

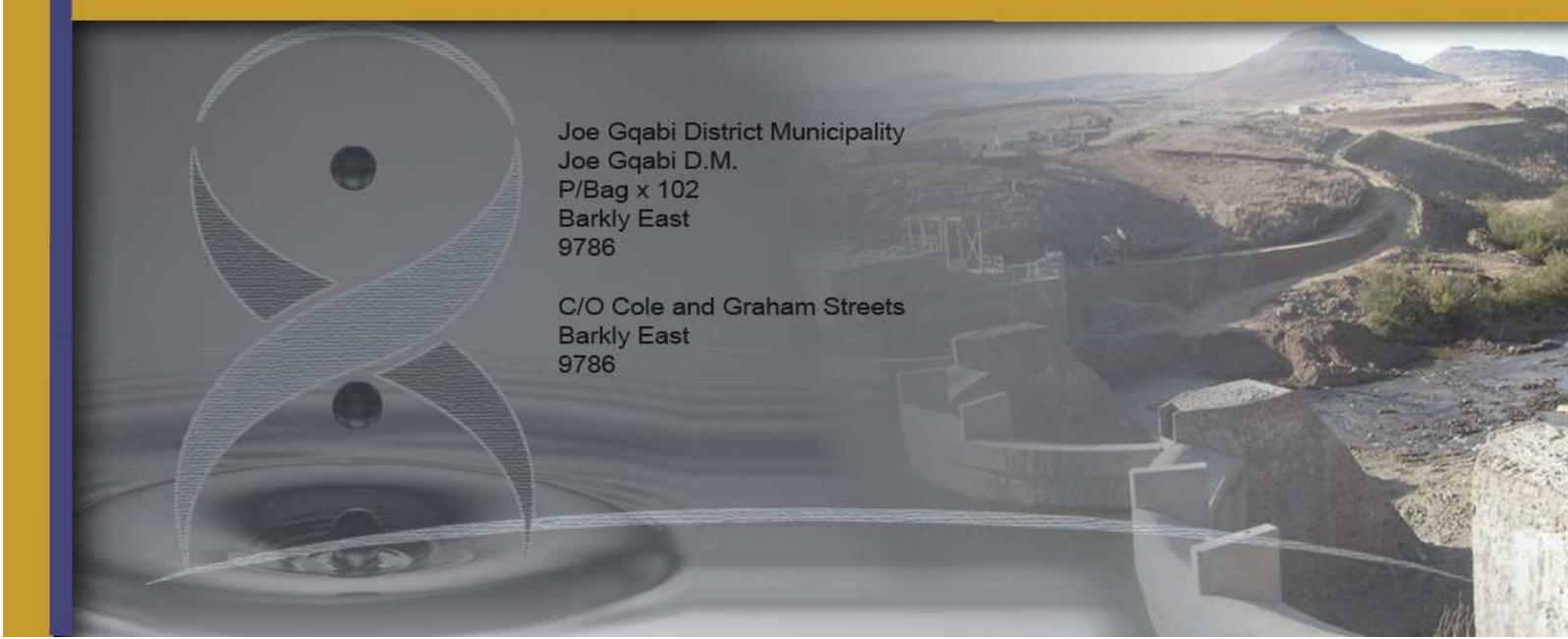


# WATER SERVICES DEVELOPMENT PLAN

2014/2015



## EXECUTIVE SUMMARY



Joe Gqabi District Municipality  
Joe Gqabi D.M.  
P/Bag x 102  
Barkly East  
9786

C/O Cole and Graham Streets  
Barkly East  
9786



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# 1 ACRONYMS AND ABBREVIATIONS

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DWA	Department of Water Affairs
ECPT	Eastern Cape Provincial Treasury
ECTB	Eastern Cape Tourism Board
GGP	Gross Geographic Product
GVA	Gross Value Added
IDP	Integrated Development Plan
IRP	Integrated Resource Planning
LM	Local Municipality
LRSP	Land Reform Support Programme
MAR	Mean Annual Runoff
MIG	Municipal Infrastructure Grant
MIS	Management Information System
NEMA	National Environmental Management Act
RDP	Reconstruction and Development Plan
RBIG	Regional Bulk Infrastructure Grant
STD	Sexually Transmitted Disease
UAW	Unaccounted for Water
WC/WDM	Water Conservation / Water Demand Management
VAT	Value Added Tax
WSA	Water Services Authority
WSDP	Water Services Development Plan
WSP	Water Services Provider
WTW	Water Treatment Works
WWTW	Waste Water Treatment Works

## 2 DEFINITIONS

TERM	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.
Consumer Unit	<ol style="list-style-type: none"> <li>1) all members of a particular household who are related by blood or legal arrangements;</li> <li>2) persons living alone or sharing a household with others; or</li> <li>3) two or more persons together who are making joint expenditure decisions. All units are considered financially independent.</li> </ol>
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.
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.
WSP	<p>A Water services provider is</p> <ul style="list-style-type: none"> <li>• 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</li> <li>• 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</li> <li>• A water services authority which provides either or both of the above services itself</li> </ul>

### 3 INTRODUCTION

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Progress has been made in JGDM area since the previous draft of the WSDP (2010/11), but Water and Sanitation Services continues to face critical challenges. These include basic water and sanitation services backlog, achieving the essential targets for reducing water demand, implementation of FBS, meeting the wastewater effluent standards and thereby reducing the impact on the water quality of urban rivers, asset management and ensuring that infrastructure is extended timeously to meet the development growth demands. Financial sustainability of the service is a particular challenge: ensuring full cost recovery and debt management at a fair tariff, and financing of capital investment.

In order to optimally achieve this and thus meet key policy and legislative requirements, new and effective institutional arrangements and other strategies continue to be put in place.

Following the current expenditure trend, backlogs will be eradicated as follows:

- Water: 2019
- Sanitation 2016

**This will only be possible if the necessary funding will be made available by government and JGDM uses the resources at hand in a progressive and well focussed manner with respect to infrastructure.**

## 4 TOTAL EFFECTIVE SERVICES

### 4.1 Infrastructure Requirements

#### 4.1.1 Water Services Backlogs

Significant inroads have been made in terms extending household water access in Joe Gqabi District Municipality. Yet the more populous eastern parts of the district (Elundini) face the greatest challenges as far a water backlogs.

*Table 4.1: RDP Water Services Backlogs in JGDM*

LM	Total Households	WATER					
		Households			Percentage		
		None	Some	≥ RDP	None	Some	≥ RDP
Elundini	37 840	17 733	4 920	14 448	46.9%	13.0%	38.2%
Gariiep	9 767	180	60	9 513	1.8%	0.6%	97.4%
Maletswai	12 104	222	870	10 959	1.8%	7.2%	90.5%
Senqu	38 010	7 152	4 560	25 437	18.8%	12.0%	66.9%
<b>TOTAL</b>	<b>97 721</b>	<b>25 287</b>	<b>10 410</b>	<b>60 357</b>	<b>25.9%</b>	<b>10.7%</b>	<b>61.8%</b>

**Notes:**

1. Source: Census 2011

In estimating these water backlogs, the following assumptions have been applied:

- People sourcing water from springs, rainwater tanks, streams, rivers, dams or water vendors are deemed to be unserved; and
- People with piped and borehole water within 200m in rural areas are deemed to be served.
- People with piped and borehole water within 200 – 1000m are deemed to have access to some water.
- People with a yard connection in urban areas are deemed to be served.

*Table 4.2: RDP Sanitation Services Backlogs in JGDM*

LM's	Total Households	SANITATION			
		Households		Percentage	
		< RDP	≥ RDP	< RDP	≥ RDP
Elundini	37 840	24 317	13 485	64.3%	35.6%
Gariiep	9 767	2 072	7 695	21.2%	78.8%
Maletswai	12 104	2 419	9 685	20.0%	80.0%
Senqu	38 010	22 165	15 852	58.3%	41.7%
<b>TOTAL</b>	<b>97 721</b>	<b>50 973</b>	<b>46 717</b>	<b>52.2%</b>	<b>47.8%</b>

**Notes:**

1. Source: Census 2011

The following assumptions have been applied in estimating sanitation backlogs:

- People with flush toilets, septic tanks, chemical toilets or VIP latrines are deemed to be served; and
- People using unventilated pit latrines, buckets or no infrastructure are deemed to be unserved.

## 4.2 Infrastructure Costs

### 4.2.1 Eradication of Backlogs Requirements

Numerous studies were conducted with the purpose to compile an accurate backlog eradication implementation plan.

**Table 4.3: Estimated cost of eradicating rural water backlogs in JGDM**

LM's	RURAL WATER				
	HH Below RDP	HH Eradicated Since Census	Remaining HH Below RDP	Cost per HH	Cost of backlog eradication
Elundini	15 307	7 346	7 961	R 20 000	R 159 220 000
Gariep	240		240	R 20 000	R 4 800 000
Maletswai	1 092		1 092	R 20 000	R 21 840 000
Senqu	11 712		11 712	R 20 000	R 234 240 000
<b>TOTAL</b>	<b>28 351</b>	<b>7 346</b>	<b>21 005</b>		<b>R 420 100 000</b>

**Table 4.4: Estimated cost of eradicating rural sanitation backlogs in JGDM**

LM's	RURAL SANITATION				
	HH below RDP	HH Eradicated Since Census	Remaining HH Below RDP	Cost per HH	Cost of backlog eradication
Elundini	21 489	9 253	12 236	R 11 000	R 134 596 000
Gariep	1 695		1 695	R 11 000	R 18 645 000
Maletswai	1 694		1 694	R 11 000	R 18 634 000
Senqu	19 286	5 789	13 497	R 11 000	R 148 467 000
<b>TOTAL</b>	<b>44 164</b>	<b>15 042</b>	<b>29 122</b>		<b>R 320 342 000</b>

### 4.2.2 Refurbishment and Augmentation Budget Requirements

The JGDM is to take note that critical infrastructure interventions are required as the condition of infrastructure deteriorated. Infrastructure further needs to be augmented or replaced in order to maintain and improve the current level of service. Some critical interventions have been identified to accommodate growth and industrial (e.g. PG Bison) development.

**Table 4.5: Estimated cost to rehabilitate and augment water infrastructure**

LM's	URBAN WATER REHABILITATION AND UPGRADE REQUIREMENT
Elundini	R 94 995 638
Gariep	R 9 000 000
Maletswai	R 10 694 047
Senqu	R 20 859 044
<b>TOTAL</b>	<b>R 135 548 729</b>

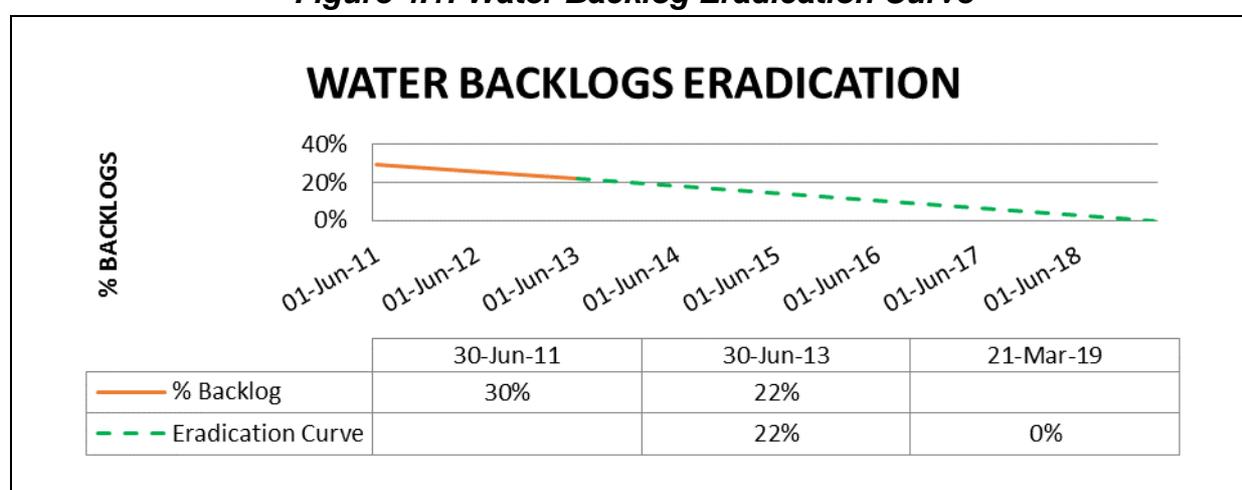
**Table 4.6: Estimated cost to rehabilitate and augment sanitation infrastructure**

LM's	URBAN SANITATION REHABILITATION AND UPGRADE BUDGET REQUIREMENT
Elundini	R 97 111 380
Gariep	R 15 108 039
Maletswai	R 27 550 081
Senqu	R 10 647 288
<b>TOTAL</b>	<b>R 150 416 788</b>

### 4.3 Strategies to eradicate backlogs

#### 4.3.1 Water Services

**Figure 4.1: Water Backlog Eradication Curve**



**Notes:**

1. Source: Census 2011.
2. MIG Progress Reports used to update backlog figures and to determine eradication trends

#### **Elundini Local Municipality:**

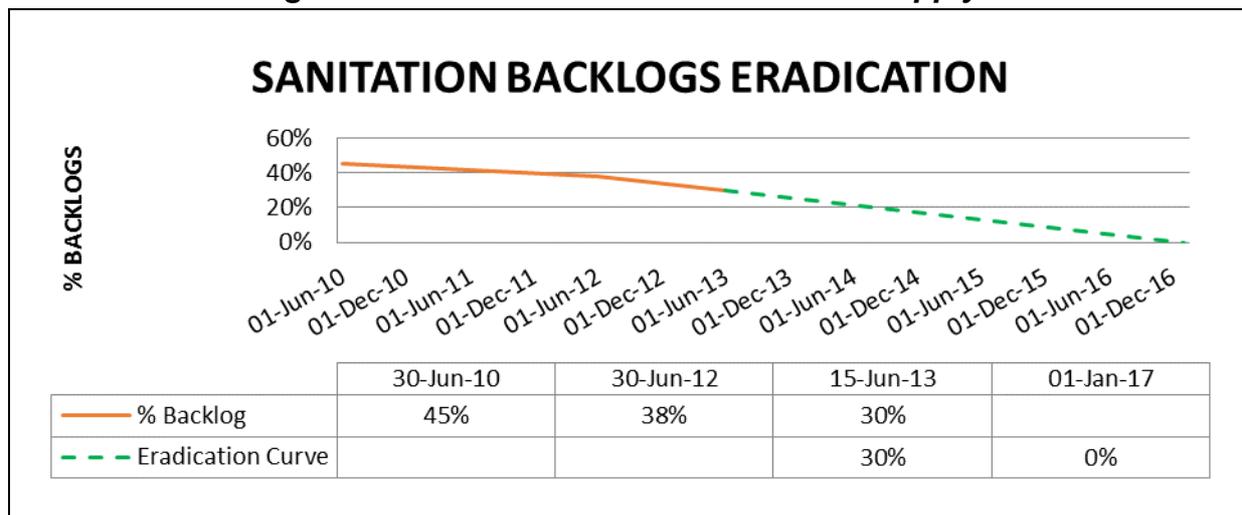
Water backlogs will be eradicated by means of the development of borehole stand-alone schemes. See Elundini: Provision of Water Infrastructure to 107 villages in the Elundini rural areas, Technical Report in Support of MIG Business Plan, Sintec, 15 March 2010.

#### **Senqu Local Municipality:**

Water backlogs will be eradicated by means of the augmentation and extension of the Sterkspruit regional scheme. See report “Senqu: Senqu Rural Water Supply – Network Extension, Technical Report in Support of MIG Business Plan, Bigen Africa, November 2010” and “Senqu: Senqu Rural Water Supply – Upgrade of Sterkspruit WTW and Bulk Supply Lines Phase II, Technical Report in support of MIG Business Plan, Bigen Africa, November 2010”. Areas not covered by the above will be supplied through stand-alone borehole scheme.

### 4.3.2 Sanitation Services

**Figure 4.2: Trends of Elundini LM Water Supply**



**Notes:**

1. Source: Census 2011.
2. MIG Progress Reports used to update backlog figures and to determine eradication trends

#### **Elundini Local Municipality:**

Rural sanitation backlogs will be eradicated by means of the construction of VIP's. See Elundini: Provision of Sanitation Infrastructure to 206 villages in the Elundini rural areas, Technical Report in Support of MIG Business Plan, Sintec, 15 March 2010.

Urban sanitation backlogs in Maclear will be eradicated by means of the augmentation of the WWTW. See Technical Report in support of MIG Business Plan, Arcus Gibb.

Urban sanitation backlogs in Ugie will be eradicated by means of the augmentation of the WWTW and bulk infrastructure. See Technical Report in support of MIG Business Plan.

#### **Senqu Local Municipality:**

Rural sanitation backlogs will be eradicated by means of the construction of VIP's. See report "Senqu: Senqu Rural Water Supply – Network Extension, Technical Report in Support of MIG Business Plan, Bigen Africa, November 2010" and "Senqu: Senqu Rural Water Supply – Upgrade of Sterkspruit WTW and Bulk Supply Lines Phase II, Technical Report in support of MIG Business Plan, Bigen Africa, November 2010".

Urban sanitation backlogs in Barkly East will be eradicated by means of the construction of bulk and reticulation infrastructure. See Technical Report in support of MIG Business Plan.

Urban sanitation backlogs in Lady Grey will be eradicated by means of the construction of bulk and reticulation infrastructure. See Technical Report in support of MIG Business Plan.

Urban sanitation backlogs in Sterkspruit will be eradicated by means of the upgrade of and rehabilitation of existing bulk and reticulation infrastructure.

#### **4.4 Status of water infrastructure**

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Backlog eradication is the main challenge facing the JGDM, especially in the rural areas of Elundini and Senqu. Operation and maintenance of those existing water services schemes is also posing a major challenge to this municipality and as a result some schemes are dysfunctional at present.

There is a need for the rehabilitation of dilapidated infrastructure. Rehabilitation projects are to be initiated and ongoing refurbishment and maintenance programme which will ensure sustainability of these schemes.

## 5 PRIORITY INTERVENTION ACTION PLAN

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### 5.1 Priority Issues

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In compiling this Water Services Development Plan, a large number of issues and challenges have emerged that must be faced by Joe Qgabi District Municipality if it is to successfully fulfil its obligations as both a Water Services Authority and Water Services Provider.

These issues are numerous and, given the available capacity and resources, may appear insurmountable. However through a prioritisation of these challenges, it is possible to focus initial efforts on the following more manageable issues:

#### **Operational Performance:**

1. Asset management – *development of full lifecycle approach to assets with proactive, preventative maintenance as a core activity, as opposed to current reactive, disaster management approach.*
2. Revenue management – *expansion of local revenue base, reduction in non-revenue water and improved cost recovery.*
3. Water conservation and demand management – *improved metering, monitoring and control of consumption, together with a reduction in water wastage.*
4. “Blue” and “Green Drop” compliance – *compliance with DWA requirements for water and wastewater treatment.*
5. Consumer Management – *improved consumer interaction and communication through call centre, fault reporting & feedback, community liaison officer (i.e. meter readers) and outreach initiatives.*
6. Maintenance – *ensure internal maintenance capacity that will focus on the eradication of deferred maintenance, day-to-day maintenance, maintenance manuals, management and training of maintenance staff.*

#### **Organisational and Institutional:**

7. Institutional Reform - *finalise the Institutional Reform of the JGDM with respect to the WSP/WSA functions. Also ensure that the necessary contractual arrangements be implemented and rolled out. It is suggested that this effort be managed through project management principles and that a Project Manager be appointed to facilitate the process.*
8. Systems and procedures – *meeting & reporting management, internal functions, roles and responsibilities, separation of WSA and WSP functions.*
9. Human Resources – *training, capacity building, recruitment, staff appraisal & retention. Updated organogrammes and job descriptions of staff are required.*
10. Financial budget allocations – *water billing not done and over dependency on equitable share funding.*

11. Water Services Business Plan – *a business plan is to be compiled in accordance with an agreed format, this is to be prioritised. The Business Plan is to focus on:*
- *Appropriate leadership and management*
  - *Financial control and management*
  - *HR support and efficiency of current human resources*
  - *Refurbishment of existing infrastructure*

**Extension and Rehabilitation of Water and Sanitation Services:**

12. Sanitation Infrastructure - *design and construction of new rural and urban sanitation infrastructure. Affordability of services are to be ensured through appropriate designs. Existing dilapidated infrastructure is to be rehabilitated by means of capital projects.*
13. Water Infrastructure - *design and construction of new rural and urban water infrastructure. Affordability of services are to be ensured through appropriate designs. Existing dilapidated infrastructure is to be rehabilitated by means of capital projects.*

Within each of these initial priority areas, it is proposed that the District Municipality develop a number of achievable milestones and goals.

## 6 WATER SERVICES BUSINESS ELEMENT SUMMARY

### 6.1 Socio Economic Profile

#### 6.1.1 Situation

The JGDM IDP refers to the Census 2011 as its source for population figures.

**Table 6.1: Population Projection**

LM's	Population Projection				
	Census 2001	Census 2011	2013 @ 0.23%	2018 @ 0.23%	2023 @ 0.23%
Elundini	137 861	138 141	138 777	140 381	142 003
Gariep	31 290	33 677	33 832	34 223	34 619
Maletswai	37 320	43 800	44 002	44 510	45 025
Senqu	135 351	134 150	134 768	136 325	137 901
<b>Total</b>	<b>341 822</b>	<b>349 768</b>	<b>351 379</b>	<b>355 440</b>	<b>359 547</b>

The JGDM classifies households with an annual income of less than R19 600 as indigent. The table below shows the percentage of indigent households in the district. These figures include the unemployed. This percentage will most likely rise due to child-headed homes, because of HIV/Aids.

**Table 6.2: Percentage of Households Earning less than R19 600**

LM's	Percentage of Households earning less than R19600 per annum
Elundini	66%
Gariep	47%
Maletswai	45%
Senqu	63%

#### 6.1.2 Strategies

JGDM plans the following implementation strategies to address the situation:

- Ensure water quality through the SANS 0241 specification, blue drop and green drop implementation programmes;
- Design and install the water services at the affordable/sustainable level;
- Provide the first 6kℓ per household per month free of charge (see Indigent Policy);
- Ensure higher level of service;
- Provided accessibility to water services to the industry;
- Encourage economic growth through private sector; and
- Ensure the pollution is taken care of to protect the environment.

## 6.2 Service Level Profile

### 6.2.1 Situation

**Table 6.3: Residential Consumer Units of Service: Water**

No. Consumer units with	Urban	Rural			
		Dense	Village	Scattered	Farmland
1. None or inadequate	3 297	0	11 866	9 300	880
2. Communal water supply	6 654	0	16 293	7 440	700
3. Controlled volume supply	0	0	0	0	0
4. Uncontrolled volume supply: yard tap or house connection	27 403	0	8 188	2 250	3 450
<b>5. Total Served (2+3+4)</b>	<b>34 057</b>	<b>0</b>	<b>24 481</b>	<b>9 690</b>	<b>4 150</b>
<b>6. Total (1+5)</b>	<b>37 354</b>	<b>0</b>	<b>36 347</b>	<b>18 990</b>	<b>5 030</b>

**Notes:**

1. Source: Census 2011.

**Table 6.4: Residential Consumer Units of Service: Sanitation**

No. Consumer units with	Urban	Rural			
		Dense	Village	Scattered	Farmland
1. None or inadequate: Below RDP: Pit	7 229	0	21 184	11 263	2 786
2. None or inadequate: Below RDP: Bucket	2 158	0	1 865	995	223
3. Consumer installations: On Site dry or equivalent, including VIP toilets, USD, composting system	3 216	0	11 397	5 575	382
4. Consumer installations: Wet (Septic tank, digester or tanker desludge or effluent discharge to an oxidation)	2 031	0	293	84	471
5. Discharge to sewer treatment works (intermediate or full waterborne)	22 083	0	371	128	726
<b>6. Total Served (3+4+5)</b>	<b>27 330</b>	<b>0</b>	<b>12 061</b>	<b>5 787</b>	<b>1 579</b>
<b>7. Total (1+2+6)</b>	<b>36 717</b>	<b>0</b>	<b>35 110</b>	<b>18 045</b>	<b>4 588</b>

**Notes:**

1. Source: Census 2011.

### 6.2.2 Strategies

- a) Implement identified projects as per the MIG Sanitation Backlog Eradication Programme as funding becomes available;
- b) Ensure that an operation and maintenance programme for rural sanitation is implemented;
- c) Develop a free basic sanitation policy;
- d) Implement identified projects as per the MIG Water Backlog Eradication Programme as funding becomes available;

- e) Undertake detailed master planning based on adopted level of service, identify and package infrastructure upgrade projects and implement these based on the development priorities of JGDM and funding availability;
- f) Develop a strategy for current and future needs of the wet industries; and
- g) Develop a strategy to monitor effluent releases from industries.

## 6.3 Water Resource Profile

### 6.3.1 Situation

The tables below list the surface, ground and external water sources and their yields.

**Table 6.5: Surface Water Sources**

Name	LM	Source Type	Yield (ME/d)	Allocation		
				Domestic (ME/d)	Irrigation (ME/d)	Environment (ME/d)
Maclear	Elundini	Maclear Dam	1.3	1.3	No data	No data
		Aukamp Dam <sup>2</sup>	?	?	No data	No data
		Mooi River <sup>2</sup>	?	?	No data	No data
Elundini rural Communities	Elundini	Mt Fletcher Dam <sup>5</sup>	5.512	5.512	0.000	0.000
Ugie	Elundini	Ugie Dam <sup>1</sup>	No data	No data	No data	No data
		Wildebeest Weir <sup>2</sup>	1.3	1.3	No data	No data
Lady Grey	Senqu	Lady Grey Dam <sup>6</sup>	0.184	0.184	0	No data
		Witfontein Dam <sup>6</sup>	0.022	0.022	0	No data
Sterkspruit	Senqu	Holohlatsi Dam <sup>3</sup>	26.027	11.507	8.685	5.836
Barkly East	Senqu	Langloof weir & Commonage Dam <sup>2</sup>	1.3	1.3	0	No data
Rhodes	Senqu	Rhodes Dam <sup>2</sup>	0.3	0.3	0	No data
Aliwal North	Maletswai	Orange River Weir	?	15	0	0
Jamestown	Maletswai	Off Channel Dam <sup>4</sup>	1.172	1.172	0	0
Steynsburg	Gariep	Orange Fish Tunnel <sup>3</sup>	347.9	4.383	0	0
Venterstad	Gariep	Gariep Dam <sup>3</sup>	347.9	1.8	0	0
Burgersdorp	Gariep	JL de Bruyn Dam <sup>3</sup>	1.233	1.233	0	0
		Stormberg Spruit	No data	No data	No data	No data
		Chiappini's Klip Dam	No data	No data	No data	No data

**Notes:**

1. Future dam currently in feasibility stage, yield not yet determined.
2. Yield to be confirmed.
3. Source: Eastern Cape Water Resources Situation Assessment – Main Report, Ninham Shand, June 1999.
4. Source: Water Supply Scheme for Jamestown and Masekhane – Technical Report, Ninham Shand, January 2005.
5. Source: Mt Fletcher Villages Bulk Water Supply Scheme – Revised Design Report, RBA, April 2007.
6. Source: Development of an Additional Bulk Water Source for Lady Grey – Business Plan, Sektor Engineering, February 2003.

**Table 6.6: Ground Water Sources**

Name of authorised users	LM	Number of Production Boreholes		Known Yield (Mℓ/d)	Quality
		Yield Known	Yield Unknown		
Senqu	Barkly East	0	7	0	?
	Lady Grey	3	3	0.759	?
	Hershell	?	?	0.8	?
	Rossouw	0	3	0	?
	Rudimentary	?	47	?	?
Elundini	Mt Fletcher	4	0	0.328	?
	Ward 7 Rudimen.	4	2	0.257	?
	Rudimentary	10	?	1.602	?
Maletwai	Jamestown	8	0	0.41	?
Gariiep	Burgersdorp	13	0	0.41	?
	Steynsburg	9	0	0.908	?

**Notes:**

1. Yields is to be confirmed.
2. Source: Eastern Cape Water Resources Situation Assessment – Main Report, Ninham Shand, June 1999.
3. Source: Water Supply Scheme for Jamestown and Masekhane – Technical Report, Ninham Shand, January 2005.
4. Source: Mt Fletcher Villages Bulk Water Supply Scheme – Revised Design Report, RBA, April 2007.

Most of the towns in JGDM will, in the near future, be supplied by surface water. Several of these infrastructures are or will be new and thus it should be sufficient to carry the demand. This will take some of the pressure off the ground water resources.

### 6.3.2 Strategies

- a) Compile Water Services Business Plans;
- b) Compile Water Services Safety Management Plans;
- c) Verify the yields of all surface water sources;
- d) Verify the yields of all production boreholes;
- e) Compile maintenance plans for all surface water sources;
- f) Compile maintenance plans for all groundwater sources;
- g) Do dam safety inspections;
- h) Compile dam operating rules for all surface water sources;
- i) Establish a comprehensive groundwater monitoring plan for the monitoring of water levels and groundwater quality – rural and urban;
- j) License all wastewater treatment works;
- k) Ensure that sanitation backlog eradication programme succeed;
- l) Ensure that housing programme succeed;
- m) Ensure the successful implementation of the blue and greed drop programme;
- n) Set up the laboratory; and

- o) Ensure adequate budget and resources for efficient monitoring, evaluation and control of water quality.

**PRIORITY WATER SERVICES INTERVENTION 4:**

**Operational Performance:**

“Blue” and “Green Drop” compliance – *compliance with DWA requirements for water and wastewater treatment*

## **6.4 Water Conservation and Demand Management**

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### **6.4.1 Situation**

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A WCDM initiative has been implemented, focussing on social interventions. Subsequently a flow meter implementation programme has been rolled out. This paved the way to conduct a more WCDM pilot project in Burgersdorp which has been completed recently. A study has been conducted by Aurecon highlighting water balance challenges. A district wide WCDM programme is required.

### **6.4.2 Strategies**

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- a) A Water Conservation and Demand Management Unit has been formed within the WSA Office. Such a unit has been manned by three Institutional and Social Development Practitioners. Technical staff will also have to be appointed.
- b) On continuous basis, these practitioners will be dedicated in the education of Water and Sanitation By-Laws, Water Conservation awareness, customer care etc.
- c) Ensure that all water users are billed.
- d) Implement a district wide WCDM programme.

**PRIORITY WATER SERVICES INTERVENTION 3:**

**Operational Performance:**

Water conservation and demand management – *improved metering, monitoring and control of consumption, together with a reduction in water wastage*

## **6.5 Water Services Infrastructure Profile**

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### **6.5.1 Situation**

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Schematic layouts of all water services infrastructure have been included in the main report. The information point out the critical areas with respect to the required replacement of dilapidated infrastructure and the augmentation of infrastructure.

### **6.5.2 Strategies**

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**Water Services**

- a) Engage with the IDP Unit in general and the Local Municipalities in particular, to obtain greater clarity with regard to anticipated future housing requirements within JGDM and:
  - o The key development areas within the JGDM;

- Housing demands and level of services requirements;
  - Other anticipated development.
- b) Development of a district wide Water Services Master Plan/Water Services Master Plan:
- Develop and calibrate hydraulic models;
  - Review the implication of various scenarios (ranges) of levels of service;
  - Present findings to Council for consideration;
  - Review level of service policy; and
  - Undertake detailed master planning based on the reviewed / adopted level of service policy.
- c) Define WCDM as the key service delivery objective and implement WCDM initiatives on a sustained basis as defined in terms of strategies defined previously.
- d) Undertake the necessary master planning to:
- Adequately identify and cost the infrastructure upgrade requirements for JGDM in general, and the key delivery areas in particular;
  - Determine appropriate/affordable levels of service; and
  - Identify, prioritise and package projects for implementation.
- e) Investigate alternative measures to obtain the necessary funding to undertake the required capital works, including the following:
- Private sector contributions;
  - PPP interventions.
- f) Progressively upgrade existing and build new infrastructure, focussing on areas with current shortages and identified priority development areas.
- g) Address the rural backlogs.

### **Sanitation Services**

- a) Engage with other internal and external stakeholders to obtain greater clarity with regards to the following:
- The key development areas within JGDM;
  - Housing demands and level of service requirements; and
  - Other anticipated development.
- b) Define WC/WDM as the key service delivery objective and implement WC/WDM initiatives on a sustained basis as defined in terms of strategies defined previously.
- c) Simultaneous to the above, undertake a customer education/communication initiative to ensure:
- Appropriate use of infrastructure;
  - Prevent storm water ingress; and
  - Infrastructure is not vandalised.
- d) Undertake the necessary master planning/business planning to:
- Adequately identify and cost the infrastructure upgrade/augmentation requirements for JGDM in general and the key delivery areas in particular;
  - Identify areas with surplus capacity where development can readily proceed;
  - Determine appropriate/affordable levels of service; and
  - Identify, prioritise and package projects for implementation.

- e) Identify areas of high environmental impact concern and upgrade/refurbish/replace existing infrastructure in the areas as required.
- f) Investigate alternative measures to obtain the necessary funding to undertake the required capital works, including the following:
  - o Private sector contributions;
  - o PPP intervention.
- g) Progressively upgrade existing and build new infrastructure, focussing on areas with current shortages and identified priority development areas.
- h) Address the rural backlogs.

**Infrastructure Asset Management**

- a) Implement management information systems in order to:
  - o Develop systematic routine and preventative maintenance systems/procedures;
  - o Develop and implement routine pipe and meter replacement programmes;
  - o Identify problem areas (bursts, blockages, old pipes); and
  - o Collate statistics to lobby for the requisite additional funding.
- b) Implement routine and preventative maintenance programmes throughout the JGDM subject to availing budget.
- c) Refurbish or replace infrastructure as required, focussing on:
  - o Key system infrastructure; and
  - o Areas with highest water losses, sewer spills/environmental problems and/or those with infrastructure in the poorest condition.
- d) Progressively implement/operationalise the identified operational and maintenance plans.

**PRIORITY WATER SERVICES INTERVENTION 1,6:**

**Operational Performance:**

*Asset management – development of full lifecycle approach to assets with proactive, preventative maintenance as a core activity, as opposed to current reactive, disaster management approach*

*Maintenance – ensure that internal capacity is built that will focus on the eradication of deferred maintenance, day-to-day maintenance, maintenance manuals, management and training of maintenance staff*

**PRIORITY WATER SERVICES INTERVENTION 12 & 13:**

**Extension of Water and Sanitation Services:**

Design and construction of additional community water and sanitation infrastructure

Design and construction of regional bulk water infrastructure and borehole schemes (rudimentary) to support community infrastructure

## **6.6 Water Balance**

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### **6.6.1 Situation**

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Although the LMs have more water available than the requirements, it is not spread in such a manner as to satisfy the need everywhere. Thus some places have surplus water while others have water shortages. The towns that are currently experiencing water shortages are:

- Herschel
- Lady Grey
- Rossouw
- Ugie
- Burgersdorp

### **6.6.2 Strategies**

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- a) Do a comprehensive yield analyses for all surface water resources
- b) Test all production boreholes that has not been tested
- c) Do a comprehensive analysis with respect to current and future demand figures

## **6.7 Water Services Institutional Arrangements**

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### **6.7.1 Situation**

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Joe Gqabi DM has the capacity to act as the WSA. Currently, the WSP arrangements in the District Municipality are as follows:

- a) Elundini LM provides water to the urban areas of Maclear and Mt Fletcher. Sintec (service provider) provides water to the rural areas and Ugie Town. The WSP function will now be taken over by the JGDM.
- b) Senqu LM provides water to the urban areas. Amatola Water (water board) provides water to the rural areas and Sterkspruit Town. Bulk water function is being taken over by JGDM.
- c) Maletswai LM provides water to the urban areas, whereas the remaining rural areas are in the farmland and self sufficient as water is provided by commercial farmers. The WSP function is being taken over by the JGDM.
- d) Gariep LM provides water to the urban areas, whereas the remaining rural areas are in the farmland and self sufficient as water is provided by commercial farmers. The WSP function is being taken over by the JGDM.

### **6.7.2 Strategies**

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- a) Ensure that the institutional arrangements and the necessary SLA's are finalised.
- b) Progressively enhance the capacity of the WSA in accordance with the WSA Capacity Building Business Plan.
- c) Compile a WSP Business Plan.
- d) Enhance the capacity of the JGDM WSP Department in accordance with the WSP Business Plan.

**PRIORITY WATER SERVICES INTERVENTION 7,8,9,11:**

**Organisational and Institutional Performance:**

Prioritise and finalise the Institutional Reform of the JGDM with respect to the WSP/WSA functions. Also ensure that the necessary contractual arrangements be implemented and rolled out.

Systems and procedures – meeting & reporting management, internal functions, roles and responsibilities, separation of WSA and WSP functions

Human Resources – training, capacity building, recruitment, staff appraisal & retention

Water Services Business Plan – a business plan is to be compiled in accordance with an agreed format, this is to be prioritised

**6.8 Customer Services Profile**

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**6.8.1 Situation**

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There is not yet adequate information available with regards to the Consumer Services Profile. The following initiatives are in place and should provide relevant information:

- a) Customer call centre is currently being investigated; and
- b) Water conservation and water demand management programme has been done in Burgersdorp.

**6.8.2 Strategies**

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- a) Install, customise and operationalise the MIS (Management Information System) on a sustained basis and ensure routine reporting on customer services to the relevant managers.
- b) Water Conservation and Water Demand Management Programme will focus on community education and awareness programmes (schools, women's groups, churches, indigent households with high water consumption, large users and various community structures. A district wide WCDM project is to be implemented.
- c) Link these community education and awareness programmes to all WCDM initiatives undertaken by the JGDM like water balance through bulk water metering etc.
- d) Establish partnerships with the Departments of Housing, Health and Water Affairs and Forestry to implement such programmes.

**PRIORITY WATER SERVICES INTERVENTION 5:**

**Operational Performance:**

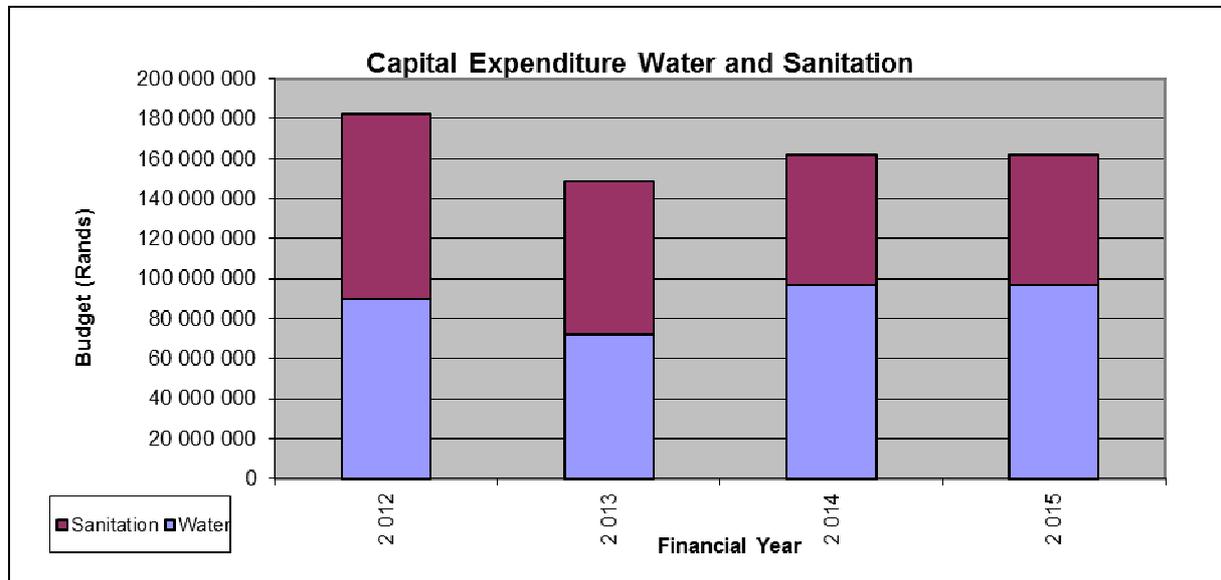
Consumer Relations – *improved consumer interaction and communication through call centre, fault reporting & feedback, community liaison officer (i.e. meter readers) and outreach initiatives*

## 6.9 Financial Profile

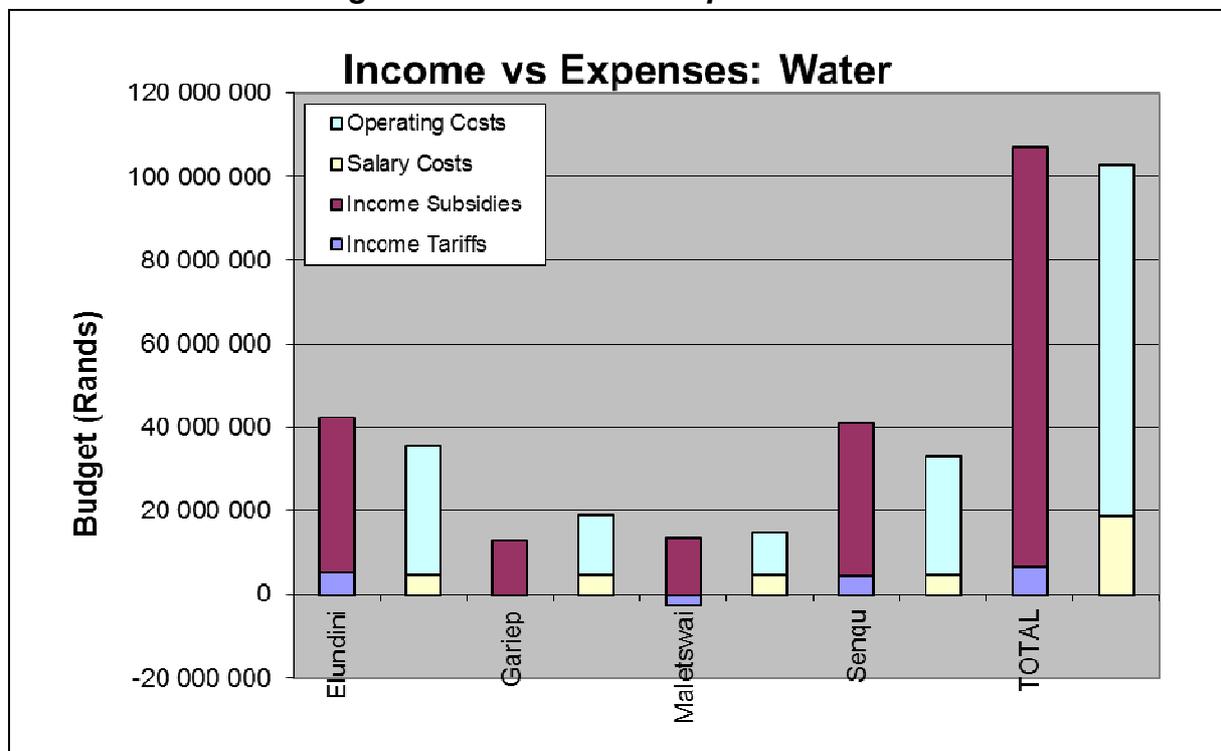
### 6.9.1 Situation

The three figures below show the capital expenditure for water and sanitation, and the income versus the expenses for both water and sanitation.

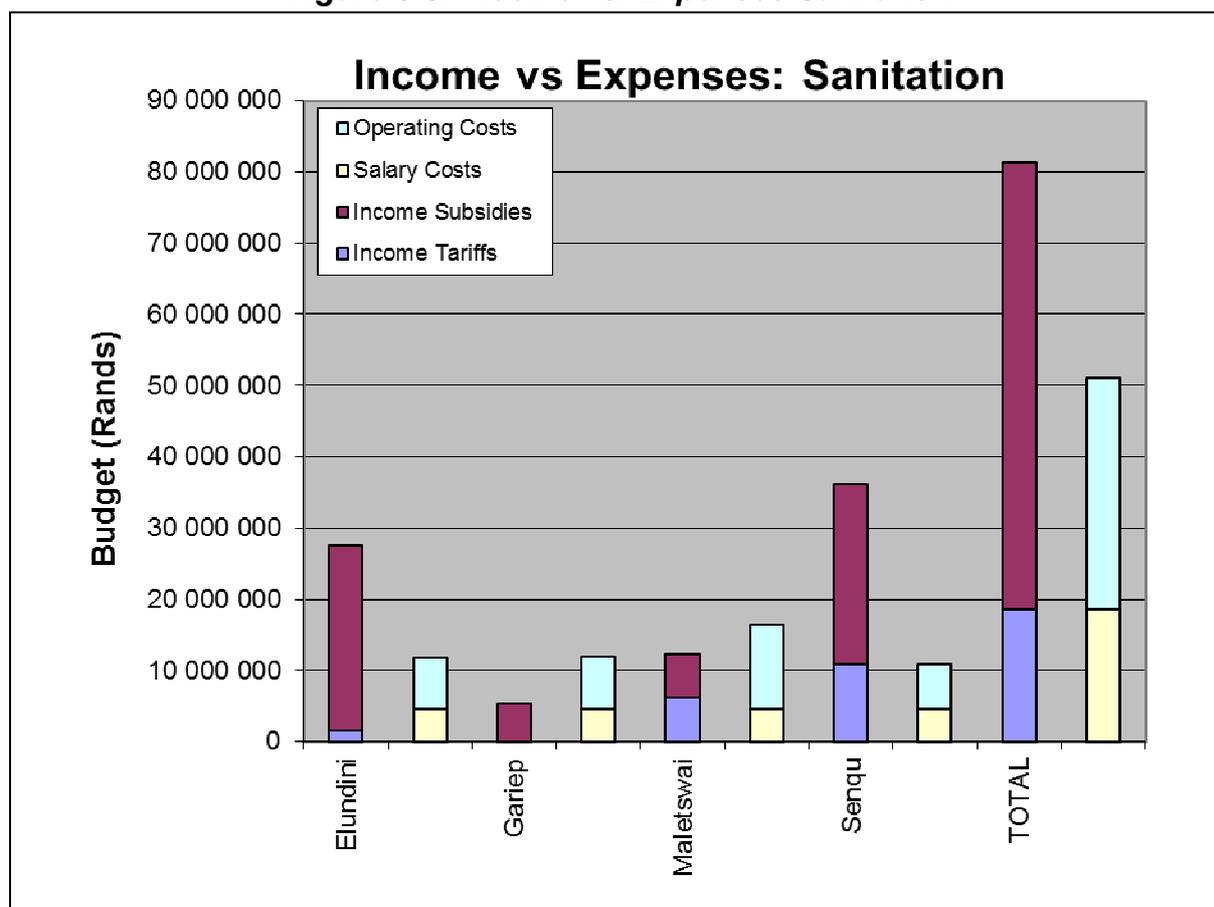
**Figure 6.1: Capital Expenditure Water and Sanitation**



**Figure 6.2: Income vs. Expenses Water**



**Figure 6-3: Income vs. Expenses Sanitation**



From the above it is clear that there is an over dependence on equitable share and that very little emphasis is put on cost recovery initiatives. **This puts the sustainability of the municipality at risk** with respect to its ability to **provide a higher level** of water services. Further **economic decline** can be expected if this trend continues.

Water tariffs have been reviewed as follows.

**Table 6.7: Water Tariff**

		Fixed Tariff	Block Definition 1 Kl per month from: 0 to 6Kl	Block Definition 2 Kl per month from: 7 to 30 Kl	Block Definition 3 Kl per month from: 31 to 50Kl	Block Definition 4 Kl per month from: >50Kl
<b>Residential</b>						
Water	Communal Water Supply	45.06				
	Controlled Volume Supply	45.06				
	Uncontrolled Volume Supply	45.06	Free	7.01	7.72	8.42
Sanitation	On site dry	0.00				
	On site wet (conservancy tanks etc.)	75.66				
	Water borne reticulated sanitation	75.66				
<b>Industrial</b>						
	Water Industrial	45.06				
	Sanitation Industrial	75.66				

## 6.9.2 Strategies

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- a) Lobby National Government for additional capital works funding budgets in order to meet the National backlog eradication targets
- b) Investigate alternative source of capital work funding for delivery of infrastructure to support higher levels of service including:
  - o Private sector contributions;
  - o PPP interventions
- c) Develop a holistic integrated capital works funding strategy, which addresses:
  - o Infrastructure provision for both basic and higher levels;
  - o Deferred maintenance upgrade of existing infrastructure and the provision of new infrastructure;
  - o Optimal use of both public and private sector funding
- d) Implement WC/WDM initiatives at scale in order to reduce water wastage and promote water use efficiency to:
  - o Optimise bulk water purchase; and
  - o Reduce water and waste water operating costs
- e) Increased investments in maintenance in order to enhance operational efficiencies and infrastructure longevity
- f) Undertake meter audits to ensure functionality of meter installations and comprehensiveness of metering
- g) Implement universal metering and a comprehensive meter repair/replacement programme
- h) In conjunction with finance, review the comprehensiveness/cleanliness of the billing database
- i) Lobby for adequate budget to implement universal metering in accordance with the approved WCDM strategy
- j) Undertake a study to investigate the provider methodologies and associated costs of free basic sanitation provision and to determine what constitutes and who should benefit from the free basic sanitation provision
- k) Undertake a study to investigate the provider methodologies and associated costs of free basic services

### **PRIORITY WATER SERVICES INTERVENTION 2:**

#### **Operational Performance:**

Revenue management – *expansion of local revenue base, reduction in non-revenue water and improved cost recovery*

**PRIORITY WATER SERVICES INTERVENTION 10:**

**Organisational and Institutional:**

Financial budget allocations – *water billing not done and over dependency on equitable share funding*

**6.10 Project List**

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**6.10.1 Situation**

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See projects list (Module 1, Topic 13) for more detail.

**6.10.2 Strategy**

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- a) Ensure that PMU is fully functional.
- b) Ensure that applications for grant funding (MIG) are made for all water and sanitation projects dealing with the eradication of backlogs.

## **7 CONCLUSION**

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In compiling this Water Services Development Plan, a large number of issues and challenges have emerged that must be faced by Joe Gqabi District Municipality if it is to successfully fulfil its obligations as both a Water Services Authority and Water Services Provider.

These issues are numerous and, given the available capacity and resources, may appear insurmountable. However through a prioritisation of these challenges, it is possible to focus initial efforts on the high priority quick win initiative first. It is suggested that the JGDM deal with issues in hand through a project management intervention. It is further suggested that the process be managed by means of a dedicated project manager (inhouse/outsourced).



## ANNEXURE A: MODULE 1

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## ANNEXURE B: MODULE 2

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## ANNEXURE C: MODULE 3

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## ANNEXURE D: MINUTES OF MEETINGS

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## ANNEXURE E: SOURCE DOCUMENTATION IN ELECTRONIC FORMAT (CD)

F.1	Elundini Hydro Census
F.2	Water and Sanitation Bylaws
F.3	Water Services Policy
F.4	Water Services Business Plan
F.5	Technical Reports
F.6	Sustainability Audits
F.7	Customer Care Call Centre
F.8	Water Services Status Report
F.9	Free Basic Water Strategy
F.10	Tarrif Study
F.11	JGDM Budget
F.12	Umzimvubu Transfer Schemes
F.13	Geohydrological Investigations
F.14	Water Concervation and Demand Management
F.15	Water Sector Plans
F.16	Water Services Development Plan 2010
F.17	Integrated Development Plan 2013
F.18	Spatial Development Framework 2006
F.19	Water Resources Situation Assessment
F.20	Population Data
F.21	Technical Audit Findings and Recommendations
F.22	H&S Compliancy Audits
F.23	ToR Maintenance Contractor
F.24	Infrastructure Details
F.25	Blue and Green Drop Assessments
F.26	Sec 78(3) Assessment Report
F.27	Sanitation Materplan
F.28	IQC Infrastructure Assessment Reports