

# 2019/20 WATER SERVICES DEVELOPMENT PLAN



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## ACRONYMS

The following abbreviations are used in this Water Services Development Plan:

AW	Amatola Water
BDS	Blue Drop System
CBO	Community Based Organization
CMA	Catchment Management Agency
CMIP	Consolidated Municipal Infrastructure Programme
CoGTA	Department of Corporative Governance and Traditional Affairs
CWSSCP	Community Water Supply and Sanitation Capital Programme
DM	District Municipality
DORA	Division of Revenue Act
DWS	Department of Water and Sanitation (formerly DWA and DWAF)
DWQ	Drinking Water Quality
EHP	Environmental Health Practitioner
EIA	Environmental Impact Assessment
EIP	Environmental Implementation Plan
FA	Functional Assessment
FBS	Free Basic Sanitation
FBW	Free Basic Water
GDP	Gross Domestic Product
GDS	Green Drop System
GIS	Geographic Information System
GGP	Gross Geographic Product
HR	Human Resources
IDP	Integrated Development Plan
IWA	International Water Association
IMATU	Industrial, Municipal and Allied Trade Union
ISD	Institutional and Social Development
ISRDP	Integrated Sustainable Rural Development Programme
JGDM	Joe Gqabi District Municipality
LM	Local Municipality
M & E	Monitoring and Evaluation
MHS	Municipal Health Services
MIG	Municipal Infrastructure Grant
MIIU	Municipal Infrastructure Investment Unit
NEMA	National Environmental Management Act



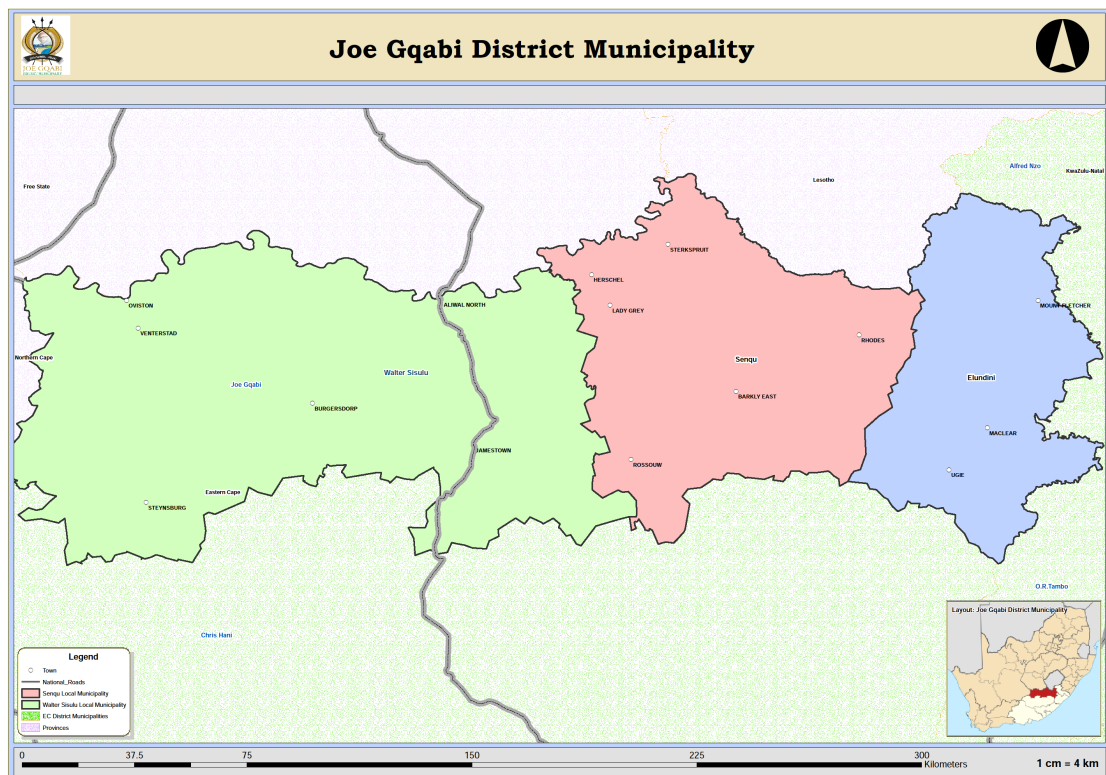
NGO	Non-Governmental Organization
NRW	Non Revenue Water
NT	National Treasury
O & M	Operation and Maintenance
PGDP	Provincial Growth and Development Plan
PIMS	Programme Implementation Management System
PMU	Project Management Unit
PRV	Pressure Reducing Valve
RDP	Reconstruction and Development Programme
RSA	Republic of South Africa
SALGA	South African Local Government Association
SAMWU	South African Municipal Workers Union
SANS	South African National Standards
SDI	Spatial Development Initiative
SLA	Service Level Agreement
SMME	Small and Medium Micro Enterprise
STATS SA	Statistics South Africa
S78	Section 78 of the Municipal Systems Act (Act No 32 of 2000)
UAW	Unaccounted for Water
VAT	Value Added Tax
VIP	Ventilated Improved Pit (Latrine)
WCDM	Water Conservation and Demand Management
WMA	Water Management Area
WSA	Water Services Authority
WSAM	Water Situation Assessment Model
WSDP	Water Services Development Plan
WSP	Water Services Provision
WTW	Water Treatment Works
WWTW	Wastewater Treatment Works

## SECTION 1: INTRODUCTION AND BACKGROUND

### 1.1 LOCATION

The Joe Gqabi District Municipality (DC 14) came into existence due to the Municipal Structures Act (Act 117 of 1998, Structures Act) in December 2000 following the Municipal Elections. The borders and composition of the municipality were determined by the Municipal Demarcation Board. This body is tasked with the determination of local government borders and internal ward arrangements. The municipality was previously known as the Ukhahlamba District Municipality, but was later renamed in honour of Joe Nzingo Gqabi, a struggle stalwart who was born in Aliwal North and died in exile.

The Joe Gqabi District Municipality (JGDM) is a Water Services Authority (WSA) for its area of jurisdiction in terms of the Water Services Act (Act 108 of 1997, Water Services Act). It therefore has statutory responsibilities and accountability in terms of legislation and policy with respect to the provision of water services.



**Figure 1-1 Joe Gqabi Locality Map**

The JGDM is situated along the northern border of the Eastern Cape Province. The municipality is made up of three local municipalities, namely Walter Sisulu, Senqu and Elundini.

The N6 national highway traverses the centre of the municipality in a north/south direction. Other major routes that serve the municipality are the R56 in a general east/west direction and the R58 in a general north-east/south-west direction. These roads also connect the main towns in the JGDM. These main towns in each local municipality area are namely:

- Walter Sisulu Local Municipality (Oviston, Steynsburg, Venterstad, Burgersdorp Aliwal North, Jamestown)
- Senqu Local Municipality (Sterkspruit, Barkly East, Rossouw, Rhodes, Lady Grey)
- Elundini Local Municipality (Ugie, Maclear, Mount Fletcher)

The administrative centre of Joe Gqabi District Municipality is located in Barkly East.

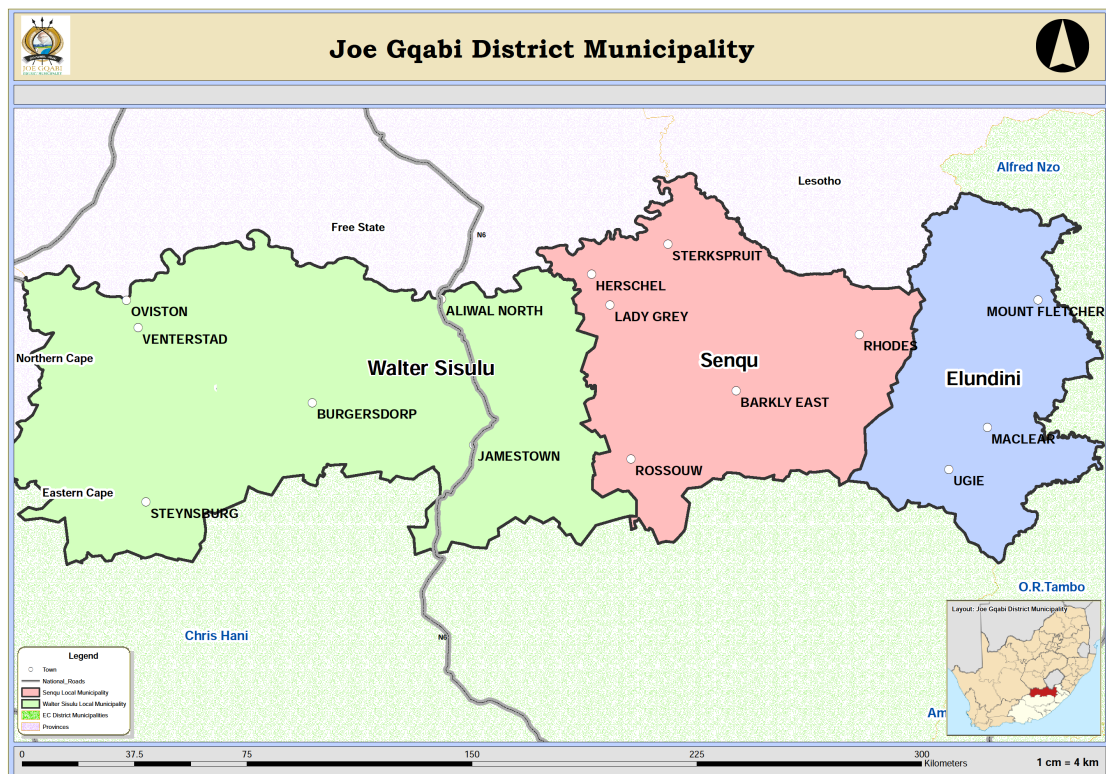


Figure 1-2 Local municipalities within Joe Gqabi DM

The Municipal Demarcation Board merged the Gariiep and Maletswai Local municipalities into a single entity with the Local Government elections in 2016. The new local municipality is now called the Walter Sisulu Local Municipality. The impact on Water and Sanitation has been minimal to date, as the provision and regulation of the services falls within the JGDM, and operational centres have been kept the same for the operational functions. Travel distances to a local administrative centre however may be impacted in the future as management and other

services may be rationalized, the full effect of changes will be better understood in the short term.

## 1.2 LOCAL CONTEXT

### Mission and vision

**Vision:** An improved quality of life for all residents

**Mission:** Fight poverty through stimulating the economy and by meeting basic needs, improving service delivery quality, promoting corporate governance and building the capacity of government and communities within a sustainable environment.

This mission is premised on the following key elements:

- Stimulate the economy and fight poverty
- Meet basic needs and improve service delivery quality
- Enabling the building of capacity
- Fight fraud and corruption and ensure compliance
- Grow tourism and related businesses
- Grow pro-poor and labour intensive programmes
- Grow agriculture and downstream industries
- Promote sustainable development

### Values of the District

The JGDM adheres to the following values that should apply to the District municipality, goods and service providers and the community:

- **Integrity:** Conduct the municipality's business in a fair, responsible, flexible, equitable and honest manner.
- **Teamwork:** Cooperative effort, on the part of individuals and a group of people, acting together and inputting their abilities, all for achieving of a common cause.
- **Communication:** Two-way process of reaching mutual understanding, in which participants not only exchange (encode-decode) information, news, ideas and feelings but also create and share meaning.

- **Perseverance:** Commitment, hard work, patience, endurance in spite of challenges and difficulties in ensuring that a defined course of action is attained.
- **Competence:** A cluster of related abilities, commitments, knowledge, and skills that enable a person (or an organization) to act effectively in a job or variety of situations.
- **Quality:** A measure of excellence or a state of being free from defects, deficiencies and significant unjustifiable variations. Strict and consistent commitment to certain standards is required.

### 1.3 JGDM 2018/19 INTEGRATED DEVELOPMENT PLAN (IDP) GOAL

Below is a list of the JGDM 2018/19 Integrated Development Plan Strategic Objectives and Strategies that are linked to and impact on water services goals (2018/19 SDBIP):

**Table 1-1 JGDM 2018-19 IDP Objectives and Strategies**

KPA	STRATEGIC OBJECTIVE	STRATEGIES
<b>1: Infrastructure Development and Service Delivery</b>	Provide access to basic services	<ul style="list-style-type: none"> <li>▪ Develop and maintain new water and sanitation infrastructure</li> <li>▪ Expand and fast-track the provision of universal access to basic services</li> </ul>
<b>2: Local Economic Development</b>	Facilitate and implement job creation and poverty alleviation initiatives	<ul style="list-style-type: none"> <li>▪ Implement and expand implementation of EPWP and other job creation initiatives</li> <li>▪ Implement working for water and working for wetlands</li> <li>▪ Support and facilitate rural development and poverty alleviation programmes</li> </ul>
	Facilitate and support regional economic development initiatives	<ul style="list-style-type: none"> <li>▪ Identify, support and implement economic development flagship and anchor projects</li> <li>▪ Facilitate and support local economic development initiatives</li> <li>▪ Support and participate in initiatives geared towards revitalization of towns and settlements</li> </ul>
<b>3: Institutional Development and Transformation</b>	Improve human resource capacity and potential	<ul style="list-style-type: none"> <li>▪ Attract, retain and develop a base of scarce skills</li> <li>▪ Maintain good working conditions for staff</li> </ul>
<b>4: Financial Viability and Management</b>	Ensure sound and effective financial management and reporting	<ul style="list-style-type: none"> <li>▪ Comply with all statutory financial management and reporting requirements</li> <li>▪ Implement anti-fraud and anti-corruption measures</li> <li>▪ Implement revenue collection and enhancement initiatives</li> </ul>

KPA	STRATEGIC OBJECTIVE	STRATEGIES
<b>5: Good Governance and Public Participation</b>	Facilitate intergovernmental cooperation and coordination	<ul style="list-style-type: none"> <li>▪ Support and participate in intergovernmental cooperation initiatives</li> <li>▪ Create and maintain stakeholder engagement initiatives</li> <li>▪ Provide support to local municipalities</li> <li>▪ Facilitate environmental management and conservation</li> </ul>
	Communicate effectively with communities	<ul style="list-style-type: none"> <li>▪ Ensure effective internal communications and communication with communities</li> </ul>
	Establish and support municipal oversight systems, mechanisms and processes	<ul style="list-style-type: none"> <li>▪ Implement and enforce performance management</li> <li>▪ Ensure and maintain clean governance</li> </ul>
	Facilitate the development of a healthy and inclusive society	<ul style="list-style-type: none"> <li>▪ Facilitate Implementation of HIV and AIDS programmes</li> <li>▪ Facilitate Implementation of programmes supporting the special groups (SPU)</li> </ul>

#### 1.4 NATIONAL AND PROVINCIAL DEVELOPMENT IMPERATIVES

The *National Development Plan* is the country's strategic roadmap for the elimination poverty and reduce inequality by 2030. Its imperatives will have direct and indirect impacts on the functioning of the JGDM are discussed in the table below:

**Table 1-2 NDP objectives that impact on JGDM**

STRATEGIC OBJECTIVE	OBJECTIVES	IMPLICATONS FOR JGDM
Economy and Employment	Public employment programmes should reach 1 million by 2015 and 2 million by 2030.	Job creation through labour intensive infrastructure projects
Economic Infrastructure	Ensure that all people have access to clean, potable water and that there is enough water for agriculture and industry, recognizing the trade-offs in the use of water.	Eradication of water and sanitation backlogs
Inclusive Rural Economy	Reduce water demand in urban areas to 15%. An additional 643 000 direct jobs and 326 000 indirect jobs in the agriculture, agro-processing and related sectors by 2030.	Implementation of WCDM interventions Competition for raw water and increased water demand.
Transforming Human Settlements	Upgrade all informal settlements on suitable well located land by 2030. More people living closer to their places of work.	New housing developments in the peri-urban areas and increased water demand & generation of wastewater.

The *Eastern Cape Vision 2030 Provincial Development Plan* reiterates and aligns to the premises outline in the National Development Plan. The Eastern Cape government's Vision 2030 Provincial Development Plan has identified the district as one of its provincial development nodes forestry and livestock production.

The EC Vision 2030 Provincial Development Plan further outlines other strategic objectives that will have implications on the planning and operations of the district. These include but not limited to the following:

**Table 1-3 EC Vision 2030 Provincial objectives and impact on JGDM**

OBJECTIVES	IMPLICATONS FOR JGDM
Create jobs across all sectors (including agriculture and agro-processing)	<ul style="list-style-type: none"> <li>Align the JGDM process to participate in the Eastern Cape Vision;</li> </ul>
Implementation of <i>ILIMA LABANTU</i>	<ul style="list-style-type: none"> <li>Water development, economic use and preservation are key aspects of the ensuring period to ensure achievement of the goals of the vision</li> </ul>
The development of Mzimvubu River Basin	<ul style="list-style-type: none"> <li>Key focus on agricultural development.</li> </ul>

It is vital that the district takes into consideration and integrate the national and provincial objectives emanating from the National Development and the EC Vision 2030 Provincial Development Plan documents. This will be achieved by ensuring that the district:

- Develop responsive district plans that incorporate and aligned to those objectives;
- Participates in the interactions and projects/interventions regarding these; and
- Amend the municipal programmes to address the outcomes of the relevant projects/interventions.

### 1.5 LOCAL MUNICIPALITIES

There are a number of Elundini, Senqu & Walter Sisulu Local Municipality functions and developmental priorities which will have a direct and indirect impact on the on the planning and operations of the district with regard to water services delivery. The following functions of the local municipalities have a direct and critical impact on the plans of the district:

**Table 1-4 LM functions with impact on JGDM**

Local	municipality	Implications on JGDM
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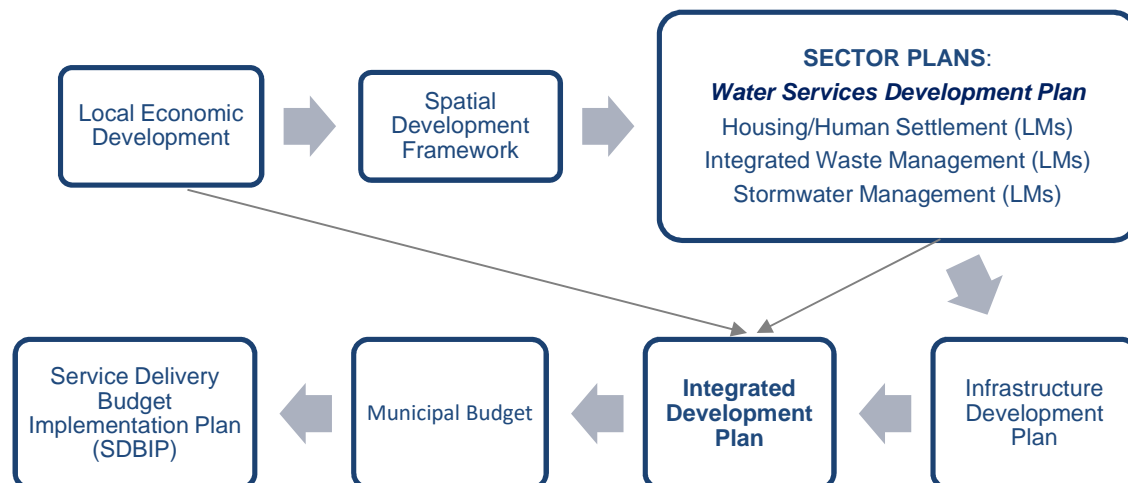
**function**

- |                         |   |
|-------------------------|---|
| 1. Spatial planning     | Development plan in alignment to existing and planned water and sewer infrastructure.   |
| 2. Housing development  | Availability of adequate water resources and ability of the existing infrastructure to cater for the additional water demand and wastewater load.                             |
| 3. Storm-water planning | Storm-water designs taking consideration of water and sanitation infrastructure to avoid damage and storm-water intrusion.  |
| 4. Waste management     | Waste management planning and services have an impact on the misuse of and damage to wastewater infrastructure (e.g. sewer manhole vandalism & misuse, VIP toilet usage, etc) |

**1.6 WSDP PROCESS FOLLOWED**

The Water Services Development Plan (WSDP) is a statutory plan and fits into the overall planning framework that is governed by the Integrated Development Plan (IDP). The WSDP is the primary planning instrument for the Water Services sector of a municipality. The plan must take, as a minimum, cognisance of the physical, social, economic, financial, environmental and institutional aspects of water services provision in a particular water services authority area. The planning format has largely been driven by the Department of Water and Sanitation (DWS) *in order for the al the municipality’s current and projected activities are teased in order to align with the strategies and plans of the department.*

The WSDP is but one of several planning documents that local government is legally compelled to compile, implement and maintain. The relative positions of various plans are depicted below:



**Figure 1-3 WSDP alignment to IDP**

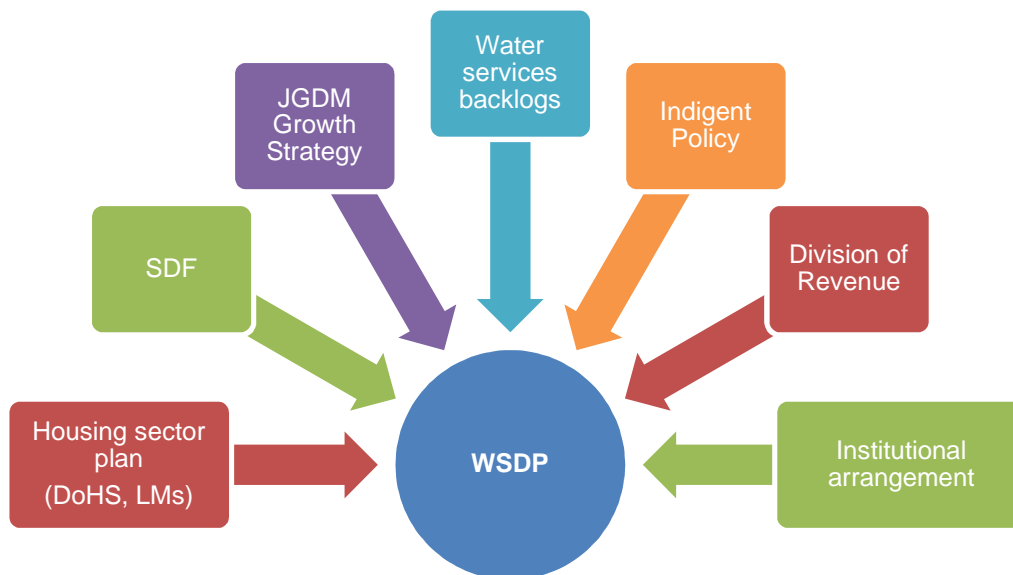


The public participation process included engagements with a number of stakeholders and utilized numerous avenues:

- Internal inputs from the JGDM internal departments.
- Submission of the draft document to the Department of Water and Sanitation.
- Publishing of the document on the JGDM municipal website from the 30 April 2018 for public comment.
- Hard copies of the WSDP were delivered to the MM Offices and libraries of the three local municipalities and the JGDM MM Office.
- The draft presentation of the draft document on the JGDM Joint Standing Committee in May 2018.
- The draft presentation of the document at the District Water Forum on the 14 June 2018.

The final 2018/19 Water Services Development Plan will be submitted for Council approval on the Council Meeting scheduled for 28 June 2018.

The WSDP planning process should run concurrently with the IDP planning process as the IDP is the principal and strategic municipal plan, while the WSDP is a sector plan of the IDP. *This will ensure that the municipalities' IDP priorities that impact on water and sanitation must be cross-referenced to the WSDP, which in turn must include detailed information thereof.*



**Figure 1-4 Inputs into the WSDP Process**

In turn, the WSDP relies on a number of plans for its compilation. This process should be iterative until all plans are fine-tuned and in harmony.

## **1.7 LEGAL FRAMEWORK**

The need to provide water and sanitation services to the population of South Africa is founded in the Constitution of South Africa. The following legislation directly guides the provision of water services:

- The Constitution of the RSA, 1996 (Act 108 of 1996)
- Water Services Act (Act 108 of 1997)
- National Water Act (Act 36 of 1998)
- The White Paper on Local Government (1998)
- The Local Government: Municipal Systems Act, 2000 (Act 32 of 2000)
- Municipal Planning and Performance Management Regulations 2001 (No 796, 24 August 2001)
- The Local Government: Municipal Structures Act, 1998 (Act 117 of 1998)
- The Local Government: Municipal Financial Management Act, 2003 (Act 66 of 2003)
- The Batho Pele White Paper (1998)

There are various regulations under the acts that spell out further detail with respect to service provision and standards, for example:

- Guidelines for Compulsory National Standards (Regulations under section 9 of the WSA, Act 108 of 1997); and
- Norms and Standards for Water Services Tariffs (Regulations under section 10 of the WSA, Act 108 of 1997).

It must be noted that the DWS is looking at reviewing water legislation and the policy framework is being revised and consolidated.

## **1.8 WATER SERVICES BACKLOGS**

Similarly to other rural WSAs in the country, Joe Gqabi District Municipality has inherited the historical legacy of a large backlog of water and sanitation service infrastructure especially in the rural and peri-urban areas of the region. As a departing point, the water and sanitation backlogs as reported in the Statistics South Africa's 2016 Community Survey Census data, is used as reference. In the interim, various capital infrastructure development programmes and

related projects have been completed and/or initiated during the 2016/17 and 2018/19 municipal financial year with some in the progress to completion. The completed and audited projects are used to modify the backlogs to reflect the work and effort undertaken to date to eradicate backlogs since the last census.

## 1.9 WSDP COMPILATION TEAM

The WSDP is a Joe Gqabi District Municipality document as such the municipality has undertaken to utilize internal resources to develop the document and employ a service provider where a specific need arise. *This is aimed at improving the capacity of the municipality, ensure ownership of the document and reinforce the internal governance of water services delivery.*

The following team has been involved in the compilation of the WSDP:

**Table 1-5 JGDM 2019/2020 WSDP Compilation Team**

<b>Name</b>	<b>Designation</b>	<b>Department/Section</b>
1. Sicelo Pongoma	WSA Manager	Water Services Authority
2. Fiona Sephton	Director	Community Services
3. DC Lourens	Head: Compliance	Water Services Authority
4. Robert Fortuin	Director	Technical Services
5. Lumanyano Wana	PMU Manager	Technical Services
6. Dumisani Lusawana	WSP Manager	Water Services Provision
7. Bongani Makehle	Water Quality Manager	Water Services Provision
8. Malefu Saule	MHS Manager	Municipal Health Services
9. Sulene Du Toit	Chief Financial Officer	Finance
10. Mcebisi Nonjola	Director	Institutional Support and Advancement
11. Vusumzi Ndaki	Area Manager: Sterkspruit	Water Services Provision
12. Karel McCarthy	Area Manager: Senqu	Water Services Provision
13. Peter Mathebula	Area Manager: Maletswai	Water Services Provision
14. Riaan Potgieter	Acting Area Manager: Gariep	Water Services Provision
15. George Xwazi	Area Manager: Elundini Urban	Water Services Provision
16. Thembelani Ngceba	Area Manager: Elundini Rural	Water Services Provision
17. Sibongile Mnengisa	Plant Controller: Mt Fletcher	Water Services Provision

## SECTION 2: SOCIO-ECONOMIC DEVELOPMENT/PROFILE

The IDP process sets the base information that is utilised by all municipal planning documents such that a single reference set of data is used and consistency is ensured. The Statistics South Africa's 2016 Community Survey is used for the review of the 2018/19 IDP as such the WSDP preparation process also utilized the municipal demographic data set for the 2018/19 planning cycle.

### 2.1 DEMOGRAPHICS

The population of the District slightly increased from 341 750 in 2001 to 372 192 in 2016 representing a 9% growth (see table 1-1). There has been a modest growth compared to the 8.2% growth observed between 1996 and 2001 as depicted in the table below. The locality that has seen higher population growth is the former Maletswai local municipality that stood at 16% between 2001 and 2011. This was followed by the Former Gariiep local municipality at 7.3%. The Senqu local municipality observed a decrease of 1.2 % and in Elundini an insignificant growth of 0.5%.

**Table 2-1 Table 1: Population and total households (2001, 2011 and 2016)**

MUNICIPALITY	POPULATION			HOUSEHOLDS		
	2001	2011	2016	2001	2011	2016
JGDM	341 750	349 768	372 192	84 835	97 775	95 107
Elundini	137 394	138 141	144 929	33 209	37 854	35 804
Senqu	135 734	134 150	140 720	33 904	38 046	35 597
Walter Sisulu	68 621	77 477	87 263	17 722	21 875	23 705

The Walter Sisulu local municipality increased the most population, with an average annual growth rate of 1.4%; the Elundini local municipality had the second highest growth, with an average annual growth rate of 0.6%. The Senqu local municipality had the lowest average annual growth rate of 0.33%.

Based on the present age-gender structure and the present fertility, mortality and migration rates, ECSSEC projects that the population of the JGDM to grow at an average annual rate of 1.1% from 373 000 in 2016 to 393 000 in 2021. The average annual growth rate in the population over the forecasted period for Eastern Cape Province and South Africa is 1.0% and

1.4% respectively. The Eastern Cape Province is estimated to have average growth rate of 1.0% which is lower than the Joe Gqabi District Municipality. South Africa as a whole is estimated to have an average annual growth rate of 1.4% which is higher than that of Joe Gqabi DM's growth rate.

### Population density

In 2016, Joe Gqabi District Municipality had a population density of 14.5 per square kilometre and it ranked highest amongst its peers. The region with the highest population density per square kilometre was the Nelson Mandela Bay with a total population density of 646 per square kilometre per annum. In terms of growth, Joe Gqabi District Municipality had an average annual growth in its population density of 0.65% per square kilometre per annum. In terms of the population density for each of the regions within the Joe Gqabi District Municipality, Elundini local municipality had the highest density, with 28.9 people per square kilometre. The lowest population density can be observed in the Walter Sisulu local municipality with 6.48 people per square kilometre.

**Table 2-2 Key demographic highlights**

DEMOGRAPHICS	2011		2016	
	Number	Percent	Number	Percent
Population	348 667	-	372 912	-
Population growth	-	-	-	1.3
Population profile:				
• Black African	326 901	93.8	352 041	94.4
• Coloured	12 177	3.5	12 260	3.3
• Indian or Asian	632	0.2	647	0.2
• White	8 277	2.4	7963	2.1
Number of households	100 189	-	95 107	-
Household size	3.5	-	3.9	-
<b>ACCESS TO WATER</b>				
Piped water	73579	73.7	70427	74.1
No access to water	26208	26.3	24690	25.9
<b>ACCESS TO SANITATION</b>				
Flush toilet	26995	28.0	32431	34.1
Chemical	3539	3.7	8326	8.8
Pit toilet	46943	48.7	45608	48.0

Bucket	1742	1.8	1195	1.3
None	17105	17.8	5678	6.0

With 373 000 people, the Joe Gqabi District Municipality housed 0.7% of South Africa's total population in 2016. Between 2006 and 2016 the population growth averaged 0.65% per annum which is about half than the growth rate of South Africa as a whole (1.54%). Compared to Eastern Cape's average annual growth rate (0.83%), the growth rate in Joe Gqabi's population at 0.65% was slightly lower than that of the province.

When compared to other regions, Joe Gqabi District Municipality accounts for a total population of 373,000, or 5.3% of the total population in Eastern Cape Province ranking as the most populous district municipality in 2016. The ranking in terms of the size of Joe Gqabi compared to the other regions remained the same between 2006 and 2016. In terms of its share Joe Gqabi District Municipality was very similar in 2016 (5.3%) compared to what it was in 2006 (5.4%). When looking at the average annual growth rate, it is noted that Joe Gqabi ranked sixth (relative to its peers in terms of growth) with an average annual growth rate of 0.7% between 2006 and 2016.

### Migration Patterns

The levels of out-migration from Joe Gqabi are higher than the provincial average. At least 18% of District households against 15.2% of provincial households reports of at least one migrant household member. Approximately, 7% of the District population overall migrates from their households, while the provincial migration rate amounts to 5.6% of the provincial population.

**Table 2-3 Demographic implications on water services**

<b>Issue</b>	<b>Status Quo</b>	<b>Proposed sector intervention</b>
Overall population	Stable population growth throughout the District with an exception of former Maletswai where there was increment of 16%	Water Services Development Plan to prioritise long term investment into the growth areas
Migration	Higher out-migration rate which is above provincial rate	Local Economic Development strategy to deal with business retention and attraction. Introduce small town regeneration programmes.

## 2.2 ECONOMY

With a GDP of R 10.4 billion in 2016 (up from R 3.87 billion in 2006); the Joe Gqabi District Municipality contributed 3.09% to the Eastern Cape Province GDP of R 338 billion in 2016 increasing in the share of the Eastern Cape from 2.72% in 2006. The Joe Gqabi District Municipality contributes 0.24% to the GDP of South Africa which had a total GDP of R 4.34 trillion in 2016 (as measured in nominal or current prices). Its contribution to the national economy stayed similar in importance from 2006 when it contributed 0.21% to South Africa. In terms of total contribution towards Eastern Cape Province the Joe Gqabi District Municipality ranked lowest relative to all the regional economies to total Eastern Cape Province GDP. This ranking in terms of size compared to other regions of Joe Gqabi remained the same since 2006. In terms of its share, it was in 2016 (3.1%) slightly larger compared to what it was in 2006 (2.7%). For the period 2006 to 2016, the average annual growth rate of 2.8% of Joe Gqabi was the second relative to its peers in terms of growth in constant 2010 prices. GDP contribution per municipality is shown in table 3 below.

**Table 2-4 Gross Domestic Product (GDP) Share and Growth**

	2016 (Current prices)	Share of district municipality	2006 (constant prices)	2016 (constant prices)	Average annual growth
Elundini	2.10	20.10%	1.22	1.43	1.60%
Senqu	3.07	29.42%	1.61	2.09	2.61%
Walter Sisulu	5.27	50.48%	2.50	3.54	3.55%
JGDM	10.44	-	5.33	7.06	-

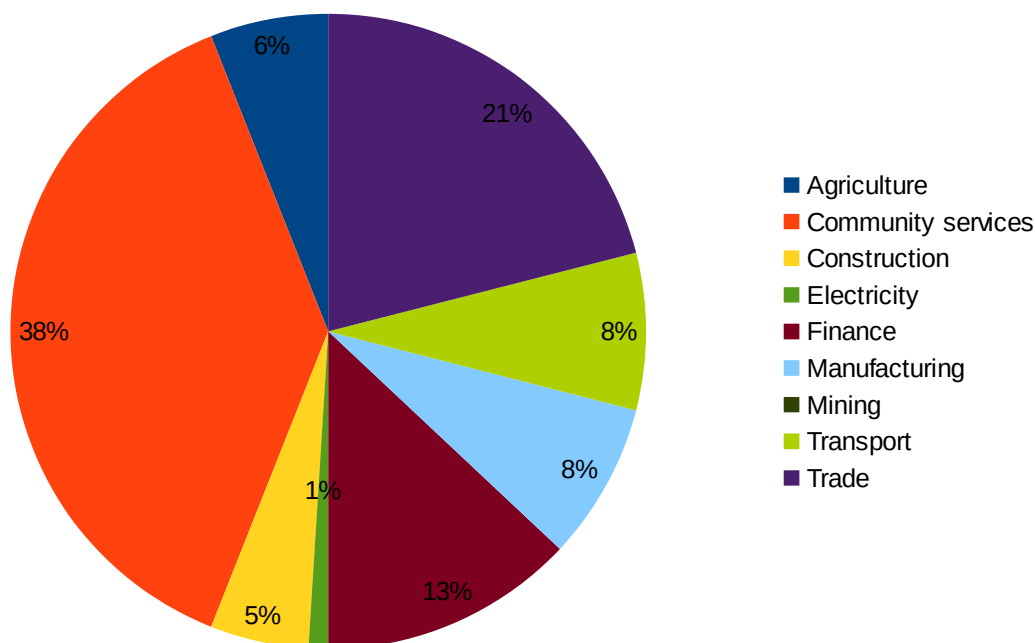
The Walter Sisulu had the highest average annual economic growth, averaging 3.55% between 2006 and 2016, when compared to the rest of the regions within the Joe Gqabi District Municipality. The Senqu local municipality had the second highest average annual growth rate of 2.61%. Elundini local municipality had the lowest average annual growth rate of 1.60% between 2006 and 2016. The greatest contributor to the Joe Gqabi District Municipality economy is the Walter Sisulu local municipality with a share of 50.48% or R 5.27 billion, increasing from R 1.84 billion in 2006. The economy with the lowest contribution is the Elundini local municipality with R 2.1 billion growing from R 869 million in 2006.

According to ECSSEC, it is expected that Joe Gqabi District Municipality will grow at an average annual rate of 1.84% from 2016 to 2021. The average annual growth rate of Eastern Cape Province and South Africa is expected to grow at 1.62% and 1.61% respectively. The GDP share and growth per local municipality is shown in the table below.

**Table 2-5 Gross Domestic Product (GDP) Share and Growth**

	2021 (Current prices)	Share of district municipality	2016 (constant prices)	2021 (constant prices)	Average annual growth
Elundini	2.89	37.42%	1.43	1.52	1.28%
Senqu	4.42	57.21%	2.09	2.32	2.13%
Walter Sisulu	7.46	96.47%	3.54	3.89	1.89%
JGDM	14.77	-	7.06	7.73	-

In 2021, Joe Gqabi's forecasted GDP will be an estimated R 7.73 billion (constant 2010 prices) or 3.1% of the total GDP of Eastern Cape Province. The ranking in terms of size of the Joe Gqabi District Municipality will remain the same between 2016 and 2021, with a contribution to the Eastern Cape Province GDP of 3.1% in 2021 compared to the 3.0% in 2016. At a 1.84% average annual GDP growth rate between 2016 and 2021, Joe Gqabi ranked the second compared to the other regional economies.



**Figure 2-1 Gross Value Added (GVA) by Broad Economic Sector**

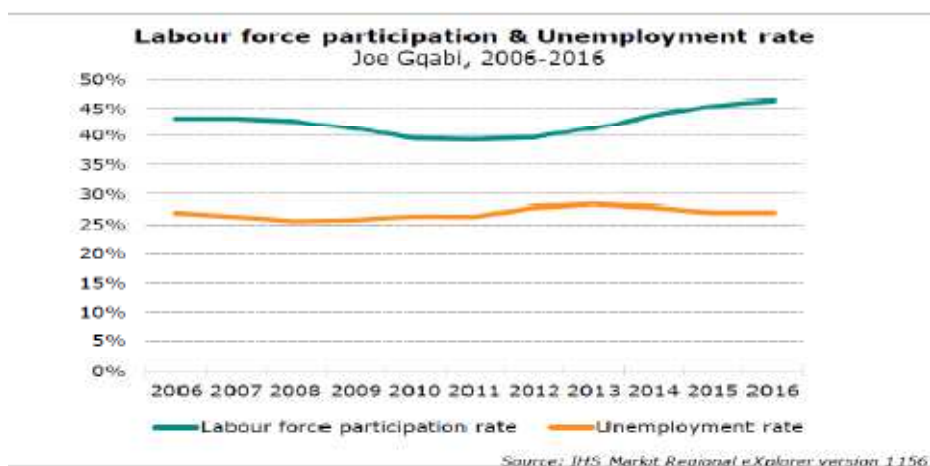
In 2016, the community services sector is the largest within Joe Gqabi District Municipality accounting for R 3.6 billion or 38.4% of the total GVA in the district municipality's economy. The sector that contributes the second most to the GVA of the Joe Gqabi District Municipality is the



trade sector at 20.8%, followed by the finance sector with 13.1%. The sector that contributes the least to the economy of Joe Gqabi District Municipality is the mining sector with a contribution of R 15.3 million or 0.16% of the total GVA. The community sector, which includes the government services, is generally a large contributor towards GVA in smaller and more rural local municipalities.

## 2.3 LABOUR

The Joe Gqabi District Municipality's labour force participation rate increased from 43.17% to 46.28% which is an increase of 3.1 percentage points. The Eastern Cape Province increased from 47.58% to 47.93%, South Africa increased from 56.37% to 58.77% from 2006 to 2016. The Joe Gqabi District Municipality labour force participation rate exhibited a higher percentage point change compared to the Eastern Cape Province from 2006 to 2016. The Joe Gqabi District Municipality had a lower labour force participation rate when compared to South Africa in 2016.



**Figure 2-2 Labour Force participation**

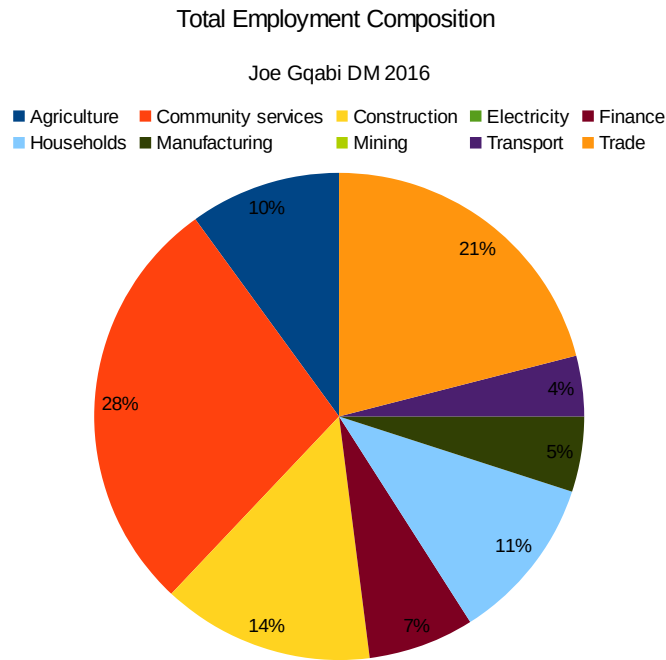
In 2016, the labour force participation rate for Joe Gqabi was at 46.3% which is slightly higher when compared to the 43.2% in 2006. The unemployment rate is an efficient indicator that measures the success rate of the labour force relative to employment. In 2006, the unemployment rate for Joe Gqabi was 27.0% and increased overtime to 27.0% in 2016. The gap between the labour force participation rate and the unemployment rate decreased which indicates a negative outlook for the employment within Joe Gqabi District Municipality.

In 2016, Joe Gqabi employed 75 700 people which is 5.20% of the total employment in Eastern Cape Province (1.46 million), 0.48% of total employment in South Africa (15.7 million). Employment within Joe Gqabi increased annually at an average rate of 1.67% from 2006 to 2016.

**Table 2-6 Total Employment**

Year	JGDM	Eastern Cape	National
2006	64,100	1,330,000	13,000.000
2007	65,300	1,350,000	13,500.000
2008	65,800	1,350,000	14,100.000
2009	64,000	1,320,000	14,000.000
2010	61,300	1,260,000	13,600.000
2011	61,500	1,260,000	13,800.000
2012	61,300	1,270,000	14,000.000
2013	63,900	1,310,000	14,500.000
2014	69,000	1,370,000	15,100.000
2015	73,200	1,430,000	15,500.000
2016	75,700	1,460,000	15,700.000
<b>Average annual growth</b>			
<b>2006-2016</b>	<b>1.67%</b>	<b>0.91%</b>	<b>1.89%</b>

In Joe Gqabi District Municipality the economic sectors that recorded the largest number of employment in 2016 were the community services sector with a total of 20 900 employed people or 27.6% of total employment in the district municipality. The trade sector with a total of 15 800 (20.9%) employs the second highest number of people relative to the rest of the sectors. The mining sector with 74.9 (0.1%) is the sector that employs the least number of people in Joe Gqabi District Municipality, followed by the electricity sector with 237 (0.3%) people employed.



**Figure 2-3 Total Employment by Economic Sector**

The number of formally employed people in Joe Gqabi District Municipality counted 53 600 in 2016, which is about 70.77% of total employment, while the number of people employed in the informal sector counted 22 100 or 29.23% of the total employment. Informal employment in Joe Gqabi increased from 20 000 in 2006 to an estimated 22 100 in 2016. In 2016, the unemployment rate in Joe Gqabi District Municipality (based on the official definition of unemployment) was 27.03%, which is an increase of 0.0529 percentage points. The unemployment rate in Joe Gqabi District Municipality is lower than that of Eastern Cape. The unemployment rate for South Africa was 26.33% in 2016, which is an increase of -0.563 percentage points from 25.77% in 2006.

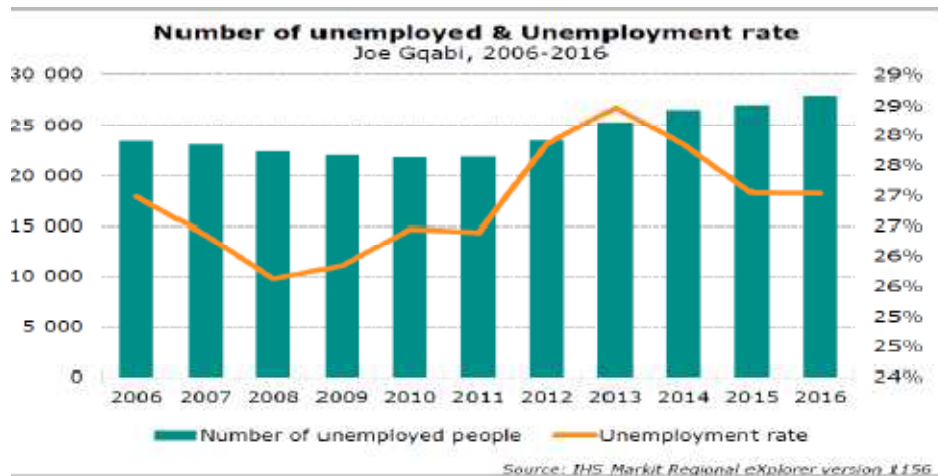


Figure 2-4 Unemployment and unemployment rate

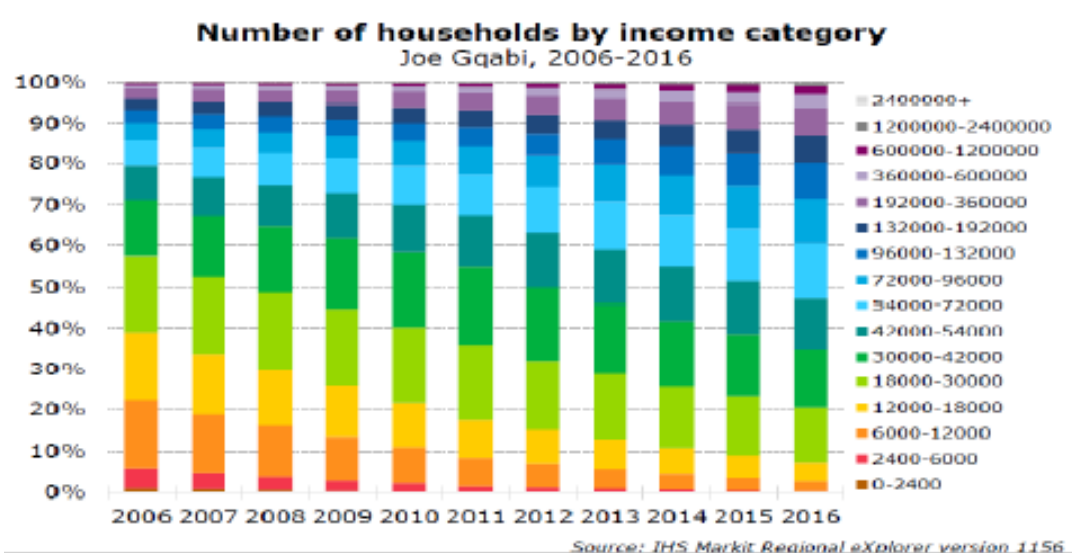
When comparing unemployment rates among regions within Joe Gqabi District Municipality, Elundini local municipality has indicated the highest unemployment rate of 36.0%, which has increased from 32.5% in 2006. It can be seen that the Walter Sisulu local municipality had the lowest unemployment rate of 18.3% in 2016, which decreased from 19.8% in 2006 (see Figure 2-5).



Figure 2-5 Unemployment rate by LM

It was estimated that in 2016 20.55% of all the households in the Joe Gqabi District Municipality, were living on R30, 000 or less per annum. In comparison with 2006's 57.55%, the number is about half. The 30000-42000 income category has the highest number of households with a

total number of 15 000, followed by the 18000-30000 income category with 14 000 households. Only 14 households fall within the 0-2400 income category.



**Figure 2-6 Household income by income bracket**

For the period 2006 to 2016 the number of households earning more than R30, 000 per annum has increased from 42.45% to 79.45%. It can be seen that the number of households with income equal to or lower than R6, 000 per year has decreased by a significant amount.

The total personal income of Joe Gqabi District Municipality amounted to approximately R 12.7 billion in 2016. The African population group earned R 10.2 billion, or 80.56% of total personal income, while the White population group earned R 1.82 billion, or 14.31% of the total personal income. The Coloured and the Asian population groups only had a share of 4.53% and 0.60% of total personal income respectively.

When looking at the annual total personal income for the regions within Eastern Cape Province it can be seen that the Walter Sisulu local municipality had the highest total personal income with R 4.68 billion which increased from R 1.54 billion recorded in 2006. It can be seen that the Elundini local municipality had the lowest total personal income of R 3.85 billion in 2016, this increased from R 1.44 billion in 2006.

In 2016, Joe Gqabi District Municipality had an HDI of 0.564 compared to the Eastern Cape with a HDI of 0.596 and 0.653 of National Total as a whole.

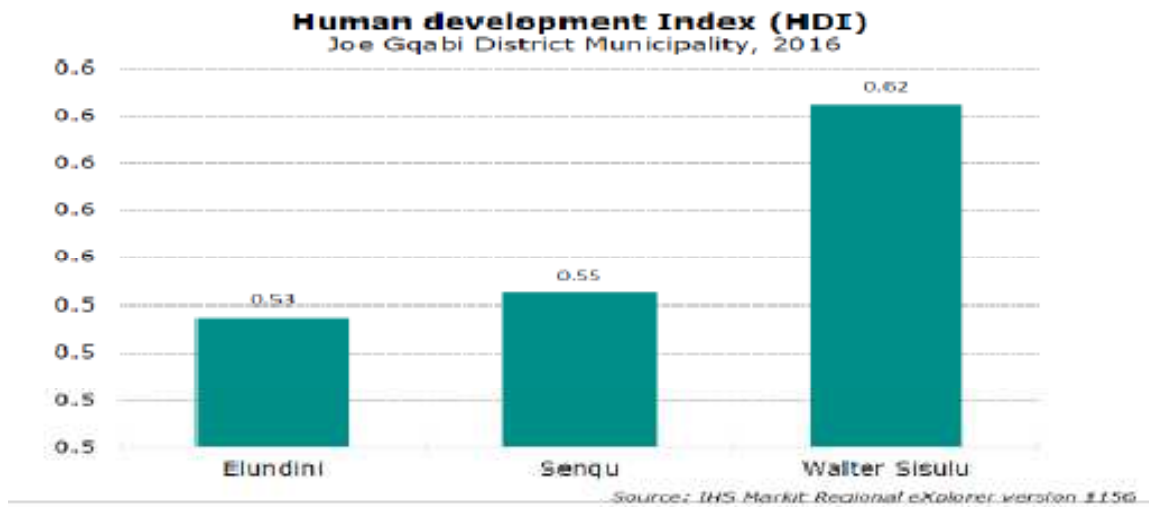


Figure 2-7 Human Development Index (HDI)

In terms of the HDI for each the regions within the Joe Gqabi District Municipality, Walter Sisulu local municipality has the highest HDI, with an index value of 0.625. The lowest can be observed in the Elundini local municipality with an index value of 0.535.

In 2016, there were 239 000 people living in poverty, using the upper poverty line definition, across Joe Gqabi District Municipality - this is 6.33% lower than the 255 000 in 2006. The percentage of people living in poverty has decreased from 73.04% in 2006 to 64.09% in 2016, which indicates a decrease of 8.95 percentage points.

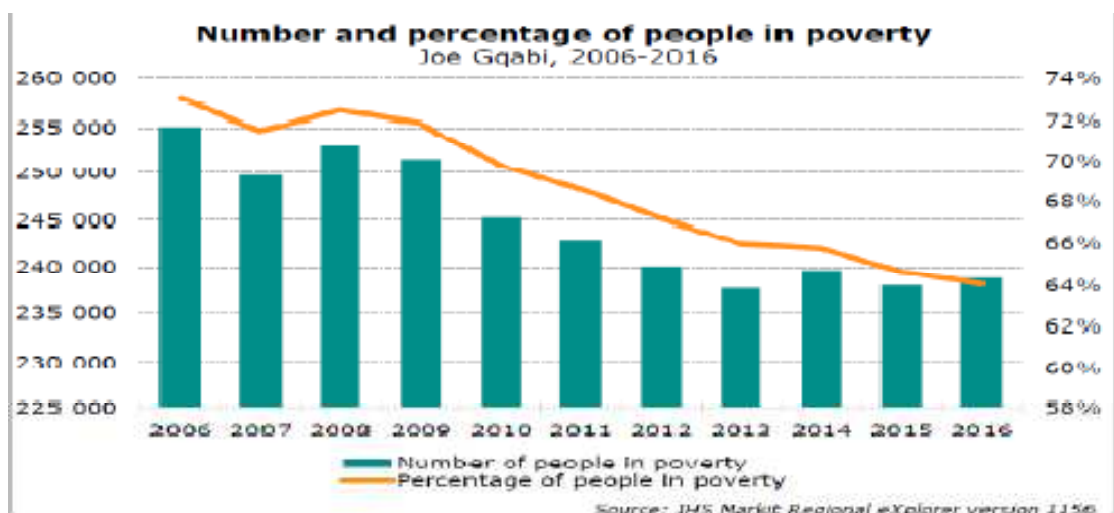


Figure 2-8 Number and percentage of people living in poverty

In 2016, the population group with the highest percentage of people living in poverty was the White population group with a total of 0.7% people living in poverty, using the upper poverty line definition. The proportion of the White population group, living in poverty, decreased by 0.243 percentage points, as can be seen by the change from 0.72% in 2006 to 0.48% in 2016. In 2016, 66.49% of the African population group lived in poverty, as compared to the 75.73% in 2006.

In terms of the percentage of people living in poverty for each of the regions within the Joe Gqabi District Municipality, Elundini local municipality has the highest percentage of people living in poverty, using the upper poverty line definition, with a total of 69.5%. The lowest percentage of people living in poverty can be observed in the Walter Sisulu local municipality with a total of 51.2% living in poverty, using the upper poverty line definition.

**Table 2-7 Economy dynamics implications**

<b>Issue</b>	<b>Status Quo</b>	<b>Sectoral Intervention required</b>
GGP	Low economic activity	Invest in industrial development focusing on agricultural and tourism downstream industry
Sectoral performance	Four main sectors in 2010 were community (Finance, Trade, Trade, Manufacturing & Agriculture).	Promote agriculture sector performance
Income levels	Low income levels	Focus on skills development through education
Employment and Income	There is high unemployment and more than two third of the population lives below poverty line	Labour intensive infrastructure development initiatives and mass job creation initiatives must continue

## **2.4 SOCIO ECONOMIC CHALLENGES AND RISKS**

The following socio-economic issues and challenges within the district with regard to water services planning and provision have been identified:

1. **Limited economic development and activity in the district;**
2. Failure to improve the current state of infrastructure possesses a serious threat to the local economy development initiatives **of both public and private institutions;**
3. The Department of Human Settlements often has housing development commitments that do not align with the **district's development** objectives and **capacity of the existing water services** infrastructure;
4. Levels of service and backlogs are a moving target **as a result of growing settlements and towns;**
5. Illegal connections to upgrade household's levels in an unstructured and often damaging manner is rife;
6. Bucket toilets are available in a number of informal settlements in Barkly East and Sterkspruit. The district is servicing them in order to avert any possible public and environmental health impacts; and
7. A substantially low portion of the population that can afford high level of water services.

## **2.5 2019/2020 SOCIO-ECONOMIC OBJECTIVES AND STRATEGIES**

JGDM has the following strategies that will assist the municipality to address the main issues and concerns in the shortest possible time.

1. Implement labour intensive projects that will help in the alleviation of poverty and creating jobs (aligned to EPWP);
2. Quantify and report on jobs created and local SMMEs benefiting through infrastructure projects;
3. Effective **development and regular update** of the Indigent Register in collaboration with the three local municipalities to ensure qualifying households benefit;
4. Effective rehabilitation, **refurbishment** and maintenance of existing infrastructure to **ensure that the district creates an enable environment for economic activities;** and
5. Create a pro-active yet cost effective response to drought.



### **SECTION 3: WATER SERVICES INSTITUTIONAL ARRANGEMENT**

The Water Services Institutional Arrangement profile of Joe Gqabi District Municipality outlines the institution's structural and operational design of water and sanitation services provision within its various departments in order to enhance good governance, effective service delivery and understanding the competing demands for resources within the municipality.

JGDM is a Water Services Authority under Section 84 of the Municipal Structures Act (No117 of 1998) and the municipality has also decided to fulfill the Water Services Provider function for the local municipalities that fall within its area of jurisdiction. The District Municipality has consolidated water services functions in the district to provide for improved control and line of sight accountability as compared to the previous arrangement which involved the Local Municipalities undertaking the water services provision responsibility.

Therefore, current situation regarding water services in Joe Gqabi District Municipality is that the municipality is both the legislated Water Services Authority (with full regulation and oversight functions) and the Water Services Provider (with full delivery functions). However, these functions are separated between Community Services and the Technical Services Departments to limit the chances of conflicting obligations.

The Constitution of South Africa, Act 108 of 1996, assigns responsibility of ensuring *access to water services* to local government. The role of the national and provincial spheres of government is to support, monitor and regulate local government. As a Water Services Authority, the primary mandate/responsibility of the municipality is outlined in Section 11(1) of the Water Services Act (Act 108 of 1997):

*“Every water services authority has a duty to all customers in its area of jurisdiction to progressively ensure efficient, affordable, economical and sustainable access to water services”.*

The other primary municipal functions that are required to be undertaken and support the provision of water services to all the residents within the district include:

- Planning: *preparing water services development plans (integration of financial, institutional, social, technical and environmental plans of the municipality)* to progressively ensure efficient, affordable, economical and sustainable access to water.

- *Human resources management and development* to ensure that the municipality has adequate and competent administrative, technical and scientific personnel in order to ensure effective and efficient water services provision.
- *Financial management* in terms of review and development of water services tariffs, metering, billing and revenue collection.
- *Regulation* of water services provision and water services providers (*by-laws, contract regulation, monitoring, and performance management*).
- *Project Management* including the project planning, design, development and monitoring.
- *Communication*: consumer education and awareness, and communication (customer care, health and hygiene promotion, water conservation and demand management, information sharing, communication, and development of consumer charter).

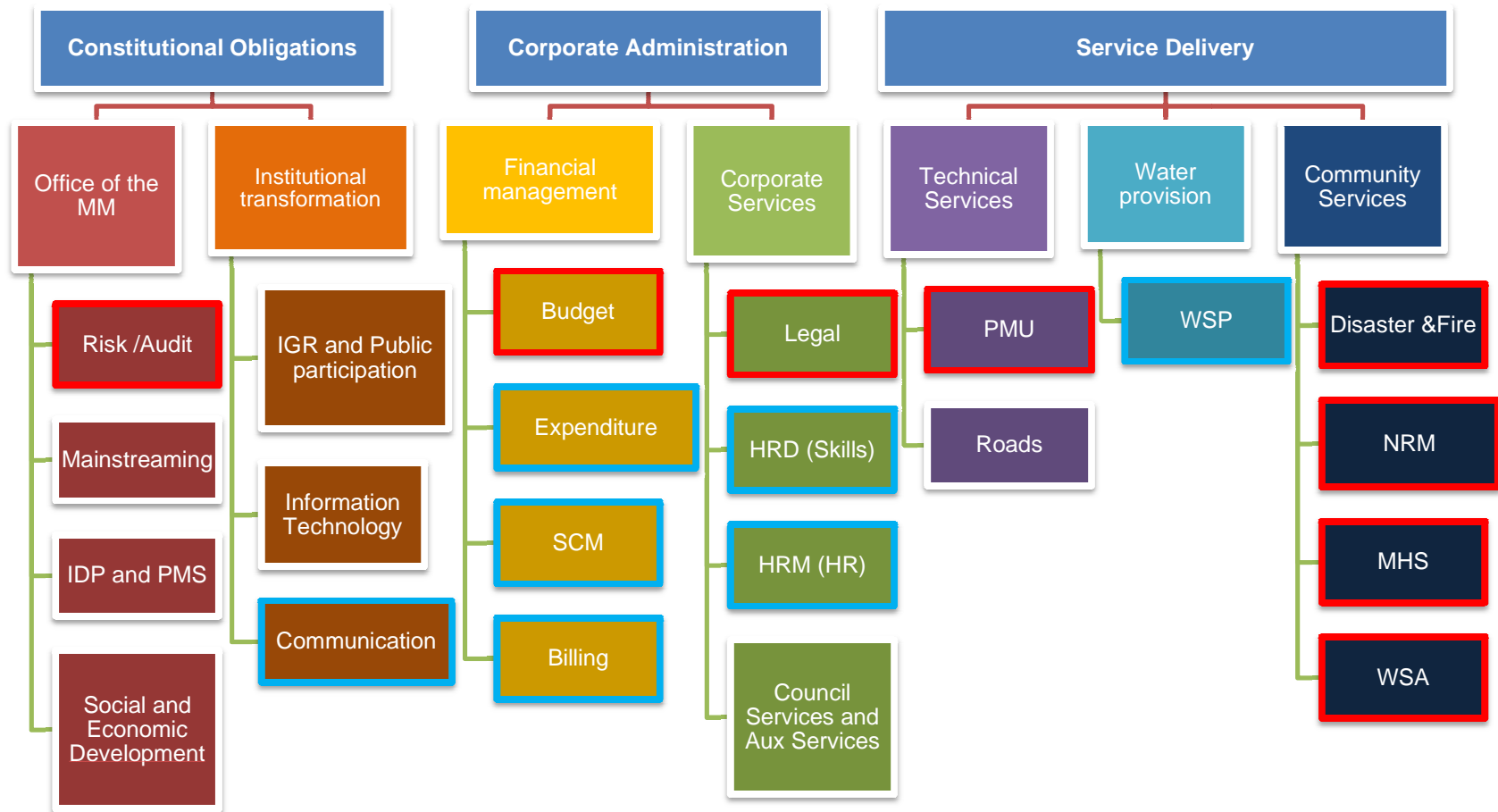


Figure 3-1 Water Services Authority Organogram

### 3.1 REGULATION

The Water Services Authority section provides the regulatory oversight on water services provision and is responsible to ensure that services are provided effectively, efficiently, sustainably and affordably. The function is located within the Community Services Department and through a Service Level Agreement (SLA) with the Water Services Provision which clearly specifies the roles and responsibilities between the regulator and the provider.

Performance **monitoring and** management is also the function of the WSA and is undertaken through the use of information gathered from the various functions to ascertain the performance of the District Municipality in this regard.

The functioning of municipal drinking **water** and wastewater sampling is undertaken by the Environmental Health Practitioners in Municipal Health Services section that is also located in the Community Services Department. **The WSA manages and finances the water and effluent quality testing and compliance with legislative requirements. However, at the moment the municipality outsources its scientific services for the drinking water and wastewater regulatory and operational water quality analysis to the SANAS-accredited East London Industrial Development Zone (ELIDZ) Laboratory Services. The long-term intention of the municipality is to establish its own accredited water testing laboratory as this will ensure that this service is integrated into the operations of the district with the benefit of operational efficiency and business opportunities.**

The WSA is also responsible for the compilation of the Water Services Development Plan (WSDP) and the Master Plans for water and sanitation. It is also responsible for the verification and review of by-laws and tariffs in terms of the Water Services Act (108 of 1997) including the compliance with legislative reporting for its area of jurisdiction. Furthermore, the WSA **facilitates the carrying out of research and development within the district on the latest water and sanitation services technologies** to ensure that JGDM adheres to current practices.

### **3.2 WATER SUPPLY AND SANITATION**

The **Water Services Provision (WSP) section** is responsible for the operations and maintenance of the water and wastewater treatment works in all local municipalities within JGDM (that is Elundini, Senqu and Walter Sisulu Local Municipalities). It is also responsible for the bulk and reticulation networks and **storage facilities** in the aforementioned municipalities; and the operations and maintenance of water services infrastructure management developed through the drought relief funding.

**The community education and awareness in terms of water supply and sanitation services is a function of the WSP's ISD sub-section with relevant personnel located in all the three local municipal areas.**

### **3.3 PROJECT DEVELOPMENT**

All the **development of new** municipal water and sanitation infrastructure is undertaken by the Project Management Unit which resides within the Technical Services Department. This section also deals with the management of the funding of projects for which applications have been received and the implementation thereof. The strategic objectives of this unit are to provide services including engineering and **social facilitation** to address the current water and sanitation backlogs.

However, the municipality still utilizes service providers for the infrastructure design and contracts management due to capacity challenges **and office accommodation.**

### **3.4 BILLING AND REVENUE COLLECTION**

The Finance Directorate provides support in the metering, billing and revenue collection processes for the bulk and retail water services functions. In addition, the Chief Financial Officer and the Water Services Authority administer the process for the review and approval of annual water and sanitation tariffs in line with the applicable prescripts provided for by the Department of Water and Sanitation, and National Treasury.

**The Directorate further manages the district's Indigent Register in collaboration with the three local municipalities. Furthermore, the Prepaid Metering Programme is also located and managed by the Chief Financial Officer.**

### **3.5 INTEGRATED DEVELOPMENT PLANNING**

According to Section 25 of the Municipal Systems Act (Act 32 of 2000): “Each municipal council must adopt a single, inclusive and strategic plan for the development of the municipality which:

- Links, integrates and co-ordinates plans and takes into account proposals for the development of the municipality;
- Aligns the resources and capacity of the municipality with the implementation of the plan; and
- Forms the policy framework and general basis on which annual budget must be based.”

This WSDP is one of the sector plans that feed into, and takes direction from the district's Integrated Development Plan.

### **3.6 2019/2020 INSTITUTIONAL ARRANGEMENT CHALLENGES AND RISKS**

- Outdated Water and Sanitation By-Laws and **inadequate** implementation thereof;
- Lack of adequately qualified technical and supervisory personnel for all the needs of municipality **owing to high staff turnover, and attraction of qualified and experienced personnel;**
- Non-compliance to Occupational Health and Safety (OHS) **that has led to** legal, financial and service delivery implications for the municipality;
- Lack of a **district infrastructure guideline and standards in order to ensure that the choice, capacity, design** and development of new water and sanitation infrastructure considers the local conditions, capacity of the municipality and developmental plans within the jurisdiction of the district; and
- There has not been any consensus reached to date in terms of an adopted technology option for the rural sanitation facilities to be provided;

### **3.7 2019/2020 INSTITUTIONAL ARRANGEMENT OBJECTIVES AND STRATEGIES:**

- **Finalization of the review of the draft Water and Sanitation By-laws through the community ward-based phase of the consultations and council-approval of the final by-laws;**
- **Review of the WSA structure and appointment of Peace Officers to facilitate the implementation of the By-Laws;**

- Finalize the review of the district's organogram and filling of vacant posts within the Water Services Provision;
- Ensuring that all municipal process controllers are registered on the DWS' Integrated Regulatory and Information System (IRIS);
- Health and Safety Training for all managers and senior personnel so that they may discharge their responsibilities and improve compliance in their operational areas  
Improve the functioning of the JGDM's District Water Forum;
- Implementation of the Integrated Water and Sanitation Master Plan is being developed through the DBSA-funded project;
- WSA needs to develop a Monitoring and Evaluation system to monitor the implementation of projects; and
- Finalization and approval of the JGDM Guidelines and Standards for the Water and Sanitation Infrastructure Development that will ensure the alignment between the developed infrastructure with the municipal policies and operational resources.

## SECTION 4: SERVICE LEVEL PROFILE

*The Water Services Act provides for the access to a basic water supply and sanitation services, and regulations specify the minimum levels of service to be provided by a municipality to all households within its area of jurisdiction.*

The definition of service levels was influenced by the Reconstruction and Development Plan (RDP) to comprise a water supply standpipe with a maximum walking distance of 200m from each household, and a Ventilated Improved Pit (VIP) latrine sanitation system. This standard has endured, but has been modified by desired goal set in the Strategic Framework for Water Services (SFWS). The concept of Basic Services has been defined to ensure consistency in compliance with the objectives of policy and legislation and the expectations of people. These definitions were set in the SFWS in 2003.

- **Basic Water Supply Service** entails 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. **A minimum quantity of potable water per person per day or 6kilolitres per household per month.**
- **Basic Sanitation Supply Service** encompasses 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.

Levels of service change overtime as the move from being less basic to higher level of service. This is aligned to the concept of the water ladder, with the input of the Department of Water and Sanitation continually striving to raise the bar in this regard. A challenge and risk is ensuring the balance between appropriate level of service and affordability, and sustainability of the service.

### 4.1 JGDM WATER AND SANITATION BY-LAWS

The Water Services Act (Act 107 of 1998) advises that all Water Services Authorities devise water and sanitation services by-laws to govern the provision of services and to give effect to



policy. The JGDM has devised a set of by-laws to regulate the provision of services including water and sanitation. The **JGDM Water and Sanitation Services By-laws** were gazetted in the Eastern Cape Provincial Gazette on 31 August 2015 **and the review thereof was started in the 2018/19 municipal financial year with consultations with the relevant institutions. The ward-based community consultations will follow in the 2019/2020 throughout the three local municipalities.**

The by-laws allow for the existence of three levels of water supply and sanitation services, namely:

**Table 4-1 JGDM water supply and sanitation Levels of Services**

LEVEL OF SERVICE	WATER SUPPLY	SANITATION
1. Basic	Standpipe within 200m walking distance from household	Ventilated Improved Pit (VIP) latrine toilet
2. Intermediate	Yard connection	Septic tanks
3. Full	House connection	Waterborne (flush) toilet

The *Basic Service Level* of service of reticulated standpipes or stationary water tank serviced either through a network pipe or a water tanker located within a reasonable walking distance from any household with a ventilated improved pit latrine located on each premises, with premises meaning the lowest order of visibly demarcated area on which some sort of informal dwelling has been erected. The standpipe is installed free of charge to the consumers and maintained by the municipality.

The *Intermediate Service Level* is a yard connection, not connected to any water installation and an individual connection to the municipality's sanitation system consisting of an un-metered standpipe on a premises' and a pour-flush toilet pan, wash-through and suitable toilet top structure connected to the Municipality's sanitation system.

The *Full Service Level* entails a metered pressured water connection with an individual connection to the Municipality's sanitation system, installed against payment of the relevant connection charges, provided against payment of prescribed charges and the on-site water and drainage installations maintained by the consumer.

The improved households' standard of living and urbanization evident from the urban sprawl and the extent and magnitude of houses being built in the peri-urban and rural areas of Herschel, Mt Fletcher and Sterkspruit will necessitate the municipality to consider the application of yard connections as the basic level of service instead of the standpipes. That will require an analysis to determine the costs with regard to raw water purchases, infrastructure development and Operations & Maintenance costs vis-à-vis the enhanced service delivery, improved revenue and illegal connects (RE: vandalism).

The status of services coverage is initially derived from the 2011 national census and augmented by information from the 2016 Community Survey. The backlog status is not static and can improve or deteriorate based on population dynamics for specific areas.

The western parts of the JGDM are dominated by large tracts of commercial farms, with limited to no rural settlements. Human settlements are concentrated in urban and peri-urban nodes. The eastern parts of the DM have a settlement pattern characterised by the occurrence of large tracts of trust land and hence traditional rural settlements with some urban nodes. Migration patterns driven by socio-economic factors result in a regular movement of people from the rural settlements to the urban nodes and beyond to larger urban nodes outside of the district. There is often a seasonal pattern of people returning to the rural villages in the holiday periods (March/April and December/January).

#### 4.2 SETTLEMENT WATER SUPPLY

The consolidated water supply provision landscape of the district is depicted in the table below as sourced from the Statistics South Africa's 2016 Community Household Survey.

**Table 4-2 JGDM Household access to water (CS 2016)**

	Access to piped water		No access to piped water	
	%			
	2011	2016	2011	2016
<b>Joe Gqabi</b>	73.7	74.1	26.3	25.9
EC141 : Elundini	52.2	61.7	47.8	38.3
EC142 : Senqu	81.2	72.2	18.8	27.8
EC145 : Walter Sisulu	98.1	95.4	1.9	4.6

According to the Statistics South Africa's 2016 Community Services, and estimated 74.1% of the district households which is a slight increase from the Census 2011 figure of 73.7%.

#### 4.3 SETTLEMENT SANITATION SERVICES

The sanitation services categories within the district encompasses waterborne in the urban nodes, septic tanks in some of the urban and peri-urban centres, and Ventilated Improved Pit (VIP) latrines in the some of the urban and rural areas. The situation in the district is summarised in the table below as per the 2016 Community Survey:

**Table 4-3 JGDM Household access to sanitation (CS 2016)**

	Flush toilet		Chemical toilet		Pit latrine		Bucket		None	
	2011	2016	2011	2016	2011	2016	2011	2016	2011	2016
	%									
<b>Joe Gqabi</b>	28.0	34.1	3.7	8.8	48.7	48.0	1.8	1.3	17.8	6.0
EC141 : Elundini	12.0	14.9	2.9	17.3	60.6	58.5	0.7	0.0	23.8	7.1
EC142 : Senqu	14.2	18.2	5.1	3.6	62.9	68.1	1.7	2.6	16.1	6.7
EC145 : Walter Sisulu	78.4	86.8	2.6	3.6	4.7	1.7	3.7	1.1	10.5	3.1

The CS2016 picture below shows that the JGDM's efforts to eradicate sanitation backlogs have progressed well in the five years since Census 2011. The backlog was indicated to stand at 25.12%. This translates to an additional 17 772 households receiving sanitation between 2011 and 2016, at an average rate of 3 554 households per annum.

**Table 4-4: Sanitation Provision and Backlogs, JGDM in CS 2016**

Level of Service Parameter	Census 2011	Census 2011 %	CS 2016	CS 2016 %
Those with an Adequate Level of Service	53 585	54,80%	71 357	74,88%
Those without an Adequate Level of Service	44 191	45,20%	23 937	25,12%
Total	97 776	100,00%	95 294	100,00%

This delivery rate can improve with more funding and improved delivery mechanism and experience gained in the past. The backlog is still 23 937 units, implying an elimination of the currently defined backlog within 7 years, at about 2024. The table below shows the picture in Elundini in 2011.

**Table 4-5: Sanitation Provision and Backlogs in Elundini LM**

Elundini	No Service	Below RDP	RDP	Above RDP	Total	Backlog Per Category
Rural	7201	11147	6863	1266	26477	79.00%
Urban	1428	3462	2381	4034	11305	21.00%
Total	8629	14609	9244	5300	37782	100.00%
Percentage	22.80%	38.70%	24.50%	14.00%	100.00%	

As in the case with water supply services, Elundini LM had substantial backlogs in sanitation. A total of 61.5% of households in the LM had less than an RDP level of service. This required substantial investment to reverse this status quo. CS 2016 returned the following picture in Elundini LM in 2016:

**Table 4-6: Sanitation Provision and Backlogs in Elundini, CS 2016**

Level of Service Parameter	Census 2011	Census 2011 %	CS 2016	CS 2016 %
Those with an Adequate Level of Service	14 544	38,49%	26 898	74,73%
Those without an Adequate Level of Service	23 238	61,51%	9 094	25,27%
Total	37 782	100.00%	35 992	100,00%

There has been a substantial reduction in the backlogs for sanitation in Elundini LM, with the backlog having reduced from 61.5% to 25.27% of households. Numerically, some 12 354 households in this LM have been provided with an adequate sanitation facility between 2011 and 2016. This is the bulk of sanitation facilities that have been provided in the DM over the five-year inter-census period. The situation in Senqu LM is described below:

**Table 4-7: Sanitation Provision and Backlogs in Senqu LM**

Senqu	No Service	Below RDP	RDP	Above RDP	Total	Backlog Per Category
Rural	4550	11074	9203	2111	26938	77.10%
Urban	1352	3286	1475	4941	11054	22.90%

Total	5902	14360	10678	7052	37992	100.00%
Percentage	15.50%	37.80%	28.10%	18.60%	100.00%	

Service levels below the RDP standard also had a high incidence in the Senqu LM in 2011. An estimated 53.3% of households were below the RDP standard of supply. The recent situation, as per CS 2016, is described in the table below:

**Table 4-8: Sanitation Provision and Backlogs in Senqu LM, CS 2016**

Level of Service Parameter	Census 2011	Census 2011 %	CS 2016	CS 2016 %
Those with an Adequate Level of Service	17 730	46,67%	22 746	63,90%
Those without an Adequate Level of Service	20 262	53,33%	12 850	36,10%
Total	37 992	100.00%	35 597	100,00%

Some 5 016 households have received a sanitation facility that complies with the RDP standard. The backlog has been reduced from 53.3% to 36.1%.

Maletswai and Gariiep LMs are described below as they were independent LM areas in the last year. Maletswai LM had a lower incidence of sanitation backlogs compared to the LM's in the east of JGDM. The below-RDP level was also at a relatively low incidence at 17.8% of households, with 2 152 households in need of adequate sanitation. The CS 2016 situation for the Maletswai area is depicted below:

**Table 4-9: Sanitation Provision and Backlogs in Maletswai LM, CS 2016**

Level of Service Parameter	Census 2011	Census 2011 %	CS 2016	CS 2016 %
Those with an Adequate Level of Service	9950	82.22%	12 364	88.46%
Those without an Adequate Level of Service	2 152	17.78%	1 614	11.54%
Total	12 102	100.00%	13 978	100,00%

The sanitation backlog has reduced from 17.8% to 11.54%. In terms of household units, this translates to 2 414 additional households reporting an adequate level of service. The backlogs remain, apparently due to the influx of people from other areas into the urban nodes in the Maletswai area, as the number of households has increased by 1 876. This influx can be expected as Aliwal North, as the main urban area of the DM will be a staging ground for out-migration from some rural areas in this hinterland.

The Gariep LM area also had a low incidence of services backlogs compared to the eastern LM's. Services below the RDP level occur in 18.1% of households. Some 1772 households were in need of adequate sanitation in 2011. The table below from CS 2016 paints the most recent picture with respect to sanitation in this area.

**Table 4-10: Sanitation Provision and Backlogs in Gariep LM, CS 2016**

Level of Service Parameter	Census 2011	Census 2011 %	CS 2016	CS 2016 %
Those with an Adequate Level of Service	7 997	81.86%	9 348	96.10%
Those without an Adequate Level of Service	1 772	18.14%	379	3.90%
Total	9 769	100.00%	9 727	100,00%

There has been a telling impact as backlogs have been reduced from 18.1% of households to 3.9%. Some 1 351 additional households have been provided with an adequate sanitation facility.

The amalgamation of Gariep and Maletswai LMs has necessitated the consolidation of the Census 2011 status of the two erstwhile LM's to produce a consolidated profile for the new Water Sisulu LM, portrayed below:

**Table 4-11: Sanitation Provision and Backlogs in Walter Sisulu LM, Census 2011**

Walter Sisulu	No Service	Below RDP	RDP	Above RDP	Total	Backlog Per Category
Rural	1124	312	196	818	2450	36.60%
Urban	1045	1443	440	16493	19421	63.40%
Total	2169	1755	636	17311	21871	100.00%
Percentage	9.90%	17.90%	2.90%	79.20%	100.00%	

The consolidated 2016 Community Survey outline of the sanitation services in the amalgamated Walter Sisulu Local Municipal area is depicted in the table below:

**Table 4-12: Sanitation Provision and Backlogs in Walter Sisulu LM, CS 2016**

Level of Service Parameter	Census 2011	Census 2011 %	CS 2016	CS 2016 %
Those with an Adequate Level of Service	17 947	82.06%	21 712	91.59%

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Those without an Adequate Level of Service	3 924	17.94%	1 993	8.41%
Total	21 871	100.00%	23 706	100,00%

The consolidated incidence of backlogs in Walter Sisulu LM stands at 8.41% of households without an adequate sanitation facility, representing some 1 993 households.

There is substantial work that must be undertaken in the JGDM area to eradicate water and sanitation backlogs. The situation in sanitation was dire in the Elundini area in 2011, but some impressive strides have been made between 2011 and 2016. This has and continues to receive the attention of the JGDM and will require substantial financing to improve and eradicate.

#### **4.4 SERVICE LEVELS CHALLENGES AND RISKS**

- Levels of service and basic services backlogs are not constant due to growing population, economy and urban sprawl;
- Illegal connections lead to unplanned upgrade household's levels in an unstructured and often damaging manner is rife; and
- Inadequate information for decision making on how to frame the appropriate levels of service.

#### **4.5 2018/19 SERVICE LEVELS STRATEGIES AND OBJECTIVES**

- Devise a sustainable approach to the provision of basic services to all residents;
- **Implementation of the Integrated Water and Sanitation Master Plan is being developed through the DBSA-funded project;** and
- Create a pro-active yet cost effective response to drought.

## **SECTION 5: WATER RESOURCES**

The JGDM area is endowed with various surface and subterranean water resources. Surface water resources are in the form of rivers and dams established to utilise surface waters. Subterranean waters manifest in boreholes and springs that are harnessed to supply communities with water. The water resources described here are found in three of the Department of Water and Sanitation's Water Management Areas which are demarcated as the major drainage systems that traverse the district. These water management areas comprise a number of major rivers, dams and boreholes from which the municipality abstract water for the purpose of water services provision. Below is the list of the water management areas and the towns they provide water to:

- Upper Orange River Catchment – Aliwal North, Burgersdorp and Sterkspruit.
- Mzimvubu Catchment – Maclear, Mt Fletcher and Ugie.
- Fish River Catchment – Steynsburg, Oviston and Steynsburg.

In this chapter, the district illustrates the comprehensive inventory of the surface- and groundwater sources currently utilized for the provision of water supply. Furthermore, based on a number of municipal and partner institutions, the district also attempts to outline some of the water sources available from within and/or in the proximity of the municipality to cater for its future demands.

### **5.1 SURFACE WATER**

DWS is the custodian of water resources and is also the owner of the major impoundments in the area, notably the Gariiep Dam in the Walter Sisulu area and, the Jozana Dam that supplies the area of Sterkspruit, surrounding areas and Herschel. Major investigations and studies for bulk augmentation schemes are therefore undertaken by the DWS on well-motivated requests from WSA's.

Ideally, the municipality requires a comprehensive municipal-wide master plan to be developed to facilitate a better understanding of the water resource and water infrastructure serving the



JGDM. This master plan will set and recalibrate water resource levels against current and future demand projections, and also assist with the finalization of strategies for the eradication of backlogs and the setting of realistic and sustainable service levels (for the current and future settings).

In addition to the numerous dams inherited from DWS, *the district has also constructed a number of small-scale municipal domestic water dams located throughout the district.*

Below is a list of municipal-owned dams as per the DWS Dam Safety Office:

**Table 5-1 List of JGDM-owned dams**

Name of Dam	Nearest Town	River or Watercourse	Capacity (1000 Cub M)
Barkly East Commonage Dam	Barkly East	Langkloof River Tr.	70
J.L .De Bruin Dam	Burgersdorp	Little Buffelsvlei River	1696
Kopfontein Dam	Burgersdorp	Buitendagspruit	1360
Chiappinisklip Dam 1	Burgersdorp	Stormbergspruit	900
Chiappinisklip No 2	Burgersdorp	Stormbergspruit	52
Jamestown Dam	Jamestown	Skulkspruit River Off-Channel	591
Witfontein Dam	Lady Grey	Findlay's Slood	95
Lady Grey Dorps Dam	Lady Grey	Wilge Spruit	153
David Aucamp Dam	Maclear	Mooi River	180
Ugie Forest Dam	Ugie	Wildebeest River	3753

Owing to the magnitude and extent of the Mt Fletcher weir, it continues to be mistakenly referred to as a dam. The weir supplies water to the Mt Fletcher Water Treatment Works for distribution to a big portion of the area including the town centre. However, its functionality and long-term integrity is constantly threatened by the regular siltation of the facility.

As a result of the heavy rainfalls experienced over much of the district's countryside during the month of March 2018, most of the dams experienced unusually high levels with the most benefiting being the Witfontein, Lady Grey, Chiappinisklip and JL De Bruin Dams as they overflowed for the first time in a number of years.

Recently, the municipality has recently applied for and/or in the process of developing the following dams within the district:

- Zachtevlei Dam in Lady Grey; and

- Ugie Dam to augment water availability in Ugie and surrounds.

The Department of Water and Sanitation is undertaking a comprehensive project for the development of the Mzimvubu River Basin which will supply potable water to the lower rural areas of the district in the Elundini Municipal Area.

Below is a list of the major rivers and tributaries that the district abstract from for the treatment and distribution of potable water in the applicable areas:

**Table 5-2 List of major rivers and tributaries within JGDM boundary**

<b>MUNICIPAL AREA</b>	<b>MAJOR TOWN</b>	<b>MAJOR RIVER/TRIBUTARY</b>
Elundini	Maclear	Mooi River
	Mt Fletcher	Mzimvubu River
	Ugie	Wildebess River
Senqu	Barkly East	Langkloofspruit
	Lady Grey	Lady Grey Dam
	Rhodes	Bell Spruit River
	Sterkspruit	Sterkspruit River
Walter Sisulu	Aliwal North	Orange River
	Jamestown	Skulkspruit River
	Burgersdorp	Stormbergspruit and Wonderboomspruit Rivers
	Steynsburg	Orange-Fish River Tunnel

The extent of the quantity and quality available in these water resources is important to understand the extent of future development of the resources, not only to support water for human consumptive needs, but also to gauge the extent to which water can support economic development in the other economic sectors of the area, and how best to balance these. Department of Water and Sanitation is responsible for the monitoring and dissemination of the hydrological data relating to the rivers and streams. The district does receive this data at regular intervals and needs to enhance its relationship with the department to inform its water resources and water supply development interventions.

## **5.2 GROUNDWATER**

Groundwater plays an important role in provision of water in South Africa because it serves as a primary source for areas that are located remotely from surface water resources but also is seen as part of the mitigation in times of drought.

The main aim in areas with insufficient surface water resources should be to use groundwater water as far as viable. Groundwater water, provided that there are no serious quality constraints, is generally more cost effective as treatment costs (capital and operational) are limited and affordable.

The availability of groundwater depends on soil and geological conditions of the area. Good groundwater can be found throughout the district and it is greatly utilized in the eastern parts of Maclear, Mount Fletcher and Ugie. The table below depicts the groundwater development and use profile in the JGDM. It is notable that yield and quality data for the various developed resources is not available.

**Table 5-3 JGDM Groundwater sources**

Local Municipality	Town	Number of boreholes or protected springs		Total yield
		Total	Currently used	
Elundini	Maclear rural	36	36	-
	Mt Fletcher rural	33	33	-
	Ugie rural	16	16	-
Senqu	Barkly East	8	8	-
	Lady Grey	9	9	-
	Rossouw	2	1	-
	Sterkspruit rural	52	52	-
Walter Sisulu - East	Aliwal North	6	6	-
	Jamestown	12	12	-
Walter Sisulu - West	Burgersdorp	14	6	-
	Steynsburg	9	9	-

It is notable that yield and quality data for the various developed resources is not available. As part of its Groundwater Management Plan, the district needs to undertake a study to determine and catalogue the safe yields of all boreholes in its jurisdictional area to inform its sustainable usage and management.

National Government gazetted new guidelines for all boreholes and well points, effective from 12 January 2018 (*Government Gazette No. 412381 Volume 631*) and it stipulates that:

- Borehole/well point water must be metered and all users are required to keep records and have them available for inspection; and
- Permission from the national Department of Water and Sanitation to sell or buy borehole/well point water.

Groundwater (like all alternative water) may not be generally used for drinking, cooking or body washing according to the Water and Sanitation By-law. However, with some treatment (boiling or a teaspoon of bleach per 20litres) it can be used for these household uses.

The use of groundwater is free and is not billed by the municipality; however, it needs to be used responsibly to prevent over-extraction, which harms the environment. The JGDM Water and Sanitation By-law states that if any person/institution intends to sink a borehole or well-point on their property they will need to apply to the municipality before they install it. Once installed, the customer will need to register the borehole or well-point in order to enable the municipality to conduct environmental monitoring and research. A customer that already has a borehole or well-point on their property must register or renew the registration at the municipality.

### **5.3 JGDM LONG-TERM WATER SECURITY**

Long term water security is one of the key responsibilities of the Water Services Authority. The appropriate development and utilization of the water resources to the benefit of the district municipality and its key stakeholders is an important aspect that flows from this responsibility.

Until recently, the options for water development largely focused on the development of surface water resources and the protection of groundwater resources. The development of large dams is a long-term exercise as the process takes in excess of 10 years from planning to sod-turning or completion. It is also highly capital intensive, thus these developments are driven by aspects such as sustainability and risk mitigation for the long term. The development timeframes are too long for the immediate concern of water services backlog eradication. In some instances smaller dams and run-of-river abstractions are more likely to make an immediate impact. In this instance, JGDM will take on a more active role in lobbying and participating in resource development forums in the future. Key projects that have an impact on the JGDM are discussed hereunder.

Through a number of municipal and/or externally funded initiatives, JGDM has conducted a number of area specific long-term water resources planning studies in line with the DWS' Town

Reconciliation Strategies. Below is a list of municipal long-term water resources development projects that will enhance the raw water availability and storage capacity upon completion:

**Table 5-4 Current and upcoming municipal augmentation schemes**

Local Municipality	Town	Proposed or current development	Yield/Capacity	Funding avenue
Walter Sisulu	Burgersdorp	Chiappinisklip Dam 2	270 MI	Provincial Treasury
Senqu	Lady Grey	Zachtevlei Dam	0.812 million m3/a	RBIG (DWS)

The construction of the Chiappinisklip Dam 2 has been completed under the EC Provincial Treasury Drought Relief Programme. However, the dam has not been connected the Burgersdorp water supply and that has been identification for funding in the 2018/19 municipal financial year.

The Zachtevlei Dam and associated bulk distribution project has been identified as the optimum long- term water supply augmentation option for Lady Grey. The technical and environmental viability of the dam has been finalized and it has been presented to the Department of Water and Sanitation for approval for funding and construction.

Other notable project(s) that are planned and/or currently underway which will impact (positively or negatively) on the JGDM water are discussed hereunder:

- *Mzimvubu Water Project* which entails the development a multipurpose dam (Ntabelanga Dam) to supply new water capacity for irrigation development, domestic and industrial water requirements, and hydropower usage in the Mzimvubu River catchment. According to the feasibility of the project, the majority communities that will be benefitting from the domestic water supply portion of the development are from the OR Tambo and the Alfred Nzo District Municipalities. This is further underlined by the fact that no major towns in JGDM are included instead the development will benefit a number of rural villages in the Elundini LM.
- The proposed *Verbeeldingskraal Dam* upstream of Aliwal North is one of the options that have been considered for the long-term water augmentation of the town. This off-channel dam's certainty is unclear and subject to further studies and other feasibilities. It will therefore not have an impact on immediate concerns.
- The *Island Spa Dam and springs* also provide an option for the long-term raw water supply to the town of Aliwal North. The water quality of the availability has been

identified as a challenge but the resource should be considered as a short to medium solution to the water security of the town.

Orange-Kraai Catchment Management Forum established and the district was appointed the Deputy Chairperson;

#### **5.4 TREATED EFFLUENT RE-USE**

JGDM promotes/encourages the use of treated effluent (recycled water) for irrigation, construction or industrial purposes as a way of to conserve the district's limited water supply. Treated effluent or recycled water, is wastewater that has been treated at a wastewater treatment works and distributed to different consumers via a separate network of pipes. The use of treated effluent is cheaper than using drinking water.

Treated effluent can be supplied to large water users such as industry, sports fields, golf courses, large new developments, crop irrigation and schools. However, the use of treated effluent is dependent on the location of the facility and other factors, such as expected consumption.

At the moment the municipality has three wastewater treatment facilities whereby the agreements for reuse treated effluent:

- Crop irrigation in Aliwal North
- Grazing land, and golf course irrigation in Barkly East;
- **Grazing land in Sterkspruit.**
- **Recreational park, school sportsfield and golf course irrigation in Burgersdorp; and**
- Crop irrigation in Lady Grey.

However, the municipality cannot guarantee an interrupted supply of treated effluent and the quality of the treated effluent. The use of treated effluent is legislated under the following legislated prescripts:

- Department of Health's South African Guidelines for the Permissible Re-Use of Treated Sewage Effluents of 1978; and
- Department of Water and Sanitation's National Water Act (Act 36 of 1998): Revision of General Authorizations in terms of Section 39 of the Act [*Schedule 1: Engaging in a controlled activity, identified as such in section 37(1)(a): Irrigation of any land with waste or water containing waste generated through any industrial activity or by a waterwork*]

Both these pieces of legislation outline the roles and responsibilities of both the municipality and users of the treated effluent for irrigation. These include but not limited to:

- Location of irrigation in relation to flood line or riparian habitat;
- Construction, maintenance and operational practices of the wastewater irrigation systems;
- Monitoring programme for water quantity and quality;
- Inspections;
- Incidence reporting; and
- Other issues.

The municipality will need to have well structured and legally sound agreements with any individual/institution(s) that will be utilizing the treated effluent from its wastewater treatment facilities as there are unintended public and environmental impacts from the misguided usage of such a resource.

## **5.5 DROUGHT IMPACTS**

A drought is a shortage of precipitation over an extended period and it entails deficient rainfall relative to the statistical multi-year average for a region. Drought is not merely low rainfall, but a relative concept based on the expected, or average, rainfall of an area, whether desert or tropical, for any given time of year. There are four different types of drought

- 1) Meteorological Drought occurs** happens when areas receive less precipitation than typical for that specific region.
- 2) Agricultural Drought** occurs when various characteristics of meteorological (or hydrological) drought do not supply enough water to supply all the stages of crop development
- 3) Hydrological Drought** refers to shortages of water resources, occurs when extended precipitation shortfalls impact the water supply. Because regions are connected through a series of hydrologic systems, the impact of a meteorological drought can expand further the borders of the precipitation-deficient area when for example; groundwater, reservoir, or stream levels are significantly reduced. Conditions for hydrologic drought are built over extended periods of time

**4) Socio-economic Drought** occurs when the clean water supply does not meet the demand. The demand of economic goods may increase because of population growth, improved production efficiency, technology or the increase of surface water storage capacity.

Drought is a slow onset hazard, as defined above it is observed after a long time, in most cases, the first three types of droughts, namely the meteorological, hydrological and agriculture drought are the ones experienced first and the socio economic drought is mostly felt as an impact of the first three.

It takes time to go through the cycle of drought, in most cases it is a cycles of 5 to 7 years. It is also common to observe that within the drought cycles that are years that are drier than others.

Drought is classified as the **primary hazard** which normally leads to **secondary hazards** of which one of them is veld fires, it becomes a complex emergency for emergency services as they are require water to fight the veld fires while there is water shortage. The drought is normally broken by a flood which also leads to other hazards like soil erosion, mud slides, equally dangerous like other hazards.

Joe Gqabi District Municipality is currently affected by low rainfall conditions on the western parts of the district and the most affected areas are Burgersdorp, Jamestown, Lady Grey and Rossouw.

The District Municipality conducted a municipal disaster risk assessment study for the municipality. The study indicated that the entire district is prone to drought however the extent and severity varies from one local municipal area to another.

**Table 5-5 JGDM Drought Risk Assessment**

Hazard Name	Areas affected	Impact	Seasonal calendar
Drought	The entire municipaltiy is prone to drought, especially those depending on subsbsistancn	<ul style="list-style-type: none"> <li>• Increase in Inflation (food prices)</li> <li>• Reduction of raw water use for domestic and agricultural use , new housing developments and industrial operations</li> <li>• Grazing grass is reduced significantly</li> <li>• Over stretched municipal resources to provide basic services and delay in the implementation of current projects (water carting, drilling of boreholes and purchase of Jojo tanks, over time and S&amp;T and operational cost)</li> </ul>	Over long period



	e farming.	<ul style="list-style-type: none"> <li>• Increased in the runaway veld fires</li> <li>• Implementation of water restrictions and rationing</li> <li>• Loss of employment (farmers)</li> <li>• Increase government social safety nets (indigent register and provision of food parcel)</li> <li>• Increased insurance for commercial farmers</li> <li>• Farmers having abandon farming and others commit suicide</li> <li>• Increased running costs of farming</li> <li>• Frequent blockages of sewer systems</li> <li>• Unplanned reduction of livestock</li> <li>• Negatively affects family livelihoods</li> </ul>	
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The following section outlines the severity per municipality and per area.

**Table 5-6 Elundini Local Municipality disaster severity profile**

Name of area	Water Sources	Sector affected the most	Classification
Mt Fletcher area	Mt Fletcher dam and boreholes	Communities, institutions, livestock in rural areas and farmers	High
Maclear	Maclear Dams, Aucamp Dams and Mooi River	Communities, institutions and farmers	Low
Ugie	Wildebeest River and boreholes	Communities, institutions and farmers	Low

**Table 5-7 Senqu Local Municipality disaster severity profile**

Name of area	Water Sources	Sector affected the most	Classification
Lady Grey Area	Lady Grey Dam and boreholes	Communities, farmers, institutions	High
Sterkspruit Area	Jozana Hoek Dam and boreholes	Communities, farmers, institutions	Moderate
Barkly East	Lang Kloof River	Communities, farmers, institutions	Low
Rhodes	Bell River and Rhodes Dam	Communities, farmers, institutions	Low
Rossouw	Boreholes	Communities, farmers, institutions	Low

**Table 5-8 Walter Sisulu Local Municipality disaster severity profile**

Name of area	Water Sources	Sector affected the most	Classification
Burgersdorp	Chiappinisklip Dam, JL De Bruin dam and boreholes	Communities, farmers, institutions	High

Jamestown	Skulkspruit River and Boreholes	Communities, farmers, institutions	High
Aliwal North	Orange River	Communities, farmers, institutions	Low
Venterstad	Gariiep Dam	Communities, farmers, institutions	Low
Steynsburg	Gariiep Dam	Communities, farmers, institutions	Low
Oviston	Gariiep Dam	Communities, farmers, institutions	Low

The District has, or is planning, a number of initiatives to ensure the optimal functioning of and adequate flows to the natural water resource. The DWS' Working for Water Programme has been active in a number of areas of the District. One of the goals of this programme is to reduce the number of invasive "alien" species of vegetation (i.e. wattle) that excessively consume groundwater resources.

## 5.6 CLIMATE CHANGE

According to the South African Weather Services (SAWS), the Joe Gqabi District Municipality will be general a drier than normal period for March through to July affected by the inland Lesotho and Lesotho climate in the western parts, and by the coastal conditions in the east of the district.

The weather conditions are fluctuating as compared to the norm with below and above normal rainfall conditions interchanging with periods of below and above normal overnight conditions. Some of these fluctuations are attributed to the global climate change leading to weather extremes and subsequent occurrences of water-related disasters (droughts and floods).

These climatic changes have a great impact on the quantity and quality of the raw water availability in the rivers, streams and dams within the district. For example, the high rainfall and flash floods in the upper reaches of the Orange River contribute to the siltation in the proximity of the Aliwal North abstraction point resulting in the blocking of the infrastructure and high turbidity.

The municipality will have to continually adapt its management of water in accordance to the conditions and volume of water availability. Therefore, the district will implement various interventions to ensure the sustainability of water supply to its consumer base, including:

- Implementation of water restrictions where applicable;
- Water enhancement initiatives; and
- Consumer awareness.

The development of a long-term Climate Change Response Plan will ensure the district proactively plans and implements measures that will prevent and/or mitigate the effects of water extremes to water services delivery.

### **Climate change response plans**

The National Department of Environmental Affairs (DEA) in partnership with GIZ is embarking on the Local Government Support Program (LGCCSP). The LGCCSP is mainly focusing on mainstreaming Climate Change into municipal planning processes. The main purpose of the support offered through this program will be to build capacity and work with municipalities in developing specific Climate Change Response Strategies.

DEA has appointed a service provider to facilitate the development of such municipal strategies, and the programme has been running from 2017 up to mid 2018. The LGCCSP will take place over five phases as follows:

- The first two phases are aimed at building capacity within municipalities through conducting workshops, training and knowledge exchange sessions; and
- This will be followed by three phases focusing on development of the climate change strategies, funding of programs and ensuring integration of climate change into municipal planning (IDP).

As part of this process, two workshops have been held with the district to go through the process of conducting a climate change vulnerability assessment. The workshop aims to provide the necessary tools, build capacity and provide support to key climate change champions in the Joe Gqabi District Municipality to begin to conduct a climate change vulnerability assessment. The three local municipalities have been part of the workshops as they do have functions which impact on local climate and on the district's water services provision responsibilities.

## **5.7 WATER RESOURCES CHALLENGES AND RISKS**

- Dam siltation in a number of dams including the Lady Grey, Witfontein, JL De Bruin, David Aucamp and Maclear Dams;
- Low flows and silting of the Orange River has resulted in water supply disruptions in Aliwal North;
- Seasonal drought conditions which result in dams running empty thus threatening water security and local economic development;

- A number of municipal General Authorizations and Water Use License Authorization have expired which deems the water use abstractions unlawful; and
- Most groundwater resources do not have sufficient information on pumping regimes and yields. Groundwater potential is not well documented;

## **5.8 2018/19 WATER RESOURCES OBJECTIVES AND STRATEGIES**

- Conduct a dam survey to ascertain the extent of the siltation and inform/guide the options for improving the dam capacities;
- Embark on activities for the management of the silting of the municipal dams as per the recommendation of the Dam Survey above. This can include the installation of silt traps upstream of the dam walls;
- Consolidate the number and status of boreholes that are utilized for water supply within the district including the number of standalone schemes and villages that benefit from them;
- **Monitoring of raw water quality at least annually (surface and groundwater);**
- Develop and implement Drought Plan in line with the Climate Change Adaption/Response Plan;
- Bulk metering of strategic water abstraction to inform the water resource water balance to inform the long-term municipal water resources and services planning;
- Investigate the possible utilization of treated effluent water reuse for those uses that do not require potable water and in turn reduce raw water abstraction and improve the reserves of the district. **Ensure that all the contracts of mandate for the use of treated effluent signed in Barkly East, Burgersdorp and Aliwal North with local municipalities, golf course and Burgersdorp school;**
- Participate in the Catchment Management Forum discussions of the Orange River to inform water resources planning and development –and
- Review the expired and apply for “new” General Authorizations and Water Use License Authorization from DWS to assist the municipality comprehend its water usage – **the Water Use License Applications for the Aliwal North and Burgersdorp wastewater treatment works have been submitted to the Department of Water and Sanitation.**

## SECTION 6: WATER SERVICES INFRASTRUCTURE/MANAGEMENT

The water services infrastructure in Joe Gqabi District Municipality broadly consists of a number of regional schemes and a large number of relatively small 'standalone' supplies in the more remote rural areas.

Municipal water supply and wastewater management infrastructure consists of various pieces of infrastructure namely dams, pump-stations, reservoirs, pipelines, water treatment works and wastewater treatment works. In Joe Gqabi District Municipality, the Water Services Provision section is responsible for the operation and maintenance of all the water and sewer infrastructure.

JGDM has water and sanitation infrastructure and networks which is old in the main urban centres while the newer townships and peri-urban areas have newer infrastructure. There is a dedicated potable water network that services homes, industries and businesses.

### 6.1 ASSET MANAGEMENT

Asset management is a legislative requirement as set out in the Municipal Finance Management Act [Section 96(1) (2a)] wherein the accounting officer is expected to put in place the *necessary measures to ensure asset management including the safeguarding and maintenance of those assets*. The Occupational Health and Safety Act also requires of an employer to ensure the safety of workers and the public when they interact with certain assets that have implicit risks to safety and health.

Broadly, assets are physical or corporeal objects and also intangible things. In so far as the scope of municipal assets and water services in particular is concerned, the following definition of assets and management thereof is most appropriate:

***“Infrastructure Asset Management is an integrated process of decision-making, planning and control over the acquisition, use, safeguarding and disposal of assets to maximise their service delivery potential and benefits, and to minimise their related risks and costs over their entire life.”***

A lifecycle view is therefore very important in viewing infrastructure asset management, with the intention of extracting as much useful life from assets as possible without negative environmental or other impacts.

National Treasury has taken cognisance of engineering assets and the acquisition of these assets will now be covered under more specific procurement guidelines as opposed to the past practice of these assets being acquired under generic guidelines and prescripts. The documents released recently are the following:

- National Treasury Standard for Infrastructure Procurement and Delivery Management
- Annexure A: Model SCM Policy for Infrastructure Procurement and Delivery Management, Circular no. 77
- Annexure B: Standard for Infrastructure Procurement and Delivery Management

The effective date for the implementation of the above documents is 01 July 2019 for local government. The impact of this on the effectiveness of infrastructure procurement or delivery needs to be ascertained. These documents have the following take on infrastructure delivery:

The effective date for the implementation of the above documents is 01 July 2019 for local government. The impact of this on the effectiveness of infrastructure procurement or delivery needs to be ascertained. These documents have the following take on infrastructure delivery:

***“the combination of all planning, technical, administrative and managerial actions associated with the construction, supply, renovation, rehabilitation, alteration, maintenance, operation or disposal of infrastructure.”***

The physical extent, social support and economic value creation and support function played by the water and sanitation infrastructure base requires that a very strong asset management approach and system be applied to ensure the continuation of the positive benefits that the infrastructure provides.

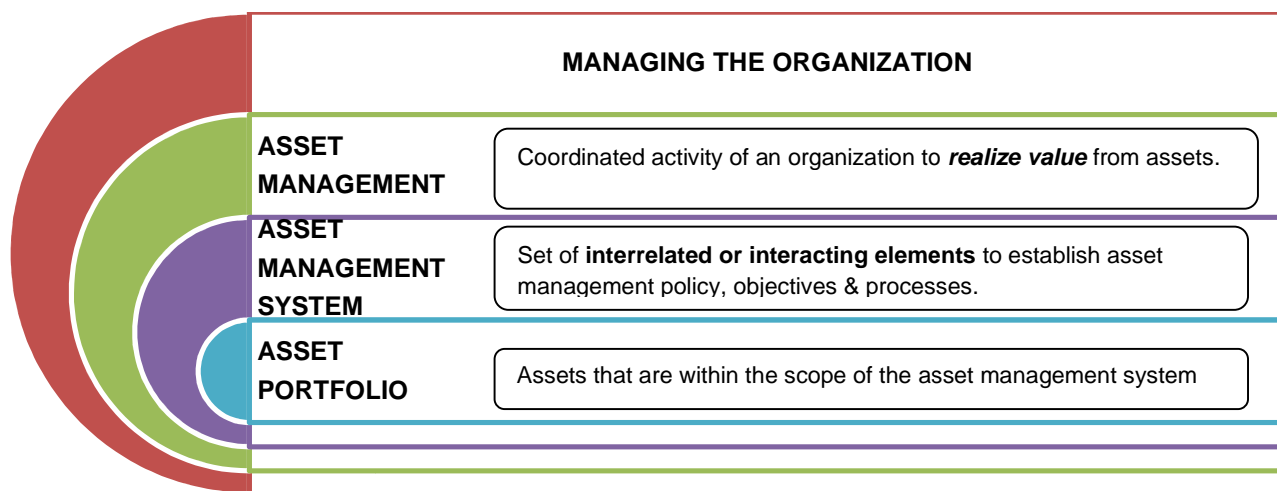


Figure 6-1 Asset Management and Asset Management System (ISO 5001)

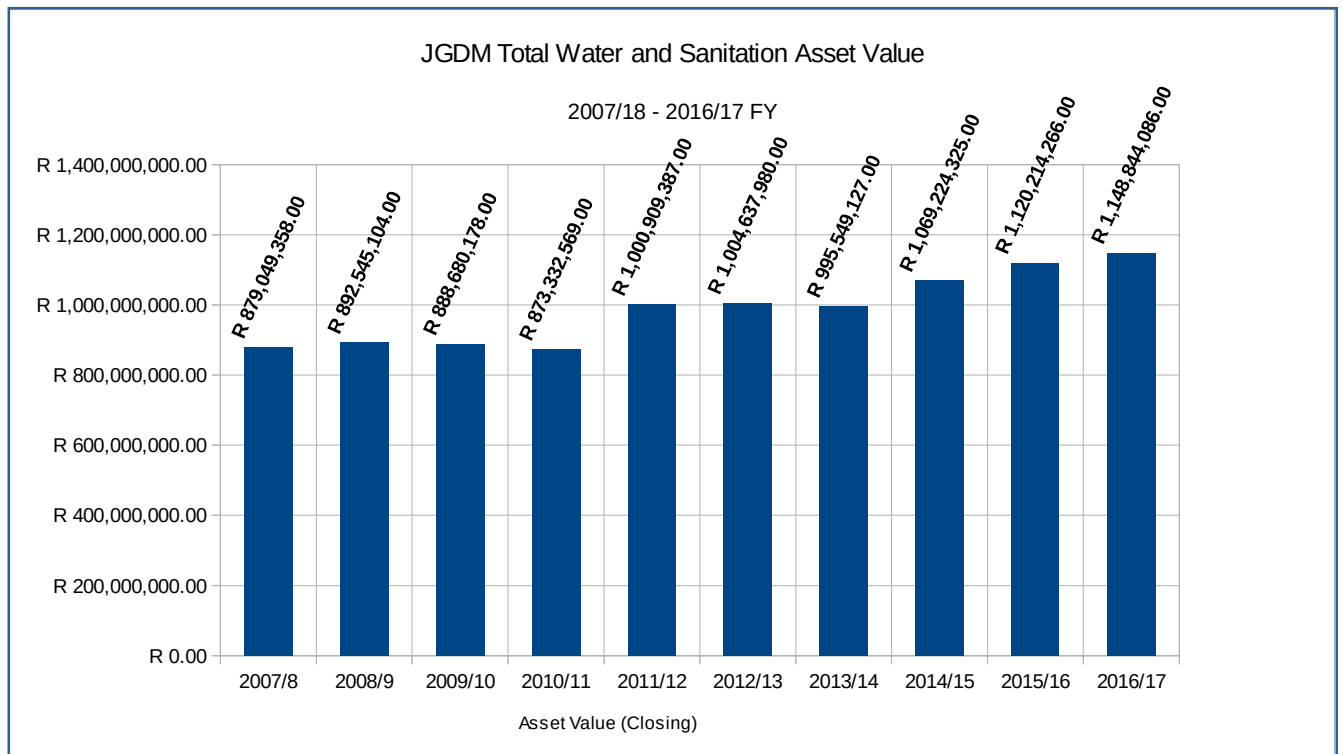
### Status of JGDM water services infrastructure

Existing infrastructure has a finite life span and it is essential that it is maintained, upgraded and replaced within the relevant time frames to ensure the sustainability of the district's water and sanitation services.

JGDM has appointed a service provider for the annual review and updating of the municipal infrastructure asset register as required by law.

### Value of the water and sanitation networks

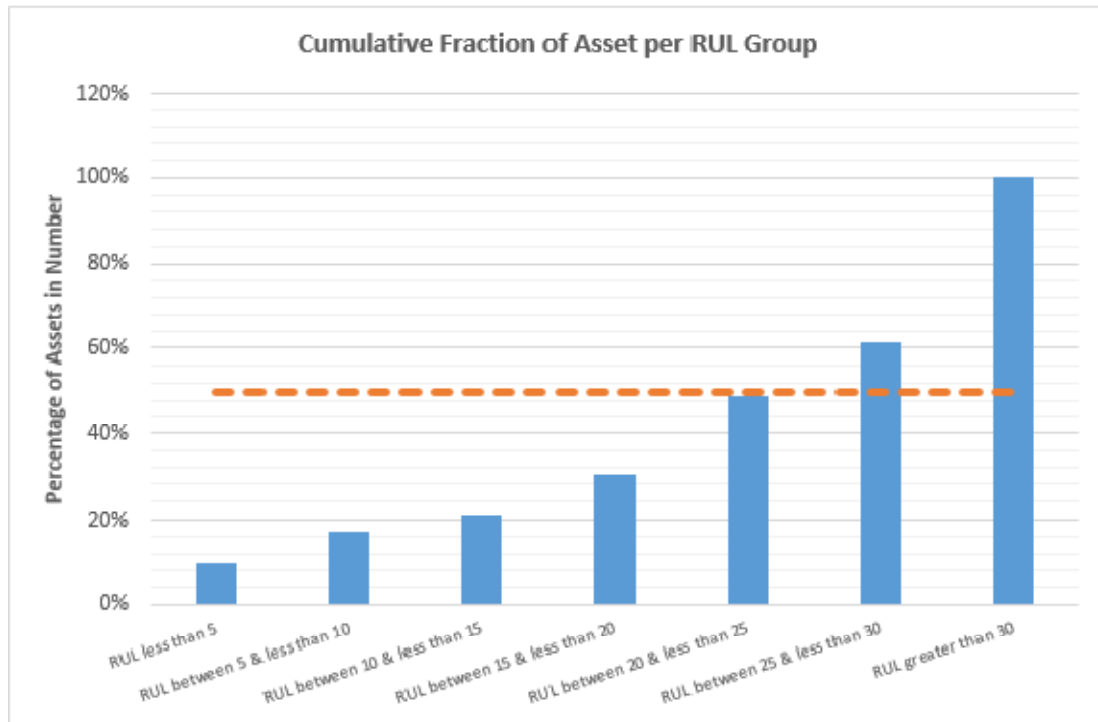
The costs used in the calculations and reflected in the results for this section are based on the Current Replacement Cost (CRC). This total can be defined as the cost of replacing the service potential of an existing asset, by reference to some measure of capacity, with an appropriate modern equivalent asset. This cost includes the full cost of installation, contractor's costs, design, and construction supervision. These unit costs are based on JGDM infrastructure asset register's unit rates used during cost estimation. The unit costs determined by this method are not and cannot be accurate, but are reasonable estimates.



**Figure 6-2 JGDM Total Water and Sanitation Asset Value**

According to the Joe Gqabi District Municipality's Infrastructure 2016/17 Asset Register, the current book value of the JGDM water and sanitation supply network is R 1.148 billion as at 30 June 2017. The asset base is increasing, reflective of the annual investments that the DM is undertaking to eradicate backlogs and renewals. The growth rate is tempered by the deduction of depreciation on an annual basis.





**Figure 6-3 JGDM Asset Component Number with different RUL Groups**

The chart above shows a breakdown of the assets into ranges of Remaining Useful Life (RUL). It is clear in the graph that the asset base of the DM is relatively new, with assets of an RUL of more than 30 years predominating. There may be some older assets that have long remaining useful lives. The older assets will be in the towns predominantly. It is important the DM undertakes a determination of the Replacement Value (RV) of these assets as this will have to be reflected in a renewal/refurbishment capital programme. The asset register reflects the book value of these assets.

The Deemed Replacement Cost (value) of the municipal water and sanitation supply network is R15.226 billion as at 30 June 2017. The municipality needs to prioritize and avail adequate maintenance budget of some of the *strategic water and sanitation infrastructure* due to their significant impact on service delivery and economic growth. The municipal strategic infrastructure assets include the following:

- Water treatment works;
- Bulk water storage and reticulation; and
- Wastewater treatment works.

The water supply and wastewater management infrastructure also entails networks of complex configurations of multiple assets spread over geographically significant areas. These networks are very dynamic in that networks are extended, upgraded, they age and require renewal, complete replacement, and are reconfigured over time. Therefore, all measurable variables of an infrastructure network constantly change: extent, age, value, capacity, condition and cost of operation being some of these variables.

As a result of the heavy rainfalls experienced over much of the district's countryside during the month of March 2018, replenished some of the municipality's water resources. However, the heavy rainfall also contributed to massive damage to water supply and sewer network.

## **6.2 WATER SERVICES OPERATIONS**

The operational water services provision structuring of the district is in according to local municipal boundaries with each region administered by a Water Manager that directly report to the Manager: Water Services Provision. All the region-specific Water Managers are responsible for the operations and maintenance of both water supply and sewer infrastructure includes the works and distribution network. The regional schemes are structured as follows:

- Elundini Urban (Maclear, Mt Fletcher and Ugie urban & peri-urban centres);
- Elundini Rural (Rural settlements);
- Gariiep (Burgersdorp, Oviston, Steynsburg and Venterstad);
- Maletswai (Aliwal North and Jamestown);
- Senqu East (Barkly East, Lady Grey, Rhodes and Rossouw); and
- Senqu West (Sterkspruit urban and rural).

## **6.3 WATER SUPPLY INFRASTRUCTURE**

The district has a total of 13 water treatment facilities that service communities residing within urban centres and a number of rural households of the three local municipal areas. These WTWs are complimented by a number stand-alone water supply schemes that employ groundwater sources to ensure water supply to the communities residing in the rural settlements of the district.

The stand alone schemes are characterized by diesel powered pump-stations and managed by district personnel that reside within their respective villages. Most of these pump-stations are quite old and susceptible to frequent breakdown resulting in intermittent water supply to the respective communities. The municipality must consider an effective diesel management

process that will ensure improve the supply of delivery and reduce theft. The long term solution would be to change to electricity-powered pump-stations which would require the replacement of old pump-stations.

**Table 6-1 Location, capacity and service area of JGDM WTWs**

AREA NAME	SERVICE AREA	NAME OF WTW	DESIGN CAPACITY (MI/d)	OPERATING CAPACITY (MI/d)
1) Aliwal North	Abborview, Dukathole, Hilton, Area 13, Joe Gqabi, Springs, Aliwal North	Aliwal North	14.4	
2) Barkly East	Town, Nkululeko Location, Boycers Nondala Location, Fairview	Barkly East	4.5	
3) Burgersdorp	Burgersdorp, Eureka, Harmonie, Mzamomhle & Thembisa	Burgersdorp	2.0	
4) Lady Grey	Lady Grey, Kwezinaledi & Transwilger,	Lady Grey	0.022 (1.2)	
5) Jamestown	Jamestown, Masakhane	Jamestown		
6) Maclear	Mcalear tow, Greenfield, Vincent	Aucamp	0.72	
		Mooi River	0.7	
7) Mt Fletcher	Mt Fletcher town, Tsolobeng, Mfanta,	Mt Fletcher	6.7	
8) Rhodes	Rhodes town & Zakhele location	Rhodes	0.3	
9) Oviston	Oviston, Venterstad	Oviston	5.8	
10) Sterkspruit	Herschel, Sterkspruit & surrounding settlements	Sterkspruit	12.0	9.5
11) Sterkspruit	Jozana villages	Jozana	1.08	
12) Steynsburg	Steynsburg, Greenfields, Khayamnandi & Westdene	Steynsburg	2.0	
13) Ugie	Ugie town, Phola Park, Popcorn Valley, Land Camp, Dyoki Location	Ugie	6.0	

The municipality will need to determine the current operating capacity volumes for all its water treatment facilities as this has an impact on not only the functionality and sustainability of the infrastructure but also on the effectiveness of the facilities in terms of the quality of the municipal drinking water produced.

## **Elundini Municipal Area Water Supply**

### **Maclear**

The town of Maclear is currently supplied with potable water from two water treatment works located to the north and south of the town.

The north located is the old Aucamp WTW employs a conventional water treatment system that comprises coagulation/flocculation, settling, pressure filters and disinfection. The works raw water is pumped from the Aucamp Dam and is received from the Maclear Dam via gravity. During the 2017/18 financial year, the filters have recently been refurbished in order to improve quality of the produced municipal drinking water. All final water is gravitated to the supply areas.

Mooi River WTW package plant obtains raw water from the run-off flows of the Mooi River via a pumping system. The works are housed in containers, and the treatment process is conventional with coagulation/flocculation, settling, pressure filtration and disinfection. There is no wash-water recovery and the works have some leaks in one of the pump sumps (JoJo Type). The works are currently being upgraded from 0.67 Mℓ/d to 1.34 Mℓ/d. All the final potable water is all pumped away.

### **Mt Fletcher**

The Mt Fletcher WTW was commissioned in 2011, and raw water is pumped from the Thina River at the weir. The works employs a conventional rapid gravity treatment works with a raw water holding dam, coagulation/flocculation, longitudinal settlers and rapid gravity sand filters. The final water is disinfected and mostly pumped away. The biggest concern at this stage is the throughput constraints in the flow channels from the settling plant to the filters.

The silting of the weir does threaten not only the water quality and water supply to the communities but also the integrity of the infrastructure and lifespan of the filters. **The sluice gates have been repaired and are operational with occasional silt released down the Thina River.**

Furthermore, the Elundini Local Municipality is implementing a Small Town Revitalization project funded by the Office of the Premier which entails the development of a new housing development and economic development facilities in town. The district will need to consider the increased water demand in the face of the current water supply infrastructure capacity and also plan for the desilting of the weir to increase water availability.

## **Ugie**

The town of Ugie and surrounding peri-urban settlements are supplied by a single 6 Mℓ/d water treatment works that is situated to the south of the town. The works are conventional with coagulation/flocculation, longitudinal settlers, pressure filtration and disinfection. Final water is pumped to the various supply areas.

## **Senqu Municipal Area Water Supply**

### **Barkly East**

The only water treatment facility in Barkly East receives its raw water from via a pump station that draws from the Langkloofspruit River south of the town. The works are generally old and utilizes a conventional treatment process that includes coagulation/flocculation, longitudinal settling followed by pressure filtration. The filters have recently been upgraded with larger pressure filters. Final water is disinfected before it is pumped to distribution reservoirs. There is no wash- water recovery.

A project is currently underway to improve the bulk infrastructure and capacity of the Barkly East water supply scheme in order to provide for the recently developed housing development and future developments.

### **Rhodes**

The settlement of Rhodes has a single WTW that draws water from the Bell River via pumping. Water is also drawn from a dam upstream of the works through gravity. The works is conventional package plant type with coagulation, limited flocculation, pressure sand filtration and disinfection. Final water is pumped to a header reservoir from where it is fed to the supply zones via gravity. There is no wash water recovery.

### **Lady Grey**

Lady Grey potable is provided from relatively old package plant-type WTW that is located north of the town and draws its water from two dams via gravity and the final water is also gravitated via the water supply network to a number of reservoirs. A new 1.2 Mℓ/day works has been constructed adjacent the existing works, but is not complete as a result of funding and contractual challenges. The unit operations are of the package format with pressure sand filters and the other processes are conventional, with the final water intended to be disinfected. There is no allowance for wash-water recovery.

## **Rossouw**

Rossouw does not have any WTW and relies on **two** boreholes for water supply and water carted from Sterkspruit and/or Barkly East.

## **Sterkspruit**

There are two water treatment works that are located within the Sterkspruit area. The main works is the 12 Ml/day Sterkspruit WTW situated west of the town next to the R392 from Herschel. The works is of conventional concrete construction with coagulation/flocculation, settling, rapid gravity filtration and disinfection. Raw water is supplied from the Jozana Dam via gravity. The wash-water recovery facilities have been provided but inadequate. The treated water is distributed through pumping and gravity. The main works supplies water to Sterkspruit, some surrounding villages and the settlement of Herschel as well.

The smaller Jozana WTW that supplies water to rural villages. The works draws water via gravity from the Jozana Dam. The works are convention package type with pressure filtration. The treatment processes entail coagulation/flocculation, settling, pressure filtration, disinfection and distribution via pumping. There is no wash-water recovery.

There are a number of diesel powered stand-alone water supply schemes that utilize groundwater water sources to provide potable water to a number of villages. These can be connected to ESKOM electricity grid in order for effective and efficient water supply and reduce operational costs as diesel and the maintenance of the diesel-powered pump-station infrastructure is expensive.

**Extensive illegal water supply connections in the Zastron pipeline supplying the upper villages has led to disruptions in Ndofela and Macacuma Villages.**

## **Walter Sisulu Municipal Area Water Supply**

### **Gariep**

The Burgersdorp WTW is the only facility that provides municipal drinking water to the CBD, **Harmonie**, Eureka, Mzamomhle and Thembisa Townships. The works is old with conventional processes **that comprise** coagulation/flocculation, settling, rapid gravity sand filtration and disinfection. All raw water is received via pumping **from the two dams and from the new raw water sump linked to the five boreholes that have been developed during 2018/19. However, the Burgersdorp water treatment system is** strained by a high loading of silt and does not have wash-water recovery.

The final drinking water is gravitated to the storage reservoirs and to the consumers.

Through the Eastern Cape Provincial Treasury Drought Relief Programme, a new 6MI reservoir was constructed adjacent to the works to increase the drinking water storage capacity of the town.

### **Steynsburg**

Steynsburg has one WTW that receives water from the DWS Orange-Fish transfer tunnel. It is relatively new and of an all concrete construction. The processes are conventional with coagulation/flocculation, settling, rapid gravity sand filtration and disinfection. Final water is distributed via gravity. There is a wash-water recovery section. The works are visually in a good state. A number of boreholes and a reservoir have been developed to increase water availability and increase storage. However, due to shortcomings to the infrastructure the boreholes are used in conjunction with the water from the Orange-Fish Transfer Tunnel. The municipal-owned pump station located adjacent the tunnel requires refurbishment to ensure the protection of the mechanical and electrical equipment.

Additional boreholes and a reservoir have been developed through the EC Provincial Treasury's Drought Relief Programme.

### **Venterstad and Oviston**

The small towns of Venterstad and Oviston are supplied from the one WTW situated in Oviston and the plant receives water from the DWS-owned Gariiep Dam via The works are of brick/concrete construction with a balancing dam, coagulation/flocculation, rapid gravity sand filtration and disinfection. Final water is distributed via gravity and pumping. There is no wash-water recovery. The works must be prioritised for refurbishment and upgrading.

### **Maletswai area**

The Maletswai municipal area is made up of two towns, namely Aliwal North and Jamestown. The two towns employ conjunctive surface and groundwater sources for the provision of municipal drinking water.

### **Aliwal North**

Aliwal North has a single conventional water treatment facility that comprises a balancing dam, coagulation/flocculation, settling, rapid gravity filtration and disinfection. Raw water is mostly

supplied via pumping from the international Orange River that forms a boundary with the Free State province and the groundwater from the Island Spa Dam has been linked to the water treatment work. The works are old, and needs to be prioritised for renewal/upgrading. However, all of the 12 filters have been refurbished which will improve the operational efficiency of the water treatment works.

Final water is distributed via pumping to all the settlements within Aliwal North. There is no wash-water recovery. Low levels and extensive silting of the Orange River has resulted in water supply disruptions due to the municipal abstraction infrastructure being overwhelmed and blocked. A second water abstraction system has been constructed upstream of the weir to get around the extensive silting of the Orange River and also improve abstraction during periods of low flows.

Additional clear water storage reservoirs have been installed in Dukathole Extension 13, Joe Gqabi and Abborview to improve the operations of the Aliwal North water supply system.

### **Jamestown**

Jamestown has a package-type water treatment works with coagulation/flocculation, settling, pressure sand filtration and disinfection. Raw water is all pumped to the works from the Skulkspruit Off-take Dam which is fed from the perennial Skulkspruit River. The final water is pumped away for distribution. There is no wash-water recovery.

## **6.4 WASTEWATER INFRASTRUCTURE**

The JGDM has a total of 16 wastewater treatment works employing a combination of the more advanced activated sludge and oxidation pond technology, and these have been visually assessed by the WSA for compliance monitoring and reporting. Below is a table with all the municipal WWTWs:



**Table 6-2 Type and capacity of JGDM WWTWs**

LM	AREA NAME	SERVICE AREA	NAME OF WWTW	CAPACITY (MI/d)		IRRIGATION
				DESIGN	OPERATING	
Elundini	Maclear	Maclear town, Greenfield, Vincent	Maclear Activated sludge	1.4		None
			Maclear Ponds	0.5 (0.7)		None
	Mt Fletcher	Mt Fletcher town, Tsolobeng, Mfanta	Mt Fletcher Ponds	0.5		None
	Ugie	Ugie town	Ugie Ponds	0.7 (0.5)		None
			Prentjiesberg	0.594		None
Senqu	Barkly East	Town, Nkululeko Location, Fairview.	Barkly East Old Ponds	1.3		None
			Barkly East New Ponds	0.6 (1.3)		Yes
	Herschel	Herschel,	Herschel Activated Sludge Ponds	0.7 (2.0)		None
	Lady Grey	Lady Grey, Kwexi Naledi & Transwilger	Lady Grey Ponds	2.0 (1.84)		Yes
	Rhodes	None	None	N/A		N/A
	Rossouw	None	None	N/A		N/A
	Sterkspruit	Sterkspruit & surrounding settlements	Sterkspruit Ponds	2.0		None
Sterkspruit Package Plant			0.35		None	
Walter Sisulu: Gariep	Burgersdorp	Burgersdorp, Eureka, Harmonie, Mzamomhle & Thembisa	Burgersdorp Activated Sludge WWTWs	2.5		None
	Oviston	Oviston, Venterstad	Oviston Activated Sludge WWTWs	0.2		None
	Steynsburg	Steynsburg, Greenfields, Khayamandi & Westdene	Steynsburg Activated Sludge WWTW	1		None
	Venterstad	Venterstad, Nozizwe, Lyciumville	Venterstad Activated Sludge WWTW	1		None
Walter Sisulu:	Aliwal North	Abborview, Dukathole, Hilton, Area 13, Springs, Aliwal North, Joe Gqabi	Aliwal North Activated Sludge WWTWs	5.5		Yes
	Jamestown	Jamestown, Masakhane	Jamestown Ponds	0.75		None

The municipality will need to determine the current operating capacity volumes for all its wastewater treatment facilities as this has an impact on not only the functionality and sustainability of the infrastructure but also on the effectiveness of the facilities in terms of the quality of the final effluent discharged into the environment.

The detailed information on the status of the JGDM wastewater infrastructure and some of the contributing factors to the indicated conditions thereof is discussed below.

## **Elundini Municipal area**

### **Maclear**

Maclear has two wastewater treatment facilities. The older pond-based WWTW is located north of the town and is meant to act as an evaporation pond. However, the effluent does however breach the pond walls. The treatment technology consists of screening and oxidation ponds. The works are scheduled to be decommissioned in the future and the sewage currently received will be redirected to the Maclear WWTW. The access road to this plant is problematic especially during rainy periods and needs to be improved.

The Maclear activated-sludge WWTW is situated on the south of the Maclear along the R396 road. The works consists of an inlet works with screening and de-gritting, an extended aeration basin with anoxic zones. The final effluent is disinfected before being released to the Mooi River. The works are currently undergoing an upgrade, where the capacity is being increased from the current 700kl/day to 1.4 Ml/day. Both works are well-fenced with controllable access.

### **Mt Fletcher**

Mt Fletcher has one oxidation technology WWTW which is designed to operate as an evaporation facility. The works receives septic and conservancy tanks effluent from households and other consumers via a honey sucker tanker. The WWTW can receive waterborne effluent. The inlet works, however has not been designed to receive regular waterborne effluent as there are no screening and de-gritting facilities. Final effluent is not formally disinfected, but more on an informal basis. The pond walls are breaching and effluent informally leaves the works into the environment. The works are fenced and access is controlled. The works do not have a formal final effluent discharge point.

The Elundini Local Municipality is implementing a Small Town Revitalization project funded by the Office of the Premier which entails the development of a new housing development and economic development facilities in town. The expansion of the wastewater treatment works and sewer reticulation has been included in the project as the development will include a higher level of sanitation service.

## **Ugie**

Ugie town and surrounding areas are serviced two wastewater treatment works, the Ugie Ponds WWTW located to the east and the Prentjiesberg WWTW to the south of town.

The 0.7 Ml/day capacity Ugie Ponds WWTW uses oxidation pond technology and accepts tankered effluent only. It is planned that the works will be phased out and sewage will be redirected to the Prentjiesberg WWTW. The works are well fenced but the access road to this WWTW needs serious improvement as it is not easily negotiable, even by vacuum tankers. The works are properly fenced with controllable access.

The Prentjiesberg WWTW uses an activated sludge treatment system with the core of the heart of the plant is a steel structure wherein all the key processes, namely secondary treatment (aeration) and settling is undertaken. Final effluent is disinfected before it is released to the Wildebeest River. A large number of households use septic and conservancy tanks at present. JGDM owned honey-sucker trucks are utilized for the collection and transportation of the sewage to the WWTWs. The capacity of the works is expected to increase once a reticulation system is installed.

## **Senqu Municipal Area**

### **Barkly East**

Barkly East has a two-pond based wastewater treatment facilities. The older Barkly Ponds have a capacity of 0.73 Ml/day and it situated towards the east of the town. These works consist of an inlet works, allowance for the accommodation of buckets, an anaerobic pond, oxidation ponds and maturation ponds. The works does not have a disinfection unit. There is evidence of pond breach and high operating levels. These works need some refurbishment/upgrading and/or operational changes. The effluent treated here emanates from the newer works. A process audit would point out any limiting components in the current process set-up.

The second works in Barkly East is situated to the north of the town. The works is referred to as the Barkly New Ponds WWTW, with a treatment capacity of 0.6 Ml/day. These works have been designed to irrigate all the effluent on adjacent land. The irrigation system has failed and the pond walls have breached, with effluent being discharged directly to the Langkloofspruit. The works has been connected Eskom electricity supply grid and this can resolve the irrigation problems. Measures need to be installed to deal with irrigation failure to ensure that pollution of the Langkloofspruit does not occur.

### **Lady Grey**

Lady Grey uses classical pond treatment to dispose of wastewater. The plant situated to the west of the town and consists of an inlet works and final effluent that is discharged into the Wilgespruit River. There is disinfection with chlorine (HTH).

The site is adequately remote from the town and access is controlled. There is re-use of the treated sewage effluent for irrigation of animal harvest.

### **Rhodes**

Rhodes does not have any WWTW and most households use septic tanks. Septic tank effluent, however, still needs to be disposed of safely and a form of formal treatment facility may still be required.

The households in the township have VIP toilets which when full will need to be emptied and the "faecal sludge" disposed off in an authorized solid waste treatment facility. There is a Department of Human Settlement funded Senqu LM low income housing development project that has already delivered and handed over 30 of 300 planned housing which utilize VIP toilets. The district will need to consider the long term and sustainable process for the emptying of the toilets.

### **Rossouw**

The settlement of Rossouw does not have a wastewater treatment facility as all the households are served with VIP toilets. Most of the toilets are full and the district has commenced with the emptying thereof.

### **Sterkspruit**

Sterkspruit relies mostly on septic and conservancy tanks for waterborne sanitation. The existing older ponds have reached their capability as a stand-alone treatment system. A new 2 Ml/day capacity WWTW was installed near the ponds. The works is a package plant format with a mix of anaerobic treatment and aerobic treatment. There is an inlet works, a concrete anaerobic pond and then secondary treatment in a suspended medium aerated plant. The technology is combines an aerobic suspended media treatment system after an anaerobic treatment process. This system utilises blowers to keep the floating media in suspension. The treatment system is technologically sophisticated. The final effluent is filtered and disinfected before release into the ponds initially and then the Sterkspruit River. This system is an interim measure while a final works is being investigated. The proposed new WWTW has been

approved for construction under the DWS Regional Bulk Infrastructure Grant and it will be linked to the existing ponds.

The small rural community of Herschel is served by a 0.5 Ml/day capacity Tecroveer activated sludge wastewater treatment package plant. The plant consists of an inlet works and the normal processes of secondary aerated treatment followed by settling, with the return of activated sludge. There is allowance for sludge drying beds. Access to the plant is a challenge in wet conditions and plans must be made to improve this situation. On-site storm-water management also needs attention. Final effluent is disinfected before disposal. The site is well-fenced and access is controlled.

### **Walter Sisulu Municipal Area**

#### **Maletswai**

The activated sludge Aliwal North WWTW is located north of the town and consists of two plants, a 5.5 Ml/day capacity old section and a works has a capacity of 3.5 Ml/day. The condition of the works is satisfactory and the sites are well-fenced with access control. There are old works that need to be demolished to improve safety and the overall appearance of the site. There are facilities for sludge drying. The works are situated in the Free State Province side of the provincial boundary and discharge final effluent into the Orange River. There is an agreement with a local farmer to irrigate with the final effluent.

Just recently, both plants have been refurbished and a new sewer pipeline and a centralized pump-station installed to increase the operational capacity and efficiency of the sewer network. However, there has been increased number of sewage spillages reported throughout Aliwal North and the sewer network needs to be revamped in certain sections of the town.

The town of Aliwal North has been experiencing a number of sewer spillages in the network especially at the pump stations. The significance of these sewer spillages is that they directly flow into the Orange River and the municipality has received a number of warnings from the Department of Water and Sanitation.

Jamestown is served by a new oxidation pond wastewater treatment works located south of the town along the N6. Effluent is currently tankered to the works from numerous septic tanks across town. This is an expensive operation and a network needs to be prioritised to improve operating conditions. The works are fenced but access is control is unsatisfactory.

#### **Gariep**

### **Burgersdorp**

Burgersdorp has a conventional activated sludge wastewater treatment works with a capacity of 2 Ml/day. The works consist of an inlet works with screening and grit removal, together with an extended aeration basin with a clarifier plant. Final effluent is disinfected before discharge into the Stormbergspruit. There are sludge drying beds to deal with waste activated sludge. The works are well fenced with access control.

Portions of the sewer network are currently being overhauled because considerable portions of have been compromised as evident from the limited inflow into the works, extensive sewage spillages within the residential areas and into the Stormbergspruit River. The Department of Water and Sanitation has issued a number of non-compliances to the municipality as for the works.

### **Steynsburg**

Steynsburg town has waterborne sanitation that is serviced by an advanced Tecrover activated sludge wastewater treatment package plant. The works' treatment processes consist of screening, secondary anoxic and aerated treatment and settling/clarification. Final effluent is disinfected after pond treatment. There are facilities for sludge drying.

### **Oviston**

The small community of Oviston has a 0.1 Ml/day capacity Tecrover plant with the normal unit operations. There are several leakages that require maintenance and refurbishment. Effluent leaving the works is disinfected, but needs to be formally piped to a receiving area as the current discharge appears informal. Waste activated sludge is dried on site. The works are well-fenced and access is controlled.

### **Venterstad**

Venterstad also has a Tecrover activated sludge treatment works on the outskirts of town toward the west. The 1.0 Ml/day capacity works comprise an inlet works with screening and de-gritting. The secondary treatment process consists of an anoxic zone with aeration and post treatment clarification. There are drying beds for the waste activated sludge. Final effluent is disinfected before disposal into the Brak River. The works are well fenced with adequate access control.

## **6.5 REGULATORY COMPLIANCE**

In 2011, the Department of Water and Sanitation introduced an Incentive-based Regulation for both water supply and wastewater management processes of municipalities that are Water Services Authorities. These department programmes fall into the two categories: the Blue Drop Certification Programme for Drinking Water Quality Management Regulation and the Green Drop Certification Programme for Wastewater Quality Management Regulation.

### **Blue Drop System**

The Blue Drop process measures and compares the results of the performance of Water Service Authorities and their Providers, and subsequently rewards (or penalises) the municipality upon evidence of their excellence (or failures) according to the minimum standards or requirements that has been defined. The programme assesses the comprehensive aspects of each water supply scheme including the following:

- Water safety plans;
- Process Controller qualifications and training;
- Drinking water quality monitoring and compliance (microbiological);
- Incident Management Protocol; and
- Asset Management.

The JGDM has had some successes in the earlier years of the BDS with the works in Ugie and Sterkspruit achieved Blue Drop Status in 2011, with Ugie repeating the performance in 2012. However, the municipality has since lost those certifications and does not have Blue Drop Certification for each of the water treatment works.

As indicated above that one of the most important parameters/determinants of the Blue Drop System is the microbiological compliance levels of the final treated and disinfected water that is delivered from the works. The graph above describes the last performance in the 2014 evaluation cycle.

Based on the JGDM 2017/18 monthly microbiological compliance monitoring results and WSA audits, there is *an opportunity for a number of the municipal water treatment facilities to improve its performance in the next evaluation cycle that will be conducted by DWS.*

### **Water Safety Planning**

A key responsibility of the JGDM as both the Water Services Authority and the Water Services Provider is to ensure safe and healthy drinking water quality.

A key element in the DWS Blue Drop Assessment Programme is the preparation and implementation of Water Safety Plans for each water system. These plans effectively document the *risks* from catchment to consumer and recommend remedial actions to mitigate against the identified risks to water drinking water quality. Water Safety Plans are required for all water supply systems in the district. More importantly, these Water Safety Plans must be used by municipal staff to inform their day to day activities.

*The municipality has conducted risk assessments for all its water supply systems but has not developed the subsequent Water Safety Plans.*

### **Green Drop System**

A key responsibility when performing the function of both the Water Services Authority and Water Services Provider is to ensure environmental health safety with regards to strict monitoring of wastewater quality. To help ensure this, the Department of Water and Sanitation has developed the Green Drop Assessment Programme. This seeks to regulate and enforce best management practices in wastewater collection, treatment, and treated effluent disposal.

The Green Drop Certification process allows the regulatory agency to measure, monitor and publish information about the quality of wastewater services, based on legislated standards or industry good practice. Only a wastewater treatment system can achieve Green Drop Certification according to the performance for that specific system as it scores against the set requirements such as:

- Wastewater Risk Abatement Plan;
- Qualified and properly trained process controllers, supervisors and maintenance team;
- Operational management and monitoring (e.g. manuals, etc);
- Effluent quality compliance;
- Sludge management;
- Any beneficial use of treated effluent; and
- Asset management.

The department employs the **Cumulative Risk Ratio** to assess each of the wastewater treatment facilities' functioning. The CRR has been designed to measure four key risk areas: the *treatment plant's design capacity, actual operational flow received at the plant, effluent quality determinands, and technical skills compliance*. An increase in the CRR is an indication of a



poorly managed WWTWs whilst a decrease illustrates an improved performance of a WWTWs and reduced risks to public and environmental health.

The JGDM wastewater treatment facilities performance in terms of the Green Drop Certification has been less than satisfactory as evidence from the results of the last DWS evaluation process. The Department of Water and Sanitation has confirmed that the next GDS evaluations will be undertaken 2018/19 and the municipality has submitted all the required documentation required for the pre-evaluation.

### **Wastewater Risk Abatement Planning**

The most important element of the Green Drop process is the preparation and implementation of Wastewater Risk Abatement Plans (W2RAP) described as Risk Based Management for each wastewater system. Like the Water Safety Plans, W2RAP effectively identifies and documents risks from the collection, treatment and discharge of effluent and sludge recommends remedial actions to prevent and manage these risks. The aim is to ensure that public health and environmental integrity aspects are addressed in a sustainable manner.

*The municipality has conducted risk assessments for all its wastewater management systems but has not developed the subsequent Wastewater Risk Abatement Plans.*

## **6.6 HOUSING DEVELOPMENT PROJECTS**

The provision of houses remains the sole responsibility of the Department of Human Settlement and the three local municipalities play a facilitation function. The facilitation roles and responsibilities of the local municipality entails to amongst other things:

- Identification of suitable land for building of houses in line with the spatial planning of LMs;
- Engaging communities on the suitable type of houses to be built on their areas;
- Compiling a demand list, submit it to the municipal Council for endorsement then submit the project list to the DoHS;
- Compiling of beneficiary lists and submitting it to the department for scanning;
- Engaging other sector departments and entities for the provision of other services (e.g. water services bulk infrastructure, electricity, etc ;

The Department of Human Settlements then develops a project list of new houses to be built in dealing with the housing demand based on the budget availability for insertion into the local

municipality's Integrated Development Plan. Each of the local municipality is required to develop a Housing Sector Plan (HSP) whose objective is to identify and assess the housing and infrastructure situation as it related to demand and supply for houses in its respective areas.

As a Water Services Authority and also having the responsibility for water services provision in the region, the district is required to integrate the housing development projects into its planning and cater for its respective needs in the different local municipal areas. This involves the confirmation of the following details that relates to the

- Availability of adequate raw water resources;
- Adequate capacity of the existing water and sewer infrastructure to cater for the additional demands of the respective housing units; and
- The capacity of municipality to effectively operate and maintain the additional infrastructure to be inherited from housing development projects.

A very critical and overlooked aspect of the current housing development delivery methodology is that the Department of Human Settlement develops the bulk and internal networks of the new areas and connects to the existing water and sewer infrastructure of the district. The district then inherits the infrastructure, and is then responsible for the effective maintenance thereof and includes that in its asset register. This highlights the importance of the district's involvement in planning, design and construction of housing development projects in order to avert excessive operational and maintenance costs.

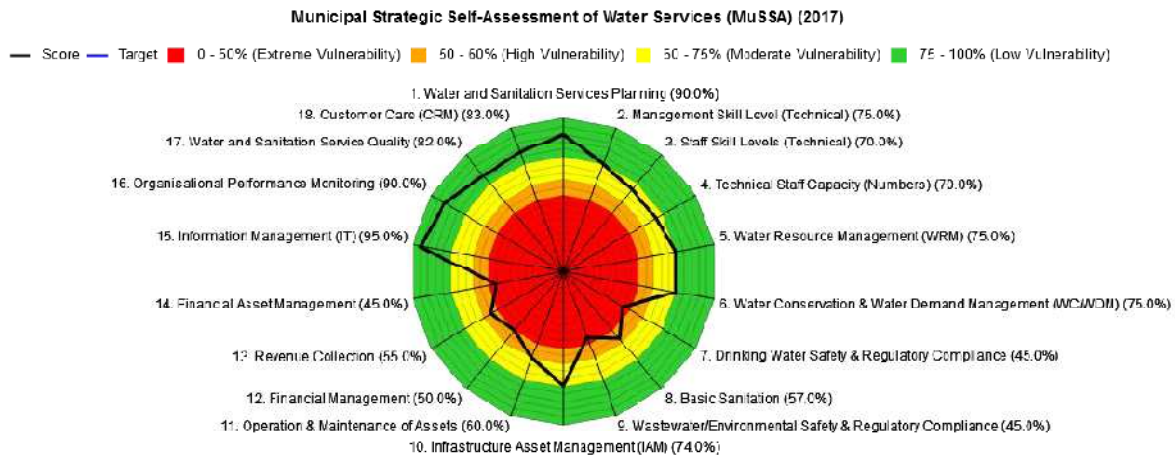
#### **6.7 DWS 2017/18 MUNICIPAL STRATEGIC SELF-ASSESSMENT SURVEY (MUSSA)**

The Department of Water and Sanitation has overseen the annual use of the MuSSA to survey and assess the overall "business health" of a Municipality when fulfilling its water services function.

JGDM has participated in the MuSSA initiative over the last few years as this assists in the identification vulnerabilities and prioritizes remedial actions in order to ensure effective water services provision. The survey also affirms those water services delivery areas in which the district is performing admirably. By identifying these key areas of business health vulnerabilities, the MuSSA allows the municipality, DWS and other sector partners to effectively plan and direct appropriate resources to enable more effective water services. Such proactive measures will contribute directly to the improvement of key service areas of vulnerability within JGDM. As

such, the MuSSA and the associated Municipal Priority Action Plan (MPAP) need to feed into and form an integral component of the JGDM's Water Services Development Plan (WSDP).

The JGDM MUSSA for the 2017/18 municipal financial year was completed and submitted to the Department of Water and Sanitation for review. Below is the outcome of the DWS review.



**Figure 6-4 JGDM 2017/18 MUSSA Outcome**

JGDM participated in the DWS' 2017/18 MuSSA and the following key identified areas of municipal water services vulnerability were identified:

1. Drinking Water Safety and Regulatory Compliance (45%)
2. Wastewater/Environmental Safety and Regulatory Compliance (45%)
3. Financial Asset Management (45%)

The most critical vulnerability of the municipality is the **Financial Asset Management** wherein:

- The district's investment in Asset Renewal is non-existent;
- Limited funding for asset repairs and maintenance; and
- The reliance on grant funding for capital expenditure.

Remedial measures will be identified and implemented to improve these areas and also to ensure that other areas do not fall back into the "red zone". In turn this will translate to a better MUSSA score for the district and improved water services provision.

## **6.8 OUTLINE OF WATER SUPPLY INFRASTRUCTURE**

The WSA and WSP should facilitate the development of central repository for the storage of all the water and wastewater infrastructure information. This must include such information as:

- Design Reports and manuals
- As built Drawings
- Water Safety Plans
- Wastewater Risk Abatement Plans
- Operational and Compliance Monitoring
- Incidence Reports
- Emergency Response Plans

This must be aligned to the Infrastructure Assets Register of the municipality and the GIS database.

## **6.9 MASTER PLAN**

A comprehensive Water and Sanitation Master Plan enables a municipality to ensure that the needs of all communities are met over the medium and long term, and that the refurbishment and upgrading of existing water services infrastructure take place in a planned and organized manner. The master plan will also guide the municipal strategic decisions with regard to the infrastructure investment, future applications for funds for the upgrading of water services in the region.

During the 2018/19 financial year, the district received funding from the Development of Southern Africa (DBSA) for the development of a municipal-wide Integrated Water and Sanitation Master Plan by consolidating the various area specific master plans. The development of the IWSMP also entailed the following:

1. The evaluation of the long-term viability of existing infrastructure to cope with expansion and augmentation;
2. An identification of the new infrastructure required, and the proposed timelines regarding when such infrastructure will be required;
3. The assessment which will address the primary and secondary networks, and the primary and secondary equipment needed to deliver a reliable, safe and affordable service to all existing and future consumers within the area;

4. Recommendations to assist the district with acquiring land, registering servitudes and undertaking Environmental Impact Assessments (EIAs);
5. Detailed designs for construction of identified priority projects over the short, medium and long-term; and
6. The compilation of an implementation strategy for the development of water supply and sanitation infrastructure.

Ideally, the consolidated master plan will inform the three-year Council Approved Infrastructure Development Plan as outlined in Section 12: Project Development of this document. The master plan will also assist the municipality with unlocking economic development within and around the municipality in terms of providing water services required for economic activities.

## **6.10 GUIDELINES AND STANDARDS FOR THE WATER AND SANITATION INFRASTRUCTURE DEVELOPMENT**

The cost of an infrastructure asset is determined not just by the size, nature, capacity and other variables of that infrastructure, but by amongst other such issues as:

- Its fitness for purpose;
- How well it was designed;
- Materials specified and used; and
- The quality of the construction.

The choice of construction material and appropriateness for the local conditions has a direct contribution to the effective operation and maintenance of the said infrastructure. However, the erroneous design and poor construction workmanship will lead to operational problems with significant costs. Furthermore, design and construction that does not take into account practical operation and maintenance issues may result in costly errors, financial, environmentally and in terms of service delivery.

The Joe Gqabi District Municipality should ensure the finalization and approval of the *Technical Guidelines and Standards for Water and Sanitation Infrastructure Development* to ensure that the design and construction of water supply and sanitation infrastructure is consistent with the municipality's existing network infrastructure, future plans in the region and that new offers minimum operational and maintenance costs over its life cycle.

## **6.11 WATER SERVICES INFRASTRUCTURE CHALLENGES AND RISKS**

The status of municipality water and wastewater infrastructure ranges from old to modern technology has the functioning and thereof will vary across the district. However, there are a number of challenges and risks that need to be addressed as they can threaten the sustainable provision of water services delivery.

a) Water supply infrastructure:

- Siltation has become a critical problem as it has reduced storage volumes in some dams to untenable levels;
- Lack of Water Safety Plans for the individual municipal water treatment works;
- Ineffectual and ineffective diesel usage and management in rural stand-alone water supply schemes;
- High non-revenue water in all the water supply systems;
- Wasteful use of water;
- Lack of municipal-wide consumer education and awareness programme;
- Incorrect water meter and insufficient monitoring of consumers;
- Illegal connections that deplete water supply to targeted areas;
- Insufficient monitoring of water loss influences such as household connections, indigent populations and length of distribution mains;
- The DM is drought prone, with many systems not able to supply water in prolonged drought periods. The municipality must often respond with expensive tinkered supplies
- Lack of Incident Management Protocol, and security (access control) in a number water treatment facilities is both a legal compliance contravention and operational limitation;

b) Wastewater infrastructure:

- Extensive sewer spillages in Aliwal North and Burgersdorp due to vandalism, overloaded networks and ;
- Lack of Wastewater Risk Abatement Plans for the municipal wastewater treatment facilities;
- Lack of municipal-wide consumer education and awareness programme;
- Lack of Incident Management Protocol, and security (access control) in wastewater treatment facilities is both a legal compliance contravention and operational limitation;

There are a number of shortcomings that are applicable to the condition and functioning of both the existing municipal water supply and sewer infrastructure:

- There is aged infrastructure in the municipality that requires to be refurbished, especially in the towns, and prone to age related failure;
- Some Infrastructure has insufficient capacity to meet identified demands thus affecting the operational efficiency thereof;
- The management of infrastructure is difficult given the resources;
- There is no systematic funded programme to tackle maintenance and refurbishment backlogs, and these rely solely on grant funding; and
- There is insufficient operating information to guide fact based interventions to systematically tackle problems.

#### **6.12 WATER SERVICES INFRASTRUCTURE STRATEGIES AND OBJECTIVES**

- Conduct an audit of all the municipal-owned water and sanitation infrastructure located within the three local municipalities;
- Develop a long term strategy to manage silting of dam;
- Reclaim and recycle water released from water works for beneficial use. **Finalization of the contracts of mandate for the applicable areas;**
- Address balancing of employment of (qualified) process controllers to deal with water quality and management;
- Urgently address sewer spillages in Burgersdorp and Aliwal North;
- Improve the system of diesel management;
- Enhance Occupational Health and Safety in water services provision in order to avoid disruption of services and possible litigation; and
- Finalization and approval of the *Technical Guidelines and Standards for Water and Sanitation Infrastructure Development*.

## **SECTION 7: WATER CONSERVATION AND DEMAND MANAGEMENT**

Water Conservation and Demand Management is an important activity in water services provision in that it attempts to control excessive consumption and water wastage. While WCDM falls organisationally under the WSA unit, many of the water conservation issues have a direct bearing on water services operations.

By taking the catchment management perspective, the municipality is also taking cognisance of the water resources availability, local economic development, competing water users, transboundary/ international rivers commitments and environmental considerations.

The level of effectiveness to implementing WC/WDM touches a number of the municipality's responsibilities in terms of water management, namely but not limited to:

- a) Provisioning of water resources for both current and future needs;
- b) General awareness of water resource and services for both the municipality and its stakeholders;
- c) Management of the water services assets; and
- d) Water quality management.

Institutionalising WC/WDM is a long-term undertaking and not a once-off project as has often been seen in the recent past. Hence, it will require effective planning, resourcing and integration in the normal operations of the municipality.

### **7.1 WATER RESOURCE MANAGEMENT**

The National Department of Environmental Affairs' Working for Water Programme has been active in the Mzimvubu Catchment Area of the district. The programme resides within the Natural Resources Management section with the Community Services Department, and it entails the removal of alien invasive species in water stressed catchments in order to avail more water to provide to under-serviced communities and settlements.

The programme has significant benefits for the communities, the municipality and the national government responsible for both natural resources management and water resources management. These include but not limited to:

- Job creation and poverty alleviation;



- Water availability for treatment and abstraction;
- Reduction of municipal water treatment costs;
- Protection of the water infrastructure integrity and functioning through the reduction of siltation;
- Improve water security;
- Limit the occurrence of flood events; and
- Protection of the ecosystem.

For the 2017/18 financial year, NDEA has allocated R7 205 278.00 to JGDM for the continuation of the on-going work in the Mt Fletcher town within the Mzimvubu Catchment area. The core of the current works involves the following:

- Clearing of invasive alien plants; and
- Dry land rehabilitation work in the form of silt traps, donga stabilization, re-vegetation of old lands and partnering with local communities to promote *environmentally friendly utilisation of natural resources*.

## **7.2 CONJUNCTIVE USE OF SURFACE – AND GROUNDWATER**

Water can be conserved by integrating the management of surface and groundwater resources which can contribute to the minimising of groundwater abstraction during periods of excess surface water supplies or utilizing groundwater during times of surface water unavailability.

As demand increases and water resources become scarce more attention must be paid to conjunctive use of surface water and groundwater sources within the district. Presently, the municipality operates a number of surface-groundwater conjunctive water supply systems which include:

- Aliwal North
- Barkly East
- Burgersdorp
- Jamestown
- Lady Grey
- Steynsburg

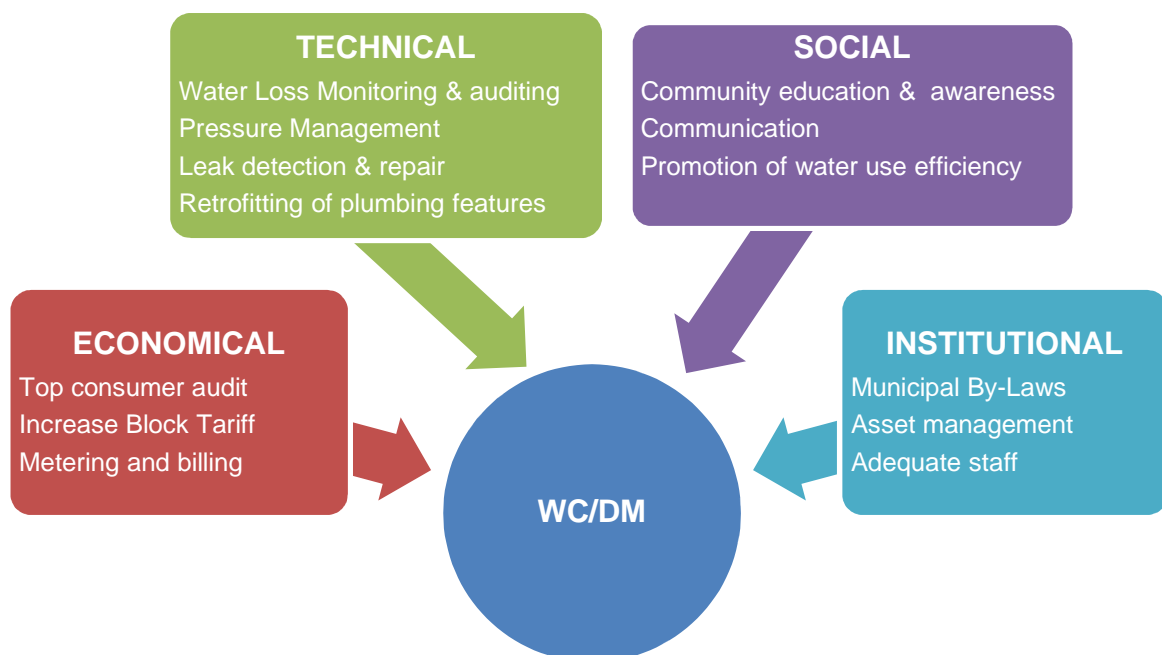
Some of these conjunctive uses are dictated by either drought conditions and/or form part of a proactive water demand management initiative of the municipality.

### 7.3 WATER SUPPLY

As a result of the increasing demands of water and its limited nature, the implementation of water conservation and water demand management is imperative in order to not only reduce water losses but also the eradication of water supply backlogs, asset management and improve revenue collection.

With the conceptualisation of the No-Drop initiative as part of the DWS Blue Drop Assessment, the importance of WC/WDM will over time gain more prominence. Institutionalising WC/WDM is a long-term undertaking and not a once-off project as has often been seen in the recent past.

The ultimate purpose of the WCDM implementation is to reduce the cost of water to citizens by delaying the need for development of new water sources or augmenting existing sources. This is achieved through implementation of a combination of appropriate activities within the four WCDM strategic pillars comprising the following:



**Figure 7-1 Water Conservation and Demand Management strategic pillars**

The district has identified a number of WCDM strategies and projects to be implemented over time due to the nature and extent. The most significant of these is the appointment of a service

provider for the development of water balance and consequently generate leads to an Annual Water Loss Report for the past two municipal financial years (2015/16 – 2016/17).

### 2016/17 Water Loss Report

During the 2012/13 municipal financial year, JGDM appointed Aurecon to conduct a short-term high level evaluation of its water losses. The evaluation was conducted using various engineering principles and proved to be successful and a useful tool for auditing purposes. It was therefore decided that the same format and engineering principles be applied annually to provide a high level water loss evaluation of the District Municipality.

This table below provides an overview of the local water losses during 2016/17:

**Table 7-1 Summary of JGDM 2016/17 Water Loss Report**

PARAMETER	ELUNDINI LM	MALETSWAI LM	SENQU LM	GARIEP LM
<b>Kilolitres purified</b>	1 177 752	5 885 157	3 978 687	3 539 116
<b>Kilolitres sold</b>	687 327	2 508 077	2 895 290	1 653 008
<b>Kilolitres lost</b>	490 425	3 377 080	1 083 397	1 886 008
<b>% Non-Revenue</b>	42%	57%	27%	53%
<b>Average cost (Ratio)</b>	R3 619 341	R24 922 850	R7 995 476	R13 918 739
	<b>% Non-Revenue Water</b>			
<b>2013/14</b>	58%	56%	40%	57%
<b>2014/15</b>	35%	42%	30%	50%
<b>2015/16</b>	50%	65%	27%	29%
<b>2016/17</b>	42%	57%	27%	53%

During 2016/17 there were improvements in Elundini and Maletswai. Senqu remained at 27% and the Gariep municipal area shows an increase in water losses. The improvements in Gariep in the 2015/16 financial year were attributed to improved billing.

Shortages of accurate water meter readings, the lack of updated indigent populations and system characteristics restrict the accuracy of analysis. The study recommended a number of priority interventions that will provide significant returns for the district in terms of reducing water consumption and water losses:

1. Leaking infrastructure and irresponsible use of water in schools and other municipal facilities;
2. Leaking bulk infrastructure and wastage at the supply source; and
3. Leaking infrastructure and plumbing fittings in low income and informal settlements.

However, the district has been implementing a number of water conservation and water demand management interventions during the 2017/18 financial year including the installation of bulk water meters. The outcomes of these projects will be included towards the end of this current financial year.

The evident implementation of WCWDM by the Water Services Authorities is consistently being made a compulsory requirement in infrastructure grant applications for the justification of augmentation of water resources.

#### **7.4 WATER CONSERVATION & DEMAND MANAGEMENT CHALLENGES AND RISKS**

- Insufficient funding for the comprehensive implementation of WCWDM programme throughout the district;
- Inadequate bulk and zonal metering to generate accurate data and information for the development of a realistic water balance;
- Illegal connections; and
- Insufficient monitoring of consumers.

#### **7.5 WATER CONSERVATION & DEMAND MANAGEMENT STRATEGIES AND OBJECTIVES**

Water resource planning and the implementation of augmentation options for surface water resource options is a DWS competency, although JGDM is responsible to implement and manage water use and reuse initiatives. Therefore, the objectives and strategies of JGDM in this regard are the following:

- Extend the Working for Water Programme to other strained catchments within the district, depending on the grant funding availability;
- Design and implement a comprehensive consumer education and awareness programme with a focus on water use efficiency;
- Devise a strategy for the effective metering, billing and revenue collection from high water users;
- **Ensure that all bulk water is metered at source, at WTW (incoming and outgoing) and at bulk storage reservoirs;**
- Conduct dam safety inspections where required;
- Compile dam operating rules for all surface water sources where required **informed by Dam Safety Inspection** ; and

- Establish a comprehensive groundwater monitoring plan for the monitoring of water levels and groundwater quality (rural and urban).

## **SECTION 8: ASSOCIATED SERVICES/PUBLIC AMENITIES**

As the only Water Services Authority within its jurisdiction, the Joe Gqabi District Municipality provides water services to the schools, police stations, magistrate courts, clinics and hospitals accordingly to the allocation of each facility i.e. to all the facilities allocated within the Urban Edge are provided with high level of service while the ones in the rural areas are provided as per RDP standards.

In ensuring sustainable water supply and sanitation services requirements in schools, clinics, hospitals, police stations, prisons and magistrate courts, there are separate arrangements with the relevant departments in consultation with the Department of Public Works as the custodian of provincial and national infrastructure development, operations and maintenance.

JGDM always endeavours to ensure the availability of adequate bulk water and sanitation services infrastructure to support current and planned public institutions. For new developments, the process involves an effective communication between the responsible department and the municipality to ascertain and confirm the ability of the existing bulk water and sanitation infrastructure to cater for the new demands.

The detail of public institutions located within the district is given as follows:

**Table 8-1 List of (serviced) public institutions within JGDM**

	Urban	Rural	Total
Police Stations	12	10	22
Magistrate Courts	13		13
Prisons	5		5
Clinics	39	11	50
Hospitals	3	18	21
Schools	45	313	358
FET	2		2
Public swimming pools	1		1

In line with the demographics and economic activities of the district, the public amenities are largely found in the urban areas. There are a number of public institutions such as clinics, schools, and police stations in the traditional and rural areas. It is important to note that there are a larger number of schools in the traditional and rural areas.

The only institution of higher learning located within the district is the Ikhala Technical and Vocational Education and Training (TVET) College which has two campuses in Aliwal North and Sterkspruit. Both the TVET campuses are connected to both the municipal water supply and wastewater networks, and the Aliwal North facility is currently embarking on a project to expand its building which will increase its water demand and wastewater load that the district will have to contend with.

The Aliwal Spa in Aliwal North has been brought into operation thus the water supply needs and sewer demand load from the facility will have to be considered in the planning, management and billing of the services in the area.

### **8.1 WATER SUPPLY TO INSTITUTIONS**

Where water supply network is in place the applicable public institutions will receive priority in terms of connection and in those areas where there is not water reticulation system there are provisions for water carting on an as needs basis and in line with the municipality's tariff policy. Where groundwater is available, the municipality encourages the institutions to tap into that resource as it reduces the pressure into the municipal water supply network.

Furthermore, in cases where a public institution utilizes its own water sources (groundwater and/or rainwater harvesting), the onus is on the user to ensure the water supply is operated and maintained in such a manner that the water quality is adequate for human consumption. The municipality needs to be informed of such in order for the Municipal Health Services unit to monitor compliance with the legislated drinking water quality requirements.

### **8.2 SANITATION SERVICES TO INSTITUTIONS**

In areas where a municipal sewer network is available, the municipality will ensure that the public institutions are connection as per the relevant processes, procedures and tariffs. Wherein the public institutions utilize on-site sanitation such septic tanks, there are municipal provisions for sewage removal and transportation on an as needs basis and in line with the municipality's tariff policy. However, the onus is on the user to operate and maintain its own on-site sanitation facility. The other sanitation alternative that is utilized by most of the rural schools within the district is the Ventilated Improved Pit (VIP) toilets.

The JGDM's Municipal Health Services will monitor all public institutions to ensure that conditions and state of repair of the facility does not cause harm to public and environmental health.

### **8.3 CUSTOMER RELATIONS**

As is applicable to an exchange of goods and service water supply, as people are expected to pay for services, customer relations is important. The service provider also requires the cooperation of the communities to ensure that safeguarding of equipment and appurtenances of the service provider.

Public institutions/amenities that receive municipal water supply and sanitation services are required to pay and the municipality endeavours to ensure that the facility is metered and billed in order to recover the costs of providing the service. This necessitates the management of the relationship between the service provider and the customer in terms of clear outline of roles and responsibilities in terms of water services planning and provision in existing and new facilities. The Chief Financial Officer has established good communication and working relations with a number of government departments which has led to improved payment levels.

### **8.4 ASSOCIATED SERVICES CHALLENGES AND RISKS**

- Uncertainty on the number of **public institutions** receiving water services from JGDM;
- Information pertaining to the **current and future** water usage and service levels;
- Informal connections to municipal water and sewer connections, and *unauthorized* water usage; and
- Billing of and revenue collection from the government departments responsible for the various institutional facilities receiving water services from the district.

### **8.5 ASSOCIATED SERVICES OBJECTIVES AND STRATEGIES**

- Development of a detailed information regarding these water users through **collaboration** with the relevant departments **especially the Department of Education**;
- Ensure that they are effectively metered, billed and revenue is collected from the responsible government departments;
- MHS to monitor all public premises to ensure compliance to health requirements and water quality standards;
- Improve the response to complaints for the servicing of septic tank;
- **Engage with Department of Public Works on the operations and maintenance of their wastewater treatment facility in Mt Fletcher**; and



- The municipality is to offer maintenance contracts to public institutions for the operations and maintenance of their on-site water supply and sanitation facilities.

## **SECTION 9: CUSTOMER SERVICES PROFILE**

Consumer communication and relationship management is one of the most critical areas in the water services provision function. It is an area that encompasses communication, public education and awareness, dealing with the public database management, billing and statements, revenue collection and credit control.

The Customer Services of the municipality is structured in two components with the Communication and Customer Care Centre functions located within the Chief Operations Officer and, the Community Awareness and Education responsibilities assigned to the Water Services Provision section within the Technical Services Department.

The Communications section conducts Annual Customer Surveys as part of a commitment to continually improve the performance of the JGDM's water services provision. Regular feedback from customers is an effective means of tracking the performance of one's business.

The Water and Sanitation Community Awareness and Education of the municipality are performed by the Institutional and Social Development (ISD) unit that is located within the Water Services Provision section. The unit plays a critical role in the facilitation and monitoring of water and sanitation services and also contribute to the social integration in water and sanitation infrastructure development projects. The unit requires additional support as incumbents are not always strong in water services specific competencies and a structured (proactive) community education and awareness programme.

### **9.1 CUSTOMER SERVICES INSTITUTIONAL ARRANGEMENT REVIEW**

During 2017/18 municipal financial year the district has established a new *Directorate: Institutional Support and Advancement Department*. This was part of the organisational review in order to streamline and improve the municipal customer care services, and enhance the intergovernmental relations functioning of the district.

Four divisions reside under this directorate namely Political Protocol Management, Communications, Marketing, Media, Public Relations and Customer Care, Division International and Inter-Governmental Relations and the Division IT infrastructure Support. The Community Awareness and Education function will also be relocated from the WSP section to the new department as part of the organisational review process.

## 9.2 CUSTOMER SERVICES

The JGDM's 2016/17 Municipal Strategic Self-Assessment feedback report from the Department of Water and Sanitation highlighted Customer Care as the top area of vulnerability which the municipality need to appropriately allocate resources to effectively address it. During 2018/19, the customer care vulnerabilities were addressed from various organizational activities which are outlined in the different sections of the WSDP. However, the district still needs to enhance its customer care experience and service in relation to:

1. The existence of functional and manned customer service system that uses a register to address complaints and appropriately inform customers of service interruptions, contamination of water, boil water alert, etc; a
2. Regular municipal wide customer satisfaction surveys
3. Response times to reported water and wastewater related complaints/callouts; and
4. Consistent customer education and awareness programme (informing customers of water and wastewater system O&M activities, water quality, resource protection/pollution, reporting incidents/security concerns, billing, etc.).

The municipality has received funding from the Belgian government through the National Department of Public Service and Administration (DPSA) for the Water Management System project which is aimed at improving enhancing service delivery and customer care. This will achieved by amongst other things, the improving the municipal processes for the management of water services information, spatial information, project information, recording, resolving and responding to customer complaints.

## 9.3 ANNUAL CUSTOMER SURVEYS

The municipality conducts customer satisfaction surveys for water and sanitation services. The aim of this survey is to help the municipality in gauging public perceptions and opinions around the levels of water and sanitation service delivery and interactions between the two (public and municipality) to identify areas of improvement.

These surveys are undertaken on an annual basis to gauge the customer satisfaction level in formal domestic, informal domestic and business sectors and to identify specific issues of concern. The last customer survey was conducted in the 2016/17 municipal financial year in all

the three local municipal areas of the district but the outcomes of which have not been assessed and documented.

The three local municipalities also undertake ward-based annual Community Satisfaction Surveys on services they provide to the public (i.e. roads, waste management, electricity, storm-water, etc). The district municipality does piggy-back on the local municipality to ensure integration, avoid duplication of efforts and unnecessary expenditure. The collaboration can be improved to ensure efficiency and clear indication of the consumers' understanding, satisfaction and experience of service delivery and all engagements with the municipalities.

#### **9.4 CUSTOMER SERVICES CHALLENGES AND RISKS**

- Lack of a comprehensive consumer education and awareness programme;
- Functional and ineffective customer care system and centre;
- Inadequate customer satisfaction surveys; and
- Lack of proactive water and sanitation customer education and awareness.

#### **9.5 CUSTOMER SERVICES OBJECTIVES AND STRATEGIES**

- Finalize the DPSA funded Water management System that will improve the customer care services;
- Conduct regular municipal-wide customer satisfaction surveys as part of the Customer Care Management Plan.;
- Finalize the programmes and resourcing of the ISD and Communication functions; and
- Develop and implement a consumer water and sanitation education and awareness programme (informing customers of water and wastewater system O&M activities, water quality, resource protection/pollution, reporting incidents/security concerns, etc.).

## **SECTION 10: FINANCIAL PROFILE**

The financial profile of the JGDM consists mainly of the capital programme and the operational budget. The operational budget consists of recurring income items and expenditure items, while the capital budget comprises specific projects in infrastructure investment and to a lesser extent, investments in systems.

The operational budget should comprise the main budget of the municipality and the key tool that determines the sustainability of the service delivery mechanisms. The focus of municipal budgeting should in future be the operational budget, as in an ideal society where most households have sustainable and decent incomes, a municipality should be largely self-financed in terms of recurrent expenditure items and for refurbishment, augmentation and new capital investment, with national fiscus playing a smaller role. The surplus of income over normal recurring expenditure creates the space for further capital investment.

The legacy of our political past has created an environment wherein poverty has rendered large portions of our households without decent incomes, and therefore unable to fund municipal services without substantial support from the National Fiscus. It should be a long-term objective of all organs of state to create a future scenario where households have decent incomes and are able to afford a municipal service package. Currently, operational budgets are largely grant finance (Equitable Share) based, with service charges playing a small component of income and various statutory grants largely financing operations.

The capital budget comprises mostly statutory grants from the National Fiscus to cover the costs of services backlogs for households that do not have adequate access to basic services, however defined. The main source is the Municipal Infrastructure Grant (MIG), supported by other smaller grant sources.

### **10.1 JGDM Budgeting Structure**

JGDM undertakes water and sanitation as its main service offering, while also undertaking other functions like district access roads, environmental and primary health, disaster management and other functions. All these are financed from mostly grants and user charges/agency fees.

The JGDM operating budget is divided into the following functional areas or departments:

- Executive & Council
- Budget & Treasury
- Water Services Provision
- Technical Services

- Community Services
- Corporate Services
- Other

Water and Sanitation Services provision comprise the bulk of the financial responsibilities of the district. Most municipal functions are structured to support this central mandate. The bulk of financial resources are therefore allocated to the functions of Water and Sanitation.

**Table 10.1 JGDM Revenue Sources**

Description	Adjusted Budget 2017/18	Budget 2018/19	Budget 2019/20	Budget 2020/21
Grants & Subsidies Received - Capital	215 712 338,00	209 500 000,00	243 024 600,00	238 552 300,00
Grants & Subsidies Received - Operational	397 599 400,00	368 285 922,00	315 692 400,00	358 149 220,00
Income for Agency Services	992 000,00	1 635 749,00	-	-
Interest Earned - External Investments	4 040 000,00	4 030 000,00	4 271 800,00	4 528 108,00
Interest Earned - Outstanding	15 386 333,00	24 018 138,67	25 459 226,99	26 986 780,61
Other Revenue	901 575,00	1 190 718,00	539 540,00	571 912,00
Nett Service charges	135 396 290,00	159 854 419,80	163 370 349,65	173 172 570,63
Service Charges	164 266 959,00	349 694 314,80	364 446 323,55	386 313 102,96
Less: Free Basic Services	(28 870 669,00)	(189 694 315,00)	(201 075 973,90)	(213 140 532,33)
Less: Revenue Foregone	-	(145 580,00)	-	-
<b>Grand Total</b>	<b>770 027 936,00</b>	<b>768 514 947,47</b>	<b>752 357 916,64</b>	<b>801 960 891,23</b>

Total Revenue decreased from R770 million in the 2017/18 Adjustment Budget to R768.5 million in the 2018/19 Final Budget. The 0.2% decrease is largely as result of a decrease in both Capital Operational Grants and subsidies.

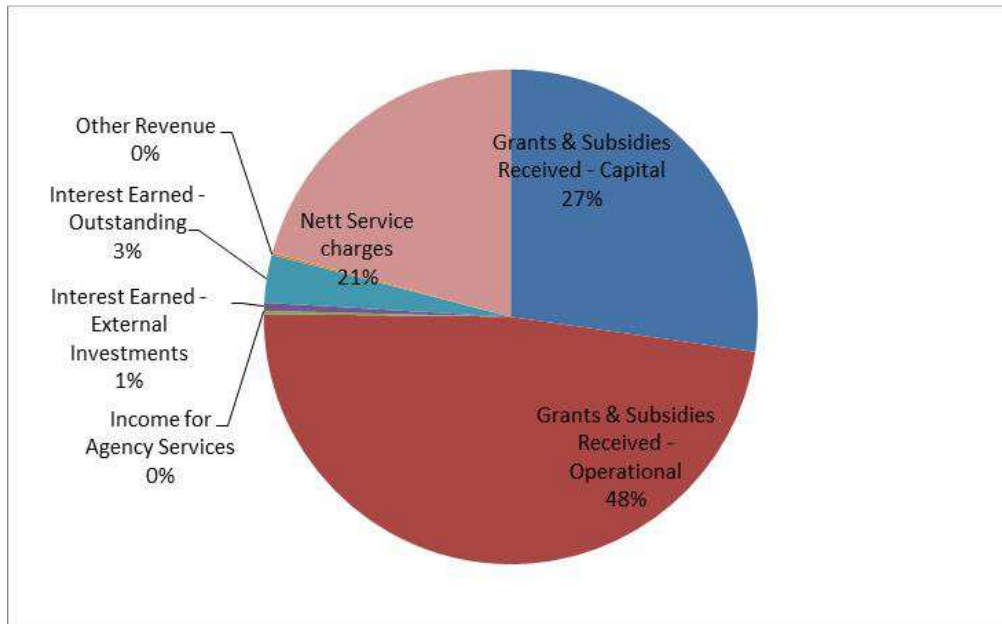


Figure 10.1 Revenue by main source

## 10.2 OPERATING COSTS

The JGDM has an Excel Database with all the individual line items for water and sanitation income and expenditure. The source of information is known as the JGDM SAMRAS spreadsheet. The information has been rearranged and extracted to facilitate easier analysis of the various components of income and expenditure items. The database has budgetary and actual information. An important point to note is that JGDM has a WSP unit that covers water and sanitation, assisted by other units in the municipality for other staff functions. The WSA function is mainly residing in the Community Services Directorate with other directorates performing staff functions in support.

**Table 10.2 Growth in expenditure by main type**

<b>Description</b>	<b>Adjusted Budget 2017/18</b>	<b>Budget 2018/19</b>	<b>Budget 2019/20</b>	<b>Budget 2020/21</b>
Bulk Purchases	9 000 000,00	10 000 000,00	10 313 800,00	10 932 628,00
Contracted Services	152 926 854,58	100 683 943,33	56 897 169,47	77 448 539,64
Debt Impairment	20 875 142,00	75 020 004,00	79 521 204,20	84 292 476,23
Depreciation and Amortisation	46 371 942,00	49 456 514,65	52 408 937,46	55 553 473,71
Employee Related Costs	190 651 379,77	204 357 707,46	214 946 485,22	227 843 274,33
Finance Charges	1 003 380,42	3 378 000,00	3 580 680,00	3 795 520,80
Grants and Subsidies Paid	11 825 000,00	9 305 000,00	9 361 291,38	9 646 968,86
Other Operating expenditure	97 462 104,93	110 318 672,64	84 905 205,50	89 081 455,23
Remuneration of Councilors	5 572 483,76	6 304 647,14	6 682 925,97	7 083 901,53
<b>Total</b>	<b>535 688 287,47</b>	<b>568 824 489,24</b>	<b>518 617 699,20</b>	<b>565 678 238,32</b>

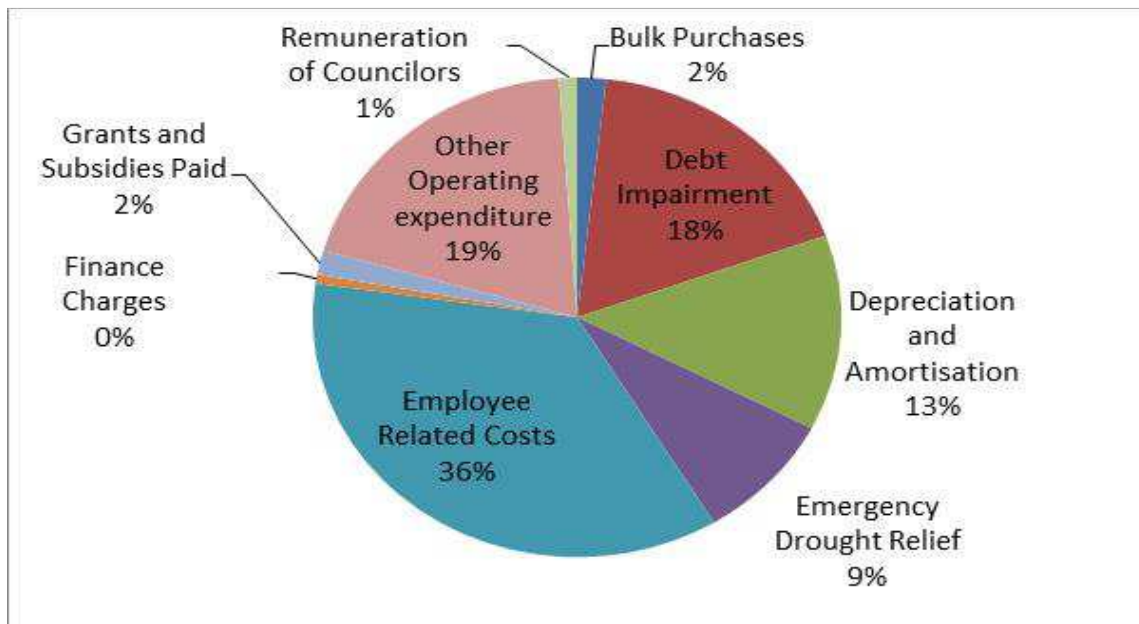
The budgeted allocation for employee related costs for the 2018/19 financial year totals R 204 million, which equals 36 percent of the total operating expenditure. The South African Local Government Bargaining Council have not reached an agreement with the Trade Unions and in the absence of a Wage Collective Agreement, employee costs have provisionally been increased by 7%.

Finance charges consist primarily of the repayment of interest on long-term borrowing (cost of capital). Finance charges (R 3.3 million) equates to 1 percent of the operating expenditure excluding annual redemption for 2018/19 financial year.

Bulk Purchases are primarily for bulk water purchases from the Department of Water and Sanitation, and they are allocated R10million for 2018/19 financial year, which represents an 11 percentage increase from the 2018/19 adjustment budget.

Repairs and Maintenance allocation is R 99.4million (including the employee costs of departments responsible for repairs and maintenance) for the 2018/19 financial year. The portion reflective as repairs and maintenance is only 17 percent of total operational expenditure. Bulk of the cost associated with repairs and maintenance comprises of employee costs, which comprises 65% of the total employee costs.





**Figure 10.2 2018/19 Expenditure by major types**

The social package assists households that are poor or face other circumstances that limit their ability to pay for services. To receive these free services the households are required to register in terms of the Municipality's Indigent Policy. The qualifying indigents will be provided with 6kl of water per month

The cost of the social package of the registered indigent households is largely financed by national government through the local government equitable share received in terms of the annual Division of Revenue Act.

### **10.3 EXPENDITURE AND INCOME**

The graph below illustrates actual expenditure against adjusted budgets and shows that JGDM generally operates a balanced budget. The figures for 2015/16 have been projected forward from March 2016.

The operating budget elements have been broken down into the following:

- Employee Expenses/Costs
- General Expenses inclusive of operational general expenses and finance costs (including depreciation allowances)

The income figure above is made up of the following components

- Grants & Subsidies Received - Capital
- Grants & Subsidies Received - Other
- Interest Earned - External Investments
- Other Revenue
- Income For Agency Services
- Service Charges
- Interest Earned - Outstanding

The main sources of income are the grant sources and service charges. The development of infrastructure within the Technical Services' Project Management Unit and the Water Services Provision receives the biggest portion of the total capital budget because water and sanitation infrastructure receives the highest allocation.

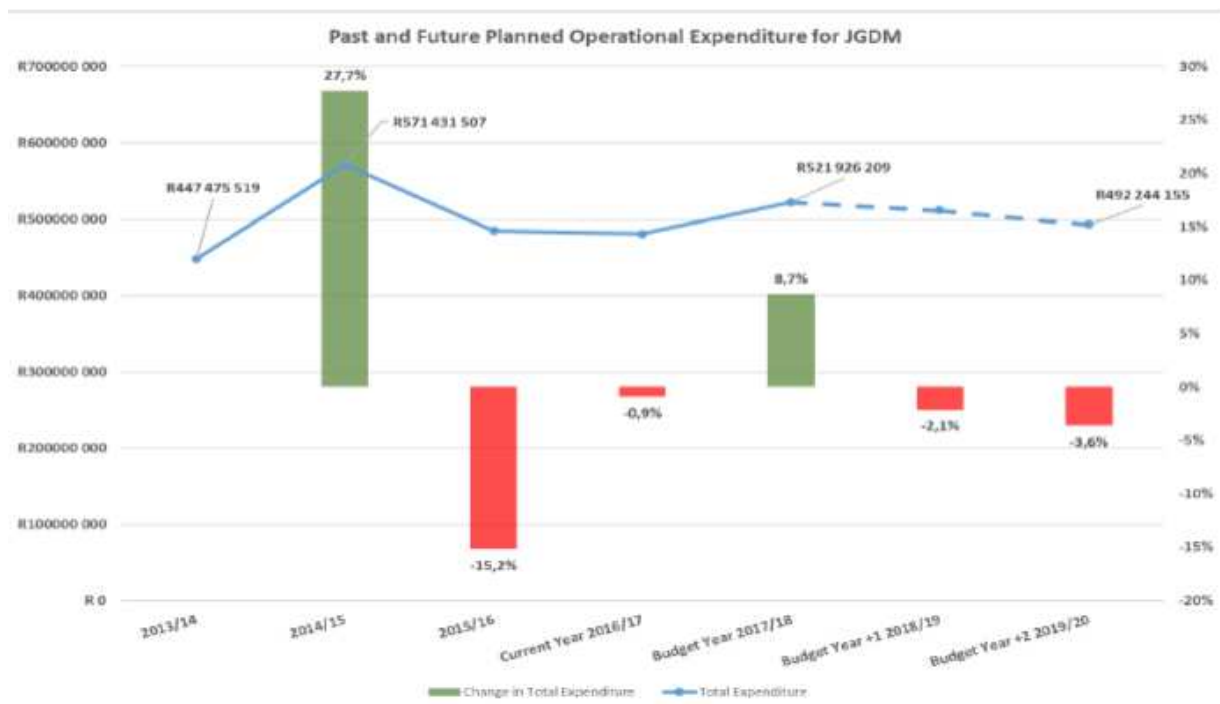


Figure 10.3 JGDM Operational expenditure

### Capital funds (MIG, RBIG, WSIG, NT Drought Relief Programme, etc)

The capital budget covers new works, refurbishments and upgrades to existing infrastructure in order to eradicate water services backlogs and also address the water needs for local economic development.

#### **10.4 SOURCES OF CAPITAL**

The current public sector sources of available capital for infrastructure creation and refurbishment comprise the following:

- Municipal Infrastructure Grant (MIG)
- Regional Bulk Infrastructure Grant (RBIG)
- Water Services Infrastructure Grant (WSIG) (an amalgamation of the Municipal Water Infrastructure Grant, Rural Household Infrastructure Grant and the Accelerated Community Infrastructure Programme (ACIP))
- COGTA grants

The MIG is a statutory grant with a relatively high assurance that is published under the Medium-Term Revenue and Expenditure Framework (MTREF) over a 3 years' window by the National Treasury under the Division of Revenue Act (DORA). The MIG is primarily for the provision of basic services (new works and upgrades) for indigent households.

The WSIG and RBIG are both Department of Water and Sanitation managed grants that are also published over three years in DORA and cover new works and improvements/refurbishments.

The other grant sources operate on a per project basis and the municipality competes with other municipalities for funding under these grants. The JGDM does make allowance for loan capital in its structure, but uptake of commercial loans has not been verified. The statutory funds available to the JGDM are as follows, according to the 2018/19 DORA Bill.

**Table 10.3 List of JGDM Operating Transfers and Grant Receipts**

**DC14 Joe Gqabi - Supporting Table SA18 Transfers and grant receipts**

Description	Ref	Current Year 2017/18			2018/19 Medium Term Revenue & Expenditure Framework		
		Original Budget	Adjusted Budget	Full Year Forecast	Budget Year 2018/19	Budget Year +1 2019/20	Budget Year +2 2020/21
<b>RECEIPTS:</b>	1, 2						
<b>Operating Transfers and Grants</b>							
<b>National Government:</b>		<b>302 887</b>	<b>344 042</b>	<b>344 042</b>	<b>311 496</b>	<b>315 321</b>	<b>357 756</b>
Local Government Equitable Share		239 160	239 160	239 160	258 283	273 008	295 103
Road Asset Management Systems Grant [Schedule 5B]		2 180	2 180	2 180	2 185	2 314	2 448
Expanded Public Works Programme Integrated Grant		2 227	2 227	2 227	2 254	-	-
Local Government Financial Management Grant [Schedule 5B]		1 250	1 250	1 250	1 320	1 785	1 510
Municipal Infrastructure Grant [Schedule 5B]		56 070	97 225	97 225	43 054	37 843	58 302
LG Seta		2 000	2 000	2 000	400	371	393
DBSA					4 000	-	-
<b>Provincial Government:</b>		<b>52 557</b>	<b>53 557</b>	<b>53 557</b>	<b>55 360</b>	<b>-</b>	<b>-</b>
Department of Environmental Affairs		38 000	38 000	38 000	15 160	-	-
Department of Roads and Public Works		11 600	11 600	11 600	40 200	-	-
DTI		957	957	957			
IDC - JoGEDA		2 000	3 000	3 000			
<b>Other grant providers:</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>1 430</b>	<b>371</b>	<b>393</b>
<i>Private Enterprises</i>					1 430	371	393
<b>Total Operating Transfers and Grants</b>	5	<b>355 444</b>	<b>397 599</b>	<b>397 599</b>	<b>368 286</b>	<b>315 692</b>	<b>358 149</b>

There are also other sources of grants from Sector Departments and external entities that may be accessed on an application basis to cover infrastructure and systems ("soft issues"). The JGDM has a list of projects that are to be funded by the Department of Cooperative Government and Traditional Affairs (COGTA). The Water Services Infrastructure Grants (WSIG) project funding on a project-by-project basis, with annual applications required to be submitted to DWS. This grant is available for remedial type capital works. The JGDM will utilise these funding opportunities when they are available.

JGDM has also successfully sourced grant funding from three other external grants, these are:

- The Eastern Cape Provincial Treasury Drought Relief Programme being implemented in Senqu and Walter Sisulu Municipal Areas;
- National Department of Environmental Affairs' Working for Water Programme grant;

- The ORIO funding Facility for Infrastructure Development that is managed by the Dutch Ministry of Foreign Affairs and its implementation has commenced in the 2017/18 municipal financial year. The funding is for the *Design and construction of water reticulation supply infrastructure for the rural settlements of the Elundini Municipal Area that are currently without formal or basic potable water supply*. The infrastructure being developed includes boreholes, rainwater harvesting, springs and communal standpipes; and
- The Belgian government funding through the National Department of Public Services (DPSA) under the Tirelo Bosha Programme to improve and finalise the Water Information Management System of JGDM with the aim of improving service delivery and customer care.

## 10.5 APPROVED 2018/19 TARIFFS AND CHARGES

The JGDM draft 2019/2020 tariffs have been published for public comment.

Appropriately set water and sanitation tariffs can go a long way to managing water demand and improve cost recovery. This is of course only true if effective metering, billing and credit control are in place. The setting of realistic annual water and sanitation tariffs also needs to take into consideration such issues as cost recovery, the overall municipal revenue enhancement strategy and other. The approved JGDM's Municipal-wide Water and Sanitation tariffs for the 2018/19 municipal financial year that have presented to council for approval are as follows:

**Table 10.4 JGDM 2018/19 Water and Sanitation Tariffs**

		TARIFFS in Rands (EXCLUDING 15% VAT)			
Description	Unit of Measure	2016/17	2017/18	2018/19	2019/20
<b>Water</b>					
<b>Basic Charge/Availability Charge</b>					
Domestic Consumers - Metered	Availability	66,22	70,20	74,41	78,87
Domestic Consumers - Unmetered	Availability	128,04	135,72	143,86	152,49
Business/industries - Metered	Availability	128,04	135,72	143,86	152,49
Business/industries - Unmetered	Availability	251,67	266,77	282,77	299,74
Rural Areas	Availability	120,45	127,68	135,34	143,46
<b>Water Consumption - Indigents</b>					
0 - 6 Kl	Consumption	Free	Free		
6 - 30 Kl	Consumption	8,53	9,04	9,58	10,16
31 - 50 Kl	Consumption	11,61	12,31	13,04	13,83
> 50 Kl	Consumption				15,21

		12,77	13,54	14,35	
Description	Unit of Measure	2016/17	2017/18	2018/19	2019/20
<b>Water Consumption - Other</b>					
0 - 6 Kl	Consumption	8,53	9,04	9,58	10,16
6 - 30 Kl	Consumption	11,61	12,31	13,04	13,83
31 - 50 Kl	Consumption	12,77	13,54	14,35	15,21
> 50 Kl	Consumption	14,05	14,89	15,79	16,73
<b>Other</b>					
Call out fees	Hourly rate	600,00	636,00	674,16	714,61
Reconnections	Hourly rate	600,00	636,00	674,16	714,61
New Connections	Hourly rate	1 500,00	1 590,00	1 685,40	1 786,52
Deposits	New consumer	750,00	795,00	842,70	893,26
Unforeseen interventions		600,00	636,00	674,16	714,61
Water carting -Delivery costs	Urban Domestic	500,00	530,00	561,80	595,51
Water carting -Delivery costs	Commercial	1 000,00	1 060,00	1 123,60	1 191,02
Water carting -Delivery costs	Government institutions	750,00	795,00	842,70	893,26
Water carting - per Kl only	kl	14,05	14,89	15,79	16,73
Description	Unit of Measure	2016/17	2017/18	2018/19	2019/20
		R	R	R	R
<b>Sanitation</b>					
<b>Basic charge/Availability Charge</b>					
Domestic	Availability	104,90	111,19	117,87	124,94
Sanitation buckets	Availability	-	-	-	-
Water Bourne sewerage - Domestic	Per connection	111,20	117,87	124,94	132,44
Water Bourne sewerage - Schools	Per connection	224,72	238,20	252,50	267,65
Water Bourne sewerage - Hostels	Per connection	224,72	238,20	252,50	267,65
Water Bourne sewerage - Hospitals	Per connection	561,80	595,51	631,24	669,11
Businesses	Per connection	222,39	235,73	249,88	264,87
Government Departments	Per connection	222,39	235,73	249,88	264,87
<b>Waste Water Charge</b>					
0 - 6 Kl	Consumption/indigent	free	free		
0 - 6 Kl	Consumption	1,00	1,06	1,12	1,19
6 - 12 Kl	Consumption	1,83	1,94	2,06	2,18
> 12 KL	Consumption	2,02	2,14	2,27	2,41

Description	Unit of Measure	2016/17	2017/18	2018/19	2019/20
<b>Other</b>					
New connections	Hourly rate	750,00	795,00	842,70	893,26
Cleaning of pipes etc.	Hourly rate	320,00	339,20	359,55	381,13
Septic tank	Per Draw	385,00	385,00	408,10	432,59
Unforeseen interventions	per hour	600,00	636,00	674,16	714,61
<b>Pre-paid water and Sanitation - Residential</b>					
0 - 6 Kl	Consumption		14,32	15,18	16,09
6 - 30 Kl	Consumption		18,20	19,29	20,45
31 - 50 Kl	Consumption		19,57	20,74	21,99
> 50 Kl	Consumption		20,93	22,18	23,51
<b>Pre-paid water and Sanitation - Business and Government</b>					
0 - 6 Kl	Consumption		19,07	20,21	21,43
6 - 30 Kl	Consumption		22,95	24,33	25,79
31 - 50 Kl	Consumption		24,32	25,78	27,33
> 50 Kl	Consumption		25,68	27,22	28,85
Non-compliance with any Municipal by-law	1st Notice	1 500,00	1 850,00	1 961,00	2 078,66
	2nd Notice	2 000,00	2 500,00	2 650,00	2 809,00
	3rd Notice	3 000,00	3 500,00	3 710,00	3 932,60
Illegal water connection	1st Notice	-	1 850,00	1 961,00	2 078,66
	2nd Notice	-	2 500,00	2 650,00	2 809,00
	3rd Notice	-	3 500,00	3 710,00	3 932,60

Tariff-setting is a pivotal and strategic part of the compilation of any budget. When rates, tariffs and other charges were revised, local economic conditions, input costs, Value added tax increase and the affordability of services were taken into account to ensure the financial sustainability of the municipality.

National Treasury continues to encourage municipalities to keep increases in rates, tariffs and other charges as low as possible. Municipalities must justify in their budget documentation all increases in excess of the 6.45 percent. Excessive increases are likely to be counterproductive,

resulting in higher levels of non-payment. The basic charges and consumption charges on conventional meters and that on pre-paid meters were increased by 8 and 4 percent respectively.

In terms of consumptive water usage, the municipality is implementing the Increasing-Block Tariff that is well-established in South Africa and it has the following advantages:

- The tariff is progressive in the sense that consumers who use more water due to affluence will pay more;
- The blocks in the tariff can be designed to have in-built cross subsidization between those that can afford and the indigent;
- The tariff can also use the pricing mechanism to control demand as higher water use costs more per unit consumed. It therefore has automatic demand management characteristics;
- It can be structured to assist in drought by having tariffs that kick in when water levels are low to use the price mechanism to contain consumption by increasing prices drastically to affect demand and use.

The installation of prepaid meters has increased by 4% from the 2017/18 fee and the rationale is to encourage customers to move from the conventional meters and to improve revenue.

A significant feature in the latest tariffs is the Prepaid Meter rates introduced during with the 2017/18 for both residential and public institutions. The municipality has initiated Prepaid Meter project for the purpose of both managing water demand and also contribute to cost recovery and revenue enhancement initiatives of the district. The project was piloted in Aliwal North then extended to Barkly East, and the intention is conduct a customer-driven expansion of the initiative across the district.

## **10.6 COST RECOVERY**

In order to enhance its metering, billing and revenue collection, JGDM utilizing the service of private company (SEBATA) to assist in the undertaking of meter reading throughout the district **with a focus on Aliwal North, Barkly East and Lady Grey.**

As of the end of the third quarter of the 2017/18 municipal financial year, JGDM's revenue collection has been unsatisfactorily low at approximately 30%. Communication channels that have been initiated and established with a number of government departments resulting in Eastern Cape Department of Education paying all their arrears during March 2018. Regular



monthly payments have been received from almost all government departments even though their accounts are still not up to date.

### **10.7 CUSTOMER PAYMENT OPTIONS**

The Joe Gqabi District Municipality offers six different ways a customer can pay their water and sanitation bill:

1. In person over the counter; and
2. **ATM and EFT payments.**

### **10.8 FINANCIAL PROFILE CHALLENGES AND RISKS**

- Inadequate revenue collection;
- Resistance from communities for installation of pre paid meters
- Lack of knowledge amongst communities to take ownership of leaks and responsibility to pay for the water services received;
- Off-site prepaid sales facilities throughout the district; and
- Lack of billing office in Mt Fletcher.

### **10.9 FINANCE OBJECTIVES AND STRATEGIES**

- Improve the municipal revenue collection;
- **The District should explore ways of linking water accounts with Eskom and Local municipalities to recover debt owed by consumers;**
- **The District should explore revenue collection mechanism including rural areas;**
- Develop a strategy for revenue collection in rural areas and update the JGDM Revenue Enhancement Strategy;
- Facilitate the extension of the prepaid meter installation programme to all properties with no meters within the district;
- Establish a billing office in Mt Fletcher in order to improve service delivery to the community and to collect monies;
- Contract Management and Project Management working closely to close any gaps in managing infrastructure projects; and
- Review of the Credit Control and Debt Collection Policies in order to achieve a higher collection rate.

## **SECTION 11: PROJECT DEVELOPMENT**

The municipal planning and development of water and sanitation infrastructure development capital projects is located within the Technical Services Department of the district. The Project Management Unit (PMU) is responsible for the capital funded infrastructure development projects funded from a number of grants funding from the fiscus and external funders.

The Operational related projects for the refurbishment, renewal and expansion of the existing infrastructure are undertaken by the Water Services Provision section as it is deemed as an extension of its Operation and Maintenance function.

### **11.1 WATER SERVICES DEVELOPMENT PROJECTS**

The comprehensive water and sanitation infrastructure development needs will be appropriately presented in the Water Services Development Plan as follows:

- Resource
- Bulk
- Reticulation
- Non-technical

### **11.2 CURRENT MAJOR PROJECTS**

An ideal capital programme has a healthy mix between the following capital programmes

- Backlog eradication
- Renewals
- Refurbishments
- Catch-up programme on deferred maintenance

Due to historical factors, backlogs eradication are a dominant component of the capital programme. The projects will be categorised in short and medium term to Long term projects.

Below is a list of Council approved 3-year MTEF Infrastructure Development projects for the 2019/20 municipal financial year onwards:

**Table 11-1 2019/2020 – 2021/2022 Three-Year Infrastructure Development Plan**

PROJECT NAME	LM	PROJECT TYPE:	Project Status	APPROVED BUDGET	BUDGET IMPLICATION	PROJECTED EXPENDITURE (Incl VAT)		
						2019/20	2020/2021	2021/2022
<b>MUNICIPAL INFRASTRUCTURE GRANT</b>								
1. Prov of Bulk Water Infrastructure for the Town of Ugie Phase B	Elundini	Water	Tender	R 143 188 982	CAPITAL	R4 000 000	R 7 000 000	R 0
2. Sterkspruit: Upgrading of WTW and Bulk Lines: Phase II	Senqu	Water	Construction	R 77 026 858	CAPITAL	R 12 000 000	R 0	R 0
3. Senqu Rural Sanitation Programme: Phase 4&5	Senqu	Sanitation	Construction	R 48 958 842	OPERATIONAL	R 25 000 000	R15 000 000	R 12 000 000
4. Senqu Rural Water Supply: Network Extension	Senqu	Water	Construction	R 75 349 668	CAPITAL	R 25 000 000	R 25 000 000	R 0
5. Elundini Rural Sanitation Programme: Phase 4&5	Elundini	Sanitation	Construction	R 46 139 223	OPERATIONAL	R 25 000 000	R 15 000 000	R 13 259 950
6. Elundini Rural water Programme (ORIO)	Elundini	Water	Tender	R 143 813 803	CAPITAL	R 10 024 600	R 16 000 000	R 0
7. Jamestown sanitation Phase 2 (Pipelines)	WSLM	Sanitation	Tender	R 50 193 464	CAPITAL	R 10 000 000	R 25 000 000	R 0
8. Maclear Water Treatment & Distribution Upgrade (WTW & AC Pipe Replacement)	Elundini	Water	Tender	R 226 644 753	CAPITAL	R 0	R 0	R 96 000 000
9. Bulk Sanitation Infrastructure Upgrade for Maclear Phase 3B	Elundini	Sanitation	Tender	R 60 447 551	CAPITAL	R 0	R 0	R 49 000 000
10. Up-scaling of Barkly East Bulk Water Infrastructure	Senqu	Water	Construction	R 42 490 377	CAPITAL	R 20 000 000	R 20 000 000	R 0
11. Aliwal North WTP Off-Channel Dam	WSLM	Water	Planning	NR	CAPITAL	R 10 000 000	R 10 000 000	R 0
12. Upgrading of Sanitation Services for Ugie	Elundini	Sanitation	Planning	NR	CAPITAL	R 5 000 000	R 25 000 000	R 0
13. Venterstad Water Services	WSLM	Water	Planning	NR	CAPITAL	R 3 000 000	R 0	R 0
14. PMU Top Slice	N/A	N/A	Planning	R 7 843 400	OPERATIONAL	R 7 843 400	R 8 034 000	R 8 961 050
<b>TOTAL</b>						<b>R 156 868 000</b>	<b>R 166 034 000</b>	<b>R 179 221 000</b>

**Table 11-1 2019/2020 – 2021/2022 Three-Year Infrastructure Development Plan (Continued)**

PROJECT NAME	LM	PROJECT TYPE:	Project Status	APPROVED BUDGET	SOURCE OF FUNDING	BUDGET IMPLICATION	PROJECTED EXPENDITURE (Incl VAT)		
							2019/20	2020/2021	2021/2022
<b>REGIONAL BULK INFRASTRUCTURE GRANT (RBIG) - DWS</b>									
1. Sterkspruit Regional Bulk Sanitation	Senqu	Sanitation	Design	120 000 000,00	RBIG	CAPITAL	R 0	R 20 000 000	R 76 373 500
2. Lady Grey Bulk Water Supply	Senqu	Water	Design	No Year Approved	RBIG	CAPITAL	R 0	R 20 000 000	R 76 373 500
<b>TOTAL</b>							<b>R 0</b>	<b>R 40 000 000</b>	<b>R 152 747 000</b>
<b>WATER SERVICES INFRASTRUCTURE GRANT (WSIG) - DWS</b>									
PROJECT NAME	LM	PROJECT TYPE:	Project Status	APPROVED BUDGET	SOURCE OF FUNDING	BUDGET IMPLICATION	PROJECTED EXPENDITURE (Incl VAT)		
							2019/20	2019/20	2019/20
1. DC14_P10163-101_Refurbishment of Burgersdorp WWTW	WSLM	Sanitation	Planning	20 000 000,00	WSIG	CAPITAL	No Year Approved	No Year Approved	No Year Approved
2. DC14_P10162-101_District Wide Telemetry System	District wide	Water	Implementation	15 000 000,00	WSIG	CAPITAL	No Year Approved	No Year Approved	No Year Approved
3. DC14_P10162-102_Rural Rudimentary Water Supply	District wide	Water	Planning	5 000 000,00	WSIG	CAPITAL	No Year Approved	No Year Approved	No Year Approved
4. DC14_P10162-103_Refurbishments of WTWs	District wide	Water	Implementation	5 000 000,00	WSIG	CAPITAL	No Year Approved	No Year Approved	No Year Approved
5. DC14_P10162-104_Argumentation of Clear Water Storage for Herschel and Rhodes	Senqu	Water	Planning	7 000 000,00	WSIG	CAPITAL	No Year Approved	No Year Approved	No Year Approved
6. DC14_P10162-105_Acquire Bulk Meters	District wide	Water	Tender	7 000 000,00	WSIG	CAPITAL	No Year Approved	No Year Approved	No Year Approved
<b>TOTAL</b>									

The district experienced an unusual under-utilization of the MIG funding in the 2018/19 due to a number of reasons especially the unsatisfactory performance of its implementing agents and contractors. The district has made a decision to cut ties with The Mvula Trust at the beginning of the municipal year and utilize the Joe Gqabi Economic Development Agency (JoGEDA) as an implementing agent for the implementation of the rural water and sanitation programme in Elundini and Senqu Municipal areas.

The two Regional Bulk Infrastructure Grant funded projects have both progressed from the Implementation Readiness Study (IRS) phases of the Department of Water and Sanitation's funding phases. Therefore, both projects should be moving over to the construction phase and will require intense monitoring to ensure that they are effectively implemented as the department is becoming stricter in poor performance and under-expenditure due to the fierce competition for budget.

The ongoing difficulties in the national and local economy will have a significant impact on the availability and magnitude of the funding for infrastructure development. The district would be wise to improve its spending, project and contracts management in order to ensure that it receives best value for the funds allocated.

### **11.3 Integrated Water and Sanitation Master Plan**

The district has received assistance from the Development Bank of Southern Africa (DBSA) for the compilation of a single municipal wide master plan by the end of the 2018/19 financial year. The process involved the consolidation of the numerous town-specific master plans and the integration of plans from the infrastructure developed during the past couple of years. Some of the main plans are covered under the water resources section of this document. The intention with a multi-year plan that takes a 10-year view is to understand the full financial needs and the impact on the capital plan.

The post of the Manager: Project Management Unit (PMU) under the Technical Services Department has been filled during the 2017/18 financial year and this will greatly enhance the water and sanitation infrastructure development activities of the municipality. An EPWP Coordinator has also been appointed in the PMU Section during 2018/19.

**Table 11.2 Unfunded water and sanitation projects for Elundini Local Municipal area**

LM	Project Origin	Project Name	Project Description	Main Category
All LM	Own-Muni	Development of an Operation and Maintenance Plan	Development of an Operation and Maintenance Plan for the whole district	Water
All LM	Own-Muni	Review current Asset Register	Review current Asset Register	Water
All LM	WSIG	Implement a district wide WC&DM Strategy	Implement WC&DM strategy	Water
Elundini	MIG	Maclear Upgrading Bulk Sanitation	WWTW upgrade from 0.7 to 1.4Ml/d. Connect houses Maclear, Vincent & Sithole	Sanitation
Elundini	MIG	Ugie Bulk Sanitation Upgrade and sewer outfall	Upgrade of sewer bulk lines and upgrade of outfall sewer in Ugie	Sanitation
Elundini	MIG	Elundini: Maclear Outfall Sewer & Treatment Works	Maclear Outfall Sewer & Treatment Works	Sanitation
Elundini	MIG	Mount Fletcher Rural Water Supply	Mount Fletcher Rural Water Supply	Water
Elundini	MIG	Maclear Raw Water Storage Facility	Maclear Raw Water Storage Facility - Ward 3 - EIA & Implementation Purification Plant	Water
Elundini	MIG	Elundini Rural Water Programme	Elundini Rural Water Programme - provision of water infrastructure to 206 villages	Water
Elundini	MIG	Elundini Rural Sanitation Programme	Elundini Rural Sanitation Programme	Sanitation
Elundini	RBIG	Mount Fletcher RWSS Upgrade - pipelines	Feasibility Study for Mount Fletcher Bulk Water Supply	Water
Elundini	MIG	Construction of Ugie Dam	Construction of Ugie Dam	Water
Elundini	RBIG	Maclear Bulk Water Augmentation	Construction of a pipeline from Ugie to Maclear to augment existing water supply to Maclear	Water
Elundini	RBIG	Ugie RWSS Upgrade - reservoirs	Ugie RWSS Upgrade - reservoirs	Water
Elundini	RBIG	Mount Fletcher Town Bulk Sanitation Supply and Sewer outfall	Feasibility Study for Mount Fletcher Bulk Sanitation Supply and WWTW	Sanitation
Elundini	MIG	Mount Fletcher Town Bulk Water Supply	Mount Fletcher Bulk Water Supply	Water
Elundini	MIG	Ugie: Provision of Bulk water infrastructure for the town of Ugie	Ugie: Provision of Bulk water infrastructure for the town of Ugie	Water
Elundini	MIG	Maclear: Water treatment and distribution upgrade	Maclear: Water treatment and distribution upgrade	Water

**Table 11.3 Unfunded water and sanitation projects for Senqu Local Municipal area**

Project Origin	Project Name	Project Description	Main Category	
Other	Augmentation of Bulk Water Supply in Lady Grey	Augmentation of Bulk Water Supply (WTW) in Lady Grey. Drilling of 8 additional boreholes, refurbish 6 existing boreholes and construct 4 additional reservoirs	Water	R80 000 000
RBIG	Sterkspruit RWSS Bulk Scheme	Replace all rural stand alone schemes	Water	R250 000 000
MIG	Rhodes Bulk Water Supply	Augmentation of river supply from existing weir	Water	R5 000 000
MIG	Rhodes Bulk Water Supply (telemetry)	Telemetry integration of Rhodes to Senqu system	Water	R3 000 000
MIG	Barkly East Raw Water Abstraction	Reconfigure abstraction pipe-work and refurbish pumpstation and pipe-work	Water	R10 000 000
MIG	Barkly East Raw Water WTW Upgrade	Upgrading of the Water Treatment Plant	Water	R30 000 000
RBIG	Lady Grey Bulk Water Supply	Construction of a dam at at the Karringmelkspruit to augment the existing water supply sources in Lady Grey Town	Water	R128 533 000
RBIG	Sterkspruit RWSS Upgrade - bulk pipelines	Sterkspruit RWSS Upgrade Phase 2 - Bulk pipelines	Water	R54 000 000
MIG	Senqu Rural Water Supply Programme	Senqu Rural Water Supply Programme	Water	R85 000 000
MIG	Senqu Rural Sanitation	Rural Sanitation - Wards 1 - 15 in Senqu	Sanitation	R102 761 477
RBIG	Sterkspruit Bulk Sanitation Supply	Sterkspruit Bulk Sanitation Supply	Sanitation	R140 000 000
MIG	Sterkspruit: Upgrading of Sterkspruit WTW and bulk supply lines	Sterkspruit: Upgrading of Sterkspruit WTW and bulk supply lines - Phase 2	Water	R110 000 000
MIG	Herschel Sanitation Project Phase 2	Herschel Sanitation Project Phase 2	Sanitation	R0
RBIG	Sterkspruit RWSS Upgrade - reservoirs	Sterkspruit RWSS Upgrade Phase 2 - Reservoirs	Water	R9 036 000
MIG	Sterkspruit RWSS Illegal connections	Address illegal connections through political intervention	Water	R5 923 000
MIG	Rockcliff and surrounds Illegal connections	Address illegal connections through political intervention	Water	R5 000 000

**Table 11.4 Unfunded water and sanitation projects planned for Walter Sisulu Local Municipal area**

LM	Project Origin	Project Name	Project Description	Main Category	Total Project Cost
Walter Sisulu	MIG	Gariep Water Master Plan	Develop a Water Master Plan for Gariep	Water	R500 000
Walter Sisulu	MIG	Burgersdorp Bulk Water Augmentation	Construction of a pipeline from Oviston to Burgersdorp to augment existing water supply to sources in Burgersdorp	Water	R163 000 000
Walter Sisulu	Other	Burgersdorp Bulk pipelines upgrade	Replacement of old AC Gravity Mains in Burgersdorp (Gariep)	Water	R150 000 000
Walter Sisulu	MIG	Steynsburg Waterborne Sanitation Phase 3	Steynsburg Construction of WWTW, outfall sewer, etc - Phase 3	Sanitation	R24 108 039
Walter Sisulu	Other	Aliwal North Bulk Sanitation Upgrade and sewer outfall	Replacement of sewer bulk lines and upgrade of outfall sewer in Aliwal North. Replacing of old clay sewer pipe line with 200mm with manholes at regular intervals	Sanitation	R30 000 000
Walter Sisulu	MIG	Aliwal North Bulk pipelines upgrade	Replacement of old AC Gravity Mains in Aliwal North	Water	R90 000 000
Walter Sisulu	RBIG	Abstracting water from the Orange River for use in the Senqu & Maletswai LMs	Utilising the Orange River as the water resource for the Economic & Agricultural Development Plan of Senqu & Maletswai LMs	Water	R282 000 000
Walter Sisulu	MIG	Venterstad Town Galaxy Reservoir	Implement reservoirs and address leakages and illegal connections	Water	R10 428 500
Walter Sisulu	MIG	Aliwal North Raw Water Storage Ponds	Reduce the intake of sediments at the existing WTW by constructing additional parallel ponds by conducting a feasibility study	Water	R10 500 000
Walter Sisulu	Other	Steynsburg Town Galaxy Reservoir	Implement reservoirs and address leakages & illegal connections	Water	R10 000 000
Walter Sisulu	MIG	Jamestown sanitation phase 2	Jamestown bucket eradication & sanitation project -phase 2	Sanitation	R38 550 081



#### **11.4 PROJECT DEVELOPMENT CHALLENGES AND RISKS**

- The lack of capacity for the monitoring, documenting and reporting of the jobs created under the various infrastructure grant as per the requirements of EPWP;
- Under-expenditure on the water and infrastructure grants (MIG and WSIG); and
- A number of complaints have been received about the municipal infrastructure development and maintenance activities that result in damaged road surfaces **and incomplete projects.**

#### **11.5 PROJECT DEVELOPMENT STRATEGIES AND OBJECTIVES**

- **The district will explore external funding sources to leverage the available resources for the development of water and sanitation infrastructure;**
- JGDM will endeavour to ensure that there is an agreement with the local municipalities for a process that ensures that during and post-water services infrastructure development and maintenance activities, and all the damaged road surfaces are restored to their original condition: **TBC with WSP; and**
- **Effective monitoring and evaluation of the development of water and sanitation infrastructure projects.**

## **SECTION 12: CONCLUSION**

The taking over of the water services provision function from the local municipalities has required the municipality to acquire adequate and competent personnel at various levels in order to discharge this accountability effectively. It is a balancing act to attract, retain and develop the required level of technical personnel that will enable the municipality to maintain acceptable levels of infrastructure functionality together with effective implementation of the capital programme within the constrained financial and economic conditions.

In the 2017/18 municipal financial year, through its operational budget and capital infrastructure development programme the district has managed utilize the available grants to ensure the provision of water services to the majority of its population and extend services to those communities that were previously not served.

A key objective must be to improve the financial resources available for the operations and maintenance of the services. Capital is generally a key focus and allocations are more specifically circumscribed. Depending on the strategies and tactics followed by the JGDM, the services backlog can be tackled and eradicated in medium to long-term.

It is however the operational capabilities that will have the more lasting impact. Good operational capability can maximize the value extracted from most infrastructure endowments.

An important constituent of a viable infrastructure base is assessing the appropriateness of technology choices for the circumstances and ensuring the operational integrity of the investment. Planning times must be increased to allow for sound engineering at inception with the view to reduce lifecycle costs of the infrastructure being planned and allow for more operational risk assessments.

Water services provision is about product quality and quantity. Product quality makes the highest impact on both consumers and the environment. Households must receive wholesome water that is not deleterious to health. Discharges of wastes into the environment must meet stringent requirements such that it will not degrade the receiving environment or its assimilative capacity and negatively affect human health. There are existing standards that must be met and all systems must be designed and/or operated to meet national standards of quality.

Wastewater effluent quality must meet the general or special limits depending on licence requirements in order to reduce potential pollution of the receiving environment.

Customers, be they domestic or otherwise are at the centre of water services provision. The needs and aspirations of the customers must receive the full attention of the water services provider. It is imperative for the municipality to proactively communicate and inform customers and not to wait for them to raise issues. The perceptions of customers therefore need to be seriously considered and managed. The Prepaid Meter project is one of the WCDM initiatives that will assist the municipality in enhancing its revenue base and also reduce the consumer water consumption.

The implementation of Water Conservation and Demand Management is important in ensuring the preservation of the already limited raw water sources and also incorporates balancing of competing needs and issues of equity between competing needs.

**ANNEXURE A**  
**JOE GQABI DISTRICT MUNICIPALITY**  
**DRAFT WATER SERVICES TARIFFS: FINANCIAL YEAR (01 July 2019 – 30 June 2020)**  
**(ALL TARIFFS ARE EXCLUDING VAT @ 15%)**

Description	Approved 2018/2019 (Excluding VAT)	Proposed 2019/2020 (Excluding VAT)	Approved 2018/2019 (Excluding VAT)	Proposed 2019/2020 (Excluding VAT)	Approved 2018/2019 (Excluding VAT)	Proposed 2019/2020 (Excluding VAT)
	Part A: Applicable during times of normal water availability		Part B: Applicable during times of water shortage when the situation is critical but not an emergency (This is a new tariff structure since 18/19)		Part C: Applicable during a water shortage emergency (This is a new tariff structure since 18/19)	
<b>CHARGES FOR SUPPLY OF WATER</b>						
Water supplied shall be charged at the appropriate rate as set out in the Part A, B and C hereunder, as Council shall determine from time to time.						
<u>Conventional metering:</u>						
<b>i) Residential (Including Indigents)</b>						
(The first 6kl of water will be free to all the registered indigent consumers whereafter the same tariffs as below will be applicable)						
Up to 0,2kl/d (0 - 6 kl)	9,77	10,39	9,77	10,39	9,77	10,39
Next 0,4kl/d (7 - 18 kl)	13,29	14,15	13,29	14,15	13,29	14,15
Next 0,4kl/d (19 -30 kl)	13,29	14,15	14,62	16,98	26,58	26,58
Next 0,6kl/d (31 - 48kl)	14,89	21,22	29,24	32,16	53,16	56,35
Additional consumption (per kl)	23,83	33,96	87,71	51,46	159,49	159,49
<b><u>Churches and Registered charity organisations will be charged under this tariff as from 19/20</u></b>						
<b>ii) Commercial and Industrial</b>						
Up to 0,2kl/d (0 - 6 kl)	9,77	10,39	9,77	10,39	9,77	10,39
Next 0,4kl/d (7 - 18 kl)	13,29	14,15	13,29	14,15	13,29	14,15
Next 0,4kl/d (19 -30 kl)	13,29	14,15	14,62	14,15	26,58	14,15
Next 0,6kl/d (31 - 48kl)	14,62	21,22	29,24	32,16	53,16	56,35
Additional consumption (per kl)	16,08	33,96	87,71	87,71	159,49	159,49

iii) Institutional (National, Provincial and Local Government)							
	Approved 2018/2019	Proposed 2019/2020	Approved 2018/2019	Proposed 2019/2020	Approved 2018/2019	Proposed 2019/2020	
Flat rate	14,62	21,22	21,93	32,16	39,87	56,35	
<b>Pre paid metering:</b>							
i) Residential (Excluding Indigents) (First 3kl of water is free)							
	Approved 2018/2019	Proposed 2019/2020	Approved 2018/2019	Proposed 2019/2020	Approved 2018/2019	Proposed 2019/2020	
Up to 0,2kl/d (0 - 6 kl)	14,89	14,89	14,89	14,89	14,89	14,89	
Next 0,4kl/d (7 - 18 kl)	18,93	20,15	18,93	20,15	18,93	20,15	
Next 0,4kl/d (19 -30 kl)	18,93	20,15	20,35	20,15	37,85	37,85	
Next 0,6kl/d (31 - 48kl)	20,35	26,19	30,53	26,19	75,71	75,71	
Additional consumption (per kl)	23,02	31,43	45,79	39,29	189,27	189,27	
<b>(Average increase of 4%, any consumption above 54kl will increase with 20%)</b>							
ii) Commercial and Industrial (First 3kl of water is free)							
	Approved 2018/2019	Proposed 2019/2020	Approved 2018/2019	Proposed 2019/2020	Approved 2018/2019	Proposed 2019/2020	
Up to 0,2kl/d (0 - 6 kl)	19,83	19,83	19,83	19,83	19,83	19,83	
Next 0,4kl/d (7 - 18 kl)	23,87	25,41	23,87	25,41	23,87	25,41	
Next 0,4kl/d (19 -30 kl)			25,29	25,41	48,64	37,85	
Next 0,6kl/d (31 - 48kl)	25,29	33,03	37,94	26,19	97,28	75,71	
Additional consumption (per kl)	28,25	39,64	56,91	41,91	243,21	189,27	
<b>(Average increase of 4%)</b>							
iii) Institutional (National, Provincial and Local Government)							
	Approved 2018/2019	Proposed 2019/2020	Approved 2018/2019	Proposed 2019/2020	Approved 2018/2019	Proposed 2019/2020	
Flat rate	23,87	33,03	25,29	25,41	48,64	37,85	

	Approved 2018/2019	Proposed 2019/2020	Approved 2018/2019	Proposed 2019/2020	Approved 2018/2019	Proposed 2019/2020
<b>iv) Indigents (First 6kl are subsidised)</b>						
Flat rate	14,89	14,89	14,89	14,89	14,89	14,89
<b>Water delivered by road tanker (Treated)</b>						
i) Charge for water supplied	23,87	33,03	37,94	39,29	72,96	75,71
ii) Delivery charge (per km)	25,00	30,00	25,00	30,00	25,00	30,00
iii) Minimum prepayment	1 565,22	1 659,13	1 565,22	1 659,13	1 565,22	1 659,13
<b>AVAILABILITY CHARGE IN RESPECT OF EACH COMMUNICATION PIPE</b>						
a) Pipe connection from the bulk supply line						
Domestic Consumers - Metered	75,81	80,36				
Domestic Consumers - Unmetered	453,39	480,59				
Business/industries - Metered	146,58	155,37				
Business/industries - Unmetered	524,16	555,60				
Rural Areas	137,90	146,17				
b) No pipe connection from the bulk supply line						
Domestic	75,81	80,36				
Business/industries	146,58	155,37				

<b>OTHER WATER SUPPLY CHARGES</b>		
	<b>Approved 2018/2019</b>	<b>Proposed 2019/2020</b>
New connection up to 22mm diameter	3 304,35	3 502,61
(Note that previously a rate of R1590 per hour was charged)		<b>OTHER CHARGES</b>
New connection up to 22mm diameter exceeding 15m in length and connections exceeding 22mm diameter	6 608,70	7 005,22
(Note that previously a rate of R1590 per hour was charged)		
New connection for low cost housing	1 652,17	1 751,30
<b>(New charge)</b>		
Bulk connection for developers	826,09	875,65
<b>(New charge)</b>		
Interruption and restoration of supply by consumer's request - :		
- Interruption	826,09	875,65
- Restoration	826,09	875,65
<b>(New charge)</b>		
Installation of a pre-paid meter (1 per erf)	FREE	FREE
Additional pre-paid meter per erf up to 15	3 043,48	3 043,48
Additional pre-paid meter per erf more than 15	2 173,91	2 173,91
<b>(Special rates might be applied for - Approval by Accounting Officer)</b>		
<b>(New charge)</b>		
Meter inspection (On request of consumer - prepayment)	521,74	553,04
Meter testing (On request of consumer - prepayment)		
- Up to 40 mm	1 913,04	2 027,83
- 40 mm - 100mm	2 434,78	2 580,87
- Larger than 100mm	2 782,61	2 949,57
<b>(New charge)</b>		
Water deposits (New consumer/New owner)	850,00	850,00

## SANITATION SERVICES

### 2019/2020 FINANCIAL YEAR (01 July 2019 – 30 June 2020)

Description	Unit	Approved 2018/2019		Proposed 2019/2020
		(Excluding VAT)		(Excluding VAT)
<b>CHARGES FOR EFFLUENT DISCHARGE:</b>				
(Effluent is based on 70% of water consumption)				
Sewerage - Erven with Metered Potable Water Supply				
a) Residential/Domestic				
0 - 6 kl	R	1,12		1,21
6 - 12 kl	R	2,06		2,22
> 12kl	R	2,27		2,45
b) Commercial and Industries:				
0 - 6 kl	R	1,12		1,21
6 - 12 kl	R	2,06		2,22
> 12kl	R	2,27		2,45
c) Government institutions:				
0 - 6 kl	R	1,12		1,21
6 - 12 kl	R	2,06		2,22
> 12kl	R	2,27		2,45
d) Indigent consumers				
First 6 kl free				
0 - 6 kl	R	-		-
6 - 12 kl	R	-		-
> 12kl	R	-		-
Flat rate	R	1,12		1,19



<b>AVAILABILITY CHARGES</b>		<b>Approved 2018/2019</b>		<b>Proposed 2019/2020</b>
Domestic/Residential	R	117,87		124,94
Business/Industries	R	249,88		264,87
Government institutions	R	249,88		264,87
Indigent consumers	R	Subsidised		
Water Bourne sewerage - Domestic		117,87		124,94
Water Bourne sewerage - Schools		249,88		264,87
Water Bourne sewerage - Hostels		249,88		264,87
Water Bourne sewerage - Hospitals		631,24		669,11
<b>MISCELLANEOUS FEES AND CHARGES</b>				
Clearing of Blockages normal working hours		1 304,35		1 382,61
Clearing of Blockages outside normal working hours		1 956,52		2 073,91
Honey sucking - Septic Tank - Other	R	385,00		385,00
Honey sucking - Septic Tank - Indigent households	R	Subsidised		
Sewer connections:				
Single erf with sewer line available		2 173,91		2 304,35
Larger than 100 nominal diameter		Fixed Quote		
Single erf with no sewer line available		9 130,43		9 678,26
All other connections will be done on a fixed quote				

**OTHER SERVICES: SCHEDULE OF CHARGES AND TARIFFS - 2019/2020 FINANCIAL YEAR**

Description		Unit	Approved 2018/2019	Proposed 2019/2020
			(Excluding VAT)	(Excluding VAT)
Water Truck	Per Hour	R	633,92	671,95
Non-compliance with any Municipal bylaw	1st Notice	R	1 961,00	2 078,66
	2nd Notice	R	2 650,00	2 809,00
	3rd Notice	R	3 710,00	3 932,60
Illegal water connection	1st Notice	R	1 961,00	2 078,66
	2nd Notice	R	2 650,00	2 809,00
	3rd Notice	R	3 710,00	3 932,60