DRAFT WATER SERVICES DEVELOPMENT PLAN 2018-19

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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

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.

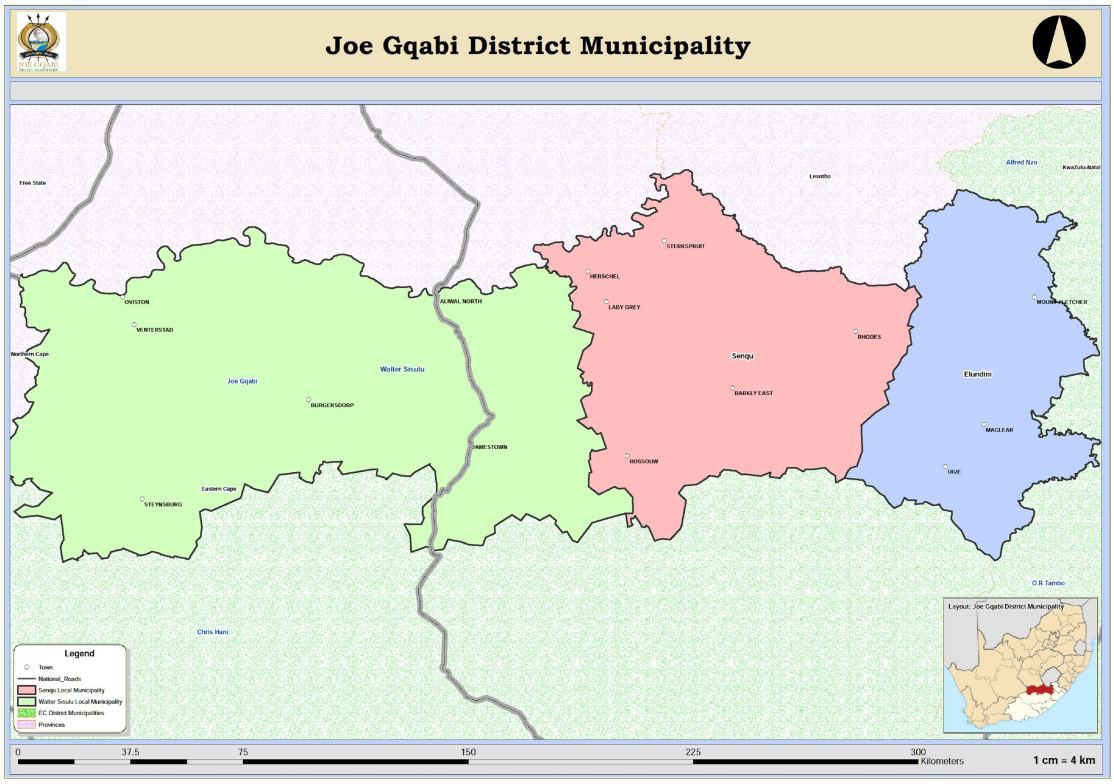

Figure 1-1 Joe Gqabi Locality Map

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.

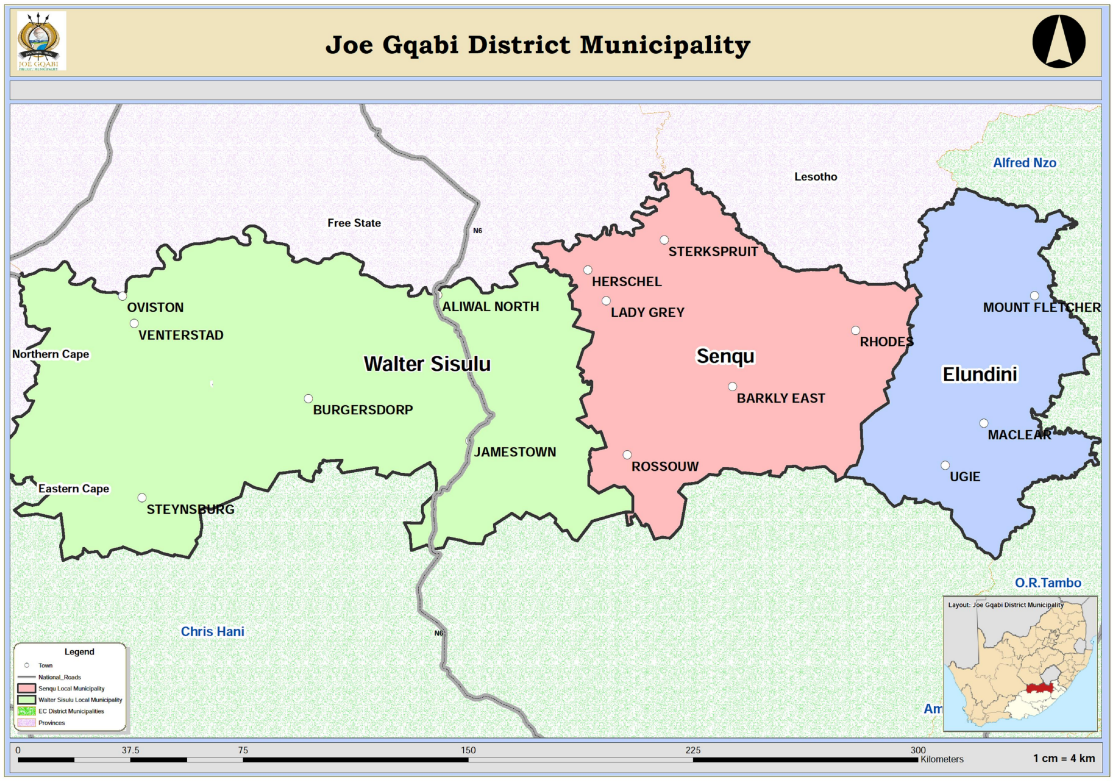

Figure 1-2 Local municipalities within Joe Gqabi DM

The Municipal Demarcation Board merged the Gariep 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.

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.

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
1: Infrastructure Development and Service Delivery	Provide access to basic services	▪ Develop and maintain new water and sanitation infrastructure ▪ Expand and fast-track the provision of universal access to basic services
2: Local Economic Development	Facilitate and implement job creation and poverty alleviation initiatives	▪ Implement and expand implementation of EPWP and other job creation initiatives ▪ Implement working for water and working for wetlands ▪ Support and facilitate rural development and poverty alleviation programmes
	Facilitate and support regional economic development initiatives	▪ Identify, support and implement economic development flagship and anchor projects ▪ Facilitate and support local economic development initiatives ▪ Support and participate in initiatives geared towards revitalization of towns and settlements
3: Institutional Development and Transformation	Improve human resource capacity and potential	▪ Attract, retain and develop a base of scarce skills ▪ Maintain good working conditions for staff
4: Financial Viability and Management	Ensure sound and effective financial management and reporting	▪ Comply with all statutory financial management and reporting requirements ▪ Implement anti-fraud and anti-corruption measures ▪ Implement revenue collection and enhancement initiatives

KPA	STRATEGIC OBJECTIVE	STRATEGIES
5: Good Governance and Public Participation	Facilitate intergovernmental cooperation and coordination	▪ Support and participate in intergovernmental cooperation initiatives ▪ Create and maintain stakeholder engagement initiatives ▪ Provide support to local municipalities ▪ Facilitate environmental management and conservation
	Communicate effectively with communities	▪ Ensure effective internal communications and communication with communities
	Establish and support municipal oversight systems, mechanisms an processes	▪ Implement and enforce performance management ▪ Ensure and maintain clean governance
	Facilitate the development of a healthy and inclusive society	▪ Facilitate Implementation of HIV and AIDS programmes ▪ Facilitate Implementation of programmes supporting the special groups (SPU)

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
	Reduce water demand in urban areas to 15%.	Implementation of Water Conservation and Water Demand Management interventions
Inclusive Rural Economy	An additional 643 000 direct jobs and 326 000 indirect jobs in the agriculture, agro-processing and related sectors by 2030.	Competition for raw water and increased water demand.
Transforming Human Settlements	Upgrade all informal settlements on suitable well located land by 2030.	New housing developments in the peri-urban areas and increased water demand & generation of wastewater.
	More people living closer to their places of work.	

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)	• Align the JGDM process to participate in the Eastern Cape Vision; • Water development, economic use and preservation are key aspects of the ensuring period to ensure achievement of the goals of the vision • Key focus on agricultural development.
Implementation of *ILIMA LABANTU*	
The development of Mzimvubu River Basin	

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 ensuing 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.

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 function	Implications on JGDM
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)

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:

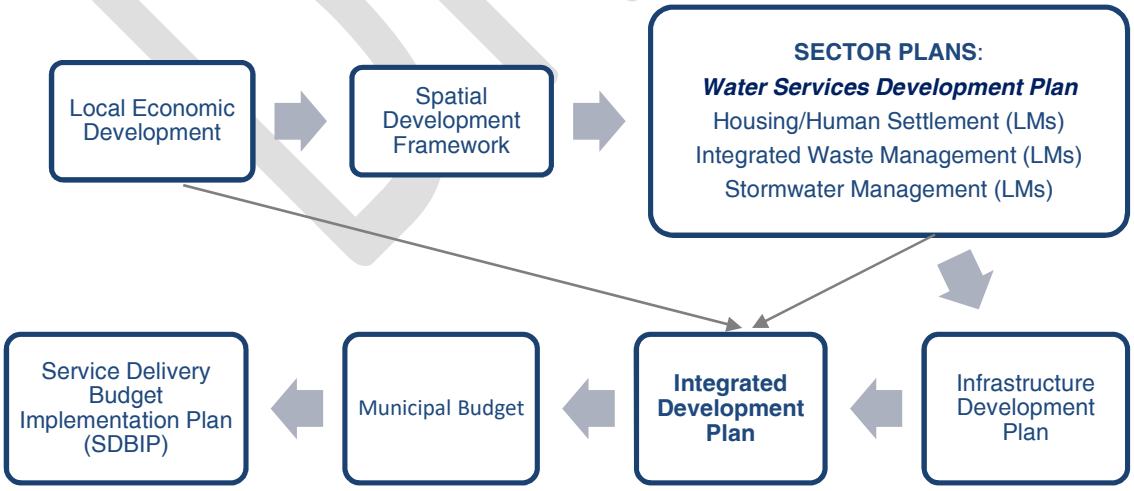

Figure 1-3 WSDP alignment to IDP

The 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.

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.

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 2017/18 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.

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 2018/19 WSDP Compilation Team

Name	Designation	Department/Section
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	Water Manager: Sterkspruit	Water Services Provision
12. Karel McCarthy	Acting Water Manager: Senqu	Water Services Provision
13. Peter Mathebula	Water Manager: Maletswai	Water Services Provision
14. Riaan Potgieter	Acting Water Manager: Gariep	Water Services Provision
15. George Xwazi	Water Manager: Elundini Urban	Water Services Provision
16. Thembelani Ngceba	Water 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.

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 Gariep 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	-
Access to water				
Piped water	73579	73.7	70427	74.1
No access to water	26208	26.3	24690	25.9
Access to sanitation				
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

Issue	Status Quo	Proposed sector intervention
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.

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 3-5 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.

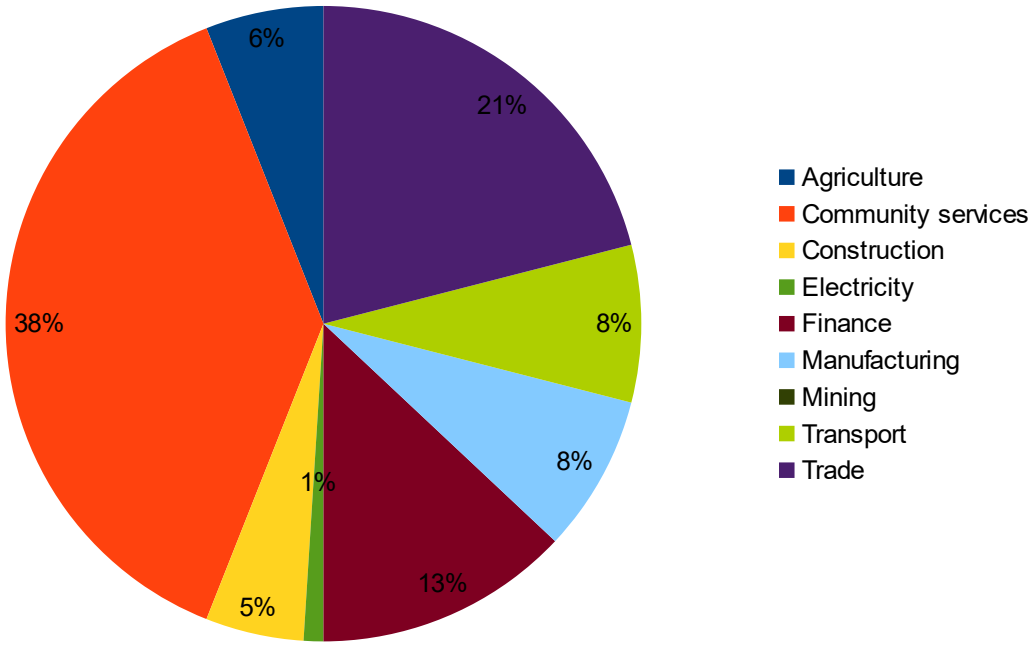

Figure 2-1 Gross Value Added (GVA) by Broad Economic Sector

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.

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.

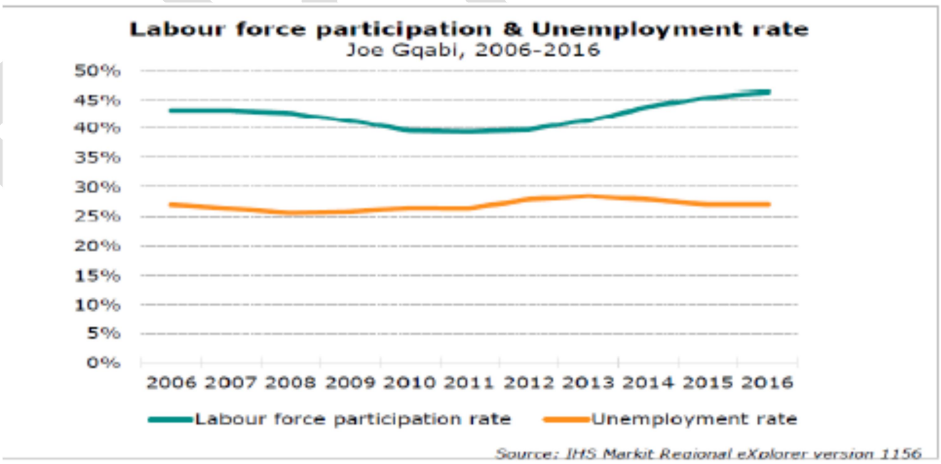

Figure 2-2 Labour Force participation

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 2-5 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
Average annual growth			
2006-2016	**1.67%**	**0.91%**	**1.89%**

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.

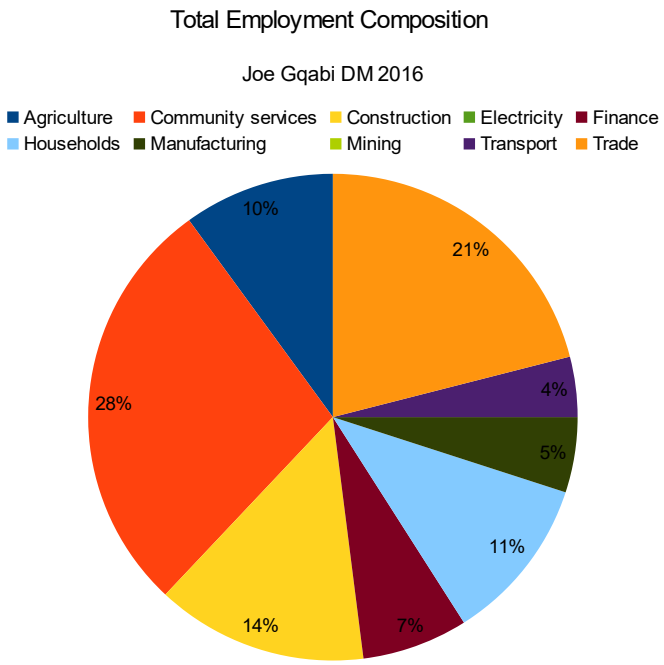

Figure 2-3 Total Employment by Economic Sector

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.

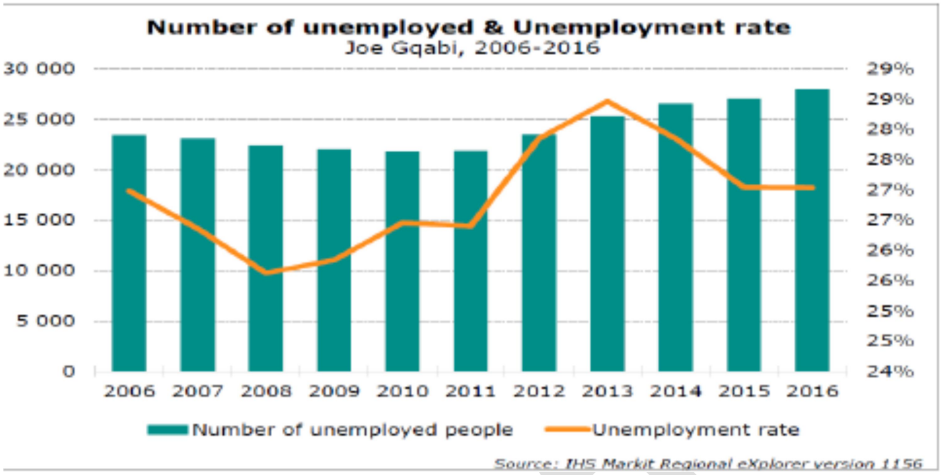

Figure 2-4 Unemployment and unemployment rate

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).

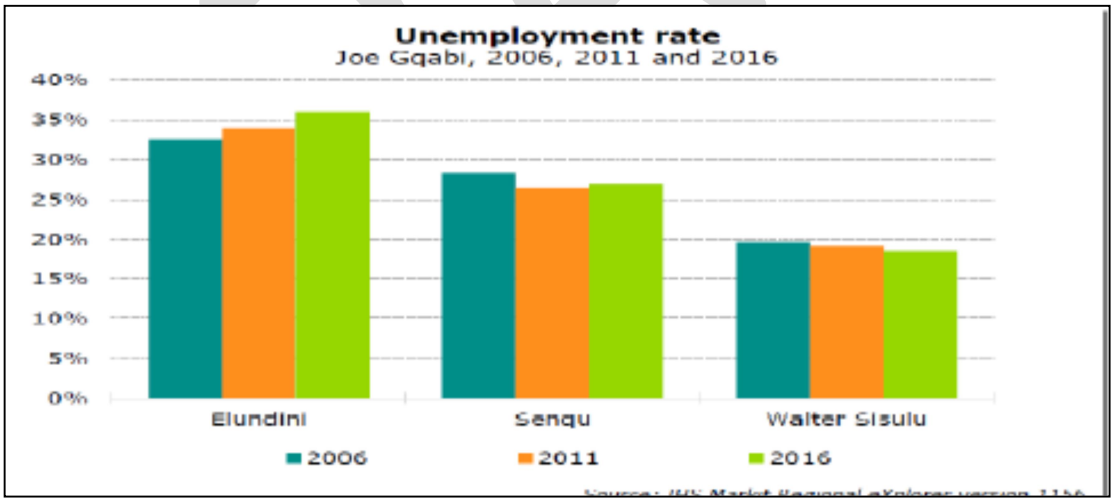

Figure 2-5 Unemployment rate by LM

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.

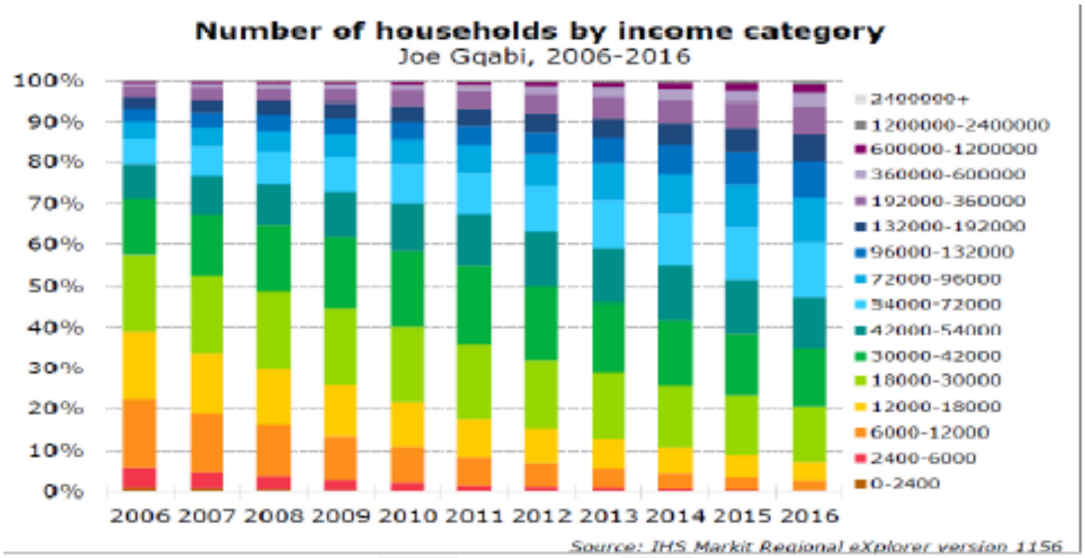

Figure 2-6 Household income by income bracket

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.

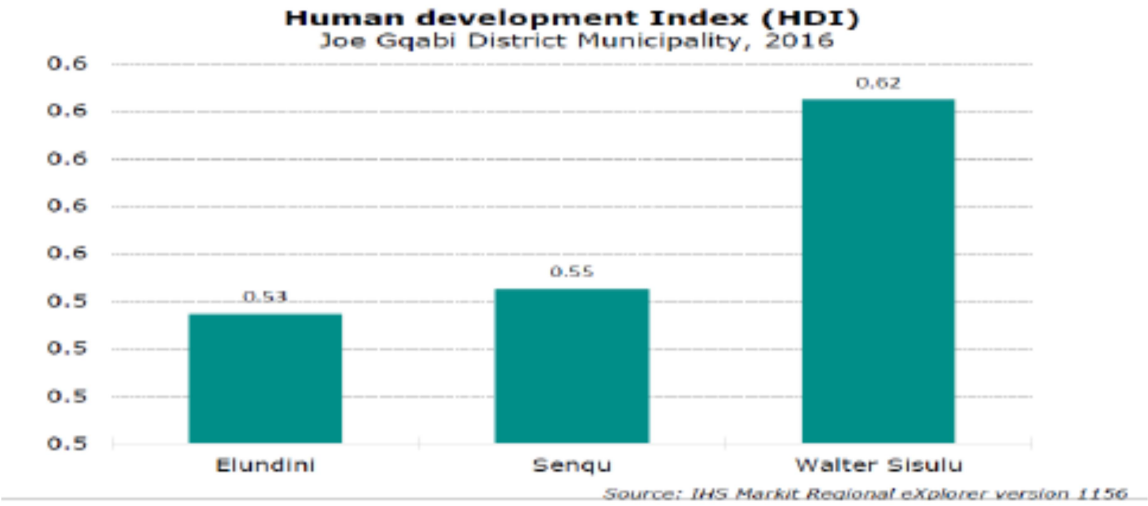

Figure 2-7 Human Development Index (HDI)

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.

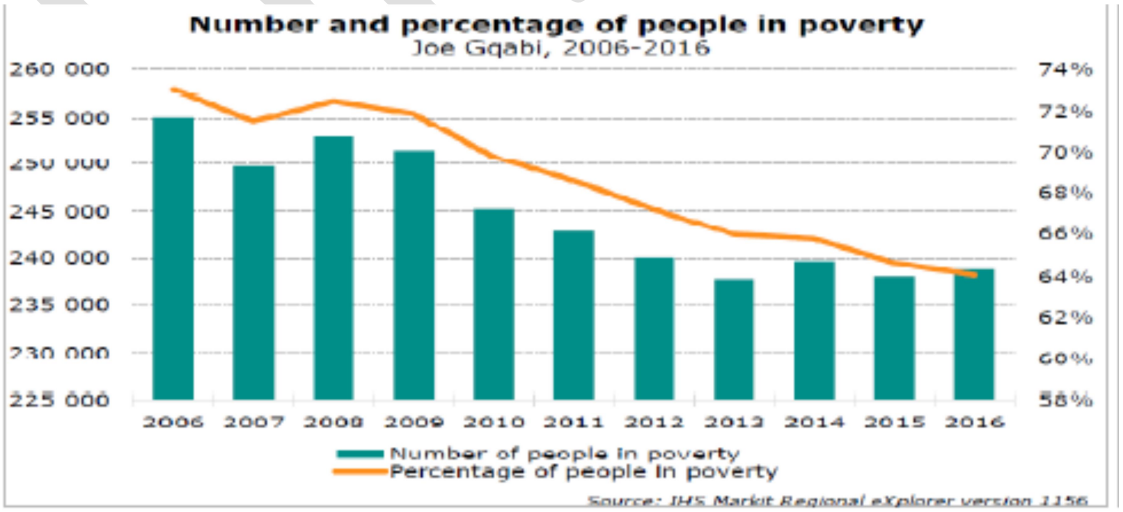

Figure 2-8 Number and percentage of people living in poverty

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 2-6 Economy dynamics implications

Issue	Status Quo	Sectoral Intervention required
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

SOCIO ECONOMIC CHALLENGES AND RISKS

The following issues and challenges with respect to planning have been identified:

1. Failure to improve the current state of infrastructure possesses a serious threat to the local economy development initiatives;
2. The Department of Human Settlements often has housing development commitments that do not align with the DM's objectives and infrastructure spare capacity;

3. Levels of service and basic services backlogs are a moving target and illegal connections to upgrade household's levels in an unstructured and oft damaging manner is rife;
4. A substantially low portion of the population that can afford high level of water services;

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 management of the Indigent Register to ensure qualifying households benefit;
4. Effective rehabilitation and maintenance of existing infrastructure to ensure facilitate of economic development; 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 of the municipality for resources.

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 (integrated financial, institutional, social, technical and environmental planning)* 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 develop water services tariffs, metering, billing and revenue collection.
- *Regulation* of water service 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 communication (health and hygiene promotion, water conservation and demand management, information sharing, communication, and consumer charters).

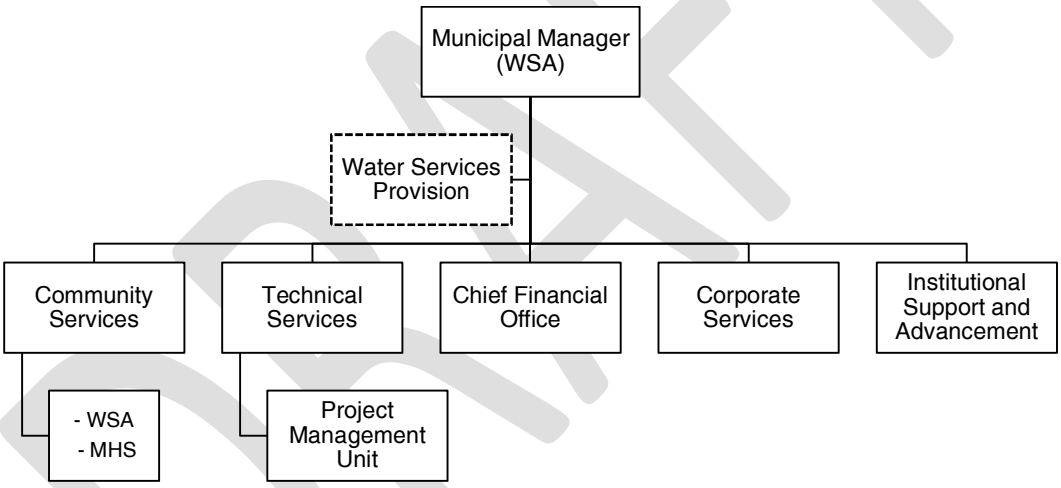

Figure 3-1 Water Services Authority Organogram

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 with 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 management is also the function of the WSA function 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 drinking water sampling is undertaken by the Environmental Health Practitioners in Municipal Health Services section that is also located in the Community Services Department.

The WSA is 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). It is also responsible for complying with legislative reporting for its area of jurisdiction.

Water supply and sanitation

The WSP is responsible for the operations and maintenance of the water purification and sewerage treatment works in all local municipalities within JGDM (Elundini, Senqu and Walter Sisulu Local Municipalities). It is also responsible for the bulk and reticulation networks in the aforementioned municipalities; and also the operations and maintenance of water services infrastructure management of the drought relief funding.

The WSP is also managing with sampling for water and effluent quality testing and compliance with legislative requirements (Blue Drop and Green Drop). However, at the moment the municipality outsources its scientific services for the drinking water and wastewater regulatory and operational water quality analysis to the 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.

Project development

All the municipal water and sanitation infrastructure development 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 community services 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.

Billing and revenue collection

The Finance Directorate provides support in the metering, billing and revenue collection process 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.

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 feeds into, and takes direction from, the district's Integrated Development Plan.

CHALLENGES AND RISKS

- Outdated Water and Sanitation By-Laws
- Lack of adequately qualified technical and supervisory personnel for all the needs of municipality.
- Non-compliance to Occupational Health and Safety (OHS) has legal, financial and service delivery implications for the municipality;
- No municipal-wide Water and Sanitation Master Plan
- Lack of a guideline and standards ensures the choice, 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.

- There has not been any consensus reached to date in terms of an adopted technology option for the rural sanitation facilities to be provided;

OBJECTIVES AND STRATEGIES:

- Review of the JGDM's Water and Sanitation By-Laws
- Filling of vacant posts within the Water Services Provision
- Consolidate the existing town-specific Master Plans into a comprehensive Municipal-wide Water and Sanitation Master Plan that the municipality can utilize to source funding and other support offerings;
- 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 legal responsibilities and improve compliance in their operational areas; 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 provision of water and sanitation is guided by national policy and legislation which require that all households be provided with a Basic Level of Service. 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 per household of 200m, and a Ventilated Improved Pit 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: The provision of a basic water supply facility, the sustainable operation of the facility (available for at least 350 days per year and not interrupted for more than 48 consecutive hours per incident) and the communication of good water-use, hygiene and related practices.

Basic Sanitation Supply Service: The provision of a basic sanitation facility which is easily accessible to a household, the sustainable operation of the facility, including the safe removal of human waste and wastewater from the premises where this is appropriate and necessary, and the communication of good sanitation, hygiene and related practices.

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.

JGDM Water and Sanitation By-Laws

It is also advisable that all WSA's devise by-laws to govern the provision of services and to give effect to policy. The JGDM has devised a set of bylaws to regulate the provision of services including water and sanitation. The by-laws were gazetted in the Eastern Cape Provincial Gazette on 31 August 2015 and are up for review in the 2018/19 municipal financial year. 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	Not applicable.
3. Full	House connection	Waterborne (flush) toilet

The *Basic Service Level* of service of reticulated standpipes or stationery 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 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).

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**
Joe Gqabi	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%.

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**
	%									
Joe Gqabi	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 Gariep 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%
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.

SERVICE LEVELS CHALLENGES AND RISKS

- Levels of service and basic services backlogs are a moving target;
- Illegal connections lead to unplanned upgrade household's levels in an unstructured and often damaging manner is rife;
- Inadequate information for decision making on how to frame the appropriate levels of service.

SERVICE LEVELS STRATEGIES AND OBJECTIVES

- Devise a sustainable approach to the provision of basic services to all residents;
- Create an over-arching Municipal-wide Water and Sanitation Master Plan for the JGDM so that synergies can be maximised, costs minimized and sustainability ensured; 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.

SURFACE WATER

DWS is the custodian of water resources and is also the owner of the major impoundments in the area, notably the Gariep 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 Sloot	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 the 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.

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 undertaken 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

MUNICIPAL AREA	MAJOR TOWN	MAJOR RIVER/TRIBUTARY
Elundini	Maclear	Mooi River
	Mt Fletcher	Mzimvubu River
	Ugie	Wildebeest River
Senqu	Barkly East	Langkloofspruit
	Lady Grey	
	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.

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	-	-
	Mt Fletcher rural	33	-	-
	Ugie rural	16	-	-
Senqu	Barkly East	8	8	-
	Lady Grey	9	9	-
	Rossouw	2	1	-
	Sterkspruit rural	52	-	-
Walter Sisulu - East	Aliwal North	6	6	-
	Jamestown	12	12	-
Walter Sisulu - West	Burgersdorp	14	-	-
	Steynsburg	6	-	-

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 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 responsibility 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 at least 14 days 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.

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 instant, 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 Ml	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.

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; and
- Crop irrigation 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.

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 of 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 leads 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 susbsistancne farming.	• Livestock loss • Agricultural production • Increase in Inflation (food prices) • Reduction of raw water use for domestic and agricultural use , new housings and industrial operations • Grazing grass is reduced significantly • Over stretched municipal resources to provide basic services and delay in the implementation of current projects (water cutting, drilling of boreholes and purchase of jojo tanks, payment over time and S&T and operational cost) • Increased in the runaway veldt fires • Implementation of water restrictions and rationing • Loss of employment (farmers) • Increase government social safety nets (indigent register and provision of food parcel) • Increased insurance for commercial farmers • Farmers having no choice leaving farming and others committing suicide • Increased running costs of farming • Frequent blockages of water supply and sewer systems • Unplanned reduction of livestock • Negatively affects family livelihoods	Over long period

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	Gariep Dam	Communities, farmers, institutions	Low
Steynsburg	Gariep Dam	Communities, farmers, institutions	Low
Oviston	Gariep 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.

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.

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;
- DWS Validation and Verification process undertaken during the second and third quarter indicated that the municipality has some unconfirmed water abstraction, dams and boreholes which it is paying for;
- 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;

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;
- 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;
- 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.

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.

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.

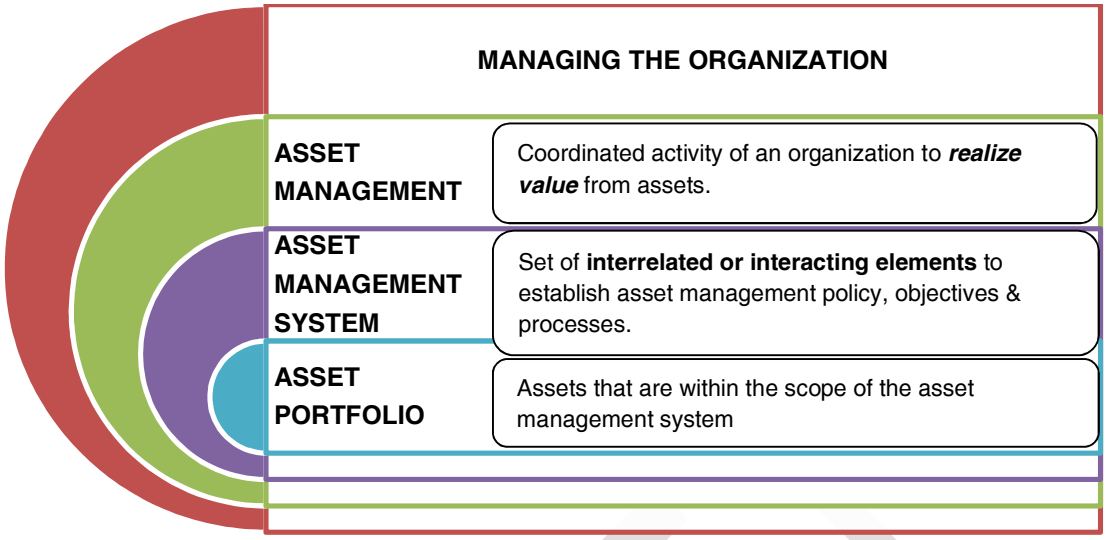

Figure 6-1 Asset Management and Asset Management System (ISO 5001)

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.

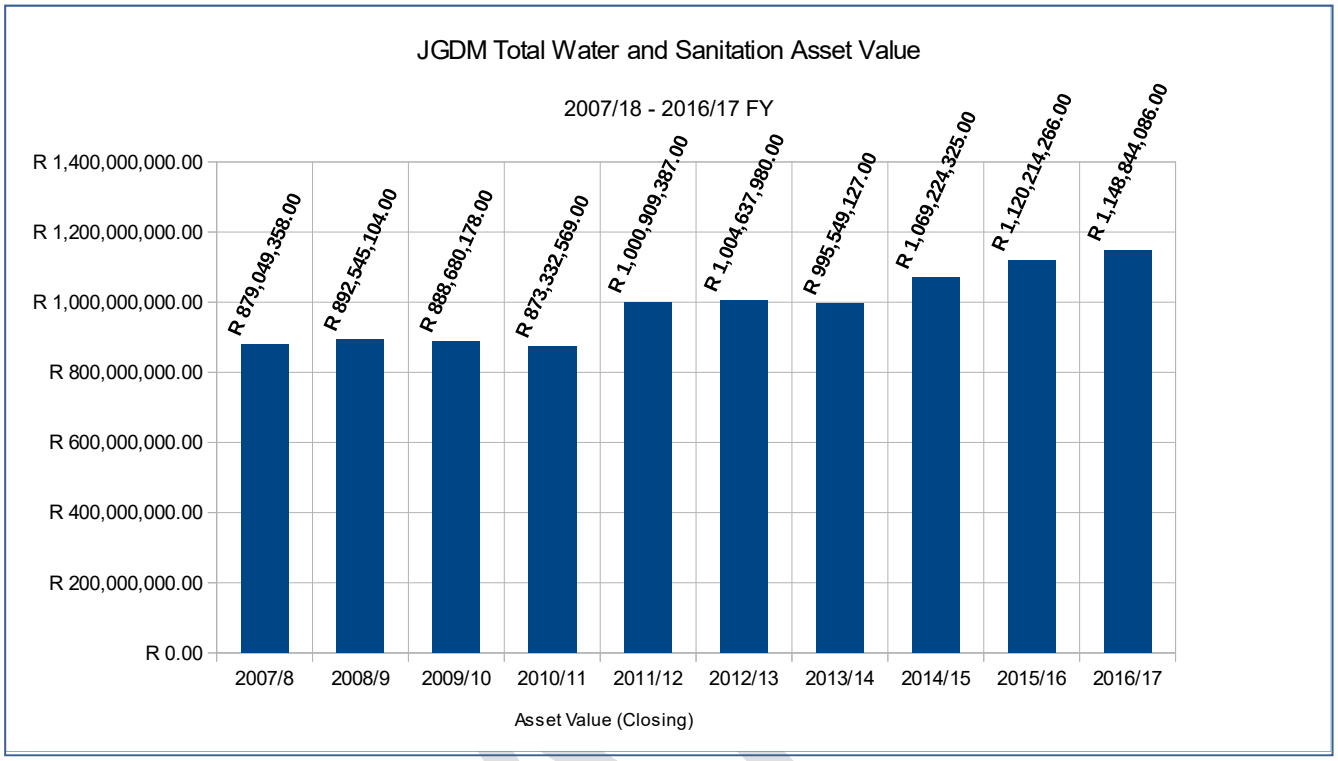

Figure 6-2 JGDM Total Water and Sanitation Asset Value

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.

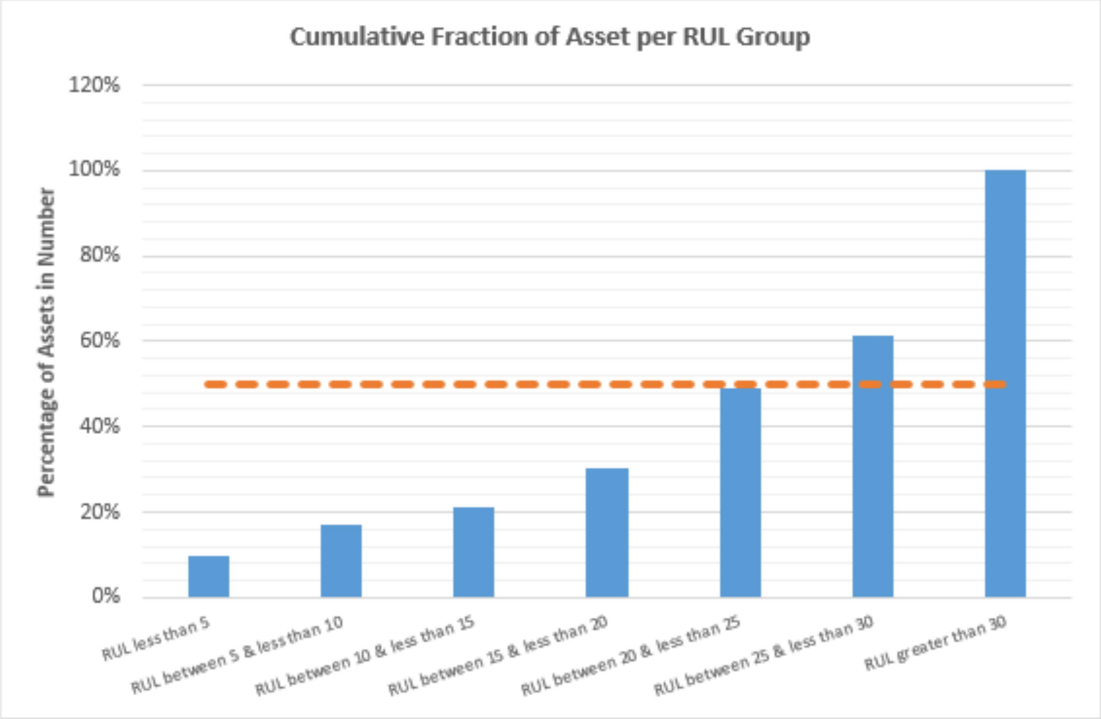

Figure 6-3 JGDM Asset Component Number with different RUL Groups (2015/16)

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.

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);
- Gariep (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).

WATER SUPPLY INFRASTRUCTURE

The district has a total of 13 water treatment facilities that service most of the urban centres of the three local municipal areas of the district. 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.

Table 6-1 Location and capacity of JGDM WTWs

AREA NAME	SERVICE AREA	NAME OF WTW	DESIGN CAPACITY (Ml/d)	OPERATING CAPACITY (Ml/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) Rossouw	Rossouw	N/A	-	
10) Oviston	Oviston, Venterstad	Oviston	5.8	
11) Sterkspruit	Herschel, Sterkspruit & surrounding settlements	Sterkspruit & Jozana	12.0	9.5
12) Steynsburg	Steynsburg, Greenfields, Khayamnandi & Westdene	Steynsburg	2.0	
13) Ugie	Ugie town, Phola Park,	Ugie	6.0	

The detailed information on the status of the individual JGDM water supply schemes together water treatment and distribution infrastructure and some of the contributing factors to the indicated conditions thereof is discussed below.

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 Tsitsa 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.

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 faclity 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 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. No wash-water recovery facilities have been provided. 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.

Walter Sisulu Municipal Area Water Supply

Gariep

The Burgersdorp WTW is the only facility that provides municipal drinking water to the CBD, Eureka, Mzamomhle and Thembisa Townships. The works is old with conventional processes. There is coagulation/flocculation, settling, rapid gravity sand filtration and disinfection. All raw water is received via pumping and final water is gravitated away. The works are strained by a high loading of silt. These works has been prioritised for renewal/upgrading in 2017/18. There is no wash-water recovery.

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 pumpstation 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 receives water from the DWS-owned Gariep Dam via pumping. 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 has a single conventional water treatment facility that comprises a balancing dam, coagulation/flocculation, settling, rapid gravity filtration and disinfection. Raw water is all supplied via pumping from the international Orange River that forms a boundary with the Free State province. Final water is distributed via pumping to all the settlements within Aliwal North. There is no wash-water recovery. The works are old, and needs to be prioritised for renewal/upgrading. 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.

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.

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	DESIGN CAPACITY (Ml/d)	OPERATING CAPACITY (Ml/d)	IRRIGATION
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 (0.6)
	Herschel	Herschel,	Herschel 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
Walter Sisulu: Gariep	Burgersdorp	Burgersdorp, Eureka, Harmonie, Mzamomhle & Thembisa	Burgersdorp Activated Sludge WWTWs	2.5		None
	Oviston	Oviston, Venterstad	Ovistion Activated Sludge WWTWs	0.2		None
	Steynburg	Steynsburg, Greenfields, Khayamnandi & Westdene	Steynsburg Activated Sludge WWTW	1		None
	Venterstad	Venterstad, Nozizwe, Lyciumville	Venterstad Activated Sludge WWTW	1		None
Walter Sisulu: Maletswai	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 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.

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 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 . . . Mℓ/day capacity 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.

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 Tecroveer 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 Tecroveer 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

Vensterstad also has a Tecroveer 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.

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 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.

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 SDF;
- 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.

DWS MUNICIPAL STRATEGIC SELF-ASSESSMENT SURVERY (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 2016/17 municipal financial year was completed and submitted to the Department of Water and Sanitation for review. Below is the outcome of the DWS review.

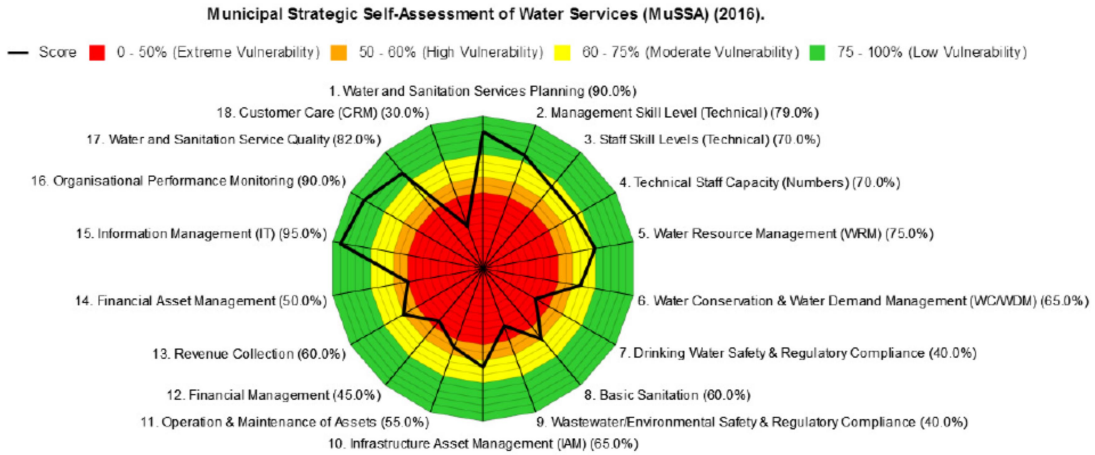

Figure 6-3 JGDM 2016/17 MUSSA Outcome

JGDM participated in the DWS' 2016/17 MuSSA and the following key identified areas of municipal water services vulnerability were identified:

1. Drinking Water Safety and Regulatory Compliance (40%)
2. Wastewater/Environmental Safety and Regulatory Compliance (40%)
3. Financial Management (45%)
4. Customer Care (30%)

The most critical vulnerability of the municipality is the Customer Care and the aspects of the indicator that require the most attention include:

- A functional customer care system;
- Conducting regular municipal wide customer satisfaction surveys as part of the municipal Customer Care Management Plan; and
- Implementation of a comprehensive water and sanitation customer awareness programme (informing customers of water and wastewater system O&M activities, water quality, resource protection/pollution, reporting incidents/security concerns, etc.).

In terms of Financial Management, the assessment alluded to the issue of inadequacy of revenue collection in relation to the operational costs of water services provision and the implications of the vulnerability of the municipality.

Remedial measures will be identified and implemented to improve this area and also to ensure that other areas do not fall back into the "red zone".

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.

Wash-water recovery must be considered at all municipal water treatment works, as this is a good example of water conservation.

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.

Currently, JGDM has no comprehensive municipal instead there are separate master plans that were compiled to cover different areas. The municipality is currently engaging the Development of Southern Africa (DBSA) for funding the development of a Municipal-wide Water and Sanitation Master Plan by consolidating the various area specific master plans. The following area specific master plans are in existence:

Table 6-3 Existing town specific master plans

Municipal Area	Town/	Name
Elundini		
Senqu	All towns	The Mvula Trust was appointed in 2013
Walter Sisulu	Aliwal North	Aliwal North Wastewater Master Plan
	Burgersdorp	Burgersdorp Water Master Plan
		Burgersdorp Wastewater Master Plan

The Department of Water and Sanitation's All Town Reconciliation Strategies are a source of primary information in terms of the water resources availability and water services development options for the different towns. In additional, the municipality has undertaken numerous feasibility and implementation readiness studies for funding applications for such grants as the MIG, RBIG and others. The subsequent technical reports contain a wealth of information on projects that are planned and the rationale behind each. These reports need to be kept at a repository for planning information at JGDM as they will be useful in compiling the JGDM's Comprehensive Master Plan, to coordinate water and sanitation schemes in the DM and for record purposes.

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.

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.

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;
- 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.

WATER SERVICES INFRASTRUCTURE STRATEGIES AND OBJECTIVES

- Develop a long term strategy to manage silting of dams;
- Reclaim and recycle water released from water works for beneficial use;
- Address balancing of employment of (qualified) process controllers to deal with water quality and management;
- Urgently address sewer spillages in Burgersdorp and Aliwal North;
- Compile report on infrastructure status quo per LM;
- 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.

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.*

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.

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:

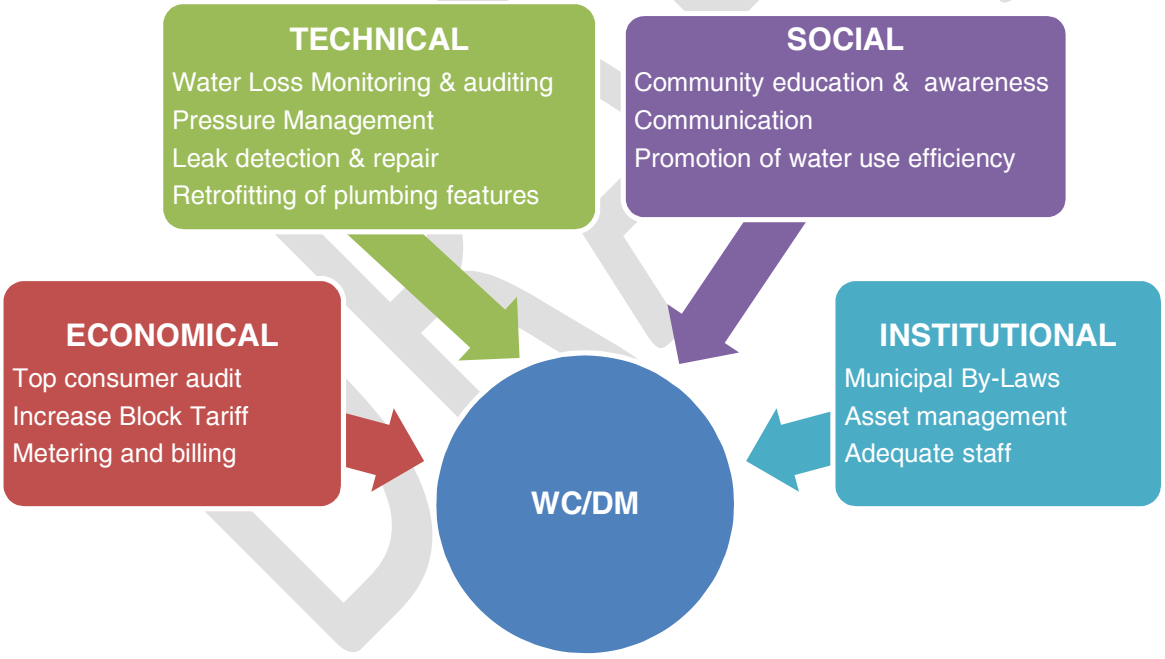

Figure 2-1 Water Conservation and Demand Management strategic pillars

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

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.

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;
- 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;
- Implementation of bulk and zonal metering;
- Conduct dam safety inspections where required;
- Compile dam operating rules for all surface water sources where required; 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 details of public institutions located within the district is given as follows:

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

	Urban	Rural
Police Stations	12	10
Magistrate Courts	13	
Prisons	5	
Clinics	39	11
Hospitals	3	18
Schools	45	313
FET	2	

In line with the demographics and economic activities of the district, the public amenities are largely found in the urban or town 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 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 in 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.

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.

SANITATION SERVICE 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.

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.

ASSOCIATED SERVICES CHALLENGES AND RISKS

- Clear outline of health facilities, schools, institutions of higher learning, magistrates, prisons receiving water services from JGDM
- Information pertaining to the number, location, water usage and service levels;
- Integrated planning in terms of the water and sanitation needs of various institutions;
- 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.

ASSOCIATED SERVICES OBJECTIVES AND STRATEGIES

- Development of a detailed information regarding these water users through engagement with the relevant departments;
- Ensure that they are effectively metered, billed and revenue is collected from the responsible departments;
- MHS to monitor all public premises to ensure compliance to health requirements and water quality standards; and
- The municipality is open to a maintenance contracts with 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.

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.

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. The criteria used for assess the Customer Care aspects of the municipality were as follows:

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; and
2. Regular municipal wide customer satisfaction surveys are conducted.
3. A reporting provision to monitor and assess reported water and wastewater related complaints/callouts within a specified period of time; and
4. Existence of a comprehensive customer education and awareness programme (informing customers of water and wastewater system O&M activities, water quality, resource protection/pollution, reporting incidents/security concerns, etc.).

The customer care vulnerabilities are being addressed from various organizational activities which are outlined in the different sections of the WSDP.

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.

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 and a total number of . . . customers/households were reached from all three of the local municipal areas of the district.

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.

DWS SOCIO-ECONOMIC IMPACT ASSESSMENT STUDY

The Department of Water and Sanitation conducted a Socio-Economic Impact Assessment Study project within the district from the 06 to 21 July 2017. The study was aimed at determining the impact of the water and sanitation bulk infrastructure developed during the period of 2002/2003 until 2014/15 in all the Water Services Authorities in the country. The assessment involved a household survey with a questionnaire and interviews on the impact of water and sanitation infrastructure to their livelihood and to the community.

A total sample of 785 households was chosen from eight (8) identified wards within Joe Gqabi DM as per the old boundaries before the new 2016 municipal demarcations (i.e. Gariep, Maletswai, Elundini and Senqu Local Municipalities). Matriculants and unemployed graduates were employed as fieldworkers to conduct the household surveys and interviews, and they were remunerated as per the number of completed questionnaires.

The training was undertaken on the 20 July 2017 and the fieldworkers acquired the following skills and knowledge (a contribution to their personal development):

- Completion of the questionnaires;
- Data collection techniques;
- Presentation skills;
- Working within a team and being a team player; and
- Communication skills and interpersonal skills.

The household survey and interviews were conducted on the 21 July 2017 in the seven (7) of the eight (8) identified wards. A project team included coordinators from JGDM and DWS

personnel respectively. The seven coordinators were responsible for secondary quality control including the collection and verification of the completed household questionnaires in their allocated wards. All the 785 completed household survey questionnaires were collected and submitted to DWS.

The involvement and assistance of the local municipal councillors in the project from the inception to the implementation ensured that DWS' Socio Economic Impact Assessment in the Joe Gqabi District Municipality was efficiently undertaken and this highlighted the importance and functioning of intergovernmental relations. The skills transfer for the fieldworkers will improve the employability of the region's young people. Lastly, the 70 job opportunities created through the project and use of the local taxi transport providers will also contribute to towards the local economic development initiatives within the region.

The DWS final report will provide the municipality with the public's understanding, the level of contentment with and impact of water services delivery to the community.

CUSTOMER SERVICES CHALLENGES AND RISKS

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

2018/19 CUSTOMER SERVICES OBJECTIVES AND STRATEGIES

- Finalize the DPSA funded Water management System that will improve the customer care services;
- Conduct regular municipal-wide customer 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.

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 40.1 JGDM Revenue Sources

JGDM Revenue Items	2015/16	2016/17	2017/18	2018/19	2019/20
Water Service Charge Revenue	R75 868 000	R54 315 000	R106 558 000	R112 951 000	R119 728 000
Sanitation Service Charge Revenue	R27 173 000	R13 163 000	R28 838 000	R30 569 000	R32 403 000
Other Service Charges	R9 317 000	R4 503 000	R0	R0	R0
Rental of Facilities and Equipment	R0	R0	R9 000	R10 000	R10 000
Interest Earned-External Investments	R4 300 000	R3 368 000	R4 040 000	R4 272 000	R4 528 000
Interest Earned-Outstanding Debtors	R5 347 000	R2 866 000	R13 078 000	R13 863 000	R14 694 000
Agency Services	R0	R119 000	R4 951 000	R4 000 000	R0
Transfers and Subsidies	R325 216 000	R330 534 000	R357 473 000	R343 966 000	R315 054 000
Other Revenue	R3 574 000	R9 866 000	R388 000	R411 000	R435 000
Gains on Disposal of PPE	R0	R0	R0	R0	R0
Totals	**R450 795 000**	**R418 734 000**	**R515 335 000**	**R510 042 000**	**R486 852 000**

Revenue is expected to first grow, then decline in the JGDM over the MTREF period.

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.

Expenditure and income

The graph above 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 & Subsides 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.

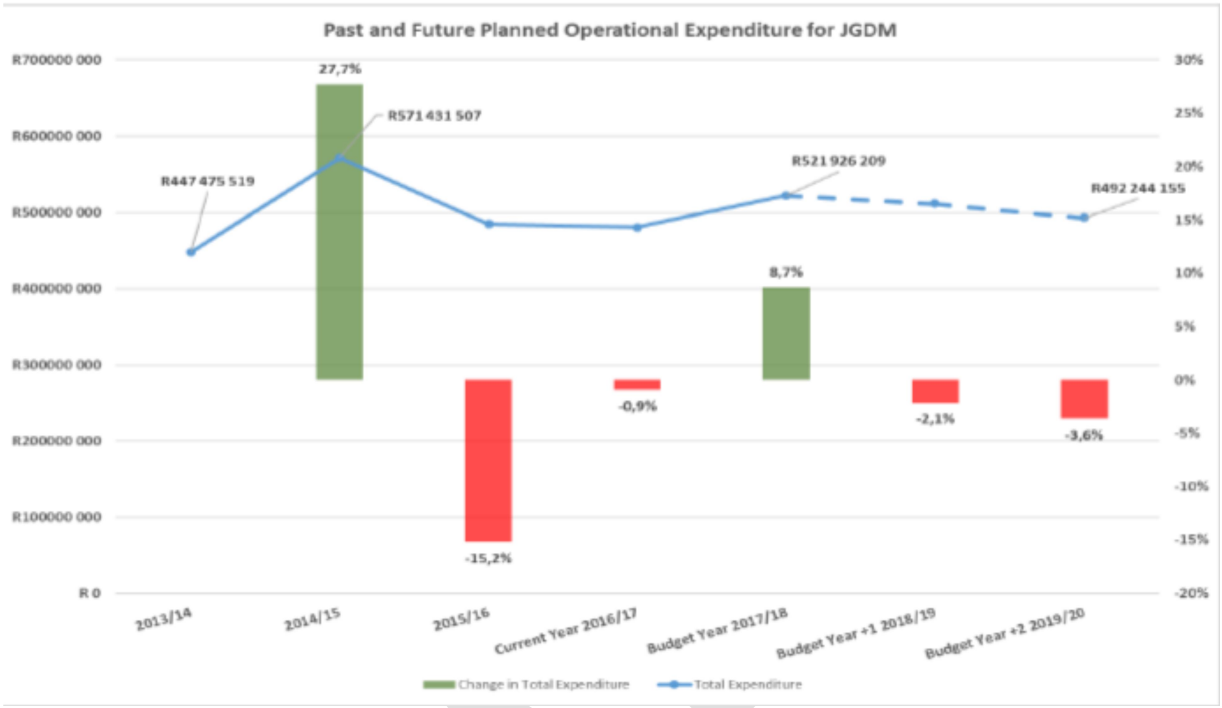

Figure 30.1 JGDM Operational expenditure

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.

12.6.1 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 2017/18 DORA Bill.

Table of JGDM Capital Grants as per the 2017 DORA Bill

Capital Grant Programme	Fin Year. 2015/16	Fin Year 2016/17	Fin Year 2017/18	Fin Year 2018/19	Fin Year 2019/20	Annualised 4-Year Incr.	Annualised 2-Year Incr.	Next 3-yr Totals	5-Year Totals
Water Services Only Grants (WSG)	R 25 011 001	R 71 828 000	R 70 500 000	R 110 310 000	R 124 000 000	49,2%	25,1%	R 304 810 000	R 401 649 001
Annual Increase in WSG		187,2%	-1,8%	56,5%	12,4%	-	-	-	-
Water Services Infrastructure Grants (WSIG)	R 25 011 000	R 71 828 000	R 64 500 000	R 87 310 000	R 84 000 000	35,4%	16,3%	R 235 810 000	R 332 649 000
Annual Increase in WSIG		187,2%	-10,2%	35,4%	-3,8%	-	-	-	-
Regional Bulk Infrastructure Grant (RBIG)		R 0	R 6 000 000	R 23 000 000	R 40 000 000	7852,7%	95,8%	R 69 000 000	R 69 000 001
Annual Increase in RBIG				283,3%	73,9%	-	-		
Appropriation Act Allocations (Appr. Act Alloc)	R0	R0	R0	R0	R0	0	0	R 0	R 0
Orio Grant	R0	R0	R0	R0	R0			R 0	R 0
Accelerated Community Infrastructure Programme (ACIP)	R0	R0	R0	R0	R0			R 0	R 0
COGTA	R0	R0	R72 500 000	R0	R0			R 72 500 000	R 72 500 000
Other	R0	R0	R0	R0	R0			R 0	R 0
Municipal Infrastructure Grant (MIG)	R 154 270 000	R 151 602 000	R 159 725 000	R 169 316 000	R 179 438 000	3,9%	3,0%	R 508 479 000	R 814 351 000
Annual Increase in MIG		-1,7%	5,4%	6,0%	6,0%	-	-	-	-
Totals	R 179 281 001	R 223 430 000	R 302 725 000	R 279 626 000	R 303 438 000	14,1%	11,9%	R 1 118 098 999	R 1 288 500 001

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.

Approved 2018/19 Tariffs and charges (Council Meeting of 27/03/2018)

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 proposed 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:

WATER AND SANITATION TARIFFS - DISTRICT WIDE					
		TARIFFS (EXCLUDING VAT)			
Description	**Unit of Measure**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
		R	**R**	**R**	**R**
Water					
Basic Charge/Availability Charge					
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
Water Consumption - Indigents					
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	12,77	13,54	14,35	15,21
Water Consumption - Other					
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
Other					
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**
Sanitation					
Basic charge/Availability Charge					
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
Waste Water Charge					
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

Other					
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
Pre-paid water and Sanitation - Residential					
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
Pre-paid water and Sanitation - Business and Government					
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

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.

Cost recovery (Revenue collection, Metering and billing, etc)

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 Aliwal North, Barkly East and Lady Grey.
As of the second quarter of the 2017/18 municipal financial year, JGDM's revenue collection has been unsatisfactorily low at approximately 17%. This has

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.

FINANCIAL PROFILE CHALLENGES AND RISKS

- Inadequate revenue collection;
- Lack of billing office in Mt Fletcher;

FINANCE 2018/19 OBJECTIVES AND STRATEGIES

- Improve the municipal revenue collection to 50%;
- Develop a strategy for revenue collection in rural areas and update the JGDM Revenue Enhancement Strategy;

- Source fund for prepaid meters and cost of installation
- 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 projects;

SECTION 11: PROJECT DEVELOPMENT

The planning and development of water and sanitation infrastructure development capital projects is located within the Project Management Unit (PMU) of the Technical Services Department.

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

WATER SERVICES DEVELOPMENT PROJECTS

The comprehensive water and sanitation infrastructure development needs will be appropriately presented in the master plan:

Resource
Bulk
Reticulation
Non-technical

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 the following groups:
o Short term projects o Medium term projects o Long term projects

Below is a list of Council approved 3-year MTEF Infrastructure Development projects for the 2017/18 municipal financial year onwards:

Table 11-1 2017/18 - 2019/20 3-Year Infrastructure Development Plan

PROJECT NAME	LM	PROJECT TYPE:	Project Status for example	FUNDING	Projected Expenditure			
					2011/2012	2017/2018	2018/2019	2019/2020
MIG								
Ugie Bulk Water Infrastructure Phase 2	Elundini	Water	Design	MIG		R 10 000 000	R 13 000 000	R 15 000 000
Mt Fletcher Villages - Bulk Water Supply Scheme	Elundini	Water	Construction	MIG	0,00	R 2 000 000	R 0	R 0
Sterkspruit: Upgrading of WTW and Bulk Lines	Senqu	Water	Construction	MIG	2 500 000,00	R 17 500 000	R 10 000 000	R 0
Senqu Rural Sanitation Programme	Senqu	Sanitation	Construction	MIG	45 000 000,00	R 25 000 000	R 20 000 000	R 25 000 000
Senqu Rural Water Programme	Senqu	Water	Construction	MIG	R 40 000 000	R 20 000 000	R 25 000 000	R 10 000 000
Elundini Rural Sanitation Programme	Elundini	Sanitation	Construction	MIG	R 45 000 000	R 25 000 000	R 20 000 000	R 25 000 000
Elundini Rural Water Programme	Elundini	Water	Tender	MIG	R 40 000 000	R 10 000 000	R 30 000 000	R 30 000 000
Jamestown sanitation Phase 2	WSLM	Sanitation	Construction	MIG	2 000 000,00	R 15 000 000	R 15 000 000	R 15 000 000
Maclear Upgrading of Bulk Water Services	Elundini	Water	Construction	MIG		R 12 655 000	R 14 061 000	R 25 000 000
Maclear Upgrading of Bulk Sanitation	Elundini	Sanitation	Construction	MIG		R 13 100 000	R 14 000 000	R 26 625 000
Lady Grey Bulk Water	Senqu	Water	Construction	MIG		R 3 000 000	R 755 000	R 0
PMU Top Slice				MIG	R 3 000 000,00	R 6 070 000	R 7 000 000	R 7 313 000
Ukhahlamba Planning Studies	District wide	Water/Sanitation	implementation	MIG	0,00	R 400 000	R 500 000	R 500 000
TOTAL						R 159 725 000	R 169 316 000	R 179 438 000
RBIG (DWS)								
Sterkspruit Regional Bulk Sanitation	Senqu	Sanitation	Design	RBIG		R 3 000 000	R 13 000 000	R 20 000 000

Lady Grey Bulk Water Supply	Senqu	Water	Design	RBIG		R 3 000 000	R 10 000 000	R 20 000 000
TOTAL						R 6 000 000	R 23 000 000	R 40 000 000
WATER SERVICES INFRASTRUCTURE GRANT (WSIG)								
Rural Household VIP toilets maintenance	District wide	Sanitation	Planning	WSIG		R 7 000 000	R 0	R 0
Rural Water Supply (Sterkspruit & Rossouw)	Senqu	Water	Planning	WSIG		R 5 000 000	R 0	R 0
Refurbishment of WTW's (Ugie & Maclear)	Elundini	Water	Planning	WSIG		R 5 000 000	R 0	R 0
ZE059 MWIG District Wide WCDM Strategy (Telemetry)	District wide	Water	Planning	WSIG		R 39 600 000	**R 7 900 000**	0
Top Up Burgerdorp WTW 6Ml Storage Reservoir	**WSLM**	**Water**	**Tender**	**WSIG**		**R 7 900 000**	**R 0**	**R 0**
TOTAL						R 64 500 000	R 7 900 000	
HUMAN SETTLEMENTS								
Barkly East Water Infrastructure	**Senqu**	**Water**	**Construction**	**DHS**		**R 14 000 000**	**R 0**	**R 0**
TOTAL						R 14 000 000	R 0	R 0
SUSTAINABLE SERVICE DIELIVERY INFRASTRUCTURE PROJECTS (PROVINCIAL TREASURY)								
Lady Grey - Borehole Pumpstations and Storage Reservoirs	Senqu	Water	Construction	Prov Treasury		R 10 000 000	R 0	R 0
Lady Grey - Sub project 4 Additional Storage and Boreholes	Senqu	Water	Construction	Prov Treasury		R 40 000 000	R 0	R 0
Aliwal North - Outfall Sewer from Spa to Nursery PS	WSLM	Sanitation	Construction	Prov Treasury		R 5 000 000	R 0	R 0
Aliwal North - Reconstruction of Nursery PS (retention)	WSLM	Sanitation	Complete	Prov Treasury		R 800 000	R 0	R 0
Aliwal North - Rehab gravity main NPS to Phola Park PS (retention)	WSLM	Sanitation	Complete	Prov Treasury		R 700 000	R 0	R 0
Aliwal North - Reconstruction pump main PPPS to WWTW (retention)	WSLM	Sanitation	Complete	Prov Treasury		R 500 000	R 0	R 0
Aliwal North - Rehab of WWTW and Phola Park PS	WSLM	Sanitation	Construction	Prov Treasury		R 500 000	R 0	R 0
Burgersdorp - replace water mains La Rochelle Street (retention)	WSLM	Water	Complete	Prov Treasury		R 500 000	R 0	R 0
Burgersdorp - replace water mains Queenstown Road	WSLM	Water	Construction	Prov Treasury		R 1 000 000	R 0	R 0
Burgersdorp - Chiapinnis Klip Dam rehabilitation (retention)	WSLM	Water	Complete	Prov Treasury		R 500 000	R 0	R 0
Steynburg - Koppie water supply	WSLM	Water	Planning	Prov Treasury		R 4 000 000	R 0	R 0
Burgersdorp - replace water mains Rose Road	WSLM	Water	Construction	Prov Treasury		R 5 000 000	R 0	R 0

Burgersdorp - Plantation sump	WSLM	Water	Construction	Prov Treasury		R 11 500 000	R 0	R 0
Burgersdorp: Top Up WTW 6Ml Storage Reservoir	**WSLM**	**Water**	**Tender**	**Prov Treasury**		**R 18 853 986**		
TOTAL						R 98 853 986	R 0	R 0

Master Plan Projects

JGDM does not have a single municipal wide master plan. It is the intention to compile such a plan in the following two 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

PMU Manager post has recently been filled.

Challenges and risks

- A clear hand-over process for completed infrastructure projects from the PMU to the WSP to operate and maintain;
- Lack of a Municipal-wide Water and Sanitation Master Plan to outline the financial investment to reduce and eradicate water and sanitation backlogs; and
- Under-expenditure on the water and infrastructure grants (MIG and WSIG).

Strategies and objectives

- Develop a hand-over process for completed infrastructure projects from the PMU to the WSP;
- Facilitate the finalization of the DBSA funding for the development of the JGDM Municipal-wide Water and Sanitation Master Plan; and

SECTION 12: CONCLUSION

The taking over of the water services provision function from the local municipalities has required the municipality to acquire adequate and competency personnel at various levels in order to discharge this accountability competently.

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.

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.