



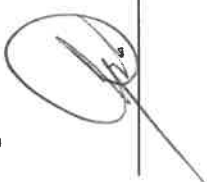
# ***HARRY GWALA DISTRICT MUNICIPALITY***

## ***Water Services Development Plan Water Sector Input Report***

*for IDP incorporation as directed by the Water Services Act (Act 108 of 1997)*

### ***FY 2024-2025***

### WSDP Compiled and submitted for approval

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### ***Background and Motivation***

The Water Services Act, 1997 (Act No. 108 of 1997) places a duty on Water Services Authorities to prepare a Water Services Development Plan as part of the process of preparing an integrated development plan. Section 15 (5) of the Water Services Act, 1997 states that:

*A water services development plan must form part of any integrated development plan contemplated in the Local Government Transition Act, 1993 (Act No. 209 of 1993).*

The Department of Water Affairs has developed water sector-specific requirements for local government's integrated development plans as a means to ensure sufficient incorporation of water services delivery matters in local government's strategic planning processes. The Department assesses the incorporation of water sector-specific matters during the IDP review and comment cycles. To improve local government's compliance with the water sector-specific requirements of its IDP's, the Department of Water Affairs has developed a '**Water Sector IDP Report**' template in October 2010. The Water Sector IDP Report template contains outputs from Module 1 of the WSDP Guide Framework towards providing status quo information as well as the WSA's self-assessment of its planning maturity for each of the elements of the water services business.

The need has been expressed for the review of the WSDP: IDP Outflow report to address the following:

1. Enable sufficient and appropriate narrative for IDP integration
2. Alignment with the latest WSDP Guide Framework as established in the WSDP System
3. Incorporation of Water Services-specific Objectives and Strategies
4. The distinction between approved MTEF projects and conceptual projects as prompted by the WSA's water services development planning initiatives

This template termed the WSDP: IDP Outflow Report replaces the Water Sector IDP Report template of October 2010.

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## Abbreviations and Definitions

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<b>DWS</b>	<b>Department of Water and Sanitation</b>
<b>BDS</b>	<b>Blue Drop Certification System</b>
<b>FY:</b>	<b>Financial Year - means in relation to –</b> <ul style="list-style-type: none"><li>• a national or provincial department, the year ending 31 March; or</li><li>• a municipality, the year ending 30 June.</li></ul>
<b>GDS</b>	<b>Green Drop Certification System</b>
<b>IDP:</b>	<b>Integrated Development Plan - An IDP is a legislative requirement for municipalities which identifies the municipality’s key development priorities; formulates a clear vision, mission and values; formulates appropriate strategies; shows the appropriate organisational structure and systems to realise the vision and the mission and aligns resources with the development priorities.</b>
<b>m<sup>3</sup></b>	<b>cubic metres = 1 000 litres = 1 kilolitre</b>
<b>MI</b>	<b>Megalitre = 1 000 kilolitres = 1 000 000 litres</b>
<b>WSA:</b>	<b>Water Services Authority - means a municipality with the executive authority and the right to administer water services as authorised in terms of the Municipal Structures Act, 1998 (Act No. 117 of 1998)</b>
<b>WSDP:</b>	<b>Water Services Development Plan – means the plan to be developed and adopted by the WSA in terms of the Water Services Act, 1997 (Act No. 108 of 1997)</b>
<b>WSDP Guide Framework</b>	<b>A modular tool which has been developed by the DWS to support Water Services Authorities in complying to the Water Services Act with respect to Water Services Development Planning and which is also used by the DWS to regulate such compliance</b>
<b>WSP:</b>	<b>Water Services Provider - means any person or institution who provides water services to consumers or another water services institution, but does not include a water services intermediary</b>

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## Introduction

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The Water Services Act, 1997 (Act No. 108 of 1997) places a duty on Water Services Authorities (WSA) to prepare a Water Services Development Plan as part of the process of preparing an integrated development plan. Section 15 (5) of the Water Services Act, 1997 states that:

A water services development plan (WSDP) must form part of any integrated development plan (IDP) contemplated in the Local Government Transition Act, 1993 (Act No. 209 of 1993).

The purpose of this report is to provide relevant and summarised water services development planning inputs for incorporation into the Harry Gwala WSA integrated development planning process and is structured as follows:

- **Section A: Status Quo Overview:** providing a summarised view of the water services status quo in terms of the water services functional business elements as aligned to the WSDP framework.
- **Section B: State of Water Services Planning:** presents the status of- and references the water services development plan of the Water Services Authority.
- **Section C: Water Services Existing Needs Perspective:** an overview of the WSA's assessment and interpretation of its water services, with a specific focus on problem definition statements.
- **Section D: Water Services Objectives and Strategies:** outlines the 5-year water services objectives and strategies as developed through the water services development planning process for incorporation in terms of the integrated development plan and aligned to the water services functional business elements.
- **Section E: Water Services MTEF Projects:** the agreed water services projects for the medium-term expenditure framework and inclusive of funding sources.
- **Section F: WSDP Projects:** presents the projects identified during the water services development planning process to meet the water services strategies of the water services authority, as aligned to the outflow from the situation analysis per water services business element.

## Section A: Status Quo Overview

### Harry Gwala District Municipality

Harry Gwala District Municipality (DC43) is located to the south-west of the KwaZulu-Natal Province in South Africa. Its population of over 500 000 is sparsely spread throughout an area of 11 127 square kilometres. Harry Gwala District Municipality lies on the border between the KwaZulu-Natal and Eastern Cape Provinces.

The Harry Gwala District Municipality (DC43) is composed of the following four local municipalities:

- UBuhlebezwe Local Municipality
- Dr Nkosazana Dlamini Zuma Local Municipality
- Greater Kokstad Local Municipality
- uMzimkhulu Local Municipality

#### Dr Nkosazana Dlamini Zuma Local Municipality

This municipality came into being in 2016 as a result of amalgamation between the former Ingwe and KwaSani Local Municipalities. It is located in the northern to northeast part of the district and consist of 15 wards, with the main towns being Underberg; Bulwer; Donnybrook and Creighton. Its area is 3 602 km<sup>2</sup>.

#### uBuhlebezwe Local Municipality

This is the hometown of the District Municipality. It is located in the eastern parts of the district. Ixopo is the main town within the municipality. It consists of 14 wards that span across approximately 1 604 km<sup>2</sup>.

#### Greater Kokstad Local Municipality

This local municipality is located in the western part of the district and is approximately 2 680km<sup>2</sup>, making it the largest municipality in the district. It consists of 10 wards and the main towns are Franklin and Kokstad.

#### uMzimkhulu Local Municipality

This local municipality is located in the southern part of the district. The area covers 2 435km<sup>2</sup> with 22 wards. The majority of the households are headed by women and youth. Youth programmes are essential in this area as well as programmes that target women.

This section gives a brief overview and summary of **Section A** of the WSDP (**Module 1**). The WSDP document and the WSDP website should be consulted for more detailed information.



Figure A 1: The Four Local Municipalities of Harry Gwala DM

## Business Element 1: Demographics

### 1. Introduction

The demographics are summarised in this section. This includes settlements, households and population distributions, and the method used to calculate the figures. The public facilities are also reported.

### 2. Settlements Summary

Comment in the WSDP Rev 1\_2022 – 2023 indicated that the Water Services Authority (HGDM) required more accurate household and population figures to be presented. These figures from the WSDP Rev 1\_2022-2023 were obtained from Stats SA and available on the DWS database and, are annualised yearly in April. The WSA did not agree with the Stats SA figures because the data did not reflect the reality on the ground when estimating the backlog. For example, the settlement areas as recorded by Stats SA differ from what is found on the ground. On the ground, within the same settlement name as per Stats SA the local population has different “sub-settlements” with different names and each with a different level of water supply and sanitation services. Hence another approach for settlement demographics was required.

For the WSDP 2022/2023, the following three-stage approach to obtain the settlement demographics was adopted:

- **Household Dot Count:** The latest aerial imagery was used for a GIS desktop household count. Individual houses were tagged, and counts done per settlement, ward and community. The imagery was dated August 2021.
- **Comparison with Current Data:** The desktop household counts were consolidated with the Stats SA 2022 demographics data.
- **Service Level Data Update:** Updated household counts were used to extrapolate service level data in the WSDP.

Two datasets were considered for the population, including the Dot Count and DWS datasets. They are summarised in **Table A 1** below. The table shows that Stats SA also provides annual estimates of the population and households. These estimates included on the DWS website are presented in the table as DWS data. The Dot Count method consisted of counting the household based on the latest aerial imagery. The Dot Count method is thus considered more accurate. However, the population presented in the Dot Count method is the population recorded in the 2016 Community Survey. This data is outdated; a new population figure must be adopted. A method is to adopt the latest 2022 population estimation from Stats SA available on the DWS database.

**Table A 1: Settlement Demographic - Comparison between DWS and Dot Count datasets**

Section	Dot Count Data (August 2021)	DWS Data (April 2022)
Population	510 865*	532 412
Households	123 305	167 647
Rural Settlements	669	1 135
Urban Settlements	156	13

\* Dot Count population is from Stats SA 2016 CS

At present the Census 2022 statistics have only been released on a Local Municipal level. Once all statistics are available on Enumerating Areas (EA), the Census figures can be compared with the current demographics for Harry Gwala DM, and updated accordingly. It is expected that the next review of the WSDP will have all demographics correlated and updated from the Census 2022 figures.



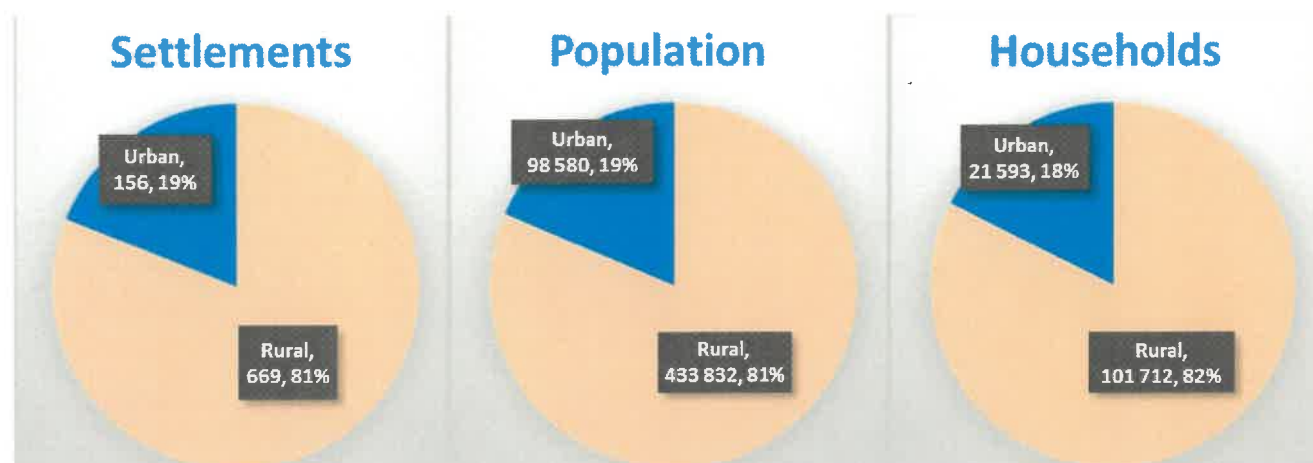
### 3. Summary by Settlements Group

Based on **Table A 1** Error! Reference source not found. and the recommendation to use the DWS population figure, the demographic data of Harry Gwala is presented in **Table A 2** below. The table indicates that, with more than 81%, the majority of the population and households are located in rural areas of Harry Gwala DM. This negatively impacts the service delivery as it is challenging to service some rural areas that are too remote. Hence, the provision of basic services is an issue. The demographic summary is graphically presented in **Figure A 2** below.

**Table A 2: Summary of Demographic Data**

Settlement Type	Settlements		Population		Households	
	Number	Percentage	Number	Percentage	Number	Percentage
Rural	669	81.1%	433 832	81.5%	101 712	82.5%
Urban	156	18.9%	98 580	18.5%	21 593	17.5%
<b>Total</b>	<b>825</b>	<b>100%</b>	<b>532 412</b>	<b>100%</b>	<b>123 305</b>	<b>100%</b>

Error! Reference source not found. visually shows that the greatest fraction of the graphs is related to rural area.



**Figure A 2: Graphical Summary of Demographic Data of Harry Gwala DM**

The population and population distribution of HGDM are presented in **Table A 3**. The highest fraction (39%) of population resides in Umzimkhulu LM. Likewise, the highest number of houses (49 705 HH) are located in Umzimkhulu LM.

**Table A 3: Population Distribution per Municipality**

Municipality	Households (HH Dot Count)	Population (2022)		Population (2016 CS)	Population (2011 Census)
		Number	Percentage		
Greater Kokstad LM	16 394	80 277	15%	76 753	65 979
Ubuhlebezwe LM	27 856	123 187	23%	118 346	110 924
Umzimkhulu LM	49 705	205 600	39%	197 286	180 277
Dr Nkosazana Dlamini Zuma LM	29 350	123 348	23%	118 480	109 649
<b>Total: Harry Gwala DM</b>	<b>123 305</b>	<b>532 412</b>	<b>100%</b>	<b>510 865</b>	<b>466 829</b>

#### 4. Assessment Score by Settlement Type

**Table A 4** below provides information on settlements, population, households, and average household size for various types of areas.

The data is divided into six main types: Farming, Rural - Dense Village > 5000, Rural - Small Village <= 5000, Rural Scattered Urban -Formal Town, and Urban – Former Township.

According to the table, the most common type of settlement is Rural - Small Village <= 5000, with 484 settlements, approximately 59% of 825 settlements, the total number of settlements in the district municipality.

In terms of population and household number, the table shows that both the largest population and households are also located in Rural - Small Village <= 5000 settlements, with 299 637 people (56% of the population) and 70 595 households (57% of the households), respectively.

The average household size varies slightly between settlement types. Rural - Dense Village > 5000 has the largest average household size, with 4.90 people per household, while Urban - Former Township has the smallest average household size, with 4.14 people per household.

**Table A 4: Assessment by Settlement Type**

Main Type	Settlements	Population	Households	Average Household Size
<b>Rural</b>	<b>673</b>	<b>438 253</b>	<b>102 659</b>	<b>4.27</b>
Farming	28	35 837	8 124	4.41
Rural - Dense Village > 5000	2	16 012	3 270	4.90
Rural - Small Village <= 5000	484	299 637	70 595	4.24
Rural Scattered	159	86 767	20 670	4.20
<b>Urban</b>	<b>152</b>	<b>94 159</b>	<b>20 646</b>	<b>4.56</b>
Urban - Formal Town	148	91 516	20 007	4.57
Urban - Former Township	4	2643	639	4.14
<b>Grand Total</b>	<b>825</b>	<b>532 412</b>	<b>123 305</b>	<b>4.32</b>

#### 5. Amenities Summary

The latest, April 2022, DWS database includes a total of 568 public amenities as summarised in **Table A 5**.

**Table A 5: Public Amenities**

Amenities	Number
Education Facilities	501
Health facilities	67
<b>Total</b>	<b>568</b>

The educational and health facilities include the different subcategories of facilities. The level of service of each facility is provided in **Table A 6** below.

**Table A 6: Public Amenities Service Level Adequacy**

Associated services facility	Number of facilities	Facilities with Adequate Services	Facilities with Inadequate Services	Percentage
<b>Sanitation Provision</b>				
<b>Educational Facilities</b>				
Primary School	277	95	182	66%
Secondary School	81	31	50	62%
Tertiary	1	0	1	100%
Combined	140	21	119	85%
Special Needs	2	2	0	0%
Other	0	0	0	-
<b>Health Facilities</b>				
Hospitals	8	8	0	0%
Health Centres	24	14	10	42%
Clinics	35	7	28	80%
Other	0	0	0	-
<b>Water Provision</b>				
<b>Educational Facilities</b>				
Primary School	277	164	113	41%
Secondary School	81	60	21	26%
Tertiary	1	0	1	100%
Combined	140	95	45	32%
Special Needs	2	2	0	0%
Other	0	0	0	-
<b>Health Facilities</b>				
Hospitals	8	8	0	0%
Health Centres	24	14	10	42%
Clinics	35	7	28	80%
Other	0	0	0	-

The table provides information on the state of provision of two essential services (Sanitation provision and Water provision) in the different types educational and health facilities. The table lists five and four types of educational and health facilities, respectively. The number of facilities varies with Primary School (277 facilities) and Clinics (35 facilities) having the highest number of facilities in the educational and health sectors, respectively.

Under sanitation provision, the table indicates that a significant percentage of these facilities have inadequate sanitation services. The percentage of facilities with inadequate services ranges from 42% (Health Centres) to 100% (Tertiary Education). However, there is only one tertiary educational facility. The highest percentage of

educational facilities with inadequate sanitation services is in the Combined category, with 85% of the facilities having inadequate services, while the health facilities with the percentage of inadequate sanitation services are the clinics. The Special Needs educational category is the only one that reports 0% of facilities with inadequate services.

Under water provision, the table also indicates that a significant number of these facilities have inadequate water services. The percentage of facilities with inadequate services ranges from 26% (Secondary School) to 100% (Tertiary). However, all the eight clinics and two special needs educational facilities have adequate water provision.

The table indicates that the level of water services is inadequate for a significant fraction of the public amenities while the majority of these amenities have inadequate level of sanitation services. Hence, it highlights the need for improvement in the provision of water and sanitation services of the educational and health facilities.

## Business Element 2: Service Level Profile

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### 1. Water and Sanitation Profile Assessment

The water supply in HGDM is predominantly from surface water sources, such as dams and rivers. The Umzimkhulu River is the main source of water for the municipality. Several water schemes have been developed, including the Umzimkhulu Water Supply Scheme, which supplies water to several towns in the municipality. However, despite the availability of surface water sources, the water supply in the municipality is often disrupted due to infrastructure problems and aging systems. Many communities, especially those in rural areas, often face water shortages and have to rely on water tankers for their daily needs. There have been efforts to improve the water supply, such as the construction of new water treatment plants and pipelines, but more needs to be done to ensure reliable and sustainable access to clean water for all residents. The previous WSDP reports that a master plan dealing with water supply services has been developed, but the document does not address many of the water supply challenges.

The sanitation profile of the municipality is also a major concern. The majority of households in the rural areas do not have access to proper sanitation facilities, such as flush toilets, and often rely on pit latrines or other informal methods. This poses a significant health risk and increases the likelihood of waterborne diseases. To address this issue, the municipality has implemented several sanitation projects, such as the installation of VIP toilets and the construction of new sanitation facilities. The municipality has also implemented hygiene and sanitation awareness campaigns to promote good hygiene practices among residents. The previous WSDP reports that the municipality does not have a master plan addressing the sanitation challenges.

In summary, the water and sanitation profile of Harry Gwala District Municipality presents significant challenges, especially in the rural areas. While there have been efforts to improve the situation, more needs to be done to ensure reliable and sustainable access to clean water and proper sanitation facilities for all residents.

As part of the current update of the WSDP, the Census 2011 water and sanitation service levels for all the settlements in Harry Gwala DM have been captured and linked to the updated household count from the Dot Count mentioned earlier. A major improvement resulting from this exercise is that the water and sanitation service levels at a district-wide level are now 'rolled up' from similar water and sanitation services data that is available for every settlement in the district. A spreadsheet database has also been prepared to accompany the WSDP with this data. This spreadsheet database includes service levels, in a tabular form, for each settlement in the district. A separate spreadsheet has been prepared for each local municipality, with a consolidated spreadsheet for the Harry Gwala District as a whole.

This spreadsheet has the advantage that service level figures can be directly traced back to specific settlements. This spreadsheet has initially been populated with the service levels from Census 2011 and the findings of the household Dot Count. **Table A 7** presents a summary of the Census 2011 service levels for the entire district updated with the Dot Count data. It should be noted that similar data is readily available at a local municipality level, a ward level and down to an individual settlement level.

At present the Census 2022 statistics have only been released on a Local Municipal level. Once all statistics are available on Enumerating Areas (EA), the Census figures can be compared with the current demographics for Harry Gwala DM, and updated accordingly. It is expected that the next review of the WSDP will have all demographics correlated and updated from the Census 2022 figures.

**Table A 7: Water and Sanitation Service Levels**

Category	Rural		Urban		
	Household	Population	Household	Population	
	Dot Count	DWS 2022	Dot Count	DWS 2022	
<b>Water</b>	Piped (tap) water inside dwelling/institution	7 134	31 163	8 023	37 049
	Piped (tap) water inside yard	13 499	58 943	6 292	29 114
	Piped (tap) water on community stand: distance less than 200m from dwelling/institution	21 840	92 960	3 517	15 883
	Piped (tap) water on community stand: distance between 200m and 500m from dwelling/institution	8 380	35 758	630	2 790
	Piped (tap) water on community stand: distance between 500m and 1000m (1km) from dwelling /institution	3 299	14 188	149	658
	Piped (tap) water on community stand: distance greater than 1000m (1km) from dwelling/institution	1 794	7 630	212	977
	No access to piped (tap) water	45 659	193 153	1 622	6 796
	Unspecified	29	120	84	364
	Not applicable	1 024	4 338	118	526
<b>Total Water</b>	<b>102 659</b>	<b>438 253</b>	<b>20 646</b>	<b>94 159</b>	
<b>Sanitation</b>	None	3 841	16 626	516	2 272
	Flush toilet (connected to sewerage system)	3 996	17 327	11 709	54 893
	Flush toilet (with septic tank)	3 283	14 663	1 160	5 078
	Chemical toilet	5 093	22 228	1 084	4 956
	Pit toilet with ventilation (VIP)	28 437	121 505	1 121	5 186
	Pit toilet without ventilation	49 315	208 863	4 639	19 922
	Bucket toilet	948	4 091	184	797
	Other	6 761	28 806	129	578
	Unspecified	29	120	16	78
Not applicable	956	4 025	87	399	
<b>Total Sanitation</b>	<b>102 659</b>	<b>438 253</b>	<b>20 646</b>	<b>94 159</b>	

The table provides information on the access to water and sanitation facilities in rural and urban households and populations. In terms of water, a higher proportion of households in urban areas have piped (tap) water inside their dwelling or institution, piped water inside their yard, and access to piped water on community stands within a distance of less than 200m from their dwelling or institution. On the other hand, a higher proportion of rural households rely on access to piped water on community stands located more than 500m away or have no access to piped water at all.

In terms of sanitation, a higher proportion of households in urban areas have access to flush toilets connected to sewerage systems, whereas rural households mostly rely on pit toilets with and without ventilation. The table shows that a significant number of households in both rural and urban areas have no access to sanitation facilities, with a higher proportion in rural areas.

## 2. Direct Backlog (Water & Sanitation)

In order to determine the water and sanitation backlogs, one has to define the levels of water and sanitation services. They are presented in **Table A 8** Error! Reference source not found. below.

**Table A 8: Total Water and Sanitation Service Levels**

Category	Total		Service Levels	
	Household Dot Count	Population DWS 2022		
Water	Piped (tap) water inside dwelling/institution	15 157	68 212	Above RDP Level
	Piped (tap) water inside yard	19 791	88 057	
	Piped (tap) water on community stand: distance less than 200m from dwelling/institution	25 357	108 843	RDP Level
	Piped (tap) water on community stand: distance between 200m and 500m from dwelling/institution	9 010	38 549	Below RDP Level
	Piped (tap) water on community stand: distance between 500m and 1000m (1km) from dwelling/institution	3 448	14 846	
	Piped (tap) water on community stand: distance greater than 1000m (1km) from dwelling/institution	2 006	8 607	
	No access to piped (tap) water	47 281	199 949	Below RDP Level
	Unspecified	113	484	
	Not applicable	1 142	4 864	
<b>Total Water</b>	<b>123 305</b>	<b>532 412</b>		
Sanitation	None	4 358	18 897	Below RDP Level
	Flush toilet (connected to sewerage system)	15 705	72 220	Above RDP Level
	Flush toilet (with septic tank)	4 442	19 741	
	Chemical toilet	6 177	27 184	RDP Level
	Pit toilet with ventilation (VIP)	29 558	126 691	
	Pit toilet without ventilation	53 955	228 785	
	Bucket toilet	1 132	4 888	Below RDP Level
	Other	6 890	29 384	
	Unspecified	45	198	
Not applicable	1 043	4 424		
<b>Total Sanitation</b>	<b>123 305</b>	<b>532 412</b>		

The table presents three levels of services including below RDP, at RDP and above RDP levels of services.

The basic level of domestic water supply corresponds to RDP level of water supply. The basic household water supply (or RDP level) is defined in both the 2017 Strategic Overview of the Water Sector in South Africa and the 2017 National Norms and Standards for Domestic Water and Sanitation Services as either 25 litres per person per day or 6000 litres of potable water per household per month, supplied to the following criteria:

- Minimum flow rate of not less than 10 litres per minutes
- Within 200 meters of a household
- Interruptions of less than 48 consecutive hours at any one time and a cumulative interruption time year of less than 15 days/year
- At a potable complying with the SANS 241 quality standards

The main criteria for the Middle Level and Full Level of service include people access to 51 – 90 litres per person per day at medium pressure and more than 90 litres per person per day at high pressure, respectively. These services are above RDP level of service. On the other hand, the level of service of households collecting water at a distance of more than 200m or the households with no access to water is below RDP level of service.

Regarding sanitation, a basic toilet facility is regarded as a toilet which is safe, reliable, environmentally sound, and easy to keep clean, provides privacy and protection against the weather, well ventilated, keeps smells to a minimum and prevents the entry and exit of flies and other disease-carrying pets. A basic level of sanitation is regarded as a Ventilated Improved Pit Latrine (VIP) which is a dry toilet facility. High level of sanitation includes full waterborne sanitation, septic tanks, soak-aways and urine diversion toilets. The sanitation systems such as chemical toilet, pit toilet without ventilation, bucket toilet, etc., are below RDP level of service.

The households with water and sanitation services below RDP level of services represent the direct backlogs. They are summarised in **Table A 9** below.

**Table A 9: Total Direct Water and Sanitation Backlogs**

Description	Total	Backlog	% Backlog
Direct settlement backlog water households	123 305	63 000	51%
Direct settlement backlog water population	532 412	267 299	50%
Direct settlement backlog sanitation households	123 305	67 423	55%
Direct settlement backlog sanitation population	532 412	286 576	54%

The table indicates that approximately 51% of households are served with water below RDP level and approximately 55% of households are served with sanitation below RDP level. They are graphically presented in **Figure A 3** below.



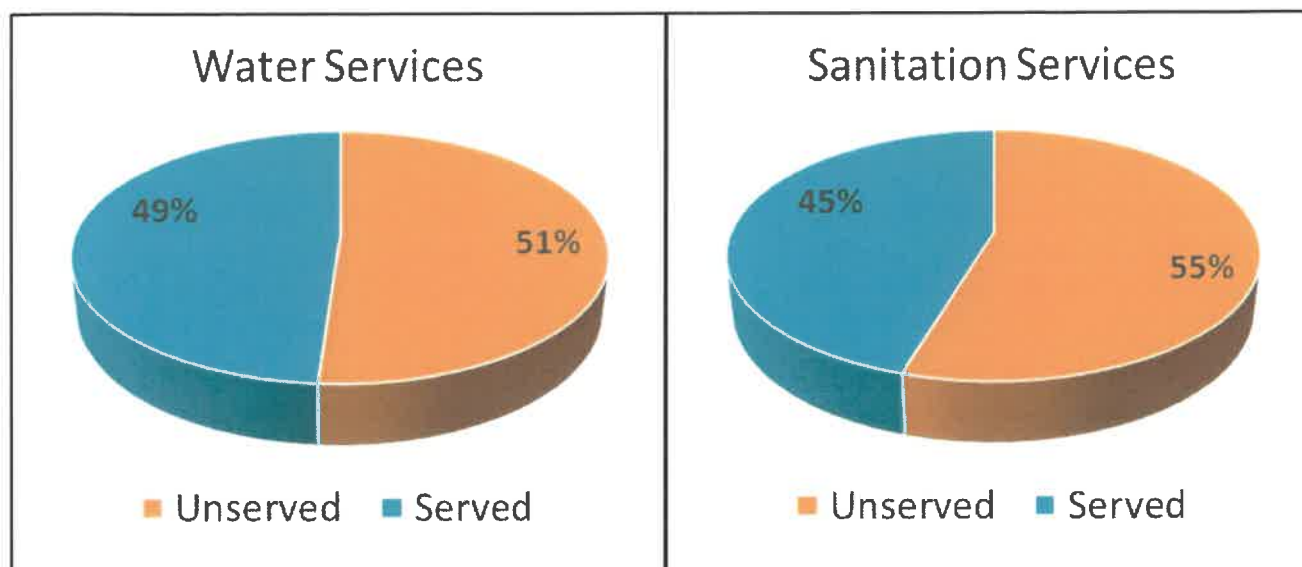


Figure A 3: Percentage Households Served and Unserved

The descriptions of served and unserved water supply and sanitation services are presented in **Table A 10**.

**Table A 10: Descriptions of Served and Unserved Water and Sanitation Services**

Service	Category
Water Served	Piped (tap) water inside dwelling/institution
	Piped (tap) water inside yard
	Piped (tap) water on community stand: distance less than 200m from dwelling/institution
Water Unserved	Piped (tap) water on community stand: distance between 200m and 500m from dwelling/institution
	Piped (tap) water on community stand: distance between 500m and 1000m (1km) from dwelling /institution
	Piped (tap) water on community stand: distance greater than 1000m (1km) from dwelling/institution
	No access to piped (tap) water
	Unspecified
Sanitation Served	Not applicable
	Flush toilet (connected to sewerage system)
	Flush toilet (with septic tank)
	Pit toilet with ventilation (VIP)
Sanitation Unserved	Chemical toilet
	None - Households
	Pit toilet without ventilation
	Bucket toilet
	Other
	Unspecified
	Not applicable

The number of households in each municipality that have backlogs (below RDP level) are shown below.

Table A 11: Household Water and Sanitation Backlogs by Municipality

Municipality	Total Households	Water Backlog		Sanitation Backlog	
		HH Backlog	Percentage	HH Backlog	Percentage
Greater Kokstad LM	16 394	1 402	9%	3 823	23%
Ubuhlebezwe LM	27 856	16 451	59%	13 312	48%
Umzimkhulu LM	49 705	31 023	62%	35 547	72%
Dr Nkosazana Dlamini Zuma LM	29 350	14 125	48%	14 741	50%
<b>Harry Gwala DM</b>	<b>123 305</b>	<b>63 000</b>	<b>51%</b>	<b>73 600</b>	<b>60 %</b>

The backlog mentioned above is based on Census 2011 and has been updated with 2021 households obtained from Dot Count. It is important to note that HGDM has implemented various projects after the Dot Count exercise, which have contributed significantly to eradicating water and sanitation backlogs. As a result, some of the backlog households listed in **Table A 11** Error! Reference source not found. have been serviced at RDP or above RDP level of service. Thus, the updated household backlogs will include the total number of households in **Table A 11**, minus the households served by the backlog eradication projects implemented after the Dot Count exercise. However, we could not include the details of these projects in this report, as they were not yet available. However, the updated backlog list is presented in **Table A 12** below.

Table A 12: Up to Date Water and Sanitation Backlogs

Municipality	Water Backlog		Sanitation Backlog	
	Household Backlog	Percentage	Household Backlog	Percentage
Greater Kokstad LM	3 816	25%	0	0%
Ubuhlebezwe LM	10 670	41%	3 201	12%
Umzimkhulu LM	16 168	33%	19 866	41%
Dr Nkosazana Dlamini Zuma LM	15 097	50%	6 183	21%
<b>Harry Gwala DM</b>	<b>45 751</b>	<b>38%</b>	<b>29 250</b>	<b>24%</b>

The water treatment facilities are in need of upgrading and/or refurbishment. Additionally, some households lack access to reliable water services due to resource constraints or inadequate infrastructure. Although urban areas have existing sanitation infrastructure, it is aging and requires refurbishment or replacement. **Table A 13** outlines several initiatives aimed at eliminating the backlog, with the number of households served indicated for each.

Table A 13: Required Backlog Eradication Types per Number of Households

Type	Water needs to eradicate the backlog	Households
Resource	Conservation & Demand Management	0
	New Source	23 075
	Refurbishment	6 551
Infrastructure	Extension	959
	New scheme	31 183
	Replace old	0

The above table indicates that the majority of households with backlogs require a new source or a new scheme to eradicate water backlogs. This is due to dried springs and boreholes, and the schemes not being able to supply increased number of households.

### 3. Water Profile

From Figure A 4 below it can be noted that:

- Twenty-eight percent of households have access to piped water services above RDP level, and approximately 21% of households have access to water services at RDP level of service. Thus, a total of 60 305 households are serviced with adequate water supply (i.e. Piped water inside dwelling, piped water inside yard and piped water on community stand with a distance of less than 200m from the dwelling).
- The remaining 63 000 households do not have adequate water supply. They make approximately 51% of all the households.

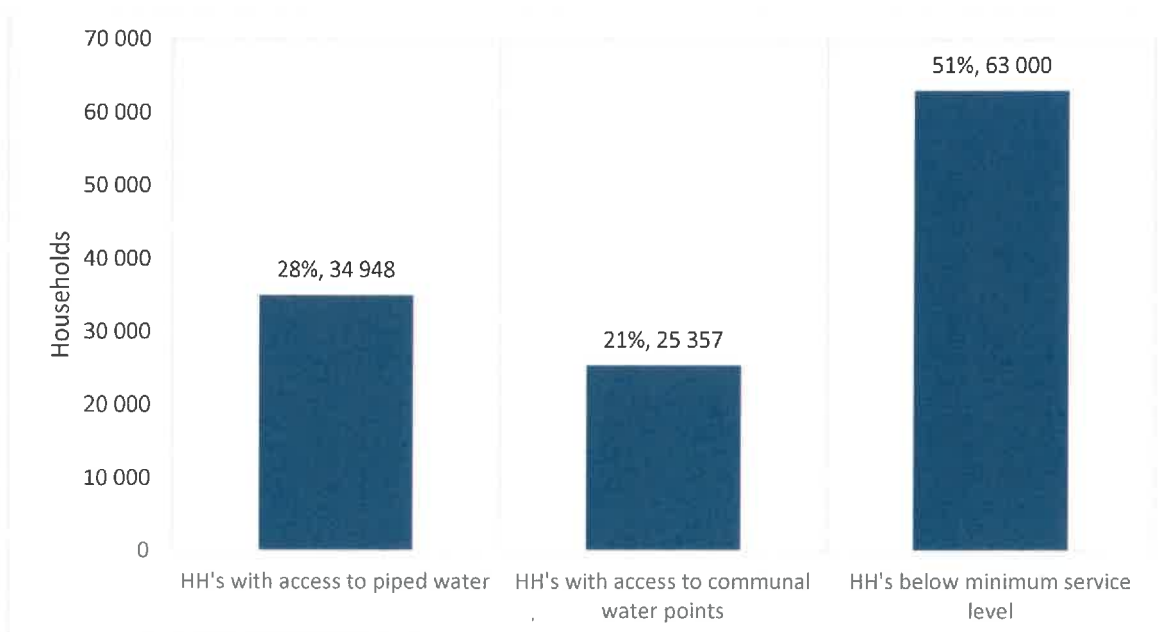


Figure A 4: Households Access to Water Services

### 4. Sanitation Profile

From Figure A 5 it can be noted the following:

- Sixteen percent of households have access to sanitation services above RDP level and 29% have sanitation services at RDP level. Therefore, a total of 55 882 households are serviced with adequate

sanitation (i.e. Flush toilet connected to sewage system, flush toilet with septic tank, pit toilet with ventilation and chemical toilet).

- The remaining 67 423 households making 55% of households do not have adequate sanitation service. Therefore, they require to be upgraded.

It should be noted that areas with no or poor sanitation are prone to high incidence of waterborne diseases.

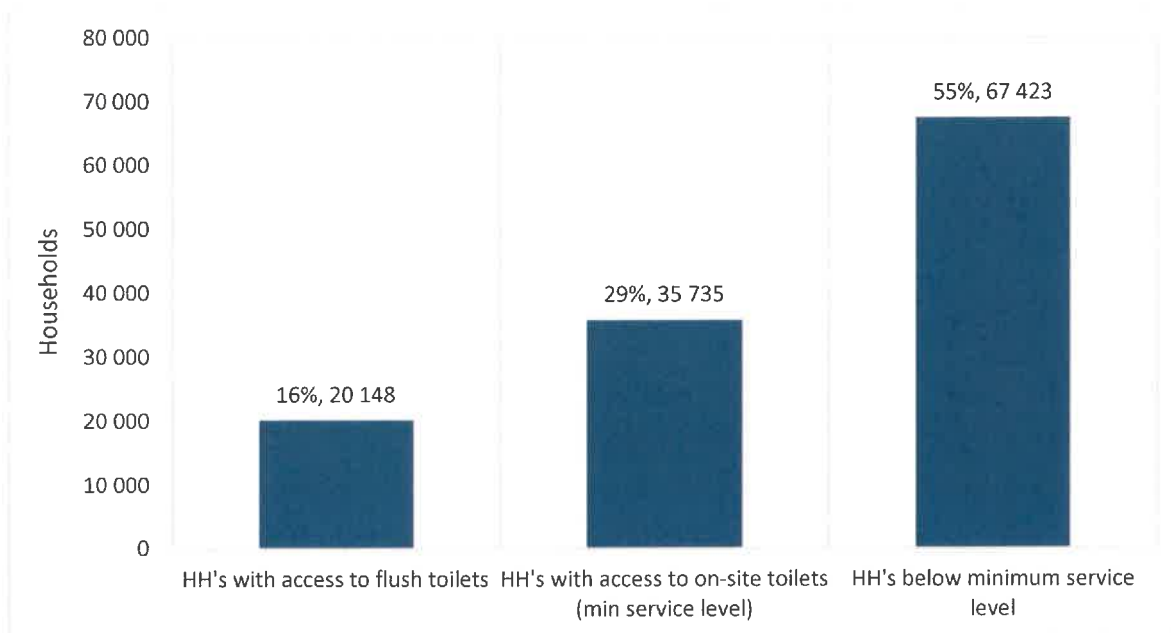


Figure A 5: Households Access to Sanitation Services

## 5. Water Services

The Government Gazette No. 41100 of 8 Sept 2017 outlines the key criteria for providing potable water services to public facilities, including educational and health facilities. The aim is to meet people's demand for potable water when they are not at home, in a practical, affordable, financially viable, and sustainable manner.

No educational facility is allowed to function without potable water. The key criteria for an adequate water supply service at an educational facility include:

- A minimum volume of 15 to 20 litres of potable water per learner per day available to an educational centre
- A minimum of 90 to 140 litres of potable water per learner per day for boarding available to an educational centre and boarding facility
- A potable water supply that complies with the SANS 241 quality standards
- One hygienic water terminal on the premises for every 130 learners and within 100m of the main building
- Water availability for 350 days per year, with no interruption longer than 48 consecutive hours

Similarly, no health centre is allowed to function without potable water. The criteria for an adequate water supply to a health centre include:

- A minimum of 15 to 20 litres of potable water per child/out-patient per day available to a care or health centre
- A minimum of 90 to 140 litres of potable water per in-patient per day available to a health centre
- A minimum of 15 to 20 litres of potable water per staff member per day available to a health centre
- A potable water supply that complies with the SANS 241 quality standards

- A minimum of 300 litres of water of acceptable quality available to a health centre for laundry and general cleaning purposes
- One hygienic terminal on the premises for every 130 patients and within 100m of the main building
- Water availability for 365 days per year, with no interruption longer than 24 consecutive hours

A summary of water services status of public amenities within HGDM is presented in **Table A 14**.

**Table A 14: Water Services Status of Public Amenities**

Amenity Type	Number of facilities	Facilities with Adequate Services	Facilities with No Services	Facilities with Inadequate Services
<b>Educational Amenities</b>				
Primary School	277	95	0	182
Secondary School	81	31	0	50
Tertiary	1	0	0	1
Combined	140	21	0	119
Special Needs	2	2	0	0
Other	0	0	0	0
<b>Total</b>	<b>501</b>	<b>149</b>	<b>0</b>	<b>352</b>
<b>Health Amenities</b>				
Hospitals	8	8	0	0
Health Centers	24	14	0	10
Clinics	35	7	0	28
Other	0	0	0	0
<b>Total</b>	<b>67</b>	<b>29</b>	<b>0</b>	<b>38</b>

Overall, the data from the above table suggest that there is a significant need for improvement in the level of water service provided by these amenities.

## 6. Sanitation Services

All public institutions are required to provide sanitation services which must include hand washing facilities, hygiene and end-user education. The National Norms and Standards for domestic water and sanitation services (Government Gazette No. 41100 of 8 Sept 2017) state that no public institution facility, including education and health facilities, is allowed to function without **adequate** sanitation facilities.

The status of the sanitation services for the public amenities are presented in **Table A 15**.

Table A 15: Sanitation Services Status of Public Amenities

Amenity Type	Number of facilities	Facilities with Adequate Services	Facilities with No Services	Facilities with Inadequate Services
<b>Educational Amenities</b>				
Primary School	277	164	0	113
Secondary School	81	60	0	21
Tertiary	1	0	0	1
Combined	140	95	0	45
Special Needs	2	2	0	0
Other	0	0	0	0
<b>Total</b>	<b>501</b>	<b>321</b>	<b>0</b>	<b>180</b>
<b>Health Amenities</b>				
Hospitals	8	8	0	0
Health Centers	24	14	0	10
Clinics	35	7	0	28
Other	0	0	0	0
<b>Total</b>	<b>67</b>	<b>29</b>	<b>0</b>	<b>38</b>

Overall, the data suggest that there is also a need for improvement in the level of sanitation service provided by these amenities. A more detailed analysis may be necessary to fully understand the situation and identify specific areas for improvement.

The entire lists of settlements with number of households below RDP level for both water and sanitation services are presented in Table A16 below.

Table A 16: -Number of HH with services below RDP Levels (Unserved) per settlement

**Greater Kokstad LM**

Ward ID	Census Small Area	Settlement Name	Total Population	Total Households	Below RDP Water - Households	Below RDP Sanitation - Households
1	5960021	KOKSTAD/BHONGWENI/MOUNT CURRIE	514	105	0	0
1	5960038	KOKSTAD/BHONGWENI/MOUNT CURRIE	514	105	5	25
1	5960063	KOKSTAD/BHONGWENI/MOUNT CURRIE	548	112	2	110
1	5960067	KOKSTAD/BHONGWENI/MOUNT CURRIE	627	128	6	128
1	5960069	KOKSTAD/BHONGWENI/MOUNT CURRIE	813	166	55	20
1	5960074	KOKSTAD/BHONGWENI/MOUNT CURRIE	725	148	10	10
1	5960076	KOKSTAD/BHONGWENI/MOUNT CURRIE	661	135	5	48
2	5960001	FRANKLIN	98	20	0	7
2	5960011	KRANSDRAAI	504	103	0	85
2	5960012	WENSBURG	1048	214	0	66
2	5960013	MOUNT CURRIE NU 451	1263	258	20	126
2	5960068	MOUNT CURRIE NU 153	1924	393	27	202
2	5960091	MOUNT CURRIE NU 037	1440	294	55	175
2	5960094	MARAIKOP	2115	432	56	297
2	5960097	MOUNT CURRIE NU 142	2977	608	90	191
2	5960098	FRANKLIN	837	171	18	42
3	5960014	KOKSTAD/BHONGWENI/MOUNT CURRIE	402	82	3	3
3	5960018	KOKSTAD/BHONGWENI/MOUNT CURRIE	798	163	0	0
3	5960023	KOKSTAD/BHONGWENI/MOUNT CURRIE	78	16	16	16
3	5960035	KOKSTAD/BHONGWENI/MOUNT CURRIE	553	113	0	0
3	5960037	KOKSTAD/BHONGWENI/MOUNT CURRIE	563	115	0	0
3	5960049	KOKSTAD/BHONGWENI/MOUNT CURRIE	548	112	0	0
3	5960066	KOKSTAD/BHONGWENI/MOUNT CURRIE	465	95	0	0
3	5960092	KOKSTAD/BHONGWENI/MOUNT CURRIE	2556	522	0	15
4	5960022	SHAYAMOYA NORTH	735	150	0	0
4	5960030	SHAYAMOYA NORTH	637	130	2	0
4	5960042	SHAYAMOYA NORTH	646	132	0	0
4	5960043	SHAYAMOYA NORTH	641	131	2	0
4	5960056	SHAYAMOYA NORTH	641	131	0	2
4	5960059	SHAYAMOYA NORTH	725	148	0	2
4	5960073	SHAYAMOYA NORTH	651	133	5	0
4	5960082	SHAYAMOYA NORTH	906	185	5	0
4	5960083	SHAYAMOYA NORTH	769	157	2	4
4	5960086	SHAYAMOYA NORTH	867	177	0	4
4	5960088	SHAYAMOYA NORTH	847	173	2	2
5	5960047	KOKSTAD/BHONGWENI/MOUNT CURRIE	475	97	0	6
5	5960052	KOKSTAD/BHONGWENI/MOUNT CURRIE	441	90	1	1
5	5960060	KOKSTAD/BHONGWENI/MOUNT CURRIE	632	129	0	3
5	5960075	KOKSTAD/BHONGWENI/MOUNT CURRIE	563	115	1	26
5	5960077	KOKSTAD/BHONGWENI/MOUNT CURRIE	392	80	2	4
5	5960081	KOKSTAD/BHONGWENI/MOUNT CURRIE	529	108	0	2
6	5960003	MOUNT CURRIE NU 403	98	20	4	4
6	5960004	PAKKIES FARM	10	2	2	2

6	5960008	5960008 Ward 7?	597	122	0	6
6	5960025	PAKKIES FARM	578	118	33	11
6	5960055	PAKKIES FARM	779	159	114	134
6	5960093	THUTHUKANE	886	181	122	3
6	5960099	MOUNT CURRIE NU 352	7987	1631	189	829
6	5960100	MOUNT CURRIE NU 361	8026	1639	274	731
7	5960002	KOKSTAD	211	43	0	0
7	5960034	KOKSTAD/BHONGWENI/MOUNT CURRIE	593	121	0	0
7	5960036	KOKSTAD/BHONGWENI/MOUNT CURRIE	98	20	0	0
7	5960040	KOKSTAD/BHONGWENI/MOUNT CURRIE	607	124	0	0
7	5960053	KOKSTAD	710	145	0	0
7	5960062	KOKSTAD	759	155	2	5
7	5960071	KOKSTAD	720	147	2	0
7	5960079	KOKSTAD/BHONGWENI/MOUNT CURRIE	774	158	0	2
7	5960080	KOKSTAD	813	166	2	34
8	5960015	BHONGWENI	460	94	0	0
8	5960028	BHONGWENI	406	83	0	0
8	5960039	BHONGWENI	294	60	0	0
8	5960050	BHONGWENI	446	91	3	0
8	5960057	BHONGWENI	539	110	0	2
8	5960085	BHONGWENI	426	87	0	0
8	5960096	BHONGWENI	651	133	9	9
9	5960005	KOKSTAD/BHONGWENI/MOUNT CURRIE	5	1	0	1
9	5960007	KOKSTAD/BHONGWENI/MOUNT CURRIE	20	4	0	3
9	5960009	KOKSTAD/BHONGWENI/MOUNT CURRIE	240	49	0	22
9	5960017	KOKSTAD/BHONGWENI/MOUNT CURRIE	539	110	0	2
9	5960020	KOKSTAD/BHONGWENI/MOUNT CURRIE	93	19	18	15
9	5960024	KOKSTAD/BHONGWENI/MOUNT CURRIE	5	1	0	1
9	5960026	KOKSTAD/BHONGWENI/MOUNT CURRIE	637	130	5	3
9	5960027	KOKSTAD/BHONGWENI/MOUNT CURRIE	793	162	6	0
9	5960029	KOKSTAD/BHONGWENI/MOUNT CURRIE	436	89	0	4
9	5960033	KOKSTAD/BHONGWENI/MOUNT CURRIE	436	89	0	3
9	5960044	KOKSTAD/BHONGWENI/MOUNT CURRIE	529	108	3	3
9	5960045	KOKSTAD/BHONGWENI/MOUNT CURRIE	490	100	25	36
9	5960054	KOKSTAD/BHONGWENI/MOUNT CURRIE	431	88	2	5
9	5960070	KOKSTAD/BHONGWENI/MOUNT CURRIE	353	72	1	2
9	5960078	KOKSTAD/BHONGWENI/MOUNT CURRIE	622	127	3	2
9	5960084	KOKSTAD/BHONGWENI/MOUNT CURRIE	578	118	4	4
9	5960087	KOKSTAD/BHONGWENI/MOUNT CURRIE	906	185	5	178
9	5960089	KOKSTAD/BHONGWENI/MOUNT CURRIE	700	143	3	7
9	5960090	KOKSTAD/BHONGWENI/MOUNT CURRIE	289	59	15	18
9	5960095	KOKSTAD/BHONGWENI/MOUNT CURRIE	818	167	135	90
10	5960006	1	622	127	0	0
10	5960010	KOKSTAD W10 SP1	441	90	7	5
10	5960016	2	578	118	0	2
10	5960019	KOKSTAD	553	113	0	0
10	5960031	KOKSTAD W10 SP3	641	131	2	2
10	5960032	3 MARAKANA INFORMAL	1278	261	0	5
10	5960041	4	597	122	0	2



10	5960046	5	798	163	0	2
10	5960048	6	602	123	5	5
10	5960051	7 SHAYAMOYA	637	130	0	2
10	5960058	8	720	147	2	0
10	5960061	9	695	142	2	2
10	5960064	10	847	173	4	6
10	5960065	KOKSTAD W10 SP4	485	99	6	0
10	5960072	KOKSTAD	730	149	0	0

### Ubuhlebezwe LM

Ward ID	Census Small Area	Settlement Name	Population	Households	Below RDP Water - Households	Below RDP Sanitation - Households
1	5970013	MAHEHLE/NOCBANE	654	148	82	133
1	5970019	MAHEHLE/NOCBANE	632	143	28	91
1	5970035	MAHEHLE/NOCBANE	685	155	83	132
1	5970039	CABAZI	570	129	46	8
1	5970061	MAHEHLE/NOCBANE	694	157	130	123
1	5970064	MAHEHLE/NOCBANE	1198	271	158	172
1	5970071	CABAZI	601	136	130	10
1	5970081	MAHEHLE/NOCBANE	654	148	148	148
1	5970122	MAHEHLE/NOCBANE	739	167	167	167
1	5970125	MAHEHLE/NOCBANE	964	218	183	202
1	5970132	MAHEHLE/NOCBANE	827	187	130	175
2	5970016	ECHIBINI	464	105	105	69
2	5970093	IXOPO/STUARTSTOWN	721	163	3	3
2	5970124	HOPEWELL/CARISBROOK	796	180	17	31
2	5970128	IXOPO/STUARTSTOWN	747	169	4	3
2	5970130	IXOPO/STUARTSTOWN	601	136	7	73
2	5970138	ECHIBINI	716	162	144	9
2	5970142	HOPEWELL/CARISBROOK	880	199	148	163
2	5970156	UMZIMKULU FARMS	1738	393	175	185
2	5970157	HIGHFLATS 20	2388	540	174	235
3	5940139	NTAKAMA	787	178	8	8
3	5940155	NTAKAMA	1022	231	113	8
3	5970005	EMASHAKENI	469	106	99	0
3	5970025	MGOBANSIMBI	562	127	119	123
3	5970027	AMATOLO	517	117	96	67
3	5970037	ENTLANGWINI	526	119	112	25
3	5970038	ESIGEDCENI	544	123	123	0
3	5970052	ESIGEDCENI	734	166	159	3
3	5970062	MGOBANSIMBI	862	195	38	4
3	5970083	ESHESHE	800	181	157	66
3	5970110	EMASHAKENI	663	150	144	0
3	5970127	INKUMANDE	915	207	196	4
3	5970134	ECHIBINI	977	221	205	205
3	5970136	ESIGEDCENI	769	174	174	7
3	5970147	EMASHAKENI	743	168	168	27
4	5970002	IXOPO/STUARTSTOWN	287	65	0	2

4	5970020	IXOPO/STUARTSTOWN	230	52	13	14
4	5970022	IXOPO/STUARTSTOWN	314	71	71	71
4	5970023	IXOPO/STUARTSTOWN	429	97	86	54
4	5970026	MARIATHAL	416	94	94	92
4	5970028	IXOPO/STUARTSTOWN	447	101	0	2
4	5970031	IXOPO/STUARTSTOWN	482	109	3	103
4	5970041	IXOPO/STUARTSTOWN	814	184	111	161
4	5970054	IXOPO/STUARTSTOWN	438	99	8	96
4	5970069	IXOPO/STUARTSTOWN	610	138	39	24
4	5970080	IXOPO/STUARTSTOWN	535	121	0	8
4	5970098	IXOPO/STUARTSTOWN	641	145	29	10
4	5970113	IXOPO/STUARTSTOWN	597	135	3	7
4	5970116	IXOPO/STUARTSTOWN	646	146	0	0
4	5970133	IXOPO/STUARTSTOWN	964	218	20	92
4	5970139	IXOPO/STUARTSTOWN	703	159	0	0
4	5970158	IXOPO NU 029	4068	920	657	350
5	5970011	KUMPOTSHOSI/NDUNDUMA	491	111	0	5
5	5970024	KUMPOTSHOSI/NDUNDUMA	407	92	36	89
5	5970033	EMKHUBANE	164	37	27	25
5	5970036	QUMENI	624	141	93	137
5	5970086	KWELETSHENI/NTSHASENI	845	191	178	129
5	5970096	KWELETSHENI/NTSHASENI	800	181	174	36
5	5970101	KWELETSHENI/NTSHASENI	889	201	190	19
5	5970103	SANGCWABA	929	210	205	205
5	5970108	QUMENI	747	169	17	140
5	5970126	SANGCWABA	845	191	188	123
5	5970148	MKHUNYA	889	201	192	31
5	5970154	ADERLY	769	174	174	135
6	5970030	HLOKOZI/NTAPHA/MANTULELA	500	113	113	0
6	5970065	HLOKOZI/NTAPHA/MANTULELA	641	145	117	3
6	5970073	HLOKOZI/NTAPHA/MANTULELA	685	155	152	3
6	5970105	HLOKOZI/NTAPHA/MANTULELA	712	161	151	3
6	5970109	HLOKOZI/NTAPHA/MANTULELA	659	149	146	137
6	5970114	HLOKOZI/NTAPHA/MANTULELA	601	136	136	61
6	5970146	HLOKOZI/NTAPHA/MANTULELA	650	147	142	5
6	5970149	HLOKOZI/NTAPHA/MANTULELA	761	172	133	3
6	5970151	HLOKOZI/NTAPHA/MANTULELA	783	177	174	3
6	5970153	HLOKOZI/NTAPHA/MANTULELA	774	175	172	43
7	5970079	KUMPONDO/NDELA	615	139	11	61
7	5970123	MPUNGA/HLUTANKUNGU/JOLIVET/SOMELULWAZI	752	170	47	161
7	5970135	MPUNGA/HLUTANKUNGU/JOLIVET/SOMELULWAZI	593	134	15	52
7	5970137	MPUNGA/HLUTANKUNGU/JOLIVET/SOMELULWAZI	774	175	15	23
7	5970143	MPUNGA/HLUTANKUNGU/JOLIVET/SOMELULWAZI	783	177	25	149
7	5970150	KUMPONDO/NDELA	796	180	12	105
7	5970152	MPUNGA/HLUTANKUNGU/JOLIVET/SOMELULWAZI	765	173	5	18
7	5970155	MPUNGA/HLUTANKUNGU/JOLIVET/SOMELULWAZI	747	169	23	23
8	5970009	HLOKOZI/NTAPHA/MANTULELA	420	95	88	70
8	5970010	MPUNGA/HLUTANKUNGU/JOLIVET/SOMELULWAZI	473	107	36	64
8	5970044	HLOKOZI/NTAPHA/MANTULELA	610	138	112	118

8	5970050	NHLOZANE	615	139	32	128
8	5970055	HLOKOZI/NTAPHA/MANTULELA	654	148	125	144
8	5970058	HLOKOZI/NTAPHA/MANTULELA	632	143	136	116
8	5970067	MPUNGA/HLUTANKUNGU/JOLIVET/SOMELULWAZI	831	188	83	182
8	5970090	HLOKOZI/NTAPHA/MANTULELA	677	153	54	43
8	5970102	NHLOZANE	690	156	61	31
8	5970104	MPUNGA/HLUTANKUNGU/JOLIVET/SOMELULWAZI	778	176	10	3
8	5970111	MPUNGA/HLUTANKUNGU/JOLIVET/SOMELULWAZI	796	180	125	167
8	5970112	HLOKOZI/NTAPHA/MANTULELA	712	161	153	17
8	5970115	MPUNGA/HLUTANKUNGU/JOLIVET/SOMELULWAZI	730	165	119	149
8	5970119	MPUNGA/HLUTANKUNGU/JOLIVET/SOMELULWAZI	566	128	11	56
8	5970121	MPUNGA/HLUTANKUNGU/JOLIVET/SOMELULWAZI	624	141	36	97
8	5970141	HLOKOZI/NTAPHA/MANTULELA	721	163	160	54
9	5970017	SPRINGVALE	522	118	101	115
9	5970021	MZIKI/SPRINGVALE/MADLEKAZI/	1809	409	357	9
9	5970029	KOZONDI	486	110	70	15
9	5970034	MZIKI/SPRINGVALE/MADLEKAZI/	531	120	10	3
9	5970043	NTABANE/PHUMOBALA	1238	280	272	182
9	5970056	KOSHANGE/SIZISIZWE	774	175	0	15
9	5970059	MZIKI/SPRINGVALE/MADLEKAZI/	615	139	26	7
9	5970077	MADLEKAZI/KADEDA	632	143	122	10
9	5970088	MZIKI/SPRINGVALE/MADLEKAZI/	628	142	5	114
9	5970100	NTABANE/PHUMOBALA	774	175	130	58
10	5970032	KWABHIDLA/ZWELITHULE	756	171	30	166
10	5970072	KWABHIDLA/ZWELITHULE	628	142	28	130
10	5970095	KWABHIDLA/ZWELITHULE	730	165	26	142
10	5970099	KWABHIDLA/ZWELITHULE	703	159	72	153
10	5970120	KWABHIDLA/ZWELITHULE	681	154	18	148
10	5970129	TSHELENI/MALEZULU	734	166	129	20
10	5970131	MHLABATSHANE	871	197	166	17
10	5970144	TSHELENI/MALEZULU	911	206	37	18
10	5970145	MHLABATSHANE	805	182	151	107
11	5970014	KWA-NOKWEJA/MHLWENI/PLAINHILL	433	98	4	23
11	5970042	KWA-NOKWEJA/MHLWENI/PLAINHILL	624	141	50	21
11	5970045	NGONGONINI	517	117	3	47
11	5970053	KWA-NOKWEJA/MHLWENI/PLAINHILL	632	143	68	14
11	5970063	KWA-NOKWEJA/MHLWENI/PLAINHILL	601	136	78	26
11	5970066	KWA-NOKWEJA/MHLWENI/PLAINHILL	659	149	75	75
11	5970068	KWA-NOKWEJA/MHLWENI/PLAINHILL	628	142	56	9
11	5970074	KWA-NOKWEJA/MHLWENI/PLAINHILL	610	138	14	8
11	5970084	MPHESHEYA	632	143	94	24
11	5970089	KWA-NOKWEJA/MHLWENI/PLAINHILL	668	151	9	27
11	5970091	KWA-NOKWEJA/MHLWENI/PLAINHILL	654	148	91	42
11	5970092	KWA-NOKWEJA/MHLWENI/PLAINHILL	610	138	101	21
11	5970107	IXOPO NU 058	1835	415	75	196
11	5970117	MVUTSHINI	805	182	125	13
12	5970003	ESIGUBUDWINI/RIVER VIEW/UMGODI	181	41	38	16
12	5970006	BOVINI	305	69	22	38
12	5970008	INCALU	332	75	75	68

12	5970012	BOVINI	787	178	145	158
12	5970018	MGODI/SKEYI	509	115	103	111
12	5970040	NTSHAYAMOYA	460	104	104	62
12	5970048	NTSHAYAMOYA	469	106	74	80
12	5970070	MGODI/SKEYI	672	152	148	148
12	5970075	FAIRFIELD/VELABETHUKE/AMAZABEKO/MDIBANISO	703	159	135	145
12	5970076	MGODI/SKEYI	734	166	166	13
12	5970082	FAIRFIELD/VELABETHUKE/AMAZABEKO/MDIBANISO	584	132	7	91
12	5970085	FAIRFIELD/VELABETHUKE/AMAZABEKO/MDIBANISO	588	133	130	133
12	5970087	FAIRFIELD/VELABETHUKE/AMAZABEKO/MDIBANISO	637	144	141	13
12	5970094	FAIRFIELD/VELABETHUKE/AMAZABEKO/MDIBANISO	579	131	69	128
12	5970106	UMGODI HIGHFLATS A/IMPIYAMANDLA/ETSHENILENDUNA	827	187	183	187
12	5970118	BOVINI	716	162	148	101
13	5970004	IXOPO NU 063	933	211	211	141
13	5970007	TSHELENI	385	87	54	36
13	5970015	ESIGUBUDWINI/RIVER VIEW/UMGODI	389	88	82	79
13	5970046	UMGODI HIGHFLATS A/IMPIYAMANDLA/ETSHENILENDUNA	637	144	144	139
13	5970047	IXOPO NU 063	1809	409	45	134
13	5970049	TSHELENI	699	158	153	144
13	5970051	HIGHFLATS	593	134	8	20
13	5970057	UMGODI HIGHFLATS A/IMPIYAMANDLA/ETSHENILENDUNA	593	134	134	127
13	5970060	MPUNGA/HLUTANKUNGU/JOLIVET/SOMELULWAZI	809	183	79	151
13	5970078	TSHELENI	814	184	153	0
13	5970097	MPUNGA/HLUTANKUNGU/JOLIVET/SOMELULWAZI	796	180	68	173
13	5970140	TSHELENI	796	180	167	20
14	5030002	THUTHUKA	119	27	27	27
14	5030004	MPIKANISWENI	287	65	65	59
14	5030005	UMZUMBE	270	61	61	61
14	5030059	ENHLANGWINI/NTABAKUCASHA/ELWAZI	420	95	86	6
14	5030078	ENHLANGWINI/NTABAKUCASHA/ELWAZI	557	126	70	126
14	5030096	ENHLANGWINI/NTABAKUCASHA/ELWAZI	716	162	130	149
14	5030103	ENHLANGWINI/NTABAKUCASHA/ELWAZI	641	145	138	138
14	5030123	ENHLANGWINI/NTABAKUCASHA/ELWAZI	672	152	148	152
14	5030136	ENHLANGWINI/NTABAKUCASHA/ELWAZI	637	144	42	89
14	5030143	ENHLANGWINI/NTABAKUCASHA/ELWAZI	761	172	113	166
14	5030155	ENHLANGWINI/NTABAKUCASHA/ELWAZI	624	141	120	141
14	5030160	ENHLANGWINI/NTABAKUCASHA/ELWAZI	743	168	165	159
14	5030177	ENHLANGWINI/NTABAKUCASHA/ELWAZI	575	130	55	103
14	5030194	ENHLANGWINI/NTABAKUCASHA/ELWAZI	787	178	145	175

### Umzimkhulu LM

Ward ID	Census Small Area	Settlement Name	Population	Households	Below RDP Water - Households	Below RDP Sanitation - Households
1	5980004	MOUNT CURRIE NU 153	319	77	58	77
1	5980015	TSAWULE	157	38	38	33
1	5980020	SANGWENI	70	17	17	17
1	5980024	MAKHAMLENI	364	88	78	78

1	5980061	ELUCINGWENI	401	97	93	8
1	5980069	TSAWULE	376	91	18	88
1	5980077	INDAWANA/NGQODOZA/LUSUTU	418	101	101	101
1	5980142	DELAMUZI	558	135	120	131
1	5980148	ZWELITSHA	505	122	46	122
1	5980180	INDAWANA/NEW VILLAGE	517	125	24	43
1	5980191	DELAMUZI	699	169	4	169
1	5980204	INDAWANA/NGQODOZA/LUSUTU	554	134	124	131
1	5980218	INDAWANA/NGQODOZA/LUSUTU	501	121	69	7
1	5980228	ESIKOLWENI	703	170	52	166
1	5980240	INDAWANA/NGQODOZA/LUSUTU	695	168	16	156
1	5980276	DELAMUZI	790	191	156	180
1	5980290	DELAMUZI	848	205	21	82
1	5980292	INDAWANA/NGQODOZA/LUSUTU	836	202	144	202
1	5980295	INDAWANA/NGQODOZA/LUSUTU	720	174	68	103
1	5980302	ELUKHASINI	794	192	85	46
1	5980320	EZIQALABENI	802	194	51	194
2	5980027	THENTI (EDGERTON 20)	153	37	37	11
2	5980066	ENYANISWENI - A	430	104	28	85
2	5980073	RIVERSIDE	3189	771	249	273
2	5980081	RIVERSIDE	724	175	10	27
2	5980117	SIDIKIDENI	558	135	0	128
2	5980165	CORINTH (KORINTE)/MZINTLANGA/PHONGOLO/MDENI	550	133	133	15
2	5980170	EDGETON	571	138	4	8
2	5980186	CORINTH (KORINTE)/MZINTLANGA/PHONGOLO/MDENI	513	124	36	77
2	5980197	ENYANISWENI - A	567	137	14	114
2	5980200	CORINTH (KORINTE)/MZINTLANGA/PHONGOLO/MDENI	645	156	34	72
2	5980207	CORINTH (KORINTE)/MZINTLANGA/PHONGOLO/MDENI	732	177	158	11
2	5980212	ENYANISWENI - A	769	186	63	162
2	5980265	SIDIKIDENI	604	146	0	5
2	5980270	CORINTH (KORINTE)/MZINTLANGA/PHONGOLO/MDENI	732	177	28	126
2	5980280	CORINTH (KORINTE)/MZINTLANGA/PHONGOLO/MDENI	641	155	155	3
2	5980309	ENYANISWENI - A	707	171	86	164
2	5980316	CORINTH (KORINTE)/MZINTLANGA/PHONGOLO/MDENI	703	170	57	79
2	5980335	SIDIKIDENI	860	208	13	147
3	5980033	ESIKAWINI	203	49	30	8
3	5980057	DEDA	405	98	90	8
3	5980063	DLAMINI	356	86	43	11
3	5980068	DEDA	443	107	97	10
3	5980088	BOVINI/MNCWEBA	509	123	123	88
3	5980091	BOVINI/MNCWEBA	645	156	152	137
3	5980113	NTSIKENI - A	455	110	20	100
3	5980131	NTSIKENI - A	563	136	13	129
3	5980149	BOVINI/MNCWEBA	583	141	141	86
3	5980163	NTSIKENI - A	372	90	0	9
3	5980213	NTSIKENI - A	625	151	3	148
3	5980223	NTSIKENI - A	662	160	6	150

3	5980249	NTSIKENI - A	711	172	0	10
3	5980267	BRIDGE	885	214	11	15
3	5980277	BOVINI/MNCWEBA	757	183	183	16
3	5980343	NGWAQA	831	201	77	117
4	5980006	NQABENI - F	219	53	0	53
4	5980016	MASAMENI/FOREST STATION	137	33	28	9
4	5980025	NONGINQA/MAGQAGQENIKWA-DULANTHI	178	43	9	13
4	5980031	NONGINQA/MAGQAGQENIKWA-DULANTHI	219	53	5	11
4	5980051	MARAMBENI - B	347	84	84	15
4	5980067	MNKANGALA	488	118	20	118
4	5980074	MASAMENI 3	385	93	78	69
4	5980075	MNKANGALA	323	78	0	78
4	5980107	MNKANGALA	538	130	33	114
4	5980135	NONGINQA/MAGQAGQENIKWA-DULANTHI	554	134	53	102
4	5980136	NONGINQA/MAGQAGQENIKWA-DULANTHI	687	166	162	17
4	5980138	NONGINQA/MAGQAGQENIKWA-DULANTHI	534	129	8	12
4	5980154	MARANJANA - B	592	143	131	131
4	5980155	NONGINQA/MAGQAGQENIKWA-DULANTHI	463	112	7	7
4	5980214	NONGINQA/MAGQAGQENIKWA-DULANTHI	716	173	9	9
4	5980233	MAREWINI - A	695	168	160	109
4	5980243	NQABELWENI	802	194	189	35
4	5980250	MARANJANA - B	769	186	147	182
4	5980253	NONGINQA/MAGQAGQENIKWA-DULANTHI	716	173	35	160
4	5980260	MALENGE - (LOURDES SETTLEMENT)	745	180	175	175
4	5980273	MLENZANA	716	173	83	170
4	5980281	MNKANGALA	736	178	45	168
5	5980038	THONJENI	203	49	49	49
5	5980045	SARIYA	269	65	61	61
5	5980046	NGWAGWANE	240	58	58	10
5	5980071	MDENI 2	476	115	10	105
5	5980097	NDUMAKUDE	534	129	129	120
5	5980129	GUJEDLINI	501	121	121	118
5	5980146	NDUMAKUDE	587	142	25	142
5	5980152	MAGANGXOSINI	525	127	123	28
5	5980153	GUJEDLINI	666	161	158	151
5	5980182	LUKALWENI	550	133	104	111
5	5980184	NDUMAKUDE	629	152	120	149
5	5980205	NKOMENI	554	134	134	130
5	5980229	GUJEDLINI	757	183	183	172
5	5980266	NKOMENI	529	128	128	128
5	5980306	GERMISTON	678	164	164	17
5	5980337	MDENI 2	1080	261	257	257
6	5980001	PHOLANYONI	120	29	29	29
6	5980008	ESIBOVINI	327	79	79	79
6	5980019	MAFABELA - A - (LOURDES SETTLEMENT)	128	31	31	31
6	5980052	MABELA/MAKHOLWENI - (LOURDES SETTLEMENT)	343	83	13	80
6	5980064	EMATYENI - D - (LOURDES SETTLEMENT)	385	93	74	16
6	5980100	EMMAUSI - (LOURDES SETTLEMENT)	484	117	117	9
6	5980104	SIPHANGENI/BASHAWENI	484	117	113	25

6	5980105	PHUNGULA - (LOURDES SETTLEMENT)	633	153	29	120
6	5980106	NKKQOZANA/THEMBALIHLE - (LOURDES SETTLEMENT)	488	118	118	118
6	5980121	CACADU - (LOURDES SETTLEMENT)	505	122	122	122
6	5980126	NKKQOZANA/THEMBALIHLE - (LOURDES SETTLEMENT)	567	137	125	129
6	5980127	NZOMBANE - B	575	139	30	15
6	5980128	THOBO - (LOURDES SETTLEMENT)	525	127	127	21
6	5980141	GEIBROOK/MAGCAKINI	633	153	153	19
6	5980156	ELALINI - E - (LOURDES SETTLEMENT)	410	99	93	12
6	5980258	ST PAUL	798	193	154	189
6	5980278	MOYENI - (LOURDES SETTLEMENT)	1030	249	249	249
6	5980331	ST PAUL	881	213	95	213
6	5980348	EMATYENI - D - (LOURDES SETTLEMENT)	1009	244	237	111
7	5980029	ENYANISWENI - B	368	89	33	89
7	5980111	SICELWENI/MFULAMHLE 2	376	91	91	91
7	5980137	NAZARETH/JOZANE/MABUYANA/MABUXANE	525	127	127	127
7	5980158	NAZARETH/JOZANE/MABUYANA/MABUXANE	414	100	84	3
7	5980194	ZADUNGENI	430	104	104	104
7	5980199	NAZARETH/JOZANE/MABUYANA/MABUXANE	563	136	126	136
7	5980248	MADUNA	558	135	103	135
7	5980254	NGUSE	546	132	132	118
7	5980264	NGUSE	538	130	127	130
7	5980275	NGUSE	637	154	154	154
7	5980299	SICELWENI/MFULAMHLE 1	620	150	150	150
7	5980303	NAZARETH/JOZANE/MABUYANA/MABUXANE	716	173	173	173
7	5980308	NGUSE	583	141	141	138
7	5980323	NAZARETH/JOZANE/MABUYANA/MABUXANE	732	177	114	174
8	5980003	MOUNT CURRIE NU 361	877	212	0	212
8	5980005	TIGERHOEK - TAIKO	132	32	9	23
8	5980039	MPUR	476	115	115	115
8	5980058	NIEWJAARSFONTEIN	525	127	110	127
8	5980089	PHOLANYONI	393	95	95	12
8	5980094	DRESSINI	414	100	39	71
8	5980096	TIGERHOEK/EGUNJINI	596	144	139	134
8	5980169	SINGISI	716	173	158	20
8	5980183	SENTI	488	118	23	118
8	5980203	FOURTEEN/DRIEFONTEIN	678	164	164	9
8	5980209	DRIEFONTEIN	670	162	162	21
8	5980220	TIGERHOEK/EGUNJINI	761	184	184	184
8	5980236	SENTI	620	150	36	143
8	5980238	MLENZANA	716	173	30	160
8	5980241	ROCKY MOUNT	579	140	15	133
8	5980244	DEKEDEKINI	761	184	180	184
8	5980261	BALBEL	554	134	134	131
8	5980274	DRESSINI	625	151	47	144
8	5980314	SINGISI	749	181	2	93
8	5980315	BALBEL	720	174	158	168
8	5980356	MAROMENI	1506	364	359	354
9	5980010	STRAALHOEK	108	26	0	3

9	5980012	NDAKENI/MAHAWINI	529	128	26	77
9	5980047	NDAKENI/MAHAWINI	381	92	43	92
9	5980056	JABULA	443	107	0	95
9	5980072	NGQOKOZWENI/MPENKULU/DLANGAMANDLA	492	119	4	119
9	5980085	NGQOKOZWENI/MPENKULU/DLANGAMANDLA	484	117	8	109
9	5980103	NGQOKOZWENI/MPENKULU/DLANGAMANDLA	587	142	8	138
9	5980112	CANCELE	517	125	122	125
9	5980185	CANCELE	567	137	137	137
9	5980196	NDAKENI/MAHAWINI	616	149	72	149
9	5980217	MATATAMA	691	167	4	163
9	5980226	CANCELE	670	162	155	162
9	5980235	CANCELE	604	146	139	143
9	5980269	GOXE	740	179	4	179
9	5980321	KWA CEBE	914	221	157	217
9	5980338	MATATAMA	625	151	0	151
10	5980014	MADLATU	91	22	22	0
10	5980037	KLIPSPRUIT - B	327	79	17	75
10	5980044	KWAPILE	232	56	6	47
10	5980048	NGQUMARENI	240	58	52	55
10	5980062	AMAROMA	182	44	19	7
10	5980082	RIESDALE	505	122	122	117
10	5980087	KROMDRAAI	583	141	141	13
10	5980145	LANGVERWACHT	401	97	41	58
10	5980173	NJUNGA/GLENGARRY	376	91	91	91
10	5980175	RIESDALE	583	141	141	141
10	5980188	NJUNGA/GLENGARRY	683	165	165	165
10	5980189	NJUNGA/GLENGARRY	546	132	128	132
10	5980222	TIGERHOEK - NGQUMARENI	616	149	43	149
10	5980225	SIKHULU	724	175	175	4
10	5980247	SAWMILL/NCAMBELE	666	161	40	158
10	5980256	MANQORHOLWENI/TWEEFFONTEIN	683	165	161	161
10	5980326	SAWMILL/NCAMBELE	811	196	10	196
10	5980330	MPOLA	902	218	141	23
11	5980017	MEI/JABULANI/MPAKAMENI	410	99	99	99
11	5980090	MEI/JABULANI/MPAKAMENI	381	92	92	27
11	5980108	MDENI 1	438	106	103	103
11	5980116	MDENI 1	426	103	103	97
11	5980122	JAMES	385	93	93	93
11	5980130	HLONTLWENI	368	89	0	89
11	5980198	BISI/VUKUZIMELE/MFUNDWENI	596	144	11	126
11	5980230	BISI/VUKUZIMELE/MFUNDWENI	459	111	7	104
11	5980237	CHIYA	625	151	151	148
11	5980242	MEI/TAKANI	662	160	151	3
11	5980251	MEI/JABULANI/MPAKAMENI	554	134	134	128
11	5980287	BISI/VUKUZIMELE/MFUNDWENI	550	133	24	121
11	5980298	BISI/VUKUZIMELE/MFUNDWENI	2891	699	206	690
11	5980344	HLONTLWENI	865	209	7	199
12	5980013	LUKHALWENI	112	27	27	27
12	5980040	MASAMENI 2	269	65	65	46



12	5980054	TUSE	393	95	75	5
12	5980079	MANYANYA	368	89	89	82
12	5980119	NXAPANXAPENI	426	103	84	103
12	5980150	MASAMENI/PITSKOP	645	156	109	146
12	5980161	VIMBANE/KWELEMTINI/MACHUNWINI - MACHUNWINI	761	184	184	179
12	5980192	RIETVLEI	637	154	151	154
12	5980215	EMBUZWENI	629	152	51	37
12	5980246	VIMBANE/KWELEMTINI/MACHUNWINI - MACHUNWINI	596	144	135	141
12	5980255	NXAPANXAPENI	749	181	69	174
12	5980257	RIETVLEI	608	147	88	120
12	5980262	RIETVLEI	707	171	168	171
12	5980300	VIMBANE/KWELEMTINI/MACHUNWINI - MACHUNWINI	848	205	201	201
12	5980324	RIETVLEI	691	167	7	7
12	5980327	EMBUZWENI	745	180	15	127
13	5980030	ROND - DRY	141	34	34	34
13	5980065	MAMENI/LUCINGWENI/NOMDAPHU/KOK'HILL RA	405	98	63	95
13	5980083	RONDEDRAAI	298	72	69	72
13	5980092	THEEKLOOF	352	85	85	85
13	5980140	MNQUMENI 3	463	112	112	112
13	5980151	NTLOBENI/KOK'HILL	501	121	3	121
13	5980166	BISI/VUKUZIMELE/MFUNDWENI	538	130	0	0
13	5980167	BISI/VUKUZIMELE/MFUNDWENI	542	131	48	121
13	5980172	BISI/VUKUZIMELE/MFUNDWENI	1816	439	18	439
13	5980177	MAMENI/LUCINGWENI/NOMDAPHU/KOK'HILL RA	571	138	44	138
13	5980195	MAMENI/LUCINGWENI/NOMDAPHU/KOK'HILL RA	401	97	53	3
13	5980210	MAMENI/LUCINGWENI/NOMDAPHU/KOK'HILL RA	583	141	36	134
13	5980232	MAMENI/LUCINGWENI/NOMDAPHU/KOK'HILL RA	575	139	44	133
13	5980239	BISI/VUKUZIMELE/MFUNDWENI	641	155	51	101
13	5980271	BISI/VUKUZIMELE/MFUNDWENI	641	155	0	68
13	5980283	NTLOBENI/KOK'HILL	687	166	146	166
13	5980304	MAMENI/LUCINGWENI/NOMDAPHU/KOK'HILL RA	654	158	37	8
13	5980340	BISI/VUKUZIMELE/MFUNDWENI	749	181	6	181
13	5980359	TAFENI	918	222	213	216
14	5980028	MNQUMENI 2	182	44	35	44
14	5980034	NDLOVINI	120	29	29	6
14	5980036	NDLOVINI	161	39	39	0
14	5980041	MBANJWA	339	82	82	82
14	5980042	HLAZENI	207	50	50	7
14	5980050	MABISANE	170	41	39	34
14	5980084	KHETHENI	323	78	15	57
14	5980098	DRESSINI/MAPLAZINI/MANTUZELENI	463	112	112	112
14	5980120	GUGWINI/SIPHAHLENI	393	95	18	88
14	5980125	NDIDENI	372	90	90	90
14	5980139	MTSHAZO	319	77	74	3
14	5980268	DRESSINI/MAPLAZINI/MANTUZELENI	587	142	130	43
14	5980294	GUGWINI/SIPHAHLENI	732	177	174	170
14	5980317	MNQUMENI 1	790	191	191	191
14	5980346	DRESSINI/MAPLAZINI/MANTUZELENI	993	240	240	218

14	5980347	DRESSINI/MAPLAZINI/MANTUZELENI	823	199	199	193
14	5980352	DRESSINI/MAPLAZINI/MANTUZELENI	831	201	105	201
14	5980355	NKAPHA	802	194	191	191
15	5980078	DRYIINI/GLOVEESTER	285	69	69	69
15	5980123	THORNY BUSH	401	97	97	97
15	5980124	SHAMTO	534	129	129	125
15	5980159	NKABUBU/MASTELA	496	120	110	110
15	5980179	MUNCU	513	124	124	36
15	5980187	GCENI	563	136	136	0
15	5980216	EDIPHU	443	107	98	107
15	5980310	GCENI	662	160	160	3
15	5980334	SUMMER FIELD	740	179	179	168
15	5980339	LONG CLOVE	761	184	177	84
15	5980345	DRYIINI/GLOVEESTER	811	196	192	23
16	5980022	MANKOFU 2	87	21	21	21
16	5980049	UMZIMKULU TOWN	215	52	0	0
16	5980076	UMZIMKULU TOWN	467	113	21	17
16	5980221	UMZIMKULU TOWN	567	137	0	0
16	5980252	UMZIMKULU TOWN	492	119	16	37
16	5980279	UMZIMKULU TOWN	563	136	14	6
16	5980286	UMZIMKULU TOWN	633	153	6	3
16	5980289	UMZIMKULU TOWN	596	144	15	12
16	5980336	UMZIMKULU TOWN	517	125	9	105
16	5980342	UMZIMKULU TOWN	501	121	1	10
16	5980353	UMZIMKULU TOWN	554	134	1	55
16	5980360	UMZIMKULU TOWN	749	181	2	22
17	5980007	EHULA/BHOOLA	74	18	14	5
17	5980060	BHOOLA	687	166	160	166
17	5980086	BHOOLA	691	167	167	162
17	5980118	BHOOLA	616	149	145	149
17	5980176	HOPEWELL	476	115	115	112
17	5980272	HIGHLANDS	633	153	28	28
17	5980291	HOPEWELL	563	136	136	124
17	5980313	HOPEWELL	691	167	163	167
17	5980325	CLYDESDALE/HOPEWELL	525	127	12	25
17	5980349	BHOOLA	575	139	82	105
17	5980350	UMZIMKULU TOWN	550	133	5	92
17	5980351	CLYDESDALE/HOPEWELL	575	139	5	134
17	5980358	BHOOLA	1013	245	245	239
17	5980361	BHOOLA	711	172	113	126
18	5980002	LUKHALWENI	124	30	30	30
18	5980021	JUTA	120	29	29	29
18	5980035	NKAMPINI	232	56	56	0
18	5980080	MAGQENI	459	111	107	73
18	5980101	NTLANGWINI	629	152	146	146
18	5980133	PANINKUKHU	534	129	129	106
18	5980134	NTLANGWINI	554	134	4	134
18	5980160	MMUSA	542	131	124	131
18	5980162	MVOLOZANA	724	175	175	175

18	5980164	MQHOKWENI	563	136	136	136
18	5980181	SIKHULU	596	144	144	4
18	5980190	BONTRAND	529	128	125	122
18	5980201	KWABASE	732	177	137	159
18	5980224	PANINKUKHU	711	172	165	14
18	5980293	SIKHULU	670	162	162	10
18	5980307	MVOLOZANA	670	162	162	162
19	5980009	UMZIMKULU - A	21	5	5	5
19	5980011	EMAUS/ELANGENI	79	19	19	13
19	5980144	EMVUBUKAZI 2	612	148	148	144
19	5980171	EMVUBAKAZI 1	612	148	141	144
19	5980193	ST BARNABAS	567	137	0	88
19	5980202	EMVUBAKAZI 1	670	162	56	151
19	5980211	UMZIMKULU - A	703	170	21	15
19	5980284	MOUNTAIN HOME	666	161	126	81
19	5980301	NTLAMBAMSOKA	645	156	153	6
19	5980305	ST BARNABAS	654	158	3	117
19	5980312	LUSIZINI	827	200	6	197
19	5980328	MOUNTAIN HOME	774	187	85	51
19	5980354	EMAUS/ELANGENI	790	191	135	0
20	5980026	TEMBENI - B	199	48	5	32
20	5980070	MAGQAGQENI	385	93	93	89
20	5980093	TEMBENI - B	600	145	133	141
20	5980099	BLEMA	372	90	86	90
20	5980102	MPAKHAMENI	418	101	101	77
20	5980110	KROMHOEK	496	120	120	23
20	5980132	MAGQAGQENI	563	136	136	120
20	5980168	STRANGERS REST/HIGHLANDS	579	140	26	22
20	5980178	NTSHABENI	608	147	98	147
20	5980219	WASHBANK	546	132	123	132
20	5980231	WASHBANK	517	125	97	6
20	5980259	MADAKENI	695	168	102	161
20	5980282	WASHBANK	604	146	146	19
20	5980288	MADAKENI	513	124	99	118
20	5980297	KROMHOEK	691	167	167	45
20	5980332	MADAKENI	525	127	95	124
20	5980333	NKABUBU/MASTELA	707	171	171	171
20	5980357	TAFENI	819	198	131	195
21	5980023	NYAKA - B	157	38	38	38
21	5980053	MPAKAMENI/NTABENI - (LOURDES SETTLEMENT)	513	124	124	124
21	5980055	ESIBOVINI	302	73	69	73
21	5980059	HOLLAND/DUMISA - (LOURDES SETTLEMENT)	294	71	68	71
21	5980115	MYEMBE	364	88	64	85
21	5980143	HOLLAND/DUMISA - (LOURDES SETTLEMENT)	426	103	92	103
21	5980147	SAIMAN/CABANE	525	127	95	10
21	5980157	MYEMBE	596	144	136	144
21	5980174	KWAMAKHANYA	513	124	120	124
21	5980206	MARHWAQA	563	136	98	136
21	5980227	NGOKOZWENI/NONGIDI	753	182	13	169

21	5980263	MPAKAMENI/NTABENI - (LOURDES SETTLEMENT)	546	132	132	132
21	5980285	NGQOKWENE	790	191	0	191
21	5980296	GUDLINTABA	860	208	35	122
21	5980319	MPAKAMENI/NTABENI - (LOURDES SETTLEMENT)	757	183	158	179
22	5980018	IMBULUMBU	641	155	155	155
22	5980032	FARM - A	223	54	54	54
22	5980043	JALIMEKA	265	64	64	58
22	5980095	MAHOBE	372	90	86	90
22	5980109	FARM - A	525	127	96	12
22	5980114	DEEPDALE TSHALI	360	87	87	87
22	5980208	FARM - A	782	189	184	189
22	5980234	MEHLOMANE	625	151	3	3
22	5980245	IMBULUMBU	592	143	140	134
22	5980311	KWALORI	662	160	154	157
22	5980318	KWALORI	815	197	194	194
22	5980322	MATYENI	873	211	54	201
22	5980329	KILIVER	678	164	164	161
22	5980341	MAKHALENI	761	184	181	47

### Dr Nkosazana Dlamini Zuma

Ward ID	Census Small Area	Settlement Name	Population	Households	Below RDP Water - Households	Below RDP Sanitation - Households
1	5650012	INGQIYA	231	55	3	0
1	5650014	INGQIYA	269	64	28	20
1	5650017	NKOTHWENI 03	357	85	85	63
1	5650032	STEPMORE 03	593	141	30	3
1	5650038	NTWASAHL0BO 08	685	163	85	26
1	5650040	THE RIDGE/WILLOWBROOK	303	72	10	52
1	5650059	STEPMORE 03	883	210	123	7
1	5650066	STEPMORE 03	946	225	111	51
1	5950003	THE RIDGE/MKHOMAZANA	113	27	10	12
1	5950007	MHLANGENI	223	53	34	15
1	5950009	THE RIDGE/MKHOMAZANA	353	84	0	0
1	5950018	MQATSHENI/INGQIYA	685	163	154	21
1	5950021	MQATSHENI/INGQIYA	777	185	166	69
1	5950025	MQATSHENI/INGQIYA	643	153	147	87
2	5940163	BEERSHHEBA/WESTCLIFF	1131	269	77	63
2	5950001	ENHLANHLENI/OKHLAWENI 1	80	19	3	3
2	5950002	UNDERBERG NU 120	172	41	0	0
2	5950004	UNDERBERG NU 097	572	136	34	0
2	5950010	HIMEVILLE	265	63	3	10
2	5950011	HIMEVILLE	244	58	4	32
2	5950015	KWAPITELA	412	98	20	29
2	5950016	HIMEVILLE	336	80	17	32
2	5950017	HIMEVILLE	857	204	3	3
2	5950019	ENHLANHLENI/OKHLAWENI 2	521	124	2	5
2	5950020	DRAKENSBURG GARDENS	1656	394	25	90
2	5950027	UNDERBERG NU 061	3631	864	87	417

3	5950005	UNDERBERG NU 156	382	91	10	10
3	5950006	UNDERBERG NU 004	92	22	6	21
3	5950008	UNDERBERG	273	65	0	28
3	5950012	UNDERBERG	252	60	0	10
3	5950013	UNDERBERG	639	152	4	6
3	5950014	UNDERBERG NU 010	1206	287	88	110
3	5950022	UNDERBERG	374	89	0	38
3	5950023	UNDERBERG	1589	378	6	9
3	5950024	UNDERBERG NU 120	2484	591	94	315
3	5950026	UNDERBERG NU 004	2353	560	52	156
4	5940023	NCXOLA/CABAZINI	345	82	82	78
4	5940036	EMADWALENI 03	328	78	75	72
4	5940040	ESIDANGENI 02	294	70	70	70
4	5940054	THONSINI 01	303	72	64	72
4	5940101	MASHAYILANGA 01	681	162	162	125
4	5940107	EMBANTINI 01	525	125	106	120
4	5940121	MASHAYILANGA 01	706	168	159	159
4	5940127	EMADWALENI 03	601	143	141	89
4	5940130	MASHAYILANGA 01	614	146	146	103
4	5940131	EMBANTINI 02	622	148	128	145
4	5940145	MASHAYILANGA 01	626	149	135	17
4	5940149	MASHAYILANGA 01	740	176	163	157
4	5940150	NCXOLA/CABAZINI	773	184	181	48
4	5940164	EMADWALENI 03	891	212	203	209
5	5940043	MPUMULWANE 02	374	89	70	89
5	5940047	MASHAYILANGA 01	416	99	99	95
5	5940057	DAZINI	395	94	58	94
5	5940084	DAZINI	567	135	88	119
5	5940095	MASHAYILANGA 01	672	160	160	160
5	5940123	MASHAYILANGA 01	647	154	135	151
5	5940136	NDODENI 06	698	166	60	81
5	5940159	MPUMULWANE 02	731	174	166	174
5	5940160	NDODENI 06	723	172	87	169
5	5940161	NDODENI 06	773	184	53	32
5	5940167	NDODENI 06	887	211	83	35
6	5940027	OKHETENI	332	79	66	6
6	5940037	HLABENI	332	79	48	3
6	5940045	MAQOLENI	521	124	11	113
6	5940060	MAKHOLWENI	567	135	131	35
6	5940062	CENTOCOW	735	175	75	70
6	5940069	SIBOMVWINI	483	115	6	97
6	5940074	OKHETENI	723	172	128	164
6	5940077	DAZINI	412	98	95	95
6	5940087	HLABENI	685	163	62	13
6	5940104	SIBOMVWINI	668	159	0	159
6	5940109	MAJUKUKWINI	790	188	171	179
6	5940119	QULASHE	727	173	85	169
6	5940122	SCEDENI	786	187	144	179
6	5940125	QULASHE	719	171	144	171

6	5940141	QULASHE	752	179	25	172
6	5940144	SIBOMVWINI	748	178	82	178
6	5940146	KWASHUSHA	786	187	80	178
7	5940001	TARSEVILLE	84	20	0	13
7	5940071	MQUNDEKWENI	584	139	73	26
7	5940073	GQUMENI	546	130	83	11
7	5940105	GQUMENI	500	119	11	15
7	5940110	MQUNDEKWENI	660	157	67	57
7	5940114	MAQOLENI	756	180	118	173
7	5940116	JOKWENI	588	140	62	46
7	5940133	GQUMENI	689	164	77	8
7	5940137	GQUMENI	639	152	3	16
7	5940153	TARSEVILLE	761	181	169	34
7	5940172	GQUMENI	828	197	29	0
8	5940008	NCXOLA/CABAZINI	42	10	10	10
8	5940010	NGXALINGENWA	198	47	47	47
8	5940024	BHOBHOYI / NEWTONVILLE	324	77	51	77
8	5940034	INGWANGWANA	429	102	94	102
8	5940048	UQAQANI	559	133	99	39
8	5940063	NDODENI	471	112	109	3
8	5940066	NDODENI	559	133	133	7
8	5940067	BHOBHOYI / NEWTONVILLE	706	168	149	168
8	5940068	BHOBHOYI / NEWTONVILLE	517	123	0	119
8	5940089	INGWANGWANA	786	187	129	187
8	5940094	INGWANGWANA	630	150	150	150
8	5940111	BHOBHOYI / NEWTONVILLE	551	131	61	128
8	5940118	INGWANGWANA	756	180	150	170
8	5940129	INGWANGWANA	740	176	156	173
8	5940142	BHOBHOYI	878	209	171	209
9	5940090	MAOLENI/NKWAZELA	471	112	109	112
9	5940102	MAOLENI/NKWAZELA	450	107	100	17
9	5940112	MAOLENI/NKWAZELA	693	165	79	6
9	5940128	MAOLENI/NKWAZELA	727	173	50	15
9	5940138	MAOLENI/NKWAZELA	584	139	71	44
9	5940147	MAOLENI/NKWAZELA	668	159	76	50
9	5940151	MAOLENI/NKWAZELA	677	161	161	75
9	5940152	MAOLENI/NKWAZELA	731	174	154	34
9	5940156	MAOLENI/NKWAZELA	710	169	166	76
9	5940157	MAOLENI/NKWAZELA	719	171	142	72
10	5940003	EZITENDENI 08	181	43	0	0
10	5940004	POLELA NU 35	130	31	3	12
10	5940006	IGQUMA	193	46	3	7
10	5940015	POLELA NU 25	576	137	14	33
10	5940016	POLELA	286	68	68	68
10	5940021	CHIBINI/ESIQHINGINI/MQULELA	504	120	10	10
10	5940025	MBULELWENI 01	315	75	0	0
10	5940035	CHIBINI/ESIQHINGINI/MQULELA	340	81	28	81
10	5940038	BULWER	1231	293	51	51
10	5940079	MBULELWENI 01	605	144	85	13

10	5940100	MAHLATINI/HLAFUNA	1118	266	46	127
10	5940113	BULWER	1366	325	10	26
10	5940117	EZITENDENI 06	693	165	77	160
10	5940120	MKOBENI/NGONYAMA	828	197	95	186
10	5940126	EZITENDENI 06	672	160	98	24
10	5940168	XOSHEYAKHE 02	958	228	160	45
11	5940005	AMANGWANE	151	36	36	5
11	5940009	MANGWANENI	240	57	6	6
11	5940011	EMVULENI	248	59	14	54
11	5940013	MANGWANENI	298	71	25	65
11	5940028	NKELABATWANA	660	157	113	151
11	5940041	MKHohlWA	693	165	5	5
11	5940044	PHOSANE	601	143	139	118
11	5940082	MACHABASINI	635	151	122	110
11	5940106	GAYE	601	143	45	9
11	5940115	MAFOHLA	731	174	171	73
11	5940132	MAZIZINI	664	158	29	52
11	5940143	NTABAMAKHABA	672	160	39	58
11	5940154	BHIDLA	1030	245	159	15
11	5940162	NKUMBA	1194	284	11	84
12	5940018	MAHOHOHO	311	74	19	4
12	5940020	VOYIZANA	382	91	58	91
12	5940033	BETHLEHEM	462	110	10	94
12	5940042	PHOSANE	332	79	76	20
12	5940046	MACHOBENI	517	123	7	119
12	5940051	VOYIZANA	555	132	74	101
12	5940053	VOYIZANA	551	131	68	99
12	5940056	MACHOBENI	441	105	35	76
12	5940065	KWASANDANEZWE/MALAHLENI	668	159	102	141
12	5940086	SPHALENI	622	148	100	97
12	5940088	EMNYWANENI	441	105	84	10
12	5940092	SPHALENI	740	176	107	115
12	5940096	MNYAMANA	664	158	79	158
12	5940103	MQULELA	559	133	9	0
12	5940166	SIZANENJANA 02	1635	389	32	141
13	5940026	MAWULENI	345	82	64	82
13	5940030	DONNYBROOK	677	161	0	0
13	5940031	MAWULENI	294	70	50	63
13	5940081	DONNYBROOK	996	237	3	0
13	5940083	KWASOKHELA	693	165	140	114
13	5940085	KWASOKHELA	698	166	153	166
13	5940097	KWASOKHELA	664	158	76	151
13	5940165	MAWULENI	933	222	194	210
13	5940169	MAWULENI	836	199	112	185
13	5940170	MAWULENI	765	182	157	174
14	5940022	IXOPO NU 112	1173	279	32	137
14	5940059	MJIILA	387	92	74	85
14	5940064	OWAMBENI/KWASOKHELA/DONYBROOK	403	96	93	91
14	5940072	ISIBIZANE 05	1753	417	14	62

14	5940078	OWAMBENI/KWASOKHELA/DONYBROOK	454	108	39	102
14	5940080	OWAMBENI/KWASOKHELA/DONYBROOK	488	116	111	42
14	5940124	OWAMBENI/KWASOKHELA/DONYBROOK	618	147	141	91
14	5940134	MJIILA	790	188	3	172
14	5940158	CREIGHTON	1080	257	2	35
14	5940171	NOMANDLOVO	878	209	22	190
15	5940014	NOMBULULA	277	66	66	55
15	5940029	SIKESHINI	500	119	3	6
15	5940049	KWASANDANEZWE/MALAHLENI	546	130	113	13
15	5940052	MASAMENI 1	298	71	2	3
15	5940070	IXOPO NU 007	542	129	122	105
15	5940091	KWASANDANEZWE/MALAHLENI	883	210	136	19
15	5940093	MASAMENI 1	466	111	2	2
15	5940098	KWASANDANEZWE/MALAHLENI	693	165	133	10
15	5940099	SIKESHINI	841	200	170	123
15	5940108	KWASANDANEZWE/MALAHLENI	643	153	150	28
15	5940148	MASAMENI 1	622	148	55	148
15	5940173	IXOPO NU 139	1324	315	120	215



## Business Element 3: Water Services Asset Management

### 1. General Information

The municipality maintains an infrastructure Fixed Asset Register (FAR). However, the FAR data provided for 2022 has a complicated structure, making it challenging to quantify the various asset types. Thus, there is a necessity to enhance the data recording structure. However, the quantities of the current assets are presented in **Table A 17** below. Please take note that a Professional Service Provider (PSP) is presently involved in an asset management project which is expected to conclude by June 2023. The project intends to update the water and sanitation assets while also improving the structure of the Fixed Asset Register.

Table A 17: Number of Water and Sanitation Assets

Asset	Quantity
B – Boreholes	1 988
AP – Abstraction Points	184
WTW – Water Treatment Works	22
WP – Water Pumpstations	73
SP – Sewer Pumpstations	14
WP – Water Pipeline	1 401.2 km
SL – Sewer Pipeline	103.8 km
R – Reservoirs and Tanks	713
WWTW – Wastewater Treatment Works	12

### 2. Operation

The Operations and Maintenance unit is responsible for attending to all the technical water and sanitation issues and incidence reported. However, during the drafting this report, the list of incidents from the past twelve months was not yet available for analysis.

However, the tasks undertaken by the Operations and Maintenance staff include:

- Conduct regular maintenance and repairs of water and sanitation facilities, such as pumps, treatment works, pipelines and reservoirs.
- Respond to customer complaints and service requests related to water and sanitation issues.

However, the average lifespan of some water and sanitation assets are presented in **Table A 18** below.

Table A 18: Average Lifespan of Some Water and Sanitation Assets of HGDM

Asset	Average Asset Life Term (Months)	Average Asset Term Passed (Months)
B – Boreholes	352.3	114.3
AP – Abstraction Points	-	-
WTW – Water Treatment Works	282.8	154.5
WP – Water Pumpstations	648.4	136.8
SP – Sewer Pumpstations	659.9	192.7
WP – Water Pipeline	470.0	123.5
SL – Sewer Pipeline	480.0	158.8
R – Reservoirs	454.5	133.0
WWTW – Wastewater Treatment Works	347.9	160.0

### 3. Functionality Observation

Historical Costs and values of the water and sanitation infrastructures of Harry Gwala District Municipality are presented **Table A 19** below.

Table A 19: Assets' Cost Opening Balance, Depreciation & Value

Asset	Historical Cost Restated Opening Balance	Depreciation	Asset Value
Boreholes	R479 548 273	R119 424 346	R540 222 830
Water Treatment Works	R522 488 200	R231 904 496	R522 488 200
Water Pumpstations	R33 426 401	R4 395 753	R33 671 698
Sewer Pumpstations	R1 385 166	R784 673	R1 385 166
Water Pipeline	R1 309 988 472	R334 032 798	R1 429 667 882
Sewer Pipeline	R134 208 495	R29 411 687	R186 968 603
Reservoirs	R506 338 447	R198 592 883	R506 338 447
Wastewater Treatment Works	R125 727 373	R51 343 693	R125 727 373
Dams	R219 261 445	R54 597 234	R219 261 445

The table shows that the Asset Value of some assets is higher than their Historical Cost Restated Opening Balance. This indicates that these assets have appreciated in value over time. The Historical Cost Restated Opening Balance represents the original cost of the asset at the time of purchase, adjusted for any changes in the value of money due to inflation or other factors. On the other hand, the Asset Value represents the current market value of the asset, calculated by subtracting the accumulated depreciation from the historical cost closing balance. On the other hand, the asset depreciation which reflect the decline in the asset's value over time is also presented.

### 4. Asset Assessment Spectrum

Based on current data, the expected remaining life of the water and sanitation infrastructure assets are presented in **Table A 20** below

Table A 20: Percentage of Assets by Remaining Life\*

Asset	1 - 5 Years	6 - 10 Years	11 - 15 Years	16 - 20 Years	>20 Years
Boreholes	38.7%	23.9%	9.7%	21.9%	38.7%
Water Treatment Works	38.2%	32.5%	3.6%	4.7%	21.0%
Water Pumpstations	-	-	-	1.7%	98.3%
Sewer Pumpstations	-	-	-	-	100%
Water Pipeline	0.5%	0.9%	0.9%	0.9%	96.8%
Sewer Pipeline	3.2%			16.1%	80.6%
Reservoirs	9.7%	5.2%	4.5%	12.9%	67.8%
Wastewater Treatment Works	9.9%	41.0%	4.2%	7.7%	37.1%

\* Remaining Life is calculated by subtracting the asset term passed from the asset life term.

## 5. Water and Sanitation Schemes

HGDM is responsible for 22 water supply systems presented in **Table A 21** below. The 2023 municipal Blue Drop score is 66.18%. Fourteen water supply systems are in low-risk rating category (achieved <50% BDRR), two are in the medium-risk rating category (achieved between 50% and <70% BDRR), and five are in the high-risk rating category (achieved between 70% and <90% BDRR).

Table A 21: Water Supply Systems within Harry Gwala DM

Water Supply Systems	Capacity Ml/day	% Utilisation	%BDRR/BDRR max	%BDRR/BDRR max
			2023	2022
Bulwer	1	80%	21.89%	48.10%
Chibini	1	70%	95.31%	44.80%
Creighton	1	95%	35.30%	30.30%
Esiqandulweni	1	80%	30.50%	26.40%
Franklin	0.5	70%	34.46%	26.80%
Hlanganani/ Polela	0.25	88%	20.65%	31.80%
Ibisi	5	36%	16.04%	24.00%
Ixopo	0.5	100%	22.46%	16.80%
Jolivet/ Ugu	NI	NI	Not available	Not available
Kokstad	18	66.7%	24.23%	29.40%
Machunwini	0.6	90%	100.00%	Not available
Mangwaneni WTW	1	95%	85.77%	86.90%
Mnqumeni WTW	2	85%	78.13%	70.10%
Mqatsheni WTW	1.2	91.7%	22.01%	23.70%
Njunga	0.48	95.8%	90.69%	72.80%
Nokweja	1.8	60%	34.48%	48.40%
Rietvlei	0.5	80%	66.78%	30.80%
Riverside	0.5	98%	38.96%	37.40%
St Apollinaris	0.66	81.8%	34.16%	32.30%
Umzimkhulu	5	80%	38.11%	35.80%
Underberg	4.5	77.8%	48.19%	45.50%
Washbank/ Highlands	0.82	87.8%	56.42%	38.50%

\* NI: No Information Capacity and Percentage Utilisation for Jolivet/ Ugu system.

The table further indicates that the majority of the supply systems are operating below 90% of their design capacity. However, the supply systems of Creighton, Ixopo, Machunwini, Mangwaneni, Mqatsheni, Njunga and Reverside are operating above 90% of their design capacity indicating that their treatment capacity may be insufficient to supply current and future requirements.

## 6. Sanitation Schemes

HGDM is serviced with 12 Wastewater Treatment Works (WWTWs). Eleven of the twelve WWTWs are owned by HGDM, and one belongs to Umgeni Water. The district municipality operates all the sewer networks and some tankers which service areas with septic tanks and conservancy tanks. The existing sanitation infrastructure is old and in poor condition. It also operates at capacity and the environment is under threat due to sewage spills and leakages. The schedule of the existing sanitation infrastructure is presented in **Table A 22**.

Table A 22: Schedule of Sanitation Infrastructure within HGDM

Service	Number of Units
Wastewater Treatment Works	12
Sewerage Pipeline (km)	48
Sewer Pump Stations	14
Ventilated Improved Pits (VIPs)	-

The status quo of each WWTW is summarised in **Table A 23**. The table shows that Kokstad and Franklin WWTWs are overloaded.

Table A 23: WWTW within HGDM

WWTW	Water Service Provider	Capacity (Ml/day)	% Utilisation
Bulwer	HGDM	0.13	85%
Polela	HGDM	0.03	67%
St Apolinaris	HGDM	0.7	100%
Underberg Old	HGDM	0.24	50%
Underberg New	HGDM	0.18	NI
Himeville	HGDM	0.15	NI
Kokstad	HGDM	6.4	125%
Franklin	HGDM	0.15	133%
uMzimkhulu	HGDM	2	20%
Ibisi	HGDM	0.8	49%
Riverside	HGDM	0.6	74%
Ixopo	Umgeni Water	1.4	71%

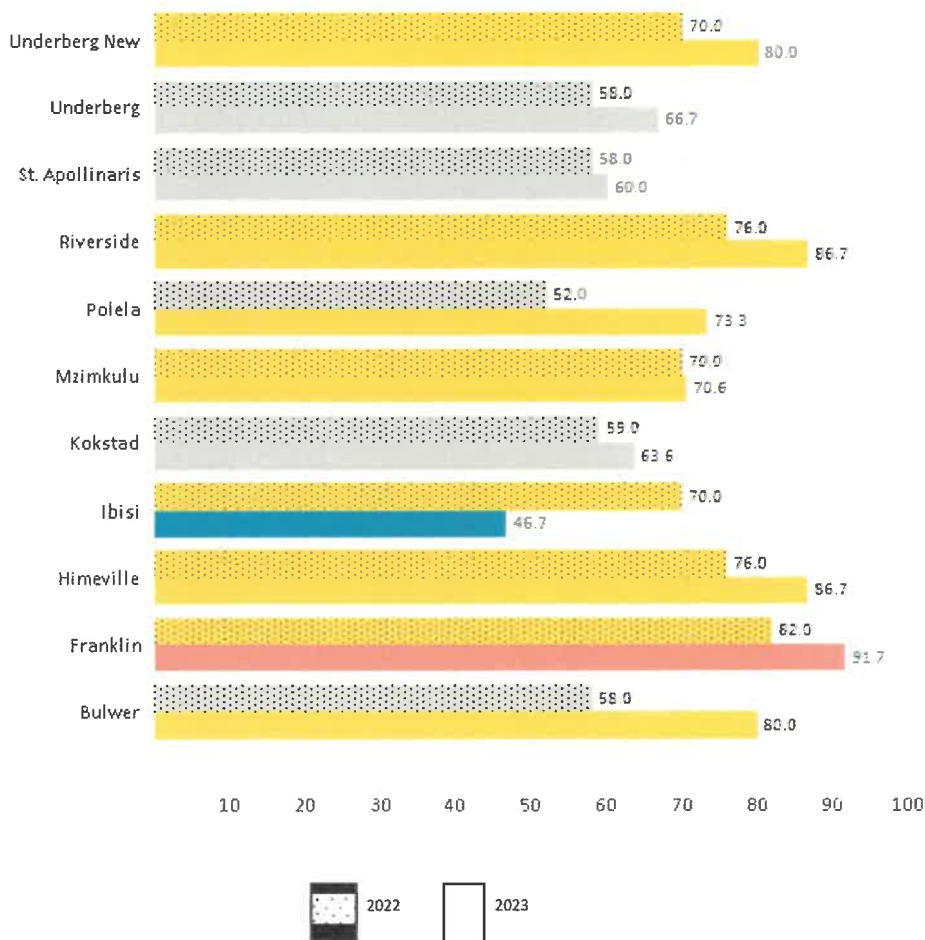
\* NI: No Information on daily flow

The latest green drop scores of the HGDM WWTWs are presented in **Table A 24** together with the 2023 scores. In general, the municipal green drop score has decreased from 67% in 2013 to 65.8% in 2023. This is due to vandalism, theft, require operational improvements and Standard Operating Procedures.

Table A 24: Green Drop Score

WWTW	Green Drop CRR Rating 2023	Green Drop CRR Rating 2022
Bulwer	80.0%	58.0%
Polela	73.3%	52.0%
St Apollinaris	60.0%	58.0%
Underberg Old	66.7%	58.0%
Underberg New	80.0%	70.0%
Himeville	86.7%	76.0%
Kokstad	63.6%	59.0%
Franklin	91.7%	82.0%
uMzimkhulu	70.6%	70.0%
Ibisi	46.7%	70.0%
Riverside	86.7%	76.0%
Ixopo	Not available	Not available

Risk Trend per plant as CRR



## Business Element 4: Water Services Operation and Maintenance

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### 1. Operation & Maintenance Plan

The district municipality has an Operation and Maintenance Plan in place. The document is updated annually to incorporate the following:

- a) Maintenance requirements for new infrastructure.
- b) Changes in operational rules that impact on maintenance routines and costs.
- c) Regulations or compliance requirements due to changes in policy/by-laws or laws.
- d) Budget allocation
- e) Risk register (inform budgetary provisions and incorporated to align to IDP & Budget process)
- f) Performance management targets and service level standards.

The document details the categories of activities to be undertaken, along with their planned budgets, including:

- Routine maintenance or day to day activities
- Reactive maintenance
- Planned maintenance or preventative maintenance
- Emergency maintenance

The review of the existing preventative maintenance plan for the water and sanitation infrastructure indicates that the plan appears to be a comprehensive and well-structured approach to maintaining the assets, ensuring a reliable and efficient operation of the water and sanitation infrastructures. Nevertheless, certain infrastructures have incomplete information in their preventative maintenance plans, which needs to be rectified.

An example of the preventative maintenance plan for Kokstad WTW for the 2022/23 FY is presented in **Figure A 6** below. The plan outlines the frequency of maintenance activities for various assets within the WTW, as well as the associated risks if these activities are not performed. The assets listed in the plan include the Kokstad Gravity Main, Clarifiers, Dosing Pumps, WTW Control Valves, Back Wash Pumps, Filters, Chlorinators, Flow Meters, and Pump Station WTW1. For each asset, the plan specifies the frequency of maintenance activities, such as cleaning, servicing, and checking for abnormalities, and the associated risks if these activities are not performed. The risks associated with each asset vary, but they generally involve interruptions to the water treatment process and reduced production water flow. For example, if the Back Wash Pumps are not maintained properly, they could interrupt the water treatment process. Similarly, if the Chlorinators are not serviced and checked for abnormalities, chlorination cannot be done as per the set standards. The plan also specifies the frequency of maintenance activities, which range from monthly to yearly. For example, the Back Wash Pumps require maintenance every month, while the Clarifiers require a quarterly maintenance.



**KOKSTAD WTW**

	Assest	FREQ	KOKSTAD WTW											Activities	Risk		
			JANUARY			FEBRUARY			MARCH								
			1	2	3	4	5	6	7	8	9	10	11	52			
<b>Kokstad GravityMain</b>		3M														Scouring, servicing of air valves, scour valves and isolating valves	Blockages and low pressures
<b>Clarifiers</b>		3M														Clean and scour	spoil the process
<b>Dosing pumps</b>		3M														Check coupling rubbers, Feel for abnormal vibration and Check alignment	Blockages and interrupt the process
<b>WTW Control Valves</b>		1YR														service valves by checking gland packing and bolts	Water loses
<b>Back wash Pumps</b>		1M														Listen for bearing noise and temperature, Check gland packing, Check greasing and Feel for abnormal vibration	interrupt the process
<b>Filters</b>		1M														Change of sand, clean filter pipes to avoid blockages	Reduces production water flow
<b>chlorinators</b>		1M														Service, Check chlorine pipes for corrosion, Clean inlet filters, Check switch gear and amps and Check motor and cables	Chlorination cannot be done as per the set standards
<b>Flow meters</b>		3M														Annual Calibration. Stop / start device working, Any damages on control unit, Electrical meters working, Display on unit clearly visible, Electrical cables secured and connections water tight, Probe unit bracket secure, electrical cables secure and water tight	Water going in and out cannot be measured for water balancing.
<b>Pump Station WTW1</b>		3M														service motor and pump	Interruptions can happen any time and result to non-operational of the pump

1 monthly

Figure A 6: Preventative Maintenance Plan of Kokstad W

## 2. Resources

The resources are summarised in **Table A 25**. Regarding the water supply systems, the 2023 Blue Drop reports that eight of the 22 systems have adequate technical skills. But the remaining 14 systems have insufficient technical skills. This will affect the operation and maintenance of the systems. With regards to wastewater treatment works, the supervisors comply with the regulations while the majority of the process controllers are not registered and do not comply with the relevant regulations.

Table A 25: Resources

Topic: 4.2 Resources	Compliance	Status Quo	Impact
<b>Question: 4.2.1 Existing Groundwater Infrastructure</b>			
Operation	Staff	1	L
Maintenance	Staff	1	M
Operation	External resources	1	L
Maintenance	External resources	3	L
Operation	Spare Parts	1	M
Maintenance	Spare Parts	1	M
Operation	Tools & Equipment	3	L
Maintenance	Tools & Equipment	2	L
Operation	Budget	1	M
Maintenance	Budget	1	M
<b>Question: 4.2.2 Existing Surface Water Infrastructure</b>			
Operation	Staff	2	L
Maintenance	Staff	2	L
Operation	External resources	3	L
Maintenance	External resources	3	L
Operation	Spare Parts	1	L
Maintenance	Spare Parts	1	L
Operation	Tools & Equipment	2	L
Maintenance	Tools & Equipment	2	L
Operation	Budget	1	M
Maintenance	Budget	1	M
<b>Question: 4.2.3 Existing Wastewater Treatment Works Infrastructure</b>			
Operation	Staff	1	C
Maintenance	Staff	1	C
Operation	External resources	3	L
Maintenance	External resources	3	L
Operation	Spare Parts	1	C
Maintenance	Spare Parts	1	C



Operation	Tools & Equipment	2	L
Maintenance	Tools & Equipment	2	L
Operation	Budget	1	C
Maintenance	Budget	1	C
<b>Question: 4.2.4 Existing Water Treatment Works Infrastructure</b>			
Operation	Staff	1	C
Maintenance	Staff	1	C
Operation	External resources	3	L
Maintenance	External resources	3	L
Operation	Spare Parts	1	C
Maintenance	Spare Parts	1	C
Operation	Tools & Equipment	2	L
Maintenance	Tools & Equipment	2	L
Operation	Budget	1	C
Maintenance	Budget	1	C
<b>Question: 4.2.5 Existing Pump Station Infrastructure</b>			
Operation	Staff	1	M
Maintenance	Staff	1	M
Operation	External resources	3	L
Maintenance	External resources	3	L
Operation	Spare Parts	1	M
Maintenance	Spare Parts	1	M
Operation	Tools & Equipment	1	L
Maintenance	Tools & Equipment	1	L
Operation	Budget	1	C
Maintenance	Budget	1	C
<b>Question: 4.2.6 Existing Bulk Pipeline Infrastructure</b>			
Operation	Staff	1	M
Maintenance	Staff	1	M
Operation	External resources	3	L
Maintenance	External resources	3	L
Operation	Spare Parts	1	M
Maintenance	Spare Parts	1	M
Operation	Tools & Equipment	1	L
Maintenance	Tools & Equipment	1	L
Operation	Budget	1	C
Maintenance	Budget	1	C

**Question: 4.2.7 Existing Tower & Reservoir Infrastructure**

Operation	Staff	1	M
Maintenance	Staff	1	M
Operation	External resources	3	L
Maintenance	External resources	3	L
Operation	Spare Parts	1	M
Maintenance	Spare Parts	1	M
Operation	Tools & Equipment	1	L
Maintenance	Tools & Equipment	1	L
Operation	Budget	1	C
Maintenance	Budget	1	C

**Question: 4.2.8 Existing Reticulation Infrastructure**

Operation	Staff	1	M
Maintenance	Staff	1	M
Operation	External resources	3	L
Maintenance	External resources	3	L
Operation	Spare Parts	3	L
Maintenance	Spare Parts	3	L
Operation	Tools & Equipment	1	L
Maintenance	Tools & Equipment	1	L
Operation	Budget	1	C
Maintenance	Budget	1	C

**LEGEND****STATUS QUO**

Z	Zero Compliance
1	Below Minimum Requirement
2	Minimum Requirement
3	Above Minimum Requirement

**IMPACT**

C	Critical
M	Medium/ High
L	Low
No	No Impact

According to the table, the municipality falls short of the minimum requirements in terms of Operations and Maintenance staffing, stock management and budget. Nevertheless, it exceeds the minimum requirement for outsourcing Operations and Maintenance services to external service providers.

Furthermore, the latest 2022-2023 organogram of the Water Services Department of Harry Gwala shows that approximately 56% of the Operations and Maintenance posts are vacant (**Table A 26**).

Table A 26: Operations and Maintenance - Filled and Vacant Posts

Description	Number	Percentage
Filled	206	44%
Vacant	258	56%
<b>Total</b>	<b>464</b>	<b>100%</b>

### 3. Information

Based on the reports, there exists a Master Plan that specifically focuses on Operations and Maintenance. However, it appears that this plan doesn't fully address the problem.

It is therefore imperative to identify the gaps and work towards addressing them to ensure the efficient functioning of Operations and Maintenance activities.

### 4. Activity Control & Management

A Master Plan has been developed to address the specific topic under discussion. However, the plan falls short of fully addressing the issue at hand, indicating the existence of certain gaps and shortcomings. It is crucial to explore the existing master plan and identify the specific areas that require improvement to ensure a comprehensive solution to the problem.

## Business Element 5.1: Water Resource Management

Water Conservation and Water Demand Management (WCWDM) generally plays an important role in municipalities, as the activities of this programme contribute to reducing water loss and wastage and increasing the municipal revenue.

The concept of WC/WDM has been introduced to the municipality and some WC/WDM activities are included in its Water Master Plan. HGDM has not yet consolidated its WC/WDM strategy. The review of the organogram of the Water Services Department indicates that WC/WDM unit is not included. There are no personnel dedicated for management of WC/WDM activities. Furthermore, there is no plan to include such a section in the department so that resources can be hired to monitor and manage the WC/WDM activities. It was also noted that the district municipality does not have any hydraulic model which can be used to identify areas of high pressure in order to plan for pressure management. However, the following WC/WDM activities/strategies were implemented:

- Reducing unaccounted water and water inefficiencies
- Leak and meter repair programmes
- Public information and education programmes
- Conjunctive use of surface- and groundwater
- Working for water programme

### 1. Reducing unaccounted water and water inefficiencies

The water losses include not only the real losses such as water leaks and reservoir overflows, but also apparent losses through illegal connections and metering inaccuracies. Another issue is the connected consumers that are not on the billing database. Reducing unaccounted water programme should include the activities to tackle the issues aforementioned. Therefore, activities such as management of illegal water connections, water meter replacement programmes and meter audit and update of the billing database should be implemented in order to reduce the unaccounted water. **Table A 27**, at the end of this section, summarises the implementation of strategies to reduce unaccounted water by HGWDM.

### 2. Leak and meter repair programme

It should be noted that this activity did not include active leakage detection and repair. The activity consisted of a reactive leak repair where the team goes to repair a leak that is reported, instead of actively looking for new leaks visually or by the use of leak detection equipment.

### 3. Public Information and Education Programme

The WSA has conducted awareness campaigns for the public and at schools.

### 4. Conjunctive Use of Surface- and Ground Water

This involves managing the use of both surface water and ground water sources in a coordinated manner to optimise water availability and sustainability. Harry Gwala District Municipality boasts a diverse range of water sources, including surface water and ground water from boreholes. Surface water, such as that found in rivers and dams, can be a valuable resource for municipalities, providing a relatively reliable supply of water that can be treated and distributed to communities.

### 5. Working for Water Programme

The working for Water Programme is a programme aimed to reduce alien vegetation which uses much more water than indigenous vegetation. However, during the period under review, Harry Gwala District Municipality failed to implement the aforementioned programme. This might be due to a variety of factors, such as resources, conflicting priorities, or administrative challenges.

The implementation of water resource management is hindered by numerous challenges including, but not limited to:

- Shortage of skilled and experienced staff.
- Significant shortage of staff in the Water Services Department

- Operation and Maintenance (O&M) staff work overtime to attend to leaks and related challenges
- Ageing water and sanitation infrastructure
- Insufficient budget for O&M, refurbishment activities, including for the of supply standby equipment

The implementation strategies for water resource management are summarised in **Table A 27** below.

Table A 27:Reducing Unaccounted Water

Activities	In Place	Assessment Score
<b>Topic: 5.1 Reducing unaccounted water and water inefficiencies</b>		
5.1.1 Night flow metering	Partial	25.00
5.1.2 Day flow metering	Partial	25.00
5.1.3 Reticulation leaks	Yes	60.00
5.1.4 Illegal connections	No	25.00
5.1.5 Un-metered connections	Yes	75.00
<b>Topic: 5.2 Leak and meter repair programmes. Consumer units targeted by:</b>		
5.2.1 Leak repair assistance programme	Yes	60.00
5.2.2 Retrofitting of water inefficient toilets	No	25.00
5.2.3 Meter repair programme	Yes	60.00
<b>Topic: 5.3 Consumer/end-use demand management: Public Information &amp; Education Programmes</b>		
5.3.1 Schools targeted by education programmes	Yes	60.00
5.3.2 Consumers targeted by public information programmes	Yes	75.00

## Business Element 5.2: Water Balance

The water balance is calculated at the local municipality's level. It is compiled monthly and then combined to create the district municipality's water balance. The monthly water balances are added over a 12-month period to generate the annual water balance. Some components of the annual water balance are presented in **Table A 28** below.

Table A 28: Water Balance 2021/2022 Components

Municipality	SIV (Ml/a)	Revenue Water		Non-Revenue Water		Infrastructure Leakage Index (ILI)
		Ml/a	%	Ml/a	%	
Greater Kokstad	1 376.5	1 126.2	81.8%	250.3	18.2%	1.2
Ubuhlebezwe	762.5	337.3	44.2%	425.2	55.8%	1.4
Dr Nkosazana Dlamini Zuma	296.9	195.1	65.7%	101.8	34.3%	2.3
Umzimkhulu	438.3	330.6	75.4%	107.8	24.6%	0.8
Harry Gwala	3 217.9	2 234.5	69.4%	983.4	30.6%	1.3

## Business Element 6: Water Resources

This section gives details regarding the infrastructure: incidents, safety inspections, monitoring of the WWTW, the condition of the infrastructure, refurbishment, replacement and new development costs, lifespan, and useful capacity.

### 1. Current Water Sources

The water sources are made of boreholes and surface water, grouped into 182 water schemes. There are 1 988 boreholes. HGDM has a high dependency on ground water. However, there is a need to update the boreholes database with all relevant information.

As shown in **Table A 29**, Harry Gwala DM counts 133 water schemes. This is an issue because while there are several small borehole or spring schemes, there are very few regional bulk schemes, making operation and maintenance difficult. The majority of these small schemes suffer from overuse and drying up. In addition, some schemes are dysfunctional or non-operational. There is thus a need for more sustainable water supply in Harry Gwala DM via regional bulk schemes.

Table A 29: Water Schemes

Water Schemes		
<b>Dr Nkosazana Dlamini Zuma LM = 34 schemes</b>		
Pitela	Hlafuna	Mnywaneni
Bulwer WTW	Nomandlovu	Sandanezwe
Underberg WTW	Hlanganani WTW	Nkelabantwana
Okhetheni	Creighton WTW	Skhesheni
Ntakama	Ehlanhlenni	Dumabezwe
Mdayane	Mahhwaqa	Ohlabeni
Ntekaneni	Mangwaneni	Mphithini
Ridge	Nkumba	Macabazini
Mabedlana	Nkwezela	Gqumeni
Donnybrook	Kilmon	St Apollinaris WTW
Masamini	Qulashe	Mqatsheni
Tarsvalle	-	-
<b>Greater Kokstad LM = 10 schemes</b>		
Pakkies	Kraansdraai	Franklin Water Works
Thuthukani	Wynesberg	Makhoba
Nyanisweni	Maraiskop	Noek Farm
Kokstad Water Works	-	-
<b>Ubuhlebezwe LM = 9 schemes</b>		
Hopewell Water Supply	Mahhehle Water Supply	Springvale Water Supply
Mgodi Sky Water Scheme	Hlokozi Water Supply	Ebhayi - Erith Trust Water Supply
Mazabekweni water supply	Mariathal Water Supply	Jolivet Water Supply
<b>Umzimkhulu LM = 80 schemes</b>		
Ibisi Water Scheme	Sihlonhlweni Water Scheme	Myembe Water Scheme

Umzimkhulu Water Scheme	Gudlintaba Water Scheme	Ndawana
Mfundweni Water Scheme	Rocky Mount Water Scheme	Emagqagqeni Water Scheme
Clydesdale Water Scheme	Emangeni Water Scheme	Readsdale
Nqumarheni Water Scheme	Bondrand Water Scheme	Lukhasini Water Scheme
Mbulumba Water Scheme	Gaybrook Water Scheme	Nomarhanjana Water Scheme
Ndzimankulu Water Scheme	Mpola Water Scheme	KwaBhala Water Scheme
Sevenfontein Water Scheme	Rhawuka Water Scheme	Bomvini Water Scheme
Nongidi Water Scheme	Senti Water Scheme	Kokshill RB
St Paul Water Scheme	Gijima Water Scheme	Kokshill RA
St barnabas Water scheme	Tsawule Water Scheme	Marhewini Water Scheme
Ndzombane Water Scheme	Emmaus Water Scheme	Rietvlei Water Scheme
Waterfall water scheme	Antioch Water Scheme	Eastlands Water Scheme
Rasfontein water Scheme	Nqokozweni Water Scheme	Esangweni Water Scheme
Stranger's Rest	Mdeni Water Scheme	Delamzi Water Scheme
Spitzkop Water Scheme	Driefontein	Mthintwa
Klipspruit Water Scheme	Machunwini Water Scheme	Vierkant
Ntsikeni Water Scheme	Manqarholweni	Bombo Water Scheme
Mbuzweni Water Scheme	Bashaweni Water Scheme	Highlands / Waschbank Water Scheme
Mnkangala Water Scheme	Malenge Water Scheme	Nxaphanxapheni Water Scheme
Nyanisweni Water Scheme	Riverside Water Scheme	Nazareth Water Scheme
Jabula Water Scheme	Ncambele Water Scheme	Zimbongolweni Water Scheme
Fountain / Mathathane Water Scheme	Vukuzenzele Water Scheme	Gugwini Water Scheme
Ngwaqa Water Scheme	Lucingweni Water Scheme	Dumisa Water Scheme
Edgeton Water Scheme	Diphini Water Scheme	Makholweni Water Scheme
Corinth Water Scheme	Lusizini / Mvubukazi Water Scheme	Small Mahobe Water Scheme
Nqabelweni Water Scheme	Njunga / Rhalodi	-

HGDM possesses 12 sewerage schemes which are listed in **Table A 30** below.

**Table A 30: Sewerage Schemes**

Sewerage Schemes		
Dr Nkosazana DZ = 6 schemes	Umzimkhulu = 3 schemes	Greater Kokstad = 2 schemes
Underberg WWTW	Ibisi Wastewater Scheme	Kokstad Wastewater works
St Apollinaris WWTW	Umzimkhulu Sewer Reticulation Scheme	Franklin Wastewater Works
Bulwer WWTW	Riverside Wastewater Scheme	
Hlanganani WWTW		Ubuhlebezwe = 1 scheme
Underberg Low cost WWTW		Ixopo
Himeville Low cost WWTW		



## 2. Additional Water Sources

Rainwater harvesting should be encouraged as it can help conserve water resources by reducing demand from traditional water sources, such as rivers and groundwater.

## 3. Monitoring

### Groundwater monitoring

There is limited groundwater monitoring taking place. Therefore, there is a need to extend monitoring to include:

- Water quality testing for all the active boreholes
- Water level monitoring for all the boreholes

The implementation of such a monitoring programme may prevent over abstraction of the boreholes. Over-abstraction of water from boreholes may lead to dry wells and reduced water quality as pollutant concentrations increase.

### Surface water monitoring

Water monitoring is an issue as Harry Gwala does not have a department responsible for water quality and monitoring. However, although there is a water quality monitoring plan in place, no monitoring of the surface water levels, or abstraction volumes is conducted. However, Umgeni Water (UW) conducts both the quality and quantity monitoring of the water it supplies to HGDM.

Limited information was available regarding the water use and effluent release of the large industries within HGDM.

The available surface water sources should be analysed regarding their availability and existing abstraction volumes, and monitoring should be done regularly. **Table A 31** below, shows the monitoring frequency of both surface and ground water as explained by the OPS staff.

Table A 31: Surface and Groundwater Monitoring Frequency

Description	Daily, Weekly, Monthly, Annually, Never
Surface water levels	Monthly
Ground water levels	Monthly
Water quality for formal schemes?	Monthly
Water quality for rudimentary schemes?	Monthly
Borehole abstraction?	Never

A proper water quality and water use monitoring programme needs to be put in place for both abstraction and groundwater sources, as well as industrial users to analyse their influents and effluents.

The latest Blue Drop report for each Water Treatment Work is presented in **Table A 32** below.

Table A 32: Water Quality and Monitoring Compliance Assessment as per Blue Drop 2021

System	Microbial Compliance	Chemical Compliance
Bulwer	98.41%	98.33%
Chibini	0.00%	0.00%
Creighton	91.67%	98.85%
Esiqandulweni	72.04%	98.95%
Franklin	59.26%	99.99%
Hlanganani/Polela	98.20%	98.26%
Ibisi	97.37%	99.09%
Ixopo	99.99%	99.99%
Jolivet/Ugu	Not available	Not available
Kokstad	99.99%	99.50%
Machunwini	00.00%	00.00%
Manwaneni WTW	80.00%	99.99%
Mnqumeni WTW	45.00%	99.99%
Mqatsheni WTW	99.99%	99.99%
Njunga	33.33%	99.99%
Nokweja	86.17%	99.06%
Rietvlei	17.39%	97.22%
Riverside	93.33%	99.35%
St Apollibaris	92.86%	99.40%
Umzimkhulu	71.32%	99.30%
Underberg	88.73%	98.58%
Washbank/Highlands	26.32%	99.99%

The description of the water quality and compliance is summarised in **Table A 33** below.

Table A 33: Description and Categorisation of Compliance Criteria

Water Quality Compliance	Microbiological compliance as per SANS 241:2015	High Risk	Medium Risk	Low Risk
	Chemical Compliance as per Blue Drop requirements	<95%	95% - <97%	97% -100%
Monitoring Compliance	Microbiological monitoring compliance against registered programme	High Risk	Medium Risk	Low Risk
	Chemical monitoring compliance calculated as per Blue Drop requirements	<50%	50% - 80%	>80%

Based on the categories described in **Table A 33**, it appears that the vast majority of WTWs are in high-risk category for both microbial and chemical quality. However, there are also many WTWs that are in low risk

regarding the monitoring. The numbers are summarised in **Table A 34** below.

**Table A 34: Risk category of quality and monitoring compliance**

Risk Category	Water Quality Compliance		Monitoring Compliance	
	Microbial	Chemical	Microbial	Chemical
High Risk	16	17	5	8
Medium Risk	3	3	2	2
Low Risk	3	2	15	12

Similar to the Blue Drop, which assesses the water treatment works, the wastewater treatment works are assessed through the Green Drop programme. The effluent quality compliance of the WWTW systems as per the Green Drop 2023 are presented in **Table A 35** Error! Reference source not found. below. A system is disqualified from Green Drop Certification if the microbiological and/or chemical compliance is <90%. The table then shows that only one system, Riverside system, qualified for a Green Drop Certification. However, the Green Drop score of the system being 54%, it indicates that the status of the system is average. There is ample room for improvement. On the other hand, Ixopo was a candidate for Green Drop certification (Green Drop Score: 91%→89%), but regrettably forfeited this status due to the non-compliance to the chemical standard of 90% (88%).

**Table A 35: Effluent Quality Compliance**

System	Microbial Compliance	Chemical Compliance	Physical Compliance
Bulwer	0.0%	0.0%	0.0%
Polela	21.4%	3.6%	69.0%
St Apolinaris	0.0%	10.7%	81.0%
Underberg Old	0.0%	0.0%	0.0%
Underberg New	0.0%	0.0%	0.0%
Himeville	66.7%	33.3%	33.3%
Kokstad	59.1%	41.8%	89.9%
Franklin	0.0%	NMR	0.0%
uMzimkhulu	38.5%	43.8%	82.9%
Ibisi	50.0%	75.0%	100.0%
Riverside	0.0%	0.0%	0.0%
Ixopo	NA	NA	NA

#### 4. Water Quality

**Table A 36** shows that there is no measure or mechanism in place for water quality monitoring purpose. A water quality monitoring programme for drinking water must be developed and implemented. The monitoring programme should include:

- Groundwater
- Water Treatment Works
- Drinking Water Reticulation monitoring
- Wastewater Treatment Works

Table A 36: Water Quality

	In Place
Reporting on quality of water taken from source: urban & rural	No
Quality of water returned to the resource: urban	
Quality of water returned to the resource: rural	
Is there a Pollution contingency measures plan in place?	No
Quality of water taken from source: urban - % monitored by WSA self?	
Quality of water taken from source: rural - % monitored by WSA self?	
Quality of water returned to the source: urban - % monitored by WSA self?	
Quality of water returned to the source: rural - % monitored by WSA self?	
Are these results available in electronic format? (Yes/no)	No
% Time (days) within SANS 241 standards per year	

It should also be noted that quality monitoring programme for wastewater quality must also be developed and implemented.

## 5. Operation

There are 1 988 boreholes in operations.

Table A 37: Operation

Description	B	AP	WTW	WP	SP	WL	SL	R	WWTW
The abstraction IS registered with DWS	1988	184	22						12
The abstraction IS NOT registered with DWS	0	0							1
The abstraction IS recorded	0	0							
The abstraction IS NOT recorded	1988	184							

With

**B** : Boreholes

**AP** : Abstraction Points

**WTW** : Water Treatment Works

**WP** : Water Pumpstations

**SP** : Sewer Pumpstations

**WL** : Water Pipeline

**SL** : Sewer Pipeline

**R** : Reservoirs

**WWTW** : Wastewater Treatment Works

## Business Element 7: Finance, Expenditure, Revenue & Capex

The expenditure costs are presented in **Table A 38** below which provides insights into the planned allocations for various services over the MTEF 2023-2026 period. According to the table, 18% of the budget is allocated for the operations and maintenance of the sanitation service, while 42% of the budget value is earmarked for the operation and maintenance of the water service.

Furthermore, the table shows that the costs to purify water and deliver it to consumers are expected to gradually increase from R21 million and R15 million in 2023 to R30 million and R21 million in 2026, respectively.

In addition, the combined costs for delivering wastewater to treatment facilities and its treatment is set to gradually increase from R5.5 million in 2023 to R7.57 million in 2026.

The costs associated with the Blue drop and Green drop assessments remain constant over the MTEF period, with the Blue drop cost set at R3 million and the Green drop cost at R2 million. However, it's important to note that these costs are based on a fixed number of treatment works.

Please note that the information provided in **Table A 38** offers a summary of the planned expenditure costs for different services during the MTEF period.

Table A 38: Expenditure Cost Standards & Ratios (Rand Million)

MTEF	2023	2024	2025	2026
Sanitation service O&M [and repair] as a % of budget	18	18	18	18
Sanitation service O&M [and repair] as a % Asset value [PPE]	22	22	22	22
Water service O&M [and repair] Cost as % of budget value	42	42	42	42
Water service O&M [and repair] Cost as % of Asset value [PPE]	52	52	52	52
Untreated wastewater units released				
Cost to purify water	21	22	25	30
Cost to deliver water to consumer	15	17	19	21
Cost to treat wastewater	5	6	6.5	7
Cost to deliver wastewater to treatment facility	0.5	0.52	0.55	0.57
Blue drop cost	3	3	3	3
Green drop cost	2	2	2	2

The billing vs collection rate is provided in **Table A 39**. The table provides insights into the monthly billing, interest, VAT, net billing, receipts, and collection rate. It shows the monthly fluctuations in these financial metrics over the 2021/2022 Financial Year period.

The total collection rate for all the months combined is 99.66%, indicating that HGDM was able to collect almost all the revenue it billed over the period.

**Table A 39: Summary of Billing Vs Collection Rate for the 2021/22 FY**

Month	Total Billing	Interest	Vat	Net Billing	Receipts	Collection Rate
31/07/2021	7248089.2	898951.07	828128.38	5521009.75	2482750.65	44.97%
30/08/2021	7214241.17	913222.55	821852.14	5479166.48	6342082.4	115.75%
31/09/2021	6910768.41	927768.17	772269.07	5210731.17	3409095.23	65.42%
30/10/2021	5506465.38	938112.98	595852.36	3972500.04	6592634.59	165.96%
30/11/2021	6194401.87	954594.82	683439.38	4556367.67	2242037.44	49.21%
31/12/2021	4870029.06	983006.46	506989.1	3380033.5	6411861.76	189.70%
31/01/2022	6730735.56	972299.03	751086.65	5007349.88	4586025.59	91.59%
28/02/2022	6737726.62	1001443.17	748223.22	4988060.23	4253172.59	85.27%
31/03/2022	5641379.99	995022.75	605424.14	4040933.1	4070213.35	100.72%
30/04/2022	7114373.3	1145235.77	778569.09	5190568.44	5139737.73	99.02%
31/05/2022	6750494.13	1020918.57	747322.15	4982253.41	5813339.84	116.68%
30/06/2022	6273870.97	1078502.12	677642.64	4517726.21	5309645.34	117.53%
<b>TOTAL</b>	<b>77192575.66</b>	<b>11829077.46</b>	<b>8516798.32</b>	<b>56846699.88</b>	<b>56652596.51</b>	<b>99.66%</b>

An updated table for the 2023/2024 was not yet available at the time of the report updating, but will be provided after the 2023/2024 FY end.

**Business Element 8: Water Services Institutional Arrangement and Customer Services**

**1. Municipal Strategic Self-Assessment (MuSSA) Survey**

This section is related to the Municipal Strategic Self-Assessment (MuSSA) survey of HGDM. MuSSA survey is a tool that help assess the business health of a municipality when fulfilling its water services mandate. The results from the survey as well as from other planning tools should help a Water Services Provider (WSP) to prioritise what must be done to enable an effective water service delivery.

MuSSA survey assesses the municipality in 18 categories known as key business health attributes or key service areas and thereby generates key strategic flags. The 18 categories of the MuSSA survey with their vulnerability score are presented in the spider diagram in **Figure A 7** below.

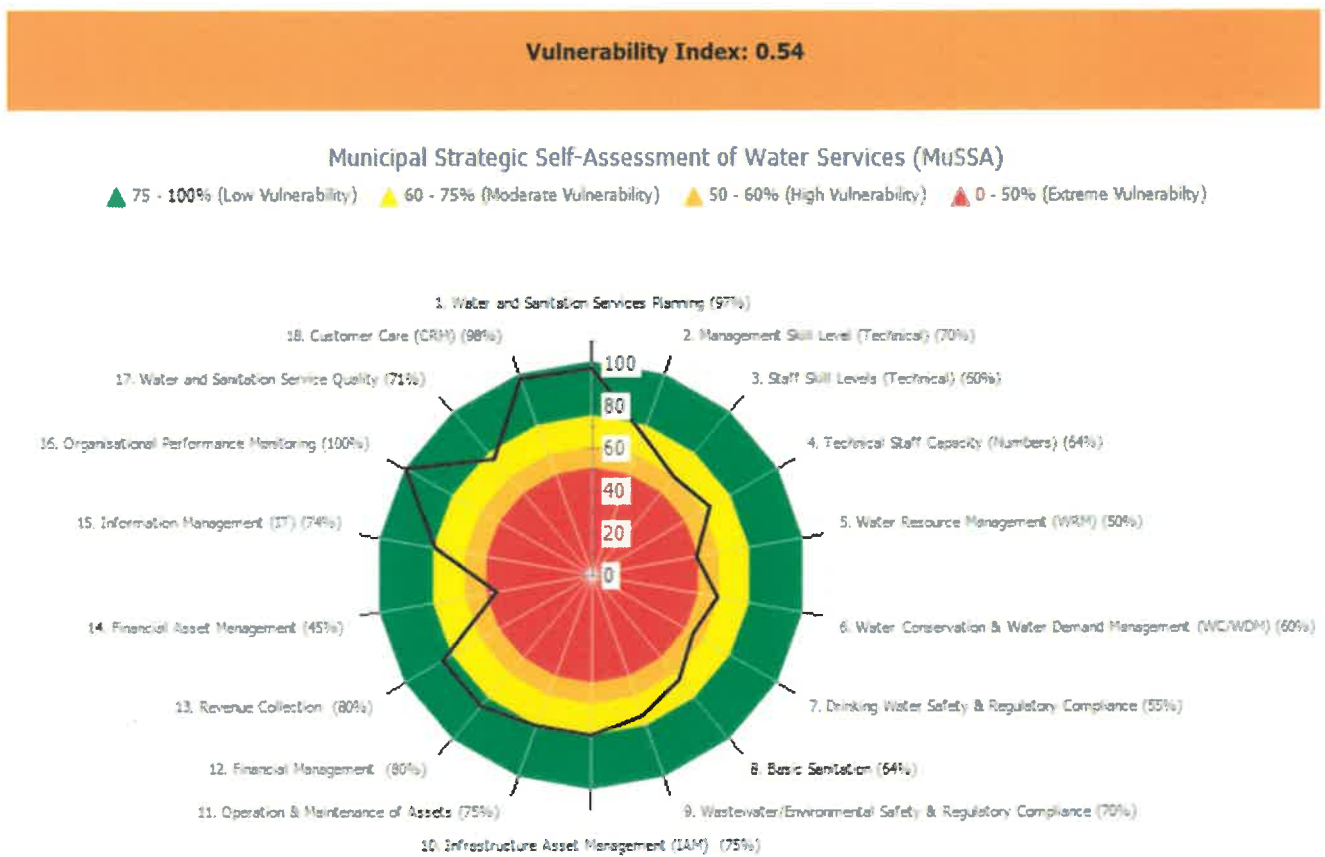


Figure A 7: Municipal Strategic Self-Assessment of Water Services (MuSSA) 2022 for Harry Gwala District Municipality

With:

- ▲ 75 – 100% (Low Vulnerability)
- ▲ 60 – 75% (Moderate Vulnerability)
- ▲ 50 – 60% (High Vulnerability)
- ▲ 0 – 50% (Extreme Vulnerability)

The Vulnerability Index of the district municipality is 0.54 indicating that its vulnerability is high. **Figure A 7** Error! Reference source not found. also shows that the top areas of vulnerability of concern to The Department of Water and Sanitation are:

- Financial Asset Management (45.0%)
- Water Resource Management (WRM) (50.0%)
- Drinking Water Safety & Regulatory Compliance (55.0%)

## 2. MuSSA Key Business Health Attributes

These 18 key service areas or business health attributes are discussed below.

### Water and Sanitation Service Planning

With a vulnerability index of 97%, this business attribute has low vulnerability. All appropriate water and sanitation services planning are developed and include all the required plans and alignment. These plans are up to data, have been adopted and implemented. The current list of projects is based on the WSDP and associated master planning process. The progress of these projects is monitored, tracked, and reported to both top municipal management/ council and the Regulator. It is also reported that almost all the projects identified within the last 3 years have been implemented.

### Management Skill Level (Technical)

The management skill level of the WSA has a moderate vulnerability level (70%). Although all the key management posts of the Water Services Department are filled, there is a shortage of technical management and technical support staff. The existing technical management and support staff accounts for less than 50% of all the posts as per the approved organogram. It is also noted that the majority of current technical staff have the correct skills, qualification and job experience. However, the skills development training to support professionalisation is lacking. The key technical managers have all signed Performance Agreements.

### Staff Skill Levels (Technical)

The vulnerability is moderate with a vulnerability index of 60%. Less than 50% of staff operating both the WTWs and WWTWs have the required skills, qualification and experience as per Regulation 2834. On the other hand, all the technical staff including contractors working on water and sewage systems have the required skills, qualifications, and experience. These employees generally attend annual skills development/ training programmes.

### Technical Staff Capacity (Numbers)

As previously described, this attribute is an area of concern (vulnerability index of 64%). This key service area has high vulnerability. With less than 50% of technical posts filled, there is a shortage of technical staff. It was also noted that both WTWs and WWTWs are operated by just above 50% of the total required staff. But there is sufficient staff including contractors working on the water and sanitation network operations and repair. There is a mentoring/shadowing programme in place, but its implementation is ineffective.

### Water Resource Management (WRM)

This is another attribute of concern due to its extreme vulnerability (vulnerability index 50%). The main issue identified is that the municipality is facing water shortage for both its current and future needs. The source water quality is regularly tested and is acceptable for its use, but the trend indicates a deteriorating quality.

### Water Conservation & Water Demand Management (WC/WDM)

This item has a moderate vulnerability with an index of 60%. Positive aspects include the development of WC/WDM strategy, compilation of monthly water balances using the DWS modified International Water Association (IWA) water balance template and implementation of intervention programmes to reduce NRW. The Non-Revenue Water (NRW) level of less than 30% indicates a good performance. However, since the accuracy level of the System Input Volume (SIV) of the water balance is less than 50%, it indicates that the calculated NRW may not be accurate. Furthermore, less than 50% of all connections are metered and billed monthly.

### Drinking Water Safety & Regulatory Compliance

This item has high vulnerability with a vulnerability index of 55%. The Blue Drop Assessment 2023 reported a microbial water quality compliance of <95% indicating a high risk as per SANS 241: 2015. Municipal council have been made aware of high risk /critical water safety plan related issues (including those identified via the Blue Drop Certification programme) that require budget and actioning. These issues were noted but no funds were



allocated. However, corrective actions to address all these identified water safety related issues have been successfully implemented to over 75%. It is also noted that all the water and sanitation services activities are managed with a suitable Water Safety Planning framework.

### **Basic Sanitation**

The vulnerability index is 64%. The vulnerability is moderate. More than 90% of formal housing areas, informal and rural areas are fully serviced with sanitation infrastructure. The WAS has developed and is implementing a detailed plan and programme to provide safe sanitation to all households within its area of service. Unfortunately, the sanitation budget is seriously underfunded with the budget allocated being less than 50% of the required funds. A limited number of (>50%) of basic sanitation facilities are serviced.

### **Wastewater/ Environmental Safety & Regulatory Compliance**

This item has high vulnerability with a vulnerability index of 70%. The Council have been made aware of all the W2RAP related issues such as pollution incident and green Drop deficiencies, that require budget and actioning. However, implementation is hindered due to insufficient funding as the budget allocated is less than 50% of the required funds. Hence, the implementation of the required corrective actions is at approximately 75%.

### **Infrastructure Asset Management (IAM)**

This business attribute has moderate vulnerability with a vulnerability index of 75%. The WSA has developed a basic asset register. It has also developed an Infrastructure Asset management (IAM) Plan but with occasional non-optimal performance. The budget allocated to implementing the IAM outcomes is approximately 50% of the required funds but the implementation rate of those IAM outcomes is greater than 75%. The WSA construct annual technical assessment of its water and wastewater related systems.

### **Operation and Maintenance of Assets**

This business attribute has moderate vulnerability with a vulnerability index of 75%. Stock management of water and sanitation equipment is in place but with occasional non-optimal performance. The WSA has developed preventative maintenance schedules for both water and sanitation. Although the preventative maintenance works are implemented, the WSA officials don't know the repair and maintenance costs as a function of total operating expenditure.

### **Financial Management**

This vulnerability of this business attribute is low with a vulnerability index of 80%. The last audit report of the WSA's financial statement found a clean audit outcome. The municipal cash/ cost coverage ratio is between 30 – 60 days. The actual operating budget and revenue closely reflect the budgeting operating expenditure and budgeted operating revenue, respectively. The WSA does not owe any money to major service providers such as Eskom and Umgeni Water for more than 30 days.

### **Revenue Collection**

This business attribute has moderate vulnerability with a vulnerability index of 80%. The WSA undertakes meter readings on a monthly basis. It has a good revenue collection rate ranging between 80% and 95%. However, the operating revenue less the operational grants/subsidies covers less than 50% of the operating expenditure. This indicates that the WSA depends significantly on grants and subsidies.

### **Financial Asset management**

This is another attribute of concern due to its extreme vulnerability (vulnerability index 45%). The capital expenditure is in the range of 20% total municipal expenditure. The repairs and maintenance expenditure is only less than 5% of the value of property, plant and equipment, and investment property. The WSA relies heavily on grand funding of capital expenditure; the grant accounts for more than 90% of capital expenditure.

### **Information Management (IT)**

This business attribute has moderate vulnerability with a vulnerability index of 74%. The existing IT Master Systems Plan has been approved and is being implemented. However, the IT systems do not support the full range of water and sanitation services business requirements and the budget allocated and staff number are insufficient to keep the IT systems stable and up to date as per the IT policies and procedures.

**Organisational Performance Monitoring**

With a vulnerability index of 100%, this attribute has low vulnerability. Appropriate plans, policies, and procedures to address Disaster Management and other issues have been developed and implemented. An organisational performance management system s developed and implemented. A municipal risk management framework is also developed and implemented. There is an effective administration support for technical staff to assist with processing work orders, providing order numbers, handling correspondence, etc. The WSA also compiles quarterly progress reports relating to access to basic water and sanitation services.

**Water and Sanitation Service Quality**

This business attribute has moderate vulnerability with a vulnerability index of 71%. Most customers (more than 75%) have functional, reliable, and safe for both water supply and sanitation system. More than 75% of households within the WSA area do not experience water pressure problems. However, the WSA needs to improve the management of critical business databases and documents, such as as-builts drawings, records, agreements, billing/revenue collection, projects and schemes data, etc.

**Customer Care (CRM)**

This business attribute has low vulnerability with a vulnerability index of 98%. There is a functional customer service system manned appropriate customer services representatives performing all the customer services related duties. The WSA also conducts municipal wide customer satisfaction surveys annually to determine, among other things, customer satisfaction levels. A comprehensive customer awareness programme is in place and implemented. However, there is a need to improve the management of the reported complaints. Only approximately 50% of reported water and sanitation complaints are attended to within 24 hours.

## ***Section B: State of Water Services Planning***

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### **B 1 Integrated Development Plan (IDP)**

Section 25 of the Municipal Systems Act deals with the IDP and states that:

“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;
- 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 IDP.

### **B 2 Water Services Development Plan (WSDP)**

Under the Municipal Structures Act (No 117 of 1998) Harry Gwala District Municipality was appointed as the Water Services Authority (WSA) and in this capacity inherited the powers and functions of both the Water Services Authority and the Water Services Provider (WSP). Under these expanded responsibilities the Water Services Authority has a duty to all consumers or potential consumers in its area of jurisdiction to progressively ensure efficient affordable economical and sustainable access to water and sanitation services.

To achieve this the Water Services Authority must take a leading role in planning:

- Service Level Objectives
- Water Resources
- Water Conservation and Demand Management
- Bulk Infrastructure
- Institutional Arrangements
- Organisational Support
- Financial Management & Tariff Policy

In general terms as a WSA HGDM must focus on establishing services provider capacity and bringing basic services to consumers in their areas. The Water Services Development Plan (WSDP) is a key tool in achieving this objective. The WSDP also feeds information into the Integrated Development Plan (IDP) which is the annual multi-sectoral plan of HGDM.

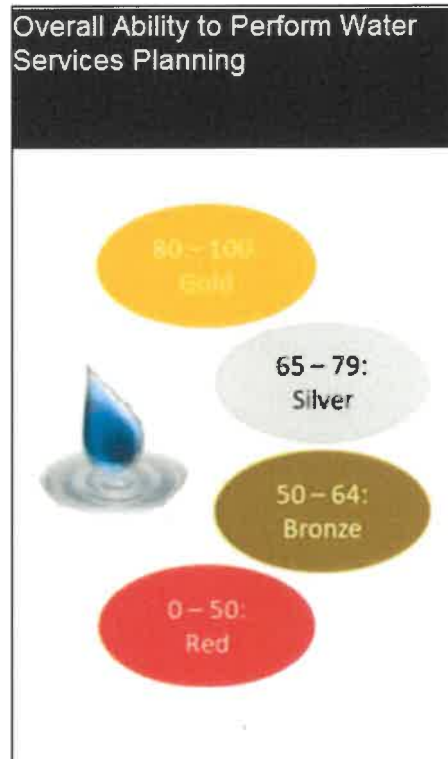
As promulgated in terms of section 16 of the Water Services Act, a WSA must prepare and adopt a new development plan every five years, unless substantial deviations. This section contains the discussion of the detailed plans which has been instituted as part of the WSDP and the status of the WSDP.

The WSDP was reviewed in June 2023 for the 2023/24 municipal year. The final score of 75.56% was recorded for the 2023/24 WSDP, which is in the Silver Category. It is worth mentioning that there are various water and sanitation initiatives either ongoing or in the planning phase within the WSA, aimed at enhancing the quality of services. However, the primary challenge lies in securing funds for these projects.

Figure B 1: 2024/25 WSDP Scoring

The overall scoring for Harry Gwala DM to perform its WSDP functionality for the 2024/2025 revision is rated at 75.9%, which remains a Silver Status. Harry Gwala DM has embarked on a Gap Analysis project in 2024 to provide a summary and an action plan to facilitate the updating of outstanding WSDP information. This should place Harry Gwala in a Gold Status.

Total Score	STATUS
75.90	Silver



### ***Section C: Water Services Existing Needs Perspective***

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*The existing needs perspective as presented below was developed through a systematic and comprehensive review of the water services function in terms of the WSDP Guide Framework. The output from this process is presented in the form of an assessment score and a strategic assessment.*

*The water services situation analysis prompted the development of problem statements which formed the input for the development of the water services objectives and strategies which follows in **Section D**.*

**Table C1: Existing Needs Perspective and Problem Statements****Demographics**

Item	Strategic interpretation
Settlements Summary	Settlements have been discussed with WSA. The HH counting was taken from an aerial photo using a Dot Count method. The population figures were calculated using the April 2022 population from both DWS and Statistics SA. The WSA did agree with this method. However, the households dot count was based on old 2021 aerial photo. More recent data from latest census need to be used in the future.
Summary by Settlement Group	Urban and rural figures are accurate. Population and households figures are also accurate.
Assessment Score by Settlement Type	Settlements have been discussed with WSA and checks have been made versus the CENSUS 2011. The identification of settlement types is adequate.
Amenities Summary	Public amenities figures were not available at the WSA - Public amenity figures need to be discussed with health and education departments to ensure a correct number of facilities to ensure correct planning. The backlogs and service levels also need to be confirmed.

**Table C.2: Existing Needs Perspective and Problem Statements****Service Levels**

Item	Strategic interpretation
Direct Backlog Water	Projects are in place to improve water services of backlog area, but funding is an issue and lack of regional bulk water supply schemes.
Water Services Infrastructure Supply Level Profile	The service levels still need more investigation for a more accurate representation. Using the current service levels, close to half of the households (49%) are above RDP level water supply. There is thus, a large portion of the WSA that is below RDP level water supply which needs to be serviced.
Sanitation Service Infrastructure Supply Level Profile	There is no proper VIP or sanitation service level asset register to assess backlog situation. There are several new rural expansions without proper planning and assessment regarding basic service provision. There are projects in place each year reducing backlogs. Areas that are below RDP level sanitation supply (VIP) needs to be serviced with either VIPs or waterborne sanitation. Household chemical toilets, which are intended for temporary use, should also be replaced by either VIPs or waterborne sanitation services.
Water Services: Education	The service levels still need more investigation for a more accurate representation. Using the current service levels and reliability profile, the majority of the backlog areas require either infrastructure or, where there is an existing scheme, a more reliable resource.
Sanitation Services: Education	The service levels still need more investigation for a more accurate representation. Using the current service levels, more than half of the education facilities have adequate services. However, 180 educational facilities have inadequate sanitation services.
Health and Educational Facilities	The service levels still need more investigation for a more accurate representation. Using the current service levels and reliability profile, the majority of the backlog areas require the existing PIT toilets to be upgraded to VIPs. Some of the VIP areas are also planned to be upgraded to waterborne

Direct Backlog Sanitation	Harry Gwala DM has a huge number of households with a below basic level of service. This is a combination of households without a basic level of service or due to infrastructure that require refurbishment extension operation and maintenance or resource development. Ensure that all households in the rural areas with existing services below RDP standard are provided with at least basic sanitation services. However, a detailed study into each of the facilities is required for a proper assessment of the service levels. Some of the facilities have inadequate sanitation provision and needs to be addressed.
Water Reliability Profile	The service levels of the health and education facilities were based on the service levels identified from the operational meeting with each LM and the UAP data. A detailed study into each of the facilities is however required for a proper assessment of the service levels. Some of the facilities have inadequate water provision and needs to be addressed.
Sanitation Reliability Profile	The service levels of the health and education facilities were based on the service levels identified from the operational meeting with each LM and the UAP data. A detailed study into each of the facilities is however required for a proper assessment of the service levels. Some of the facilities have inadequate sanitation provision and needs to be addressed.
Water Services: Health	There is a lack of detail information regarding this section. A detailed study into each of the facilities is however required for a proper assessment of the service levels.
Sanitation Services: Health	There is a lack of detail information regarding this section. A detailed study into each of the facilities is however required for a proper assessment of the service levels. Some of the facilities have inadequate sanitation provision and needs to be addressed.

Table C.3: Existing Needs Perspective and Problem Statements

## Water Services Asset Management

Item	Strategic interpretation
General Information	The WSA has an asset and disaster management plan in place. It does, however, not have a plan in place to manage untreated effluent. The asset register also needs to be updated to include all the missing schemes, infrastructure and with consistent asset categorisation. Its current structure is difficult to analyse by someone who is not familiar with the water and sanitation infrastructures of Harry Gwala DM. A Professional Service Provider (PSP) is currently engaged in an asset management project that will be completed by June 2023. This project intends to update the water and sanitation assets while also improving the structure of the Fixed Asset Register.
Operation	The asset register does not include information regarding security incidents and safety inspections performed. Proper assessment of security incidents and safety inspection are required.
Functionality Observation	Very little information was available in the asset register regarding replacement value of the infrastructure. There was also no information available regarding the refurbishment or new development costs. There was also no information regarding the physical condition of the infrastructure
Asset Assessment Spectrum	Information was also available regarding the infrastructures age to determine expected lifespans of the infrastructure. However, the structure of the asset register makes it difficult to determine the expected lifespans

	of the infrastructure.
Water and Sanitation schemes	There are several rudimentary schemes in HGDM. There should, however, be more regional schemes implemented as the maintenance and sustainability of the rudimentary schemes are difficult, and several of the schemes are not operating as they should. However, all the water and wastewater treatment works have blue and green drop reports.

**Table C.4: Existing Needs Perspective and Problem Statements****Water Services O&M**

Item	Strategic interpretation
Operation & Maintenance Plan	There is currently an operation and maintenance plan in place. The plan should, however, be improved and implemented. The plan is currently not implemented as it should, mainly due to budget constraints.
Is There an Operation and Maintenance Plan?	There is currently an operation and maintenance plan in place. The plan should, however, be improved and implemented. The plan is currently not implemented as it should, mainly due to budget constraints.
Resources	The main concern in terms of resources to the WSA in terms of all its infrastructure is budget. The WSA doesn't have enough budget to operate and maintain its infrastructure. After the budget, the WSA has issues regarding the number of staff and spare parts, which is again linked to the budget.
Information	According to the WSA, there are very little to no As-built information available regarding the infrastructure. The relevant as-builts should be collected from the consultants and surveys should be completed where necessary. There is an asset register in place but should also be updated. Several of the schemes are not included in the current asset register.
Activity Control & Management	The WSA shows very little compliance with the active control and management of its infrastructure. The major area of concern is the quality control procedures which are non-existent.

**Table C.5: Existing Needs Perspective and Problem Statements****Conservation & Demand Management**

Item	Strategic interpretation
Reducing unaccounted water and water inefficiencies	The WSA stated that there is only partial metering taking place in the WSA, mainly in urban areas where there are proper house or yard connection. The rural schemes have no metering, which is a big issue especially in terms of the water balance. There are programmes to improve leaks and un-metered connections but are not sufficient.
Leak and meter repair programmes	The WSA stated that there is currently active leak and meter repair programmes in place. There is, however, a need for retrofitting inefficient toilets. There are also several illegal connections (yard connection from communal standpipe) which increases leakage.
Consumer/end-use demand management: Public Information & Education Programmes	There are currently programmes in place for educating schools and communities regarding end use/consumer demand management. The WSA states that these are adequate, but further awareness and education is necessary.



Conjunctive use of surface - and groundwater	No information was available regarding artificial recharge, and only information on one scheme was available regarding rainwater harvesting. There is thus a need to investigate artificial recharge and rainwater harvesting in the WSA.
Working for Water	Currently, there are no programs in place to remove alien vegetation or to reduce alien vegetation. Alien vegetation typically has a high water use and should thus be removed. There have been programs in the past, but none are currently in place.
Water Balance	The monthly water balances for the local municipalities and district municipality were provided for the 2021/2022 financial year. The data was used to determine the NRW and other water balance components. However, the data did not include information on the volume of ground water and surface water. Upon analyzing the water balance spreadsheet, it was apparent that the method of compiling the water balance needs improvement. The water balance also needs to be compiled at a scheme level.

Table C.6: Existing Needs Perspective and Problem Statements

## Water Resources

Item	Strategic interpretation
Current Water Sources	Limited information was provided on the sources and additional sources available and their volumes and abstraction volumes There is, however, a need to compile and update a water and sanitation master plan to assist in identifying needs and future planning.
Monitoring	Limited information was provided on the sources and additional sources available and their volumes and abstraction volumes. There is, however, a need to review and update the operation and maintenance manual.
Water Quality	Monitoring occurs either never or very rarely. No monitoring is done regarding the groundwater sources, and only some of the more formal schemes surface water abstraction are monitored. A need for proper monitoring of the schemes and sources is required. The monitoring of sources is also vital for the water balance.
Operation	UW mainly conducts the quality monitoring of the sources (abstraction) and the water that is returned. The WSA does not monitor water quality. There is no staff dedicated to water quality and monitoring in the WSA. There is a need to improve quality monitoring in the WSA.
Additional Sources Available	Most of the abstraction points (surface and ground) are registered with the DWS, but in general, they are not recorded. Proper monitoring of the abstraction points are required.

## ***Section D: Water Services Objectives and Strategies***

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*The water services objectives and strategies presented below were derived from the water services situational analysis as summarized in **Section C: Water Services Existing Needs Perspective** and presents the 5-year Water Services objectives and strategies as established in the WSA's WSDP.*

Following interaction with the District Municipality during 2020/2021, a number of additional municipal strategies have been identified and included on the list. These new strategies are shaded in light blue.

**Table D1: WSDP FY2018: Water Services Objectives and Strategies**

**WSDP FY2017: Strategies and Objectives**

Nr	Objective of Strategy	Key Performance Indicator	Baseline	WSDP FY2017: Strategies and Objectives			
				WSDP Year 1 Target	WSDP Year 2 Target	WSDP Year 3 Target	WSDP Year 4 Target
<b>Topic 1 - Settlement Demographics &amp; Public Amenities</b>							
1	Settlement (urban and rural) survey assessing households and population	All settlements should be investigated and the number of households and population numbers should be determined. GPS locations should also be taken	The number of households has been investigated and is determined through household count based on aerial photo. The population number needs to be determined. However, when available, the Census 2022 population data can be used.	Present to council need for settlement assessment to provide funding and resources	Complete settlement survey	Update WSDP with new settlement figures	Update WSDP
2	Public amenities should be investigated with cooperation of the health and education departments	All public amenities (health and education) should be investigated and the number of facilities and their type should be determined. GPS locations should also be taken	Currently the information is based on information contained in the existing GDB and from information provided by the surveyor general. The WSA didn't provide any data.	Present to council need for public amenity assessment to provide funding and resources	Complete public amenity survey	Update WSDP with new public amenity figures	Update WSDP
3	Service level data accuracy. Ensure service level data accuracy and adequacy / align geo-databases	Improved service level data throughout district	Service level data is based on Census data and is not believed to be always accurate.	Update and improve data	Update and improve data	Update and improve data	Update and improve data
<b>Topic 2 - Service Levels Profile</b>							
1	Settlement survey assessing service levels - both water and sewer	Settlement survey needs to be completed assessing the service levels of each of the settlements in Harry Gwala (rural and urban)- both water and sewer. The survey will aid in identifying the backlog areas in terms of service provision in Harry Gwala.	Discussions were had with infrastructure regarding water and sewer service provision as Census and DWA service levels were incorrect. The service levels still need more investigation for a more accurate representation.	Presenting to council need for settlement assessment to provide funding and resources	Complete settlement survey	Update WSDP with new settlement figures	Update WSDP
2	Areas that are below RDP level water supply needs to be supplied via new schemes or regional schemes	Areas that are below RDP level water supply needs to be supplied via new schemes or regional schemes	Using the current service levels, approximately half of the households are above RDP level however, a significant fraction of households is served via water tankers. There is thus a large portion of the WSA that is below RDP level water supply which need to be serviced.	Presenting to council need for improving areas below RDP level of water provision to provide funding and resources	Upgrade below RDP level of water services areas	Upgrade below RDP level of water services areas - update WSDP	Upgrade below RDP level of water services areas - update WSDP
3	Areas that are below RDP level sanitation supply (VIP) needs to be serviced with either VIPs or waterborne sanitation.	Areas that are below RDP level sanitation supply (VIP) needs to be serviced with either VIPs or waterborne sanitation.	Using the current service levels, more than half of the households are above RDP level sanitation supply, however, 35% of the households are served via PIT toilets. There is thus a large portion (35%) of the WSA that is below RDP level sanitation supply which need to be serviced.	Presenting to council need for improving areas below RDP level of sewer provision to provide funding and resources	Upgrade below RDP level of sewer services areas	Upgrade below RDP level of sewer services areas - update WSDP	Upgrade below RDP level of sewer services areas - update WSDP
4	Assessment of service levels of Health and education facilities for planning and design	An assessment of the service levels of the Health and education facilities in Harry Gwala is required for planning and design and ensuring the facilities have adequate services	The service levels of the health and education facilities were based on the service levels identified from the operational meeting with each LM and the UAP data. A detailed study into each of the facilities is however required for a proper assessment of the service levels.	Get health and education facility information from respective departments	Update service levels and WSDP	Update WSDP	Update WSDP

Nr	Objective of Strategy	Key Performance Indicator	Baseline	WSDP Year 1	WSDP Year 2	WSDP Year 3	WSDP Year 4
5	Facilities with backlogs need to be properly serviced.	Facilities with backlogs need to be properly serviced.	Some of the facilities have inadequate water and sewer provision according to the current service levels and needs to be addressed.	Present to council need for providing proper services to health and educational facilities to provide funding and resources	Reduce backlogs at facilities and update WSDP	Reduce backlogs at facilities and update WSDP	Reduce backlogs at facilities and update WSDP
6	A water and sanitation masterplan needs to be completed for the WSA on a bulk and reticulation scale for the existing and future demand scenario	A water and sanitation masterplan needs to be completed for the WSA on a bulk and reticulation scale for the existing and future demand scenario	Currently there is no proper masterplan that assesses the infrastructure (sewer and water) and looks at the existing and future demands of the WSA. A masterplan is imperative in adequate planning infrastructure	Present to council need for a proper water and sewer masterplan to provide funding and resources	Complete masterplan and reduce backlogs	Complete masterplan and reduce backlogs	Complete masterplan and reduce backlogs
7	The existing sources should be investigated and future sources identified	The existing sources should be investigated and future sources identified	Currently the biggest issue with the existing schemes are source reliability. There is a need for more sustainable sources.	Present to council need for the investigation of the existing and future sources to provide funding and resources	Investigate existing and future sources	Develop new sources to improve scheme supply and update WSDP	Develop new sources to improve scheme supply and update WSDP
8	Policy Development (Service Level, Indigent, FBW, Tariff Collection)	Policy developed, adopted and implemented	Policies exist but not always implemented	Develop new policies and present to council for approval	Implement new and existing policies. Develop new policies and present to council for approval	Implement new and existing policies. Develop new policies and present to council for approval	Implement new and existing policies. Develop new policies and present to council for approval
9	Water Services Development Planning (WSDP)	Improved quality of WSDP and WSDP Score	WSDP Score has improved but WSDP needs more refinement. Settlement reconciliation exercise needs completion, linking settlement maps directly to service levels.	Update and refine WSDP. Present to Council for approval.	Update and refine WSDP. Present to Council for approval.	Update and refine WSDP. Present to Council for approval.	Update and refine WSDP. Present to Council for approval.
10	Service Level Backlog Quantification and Eradication	Improve accuracy of service level backlog data in order to plan for backlog eradication	Backlogs are estimated in WSDP; but accuracy of data needs improving.	Improve accuracy of backlog data in WSDP and IDP	Improve accuracy of backlog data in WSDP and IDP	Improve accuracy of backlog data in WSDP and IDP	Improve accuracy of backlog data in WSDP and IDP

Topic 3 - Water Services Asset Management							
Nr	Objective of Strategy	Key Performance Indicator	Baseline	WSDP Year 1	WSDP Year 2	WSDP Year 3	WSDP Year 4
1	The WSA should improve the asset management plan and develop a plan to manage untreated effluent	The WSA should update and improve the asset management plan and develop a plan to manage untreated effluent.	The WSA has an asset and disaster management plan in place. It does, however, not have a plan in place to manage untreated effluent. The asset register also needs to be updated to include all the missing schemes and infrastructure.	Present to council need to improve the asset management plan and develop a plan to manage untreated effluent to provide funding and resources.	Improve the asset management plan and develop a plan to manage untreated effluent and update WSDP	Implement the improved asset management plan and plan to manage untreated effluent and update WSDP	Update WSDP
2	The WSA to do a proper assessment of security incidents and safety inspections performed	The WSA to do a proper assessment of security incidents and safety inspections performed	The asset register does not include information regarding security incidents and safety inspections performed. The information was discussed with LMs and Assumptions were made. Proper assessment of security incidents and safety inspection are required.	Present to council need to do a proper assessment of security incidents and safety inspections performed to provide funding and resources	Conduct a proper assessment of security incidents and safety inspections performed and update WSDP	Conduct a proper assessment of security incidents and safety inspections performed and update WSDP	Conduct a proper assessment of security incidents and safety inspections performed and update WSDP
3	Proper replacement, refurbishment and new development costs need to be determined for all the water and sanitation infrastructure in Harry Gwala.	Proper replacement, refurbishment and new development costs need to be determined for all the water and sanitation infrastructure in Harry Gwala. This can be achieved with a sewer and water master plan	Very little to no information was available in the asset register regarding replacement value of the infrastructure. There was also no information available regarding the refurbishment or new development costs. There was also no information regarding the physical condition of the infrastructure and information was provided and assumed based on meetings with operational managers of each LM.	Present to council need to determine a replacement, refurbishment and new development costs for all the water and sanitation infrastructure to provide funding and resources	Determine replacement, refurbishment and new development costs for all the water and sanitation infrastructure and update WSDP	Determine replacement, refurbishment and new development costs for all the water and sanitation infrastructure and update WSDP	Determine replacement, refurbishment and new development costs for all the water and sanitation infrastructure and update WSDP
4	The expected lifespan on the infrastructure should be determined based on the age and the condition of the infrastructure.	The expected lifespan on the infrastructure should be determined based on the age and the condition of the infrastructure. A proper assessment of the infrastructure and their ages are required	Data on the age of infrastructure was given to aid in estimating the anticipated lifespan of the infrastructure. Nevertheless, the design of the asset register made it challenging to determine the values with precision.	Present to council need to determine expected lifespan on the infrastructure to provide funding and resources	Determine expected lifespan on the infrastructure and update WSDP	Determine expected lifespan on the infrastructure and update WSDP	Determine expected lifespan on the infrastructure and update WSDP

5	Investigate and implement more regional water and sanitation schemes.	Investigate and implement more regional water and sanitation schemes. This can be addressed with the water and sewer masterplans	There are several rudimentary schemes in HGDM. The feasibility of regional schemes should be investigated as the maintenance and sustainability of the rudimentary schemes are difficult, and several of the schemes are not operating as they should.	Presenting to council need to investigate and implement more regional water and sanitation schemes to provide funding and resources	Investigate and implement more regional water and sanitation schemes and update WSDP	Investigate and implement more regional water and sanitation schemes and update WSDP
6	Blue and green drop reports should be done for outstanding treatment works, and the existing works should be refurbished or upgraded as the score are very low	Blue and green drop reports should be done for outstanding treatment works, and the existing works should be refurbished or upgraded as the score are very low	Some of the treatment works also do not have green and blue drop reports, and the ones that do have are not in good working order and should be addressed.	Presenting to council need for assessing the infrastructure condition to provide funding and resources	Complete asset register assessment	Update WSDP
7	Update of asset register to include physical condition of all the assets.	Update of asset register to include physical condition of all the assets.	Currently, the asset register does not include the physical condition of all the infrastructure	Present to council need to ascertain the physical condition of the infrastructure to provide funding and resources	Ascertain the physical condition of the infra and update asset register and WSDP	Ascertain the physical condition of the infrastructure and update asset register and WSDP
8	Improved Municipal Design Standards for Infrastructure	Improved Design standards produced, promulgated and put into use.	Some design guidelines exist but these are not formalised	Design Standards reviewed and new design standards drafted for comment	Design standards ratified by Council	Design standards implemented by Municipality on new and existing projects
9	Asset Management Policy Development (Procurement, Asset Depreciation and Replacement)	Policies updated, developed and implemented	Some policies in place; but not always implemented	Policies reviewed and new policies drafted for comment	Policies adopted	Policies implemented and constantly reviewed
10	Address and reduce illegal connections and vandalism	Reduction in levels of vandalism and illegal connections to water and electricity supplies.	Vandalism and illegal connections are currently a serious problem, resulting in high levels of non-revenue water.	Develop strategy and plan to address illegal connections and vandalism	Implement strategy and plan to address illegal connections and vandalism	Implement strategy and plan to address illegal connections and vandalism. Review progress and suggest any required changes.

Nr	Objective of Strategy	Key Performance Indicator	Baseline	WSDP Year 1	WSDP Year 2	WSDP Year 3	WSDP Year 4
11	GIS Database population and upkeep	Updated accuracy of municipal GIS database	GIS database exists but data accuracy is questioned.	GIS data quality improved	GIS data quality improved	GIS data quality improved	GIS data quality improved
12	Disaster and Risk Management	Improved Risk Management Capacity and Protocols	Some risk management procedures in place; but not always applied.	New risk management procedures drafted for comment	New risk management procedures adopted	New risk management procedures implemented and reviewed	New risk management procedures implemented and reviewed

**Topic 4 - Water Services O&M**

Nr	Objective of Strategy	Key Performance Indicator	Baseline	WSDP Year 1	WSDP Year 2	WSDP Year 3	WSDP Year 4
1	Develop and implement an improved operation and maintenance plan for the effective operation and maintenance of assets. Improved budgets should be allocated to improve O&M.	Develop and implement an improved operation and maintenance plan for the effective operation and maintenance of assets. Improved budgets should be allocated to improve O&M.	"There is currently an operation and maintenance plan in place. The plan should however be improved and implemented. The plan is currently not implemented as it should, mainly due to budget constraints."	Present to council need to develop and implement an improved operation and maintenance plan to provide funding and resources	Develop and implement an improved operation and maintenance plan	Update WSDP	Update WSDP
2	Proper physical survey needs to be conducted and as-built drawings need to be created as very little information is available regarding physical information which limits the capacity of operational staff	Proper physical survey needs to be conducted and as-built drawings need to be created as very little information is available regarding physical information which limits the capacity of operational staff	According to the WSA there is very little to no AS-built information available regarding the sewer and water infrastructure. The relevant as-builts should be collected from the consultants and physical surveys should be completed where necessary.	Present to council need to survey infrastructure and collect as-builts to provide funding and resources	Survey infrastructure and collect as-builts and update WSDP	Survey infrastructure and collect as-builts and update WSDP	Survey infrastructure and collect as-builts and update WSDP
3	The asset register needs to be updated and all the infrastructure of existing schemes should be included.	The asset register needs to be updated and all the infrastructure of existing schemes should be included.	There is an asset register in place but should also be updated. several of the schemes infrastructure is not included in the current asset register.	Present to council need to update asset register to provide funding and resources	Update asset register and update WSDP	Update asset register and update WSDP	Update asset register and update WSD

Nr	Objective of Strategy	Key Performance Indicator	Baseline	WSDP Year 1	WSDP Year 2	WSDP Year 3	WSDP Year 4
4	Develop systems and processes for effective activity control and management - especially in terms of risk and quality	Develop systems and processes for effective activity control and management - especially in terms of risk and quality	The WSA shows very little compliance to the activity control and management of its infrastructure. The major area of concern is the quality control procedures which are non-existent.	Present to council need to develop systems and processes for effective activity control and management to provide funding and resources	Develop systems and processes for effective activity control and management	Update WSDP	Update WSDP
5	Budget to be improved regarding operation and maintenance as currently not enough budget	Budget to be improved regarding operation and maintenance as currently not enough budget	The main concern in terms of resources to the WSA in terms of all its infrastructure is budget. The WSA doesn't have enough budget to operate and maintain its infrastructure.	Present to council need for improved O&M budget to provide funding and resources	Improve O&M with increased budget and update WSDP	Improve O&M with increased budget and update WSDP	Improve O&M with increased budget and update WSDP
6	More staff and spare parts need to be allocated to WWTW and WTW plants and pump-stations for optimal operation	More staff and spare parts need to be allocated to WWTW and WTW plants and pump-stations for optimal operation	After budget the WSA has issues regarding the amount of staff and spare parts, which is again linked to budget.	Present to council need for more staff and spare parts to provide funding and resources	Acquire more staff and spare parts and update WSDP	Acquire more staff and spare parts and update WSDP	Acquire more staff and spare parts and update WSDP
7	Improved training and capacity building for municipal staff	No of staff trained, qualifications and performance of staff improves	Some limited, occasional training takes place	Increased no of training courses	Increased no of training courses	Increased no of training courses	Increased no of training courses
8	Proactive scheduled maintenance takes place on a regular basis	More scheduled, proactive maintenance and fewer infrastructure breakdowns	Limited regular maintenance takes place - mainly just reactive repairs and 'firefighting'.	Develop and implement schedule of proactive, scheduled maintenance	Expand implementation of schedule of proactive, scheduled maintenance	Expand implementation of schedule of proactive, scheduled maintenance	Expand implementation of schedule of proactive, scheduled maintenance



Topic 5.1 – Conservation and Demand management – Water Resource							
Nr	Objective of Strategy	Key Performance Indicator	Baseline	WSDP Year 1	WSDP Year 2	WSDP Year 3	WSDP Year 4
1	WC&DM Programmes and interventions to be implemented to ensure compliance by the WSA.	WC&DM Programmes and interventions to be implemented to ensure compliance by the WSA and to reduce water wastage, and levels of non-revenue water	Some WC/WDM measures being implemented - but more measures are required as water wastage is high.	Present to council need for proper WC&DM programmes and interventions to provide funding and resources	Develop and implement WC&DM Programmes and interventions and update WSDP	Develop and implement WC&DM Programmes and interventions and update WSDP	Develop and implement WC&DM Programmes and interventions and update WSDP
2	Reduction of unaccounted water and water inefficiencies	Reducing unaccounted water and water inefficiencies	Limited measures being currently implemented to effectively reduce water losses and levels of unaccounted for water.	Present to council need for proper WC&DM programmes and interventions to provide funding and resources	Present to council need for proper WC&DM programmes and interventions to provide funding and resources	Present to council need for proper WC&DM programmes and interventions to provide funding and resources	Present to council need for proper WC&DM programmes and interventions to provide funding and resources
3	Implementing Leak and meter repair programmes	Reduced leaks and faulty meters	The WSA stated that there are currently active leak and meter repair programmes in place. There is however a need for retrofitting inefficient toilets. There are also several illegal connection (yard connection from communal standpipe) which increases leaking	Present to council need for proper WC&DM programmes and interventions to provide funding and resources	Implement Leak and meter repair programmes	Implement Leak and meter repair programmes	Implement Leak and meter repair programmes
4	Raising public awareness through education programmes	More public awareness and education programmes and improved public awareness of water, sanitation, health and hygiene issues	There are currently programmes in place for educating schools and communities regarding end use/consumer demand management. The WSA states that these are adequate but more awareness and education is necessary.	Present to council need for proper WC&DM programmes and interventions to provide funding and resources	Implement public awareness campaigns	Implement public awareness campaigns	Implement public awareness campaigns
5	Promoting artificial recharge and rainwater harvesting	Improved levels of artificial recharge and rainwater harvesting	Currently no programmes in place. Rainwater harvesting is left to individual consumers	Develop strategy, plan and apply for funding	Implement strategy for artificial recharge of groundwater resources and rainwater harvesting to conserve water resources	Implement strategy for artificial recharge of groundwater resources and rainwater harvesting to conserve water resources	Implement strategy for artificial recharge of groundwater resources and rainwater harvesting to conserve water resources

Nr	Objective of Strategy	Key Performance Indicator	Baseline	WSDP Year 1	WSDP Year 2	WSDP Year 3	WSDP Year 4
6	Removal and eradication of Alien vegetation	Reduction of alien vegetation and protection & conservation of water catchments	Currently there are no programmes in place to remove alien vegetation or to reduce alien vegetation. The presence of alien vegetation results in high water use and should thus be removed. There have been programmes in the past; but none are currently in place.	Motivate and submit proposal for funding	Implement strategy to remove and eradicate alien vegetation	Implement strategy to remove and eradicate alien vegetation	Implement strategy to remove and eradicate alien vegetation
7	Improved meter reading and consumption data collection	Regularity and accuracy of meter reading and data collection	Meters are read but not always consistently or accurately.	Improved meter reading of existing meters and installation / repair of meters.	Improved meter reading of existing meters and installation / repair of meters.	Improved meter reading of existing meters and installation / repair of meters.	Improved meter reading of existing meters and installation / repair of meters.

**Topic 5.2 – Conservation and Demand Management – Water Balance**

Nr	Objective of Strategy	Key Performance Indicator	Baseline	WSDP Year 1	WSDP Year 2	WSDP Year 3	WSDP Year 4
1	Implement strategies as contained in NRW report compiled by JOAT. Especially regarding metering of sources and consumers (metering of standpipes etc.)	Implement strategies as contained in NRW report compiled by JOAT. Especially regarding metering of sources and consumers (metering of standpipes etc.)	Limited to no information was available regarding the water consumption/metering and water resources (purchased and ground and surface water sources - abstraction volumes). This made the accuracy of the water balance very low and several assumptions were made. The current NRW due to inadequate metering needs to be addressed.	Present to council need for proper metering to provide funding and resources	Improve metering of sources, reservoirs and consumers - Update WSDP	Improve metering of sources, reservoirs and consumers - Update WSDP	Improve metering of sources, reservoirs and consumers - Update WSDP
2	The WSA to develop and implement the water monitoring plan.	Develop and implement the water monitoring plan.	The water monitoring plan is not in place with limited resources to manage these functions effectively.	Develop and implement the water monitoring plan.	Develop and implement the water monitoring plan.	Update WSDP	Update WSDP
3	Comprehensive network of water meters	No of operational meters installed	Some households and areas are metered but not all	Increased no of effective meters	Increased no of effective meters	Increased no of effective meters	Increased no of effective meters

Topic 6 – Water Resource							
Nr	Objective of Strategy	Key Performance Indicator	Baseline	WSDP Year 1	WSDP Year 2	WSDP Year 3	WSDP Year 4
1	The available sources should be analysed in terms of their available abstraction volumes and existing abstraction volumes.	All abstraction sources should be logged and monitored to determine the available abstraction volumes and the existing abstraction volumes. Proper yield analysis of sources is also required	Limited information was provided on the sources and additional sources available and their volumes and abstraction volumes.	Present to council need for proper source analysis to provide funding and resources	Analyse available and existing abstraction volumes and update asset register to include volumes	Update WSDP	Update WSDP
2	A proper source monitoring program needs to be put in place - monitoring and metering of both ground and surface abstraction is required	A proper source monitoring program needs to be put in place - monitoring and metering of both ground and surface abstraction is required	Information was provided regarding monitoring of sources by the technical staff of the WSA. Monitoring occurs either never or very rarely. No monitoring is done regarding the groundwater sources and only some of the more formal schemes surface water abstraction is monitored. A need for proper monitoring of the schemes and sources are required. The monitoring of sources are also vital for the water balance.	Present to council need for proper source monitoring to provide funding and resources	Implement and develop source monitoring	Update WSDP	Update WSDP
3	A proper water quality and water monitoring program needs to be put in place - water and wastewater	A proper water quality and water monitoring program needs to be put in place - water and wastewater	The WSA provided information on the water quality. According to the WSA, UW mainly conducts the quality monitoring of the sources (abstraction) and the water that is returned. The WSA does not itself monitor water quality. There are no staff dedicated to water quality and monitoring in the WSA. There is a need to improve quality monitoring in WSA.	Present to council need for proper water and wastewater quality monitoring program to provide funding and resources	Develop and implement water and wastewater quality monitoring program	Update WSDP	Update WSDP
4	Register and record all abstractions with DWS - licensing all necessary abstractions	Register and record all abstractions with DWS - licensing all necessary abstractions	Most of the abstraction points (surface and ground) are registered with the DWS, but in general they are not recorded. Proper asset management and monitoring of the abstraction points are required.	Register and record all abstraction works with DWS	Update WSDP	Update WSDP	Update WSDP
5	Climate Change Strategy	Strategy to deal with implications of climate change and to minimise municipal contribution to climate change	No strategy at present	Develop strategy	Implement Strategy	Implement Strategy. Review and amend strategy	Implement Strategy. Review and amend strategy
6	Environmental Protection / Pollution mitigation	Environmental Protection / Pollution mitigation measures approved and implemented	Some environmental strategies but not always enforced.	Develop Environmental Protection / Pollution mitigation measures	Implement Environmental Protection / Pollution mitigation measures	Implement Environmental Protection / Pollution mitigation measures and review impact.	Implement Environmental Protection / Pollution mitigation measures and review impact.

## ***Section E: Water Services MTEF Projects***

The Water Services Medium-Term Expenditure Framework (MTEF) projects are presented below and outline the water services projects which are funded for implementation within the next three years.

**Table E.2** provides the projects identified for implementation in **FY2024 to FY2026**.

These projects are as listed in the Harry Gwala District Municipality 3 year Capital Development Plan.

The projects have been grouped into six categories as follows:

1. Infrastructure projects
2. Source development projects
3. Demand management projects
4. O&M Commitments – operations and maintenance
5. Institutional
6. Water services programs – awareness programs

It should be highlighted that the projects included herein, represents only projects for which funding has already been secured, and therefore does not comprise the comprehensive water services project requirements of the WSA.

These projects are presented for the different local municipalities in Harry Gwala District and are split between the following grant funding streams:

- Municipal Infrastructure Grant (MIG)
- Regional Bulk Infrastructure Grant (RBIG)
- Water Services Infrastructure Grant (WSIG)

The summary of the MTEF water services projects may be presented as follows in **Table E.1** (note that HGDM only currently have infrastructure and demand management projects in place):

**Table E 1: Summary of MTEF Projects**

<b>Harry Gwala DM</b>	<b>Total planned expenditure on funds for 2024/25</b>	<b>Total planned expenditure on funds for 2025/26</b>	<b>Total planned expenditure on funds for 2026/27</b>
<b>MIG</b>	253 285 000.00	265 254 000.00	278 516 700.00
<b>RBIG</b>	9 603 940.24	10 004 279.88	10 004 276.88
<b>WSIG</b>	86 956 514.00	86 956 513.00	99 999 984.00

**Table E 2: WSDP FY2024/2025: MIG PROJECTS**

Project Title	Local Municipality	Project Type (Water, Sanitation, Roads, Sportsfields, Community Halls, Crèches, Public Lighting, Other)	Authorisation EIA, WULA, DSR, Wayleave and Sector Endorsements (Y/N) List as applicable	Project Status (Initiation, Prefeasibility, Feasibility, Design, Tender, Site Handover, Construction <=25%, <=50%, <=75%, <=99%, Completed, Retention, Closeout)	Total planned expenditure on MIG funds for 2024/25	Total planned expenditure on MIG funds for 2025/26	Total planned expenditure on MIG funds for 2026/27
<b>Greater Tzaneba District Municipality</b>							
<b>Uxhobhoziwe LM</b>					<b>13 340 432.90</b>	<b>17 890 765.90</b>	<b>0.00</b>
Mahehle Water Scheme	UBU	Water	N	Feasibility	13 340 432.90	17 890 765.90	0.00
<b>Umzimkhulu LM</b>					<b>77 986 620.70</b>	<b>11 601 228.29</b>	<b>55 300 000.00</b>
Greater Summerfield Water Supply Scheme Phase 2 (Ward 15)	NMZ	Water	Y	Construction	53 943 443.80	224 337.49	0.00
Greater Summerfield Water Supply Scheme Phase 3 (Ward 17, 19 and 20)	NMZ	Water	N	Feasibility	10 726 401.00	1 376 890.80	33 000 000.00
Greater Mqumeni Water Supply Scheme Phase 5 and 6: Rising Main to Gugwini	NMZ	Water	Y	Feasibility	13 326 775.90	10 000 000.00	22 900 000.00
<b>Greater Kokstad LM</b>					<b>71 466 693.36</b>	<b>44 365 010.55</b>	<b>64 365 010.55</b>
Raising of Kemsdale Dam Wall Project (Phase 1)	GKM	Water	Y	Tender	60 827 372.36	44 365 010.55	64 365 010.55
Mahhagu Sanitation Project	GKM	Sanitation	N	Feasibility	10 639 321.00	0.00	0.00
<b>Dr Nkosazana Dlamini-Zuma LM</b>					<b>77 025 657.47</b>	<b>119 302 413.80</b>	<b>29 800 000.00</b>
Creighton Water Supply Scheme Phase 2	NDZ	Water	Y	Construction	49 133 322.47	70 694 748.80	0.00
Sub Regional Scheme: Khukhulela: Portion 3, Rising Main (Ward 05)	NDZ	Water	N	Design	24 392 335.00	38 607 665.00	0.00
Underberg-Himmeville Sewer Upgrade	NDZ	Sewer	Y	Initiation	3 500 000.00	10 000 000.00	29 800 000.00
<b>ALL</b>					<b>13 456 696.57</b>	<b>72 094 581.46</b>	<b>129 061 688.45</b>
PMU2024/25	ALL	N/A	N	Not registered	6 332 125.00	6 631 350.00	6 962 917.50
Operations and Maintenance Allocation	ALL	Water & Sewerage	N	Initiation	1 000 000.00	23 634 634.10	27 851 670.00
Infrastructure Asset Management Allocation	ALL	Water & Sewerage	N	Initiation	823 470.57	24 384 172.75	24 339 728.79
Harry Gwala DM Water Conservation and Water Demand Management Project	ALL	Water	N	Initiation	1 450 000.00	5 000 000.00	35 928 014.88
Harry Gwala District Municipality VIP	ALL	Sanitation	N	Initiation	3 850 000.00	12 444 424.61	33 969 358.30
<b>Totals</b>					<b>253 285 000.00</b>	<b>265 254 000.00</b>	<b>278 516 700.00</b>

**Table E 3: WSDP FY2024/2025: RBIG PROJECTS**

Project Title	Local Municipality	Project Type (Water, Sanitation, Roads, Sportsfields, Community Halls, Creches, Public Lighting, Other)	Authorisation EIA, WULA, DSR, Wayleaves and Sector Endorsements (Y/N) List as applicable	Project Status (Initiation, Pre-feasibility, Feasibility, Design, Tender, Site Handover, Construction <=20%, <=50%, <=70%, <=90%, Completed, Retention, Closeout)	Total planned expenditure on MIG funds for 2024/25	Total planned expenditure on MIG funds for 2025/26	Total planned expenditure on MIG funds for 2026/27
<b>Ukhahlamba-Drakensberg District Municipality (UDM)</b>							
<b>Ukhahlamba LM</b>					<b>3 075 531.00</b>	<b>3 226 232.00</b>	<b>3 384 317.00</b>
Emazizini Water Supply	UBU	Water	N	Construction	1 386 860.00	1 454 816.00	1 526 102.00
Refurbishment of Bhayi - Gudlucingo Water Supply Scheme	UBU	Water	N	Construction	821 040.00	861 271.00	903 473.00
Nokweja/Mashumi Community Water Supply Scheme	UBU	Water	N	Construction	867 631.00	910 145.00	954 742.00
<b>Umtshini LM</b>					<b>12 336 048.00</b>	<b>12 940 513.00</b>	<b>13 574 592.00</b>
Corinth Nyanisweni Water Supply Scheme	UMZ	Water	Y	Planning	434 782.00	456 086.00	478 425.00
Machurwini Water Supply Scheme	UMZ	Water	Y	Planning	9 304 347.00	9 760 260.00	10 238 513.00
Hostela-Mncwaba Water Supply Scheme	UMZ	Water	Y	Construction	1 292 573.00	1 355 909.00	1 422 349.00
Dulathi-Marhewini Water Supply Scheme	UMZ	Water	N	Design	434 782.00	456 086.00	478 435.00
KwaNjunga/Raloti Refurbishment/Upgrade	UMZ	Water	N	Design	434 782.00	456 086.00	478 435.00
Nazareth-Mkulamhle Water Supply Scheme	UMZ	Water	N	Design	434 782.00	456 086.00	478 435.00
<b>Greater Kokstad LM</b>					<b>63 716 648.00</b>	<b>62 590 203.00</b>	<b>74 428 242.00</b>
Refurb / Upgrade of Bhongweni Infrastructure	GKM	Water	N	Design	28 237 747.00	29 621 396.00	31 072 845.00
Refurb / Upgrade of Shayamoya Infrastructure	GKM	Water	N	Design	35 481 102.00	32 958 807.00	43 356 397.00
<b>Dr Nkomo Damini-Zuma LM</b>					<b>7 826 086.00</b>	<b>8 209 565.00</b>	<b>8 611 833.00</b>
Mkhohlwa-Mdayane Water Supply Scheme	ND2	Water	Y	Design	7 826 086.00	8 209 565.00	8 611 833.00
<b>Totals</b>					<b>86 966 514.00</b>	<b>86 956 513.00</b>	<b>99 999 984.00</b>

**Table E 3: WSDP FY2024/2025: WSIG PROJECTS**

Project Title	Local Municipality	Project Type (Water, Sanitation, Roads, Sportsfields Community Halls, Creches, Public Lighting, Other)	Authorisation EIA, WULA, DSR, Wayleaves and Sector Endorsements (Y/N) List as applicable	Project Status (Initiation, Prefeasibility, Feasibility, Design, Tender, Site Handover, Construction <=25%, <=50%, <=75%, <=99%, Completed, Retention, Closeout)	Total planned expenditure on MIG funds for 2024/25	Total planned expenditure on MIG funds for 2025/26	Total planned expenditure on MIG funds for 2026/27
Regional Bulk Infrastructure Grant (RBIG)							
<b>Dr Nkosazana Dlamini-Zuma LM</b>					<b>9 603 940.24</b>	<b>10 004 279.88</b>	<b>10 004 276.88</b>
Grater Bulwer-Donnybrook Water Supply Scheme	NDZ	Water	Y	Planning	9 603 940.24	10 004 279.88	10 004 276.88
<b>Totals</b>					<b>9 603 940.24</b>	<b>10 004 279.88</b>	<b>10 004 276.88</b>

## ***Section F: WSDP Projects***

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The current needs projects that are funded and as included in the MTEF project list are given below. It should, however, be emphasised that additional funding will be required to address the full achievement of the water services strategies as outlined in Section D, but that the extent of such additional funding can only be determined, once initial investigations and activities have been concluded.

**Table F 1** contains the existing needs assessment and the projects relevant per topic and also the conceptual projects that need to be included in the IDP and project planning

**Table F 2** contains the projects as identified from each topic investigation where there is currently not a project.

**Table F 3** contains the proposed projects that were identified from the public participation of the WSDP. These projects should be included in the IDP and the project planning

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Table F.1: WSDP Project List – per topic strategy

Section	Interpret Situation Assessment	Intervention required?	%	Solution description as identified by Master Plan	%	Is there an existing project/activity addressing this problem?	%	Does this current listed project/activity address the problem totally?	%	Project/Activity Approved by Council as part of WSDP database?	%	Approved by the council, in project/activity database and part of 5 yr IDP cycle projects	%	Project/Activity listed in 5 yr MTE cycle	%
1.1 Settlements Summary	Settlements have been discussed with WSA. Households number was obtained from counting HH from an aerial photo. The population figures were calculated using the DWS and Statistics SA population of April 2022. The WSA did agree with household and population figures. Study per settlement needs to be completed to assess population figures more accurately.	Yes	100%	Population figures need to be updated through a settlement survey.	100%	Yes	100%	No	0	No	0	No	0	No	0
1.2 Summary by Settlement Group	Urban and rural figures are accurate. Population and households figures need to be updated with a more accurate study.	Yes	100%	Population figures need to be updated through a settlement survey.	100%	Yes	100%	No	0	No	0	No	0	No	0
1.3 Assessment Score by Settlement Type	The identification of settlement types are adequate. The settlement households are also adequate. But the population figure still need to be assessed in more detail if WSA does not agree with Census 2022 data when published.	Yes	100%	Population figures need to be updated through a settlement survey.	100%	Yes	100%	No	0	No	0	No	0	No	0
1.4 Amenities Summary	Public amenities figures were not available at the WSA - Public amenity figures need to be discussed with health and education departments to ensure a correct number of facilities to ensure correct planning. The backlogs and service levels also need to be confirmed.	Yes	100%	Public amenities figures not available at WSA - Public amenity figures need to be discussed with health and education department	100%	No	0	No	0	No	0	No	0	No	0
Section	Interpret Situation Assessment	Intervention required?	%	Solution description as defined by topic situation assessment	%	Is there an existing project/activity addressing this problem?	%	Does this current listed project/activity address the problem?	%	Project/Activity Approved by Council as part of WSDP database?	%	Approved by the council, in project/activity database and part of 5 yr IDP cycle projects	%	Project/Activity listed in 3 yr MTE cycle	%
Direct Backlog Water	Projects are in place to improve water services of backlog area, but funding is an issue and lack of regional bulk water supply schemes. Too many small rudimentary schemes to backlog situation. Areas that are below RDP level water supply needs to be supplied via new schemes or regional schemes	Yes	100%	Master plan to assess supply to backlog areas needs to be completed, and regional supply needs to be investigated and implemented where feasible. Areas that are below RDP level water supply needs to be supplied via new schemes or regional schemes	100%	Yes	100%	No	0	No	0	No	0	No	0
Direct Backlog Sanitation	There is no proper VIP or sanitation service level asset register to assess backlog situation. There are several new rural expansions without proper planning and assessment regarding basic service provision. There are projects in place each year reducing backlogs. Areas that are below RDP level sanitation supply (VIP) needs to be serviced with either VIPs or waterborne sanitation.	Yes	100%	A proper investigation needs to be completed regarding sanitation provision and backlog reduction. Areas that are below RDP level sanitation supply (VIP) needs to be serviced with either VIPs or waterborne sanitation.	100%	Yes	100%	No	0	No	0	No	0	No	0

Water Services Infrastructure Supply Level Profile	The service levels still need more investigation for a more accurate representation. Using the current service levels, close to half of the households are above RDP level water supply. However, a significant fraction of households is served via water tankers and another fraction is served with water via springs and rivers with no proper schemes. There is thus a large portion of the WSA that is below RDP level water supply which needs to be serviced.	Yes	100%	100%	Areas that are below RDP level water supply needs to be supplied via new schemes or regional schemes	100%	Yes	100%	No	0	No	0	No	0
Water Reliability Profile	The service levels still need more investigation for a more accurate representation. Using the current service levels and reliability profile, the majority of the backlog areas require either infrastructure or where there is a scheme in place a more reliable resource.	Yes	100%	100%	Areas that are below RDP level water supply needs to be supplied via new schemes or regional schemes	100%	Yes	100%	No	0	No	0	No	0
Sanitation Service Infrastructure Supply Level Profile	The service levels still need more investigation for a more accurate representation. Using the current service levels, more than half of the households are above RDP level sanitation supply. However, 35% of the households are served via PIT toilets. There is thus a large portion (35%) of the WSA that is below RDP level sanitation supply which needs to be serviced.	Yes	100%	100%	Areas that are below RDP level sanitation supply (VIP) needs to be serviced with either VIPs or waterborne sanitation.	100%	Yes	100%	No	0	No	0	No	0
Sanitation Reliability Profile	The service levels still need more investigation for a more accurate representation. Using the current service levels and reliability profile, the majority of the backlog areas require the existing PIT toilets to be upgraded to VIPs. Some of the VIP areas are also planned to be upgraded to waterborne	Yes	100%	100%	Areas that are below RDP level sanitation supply (VIP) needs to be serviced with either VIPs or waterborne sanitation.	100%	Yes	100%	No	0	No	0	No	0
Water Services: Education	The service levels of the health and education facilities were based on the service levels identified from the operational meeting with each LM and the UAP data. A detailed study into each of the facilities is however required for a proper assessment of the service levels. Majority of the facilities have inadequate water provision and needs to be addressed.	Yes	100%	100%	The service levels of each of the facilities need to be investigated and assessed. Facilities with backlogs need to be properly serviced.	100%	Yes	100%	No	0	No	0	No	0
Water Services: Health	The service levels of the health and education facilities were based on the service levels identified from the operational meeting with each LM and the UAP data. A detailed study into each of the facilities is however required for a proper assessment of the service levels. Some of the facilities have inadequate water provision and needs to be addressed.	Yes	100%	100%	The service levels of each of the facilities need to be investigated and assessed. Facilities with backlogs need to be properly serviced.	100%	Yes	100%	No	0	No	0	No	0

Sanitation Services: Education	The service levels of the health and education facilities were based on the service levels identified from the operational meeting with each LM and the UAP data. A detailed study into each of the facilities is however required for a proper assessment of the service levels. Some of the facilities have inadequate sanitation provision and needs to be addressed.	Yes	100%	100%	Yes	100%	The service levels of each of the facilities need to be investigated and assessed. Facilities with backlogs need to be properly serviced.	100%	Yes	100%	Yes	100%	No	0	No	0	No	0
Sanitation Services: Health	The service levels of the health and education facilities were based on the service levels identified from the operational meeting with each LM and the UAP data. A detailed study into each of the facilities is however required for a proper assessment of the service levels. Some of the facilities have inadequate sanitation provision and needs to be addressed.	Yes	100%	100%	Yes	100%	The service levels of each of the facilities need to be investigated and assessed. Facilities with backlogs need to be properly serviced.	100%	Yes	100%	Yes	100%	No	0	No	0	No	0
Health and Educational Facilities	The service levels of the health and education facilities were based on the service levels identified from the operational meeting with each LM and the UAP data. A detailed study into each of the facilities is however required for a proper assessment of the service levels. Some of the facilities have inadequate sanitation provision and needs to be addressed.	Yes	100%	100%	Yes	100%	The service levels of each of the facilities need to be investigated and assessed. Facilities with backlogs need to be properly serviced.	100%	Yes	100%	Yes	100%	No	0	No	0	No	0
Section	Interpret Situation Assessment	Intervention Required?	%	%	Solution description as advised by topic specialist assessment	%	Is there an Existing project/activity addressing this problem?	Project Reference	Does this current listed project/activity address the problem totally?	%	Project/Activity Approved by Council as part of WSDP database?	%	Approved by council, in project/activity database and part of 5 yr IDP cycle project	%	Project/Activity listed in 3 yr MTE/PO/Db	%		
3.1 General Information	The WSA has an asset and disaster management plan in place. It does however not have a plan in place to manage untreated effluent. The asset register also needs to be updated to include all the missing schemes and infrastructure.	Yes	100%	100%	The WSA should improve the asset management plan and develop a plan to manage untreated effluent.	100%	No		No	0	No	0	No	0	No	0	No	0
3.2 Operation	The asset register does not include information regarding security incidents and safety inspections performed. The information was discussed with LMs and assumptions were made. Proper assessment of security incidents and safety inspection are required.	Yes	100%	100%	The WSA to do proper assessment of security incidents and safety inspections performed	100%	No		No	0	No	0	No	0	No	0	No	0
3.3 Functionality Observation	Very little to no information was available in the asset register regarding replacement value of the infrastructure. There was also no information available regarding the refurbishment or new development costs. There is also no information regarding the physical condition of the infrastructure and information was provided and assumed based on meetings with operational managers of each LM.	Yes	100%	100%	Proper replacement, refurbishment and new development costs needs to be determined for all the water and sanitation infrastructure in Harry Gwala. There is also a need to determine the general physical condition of the infrastructure.	100%	No		No	0	No	0	No	0	No	0	No	0
3.4 Asset Assessment Spectrum	Data on the age of infrastructure was given to aid in estimating the anticipated lifespan of the infrastructure. Nevertheless, the design of the asset register made it challenging to determine the values with precision.	Yes	100%	100%	The expected lifespan on the infrastructure should be determined based on the age and the condition of the infrastructure.	100%	No		No	0	No	0	No	0	No	0	No	0

3.5 Water and Sanitation schemes	There are several rudimentary schemes in HGDM. There should, however, be more regional schemes implemented as the maintenance and sustainability of the rudimentary schemes are difficult, and several of the schemes are not operating as they should. Some of the treatment works also do not have green and blue drop reports and should be addressed.	Yes	100%	Investigate and implement more regional water and sanitation schemes. blue and green drop reports should be done for outstanding treatment works	100%	No	0%	Project Reference	Does this current listed project/activity address the problem?	Project/Activity Approved by Council as part of WSDP Database?	Approved by the council, in project/activity database and part of 5 yr IDP cycle projects	No	0	No	0	Project/Activity listed in 3 yr MTEFS cycle	0
Solution	Interpret Situation Assessment	Intervention required?	%	Solution description as defined by topic situation assessment	%	Is there an existing project/activity addressing this problem?	%	Project Reference	Does this current listed project/activity address the problem?	Project/Activity Approved by Council as part of WSDP Database?	Approved by the council, in project/activity database and part of 5 yr IDP cycle projects	No	0	No	0	Project/Activity listed in 3 yr MTEFS cycle	%
4.1 Operation & Maintenance Plan	There is currently an operation and maintenance plan in place. The plan should, however, be improved and implemented. The plan is currently not implemented as it should, mainly due to budget constraints.	Yes	100%	The WSA to develop and implement an improved Operation and Maintenance Plan	100%	No	0		No	No	No	No	0	No	0		0
4.1.1 Is There an Operation and Maintenance Plan?	There is currently an operation and maintenance plan in place. The plan should, however, be improved and implemented. The plan is currently not implemented as it should, mainly due to budget constraints.	Yes	100%	The WSA to develop and implement an improved Operation and Maintenance Plan	100%	No	0		No	No	No	No	0	No	0		0
4.2 Resources	The main concern in terms of resources to the WSA in terms of all its infrastructure is budget. The WSA doesn't have enough budget to operate and maintain its infrastructure. After the budget, the WSA has issues regarding the amount of staff and spare parts, which is again linked to the budget.	Yes	100%	Develop and implement an operation and maintenance plan for the effective operation and maintenance of assets. Improved budgets should be allocated to improve O&M.	100%	No	0		No	No	No	No	0	No	0		0
4.3 Information	According to the WSA, there are very little to no AS-built information available regarding the infrastructure. The relevant as-builts should be collected from the consultants and surveys should be completed where necessary. There is an asset register in place but should also be updated. Several of the schemes infrastructures is not included in the current asset register. There is sufficient information available regarding the tools and equipment, and there are manuals and safety plans	Yes	100%	Develop and implement an operation and maintenance plan for the effective operation and maintenance of assets. Collect all as-builts from consultants regarding infrastructure and survey where required. The asset register needs to be updated, and all the missing infrastructure should be included.	100%	No	0		No	No	No	No	0	No	0		0
4.4 Activity Control & Management	The WSA shows very little compliance with the activity control and management of its infrastructure. The major area of concern is the quality control procedures which are non-existent.	Yes	100%	Develop systems and processes for effective activity control and management (activity control and management)	100%	No	0		No	No	No	No	0	No	0		0

5.1 Reducing unaccounted water inefficiencies	The WSA stated that there is only partial metering taking place in the WSA, mainly in urban areas where there are proper house or yard connection. The rural schemes have no metering, which is a big issue especially in terms of the water balance. There are programmes to improve leaks and un-metered connections but are not sufficient.	Yes	100%	WC&DM Programmes and interventions (reducing unaccounted water and water inefficiencies) to be implemented to ensure compliance by the WSA.	100%	No	0		No	No	No	No	0	No	0		0
Solution	Interpret Situation Assessment	Intervention required?	%	Solution description as defined by topic situation assessment	%	Is there an existing project/activity addressing this problem?	%	Project Reference	Does this current listed project/activity address the problem?	Project/Activity Approved by Council as part of WSDP Database?	Approved by the council, in project/activity database and part of 5 yr IDP cycle projects	No	0	No	0	Project/Activity listed in 3 yr MTEFS cycle	%

5.2 Leak and meter repair programmes.	The WSA stated that there is currently active leak and meter repair programmes in place. There is, however, a need for retrofitting inefficient toilets. There are also several illegal connections (yard connection from communal standpipe) which increases leaking.	Yes	100%	WC&DM Programmes and interventions (Leak and meter repair programmes.) to be implemented to ensure compliance by the WSA.	100%	No	0	No	0	No	0	0	No	0
5.3 Consumer/end -use demand management: Public Information & Education Programmes	There are currently programmes in place for educating schools and communities regarding end use/consumer demand management. The WSA states that these are adequate, but more awareness and education is necessary.	Yes	100%	WC&DM Programmes and interventions (more public awareness and education programmes) to be implemented to ensure compliance by the WSA.	100%	No	0	No	0	No	0	0	No	0
5.4: Conjunctive use of surface - and groundwater	No information was available regarding artificial recharge, and only information on one scheme was available regarding rainwater harvesting. There is thus a need to investigate artificial recharge and rainwater harvesting in the WSA.	Yes	100%	WC&DM Programmes and interventions (artificial recharge and rainwater harvesting investigation and monitoring) to ensure compliance with the WSA.	100%	No	0	No	0	No	0	0	No	0
5.5 Working for Water	Currently, there are no programs in place to remove alien vegetation or to reduce alien vegetation. Alien vegetation is categoric of high water use and should thus be removed. There have been programs in the past, but none are currently in place.	Yes	100%	WC&DM Programmes and interventions (alien vegetation removing programs) to be implemented to ensure compliance by the WSA.	100%	No	0	No	0	No	0	0	No	0
Section	Interprice Situation Assessment	Intervention Required?	%	Solution description as defined by topic situation assessment	%	Is there an Existing project/activity addressing this problem?	%	Does this current listed project/activity address this problem?	%	Project/Activity Approved by Council as part of WSDP Database?	%	Approved by the council, in project/activity database and part of 5 yr top cycle projects	%	Project/activity listed in 3 yr MTE cycle
5.2 Water Balance	The monthly water balances for the local municipalities and district municipality were provided for the 2021/2022 financial year. The data was used to determine the NRW and other water balance components. However, the data did not include information on the volume of ground water and surface water. Upon analysing the water balance spreadsheet, it was apparent that the method of compiling the water balance needs improvement. The water balance also needs to be compiled at a scheme level.	Yes	100%	Implement strategies as contained in NRW report compiled by JOAT. Especially regarding metering of sources and consumers (metering of standpipes etc.)	100%	No	0	No	0	No	0	No	0	0
Section	Interprice Situation Assessment	Intervention Required?	%	Solution description as defined by topic situation assessment	%	Is there an Existing project/activity addressing this problem?	%	Does this current listed project/activity address this problem?	%	Project/Activity Approved by Council as part of WSDP Database?	%	Approved by the council, in project/activity database and part of 5 yr top cycle projects	%	Project/activity listed in 3 yr MTE cycle
6.1.1 Current Water Sources	Limited information was provided on the sources and additional sources available and their volumes and abstraction volumes	Yes	100%	The available sources should be analysed regarding their available abstraction volumes and existing abstraction volumes.	100%	No	0	No	0	No	0	No	0	0

<p>6.1.2 Additional Sources Available</p>	<p>Limited information was provided on the sources and additional sources available and their volumes and abstraction volumes. The IAP completed looked at current and additional sources. There is, however, a need to complete a WSA master plan to identify possible additional sources and assess the current infrastructure in more detail.</p>	<p>Yes</p>	<p>100%</p>	<p>Complete a WSA master plan to assess additional sources</p>	<p>100%</p>	<p>No</p>	<p>0</p>	<p>No</p>	<p>0</p>	<p>No</p>	<p>0</p>
<p>6.2 Monitoring</p>	<p>Information was provided regarding monitoring of sources by the technical staff of the WSA. Monitoring occurs either never or very rarely. No monitoring is done regarding the groundwater sources, and only some of the more formal schemes surface water abstraction is monitored. A need for proper monitoring of the schemes and sources are required. The monitoring of sources is also vital for the water balance.</p>	<p>Yes</p>	<p>100%</p>	<p>A proper source monitoring program needs to be put in place</p>	<p>100%</p>	<p>No</p>	<p>0</p>	<p>No</p>	<p>0</p>	<p>No</p>	<p>0</p>
<p>6.3 Water Quality</p>	<p>The WSA provided information on the water quality. According to the WSA, LW mainly conducts the quality monitoring of the sources (abstraction) and the water that is returned. The WSA does not itself monitor water quality. There is no staff dedicated to water quality and monitoring in the WSA. There is a need to improve quality monitoring in the WSA.</p>	<p>Yes</p>	<p>100%</p>	<p>Proper water quality and water monitoring program needs to be put in place</p>	<p>100%</p>	<p>No</p>	<p>0</p>	<p>No</p>	<p>0</p>	<p>No</p>	<p>0</p>
<p>6.4 Operation</p>	<p>Most of the abstraction points (surface and ground) are registered with the DWS, but in general, they are not recorded. Proper asset management and monitoring of the abstraction points are required.</p>	<p>Yes</p>	<p>100%</p>	<p>Proper asset management and recording/monitoring of all sources are required</p>	<p>100%</p>	<p>No</p>	<p>0</p>	<p>No</p>	<p>0</p>	<p>No</p>	<p>0</p>

**Table F.2: WSDP project list (future) – as per conceptual projects per topic**

WSDP Assumed Project Number	Project Description	Project Main Focus	Intervention Category / Business Element	Intervention Horizon	WSA Priority	Project cost
HGDM_P_1	Investigate socio economics of HGDM	Institutional	Demographics	Immediate solution	High	
HGDM_P_2	Implement and maintain an Asset Register Monitoring Programme	Operation	Operation	Immediate solution	High	
HGDM_P_3	Develop and implement an Operation and Maintenance Plan.	Operation	Operation	Immediate solution	High	
HGDM_P_4	Improve water quality monitoring programme.	Operation	Operation	Immediate solution	High	
HGDM_P_5	Upgrade existing infrastructure and improve wastewater quality monitoring programme.	Operation	Operation	Immediate solution	High	
HGDM_P_6	Investigate existing sources - abstraction volumes	Demand Management	WCDM	Immediate solution	High	
HGDM_P_7	Industrial water users - Implement and develop water quality and use monitoring program	Demand Management	WCDM	Immediate solution	High	
HGDM_P_8	Develop and implement WC&DM Programmes and interventions	Demand Management	WCDM	Immediate solution	High	
HGDM_P_9	Logging at all sources and WWTWs	Demand Management	WCDM	Immediate solution	High	
HGDM_P_10	Bulk meters to be installed in all areas where neighbours are supplied	Demand Management	WCDM	Immediate solution	High	
HGDM_P_11	Investigation and implementation of NRW report solutions to improve NRW and water balance	Demand Management	WCDM	Immediate solution	High	
HGDM_P_12	Investigate water service institutional arrangements - specifically regarding policies, bylaws and regulations and develop and update where applicable	Institutional	Institutional Arrangements	Immediate solution	High	
HGDM_P_13	Formulate internal monitoring and assessment procedures	Operation	Operation	Immediate solution	High	
HGDM_P_14	Develop and implement the performance management and monitoring system.	Operation	Operation	Immediate solution	High	
HGDM_P_15	Improve call centre to handle complaints and incidents better	Operation	Operation	Immediate solution	High	
HGDM_P_16	Settlements/schemes investigation –households, population and service levels	Institutional	Demographics	Immediate solution	High	
HGDM_P_17	Water and sewer masterplans - regional	Operation	Operation	Immediate solution	High	
HGDM_P_18	Water and sewer masterplans – scheme level	Operation	Operation	Immediate solution	High	

**Table F.3: WSDP project list (future) – as per public participation**

To be collated.