water services must rest on the demographics of the community served both in terms of the *status quo* and anticipated growth. Neither of these fundamentals can be accurately determined and, as in the Integrated Development Plan, Census 2001 is still used as a benchmark with zero growth assumed in the light of various sources of data on growth since 2001 suggesting contradictory trends. The outcome of the 2011 Census is thus critical to Emthanjeni in order to identify both the current demographical situation and trends that have developed since 2001.

Based on the Employment data from the 2001 Census approximately 56% of the eligible workforce is unemployed. If the earnings of the workforce are escalated to 2010 values and compared with the current indigence threshold of R2 200 per household, indications are that the percentage of households in Emthanjeni that can be classified as indigent must be close to 70%. This situation is illustrated graphically below.



This large percentage of the community that cannot contribute to the financial viability of the municipality must be seen as a threat to sustainability.

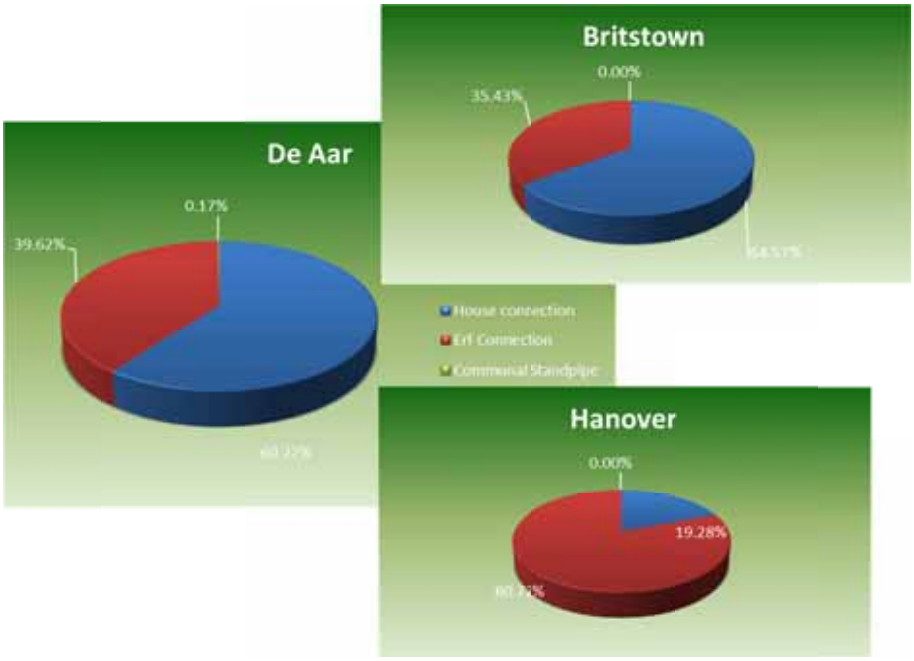
Overall affordability levels for municipal services are also a source of concern with non-indigent households having to allocate approximately 15% of their income to payment for municipal services. It must however be noted that this situation appears to be relatively

constant across the various income categories and is not unduly skewed to the detriment of lower earning households. The situation is tabulated below.

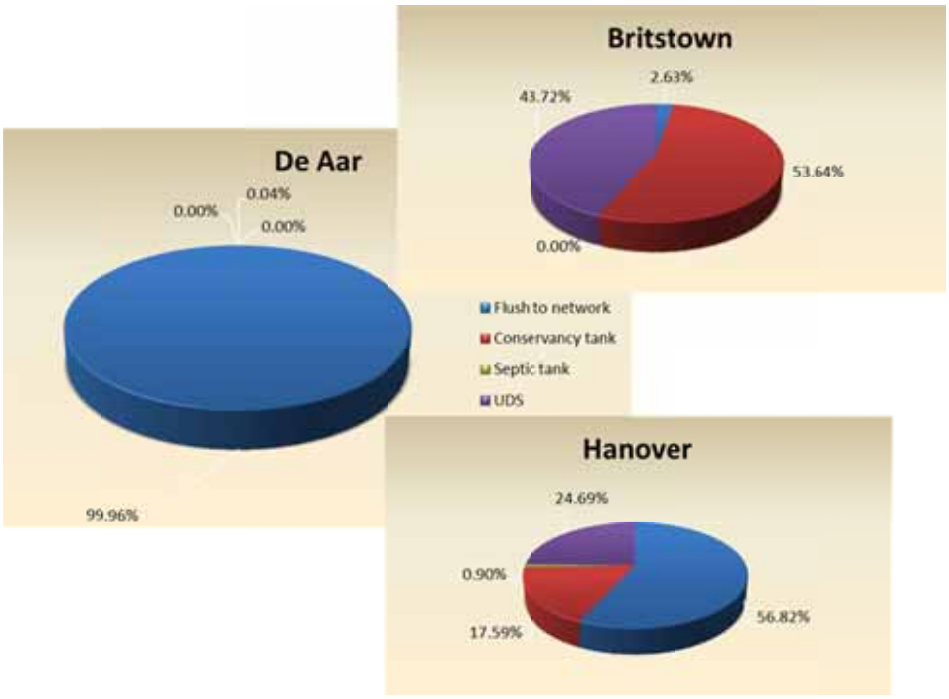
Component of Account	Indigent HH	Poor HH	Ave HH	Affluent HH
Water Consumption (kl)	6	15	25	50
Water Account	R -	R 108.73	R 183.29	R 589.11
Electricity Consumption (kWhr)	50	100	200	800
Electricity Account	R -	R 184.36	R 258.46	R 716.74
Refuse Removal Account	R -	R 74.99	R 74.99	R 74.99
Sanitation Account	R -	R 120.26	R 120.26	R 120.26
Property Values	R 18 000	R 30 000	R 300 000	R 800 000
Rates Account	R -	R 13.02	R 305.97	R 848.47
Total Monthly Account	**R -**	**R 501.36**	**R 942.97**	**R 2 349.57**
Assumed Monthly Income	< R 2200	R3 000	R6 000	R12 000
Water Account as % of Income	0	3.62%	3.05%	4.91%
Sanitation Account as % of Income	0	4.01%	2.00%	1.00%
Total Account as % of Income	**0**	**16.71%**	**15.72%**	**19.58%**

SERVICE LEVELS

The Emthanjeni Municipality maintains high water service levels within the communities served. The levels of service for the potable water and sanitation services are shown diagrammatically below.



Potable Water Service Levels



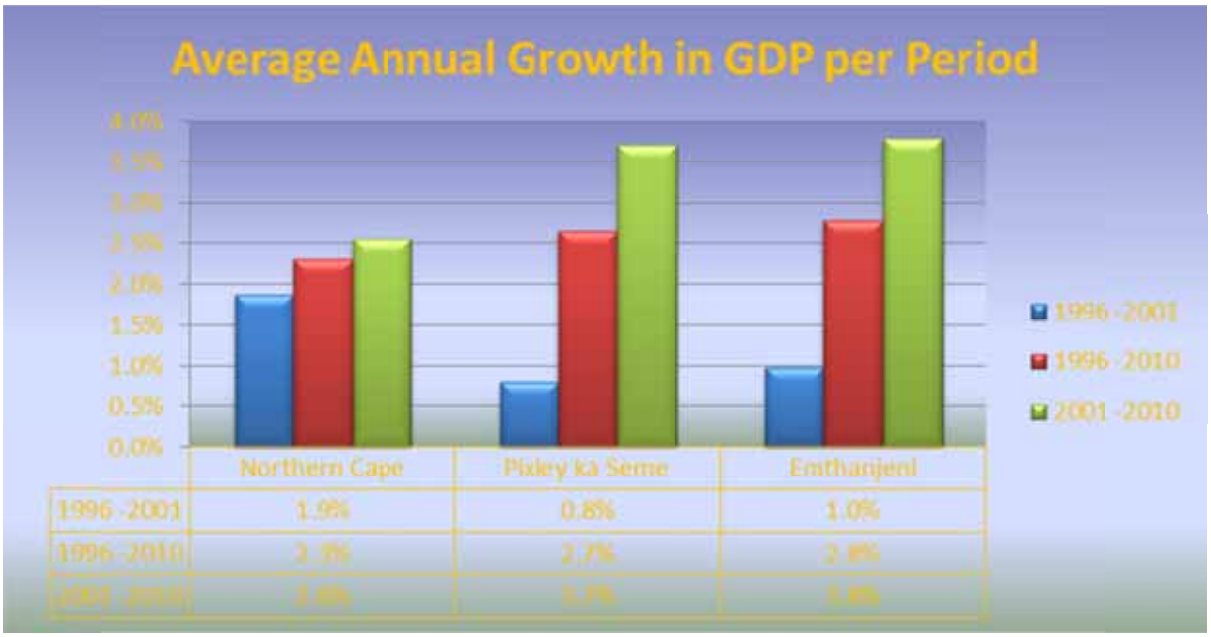
Sanitation Service Levels

If measured against the national targets of providing at least a stand-pipe for potable water within 200 m of a household and at least a VIP per household for sanitation, there are no backlogs in the areas serviced by the municipality. The municipality, however, aspires to provide each household with a metered potable water connection and water-borne sanitation.

In order to meet the service levels aspired to for potable water, 9 metered water connections must be installed in De Aar and this can be done in the normal course of operations. In the case of sanitation, 432 erven in Britstown and 219 erven in Hanover must be provided with water-borne sanitation. Provision has been made for capital projects to address these needs.

ECONOMIC BACKGROUND

Economic data for the Emthanjeni Municipality, as compiled by Global Insight and made available by DBSA, was used to evaluate the economic situation. The figures show that, while Emthanjeni, and indeed the whole Pixley ka Seme District, lacks the mining resources that form an important component of the economy of the rest of the Northern Cape, it has a well-developed tertiary economic sector and has been able to maintain growth rates in excess of the averages for the District and the Province. This ability to attract investment could, in the longer term, assist in addressing the high unemployment rates in the municipal area. These growth trends are graphically represented below.



WATER SERVICES INFRASTRUCTURE PROFILE

As would be expected from the high levels of service, Emthanjeni has well developed water services infrastructure within the towns and extended collection infrastructure to pipe potable water from surrounding boreholes to the towns. A great deal of this infrastructure is now aging and the conditional assessments undertaken as part of the compilation of an asset register, need to be analysed to objectively determine priorities for replacement and refurbishment. It is also necessary to prepare **master plans** for the water services to ensure that funds can be timeously identified to address the imperatives mandated by future development requirements.

The main priorities that have been identified prior to such an analysis are:

- The refurbishment of reservoirs at Britstown;
- The refurbishment of the Burgerville and Coroluspoort well field infrastructure.

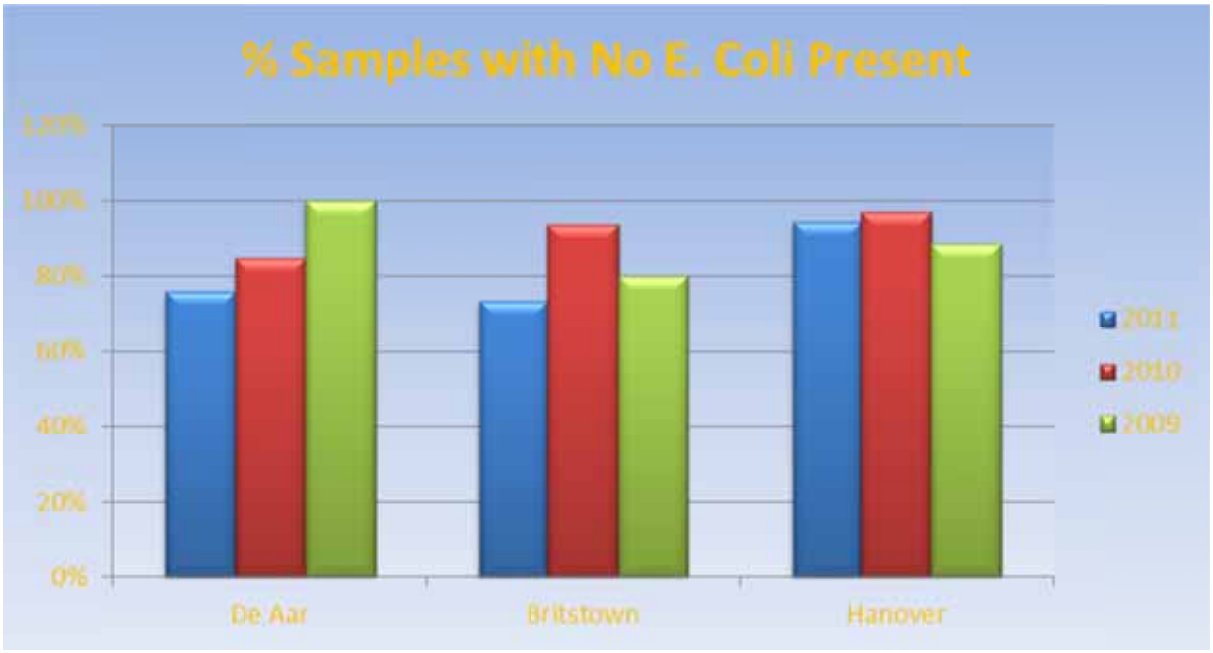
OPERATION & MAINTENANCE

The municipality has recently revised its organisational structure and the water services were affected by combining the diverse arms into more cohesive units.

The municipality has the advantage of having had consistent management of the water services over a long period which has resulted in a number of policies and procedures being put into place to effectively monitor and manage the activities. These policies and procedures must however be consolidated in formal **Operations and Maintenance Manuals**.

A primary objective of any water services provider and authority is to ensure that the community is supplied with water of the best possible quality. There is cause for concern that bacteriological analyses indicate that far less than the 99% compliance with standards in terms of E.coli presence in the water has been achieved. These results, for the last 3 years,

are shown graphically below.



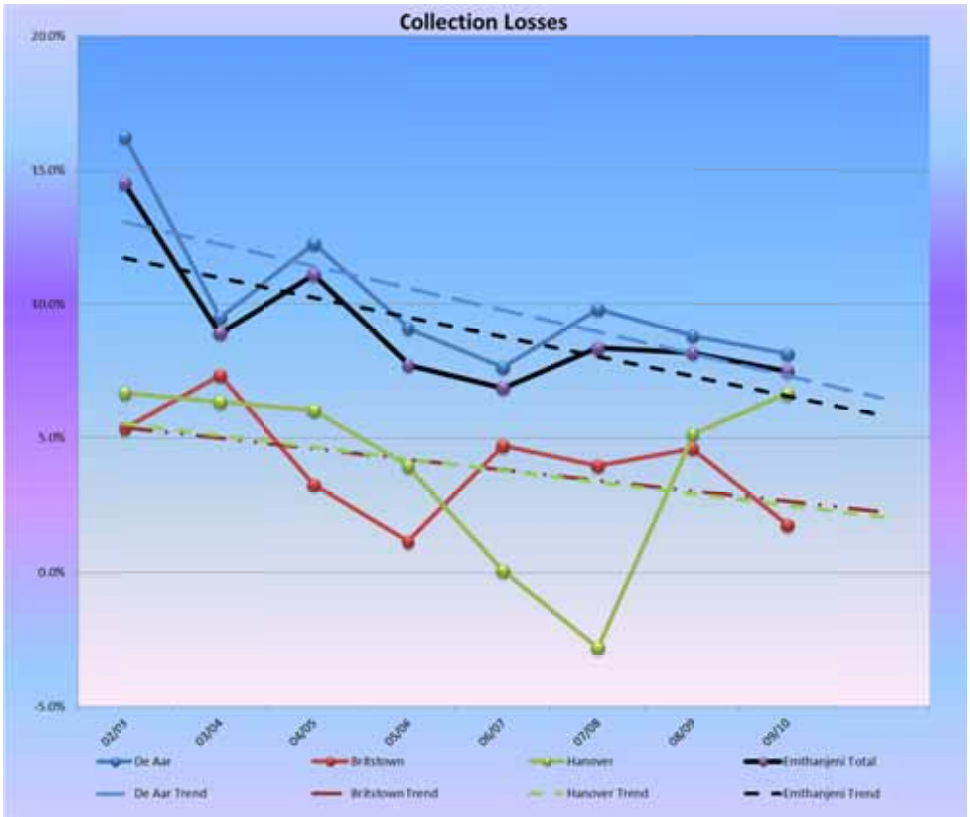
The chemical analyses of the water also reveal some anomalies that need to be further investigated. The levels of **Cadmium, Chromium and Lead** in the drinking water have been inconsistent over the last 2 years and must be investigated to determine whether these levels do in fact exceed safe concentrations. These matters should be addressed in both the **O&M Plans** as well as the proposed **Water Safety Plan**.

CONSERVATION & DEMAND MANAGEMENT

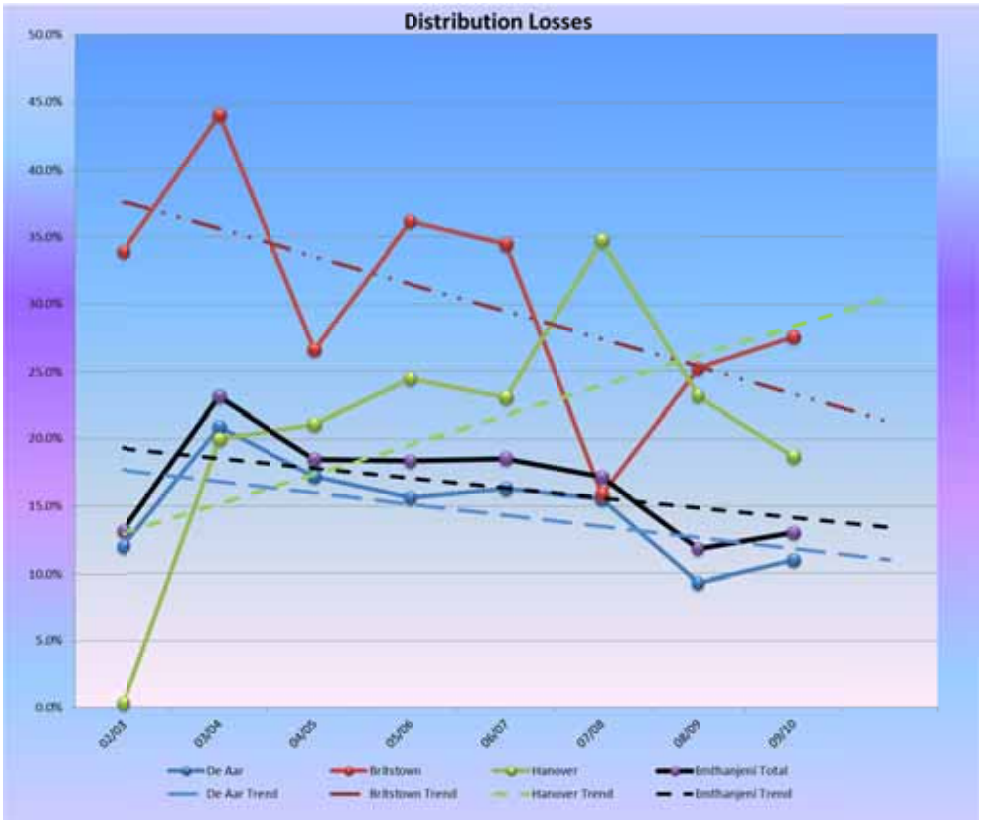
The municipality maintains comprehensive records of water extracted, collected and distributed and thus enables losses to be accurately quantified and trends to be established. Expressing water loss as a percentage of the water collected or distributed is simplistic as it does not take into account variations in the length of networks or the number of consumers connected to networks. It is however widely used and can be useful for determining trends although comparisons with other service providers are unreliable for the reasons noted above.

In Emthanjeni a distinction should be drawn between Collection Losses (those losses that occur before the water reaches the main distribution reservoirs) and Distribution Losses (those losses that occur between the distribution reservoirs and the consumer meters). In a number of municipalities water is supplied to them at their distribution reservoirs and their total water losses therefore only comprise distribution losses. In Emthanjeni both components are present.

Collection losses for all three town have been showing a consistent downward trend and this is displayed graphically below.



In the case of distribution losses, both De Aar and Britstown show a declining trend in losses but Hanover shows an apparent upward trend which should be monitored. These losses are shown below.



While the declining trends are heartening, it should be realised that there are economic limits

to viably reducing losses below a certain point. An international bench mark for evaluating potential for reducing losses in distribution networks is the Infrastructure Leakage Index (ILS). According to norms for this index, it becomes increasing difficult to reduce losses as this index decreases and is not considered economically viable once it reaches levels below 2. These indices for the Emthanjeni towns are tabulated below and it can be seen that the values for all of the distribution networks are already below this threshold.

Town	Distribution Lossess (kℓ)	Estimated Apparent Losses (%)[1]	Estimated Apparent Losses (kℓ)	Estimated Real Losses (kℓ)	CARL (ℓ/connection/ day)	UARL (ℓ/connection/ day)	ILI
De Aar	208 672	6%	12 520	196 152	32.52	30	1.08
Britstown	56 522	6%	3 391	53 131	57.56	36	1.61
Hanover	31 569	6%	1 894	29 575	34.07	33	1.03
Emthanjeni Total	296 763	6%	17 806	278 957	35.65	23	1.56

INSTITUTIONAL ARRANGEMENTS PROFILE

Emthanjeni Municipality has proactively developed all of the policies and Bylaws required to effectively manage water services and no significant gaps have been identified. It is however uncertain how effectively these bylaws are enforced and this should perhaps be the focus of future institutional initiatives.

SOCIAL AND CUSTOMER SERVICES

Although the municipality has systems in place to record and react to customer complaints, there is a need for a Customer Care Reporting System that can accurately track the progress of complaints and enquiries from initiation to resolution and thus monitor the performance of the employees in resolving these issues.

PROJECTS

The following capital and operational project have been identified for implementation.

Capital Projects

AREA:	PROJECT NAME:	COST:
De Aar	Upgrading of De Aar WWTW	R12 000 000
Britstown	Upgrading UDS toilets system to full water borne	R37 551 000
Hanover	Upgrading UDS toilets system to full water borne	R16 151 000
Britstown	Upgrading of Britstown oxidation ponds	R 6 500 000
De Aar	Sewerage Collection Main (Kareeville)	R 2 000 000
De Aar, Britstown	Pipeline from Orange river	R300 000 000

De Aar	Development of new Boreholes (Alternative)	R 40 000 000
Britstown	Refurbishment of reservoirs	R 6 000 000
De Aar	Refurbishment of Burgeville water scheme	R 3 500 000
De Aar	Refurbishment of Caroluspoort pipelines	R 1 500 000
All	Improve potable water quality	R 2 500 000
De Aar, Hanover	Lining of reservoirs and tanks	R645 000 000
All	Replacement 500 consumer water meters	R325 000 000

Operational Projects

AREA:	PROJECT NAME:	COST:
All	Training of meter readers and maintenance staff in WC/WDM.	R 120 000
All	O+M Manual for water	R 250 000
All	O+M Manual for sanitation	R 250 000
De Aar, Hanover	Sewerage master plan	R 460 000
All	Water Safety Plans	R 150 000
All	Training of process controllers	R 100 000
All	Customer Care reporting system	R 100 000
All	Community awareness programme for 7500 h/h	R 750 000
All	Waste Water Risk Abatement Plan	R250 000