# A. EXECUTIVE SUMMARY

# A.1 Introduction

ZDM as the Water Service Authority has a duty to all customers or potential customers in its area of jurisdiction to progressively ensure efficient, affordable, economical and sustainable access to Water Services [Water Services Act of 1997 Section 11]. ZDM therefore has a legislative responsibility to prepare a Water Services Development Plan (WSDP) for its area of jurisdiction [Water Service Act of 1997 Section 12]. Planning work related to various aspects of water services are being dealt with on a continuous basis through the year and the results of such work are then systematically fed into the WSDP.

#### Name of WSA

Name	Zululand District Municipality		
Address	Private Bag X76 ULUNDI 3838	Lot B400, Gagane Street ULUNDI 3838	

#### Status of WSDP

The planned completion dates for the revision of the WSDP are as follows:

- WSDP Steering Committee approval (Draft version) March 2022
- EXCO approval May 2022
- Expected Council approval June 2022
- Submission of final WSDP with amended comments & input August 2022

#### WSDP drafting team

The contact persons within the municipality who are responsible for the functioning, planning and implementation of the WSDP are shown in Table A1.1 below:

#### Table A1.1: Drafting team

Name	Position	Tel Number	Email
Mr PM Manqele	Municipal Manager	035 874 5500	mmangele@zululand.org.za
Mr X Buthelezi	WSA Manager	035 874 5542	xbuthelezi@zululand.org.za
Mr J. Jordaan	Acting HOD: Technical Services	035 874 5500	jjordaan@zululand.org.za
Mr S. Kheswa	Acting HOD: Infrastructure Planning	035 874 5617	skheswa@zululand.org.za

#### Process followed

ZDM annually prepares a revised WSDP in time for the approval of the annual municipal budget. Planning work related to various aspects of water services are being dealt with on a continuous basis through the year and the results of such work are then systematically fed into the WSDP.

The WSDP Steering Committee has been established and meets at least four times per year. The steering committee comprises of the ZDM management team, officials from the Local Municipalities, Councillors and consultants involved with the technical work. The aim is to have a first draft of each year's revision ready by end of February. The following approvals are done:

#### Table A1.2: WSDP Approval Process

Item	Date	
WSDP Steering Committee Meetings	Quarterly	
Submission of draft WSDP document to WSA for comments	End February	
WSDP & IDP Steering Committee Approval	End March	
Representative Forum approval – This forum comprises all Government Departments	End April	
involved with the IDP process, all Councillors and role players from the private sector.	, .p	
EXCO approval	Мау	
Advertise for public comment	End May	
Council approval	June	
Submit to DWA for final approval	August	

#### Public comments

The WSDP will be advertised during May 2022 for public comment.

#### Adoption record

The 2021/2022 revision of the WSDP has been approved by the ZDM Council during June 2021.

#### WSDP co-ordinators

The WSDP process is managed by the Deputy Director: Water Services Authority in association with the HOD: Planning & Community Development and the HOD: Technical Services and their staff.

#### <u>PMU</u>

The ZDM PMU has been established and is functioning well. The PMU unit comprises of a Deputy Director, two technical officers, project administrator and secretary. The PMU manager reports to the HOD: Technical Services and is responsible for the implementation of all projects scheduled by the WSA. The WSA unit is situated in the Planning Department and reports to the HOD: Planning. The organograms below indicates the split in functions related to water services:

# PLANNING AND DEVELOPMENT

Annexure 5



See proceeding pages for each Annexure

# PLANNING AND DEVELOPMENT

Planning

Annexure 5.1



# PLANNING AND DEVELOPMENT



Zululand District Municipality Water Services Development Plan (DC26) Section A: Executive Summary

# PLANNING AND DEVELOPMENT

Geographic Information Systems Annexure 5.3



# PLANNING AND DEVELOPMENT



# PLANNING AND DEVELOPMENT

Planning Annexure 5.5



# PLANNING AND DEVELOPMENT

Shared Services (Funded) Annexure 5.6



#### Water services level policy

ZDM has compiled a Water Services Policy and this is available from the ZDM website at <u>www.zululand.org.za</u>. The following levels of service for water and sanitation are available from the municipality:

#### Table A1.4: Service Levels

Domestic Water Supply					
Service	Level of Service	Definition	Applicable	Norms and	
Level			Tariff Structure	Standards	
Number					
DW1	Full pressure	Full pressure unrestricted	Stepped block	Design	
	conventional	individual erf/yard connection	tariff	specifications	
	house connection				
DW2	Yard tank	Restricted (to 200l per day)	No charge	Design	
	(RDP standard)	individual erf connection with		specifications	
		tank in yard			
DW3	Communal street	Unrestricted full pressure	No charge	Design	
	taps	standpipe not further than 200m		specifications	
	(RDP standards)	from dwellings (shared by a			
		number of consumers)			
DW4	Rudimentary	Formalised supply:	No charge	Design	
		<ul> <li>Borehole equipped with hand pump</li> <li>Protected spring</li> </ul>		specifications	
		Communal standpipe within 800m from dwellings			

	Domestic Sanitation				
Service	e Level of Service Definition Applicable Tariff			Norms and Standards	
Level			Structure		
Number					
DS1	Water borne	Unrestricted connection to	Water consumption	Design specifications	
		municipal sewerage system	based tariff		
			structure included		
			in water tariff		
DS2	Conservancy	Localised temporary	Rate per load	Design specifications	
	tank	sewage storage facility	disposed by		
			municipality		
DS3	Septic tanks	On-site disposal (self	No charge	Design specifications	
		treatment)			
DS4	Ventilated	Dry pit with sufficient	No charge	Design specifications	
	improved pit	capacity on-site disposal			
	(VIP)	based on set standards			

# A.2 IDP and WSDP Goals

The Integrated Development Plan (IDP) for the ZDM has the following vision and mission statement for the region:



Part of the development objectives for Zululand is facilitating the delivery of basic services that include water services (i.e. water and sanitation provision), strengthening the local economy with particular emphasis on tourism, agriculture and small business sectors, and the sustainable use of land and the natural environment.

The importance of the vision and objectives in terms of the WSDP is the development of Zululand through the provision of equitable and sustainable water services leading to an improvement in the quality of life. It therefore follows that planning in respect of water services must increase the current level of service throughout the region with an improvement experienced by all. Planning must therefore be sustainable in terms of water resources, material resources, contractor capacity, management capacity, as well as funding and maintenance cost.

The IDP has a number of key development strategies, namely:

- Delivery and coordination of basic services.
- Social issues of communities.
- Sustainability and environment.
- Economic development.
- Build capacity to lead and manage development in Zululand.

All these development strategies will ultimately link to the need and spatial requirement for water services provision. Spatial development within the ZDM is directly related to the provision and availability of water services, therefore development tends to follow sustainable planning in the WSDP and not force water services provision into areas that are currently not economically viable or sustainable to supply.

This support the water and sanitation infrastructure development focus of the KZN Provincial Growth and Development Strategy (PGDS) for 2035, which will be discussed in the next section.

# A.3 Strategic Objectives & Development Goals

The ZDM WSDP supports the KZN PGDS Strategic Framework. WSDP goals, objectives, interventions and projects are aligned to place ZDM in a position to fulfil its role as WSA in achieving the provincial PGDS for 2035.

While the focus has been predominantly on providing each person with sustainable infrastructure and eradicating backlogs, the status of existing and aging infrastructure, as well as the availability and sustainability of water resources has been neglected. An extract of the KZN PGDS can be reviewed below.

"The 2015/2016 drought experienced in the country and more so in the Province has had a severe impact on the citizens of the Province and their livelihoods. The most severe impact has been felt by the rural communities of KZN whose livelihoods depend on agriculture, including livestock. The Province, through various initiatives and programs, has attempted to ensure a reliable supply of water to its citizens. The continued low rainfall has made this task increasingly challenging. National and Provincial government have spent millions of rand to ensure citizens have access to water.

The discourse on reliable and affordable water supply has forced the water sector to re-look at several aspects of the water source management and water supply. In terms of water source it is being argued that the Province requires a better understanding of groundwater and its catchment areas. This strategy argues that water planning and resource management should be done at a quaternary catchment level - the focus should not only be at regional level. Alternative water sources, like grey water and desalination must become viable options as sources of supply.

There is also a school of thought that the severity of the drought is a direct correlation to the poor maintenance programs of water services authorities. These related to poor borehole upgrades and spring protection, high water losses due to leakages not been attended to urgently, water theft and lack of bulk and reticulation planning.

Skills development and capacity building, in the water sector continues to be an area of investigation in this review. There is a school of thought that argues that the skills required are more at an artisan level rather than at engineering level. This relates to the **maintenance** *issue around boreholes and spring protection and attendance of water leaks*. There is, however, another school of thought that water services authorities have focused more on *water demand* rather than water source management and that shift must be emphasised. Further, there is increasing pressure being put on the water sector institution to begin to develop a *sustainable water sector capacity building model*. The water services boards, the water services departments and the water services authorities all have various levels and type of expertise within their institutions. Therefore, these institutions along with engineering councils and the private sector must begin to provide a holistic sustainable *capacity building model* that contributes to a new water sector investment strategy. In addition, there is a growing demand for *localized water skills* at all levels as well as employment and

business opportunities. The water sector through the vast capital spend have the potential to improve **employment opportunities and create entrepreneurs in decentralized local spaces**.

The financial cost of water supply cannot be underestimated and the Province needs to have a funding model to address this. Like energy, water costs will increase and become increasingly expensive for consumers and business, thus the importance of having a **reliable and affordable water supply**. The Department of Water and Sanitation in the Province have several key capital water projects that will ensure a relative supply of water in the province. The growing concerns will be the pace at which our province is urbanizing and the greater demand this will have on water provision in these urbanized areas as well as to ensure reliable access to water, in rural areas.

Given the above, the Province in the next five years must engage in the development of a new water sector investment strategy. This strategy must include **elements of water loss and maintenance, water availability, cost of water supply**. In addition, the strategy should include water source plans that consider ground water, desalination, grey-water. Further a discussion on localized skills and local business development. Greater emphasis on improving rural access to water and increasing mitigating measures to this section of our population."

As water provision will increase, so will water resources needs, operation and maintenance of existing infrastructure, efficient institutional and financial capacity to manage infrastructure and revenue etc. The KZN PGDS Framework aims to achieve at least 90% reliable services by 2035.

An overview of the KZN PGDS framework with associated goals and objectives for water and sanitation services can be reviewed in the next figure.

#### Figure A.3.1: KZN PGDS Framework



#### The 2016 Revised PGDS Strategic Framework Figure 10: PGDS Strategic Framework

2016 PGDS STRATEGIC GOALS and OBJECTIVES				
STRATEGIC GOAL	No	STRATEGIC OBJECTIVE 2016		
	1.1	Develop and promote the agricultural potential of KZN		
	1.2	Enhance sectoral development through trade investment and business retention		
	1.3	Enhance spatial economic development		
	11	Improve the efficiency, innovation and variety of government-led job creation		
	1.4	programmes		
	1.5	Promote SMME and entrepreneurial development		
2	2.1	Improve early childhood development, primary and secondary education		
HUMAN RESOURCE	2.2	Support skills development to economic growth		
DEVELOPMENT	2.3	Enhance youth and adult skills development and life-long learning		
	3.1	Eradicate poverty and improve social welfare services		
	3.2	Enhance health of communities and citizens		
3	3.3	Safeguard and enhance sustainable livelihoods and food security		
	3.4	Promote sustainable numan settlements Enhance safety and security		
DEVELOPMENT	3.6	Advance social cohesion and social capital		
		Promote youth, gender and disability advocacy and the advancement of		
	3.7	women		
	4.1	Development of seaports and airports		
4	4.2	Develop road and rail networks		
INFRASTRUCTURE	4.3	Develop ICT infrastructure		
DEVELOPMENT	4.4	Ensure availability and sustainable management of water and sanitation for all		
	4.5	Ensure access to affordable, reliable, sustainable and modern energy for all		
	4.6	Enhance KZN waste management capacity		
5	5.1	Enhance resilience of ecosystem services		
ENVIRONMENTAL	5.2	Expand the application of green technologies		
SUSTAINABILITY	5.3	Adapt and respond climate change		
	6.1	Strengthen policy, strategy coordination and IGR		
6	6.2	Build government capacity		
GOVERNANCE AND POLICY	6.3	Eradicate fraud and corruption		
	6.4	Promote participative, facilitative and accountable governance		
	7.1	Enhance the resilience of new and existing cities, towns and rural nodes,		
7		ensuring equitable access to resources, social and economic opportunities		
SPATIAL EQUITY	7.2	ensure integrated land management use across the Province, ensuring equitable access to goods and services, attracting social and financial		
		investment		

Strategic Objectives and Interventions for the KZN PGDS can be reviewed below.

#### Figure A.3.2: KZN PGDS Strategic Objectives and Interventions

Strategic O	bjective 4.4	Indicators:
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- 4.4.1 Percentage mean annual runoff water stored in each district.
- 4.4.2 Quantity of water abstracted per annum in each district.
- 4.4.3 Number of households receiving minimum standards of sanitation.
- 4.4.4 Percentage households with access to safe drinking water
- 4.4.5 Cubic meters of water available.
- 4.4.6 Surface Water storage as a percentage of surface mean annual runoff per district.
- 4.4.7 Non-Revenue Water loss (physical and non-physical water loss).
- 4.4.8 Number of projects not approved due to bulk Water and Sanitation Infrastructure constraint.
- 4.4.9 Number of MIG and WSIG projects meeting 75 litres of water per person per day.

#### Strategic Objective 4.4 Interventions:

- 4.4(a) Review and implement the Provincial Water Sector Investment Strategy.
- 4.4(b) Policy and guidelines on the inclusion of quaternary catchment for groundwater, grey water and desalination.
- 4.4(c) Develop and implement water sector capacity building programme with all water institutions.
- 4.4(d) Develop new water and sanitation tariff policy.
- 4.4(e) Expedite the approval of Water Use Licences.
- 4.4(f) Programme for development of water sources (desalination, rainwater, recycling, groundwater).
- 4.4(g) Expedite the planning and implementation of sub-transmission networks in the Province.

The ZDM WSDP supports the above framework, and will elaborate on each aspect in more details throughout the document under each relevant chapter. The following provides a framework for these topics under 11 categories as depicted in the KZN PGDS document.



Figure A.3.3: KZN PGDS Strategic Framework

These 11 categories are consolidated in the WSDP under the following chapters as required by the webbased WSDP template of DWS:

- CHAPTER 1: Socio-Economic Profile
- CHAPTER 2: Service Level Profiles
- CHAPTER 3: Water Resources Profile
- CHAPTER 4: Operation and Maintenance
- CHAPTER 5: Water Conservation & Demand Management
- CHAPTER 6: Water & Sanitation Services Profile
- CHAPTER 7: Water Balance
- CHAPTER 8: Institutional Profile
- CHAPTER 9: Customer Service
- CHAPTER 10: Financial Profile
- CHAPTER 11: Project Rollouts
- CHAPTER 12: Strategic Goals

Items related to the Strategic Objectives and Development Framework will be discussed throughout this WSDP and reference will be made to the 2035 targets.

# A.4 Background to the area

The ZDM is situated in northern KwaZulu-Natal (KZN). It covers an area of 14,808 km<sup>2</sup> and is divided into five local municipalities (LMs), namely eDumbe (KZ261), uPhongolo (KZ262), Abaqulusi (KZ263), Nongoma (KZ265), and Ulundi (KZ266) (Figure A4.1, pg. 19). There is only one change in the local municipal boundaries from 2011 to 2016. This area is located west of Louwsburg, where a portion of uPhongolo LM has been incorporated into AbaQulusi LM. This change can be reviewed under Figure A 4.1, pg. 19.

The district is predominantly rural with commercial farmland interspersed by protected areas, towns, and dense to scattered rural settlements within traditional authority areas. The majority of these rural settlements are small, making service delivery to these remote areas extremely costly. Settlements are located as follows:

#### Table A 4.1: Settlement location

Settlement Location	Nr of Settlements
Urban Towns	27
Communal Property	27
Land Reform Areas	75
State-owned	26
Tribal Areas	857
Private Land	257
TOTAL	1 269

A revised update of household points and settlements has been done in 2016 to update settlement boundaries and include new land reform areas as settlements. Household clusters on private farms have also been identified, and will be addressed based on ZDM's policy regarding rural residents on privately owned farm lands. A map showing the existing settlements against the revised settlement database can be reviewed under Figure A4.2. The major changes and updates can be seen in AbaQulusi and eDumbe LM's, with minor updates and additions in the uPhongolo LM. The new settlement areas are included as part of this 5-year review of the WSDP.

A comparison table showing the new revised settlement types can be reviewed in Table A4.2 below.

<u>New imagery has been obtained from Google Earth to do a new household count for 2019/2020 household</u> <u>update. The settlements also need to be revised and aligned with these new household points and counts.</u> <u>However, due to COVID restrictions and councillors being off sick, the revised data sets and updated</u> <u>demographic details should be available in the final WSDP review in June 2022.</u>

Class	Settlement Type	Nr of Settlements	Total households
	Urban - Formal Town	4	6 425
	Urban - Former wynship	5	14 675
	Urban - Ex Hon 1d Town	13	10 233
UNDAN	Urban - Working Town	6	1 335
	Urban - Service Centre	8	1 549
	Urban - Squatter Camp	1	115
	Urban Fringe - Informal Settlement	19	8 906
	Peri-Urban - Squatter Camp	1	284
	Rural - Formal Dense >5000	2	3 046
	Rural - Formal Dense <5000	35	10 310
RURAL	Rural - Scattered Dense	5	2 612
	Rural - Scattered Medium Density	5	223
	Rural - Scattered Low Density	59	10 732
	Rural - Scattered Very Low Density	1 106	107 422
	Rural - Scattered households	N/A	5 775
	TOTAL	1 269	183 642

#### Table A 4.2: Settlement Types

The following provides details of the areas within ZDM defined under urban:

LM	CLASSIFICATION	Z-NR	AREA
	Urban - Formal Town	Town9	Louwsburg
		Town27a	Vryheid Town
		Town27b	Bhekuzulu
	Urban - Former Township	Town16a	Emondlo town
		Town27c	Lakeside
		ZNew180	Kandaspunt
	Urban - Service Centre	Z846	Mountain view
AbaQulusi		ZPM12	Rietvlei
	Urban - Squatter Camp	ZMAP122	Vryheid Dump Site
		ZHC5	Boomlaer
		Z932	Coronation
	Urban Working Town	Z934	Enyathi
		Z938	Hlobane
		ZHC4	Thutukani
		ZHC8	Vaalbank
	Urban - Ex Homeland Town	Z937	Frischgewaagd
oDumbo	Urban - Formal Town	Town8a	Paulpietersburg Town
eDumbe	Urban - Former Township	Town8b	Edumbe Township
	Urban - Service Centre	Z928	Luneburg
Noncomo	Urban - Ex Homeland Town	Town22	Nongoma Town
Nongoma		ZMAP26	White City
		Z741	Kwazondela
		Z931	Mahlabathini
		Town18-A	Ulundi Unit A
		Town18-B	Ulundi Unit B
Ulundi	Urban - Ex Homeland Town	Town18	Ulundi Unit B1
Oluliui		Town18-BA	Ulundi Unit BA
		Town18-C	Ulundi Unit C
		Town18-D	Ulundi Unit D
		Town18-L	Ulundi Unit L
	Urban - Service Centre	Z940	Babanango
	Urban - Ex Homeland Town	Z459	Belgrade
	Urban - Formal Town	Town15a	Pongola Town
uPhongolo	Urban - Former Township	Town15b	Ncotshane Township
urnongolo		ZMAP124	Golela Border Post
	Urban - Service Centre	Z936	Magudu
		Town15c	Pongola Town (Sugar Refinery)

Land use in the ZDM is linked primarily to tenure and the land with the highest agricultural potential is in private ownership and is mostly used for commercial farming or conservation, with low settlement densities. Private farmlands constitute a large portion of the ZDM's land area. The land use potential varies throughout the district, but are predominantly varieties of grassveld and thornveld. Agricultural activities are mainly forestry (eDumbe, Abaqulusi and around Babanango), sugar cane (uPhongolo), livestock (throughout the district), maize, soya beans, wheat, groundnuts, sorghum, vegetables and sub-tropical fruit. These commercial farms mostly have well developed infrastructure and farming systems. The difficulties they experience relate more to broader economic factors than spatial factors and linkages in the ZDM. In recent years, a number of cattle farms throughout the ZDM have been converted into game farms. These may be linked to tourism and conservation in the district.

In contrast, the non-arable land and land with severe limitations to agriculture, fall into the traditional authority areas and are densely settled. These Ingonyama Trust areas support settlement and subsistence agriculture (there is moderate to restricted agricultural potential), with the Traditional Authorities (TAs) for each LM being divided as follows:

- eDumbe LM: Dlamini TA and Mtetwa TA.
- uPhongolo LM: Masidla TA, Msibi TA, Ntshangase TA and Simelane TA.
- Abaqulusi LM: Hlahlindhlela TA and Kambi TA.
- Nongoma LM: Mandhlakazi TA, Matheni TA and Usuthu TA.
- Ulundi LM: Empetempithini TA, Mbata TA, Mpungose TA, Ndebele TA, Nobamba TA, Ximba TA and Zungu TA.

A map showing land distribution can be reviewed under Figure A4.1c. Tribal Authority areas, Land Reform Areas, privately owned farms and urban areas can be seen.

Should any boundaries change during the next elections earmarked for 2021, these changes will be updated in the next WSDP review.









Figure A 4.3: Land distribution in Zululand District Municipality.

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The area forms part of the Pongola, Mkuze and Mfolozi River Catchments of the Usuthu/Mhlathuze Water Management Area that extends from the high lying areas in the north and west to the Indian Ocean in the east. The northern and western edges of the ZDM are characterised by steep terrain. The Skurweberg and Elandsberg Mountains on the Western side of the ZDM are approximately 1,700 m above sea level. In the northeast there are the Lebombo Mountains. In general the topography slopes and gets less steep from west to east, as well as from north to south, consequently all the main rivers flow in this direction. There are some large relatively flat areas between 200 m and 300 m around the town of Pongola, as well as on the lower reaches of the Mfolozi River (Figure A4.4).

Climatic conditions vary significantly from the northern highlands to the eastern low-lying areas around the town of Pongola. Rainfall is strongly seasonal with more than 80% occurring as thunderstorms between October and March, with the peak months being December to February in the inland areas. Rainfall varies from over 1,000 mm in the north and west, dropping to below 600 mm in the central area around Pongola. The resultant Mean Annual Runoff (MAR) ranges from above 200 mm in the north and west, to below 100 mm in the central areas. Overall the Mean Annual Precipitation (MAP) is 840 mm, and the corresponding MAR 102 mm (12 % of MAP) (Figure A4.5). Annual variability of rainfall is indicated by the historic coefficient of variation of the rainfall record, which ranges from (20 % to 25 %) in the west to greater than 35 % in the Pongola area. In accordance with the rainfall pattern the relative humidity is higher in summer than in winter. Potential mean annual gross evaporation ranges from 1400mm in the west to 1600 mm in the lowveld. The highest mean monthly evaporation is in December and the lowest mean monthly evaporation in June. One strategic dam, namely Pongolapoort/Jozini, has been developed. There is a vast amount of water in the area with both surface resources, as well as good ground water potential.

Topography type	Percentage of total municipal area	
Mountainous	30%	
Rolling	70%	
Flat	0%	
Coastal	0%	



Figure A 4.4: Terrain map of Zululand District Municipality.



Figure A 4.5: Precipitation map of Zululand District Municipality.

# A.5 Backlogs

Tables A.5.1 and A.5.2 below indicate the status in ZDM with regards to water services backlogs in the district. Backlogs, progress and funding allocations are to be finalised during the final review of the WSDP in May.

			Communal	Yard/House	
	None or	Rudimentary	standpipes	connections	TOTALS
Water	Inadequate	<rdp< th=""><th>RDP</th><th>&gt;RDP</th><th></th></rdp<>	RDP	>RDP	
AbaQulusi LM	0	0	0	16 000	16 000
eDumbe LM	0	0	0	5 458	5 458
Nongoma LM	0	0	0	632	632
Ulundi LM	0	0	0	5 912	5 912
uPhongolo LM	0	0	0	4 009	4 009
Total (urban)	0	0	0	32 011	32 011
AbaQulusi LM	6 493	4 161	10401	10 064	31 119
eDumbe LM	2 695	806	1628	7 054	12 183
Nongoma LM	5 598	10 019	10 852	17 275	43 744
Ulundi LM	2 596	1 410	14 333	20 736	39 075
uPhongolo LM	1 307	1111	2570	20 522	25 510
Total (rural)	18 689	17 507	39 784	75 651	151 631
		_			
Total (households)	18 689	17 507	39 784	107 662	183 642

#### Table A.5.1: Access to water (households)

The following figure depicts the estimated time it will take to eradicate all water backlogs below RDP standard if current MIG funding allocations remains constant. RBIG and WSIG funding allocations fluctuate based on approved funding applications, and future projections have been based on the current financial year's allocations.

Most of the regional scheme business plans and technical reports have been updated to allow for price escalations, amendments and upgrades. At a total remaining cost of nearly R10b with only an annual funding allocation of R562m, ZDM will only be able to complete all remaining water infrastructure by 2039. The 2035 target will therefore not be met. ZDM will require at least **<u>R700m</u>** annual funding allocation for water alone to reach the 2035 provincial goals.





	Inadequate (Excl.	VIP	Septic tank	Waterborne	
	Infills/Replaceme				
	nts)	RDP	RDP	>RDP	TOTALS
AbaQulusi LM	0	0	1035	14 965	16 000
eDumbe LM	0	2981	498	1 979	5 458
Nongoma LM	0	283	0	349	632
Ulundi LM	0	635	0	5 277	5 912
uPhongolo LM	0	698	0	3 311	4 009
Total (urban)	-	4 597	1 533	25 881	32 011
AbaQulusi LM	5 750	24 945	424	0	31 119
eDumbe LM	967	10 950	266	0	12 183
Nongoma LM	8 621	35 123	0	0	43 744
Ulundi LM	640	38 383	52	0	39 075
uPhongolo LM	6 560	18 614	336	0	25 510
Total (rural)	22 538	128 015	1 078	0	151 631
Total (households)	22 538	132 612	2 611	25 881	183 642

#### Table A.5.2: Access to sanitation

The following figure depicts the estimated time it will take to eradicate all sanitation backlogs below RDP standard if current MIG funding allocations remains constant.



Figure A 5.2: Sanitation Backlog eradication at current funding allocation of R36m/annum

With the 2035 goals in mind, the backlogs in rural sanitation should be eradicated by 2032. However, settlements are continuously expanding, and household growth will maintain an increase in the future.

	TOTAL			% OF TOTAL
WATER	HOUSEHOLDS	BACKLOGS	% BACKLOGS	BACKLOGS
AbaQulusi LM	47 119	10 654	22.61%	29.43%
eDumbe LM	17 641	3 501	19.85%	9.67%
Nongoma LM	44 376	15 617	35.19%	43.15%
Ulundi LM	44 987	4 006	8.90%	11.07%
uPhongolo LM	29 519	2 418	8.19%	6.68%
Total	183 642	36 196	19.71%	100.00%
	TOTAL		% BACKLOGS	% OF TOTAL
SANITATION	HOUSEHOLDS	BACKLOGS	in LM	BACKLOGS
AbaQulusi LM	47 119	5 750	12.20%	25.51%
eDumbe LM	17 641	967	5.48%	4.29%
Nongoma LM	44 376	8 621	19.43%	38.25%
Ulundi LM	44 987	640	1.42%	2.84%
uPhongolo LM	29 519	6 560	22.22%	29.11%
Total	402 042	22 520	40.070/	100.00%

#### Table A.5.3: Percentage backlogs (water & sanitation)

YEAR	BACKLOGS (	Households)	ALLOC	Household	
	Water	Sanitation	Water	Sanitation	count
2019-2020	42 711	30 586	383 328 220	51 310 825	
2020-2021	39 145	28 586	394 165 250	59 721 750	2016
2020-2021	37 497	26 848	596 157 000	61 127 500	Households
2022/2023	36 196	22 538	549 102 401	36 334 200	

#### Table A.5.4: Existing backlogs against funding allocations

YEAR	BACKLOGS REMAINING (%)					
	Water	Sanitation				
2019-2020	23.26	16.66				
2020-2021	21.32	15.57				
2021/2022	20.42	14.62				
2022/2023	19.7	12.3				

PLEASE NOTE THAT BACKLOGS ARE ESTIMATES BASED ON PROJECTED COMPLETION DATES OF PROJECTS AT THE END OF JUNE, AND MAY VARY ON FINAL FINANCIAL YEAR END.

ACTUAL FIGURES WILL BE UPDATED AFTER FINANCIAL YEAR END.

# A.6 Summary of content

The key information contained in the WSDP is listed below for ease of reference. More detail can be obtained by referring to the respective chapters in the document:

# **Chapter 1: Socio Economic Profile**

The current consumer profile of the district reflect an updated household count which was done by ZDM from aerial photography taken in 2016 by National Geo-spatial Information (NGI). A total of **182 585 households** and **1 057 farm houses** were captured, bringing the total dwellings in ZDM to **183 642.** Although this is only 465 households more than what the total household count was for 2013, there were many household ruins in the rural areas where dwellings were either abandoned or people have relocated. A comparison between the various households counts since 2001 is shown in the table below. This indicates the reduction in households over the past 17 years.

#### Table A 6.1: Household Count Analysis Table (2001-2016)

YEAR FLOWN	2013 Count	2016 Count	Diff in HH from 2013 count				
2001	90 096	85 091	-5 005				
2007	40 768	38 607	-2 161				
2010	15 807	14 717	-1 090				
2013	36 506	33 666	-2 840				
2016	N/A	11 561	-				
	Overall increase in HH from 2013 count						

The above table can be reviewed in graph format in the following chart.





<u>New imagery has been obtained from Google Earth to do a new household count for 2019/2020 household</u> <u>update. The settlements also need to be revised and aligned with these new household points and counts.</u> <u>However, due to COVID restrictions and councillors being off sick, the revised data sets and updated</u> <u>demographic details should be available in the next WSDP review.</u>

From a spatial perspective, the following map indicates the number of households per square kilometer for 2016 compared with the number of households from 2013. The yellow and light green areas show a strong decline in dwellings, whereas blue indicates a strong increase in households.



Figure A.6.2: Dwelling Growth Pattern per Square Kilometer (2013-2016)

Growth trends per local municipality can be summarised as follows:

#### • AbaQulusi

High growth in the surrounding eMondlo town areas as well as in Nkongolwane. There is a substantial growth in the Kwa Shoba & Tinta's Drift areas, with a high decrease in rural households surrounding Vryheid town.

#### eDumbe

Strong positive growth in eDumbe, Frischgewaagd & Bilanyoni.

#### uPhongolo

High growth in Ncotshane as well as settlements all along the N2 going west towards Belgrade.

• Nongoma

Positive growth along the Nongoma/Hlabisa road, with an overall slight negative growth in most of the rural areas.

• Ulundi

Positive growth surrounding Ulundi town areas, with an overall slight negative growth in most of the rural areas between Ulundi and Nongoma.

When the new household count of 11 561 from 2013 to 2016 is considered, it represents an increase in the number of households of 6.31% over 3 years. An **annual average household growth of 2.1%** is therefore evident over the period from 2013 to 2016, which is less than the 3.6% increase from the period 2009-2013. The period from 2005/2006 to 2009 shows an average annual household growth of 3.7%. There is therefore a slight decreasing trend in the household growth over the past 10 years in ZDM.





Due to the spatial analysis requirements for water and sanitation provision at household level, ZDM uses its own household data set which contains actual household positions as opposed to numerical values provided by STATSSA per enumeration area. Households and defined by and projects are implement per local settlement areas as defined by the ward councillors, and these settlements areas don't always coincide with the enumeration area boundaries of STATSSA. It is therefore impossible to correlate the enumeration areas with settlement areas and derive household statistics between the two data sets.

STATSSA has released the interim 2016 Community Survey statistics per local municipality, and the estimated number of households for the 2016 community survey is slightly higher than the spatial household count for ZDM. A comparison table between the 2011 census data and the 2016 community survey details can be seen in Table A.6.2 below.

	HOUSE	HOLDS	Ave House	holds Size		
Local Municipality	2011	2016	2011	2016	2011	2016
AbaQulusi	43 299	51 472	224 998	241 196	4.90	4.70
eDumbe	16 138	17 415	85 022	89 614	5.10	5.10
Nongoma	34 341	36 409	200 948	211 892	5.70	5.80
Ulundi	35 198	38 553	264 765	205 762	5.40	5.30
uPongolo	28 772	34 667	153 727	143 845	4.40	4.10
Total	157 748	178 516	929 461	892 310	5.10	5.00

#### Table A.6.2: STATSSA 2016 Community Survey

For population analysis, the 2011 Census figures will however be applied to the ZDM household count as per local municipality since the 2016 Community Survey was not a full Census. A comparison table can be reviewed under Table A.6.3. below, showing household growth and population figures per local municipality.

Table A C 2. 7DM and STATSSA	Canava 2011 ha	upphald growth on	alvaia (2005 - 204	<b>י</b> ד ו
Table A.O.S. ZDIVI aliu STATSSA	Census 2011 no	usenolu growth an	iaiysis (2005 - 201	.,

	Actual Household Statistics (Captured from aerial photography over 4 consequtive periods) vs CENSUS Data												
Local Municipality	2006	2009 (AERIALS)	2010	2011 (CENSUS)	2012	2013 (AERIALS)	2014	2015	2016 (COMM SURVEY)	2016 (AERIALS)	Annual household growth rate	Average Population per household	Total Population (ZDM)
AbaQulusi	36 069	40 302				45 918				47 119	0.9%	4.90	230 883
eDumbe	15 011	16 880				16 671				17 641	1.9%	5.10	89 969
Nongoma	34 056	38 171				45 670				44 376	-0.9%	4.40	195 254
Ulundi	35 309	37 365				46 450				44 987	-1.1%	5.70	256 426
uPongolo	22 098	25 136				28 468				29 519	1.2%	5.40	159 403
Total	142 543	157 854		157 748		183 177			178 516	183 642	0.41%	5.10	931 935

To summarise the above outcomes, the current household count for ZDM taken from the 2016 household count, is 183 642, with a total population count of 931 935 when STATSSA population per household is applied (http://www.statssa.gov.za/publications/Report-03-01-74/Report-03-01-742011.pdf)

Figure A.6.4: ZDM household growth analysis (2005 - 2017)



In the following graph the household growth per local municipality can be compared between urban and rural growth over the past 3 years. eDumbe and uPhongolo shows the highest urban growth. Rural growth is negative in Ulundi and Nongoma, with a slight positive growth in AbaQulusi, eDumbe and uPhongolo.



Figure A.6.5: Annual Urban and Rural Household Growth per Local Municipality

Data derived from 2013 and 2016 Aerial Photography (NGI)

In Table A.3(d) the domestic dwellings and farm houses per local municipality can be reviewed. Industrial and business properties were only captured in urban areas since it is not always possible to distinguish businesses and commercial buildings in rural areas from aerial photography.

Table A.6.3: Current consumer profile (units)

		INDUSTRIAL /		
LOCAL MUNICIPALITIES	DOMESTIC	BUSINESSES	FARM HOUSES	TOTAL
AbaQulusi	16 031	1 947	-	17 978
eDumbe	5 119	336	-	5 455
Nongoma	629	483	-	1 112
Ulundi	5 834	638	-	6 472
uPhongolo	3 732	576	-	4 308
Total (urban)	31 345	3 980	-	35 325
AbaQulusi	29 463	-	424	29 887
eDumbe	11 286	-	266	11 552
Nongoma	45 041	-	-	45 041
Ulundi	40 564	-	52	40 616
uPhongolo	24 400	-	336	24 736
Total (rural)	150 754	-	1 078	151 832
Total	182 099	3 980	1 078	187 157

# Chapter 2: Service Level & Associated Services Profile

The current levels of access to water services in the district are indicated below:

			Communal	Yard/House	
	None or	Rudimentary	standpipes	connections	TOTALS
Water	Inadequate	<rdp< th=""><th>RDP</th><th>&gt;RDP</th><th></th></rdp<>	RDP	>RDP	
AbaQulusi LM	0	0	0	16 000	16 000
eDumbe LM	0	0	0	5 458	5 458
Nongoma LM	0	0	0	632	632
Ulundi LM	0	0	0	5 912	5 912
uPhongolo LM	0	0	0	4 009	4 009
Total (urban)	0	0	0	32 011	32 011
AbaQulusi LM	6 493	4 161	10401	10 064	31 119
eDumbe LM	2 695	806	1628	7 054	12 183
Nongoma LM	5 598	10 019	10 852	17 275	43 744
Ulundi LM	2 596	1 410	14 333	20 736	39 075
uPhongolo LM	1 307	1111	2570	20 522	25 510
Total (rural)	18 689	17 507	39 784	75 651	151 631
Total (households)	18 689	17 507	39 784	107 662	183 642

Table A.6.4: Residential consumers: access to water

#### Table A.6.5: Residential consumers: access to sanitation

	Inadequate (Excl.	VIP	Septic tank	Waterborne	
	Infills/Replaceme				
	nts)	RDP	RDP	>RDP	TOTALS
AbaQulusi LM	0	0	1035	14 965	16 000
eDumbe LM	0	2981	498	1 979	5 458
Nongoma LM	0	283	0	349	632
Ulundi LM	0	635	0	5 277	5 912
uPhongolo LM	0	698	0	3 311	4 009
Total (urban)	-	4 597	1 533	25 881	32 011
AbaQulusi LM	5 750	24 945	424	0	31 119
eDumbe LM	967	10 950	266	0	12 183
Nongoma LM	8 621	35 123	0	0	43 744
Ulundi LM	640	38 383	52	0	39 075
uPhongolo LM	6 560	18 614	336	0	25 510
Total (rural)	22 538	128 015	1 078	0	151 631
Total (households)	22 538	132 612	2 611	25 881	183 642

#### Table A.6.6: Backlog Figures

YEAR	BACKLOGS	Households)	ALLOC	Household	
	Water	Sanitation	Water	Sanitation	count
2019-2020	42 711	30 586	383 328 220	51 310 825	
2020-2021	39 145	28 586	394 165 250	59 721 750	2016
2020-2021	37 497	26 848	596 157 000	61 127 500	Households
2022/2023	36 196	22 538	549 102 401	36 334 200	

YEAR	BACKLOGS R	EMAINING (%)				
	Water	Sanitation				
2019-2020	23.26	16.66				
2020-2021	21.32	15.57				
2021/2022	20.42	14.62				
2022/2023	19.7	12.3				

#### Table A.6.7: Backlog Eradication Progress

## Table A.6.8: Public institutions and 'dry' industries: access to water

			WATER	
Institution	No off	None or	Communal	Yard
		inadequate	standpipe	connection
Businesses	3 980			<b>958</b>
Clinics	68	5	48	15
Creches	7	2		5
"Dry" Industries				
Hospitals	13			13
Magistrate offices	7			7
Police Stations	15	4		11
Prisons	3			3
Schools	789	360	329	100
Community Halls	39	27		12
Total	4 921	398	377	1 124

#### Table A.6.9: Public institutions and 'dry' industries: access to sanitation

			SANITATION	
Institution	No off	None or inadequate	Dry pit / Septic tanks	Waterborne
Businesses	3 980			~30
Clinics	68		1	67
Creches	7	2		5
"Dry" Industries				
Hospitals	13			13
Magistrate offices	7			7
Police Stations	15	4		11
Prisons	3			3
Schools	789	24	637	128
Community Halls	39	27		12
Total	4 921	57	638	4 226

## **Chapter 3: Water Resource Profile**

The ZDM falls within the Mfolozi (W2), Mkuze (W3) and Pongola (W4) secondary catchments of the Usuthu/Mhlathuze Water Management Area (WMA)<sup>1</sup>. The aerial extent of the ZDM occupies approximately 22% of this WMA. The total available water and requirements as at year 2000, based on a 98% assurance of supply within these sub-areas, is summarised in Table A.6.6. It is evident that apart from the Pongola catchments, water from these sub-areas is currently over-utilised and a deficit is created. However, according to Basson and Rossouw<sup>2</sup>, this deficit is a result of the provision made for future implementation of the Reserve. The Reserve is a legislated requirement of the amount of water required to satisfy the ecological needs of a river system (provisionally estimated at 20%) as well as the basic human needs (that have been established as 25 litres per person per day).

Table A.6.6: Water balance - summary of the water available and required within Zululand District Municipality for the year 2000 (Million m<sup>3</sup> ( $k\ell$ ) per annum).

			Mfolozi	Mkuze	Pongola	Total
	Notural resource	surface water	36	15	616	667
	Natural resource	groundwater	5	12	8	25
		Irrigation	5	6	21	32
Available	Usable return flow	Urban	4	0	0	4
water		Mining & bulk	1	0	0	1
	Total local yield*		51	33	645	729
	Transfers in		0	30	0	30
		Total available	51	63	645	759
		Irrigation	51	61	213	325
		Urban**	12	1	1	14
	Consumer groups	Rural**	11	10	6	27
Water		Mining & bulk industrial***	4	0	1	5
requirements		Afforestation****	2	6	34	42
	Total local requirements	-	80	78	255	413
	Transfers out		18	0	30	48
		Total used	98	78	285	461
	Balance		-47	-15	360	298

Source: Basson and Rossouw (2003).

\*Includes allowance for impacts of the ecological component of the Reserve, river losses, alien vegetation, rain-fed agriculture and urban run-off on yield.

\*\*Includes allowance for basic human needs component of the Reserve (25 t/c/d).

\*\*\*Mining and bulk industrial water uses that are not part of the urban system.

\*\*\*\*Afforestation quantities refer to the impact on yield only.

<sup>&</sup>lt;sup>1</sup> The Usuthu/Mhlathuze WMA is one of 19 areas defined across South Africa in terms of the National Water Act, 1998 (Act 36 of 1998). These WMAs have been defined to improve water resource management within South Africa. With time, each of the WMAs will establish a catchment management agency (CMA) for the regulation and control of water use in the WMA.

<sup>&</sup>lt;sup>2</sup> Op cit 2 at 23.

## **CHAPTER 4: Operation & Maintenance**

Operation and Maintenance management is split up as follows:

#### **\*** Bulk Water and Wastewater Management:

The core function for Water Services Provision Bulk is to ensure that water and wastewater infrastructure is managed properly in order to produce a cost effective and SANS 241 acquiescent quality of water. It is also to Operate and Maintain the Bulk Infrastructure in order to minimize down time).

#### Rural and Urban Reticulation:

The main function of the "Urban and Rural Reticulation Section" division is to operate and maintain the water and sanitation networks in both urban and rural areas within the Local Municipalities.

Of critical importance is the funding of Operations and Maintenance of existing and future schemes as they are being commissioned. Correct O&M of physical infrastructure is arguably more important than infrastructure construction because unless successful preventative maintenance procedures are instituted schemes will become inoperative. As a large proportion of expenditure relates to staff, competent personnel are required to ensure that the large investments in water services are not negated through dysfunction or dereliction.

This section looks at existing infrastructure which have reached its end of lifespan, and whether refurbishment, O&M or replacement is necessary for sustainable service delivery. This is applicable for water and sanitation components such as WTW's or Pump Stations, but also for scheme networks where infrastructure has deteriorated or reached the end of its lifespan. It furthermore entails O&M for all borehole and spring protection services where O&M plays a significant role.

Other factors influencing proper O&M include Staff capacity, external resources, equipment and budget requirements.

Table A.6.7 below shows the operational costs associated with the provision of water services in the district against the total income. At present a significant decline exists for O&M, and ZDM is addressing these issues through various means.

				Act	tual	I	Projected									
Operating costs and income	Tot	al 5yr projected	d 2020-2021 2021-2022			2021-2022	2022-2023 2023-2024				2024-2025		2025-2026		2026-2027	
Operational costs	R	2 135 402 037	R	344 986 742	R	317 975 886	R	349 773 474	R	384 750 822	R	423 225 904	R	465 548 494	R	512 103 344
Personnel costs	R	903 187 212	R	134 235 055	R	134 490 718	R	147 939 790	R	162 733 769	R	179 007 146	R	196 907 860	R	216 598 647
Total O&M costs	R	3 038 589 249	R	479 221 796	R	452 466 604	R	497 713 264	R	547 484 591	R	602 233 050	R	662 456 355	R	728 701 990
Equitable share: FBS	R	2 892 813 490	R	564 272 000	R	524 645 000	R	559 056 000	R	566 225 000	R	577 549 500	R	589 100 490	R	600 882 500
Income: sales (actual payment)	R	290 114 352	R	25 410 596	R	43 200 000	R	47 520 000	R	52 272 000	R	57 499 200	R	63 249 120	R	69 574 032
Total income	R	3 182 927 842	R	589 682 596	R	567 845 000	R	606 576 000	R	618 497 000	R	635 048 700	R	652 349 610	R	670 456 532
Deficit/surplus	R	144 338 593	R	110 460 800	R	115 378 396	R	108 862 736	R	71 012 409	R	32 815 650	R	-10 106 745	R	-58 245 458

|--|

KPI's include maintaining proper O&M on relevant assets, as well as keeping staff and budget requirements in place.

# **Chapter 5: Water Conservation/ Demand Management**

ZDM has embarked on an extensive Unaccounted for Water programme (UAW), aimed at understanding the usage of water in the district and to provide guidance to future demand management and waterloss interventions. Specific interventions will be launched at individual schemes to address water losses through:

- Pressure management
- Leak repair programmes
- Meter repair & replacement programmes
- Internal plumbing leaks
- Consumer end-use demand management initiatives

The water demand strategy will focus on a number of ways to ensure the reduction of water demand by consumers, for example:

- Influencing the behaviour of consumers
  - School and public educational and awareness programmes aimed at promoting effective usage of water (brochures, advertising, newsletters, demonstrations, exhibits, informative billing, etc)
  - o Water services tariff that promotes efficient water usage
  - Any other "win-win" initiatives that could influence consumers positively
- Specific targeted projects like;
  - Repair plumbing leaks inside properties
  - Installation of water flow control devices, etc.

# Chapter 6: Water and Sanitation Services Infrastructure Profile

ZDM has done extensive work on the development of a database that will serve as an asset register, but also to be used as the basis for the development of an asset management system and to capture asset related information electronically for ongoing use. The system has been named 'MANZI' and access can be gained on the ZDM website at <u>www.zululand.org.za</u> once the user has been issued with a username and password. Table A.6.7 below provides a brief overview of the schemes in the district that have been captured on the MANZI system and a summary of the infrastructure under consideration, as well as a rough estimate of the value of assets. These figures will be refined over time once the asset management system has been rolled out.

Summary Data	LOS	Total
	Above RDP - Urban	14
	Above RDP - Rural	63
Number of Schemes	RDP	122
Number of Schemes	Rudimentary	145
	To be confirmed on GIS	11
	TOTAL SCHEMES	355

#### Table A.6.8: Summary of schemes in the district

Table A.6.8 below shows examples of infrastructure data that is currently available on the GIS system and MANZI. Some gaps still exist in the infrastructure information, ZDM has been systematically updating its infrastructure details and eliminating data gaps where possible within its capability and resources. This process involves both feature as well as attribute data, and will support the asset management system initiative of ZDM which is currently in development

Summary Data	Description	Total
Disaliasa	Bulk	12922 km
Pipelines	Reticulation	6539 km
	Yard Connection	32 967
	StandPipe - Barrel	305
	StandPipe - Communal	6 011
	Electrical Point	154
	Valve	16 617
	Meter	1 198
	Bulk Metering Points	233
	Handpump	717
	Playpump	36
	Electrical Pump	110
	Diesel Pumps	25
Installations	Equipped BH pumps (Type unverified)	869
	Pump Station	114
	Scheme Source / Abstraction	549
	Break-pressure Tank	608
	Storage - Jojo	247
	Storage - Reservoir	792
	Treatment (Sand filters etc)	12
	Water Treatment Works	40
	Boreholes	2473
	Spring Protections	67
	Windmills	17

#### Table A.6.9: Summary of infrastructure components available the ZDM GIS

### **Chapter 7: Water Balance**

A first order water balance is presented in Chapter 7 from available data at the time.

#### Chapter 8: Water Services Institutional Arrangements

The ZDM Section 78 investigation process was completed in 2007 and the conclusion was that a single Water Services Provider for the entire district (internal department within ZDM) is the preferred water services provision arrangement for the future and that this be implemented progressively. Certain specialised functions were also listed that should rather be contracted out to private business, although still being part of the overall WSP structure. These are services that require skilled personnel that are expensive and difficult to source and that are more cost effective to contract in rather than source in-house, for example electrical/mechanical artisans, certain maintenance functions, etc. The detailed outcome of the Section 78 investigation process is captured in Chapter 7 herewith.

### **Chapter 9: Customer Services Profile**

The provision of high quality water services to consumers involves good water quality and the reliability of water services. This chapter covers interventions implemented or planned by ZDM to address the above mentioned issues. A customer care charter is being drafted that will be the "contract" with the consumer and will also list the consumer's responsibilities in this regard. Work has been done on the drafting of a customer care strategy and the following key focus areas have been identified:

- To know your customers (complete customer database)
- To develop proper mechanisms for effective two way communication with customers
- To provide affordable, high quality services that are accessible to all
- To empower your consumers through education
- To develop a customer focused organisation
- To develop a customer charter and honour the agreement with the customer
- To accelerate the implementation of appropriate service provision structures

### **Chapter 10: Financial Profile**

This chapter deals with two financial issues related to water services infrastructure, namely:

- New capital projects
- Operations and maintenance (O&M) of existing infrastructure

The details are contained in Chapter 9 but can be summarised in the tables below:

#### Table A.6.10: Capital requirements: water

WATER	Ca	pital requirements		2022/2023		2023-2024		2024-2025		2025-2026		2026-2027
Regional bulk	R	7 244 921 638	R	346 335 383	R	574 809 919	R	494 047 695	R	536 953 490	R	534 572 203
Reticulation	R	2 592 990 861	R	282 150 148	R	108 756 956	R	159 813 619	R	105 229 123	R	135 089 108
Total capital (new)	R	9 837 912 499	R	628 485 531	R	683 566 875	R	653 861 314	R	642 182 613	R	669 661 311
Regional bulk (WTW)	R	378 401 219		TBA								
Reticulation		TBA		TBA		TBA		TBA		TBA		TBA
Total capital (refurbishment)	R	378 401 219										
Total capital	R	10 216 313 718	R	628 485 531	R	683 566 875	R	653 861 314	R	642 182 613	R	669 661 311

#### Table A.6.11: Capital requirements: sanitation

SANITATION	Cap	bital requirements		2022/2023		2023-2024		2024-2025		2025-2026		2026-2027
Bulk infrastructure		TBA		TBA		TBA		TBA		TBA		TBA
Reticulation		TBA		TBA		TBA		TBA		TBA		TBA
VIP toilets	R	450 760 000		36 334 200		36 334 200		36 334 200		36 334 200		36 334 200
Total capital (new)	R	450 760 000	R	36 334 200								
Bulk infrastructure (WWTW)		225 985 526		TBA								
Reticulation		TBA		TBA		TBA		TBA		TBA		TBA
VIP toilets (Replacement Prgrm)		817 760 000		TBA								
Total capital (refurbishment)	R	1 043 745 526	R	-	R	-	R	-	R	-	R	-
Total capital	R	1 494 505 526	R	36 334 200								

#### Table A.6.12: Sources of Capital Income: Water

WATER	E	kpected Funding		2022/2023		2023-2024		2024-2025		2025-2026		2026-2027
MIG	R	223 195 800	R	223 195 800	R	223 195 800	R	223 195 800	R	223 195 800	R	223 195 800
DWA (RBIG)	R	217 883 101	R	217 883 101	R	217 883 101	R	217 883 101	R	217 883 101	R	217 883 101
Housing	R	-	R	-	R	-	R	-	R	-	R	-
WSIG	R	121 000 000	R	121 000 000	R	121 000 000	R	121 000 000	R	121 000 000	R	121 000 000
Loans	R	-	R	-	R	-	R	-	R	-	R	-
TOTAL	R	562 078 901	R	562 078 901	R	562 078 901	R	562 078 901	R	562 078 901	R	562 078 901
Capital requirements	R	10 216 313 718										
Shortfall up to 2026/2027	R	-9 654 234 817										

#### Table A.6.13: Sources of Capital Income: Sanitation

SANITATION	Ex	pected Funding		2022/2023		2023-2024		2024-2025		2025-2026		2026-2027
MIG	R	181 671 000.00	R	36 334 200.00								
DWA												
Housing	R	-	R	-	R	-	R	-	R	-	R	-
Other grant funding												
Loans												
TOTAL	R	181 671 000	R	36 334 200								
Capital requirements	R	1 494 505 526										
Shortfall up to 2026/2027	R	-1 312 834 526										

#### Table A.6.14: Operational costs and income

				Actual				Projected									
Operating costs and income	Total 5yr projected			2020-2021		2021-2022		2022-2023		2023-2024		2024-2025		2025-2026		2026-2027	
Operational costs	R	2 135 402 037	R	344 986 742	R	317 975 886	R	349 773 474	R	384 750 822	R	423 225 904	R	465 548 494	R	512 103 344	
Personnel costs	R	903 187 212	R	134 235 055	R	134 490 718	R	147 939 790	R	162 733 769	R	179 007 146	R	196 907 860	R	216 598 647	
Total O&M costs	R	3 038 589 249	R	479 221 796	R	452 466 604	R	497 713 264	R	547 484 591	R	602 233 050	R	662 456 355	R	728 701 990	
Equitable share: FBS	R	2 892 813 490	R	564 272 000	R	524 645 000	R	559 056 000	R	566 225 000	R	577 549 500	R	589 100 490	R	600 882 500	
Income: sales (actual payment)	R	290 114 352	R	25 410 596	R	43 200 000	R	47 520 000	R	52 272 000	R	57 499 200	R	63 249 120	R	69 574 032	
Total income	R	3 182 927 842	R	589 682 596	R	567 845 000	R	606 576 000	R	618 497 000	R	635 048 700	R	652 349 610	R	670 456 532	
Deficit/surplus	R	144 338 593	R	110 460 800	R	115 378 396	R	108 862 736	R	71 012 409	R	32 815 650	R	-10 106 745	R	-58 2 <mark>45 458</mark>	

# Chapter 11: List of Projects

The ZDM Water Master Plan comprises of ten back-to-back regional water schemes. The detailed project list included under Chapter 10 herewith lists sub-projects or phases associated with each regional scheme according to the approved progressive roll-out of the scheme.

The WSDP further allows for intermediate stand-alone schemes for areas falling within the regional scheme context which will take a long time to be implemented due to costly bulks. These intermediate stand-alone schemes are designed with a sustainable intermediate source which will all be integrated into the regional scheme once the regional scheme bulks reaches the area.

For remote communities where no bulk services are feasible or possible, a rudimentary water level of service is implemented in the form of boreholes with handpumps, or spring protections. In some areas a small reticulation scheme with RDP level of services will be constructed where possible.

Sanitation is being rolled out progressively based on prioritised zones or clusters to make implementation more cost-effective and practical. There is also a future sanitation rollout planned to replace the old Archloo, Zinc and block-type VIP's.

The water and sanitation projects to be implemented over the next 5 years and beyond are listed in detail in Chapter 10 of the document. Rollout maps can be reviewed under Figure A.6.6 – A.6.10, and include the following rollouts:

- Regional Water Supply Schemes
- Intermediate Stand-alone Water Supply Schemes
- Rudimentary Water Supply
- Rural Sanitation
  - New infrastructure
  - Future Rural Sanitation Replacement Programme

#### Figure A.6.6: Regional Water Supply Schemes





Figure A.6.7: Intermediate Stand-alone Water Supply Schemes

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#### Figure A.6.8: Rudimentary Water Supply

Figure A.6.9: Rural Sanitation (New infrastructure)





#### Figure A.6.10: Rural Sanitation (Replacement Programme)

## Chapter 12: Strategic Objectives & Development Strategies

The ZDM WSDP supports the KZN PGDS Strategic Framework. WSDP goals, objectives, interventions and projects are aligned to place ZDM in a position to fulfil its role as WSA in achieving the provincial PGDS for 2035.

While the focus has been predominantly on providing each person with sustainable infrastructure and eradicating backlogs, the status of existing and aging infrastructure, as well as the availability and sustainability of water resources has been neglected.

As water provision will increase, so will water resources needs, operation and maintenance of existing infrastructure, efficient institutional and financial capacity to manage infrastructure and revenue etc. The KZN PGDS Framework aims to achieve at least 90% reliable services by 2035.

An overview of the KZN PGDS framework with associated goals and objectives for water and sanitation services can be reviewed in the next figure.



Figure A.3.3: KZN PGDS Strategic Framework

These 11 categories are consolidated in the WSDP under the following chapters as required by the webbased WSDP template of DWS:

- CHAPTER 1: Socio-Economic Profile
- CHAPTER 2: Service Level Profiles
- CHAPTER 3: Water Resources Profile
- CHAPTER 4: Operation and Maintenance
- CHAPTER 5: Water Conservation & Demand Management
- CHAPTER 6: Water & Sanitation Services Profile
- CHAPTER 7: Water Balance
- CHAPTER 8: Institutional Profile

- CHAPTER 9: Customer Service
- CHAPTER 10: Financial Profile
- CHAPTER 11: Project Rollouts
- CHAPTER 12: Strategic Goals

The Strategic Objectives and Development Framework with associated targets and KPI's will be provided in this chapter.