



KWAZULU-NATAL
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA



STATE OF WATER, SANITATION & ELECTRICITY IN THE PROVINCE OF KZN

As of the end of AUGUST 2023



CHALLENGES: WATER AND SANITATION “HOT SPOTS” AREAS

❖ The hotspot areas Criteria Factors :

- ❑ % access/households with no service (**Zululand, Mkhanyakude and Harry Gwala**)
- ❑ Service delivery complaints / protests (**Ethekwini, Ugu, Uthukela, Umzinyathi**)
- ❑ Re-instatement of dysfunctional infrastructure/Poor maintenance (**Uthukela, Ethekwini, Ugu**)
- ❑ Areas where demand exceeds, or will exceed, exceed supply (water balance). (All)
- ❑ High Percentage of Non-revenue water (**NRW>55%** **Amajuba, Ethekwini, Ilembe, Umkhanyakude, Newcastle, uMgungundlovu, uThukela**)
- ❑ Water reticulation challenges (**Zululand, Mkhanyakude and Harry Gwala, Uthukela**)
- ❑ WSA technical capacity – MuSSA areas of vulnerability (**<50%** **eThekwini, Ugu, KCDM, Ilembe. Amajuba**)
- ❑ Flood Impacts (**uMgungundlovu, Ilembe, eThekwini, Ugu**)

Other Challenges: Ageing Water Services Infrastructure, Illegal Water Connection, “Over-stressed” system due to increased demand, Vandalism and theft of infrastructure assets



PWMP INTERVENTION 2: WATER RESOURCE MANAGEMENT (STRATEGIC DAMS)

INTERVENTION DAM PROJECT	SCOPE	CAPACITY	TIMEFRAMES	PROGRESS
<p>Cwabeni Dam</p> <p>BUDGET: R1 850m</p>	<p>Cwabeni dam includes spillway, bottom outlet, access bridge, road deviations/access roads and other ancillary works such as river management during construction of cofferdams.</p> <p>Cwabeni abstraction works includes a weir with a fish way, sediment abstraction/ diversion weir accommodating sediments, pumps and pipeline to Cwabeni dam.</p>	<p>Dam Type:Concrete faced rock fill embankment</p> <p>Dam Heights: 47 m</p> <p>Storage Capacity (gross): 15.5 million m³</p>	<p>START: April 2023</p> <p>END: July 2029</p>	<p>Review of the WTP design and Dam Design.</p> <p>The Implementation Plan completed.</p> <p>The IA Agreement submitted to DWS for review. Agreement anticipated to be completed in March 2023.</p> <p>Procurement of PSP has commenced</p>
<p>Stephen Dlamini Dam</p> <p>BUDGET: R750m</p>	<p>The Stephen Dlamini Dam is an earth embankment dam with a storage capacity of 9,78 million m³ and an estimated yield of 3,07 million m³/a (8,41 Mℓ/d) at 98% assurance of supply with the Environmental Water Requirements (EWR)</p>	<p>Dam Type:600m long zoned earth embankment</p> <p>Dam Heights: 29,5m</p> <p>Storage Capacity (gross):9,78 million m³</p>	<p>START: April 2023</p> <p>END: November 2026</p>	<p>Feasibility study and Environmental impact assessment in place.</p> <p>The IA Agreement submitted to DWS for review. Agreement anticipated to be completed in March 2023.</p> <p>Procurement of PSP has commenced</p>
<p>Upper Umkhomazi Water Project: Smithfield Dam</p> <p>BUDGET: R32 000m</p>	<p>The scheme will primarily serve the eThekweni Municipal area and to a lesser extent portions of uMgungundlovu District Municipality. Assuming 200 l/person/day, the estimated number of beneficiaries from the anticipated capacity of 625 Ml/day may be 3 125 000 people.</p> <p>The volume of 200 Ml/day from the Midmar System will become available to the UW customers within the Inland Area of supply, (Msunduzi & UMDM).</p>	<p>Dam Type: Concrete faced rock fill embankment</p> <p>Dam Heights: 81 m</p> <p>Storage Capacity (gross): 251 million m³ (FSL:)930 MASL</p>	<p>Dates to be confirmed once Water User Agreements have been signed</p>	<p>Feasibility study and Environmental impact assessment in place.</p> <p>A MFMA Section 33 consultation (60 days) has commenced for all WSAs with the exception of eThekweni Municipality</p>

WATER TREATMENT & BULK WATER SUPPLY SUMMARY

Project name	Name of WSA	Implementing agent	Estimated project cost	Expenditure to date	No of people to benefit	Overall progress	Estimated completion date
Greytown BWS	uMzinyathi	uMzinyathi	R523.4 m	R502.2 m	27 824	92%	To be revised (stopped by community)
Driefontein BWS	uThukela	uThukela	R536.2 m	R397.7 m	204 306	99%	To be revised (contractor not paid by WSA)
Greater Bulwer BWS	Harry Gwala	Harry Gwala	R339.6 m	R353.0 m	113 256	80%	To be revised (AFA pending)
Maphumulo BWS	iLembe	Umgeni Water	R649.9 m	R546.6 m	112 320	76%	Dec 2026
Mandlakazi BWS Phase 5	Zululand	Zululand	R873.1 m	R671.5 m	85 560	61%	May 2029
Middledrift BWS	King Cetshwayo	King Cetshwayo	R290.9 m	R173.5 m	177 576	54%	Apr 2025
Greater Mthonjaneni	King Cetshwayo	King Cetshwayo	R2 025.5 m	R812.7 m	99 612	65%	Jun 2027
Greater Mpofana	uMgungundlovu	Umgeni Water	R954.9 m	R937.1 m	181 590	87%	Nov 2026
uMshwathi BWS	uMgungundlovu & iLembe	Umgeni Water	R2 308.7 m	R1 121.6 m	362 682	50%	Dec 2028

IMPACT OF LOAD SHEDDING ON WATER SUPPLY

- Switching on and off of electricity (due load shedding) has an adverse impact on the functionality of some of the key priority infrastructure like pump stations, water reservoir telemetry systems, waste water treatment works, etc. as such, all the coastal metropolitan municipalities (including eThekweni Metro) have reported sewer spillages discharging to the sea and causing pollution as the results of malfunction of their waste water treatment works facilities and overflows that are being encountered due to damaged assets by load shedding.
- Users of small-scale abstraction schemes (boreholes) may be negatively
- Revenue loss to water treatment facility, reduced operational capacity, increased labour costs and water wastage
- The dynamics puts the municipalities to be in contravention of the National Water Act, 36 of 1998.
- Wastewater treatment plants and sewage pump equipment have become faulty leading to water shortages, sewage pump blockages, and shortages in water supply.
- Chemical dosing may have to be conducted manually as opposed to mechanical dosing

LOAD SHEDDING STAGES	HOURS WITHOUT PUMPING PER DAY (due to loadshedding)	REDUCED PUMPED MEGALITRES DUE TO DOWNTIME PER DAY (out of 23 MI/day)	DURATION TO BUILD OFF-CHANNEL DAM (after it has been depleted)
Stage 6	9hours 30min	18 MI	48 hours
Stage 5	9hours 30min	18 MI	48 hours
Stage 4	7hours 30min	20 MI	24 hours
Stage 3	5hours	21 MI	less than a day
Stage 2	1 hour 30min	minimal impact	minimal impact
Stage 1	1 hour 30min	minimal impact	minimal impact

INTERVENTIONS: COGTA TRANSFERS

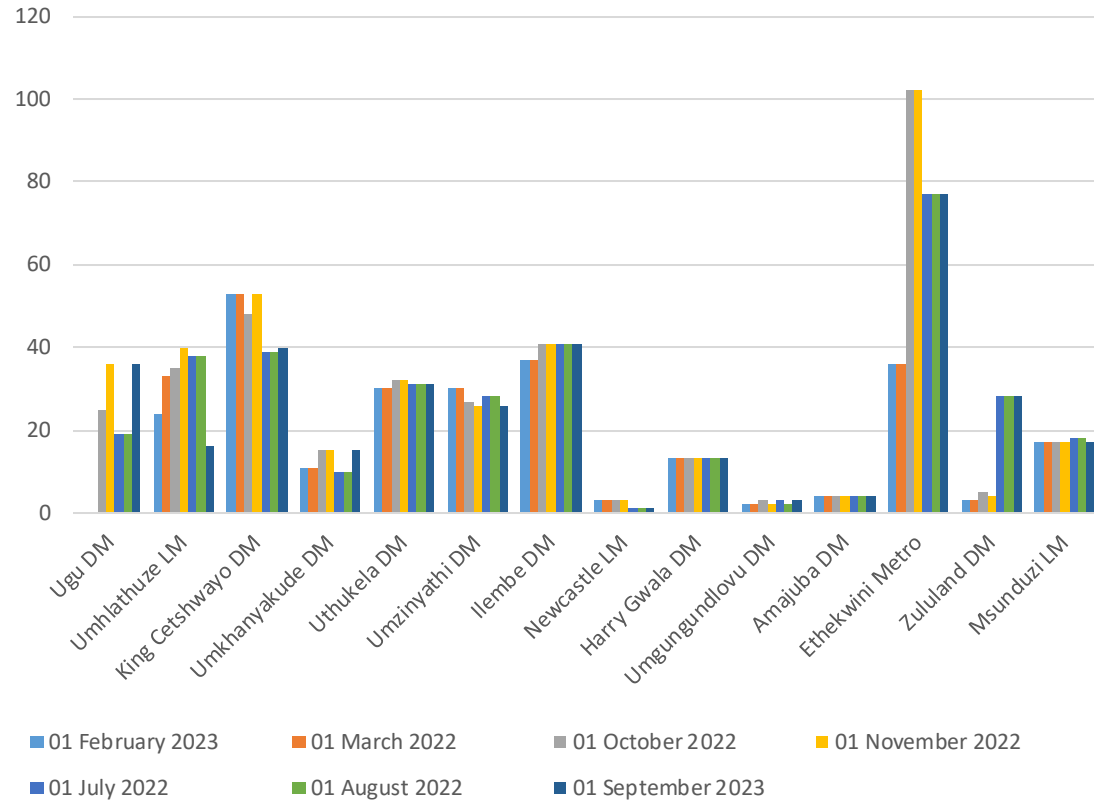
Municipality	Project	Budget	No. Household / Impact
Umzinyathi DM	Drilling of boreholes and installation of hand pumps - 1 st Tranche	R 7.5 million (95% Complete)	Nquthu- 1&4 Mvoti- Ward 11,8,5 Msinga- 8,16 & 1
	Drilling of boreholes and installation of hand pumps - 2nd Tranche	R 4.5 million (40% Complete)	
	Umzinyathi borehole project	R 2 million (35% Complete)	
Ilembe DM	Ilembe borehole project	R 3 million (40% Complete)	Ward 1 - 1997 Ward 2 - 1095 Ward 3 - 2992 Ward 4 – 1304 Ward 7 - 983 Ward 8-1472 Ward 9-1038
	Rehabilitation of Nsuze and Sidumbini Water Treatment Works & Dams Soke Simbone Reticulation Driefontein Pump Station Elevated Tank Reticulation Esidumbini & Nsuze Access Road	R 25 million (96% Complete) (98% Complete) (88% Complete) (98% Complete)	30 000 people will benefit from the project
	Sonkombo water supply scheme project	R 13 million (20% Complete)	Ward 3 - 100 Ward 10 - 50 Ward 11 - 1495 Ward 12 - 171
Zululand DM	Abaqulusi borehole programme	R 3 million (40% Complete)	Driekart 174 Melzefontein t 92 Tholithemba 79



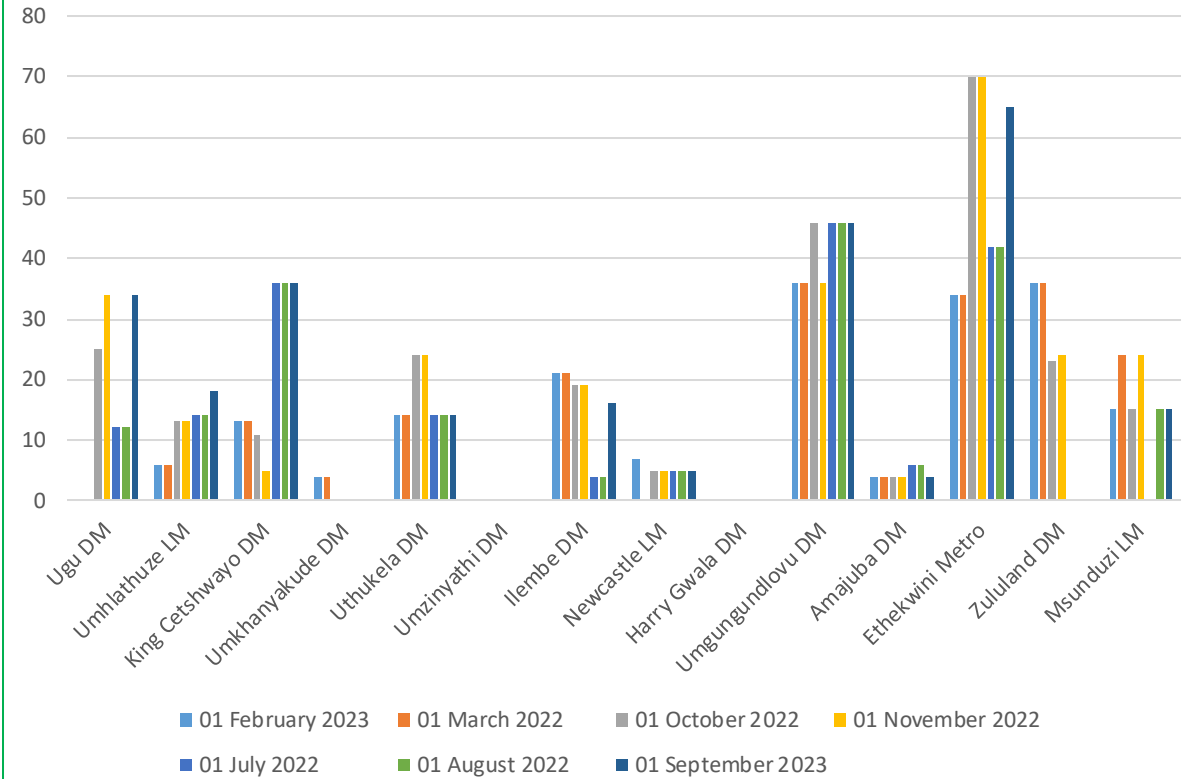
Municipality	Project	Budget	No. Household / Impact
Ugu DM	St Helen's Rock	R 15.3 million (82% Completed)	44450 rural households 62 000 urban households
	Refurbishment of Umthamvuna raw water pump station Phase 2	R 2. 6 million (Awaiting delivery of pump by 9 June)	18108 rural households 1117 urban households
	Purchasing of two water tankers	R 4 million (2x18000Litre trucks Delivered)	Dispatched as and when required to various wards, clinics and schools
Amajuba DM	Eastbourne water reticulation project 1 st Tranche	R 5.1 million (100% Complete)	235 households and a population of 1884 to be serviced
	Eastbourne water reticulation project 2 nd Tranche	R 4.9 million (85% complete)	
Newcastle LM	Refurbishment of Sewer Pumps Newcastle, Ncadu, Ayliff and Tweefontein	R8.7 million (100% complete)	Ayliff – 1131 Ncandu – 4247 Pumpstation1 – 13 468 Pumpstation 2 – 282
Umgungundlovu DM	Sanitation project : VIP toilet units equally divided between the 6 LMs	R 10 million (76% 447 Toilets completed)	590 VIP toilets
	Borehole project in Umshwathi, Impendle and Mpofana	R 10 million (SCM process stage)	Umshwathi - 870 Impendle - 129 Mpofana - 1336



INTERNAL WATER TANKERS



HIRED WATER TANKER



MUNICIPALITY

PROJECT NAME: SUPPORTED BY COGTA

Ugu	Support though CoGTA transfers with two water tankers
Ugu, Zululand, uMzinyathi, Msunduzi, Mgungundlovu	7 (Seven) CoGTA owned water tanker are dispatched to various municipalities for emergency response and reallocated as and when need arises
Ugu, Newcastle, Ethekewini, Ilember	335 static tanks have been allocated to these municipalities to support sustainable water distribution by water tanker to communities

June-2023

100.00%

80.00%

60.00%

40.00%

20.00%

0.00%

JULY

AUG

SEPT

OCT

NOV

DEC

JAN

FEB

MARCH

APRIL

MAY

JUNE

2020/2021

2.07% 11.19% 22.55% 31.90% 39.44% 54.75% 60.15% 67.34% 74.68% 82.17% 88.44% 98.32%

2021/2022

5.09% 16.58% 27.33% 36.28% 46.57% 57.52% 61.79% 67.22% 71.75% 79.03% 87.62% 99.41%

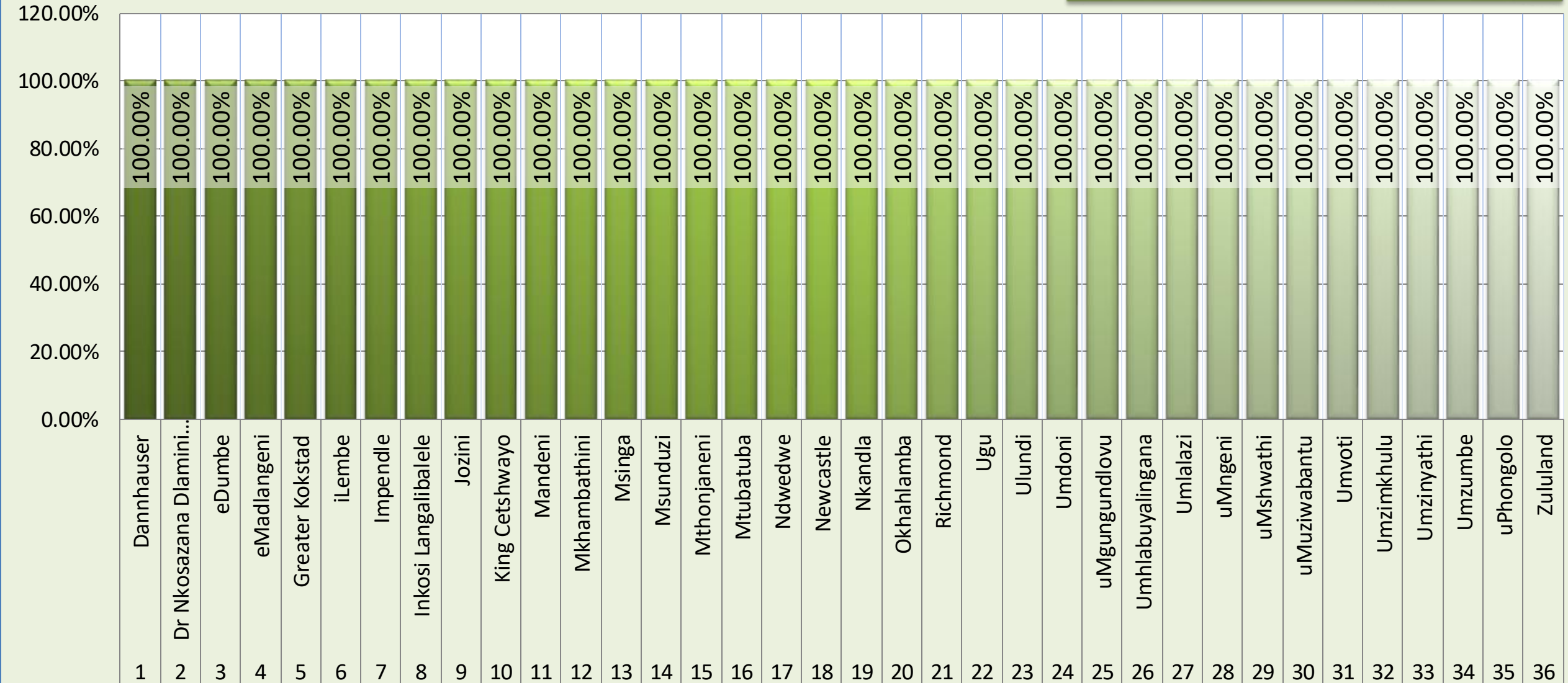
2022/2023

5.02% 12.18% 20.95% 29.85% 38.35% 48.80% 53.79% 58.46% 61.02% 69.42% 78.79% 96.22%

Target

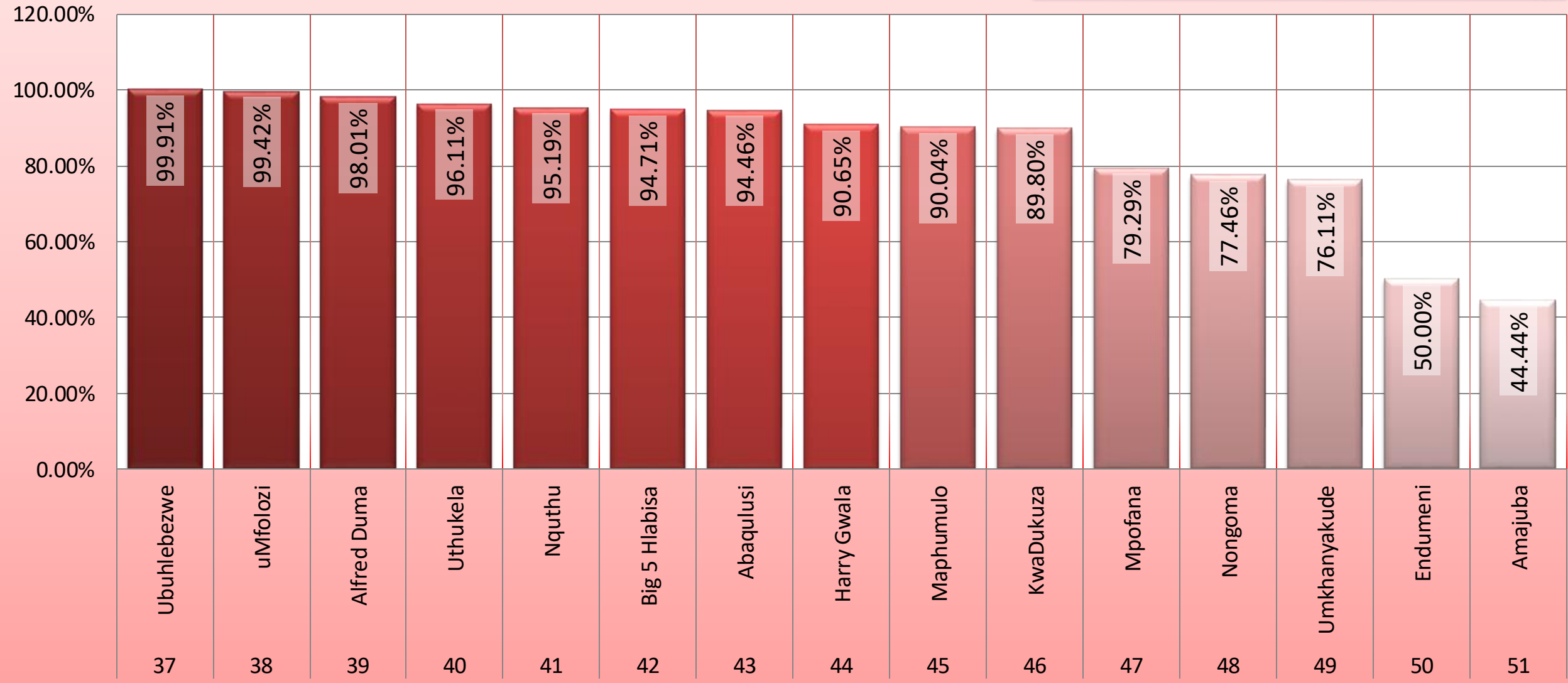
10.00% 20.00% 30.00% 40.00% 50.00% 60.00% 70.00% 80.00% 85.00% 95.00% 100.00% 100.00%

KZN GREEN ZONE 100%



MIG PERFORMANCE AS AT JUNE 2023

KZN RED ZONE BELOW 100%

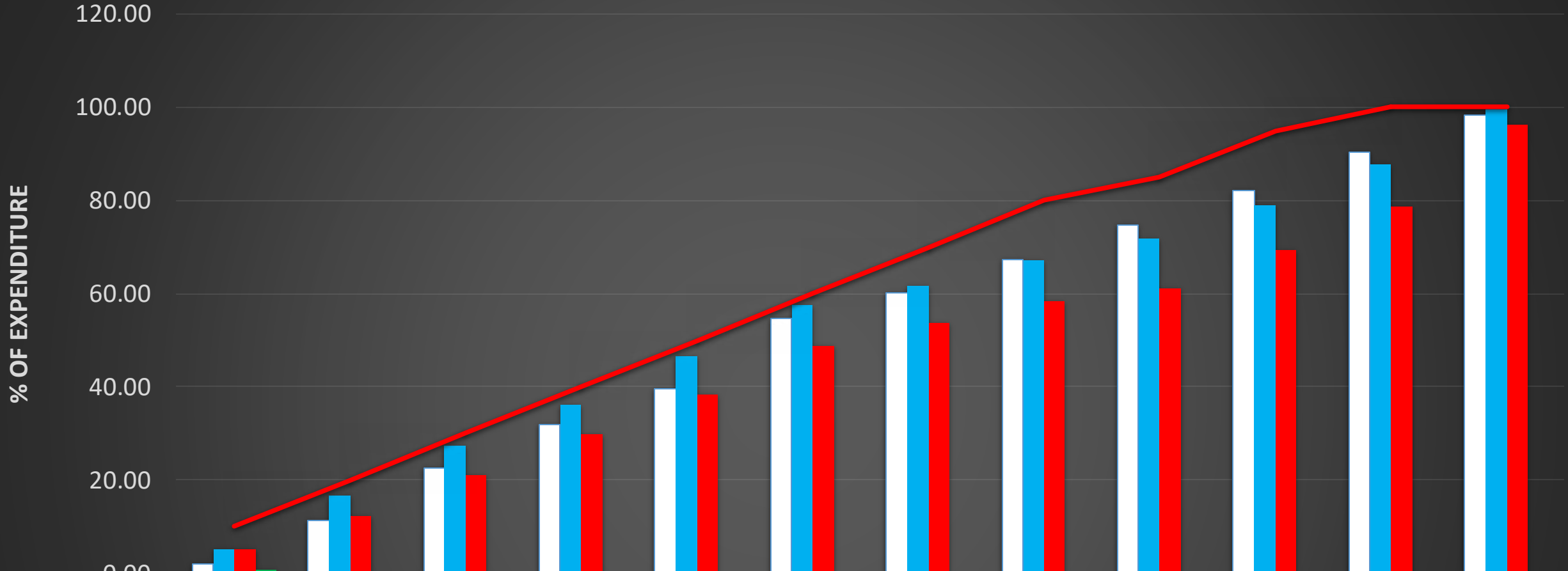


WSIG PERFORMANCE AS AT JUNE 2023

Name of WSA	Initial 2022/2023 Allocation (R'000)	Adjustment (R'000)	Revised 2022/2023 Allocation (R'000)	Expenditure as at 30 June 2023 (R'000)	% Spent on Allocation (%)
Ugu DM	70 000 000	+150 000 000	220 000 000	220 000 000	100,0%
Msunduzi LM	60 000 000	0	60 000 000	59 999 458	100,0%
uMgungundlovu DM	85 600 000	+37 000 000	122 600 000	122 599 991	100,0%
uThukela DM	80 800 000	0	80 800 000	80 800 000	100,0%
uMzinyathi DM	80 000 000	0	80 000 000	80 000 000	100,0%
Newcastle LM	48 000 000	0	48 000 000	48 000 000	100,0%
Amajuba DM	70 000 000	-10 000 000	60 000 000	46 065 001	76,8%
Zululand DM	95 000 000	0	95 000 000	90 202 312	94,9%
uMkhanyakude DM	60 000 000	-60 000 000	The WSA has been put under section 41		
uMhlathuze LM	50 000 000	-13 000 000	37 000 000	34 267 201	92,6%
King Cetshwayo DM	65 000 000	+5 000 000	70 000 000	61 863 380	88,4%
iLembe DM	80 000 000	+20 000 000	100 000 000	90 455 483	90,5%
Harry Gwala DM	95 000 000	-10 000 000	85 000 000	85 000 000	100,0%
TOTAL	939 400 000	+119 000 000	1 058 400 000	1 019 252 826	96,3%

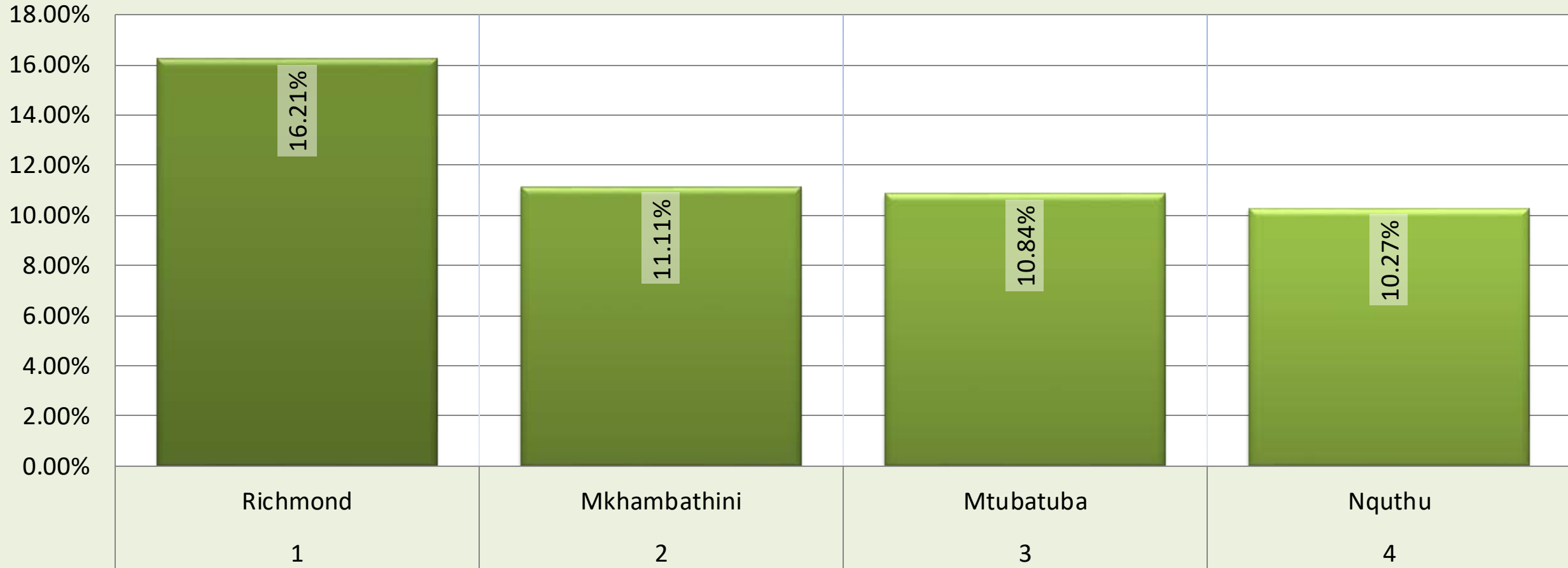
RBIG PERFORMANCE AS AT JUNE 2023

Name of WSA	Initial 2022/2023 Allocation (R'000)	Adjustment (R'000)	Revised 2022/2023 Allocation (R'000)	Expenditure as at 30 June 2023 (R'000)	% Spent on Allocation (%)
King Cetshwayo DM	213 563 000	0	213 563 000	213 420 196	99,9%
Zululand DM	15 247 000	+ 235 000 000	250 247 000	240 015 293	95,9%
Umgeni-uThukela Water	738 673 000	0	738 673 000	253 864 858	34,4%
	967 483 000	235 000 000	1 202 483 000	707 300 347	58,8%



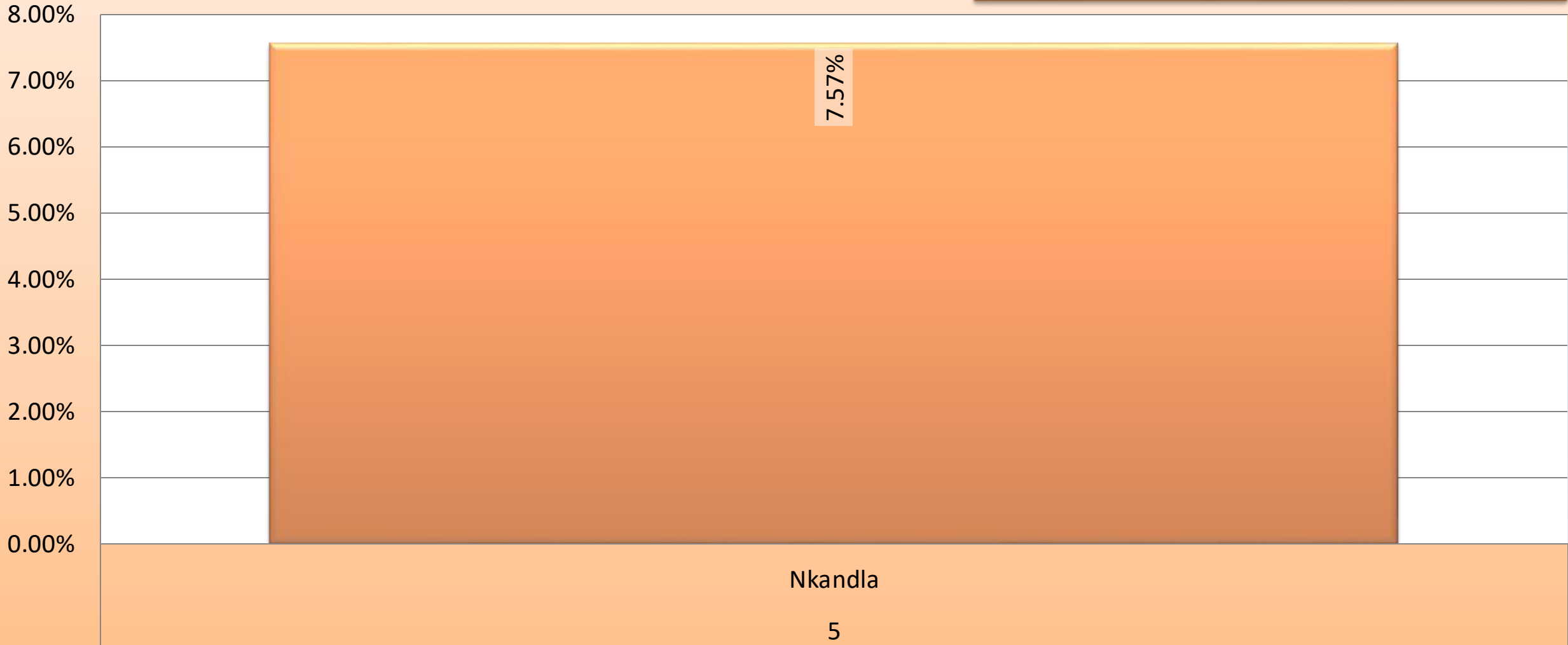
	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MARCH	APRIL	MAY	JUNE
2020/2021	2.07	11.19	22.55	31.90	39.48	54.79	60.19	67.38	74.72	82.17	90.28	98.41
2021/2022	5.06	16.58	27.33	36.28	46.57	57.52	61.79	67.22	71.78	79.04	87.61	99.41
2022/2023	5.02	12.18	20.95	29.85	38.34	48.80	53.75	58.50	61.02	69.42	78.79	96.22
2023/2024	0.69											
Target	10.00	20.00	30.00	40.00	50.00	60.00	70.00	80.00	85.00	95.00	100.00	100.00

KZN GREEN ZONE Above 10%



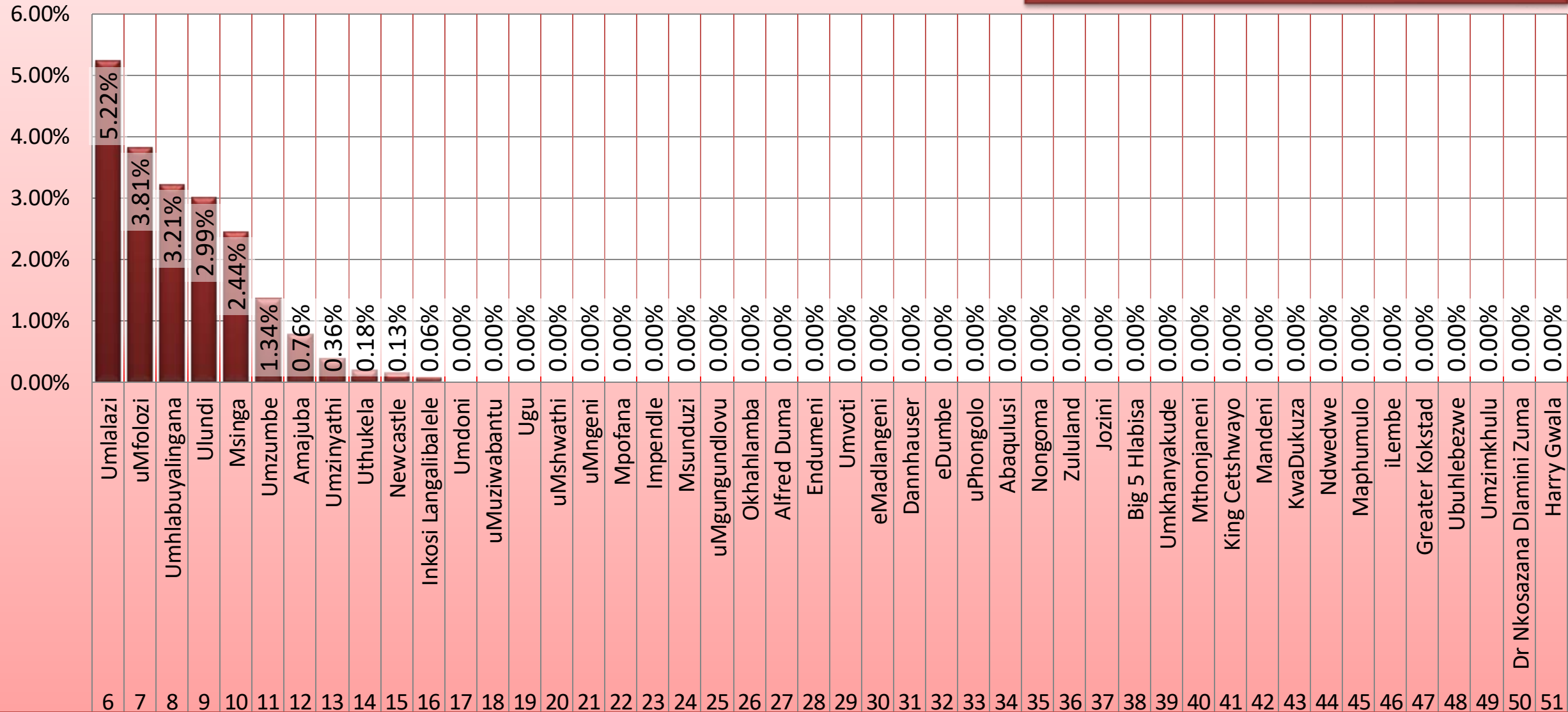
MIG PERFORMANCE AS AT JULY 2023

KZN AMBER ZONE BETWEEN 7-10%



MIG PERFORMANCE AS AT JULY 2023

KZN RED ZONE BELOW 7%



WSIG PERFORMANCE AS AT JULY 2023

Name of WSA	2023/2024 Allocation (R'000)	Amount Transferred (R'000)	Expenditure as at 31 July 2023 (R'000)	% Spent on Allocation (%)
Ugu DM	150 000 000	60 000 000	0	0,0%
Msunduzi LM	50 000 000	16 000 000	602 250	1,2%
uMgungundlovu DM	90 650 000	36 20 000	3 993 927	4,4%
uThukela DM	85 000 000	34 000 000	18 677 942	22,0%
uMzinyathi DM	50 001 000	27 000 000	0	0,0%
Newcastle LM	50 000 000	20 000 000	3 567 456	7,1%
Amajuba DM	50 000 000	28 600 000	0	0,0%
Zululand DM	100 000 000	40 000 000	8 708 345	8,7%
uMhlathuze LM	55 000 000	22 000 000	0	0,0%
King Cetshwayo DM	60 000 000	43 000 000	2 547 976	4,2%
iLembe DM	100 000 000	40 000 000	215 165	0,2%
Harry Gwala DM	100 000 000	40 000 000	10 799 682	10,8%
TOTAL	940 651 000	406 860 000	49 112 743	5,2%

RBIG PERFORMANCE AS AT JULY 2023

Name of WSA	2023/2024 Allocation (R'000)	Amount Transferred (R'000)	Expenditure as at 31 July 2023 (R'000)	% Spent on Allocation (%)
King Cetshwayo DM	240 312 000	85 000 000	5 051 819	2,1%
Zululand DM	430 905 000	150 000 000	2 116 417	0,5%
Umgeni-uThukela Water	838 723 000	0	0	0%
	1 509 940 000	235 800 000	7 168 236	0,5%

CHALLENGES & ELECTRICITY HOTSPOTS AREAS

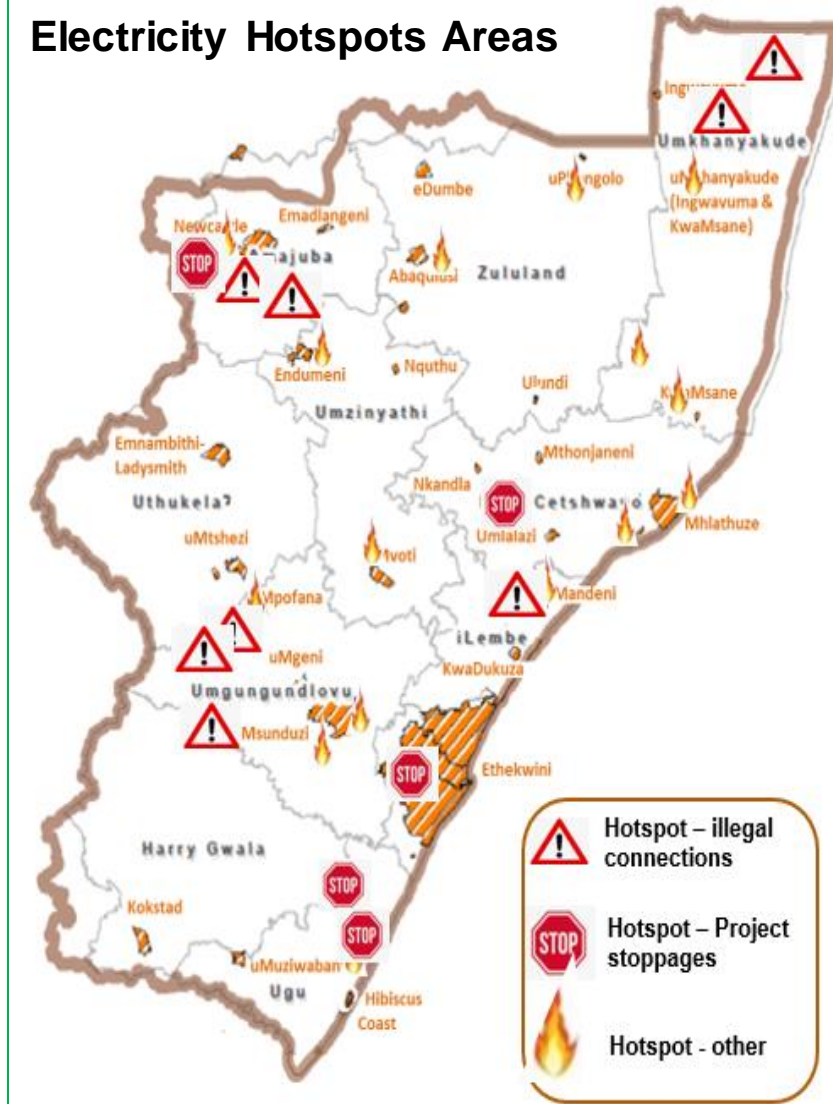
Challenges

- ❑ **Project stoppages**
 - employment demands from the communities
 - 30% demand of work by local SMMEs
 - Crime and hi-jacking of contractor employees, .
 - Theft of materials on sites and vandalism of new infrastructure.
- ❑ **Domestic/Commercial Areas** –Illegal connections leading to Load Reduction
- ❑ **Load Shedding** - Lack of Energy Security
- ❑ **Financial Sustainability** - Licensed Electricity Distributors

❖ Criteria Factors Used :

- % access to electricity
- Service delivery complaints / protests
- Ageing infrastructure – networks & mini-substations
 - ⚡ Conditional Assessment of LED's infrastructure
 - ⚡ Non-compliance with NERSA condition license on maintenance and repairs
- Longer electricity supply outages
- Reliability projects– Electrification infrastructure substations required to split longer MV networks
- Transmission Bulk infrastructure projects
- Illegal connections - Overloading MV/LV transformers leaving to explosions
- INEP programme and CoGTA massification projects
- Project stoppages due to business forums/community demands
- Zero-paying customers – meter bypasses
- LED's professional capacity – engineers and technicians

Electricity Hotspots Areas



KZN PROVINCIAL ENERGY WAR ROOM STRUCTURE

Directing and overseeing the implementation of the KZN Government's urgent action to relieve both the immediate impacts of load shedding and its medium to long term energy strategy

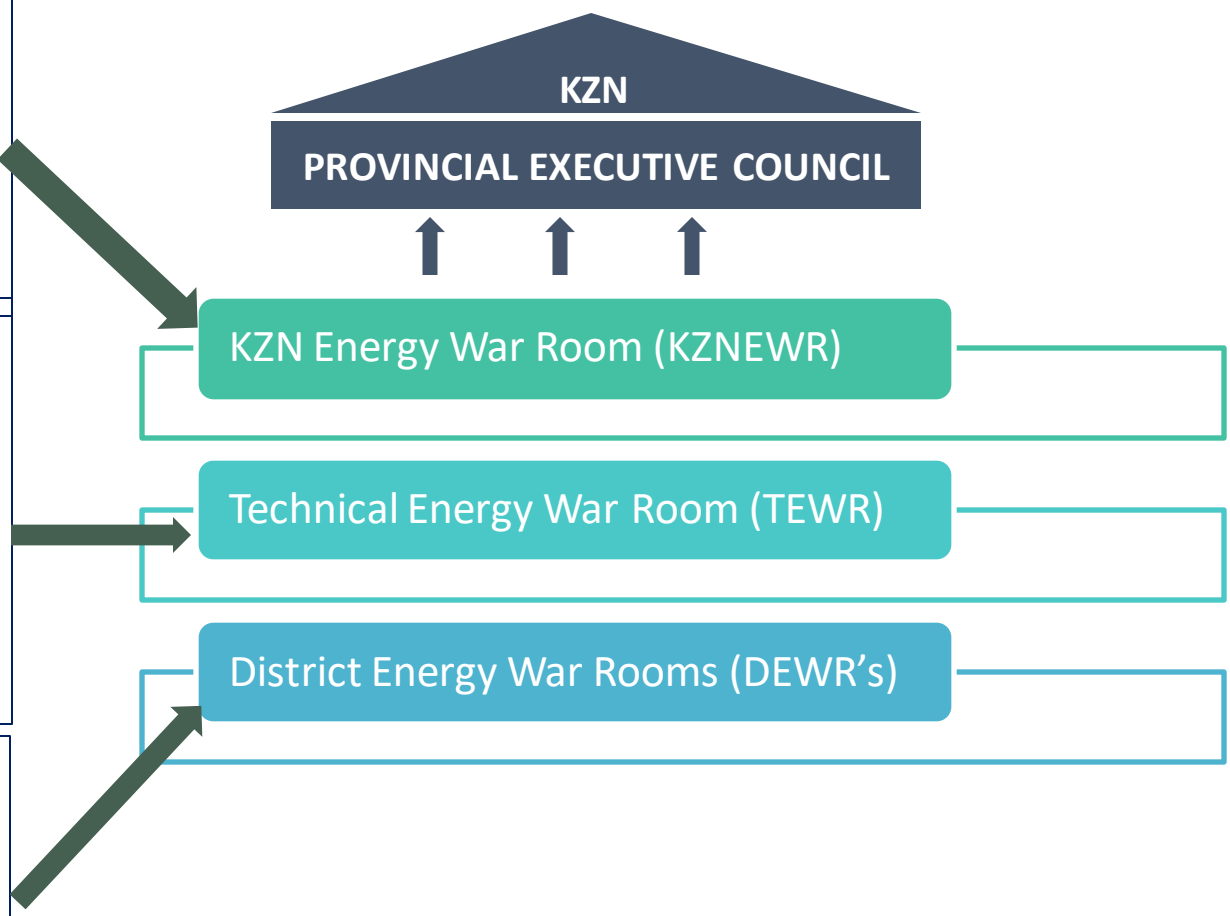
Chaired by the Premier, Deputy Chair MEC CoGTA

Unblocking any departmental issues & facilitating capacity where needed, providing technical support to KZN Energy War Room and serves as a 'caucus' so that all HODs are aligned as best possible before a KZN Energy War Room

Chaired by the DG OTP and HOD COGTA as Deputy chair

District Energy War rooms discussion short term to medium-long terms interventions, implementation plans and submissions to KZNEWR

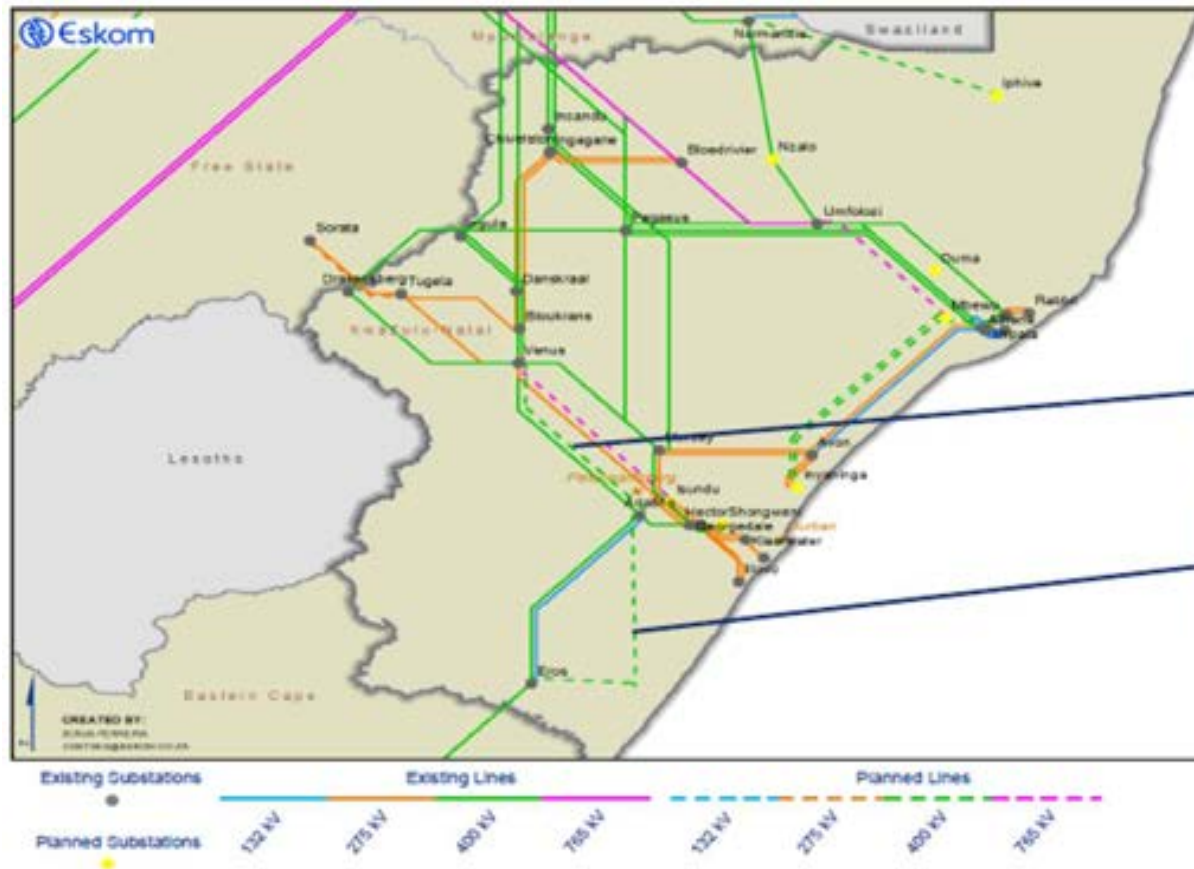
Chaired by HOD Champion and District MM as Deputy Chair



Energy Task Team & Energy Experts
To support war rooms with specialized skills

ESKOM TRANSMISSION BULK PROJECT PROGRESS

Scheme	Project	Expected Completion Year	Cost Estimate
Ariadne – Venus 2 nd 400 kV Line	<ul style="list-style-type: none"> Ariadne – Venus 2nd 400 kV line (recycle Georgedale – Venus 1 or 2 275 kV line) 	2023	R1,1bn



**Pinetown
Strengthening: Ariadne-
Venus 400 kV Line 2**

**South Coast
Strengthening: Ariadne-
Eros 400 kV Line 2**

- ### Electricity War Room meetings
- Coordination by CoGTA Service Provider (Etilweni)
 - Membership: Eskom Tx, Eskom Dx, CoGTA, SAPS, Msunduzi Leadership, Msunduzi LM Electricity, Mpofana Leadership
 - Bulk Infrastructure Project spans from Richmond, Msunduzi, Mngeni, Mpofana to iNkosi Langa Libalele local municipalities, completed in August 2023

KZN ELECTRIFICATION BACKLOG

KZN ACCESS TO ELECTRICITY STATUS

Municipality Name	Total Households	Estimated Number of Connections (without)	% (without electricity)	% (with electricity)	% Provincial Backlog	Cost to Eradicate Backlog
uGu DM	181 817	19 962	10,98%	89,02%	17,71%	R399 240 000
uMgungundlovu DM	317 950	21 785	6,85%	93,15%	19,33%	R435 700 000
uThukela DM	170 640	3 005	1,76%	98,24%	2,67%	R60 100 000
uMzinyathi DM	133 630	12 080	9,04%	90,96%	10,72%	R241 600 000
Amajuba DM	120 923	4 268	3,53%	96,47%	3,79%	R85 360 000
Zululand DM	190 973	10 988	5,75%	94,25%	9,75%	R219 760 000
uMkhanyakude DM	165 077	25 800	15,63%	84,37%	22,89%	R516 000 000
King Cetshwayo DM	239 499	4 182	1,75%	98,25%	3,71%	R83 640 000
iLembe DM	211 590	5 949	2,81%	97,19%	5,28%	R118 980 000
Harry Gwala DM	125 061	4 685	3,75%	96,25%	4,16%	R93 700 000
eThekwini						
TOTAL	1 857 160	112 704	6,07%	93,93%	100,00%	R2 254 080 000

HOTSPOTS AREAS – ILLEGAL CONNECTIONS

- ❖ An electricity connection is considered illegal when it is made to the utility's network without utility's permission.
- ❖ Examples are connecting to a mini-substation or overhead pole.
- ❖ Doing this poses great risk as it overloads the system, which often causes the power connection to trip or fail, meaning no one in the area would have electricity. It can also cause a fire.
- ❖ Illegal connections are the common causes of transformer overloads and pose a significant safety threat to the most vulnerable members of the society who are innocent children.

Safety Tips

- ❖ Avoid connecting electricity illegally.
- ❖ Only authorized Eskom/municipality personnel or qualified electricians may connect electricity and with permission from utility.



LEADING TO

❖ Cause damages to electricity infrastructure

❖ Financial losses to Eskom/LED

❖ Electrocution because such connections are usually unsafely constructed and no protection

❖ Load reduction applied as the last resort

COGTA ELECTRIFICATION INTERVENTIONS

MUNIC	AMOUNT	PROJECT NAME	PROGRESS
Mzumbe LM	R 10 000, 000	Siphofu Electrification Project (Ward 12)	<ul style="list-style-type: none"> ○ A total of 334 households have been energized.
Ray Nkonyeni LM	R 6 000, 000	Mdlozi, Bandlane, Mdlazi, Goqozi, Shoba and Dlovunga Infill Project (Ward 30)	<ul style="list-style-type: none"> ○ Project is at 70% completion ○ Expenditure- R 4 077 166.40 (68%)
eNdumeni LM	R 1, 600, 000	Buyaphile/Fankomo Phase 2 Electrification Project	<ul style="list-style-type: none"> ○ The project is currently on hold.
AbaQulusi LM and Jozini LM	R 35,800, 000	AbaQulusi LM Ward 1, 2,3 & 4 and Jozini Ward 4 Electrification	<p>AbaQulusi projects were completed at the end of July 2022</p> <p>Jozini Project: Project closed, new scope of work to be executed in August 2023</p>
Ndwedwe LM	R 5 000 000	Nsuze, Luthuli/Esdumbini, Ozwathin and Dikwayo electrification	<ul style="list-style-type: none"> ○ Funds transferred in June 2022 ○ Project construction almost complete, close out report expected in June 2023
Msunduzi LM	R 25 000 000	Eastwood 132/11 kV Primary Substation Infrastructure , Building of 132 kV over head lines and refurbishment of 132 kV Eastwood Primary Substation	<ul style="list-style-type: none"> ○ 132kV line cut in and cut out completed <p>Outstanding Work:</p> <ul style="list-style-type: none"> ○ Testing and commissioning

ELECTRICITY HOTSPOT AREAS & FUNDING REQUIREMENTS

Local Municipality	Ward No	Est. No of HH	Critical Unfunded Project Costs
Abaqulusi LM (Dlabe/Tendeka, Mphithiphithi, Kwancinta, Dondolozu, Emhlabaneni areas)	2	169	R7,2m
Newcastle LM (Siyahlala la, Nomandien, Wykom areas)	1, 6, 21, 25	806	R28,8m
uMvoti LM (Kranskop, Ndimakude, Vikandlala areas)	1, 5 & 6	798	R30m
uMzumbe LM	19	564	R27m
Mdoni LM (Alex informal settlement, Kiss-Kiss, Mbetheni)	11	608	R17,5m
Big 5 Hlabisa LM (Ezifundeni, Bazaneni, Ezibayeni, Mayanda, Mgangatho)	4, 8, 9, 10, 11 & 13	625	R25m
Mtubatuba LM (Baswazini, Gunjaneni, Nkombose, Ndlovu village & Shikishela areas)	5, 12, 13, & 18	1235	R50m
TOTAL		4 804	R185.8m

IMPACT OF LOAD SHEDDING ON INFRASTRUCTURE

- The constant load shedding is having an adverse effect on the electricity infrastructure due to constant switching on and off of these sensitive equipment.
- Municipalities are struggling with ageing electricity infrastructure that is dilapidated due to a lack of maintenance, refurbishment and investment on existing infrastructure, making them vulnerable when exposed to constant switching on and off – approximately
- Theft of infrastructure also increases during load shedding as there is no deterrent against stealing the electricity infrastructure when there is no danger of being electrocuted whilst cutting or stealing electricity equipment.
- The failure and stealing of electricity equipment means municipalities must replace these equipment, mostly not budgeted for which affects service delivery on other sectors
- Network equipment not been designed for frequent switching, it affects oil filled equipment, where the risk of breakdown of equipment increases each time it gets switched
- Additional costs for as-and-when-required contractors to assist in repairs of equipment due to load shedding – approximately **R180 000 per day**
- Cable faults increases due to high loads after restoring supply of electricity – approximately **R150 000 to R250 000/day** of load shedding
- Medium voltage switchgear failure – approximately **R50 000 to R150 000/day** of load shedding



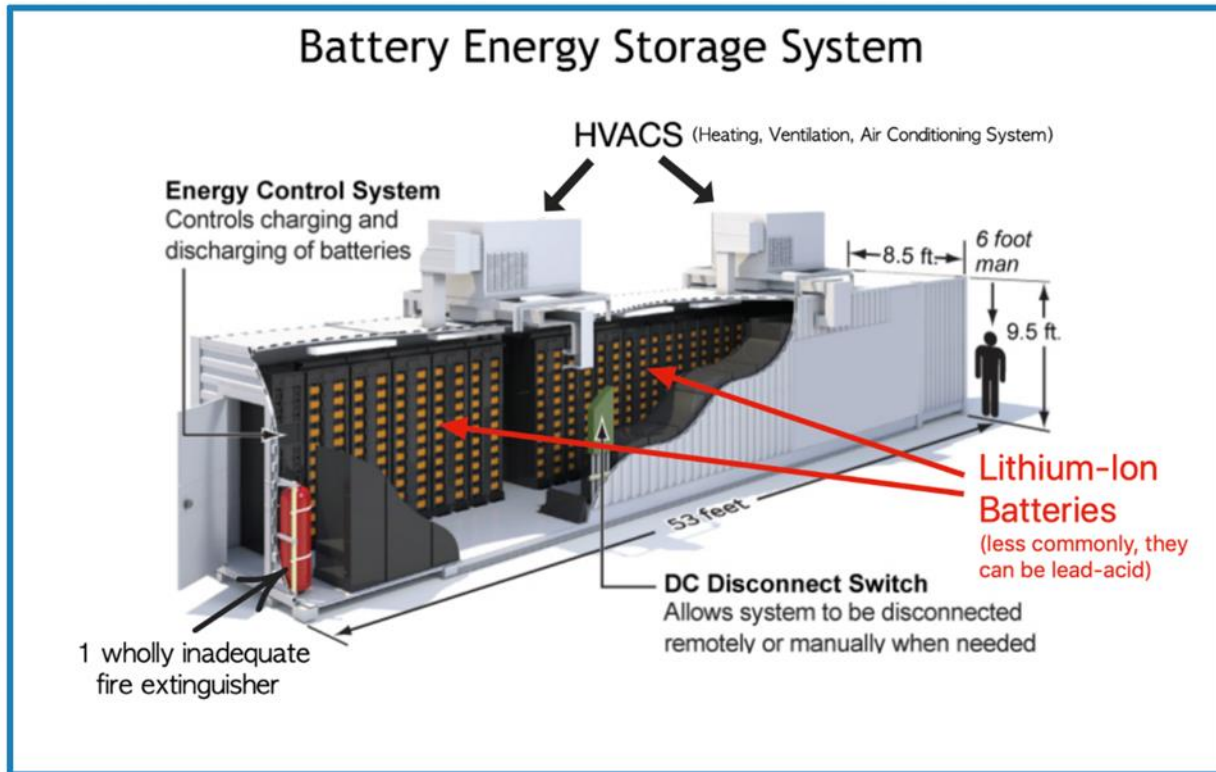
KEY SHORT-MEDIUM TERM STRATEGIES TO REDUCE THE IMPACT OF LOAD SHEDDING

1. Energy Efficiency Demand Side Management

- ❖ Department of Mineral Resources and Energy currently funds municipalities' energy efficiency demand side management (EEDSM) initiatives to reduce electricity consumption.
- ❖ The typical programme runs for a period of three years.
- ❖ The EEDSM programme begins with a comprehensive baseline assessment of the energy consumption of public infrastructure within the participating municipality.
- ❖ The baseline assessment helps the municipality to get a deeper understanding of the potential energy savings that could be achieved through the EEDSM programme.
- ❖ It also assists in the assessment of the estimated cost to retrofit public infrastructures with energy efficient technologies.
- ❖ Based on the assessment and the municipality's proposal, the Department of Mineral Resources and Energy (DMRE), through the EEDSM programme, will offer the municipality a grant (or grants) to finance the planning and implementation of one or more of the following energy efficiency measures:
 - Energy-efficient traffic lights.
 - Energy efficient streetlights and new LED lights on high masts.
 - Energy efficient building lighting, and heating, ventilation and air conditioning (HVAC).
 - Energy efficient water infrastructure and energy efficient wastewater treatment.
- ❖ EEDSM also include municipalities developing and implementing awareness programmes to support minimising of electricity consumption.

KEY SHORT-MEDIUM TERM STRATEGIES TO REDUCE THE IMPACT OF LOAD SHEDDING

2. Battery Energy Storage System



SHORT-MEDIUM TERM STRATEGIES TO REDUCE THE IMPACT OF LOAD SHEDDING

3. Illegal Connections and Non-paying Consumers

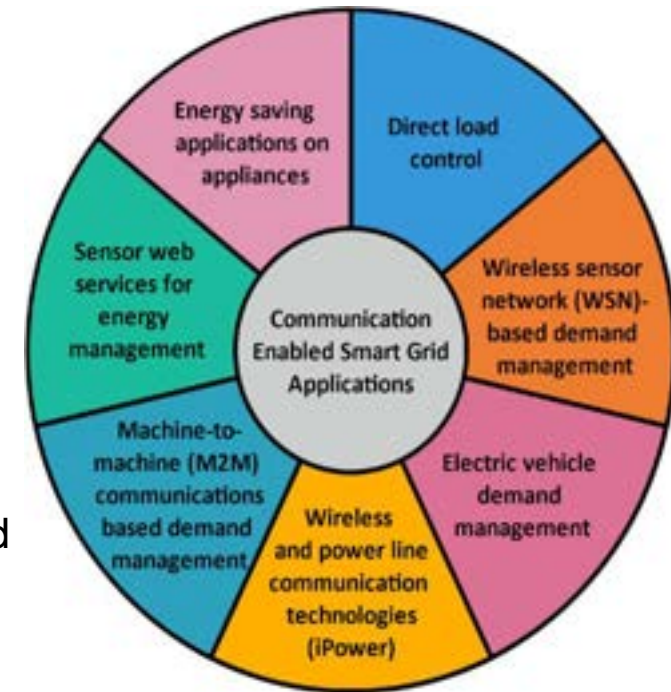
- ❖ Municipalities should ensure the revenue collection is taken seriously by all stakeholders. Non-paying customers increases the non-technical losses on the system whilst negatively affecting municipal revenues.
- ❖ Non-technical losses occur because of electricity used but not paid for through non-paying customers, poor administration with largest component attributed to electricity theft.
- ❖ Non-paying customers also impact negatively the demand required by municipalities from Eskom since they don't pay for electricity and therefore not prone to energy saving.
- ❖ With higher notified maximum demand penalties levied on municipalities by Eskom, it becomes even more imperative that the user pay principle should be strictly adhered to.
- ❖ Municipalities will need all available revenues to maintain or replace the same infrastructure used to supply electricity that could be damaged through load shedding.
- ❖ Municipalities should also ensure that all the customers in their database are accurately billed, and their metering equipment is set according to the agreed tariff with the customers.
- ❖ Meters should be replaced when faulty and not bypassed.
- ❖ Regular meter audits are critical if municipality wants to improve its revenue collection, and these should be also afforded highest priority



SHORT-MEDIUM TERM STRATEGIES TO REDUCE THE IMPACT OF LOAD SHEDDING

4. Intelligent and Smart Load Management

- ❖ Municipalities should consider installing intelligent and smart load management (peak load shifting; load limiting; shedding of non-critical loads and shedding of water heaters)
- ❖ Using smart meters as a form of load control is not widely used in the country but can be very effective in reducing the impact of load shedding and also as a demand side management tool, Smart meters holds the tariff information of the customer and therefore holds the key in understanding when and how the load should be managed.
- ❖ There are three basic methods of load control, the customer themselves acting on a signal, using the meter itself to switch the load or, to use the HAN (Home Area Network) to switch a load remotely.
- ❖ Smart meters also record the amount of load reduced or increased under this load control mechanism at half-hourly intervals to match the way electricity is priced.
- ❖ The use of smart meters as a load sign has advantages for customers, distributors and industry as a whole.
- ❖ .Tough application of smart metering, the distributor is able to:
 - balance supply and demand,
 - Improve security of supply,
 - Reduce expenditure on generation,
 - Help to integrate renewable energy and
 - Reduce expenditure on new distribution networks or the reinforcement of existing.



RECOMMENDATIONS

RECOMMENDED KZN WATER INTERVENTION PROGRAMMES:

- ❖ Funding support to capacitate municipalities for system for more efficient and sustainable operations and monitoring performance (PowerBI, upgrade of MIG-MIS or new O&M/Asset Management systems)
- ❖ Implementing Water tanker reduction programme by accelerating water projects
- ❖ Reprioritization of grants to focus on water and sanitation projects and alignment to PWMP
- ❖ Achieving 100% MIG expenditure and supporting and enhanced monitoring of WSIG/RBIG expenditure
- ❖ Enhanced monitoring of the water war room functionality
- ❖ Curbing high water losses in the province and addressing operation and maintenance budgeting & planning
- ❖ Addressing illegal connections leading to collapse of systems, protests and poor revenue collection by municipality
- ❖ Capacity building programmes to address critical technical skills especially in relation to maintenance and operations of water and waste water infrastructure and professionalization.

THANK YOU

**GROWING
KWAZULU-NATAL
TOGETHER**

ANNEXURES

PWMP INTERVENTION 2: WATER RESOURCE MANAGEMENT (STRATEGIC DAMS)

INTERVENTION DAM PROJECT	SCOPE	CAPACITY	TIMEFRAMES	PROGRESS
<p>Cwabeni Dam</p> <p>BUDGET: R1 850m</p>	<p>Cwabeni dam includes spillway, bottom outlet, access bridge, road deviations/access roads and other ancillary works such as river management during construction of cofferdams.</p> <p>Cwabeni abstraction works includes a weir with a fish way, sediment abstraction/ diversion weir accommodating sediments, pumps and pipeline to Cwabeni dam.</p>	<p>Dam Type:Concrete faced rock fill embankment</p> <p>Dam Heights: 47 m</p> <p>Storage Capacity (gross): 15.5 million m³</p>	<p>START: April 2023</p> <p>END: July 2029</p>	<p>Review of the WTP design and Dam Design.</p> <p>The Implementation Plan completed.</p> <p>The IA Agreement submitted to DWS for review. Agreement anticipated to be completed in March 2023.</p> <p>Procurement of PSP has commenced</p>
<p>Stephen Dlamini Dam</p> <p>BUDGET: R750m</p>	<p>The Stephen Dlamini Dam is an earth embankment dam with a storage capacity of 9,78 million m³ and an estimated yield of 3,07 million m³/a (8,41 Mℓ/d) at 98% assurance of supply with the Environmental Water Requirements (EWR)</p>	<p>Dam Type:600m long zoned earth embankment</p> <p>Dam Heights: 29,5m</p> <p>Storage Capacity (gross):9,78 million m³</p>	<p>START: April 2023</p> <p>END: November 2026</p>	<p>Feasibility study and Environmental impact assessment in place.</p> <p>The IA Agreement submitted to DWS for review. Agreement anticipated to be completed in March 2023.</p> <p>Procurement of PSP has commenced</p>
<p>Upper Umkhomazi Water Project: Smithfield Dam</p> <p>BUDGET: R32 000m</p>	<p>The scheme will primarily serve the eThekweni Municipal area and to a lesser extent portions of uMgungundlovu District Municipality. Assuming 200 l/person/day, the estimated number of beneficiaries from the anticipated capacity of 625 Ml/day may be 3 125 000 people.</p> <p>The volume of 200 Ml/day from the Midmar System will become available to the UW customers within the Inland Area of supply, (Msunduzi & UMDM).</p>	<p>Dam Type: Concrete faced rock fill embankment</p> <p>Dam Heights: 81 m</p> <p>Storage Capacity (gross): 251 million m³ (FSL:)930 MASL</p>	<p>Dates to be confirmed once Water User Agreements have been signed</p>	<p>Feasibility study and Environmental impact assessment in place.</p> <p>A MFMA Section 33 consultation (60 days) has commenced for all WSAs with the exception of eThekweni Municipality</p>

PWMP INTERVENTION 2: WATER TREATMENT & BULK WATER

INTERVENTION	OUTCOME INDICATOR	BASELINE	FIVE YEAR TARGET	ACTION
WATER TREATMENT & BULK WATER SUPPLY	Number of bulk water supply projects completed	New Indicator	Complete 10 Bulk water projects	<p>2021/2022: 10 Projects on the ground (Nongoma Bulk Water Supply) completed in June 2021 in Zululand District and Nongoma Bulk Water Supply in June 2022.</p> <p>Interventions to funding related challenges discussion on intervention 6 under RBIG funding challenges.</p>

PROJECT	SCOPE	IMPACT	DURATION	OVERALL STATUS	PROGRESS/ REASON FOR VARIANCE
<p>Maphumulo Bulk Water Supply Scheme Cost: R649 870 000</p>	<p>Phase 1: Abstraction from the iMvutshane River, raw water pumps, raw water pipeline, 6 MI/day water treatment works, bulk rising and gravity mains to supply the water from the water treatment works into the Ilembe District Municipality's greater Maphumulo area; Phase 2: Construction of iMvutshane Dam; Phase 3: Upgrade of pumps and water treatment plant to 12 MI/day capacity; Phase 4: Construction of weir and abstraction at Hlimbitwe River, raw water pumps and pipelines to convey water into the iMvutshane Dam.</p>	<p>Ilembe DM:18 720 households; Maqumbi, Maphumulo, Masibambisane, Kwasizabantu, Ngcebo, Ashville</p>	<p>March 2016 to Dec 2026</p>	<p>86% Under construction</p>	<p>Phases 1 and 2 are complete. Phase 3 – Upgrade of WTW is at tender stage. Construction anticipated to start in February 2023. Phase 4 - The draft preliminary design for the project is complete and being reviewed.</p>

INTERVENTION 2: WATER TREATMENT & BULK WATER SUPPLY

PROJECT	SCOPE	IMPACT	DURATION	OVERAL STATUS	PROGRESS/ REASON FOR VARIANCE
<p>Greater Mpofana Bulk Water Supply Scheme Cost: R954 948 000</p>	<p>Construction of 15Ml/day WTW with 20Ml/day infrastructure for future upgrade, bulk pipeline from WTW to Bruntville Township, bulk pipeline pipeline from WTW to Nottingham Rd. Construction of bulk pipeline from Nottingham Rd to new reservoir at Bulgowan and extending to Lidgetton and bulk pipeline from Nottingham Rd to new reservoir at Mount West. However, no firm decision made yet whether to implement the phase or not.</p>	<p>Umgungundlovu DM:30 265 Households Bruntville in Mooi River, Vaalekop, Rosetta, Balgowan, Lidgetton</p>	<p>April 2013 to Nov 2026</p>	<p>87% Under construction</p>	<ul style="list-style-type: none"> • Nottingham Road Pipeline completed • Water treatment works is 100% complete. • Pipeline from water treatment works to Bruntville Township is complete and undergoing pressure tests.

PWMP INTERVENTION 2: WATER TREATMENT & BULK WATER

PROJECT	SCOPE	IMPACT	DURATION	OVERAL STATUS	PROGRESS/ REASON FOR VARIANCE
UMshwathi Bulk Water Supply Scheme Cost: R2 308 734 000	Phase 1: Claridge to Wartburg pipeline, pump station and storage reservoir Phase 2: Wartburg to Dalton pipeline, pump station and storage reservoir. Phase 3: Dalton to Ozwathini and Efaye pipelines and pump stations. Phase 4 : Southern Ndwedwe, reservoirs, various pipelines and chambers Phase 5: Ozwathini / Maphumalo, pipelines, reservoirs and chambers	Umgungundlowu DM: 60 447 Households. Wartburg, Dalton Albert Falls, Mpolweni, Swayimana, Trust Feeds, Schroeders, Cool Air, Efaye and Ozwathini	Jun 2013 to Dec 2028	50% Tender stage (Phase 5)	Phases 1, 2 and 3 are 100% complete Phase 4 : pipe supply contract at tender stage Phase 5 : Contract 1 of 3 has been awarded. Contractor working on administrative requirements. Construction anticipated to commence in January 2023
Greytown Bulk Water Supply Scheme Cost: R523 412 969	Phase 1: Raw water main Upgrade of the WTW Phase 2 : Connection of X2 boreholes to supply Kranskop X2 Storage reservoirs (Enhlalakahle & Kranskop), Gravity lines from WTW to Enhlalakahle Abstraction in Craigieburn Upgrade of the WTW from 6MI/day to 13MI/day 2 no. storage reservoirs, 1 no. clear water sump & pump station bulk line from Craigieburn to the WTW	uMzinyathi DM: 27 824 people Households in uMvoti LM	August 2011 – Completion date to be confirmed.	92% Construction stalled by the municipality's failure to come up with co-funding as the RBIG commitment ceiling has been reached.	<ul style="list-style-type: none"> Phase 1: complete Phase 2: Construction of the outstanding components (i.e. section of pipeline from Craigieburn Dam to Greytown WTW and WTW upgrading) has been stalled. The municipality eventually appointed a contractor for the completion of the pipeline, but the contractor has been stopped again by the community from establishing on site.

PWMP INTERVENTION 2: WATER TREATMENT & BULK WATER CONT

PROJECT	SCOPE	IMPACT	DURATION	OVERALL STATUS	PROGRESS/ REASON FOR VARIANCE
Mandlakazi Bulk Water Supply Scheme – Phase 5 Cost: R873 061 493	<ul style="list-style-type: none"> Upgrade Mandlakazi WTW to 30MI/day Bulk mains Reservoirs Pump Stations 	Zululand DM:14260 Households, (9 351 in Hlabisa and 4 909 in Mandlakazi)	January 2015 to May 2029	61% Under construction	Upgrading of water treatment works to 10 ML/day is 100% complete Raw water pipeline is 72% complete Phase 5.1 - Pipelines & reservoirs (central zone) are 96% complete Phase 5.2 – Pipelines & reservoirs (western zone) are 41% complete RBIG commitment ceiling has been reached, and the WSA has applied for additional funding. The application is being assessed by DWS
Greater Bulwer Bulk Water Supply Scheme Cost: R875 053 460	<p>The project comprises of the following :</p> <ul style="list-style-type: none"> Construction of the Stephen Dlamini DAM Construction of the Pump Station Construction of the WTW and Clear Water Reservoir Construction of 110mm, 160mm, 250mm, 315mm, 350mm, 400mm, 550mm Bulk Mains Bulk network to include air valves, isolating valves & scour valves. Bulk meters each supply Zone. 	Harry Gwala DM: 113 256 people living in 23 729 households	Feb 2013 – Completion date to be confirmed.	80% Construction stalled by the municipality's failure to come up with co-funding as the RBIG commitment ceiling has been reached.	RBIG commitment ceiling has been reached. HGDM applied for additional funding. The application was reviewed and HGDM was requested to submit the outstanding information. To date, HGDM has not submitted the outstanding information despite numerous follow ups. The completion date can only be determined from the application for additional funding.

INTERVENTION 2: WATER TREATMENT & BULK WATER SUPPLY

PROJECT	SCOPE	IMPACT	DURATION	OVERALL STATUS	PROGRESS/ REASON FOR VARIANCE
Greater Mthonjaneni Bulk Water Supply Scheme Cost: R2 025 493 879	Phase 1: <ul style="list-style-type: none"> 20ML/day WTW; 10.1 km of 450Ø bulk water pipeline, 3 Booster pump stations; 2 x 250kl Concrete balancing tanks; 1 x 2.5 ML Concrete reservoir at Zimele; 1 x 100kl Concrete reservoir Phase 2: <ul style="list-style-type: none"> Bulk pipelines, storage reservoirs and pump stations 	King Cetshwayo DM:16 602 Households, Mandawe, Mbizo 2, Ncemaneni, Emaqeleni, Isisphezi, KwaMpofu, KwaHlokohloko, Thintumkhaba, Mbizo 1, Mtilombo, Mhlathuzana	August 2007 to June 2027	65% Under construction	Phase 1 : complete Phase 2 consist of the following : KwaHlokohloko SSA1 pump stations PS1 & PS2 are 100% complete and commissioned KwaHlokohloko SSA1 Phase 2a&b in tender stage Mthonjaneni SSA2 Phase 1a&b in tender stage
Middledrift Bulk Water Supply Scheme Cost: R290 895 420	<ul style="list-style-type: none"> 4 pump stations 9.4 km rising mains 31.9 km gravity mains 2 concrete reservoirs 8 steel reservoirs 	King Cetshwayo DM: 29 596 Households, Entumeni, Nkandla	May 2011 to April 2025	54% Under construction	<ul style="list-style-type: none"> Overall project is 56% complete - 20 MI/day Middledrift WTW is 100% complete - SSA 5: Bulk water pipelines, pump stations and reservoirs 95% complete. - SSA 3: Bulk pipeline 200mm diameter is 52% complete

PWMP INTERVENTION 2: WATER TREATMENT & BULK WATER

PROJECT	SCOPE	IMPACT	DURATION	OVERALL STATUS	PROGRESS/ REASON FOR VARIANCE
Driefontein Indaka Bulk Water Supply Scheme Cost: R397 742 111	<p>The project comprises of the following :</p> <ul style="list-style-type: none"> - Development of infrastructure to ensure the provision of potable bulk water supply from the Observation Hill reservoir in Ladysmith to the Driefontein Complex, consisting of; <ul style="list-style-type: none"> • 5 MI reservoir at a strategic location at Hobsland • A 10 km bulk water feeder main linking the two said reservoirs • Eastern and western bulk water feeder mains • Bulk water supply water pipeline from Hobsland Reservoir to Indaka 	uThukela DM: 204,306 People in Indaka	Jan 2011 – Completion date to be confirmed.	99% Construction stalled by the municipality's failure to come up with co-funding as the RBIG commitment ceiling has been reached.	<ul style="list-style-type: none"> • 5MI Hobsland Reservoir complete • Eastern Bulk Water Feeder main complete • Western Bulk Water Feeder main complete • Construction of bulk water supply pipeline from Matiwanoskop to Nkunzi is 99% complete. Contractor abandoned site citing non-payment by uThukela DM • The R6 090 000 allocation for 2021/22 was withdrawn because the municipality had received this amount in 2020/21 as an advance.

MIG-FUNDED WATER PROJECTS FOR 2023/24

MUNICIPALITY	PROJECT NAME	PROJECT STATUS	TOTAL PROJECT COST
Harry Gwala	Greater Summerfield Water Project	Construct. 60%	R 199 192 776,68
Harry Gwala	Highflats Town Bulk Water Supply Scheme	Design & Tender	R 33 369 810,00
Msunduzi	Copesville Reservoir and Pump Station Scheme (AFA) MIS 429173	Construct. 60%	R 116 455 117,00
Msunduzi	Non-Revenue Water Reduction Programme Ph 2 (AFA) MIS 205015	Construct. 80%	R 236 633 586,00
Umgungundlovu	Upgrading of the Nkanyezini Community Water Supply Scheme (AFA) MIS 306637	Construct. 20%	R 149 347 481,00
Zululand	Khambi RWSS Water Supply (AFA) MIS 193842	Completed	R 74 807 993,00
Zululand	Hlahlindlela/ Mondlo Regional Water Supply	Completed	R 167 579 680,00
Zululand	Gumbi Emergency Water Supply	Completed	R 26 464 362,00
Zululand	Usuthu Regional Water Supply Scheme Phase 05	Construct. 80%	R 665 847 909,96
Zululand	Simdlangentsha East Water Supply - Phase 2 (AFA) MIS 419583	Practical Completion	R 122 054 260,08
Zululand	Simdlangentsha Central Water Supply Project: Phase 3	Construct. 80%	R 148 006 808,34

MIG-FUNDED WATER PROJECTS FOR 2023/24

MUNICIPALITY	PROJECT NAME	PROJECT STATUS	TOTAL PROJECT COST
Zululand	Zululand Rudimentary Water Supply Programme - Phase 4 (AFA) MIS 371574	Practical Completion	R 218 998 225,52
Zululand	Mandlakazi Regional Water Supply - Phase 5	Construct. 20%	R 447 768 410,25
Umkhanyakude	KwaJobe Community Water Supply Scheme (Ntshongwe/Malobeni)	Construct. 60%	R 160 194 178,00
Umkhanyakude	Jozini Regional Community Water Supply Scheme Phase 1A (AFA) MIS 389040	Practical Completion	R 359 857 033,00
King Cetshwayo	Mbonambi CWSS Phase 2 (AFA) MIS 207229	Construct. 80%	R 156 725 350,00
King Cetshwayo	Mpungose 1D Reticulation - Kwahlokohloko SSA2 and SSA3 Water Supply (AFA) MIS 286039	Practical Completion	R 88 630 891,17
King Cetshwayo	Middledrift SSA5 Bulk Water and Reticulation	Construct. 60%	R 208 304 337,00
King Cetshwayo	Goedetrouw Regional Water Scheme - Kwahlokohloko SSA5	Construction	R 157 844 574,30
King Cetshwayo	Kwahlokohloko SSA1 Water	Construct. 20%	R 263 150 511,00
King Cetshwayo	Middledrift SSA3 Water	Design & Tender	R 40 805 279,54
King Cetshwayo	Eshowe SSA1 Bulk Water	Construct. 20%	R 152 282 498,63

MIG-FUNDED WATER PROJECTS FOR 2023/24

MUNICIPALITY	PROJECT NAME	PROJECT STATUS	TOTAL PROJECT COST
King Cetshwayo	Nkandla Vutshini Regional Water Supply (SSA5)	Practical Completion	R 189 341 223,20
King Cetshwayo	Nkandla- Vutshini Water Supply (AFA) MIS 283097	Construction	R 12 420 000,00
Umkhanyakude	Mangzi Star of the Sea Water Project	Construct. 80%	R 173 658 612,00
Ilembe	Macambini Water Supply Project Phase 3 & 3B	Construct. 40%	R 515 495 759,32
Umkhanyakude	Bulkpipeline from Mtubatuba Heights Reservoirs to KwaMsane Reservoirs (AFA) MIS 372734	Construct. 40%	R 13 076 775,51
Amajuba	Goedehoop Bulk Water & Sanitation	Construct. 20%	R 28 251 878,00
Zululand	Zululand Small Water Supply Scheme	Design & Tender	R 12 818 000,00
King Cetshwayo	Greater Mthonjaneni SSA4 Phase 2	Construction	R 43 911 541,46
Umzinyathi	Nquthu Regional Water Supply Scheme	Construct. 60%	R 306 421 812,50
Umkhanyakude	Non – Revenue Water Project Phase 3	Construct. 40%	R 162 760 618,75
Ilembe	Lindelani - Upgrading of Water Reticulation Network - Ward 5	Construct. 40%	R 14 473 437,00

MIG-FUNDED WATER PROJECTS FOR 2023/24

MUNICIPALITY	PROJECT NAME	PROJECT STATUS	TOTAL PROJECT COST
King Cetshwayo	Mhlana Somopho 3C (Upper Nseleni Bulk and Reticulation) Portion 3	Construct. 80%	R 120 977 315,00
Umkhanyakude	Greater Ingwavuma Water Supply Scheme and Local Reticulation of Jozini Ward 1-2	Design & Tender	R 139 773 806,00
Umkhanyakude	Greater Ngwavuma Water Supply	Design & Tender	R 17 285 961,65
Umkhanyakude	Rehabilitaion of the existing uBombo water Scheme (Phase 2)	Registered	R 11 027 333,00
Ilembe	REPRIORITISATION OF MUNICIPAL INFRASTRUCTURE GRANT (MIG) FOR MITIGATING AND RESPONDING TO THE SPREAD - COVID-19	Construct. 40%	R 50 235 000,01
Umzinyathi	Muden Regional Water Supply Scheme Phase 2	Construct. 80%	R 92 698 484,01
Umgungundlovu	Upgrading of the Manyavu Community water supply scheme: Covid-19 projects (Mkhambathini LM)	Construction	R 9 335 419,00
Harry Gwala	Accelerated Water Intervention Programme : Kostad Rising Main (Ward 09) (AFA) MIS 409679	Construction	R 56 227 759,00
Zululand	Simlangentsha West RWSS Phase 3	Construct. 80%	R 500 857 120,01
Zululand	Zululand Rudimentary Water Supply Programme - Phase 5	Construction	R 159 694 096,80
Umzinyathi	Ruigtefontein And Kunene Farm Water Reticulation	Construct. 40%	R 36 763 987,15

MIG-FUNDED WATER PROJECTS FOR 2023/24

MUNICIPALITY	PROJECT NAME	PROJECT STATUS	TOTAL PROJECT COST
Harry Gwala	KwaMay-Theekloof Water Supply Scheme Phase 3	Construction	R 35 007 306,40
Umzinyathi	Nquthu Ward 5 (Ntababomvu, Vuyiza & Mayicentela Villages) Water Scheme	Construction	R 46 208 257,06
Harry Gwala	Raising of Kempdale Dam Wall	Construction	R 6 276 427,00
Umzinyathi	KwaPharafini / Ngcengeni Water Supply Scheme	Design & Tender	R 223 569 258,34
Umzinyathi	Upgrade of Nquthu - Thelezini Water Supply	Construct. 60%	R 137 608 770,00
Umzinyathi	Upgrade of Water supply Infrastructure for Umthembu West Area Phase 2 to 4	Construct. 20%	R 251 739 012,01
UThukela	OKHAHLAMBA WATER SUPPLY SCHEME – WARD 2, 3, 14'	Construct. 40%	R 173 315 081,00
Umgungundlovu	Mpolweni, Thokozani and Claridge Ext. Water Supply Phase 2	Construction	R 261 412 335,70
Ugu	MISTAKE FARM WATER SUPPLY SCHEME (PHASE 2)	Construction	R 52 560 789,36
Ugu	Umzimkhulu Bulk Water Augmentation Scheme - Phase 2	Construction	R 139 752 403,03
Ilembe	Southern Regional Bulk Water and Sanitation Scheme Phase 2	Construction	R 281 365 295,82

MIG-FUNDED WATER PROJECTS FOR 2023/24

MUNICIPALITY	PROJECT NAME	PROJECT STATUS	TOTAL PROJECT COST
Msunduzi	Ncwadi bulk water pipeline - Phase 1	Design & Tender	R 48 943 226,43
Zululand	Upgrading of Ulundi Water Treatment Works : Phase 1	Construct. 40%	R 56 031 353,00
Zululand	Upgrading of Ulundi Water Treatment Works : Phase 2	Design & Tender	R 159 279 945,00
Ugu	Pre-Planning Studies: Upgrading of Umtamvuna Abstraction and Water Treatment Works	Construction	R 4 968 000,00
Newcastle	Pipe Replacement and Upgrade - Phase 2	Construction	R 90 000 000,01
Umgungundlovu	Community water supply to Trustfeed Phase 2 (AFA) MIS 457197	Construction	R 13 647 056,35
Harry Gwala	Khukulela Water Supply Phase 2	Construction	R 42 116 660,27
Uthukela	Upgrade of Bergville Bulk Water supply: Phase 2	Design & Tender	R 113 183 729,05
Ilembe	Ntunjambili Bulk Water Supply Scheme	Construction	R 12 724 313,54
King Cetshwayo	Middledrift SSA5 Water Reticulation: Phase 2	Construction	R 84 155 027,75
Ugu	Refurb of W&S Infra for St Helens Boby WTW Umbngo & Scott WWTW-PHASE1	Construction	R 14 490 941,85
Ugu	Repairs and Refurbishment of uMthamvuna Water Abstraction and Treatment Works: O&M	Construction	R 13 246 329,05

MIG-FUNDED SANITATION PROJECTS FOR 2023/24

MUNICIPALITY	PROJECT NAME	PROJECT STATUS	TOTAL PROJECT COST
Ugu	Umzinto Waste Water Treatment Works and Outfall Sewers Upgrade and Rehabilitation	Construction	R 81 100 000,00
Newcastle	Upgrade of Madadeni Wastewater Treatment Works (AFA) MIS 320834	Construct. 80%	R 137 685 518,00
Harry Gwala	RECTIFICATION & UPGRADE OF FAIRVIEW AND IXOPO TOWN SEWER SYSTEM	Design & Tender	R 74 239 598,00
Msunduzi	Elimination of Conservancy Tanks	Construct. 80%	R 241 158 752,00
Umkhanyakude	Themba lethu Sanitation Project	Construct. 40%	R 100 918 806,75
King Cetshwayo	Nkandla (KZ286) VIP Sanitation Area Business Plan	Construct. 80%	R 112 263 148,00
King Cetshwayo	Umlalazi Rural Sanitation Area Business Plan	Construct. 80%	R 293 453 896,75
Ilembe	Ndwedwe LM Sanitation Master Business Plan	Construct. 60%	R 146 996 597,00
Ilembe	Maphumulo LM Area Business Plan	Construct. 40%	R 204 074 386,00
Zululand	Zululand Rural Sanitation : Phase 2D (AFA) MIS 308608 (AFA) MIS 389829	Construct. 80%	R 289 064 643,72
Ilembe	Southern Bulk Water and Sanitation Scheme	Construct. 20%	R 89 712 000,00
Uqu	Hibiscus Coast Sanitation Project	Construction	R 265 935 769,26

MIG-FUNDED SANITATION PROJECTS FOR 2023/24

MUNICIPALITY	PROJECT NAME	PROJECT STATUS	TOTAL PROJECT COST
King Cetshwayo	Upgrading of Sewage Infrastructure for Eshowe (Upgrade of Water Service of Eshowe)	Practical Completion	R 268 000 000,00
Umgungundlovu	uMngungundlovu District Municipality Toilets Area	Design & Tender	R 221 723 353,80
Ilembe	Kwa –Dukuza Regional waste water treatment works	Design & Tender	R 14 007 724,50
Harry Gwala	Ibisi Sewer Reticulation	Design & Tender	R 20 501 690,45
Harry Gwala	Horseshoe Sanitation Project Phase2 (AFA) MIS 399789	Design & Tender	R 56 396 810,73
Ilembe	Sundumbili Waste Water Treatment Works Addendum 1: Fees to undertake detailed design	Construction	R 3 469 447,01
Ilembe	Frasers Waste Water Treatment Works Upgrade - Planning Phase	Construction	R 8 995 437,00
Newcastle	VILJOENPARK BULK SERVICES (PHASE 2)	Construct. 40%	R 90 400 394,00
Newcastle	Staffordhill Waterbourne Sewage Refurbishment of Toilet Structures (Phase 5)	Construct. 20%	R 93 409 323,31
King Cetshwayo	Upgrade of Sewage Infrastructure for Melmoth Phase 1	Construct. 80%	R 60 810 993,38
Uthukela	Sanitation Coverage in Alfred Duma, Inkosi Langalibalele and Okhahlamba Municipalities	Construct. 60%	R 202 749 572,14
Umkhanyakude	Upgrade of the Hlabisa Town Sanitation System	Design & Tender	R 94 555 799,00

MIG-FUNDED SANITATION PROJECTS FOR 2023/24

MUNICIPALITY	PROJECT NAME	PROJECT STATUS	TOTAL PROJECT COST
Newcastle	Upgrade and Refurbishment of Bulk Sewer Pipeline from Siyahlala-la to Voortrekker Pump station (Ward	Design & Tender	R 33 200 000,00
Umzinyathi	Eradication Of Msinga Sanitation Backlog	Construct. 20%	R 50 096 649,00
iLembe	Mandafarm Waterborne Sanitation - Planning phase (Mandeni Ward 7)	Registered	R 2 718 500,00
Ilembe	Driefontein Housing Sanitation Project - Planning Phase	Construction	R 10 366 543,79
Ilembe	Darnall Sewer Upgrade within Ward 2 of KwaDukuza Municipality	Construction	R 14 828 530,12
Ilembe	Construction of 10 142 Ventilated Pit Toilets within Mandeni Local Municipality	Construction	R 159 574 387,55
Ilembe	Groutville D Sanitation Scheme Phase 2 (Completion)	Construction	R 78 295 868,04
Msunduzi	Sewer Reticulation For Ward 16 And 21 in Edendale	Construction	R 156 576 319,71
Amajuba	Goedehoop Bulk Water and Sanitation Phase 2	Construction	R 63 888 526,00
Ilembe	KwaDukuza Town Bulk Sewer Replacement and Upgrade	Construction	R 202 555 937,90
Ugu	Margate Extension 3 & 7 Sanitation Scheme - Ward 6	Construction	R 109 482 118,86

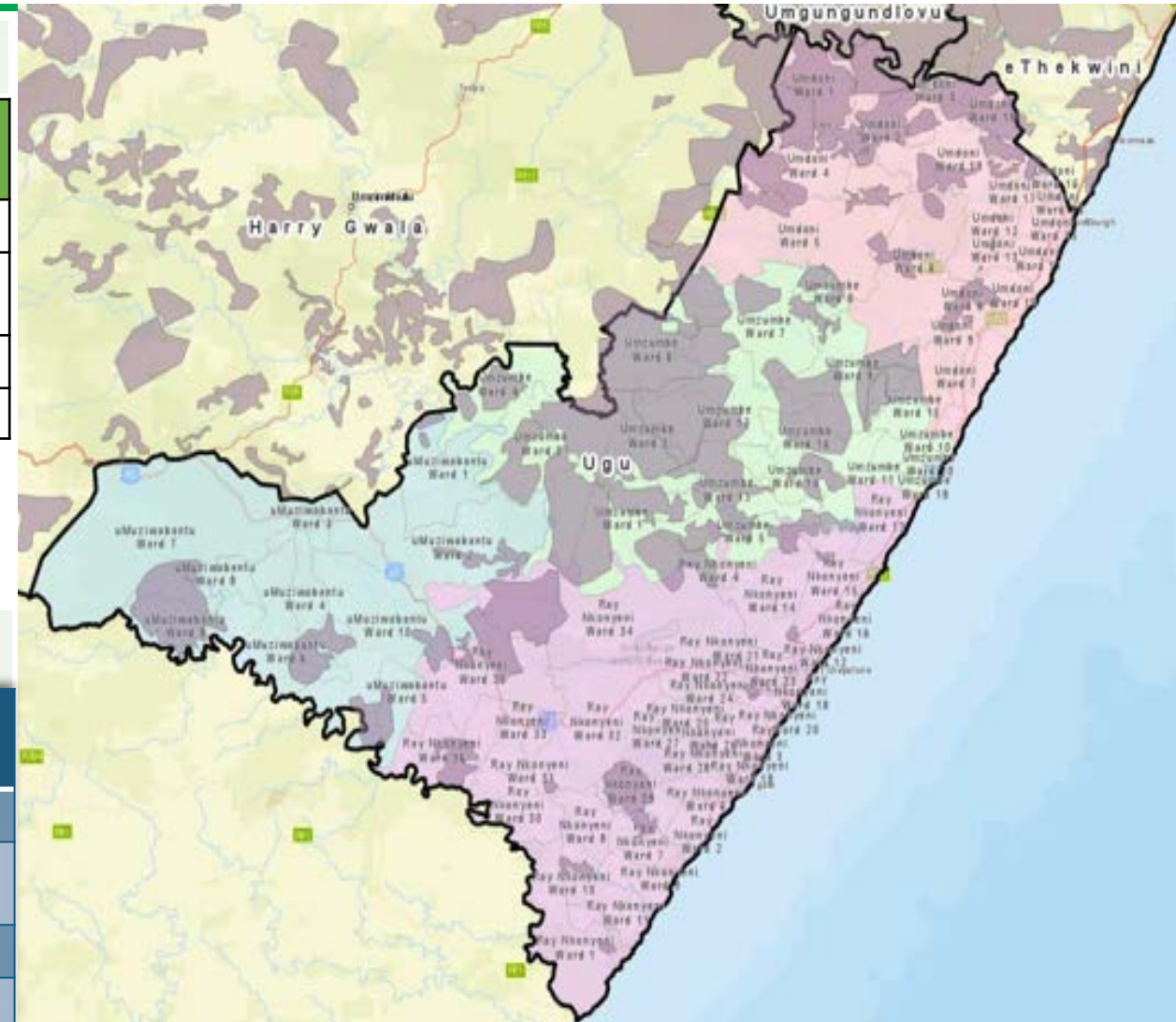
UGU DM ELECTRIFICATION BACKLOG

*Electrification Backlog based on 2019 Desktop exercise

Municipality Name	Estimated Number of Connections	Cost to Eradicate Backlog
uMdoni	16 470	R296 460 000
Ray Nkonyeni	9 531	R171 558 000
uMzambe	686	R12 348 000
TOTAL	26 687	R480 366 000

*Electrification Backlog based on 2023 DMRE EMP

Municipality Name	Estimated Number of Connections	Cost to Eradicate Backlog
uMdoni	12 250	R245 000 000
Ray Nkonyeni	7 161	R143 220 000
uMzambe	551	R11 020 000
TOTAL	19 962	R399 240 000



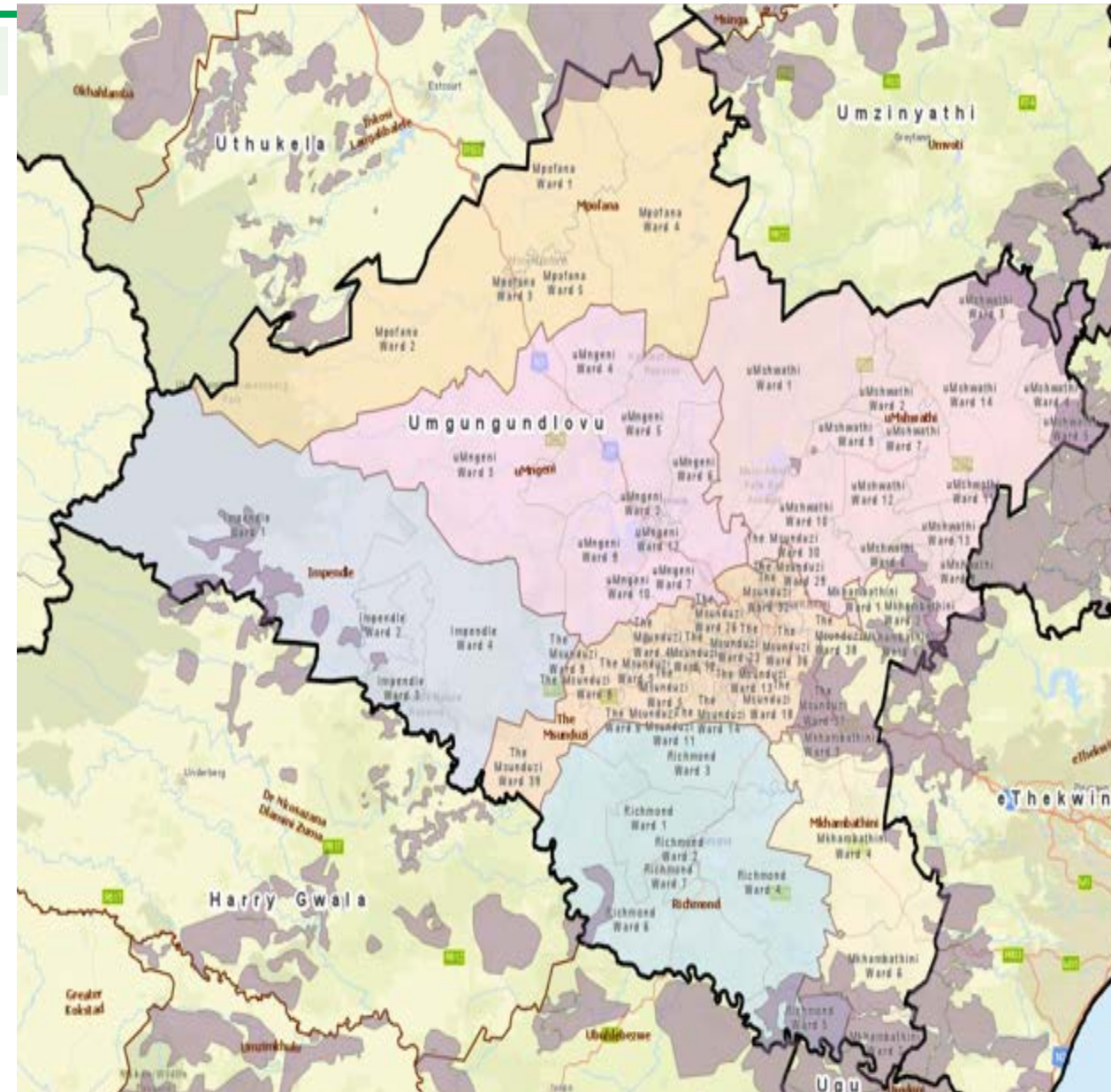
UMGUNGUNDLOVU DM ELECTRIFICATION BACKLOG

*Electrification Backlog based on 2019 Desktop exercise

Municipality Name	Estimated Number of Connections	Estimated Budget
uMshwathi LM	18 453	R332 154 000
uMngeni LM	-	
Mpofana LM	636	R11 448 000
Impendle LM	473	R8 525 320
Msunduzi LM	2 647	R47 646 000
Mkhambathini LM	7 766	R139 788 000
Richmond LM	1 080	R19 440 000
TOTAL	30 582	R557 057 000

*Electrification Backlog based on 2023 DMRE EMP

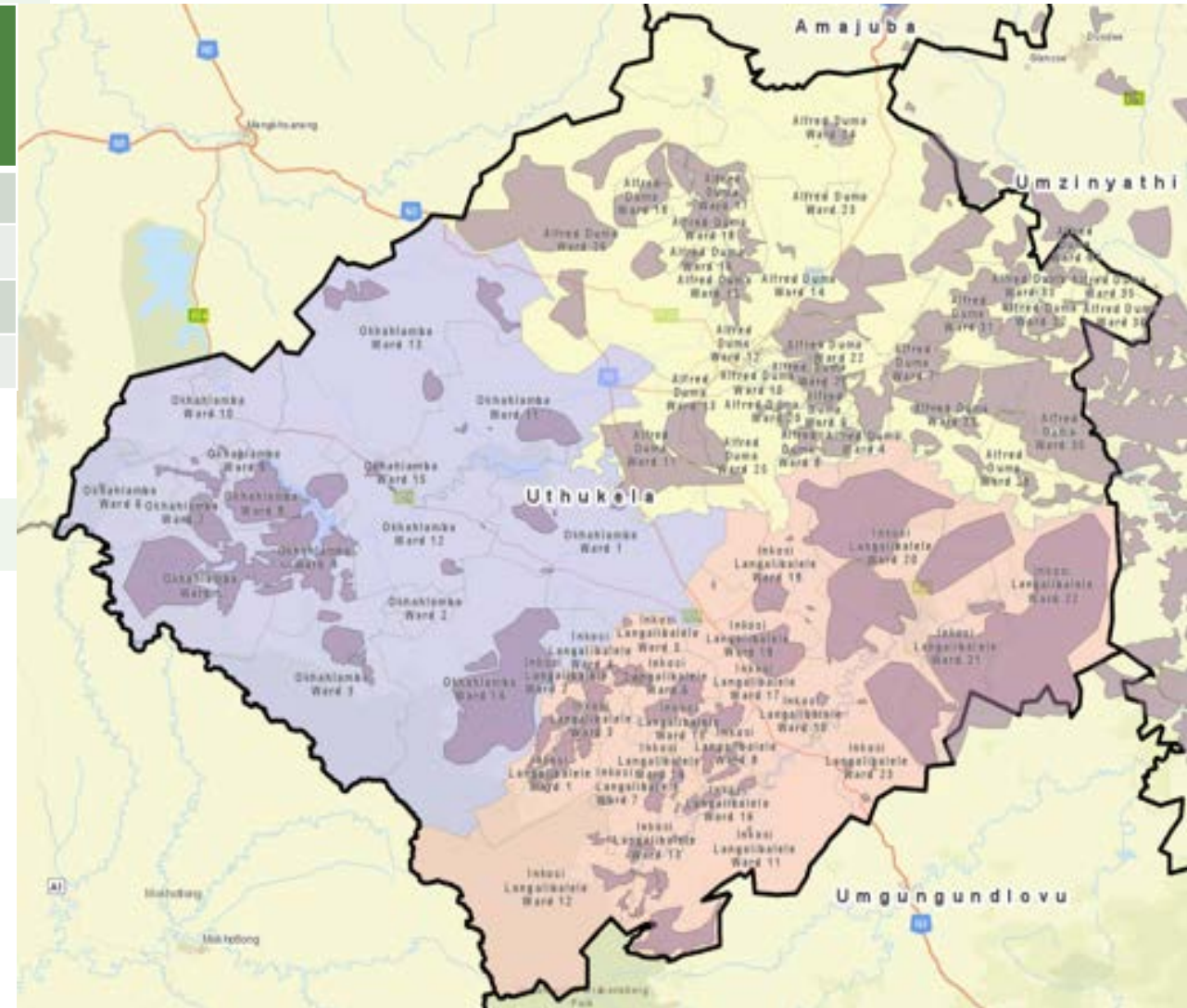
Municipality Name	Estimated Number of Connections	Estimated Budget
uMshwathi LM	11464	R229 280 000
uMngeni LM	1500	R30 000 000
Mpofana LM	234	R4 680 000
Impendle LM	473	R9 460 000
Msunduzi LM	2 647	R52 940 000
Mkhambathini LM	7080	R141 600 000
Richmond LM	360	R7 200 000
TOTAL	23758	R475 160 000



UTHUKELA DM ELECTRIFICATION BACKLOG

*Electrification Backlog based on 2019 Desktop exercise

Municipality Name	Estimated Number of Connections	Estimated Budget
Okhahlamba LM	2 929	R53 082 000
Inkosi Langalibalele LM	7011	R126 198 000
Alfred Duma LM	2 054	R36 972 000
TOTAL	33 435	R601 830 000



*Electrification Backlog based on 2023 DMRE EMP

Municipality Name	Estimated Number of Connections	Estimated Budget
Okhahlamba LM	940	R18 800 000
Inkosi Langalibalele LM	1 364	R27 280 000
Alfred Duma LM	701	R14 020 000
TOTAL	3005	R60 100 000

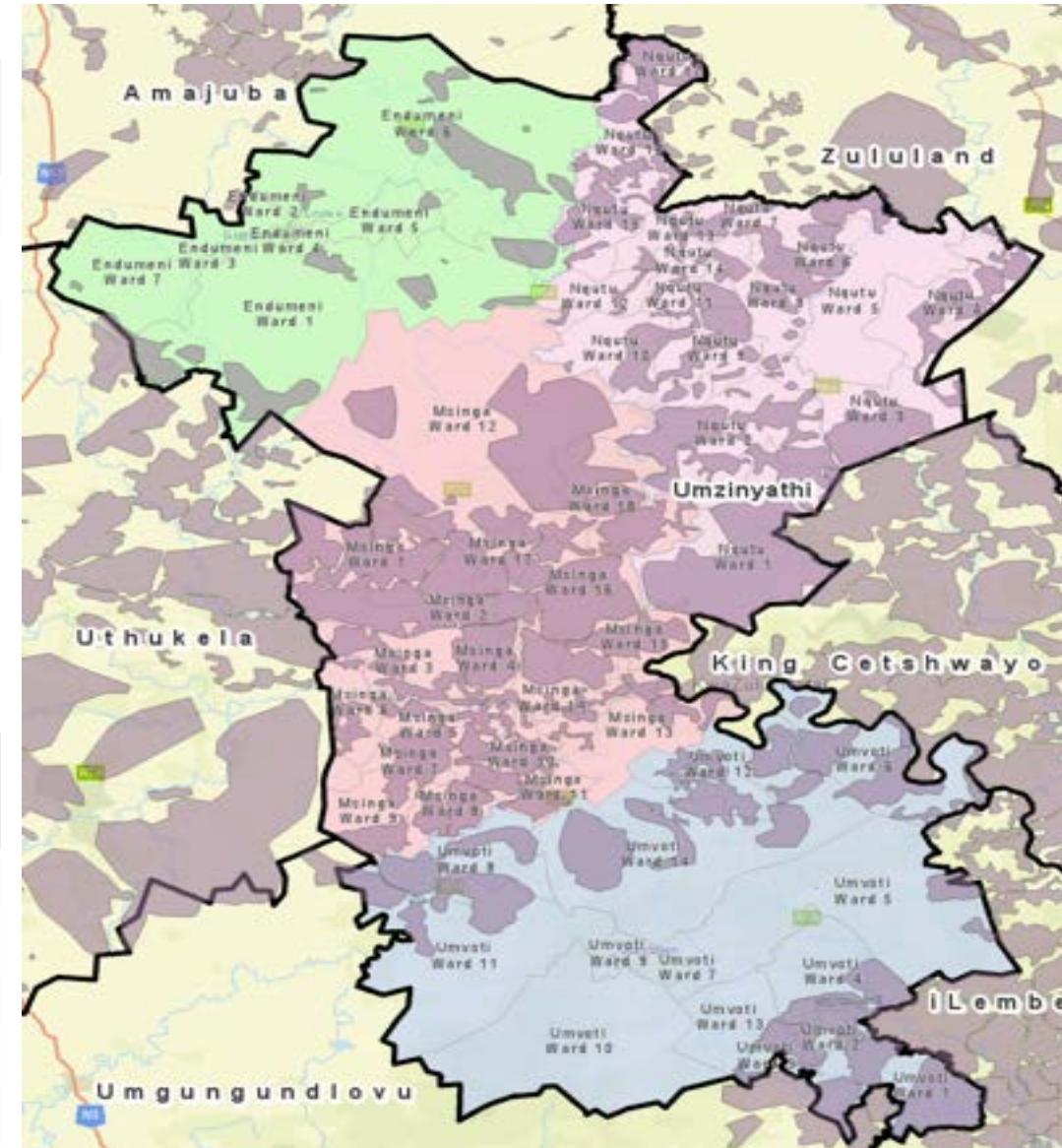
UMZINYATHI DM ELECTRIFICATION BACKLOG

*Electrification Backlog based on 2019 Desktop exercise

Municipality Name	Estimated Numer of Connections	Estimated Budget
eNdumeni LM	1 651	R29 718 000
Nquthu LM	3 391	R61 038 000
Msinga LM	4 200	R75 600 000
Mvoti LM	12 179	R219 222 000
TOTAL	21 421	R385 578 000

*Electrification Backlog based on 2023 DMRE EMP

Municipality Name	Estimated Numer of Connections	Estimated Budget
eNdumeni LM	261	R5 220 000
Nquthu LM	879	R17 580 000
Msinga LM	3 900	R78 000 000
Mvoti LM	7 040	R140 800 000
TOTAL	12 080	R241 600 000



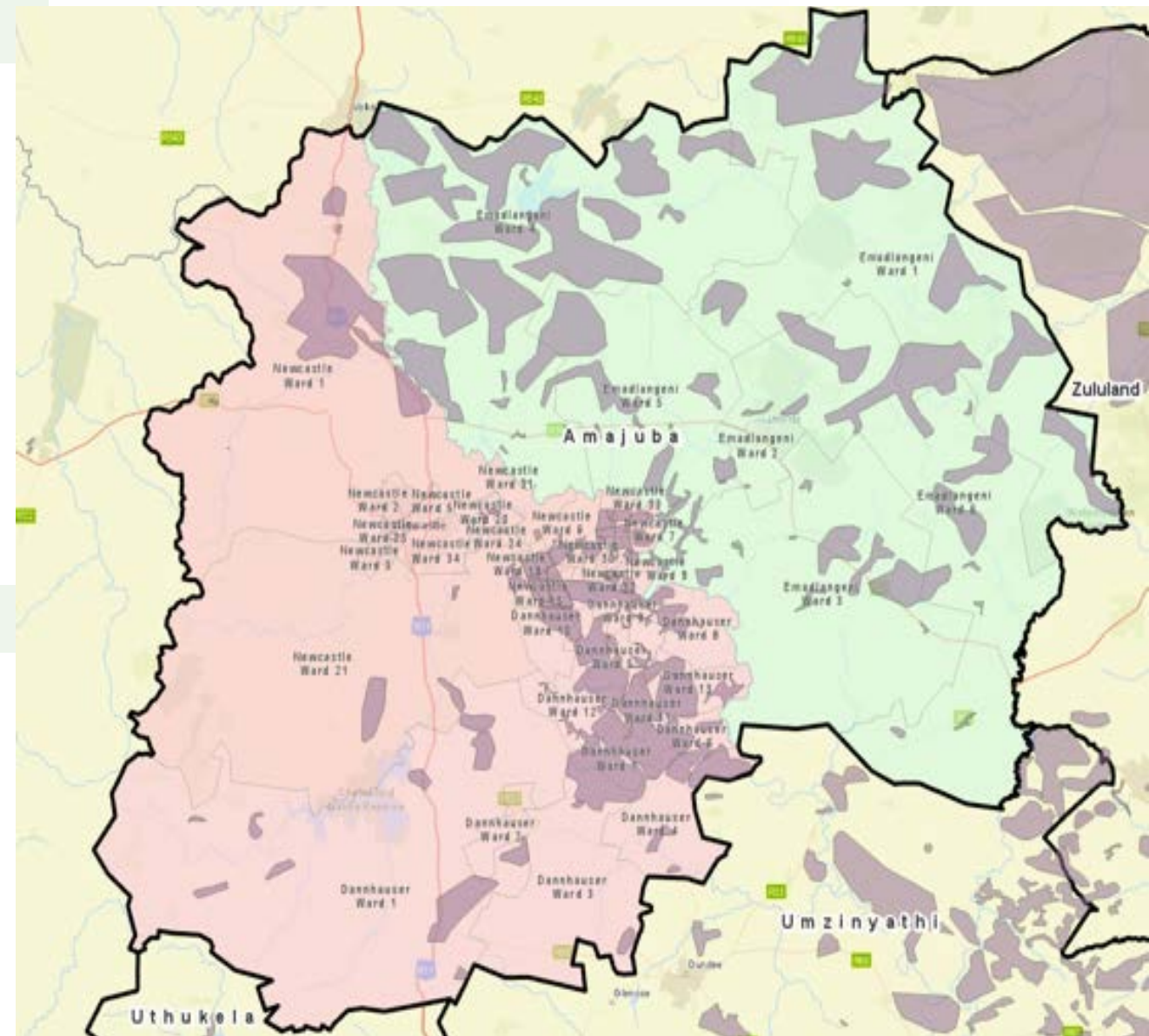
AMAJUBA DM ELECTRIFICATION BACKLOG

*Electrification Backlog based on 2019 Desktop exercise

Municipality Name	Estimated Number of Connections	Estimated Budget
Newcastle LM	23 408	468 160 000
eMadlangeni LM	1979	R35 622 000
Dannhauser LM	135	R2 430 0000
TOTAL	2 114	R468 198 052

*Electrification Backlog based on 2022 Desktop exercise

Municipality Name	Estimated Number of Connections	Estimated Budget
Newcastle LM	3 498	R69 960 000
eMadlangeni LM	770	R15 400 000
Dannhauser LM	50	R1 000 000
TOTAL	4 318	R86 360 000



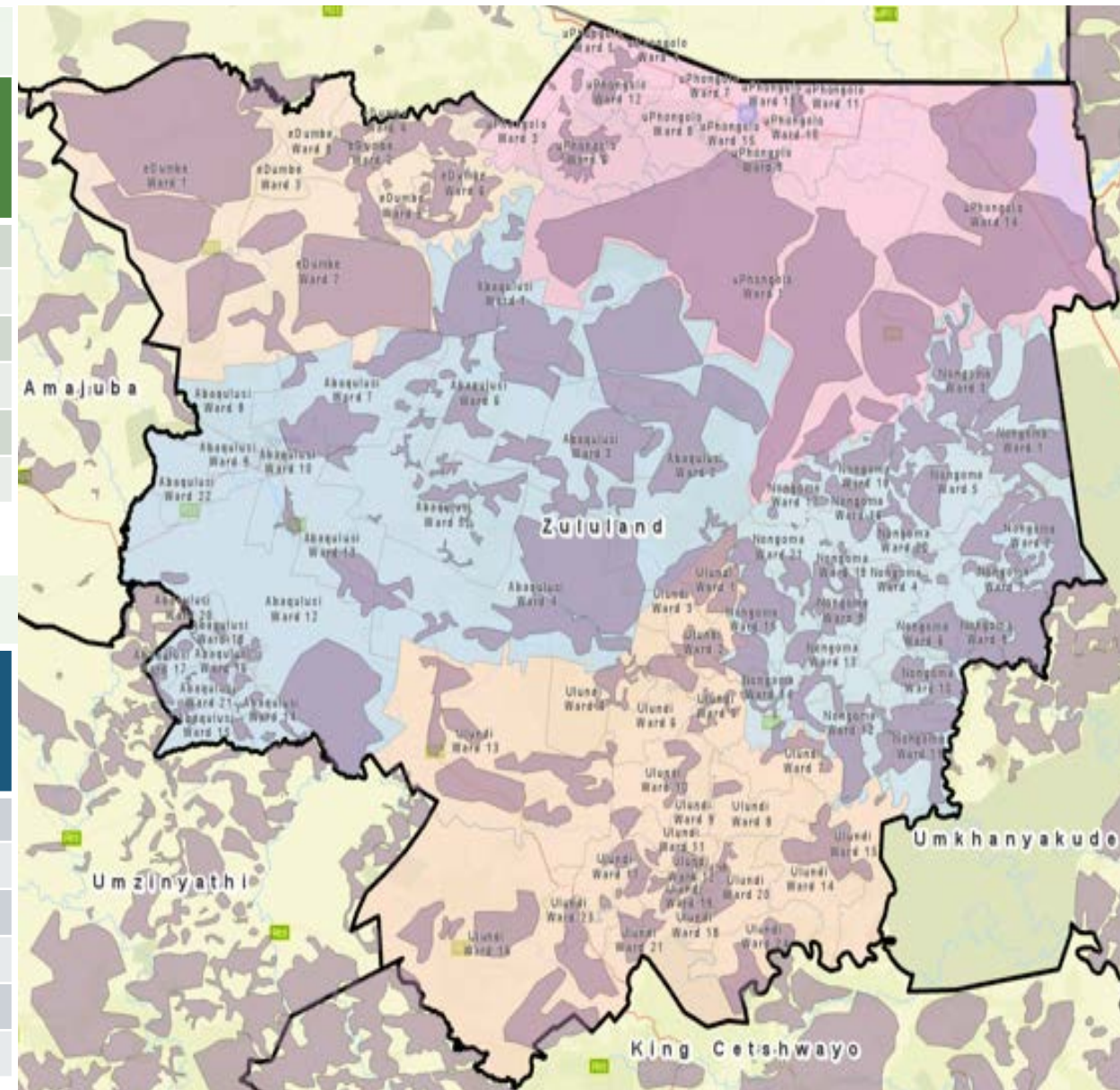
ZULULAND DM ELECTRIFICATION BACKLOG

*Electrification Backlog based on 2019 Desktop exercise

Municipality Name	Estimated Number of Connections	Estimated Budget
eDumbe LM	4 860	R87 380 000
uPhongolo LM	-	
AbaQulusi LM	-	
Nongoma LM	1 272	R22 896 000
uLundi	4 856	R87 408 000
TOTAL	10 988	R197 784 000

*Electrification Backlog based on 2022 Desktop exercise

Municipality Name	Estimated Number of Connections	Estimated Budget
eDumbe LM	1 540	R30 800 000
uPhongolo LM	2 500	R50 000 000
AbaQulusi LM	4240	R84 800 000
Nongoma LM	800	R16 000 000
uLundi	1 900	R38 000 000
TOTAL	10 980	R219 600 000



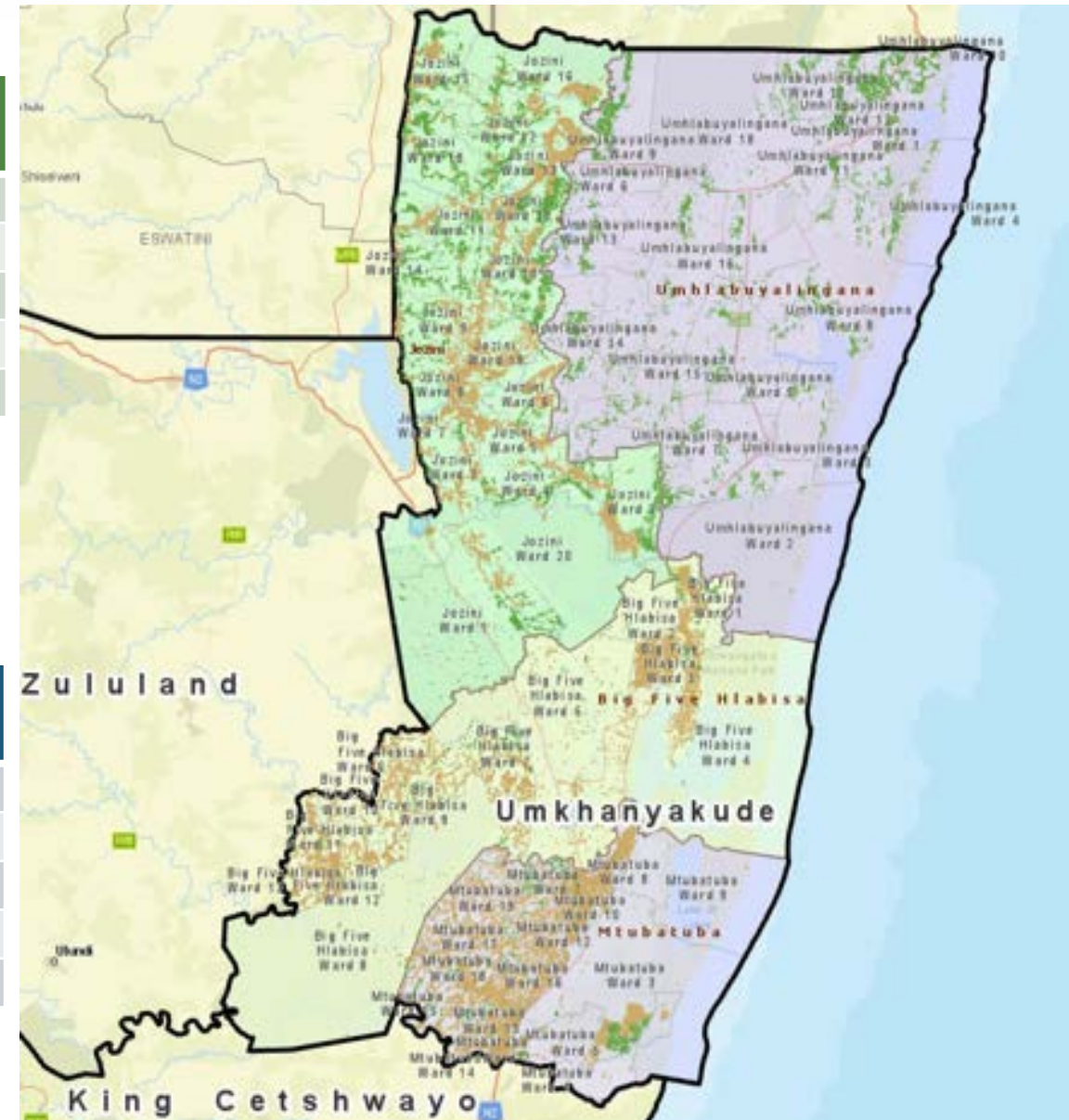
UMKHANYAKUDE DM ELECTRIFICATION BACKLOG

*Electrification Backlog based on 2019 Desktop exercise

Municipality Name	Estimated Numer of Connections	Estimated Budget
Jozini LM	6 723	R121 014 000
uMhlabuyalingana LM	43 968	R791 424 000
Mtubatuba LM	7 068	R127 224 000
Big 5 Hlabisa LM	1 521	R27 378 000
TOTAL	59 280	R1 067 040 000

*Electrification Backlog based on 2022 Desktop exercise

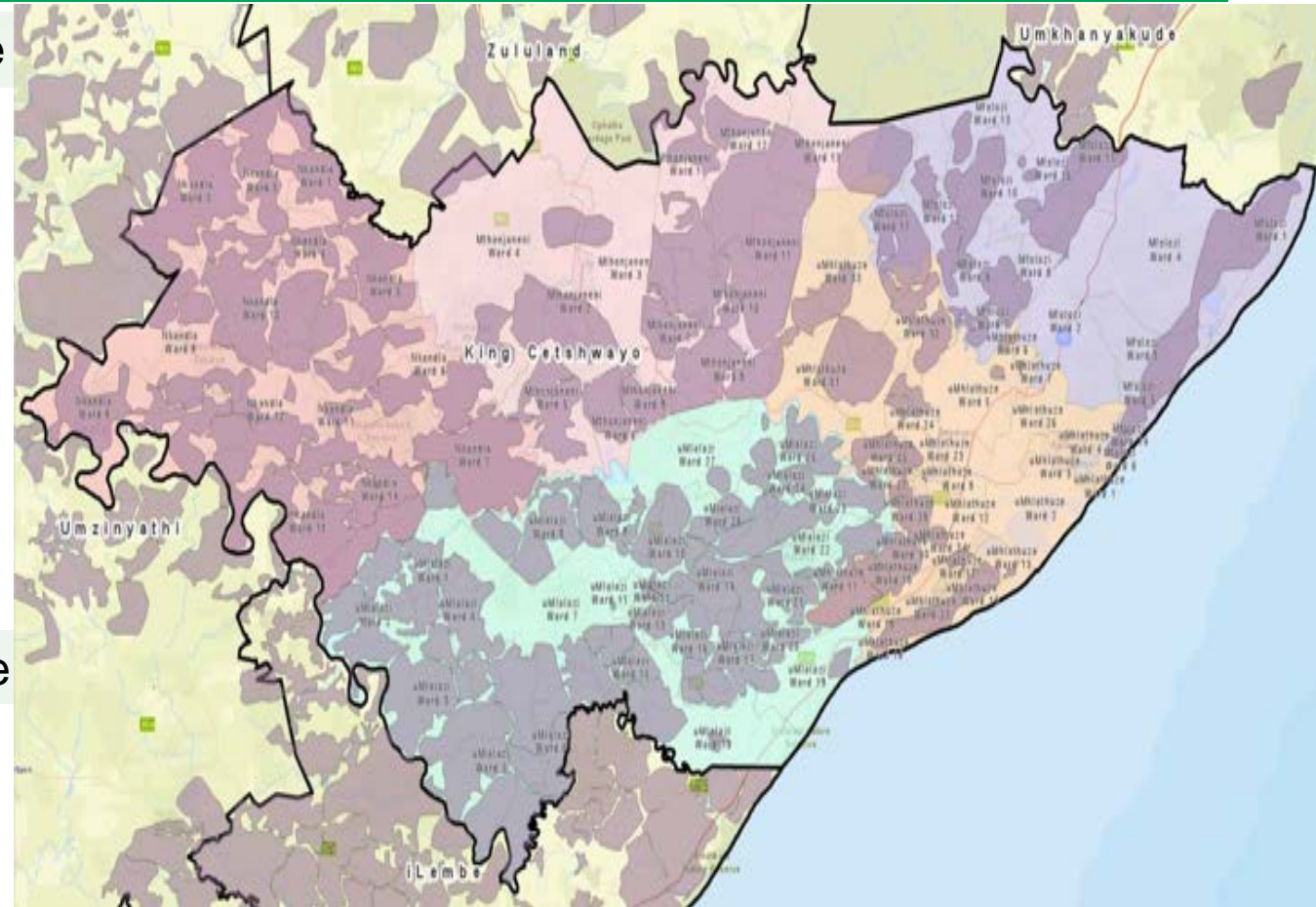
Municipality Name	Estimated Numer of Connections	Estimated Budget
Jozini LM	4 406	R88 120 000
uMhlabuyalingana LM	18 250	R365 000 000
Mtubatuba LM	2 243	R44 860 000
Big 5 Hlabisa LM	901	R18 020 000
TOTAL	25 800	R516 000 000



KING CETSHWAYO DM ELECTRIFICATION BACKLOG

*Electrification Backlog based on 2019 Desktop exercise

Municipality Name`	Estimated Number of Connections	Estimated Budget
Mfolozi LM	1 998	R35 964 000
uMhlathuze LM	2 852	R51 336 000
uMlalazi LM	6 640	R119 520 000
Mthonjaneni LM	2 114	R49 032 000
Nkandla LM	712	R12 816 000
TOTAL	14 316	R 183 672 000



*Electrification Backlog based on 2022 Desktop exercise

Municipality Name`	Estimated Number of Connections	Estimated Budget
Mfolozi LM	628	R12 560 000
uMhlathuze LM	621	R12 420 000
uMlalazi LM	1 298	R25 960 000
Mthonjaneni LM	1 536	R30 720 000
Nkandla LM	99	R1 980 000
TOTAL	4 182	R83 640 000

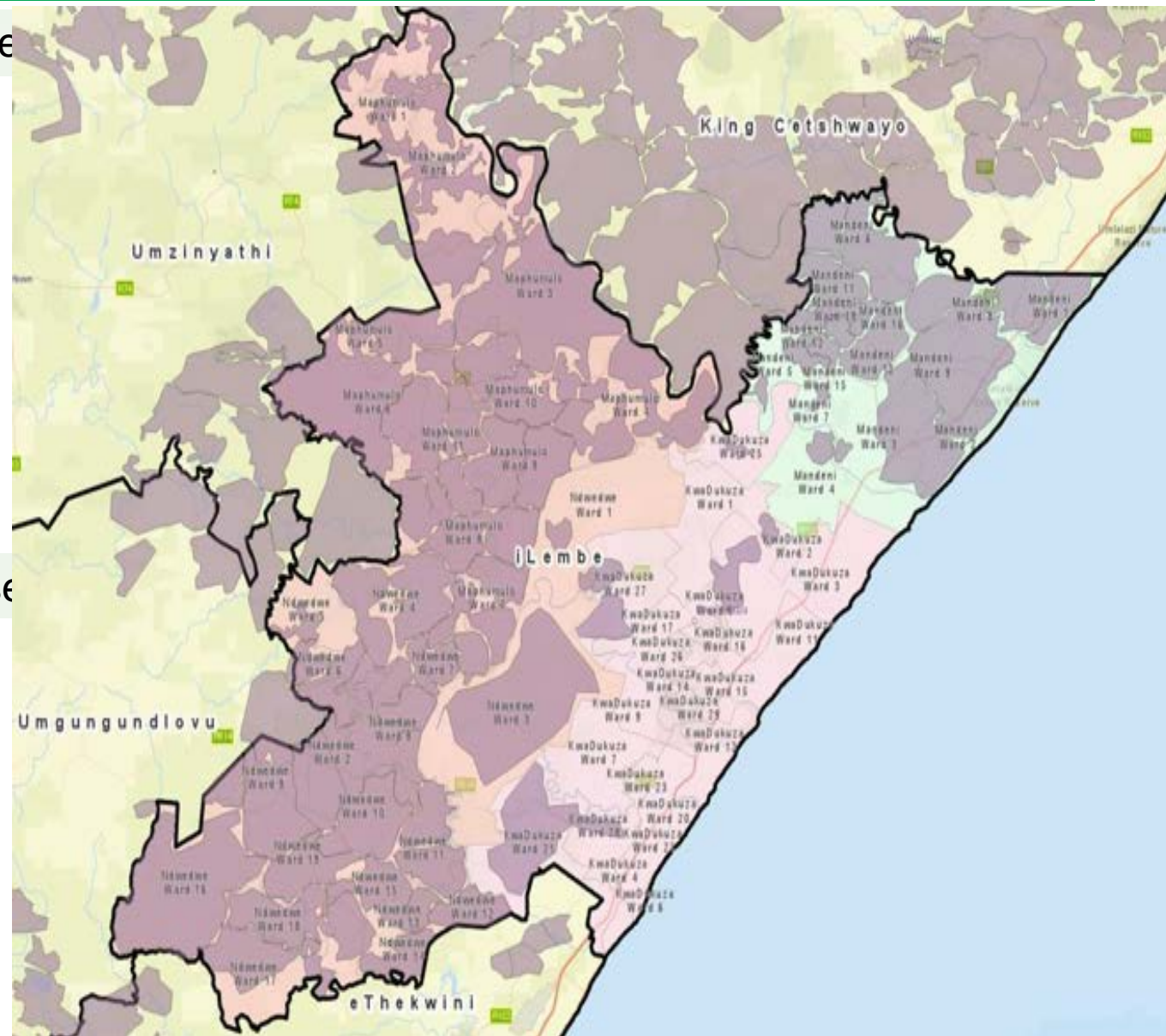
ILEMBE DM ELECTRIFICATION BACKLOG

*Electrification Backlog based on 2019 Desktop exercise

Municipality Name	Estimated Number of Connections	Estimated Budget
Mandeni LM	3 649	R65 682 000
KwaDukuza LM	11 552	R207 936 000
Ndwedwe LM	3 545	R63 810 000
Maphumulo LM	4 067	R73 206 000
TOTAL	22 813	R410 634 000

*Electrification Backlog based on 2022 Desktop exercise

Municipality Name	Estimated Number of Connections	Estimated Budget
Mandeni LM	923	R18 460 000
KwaDukuza LM	1 491	R29 820 000
Ndwedwe LM	2 144	R42 880 000
Maphumulo LM	1 391	R27 820 000
TOTAL	5 949	R118 980 000



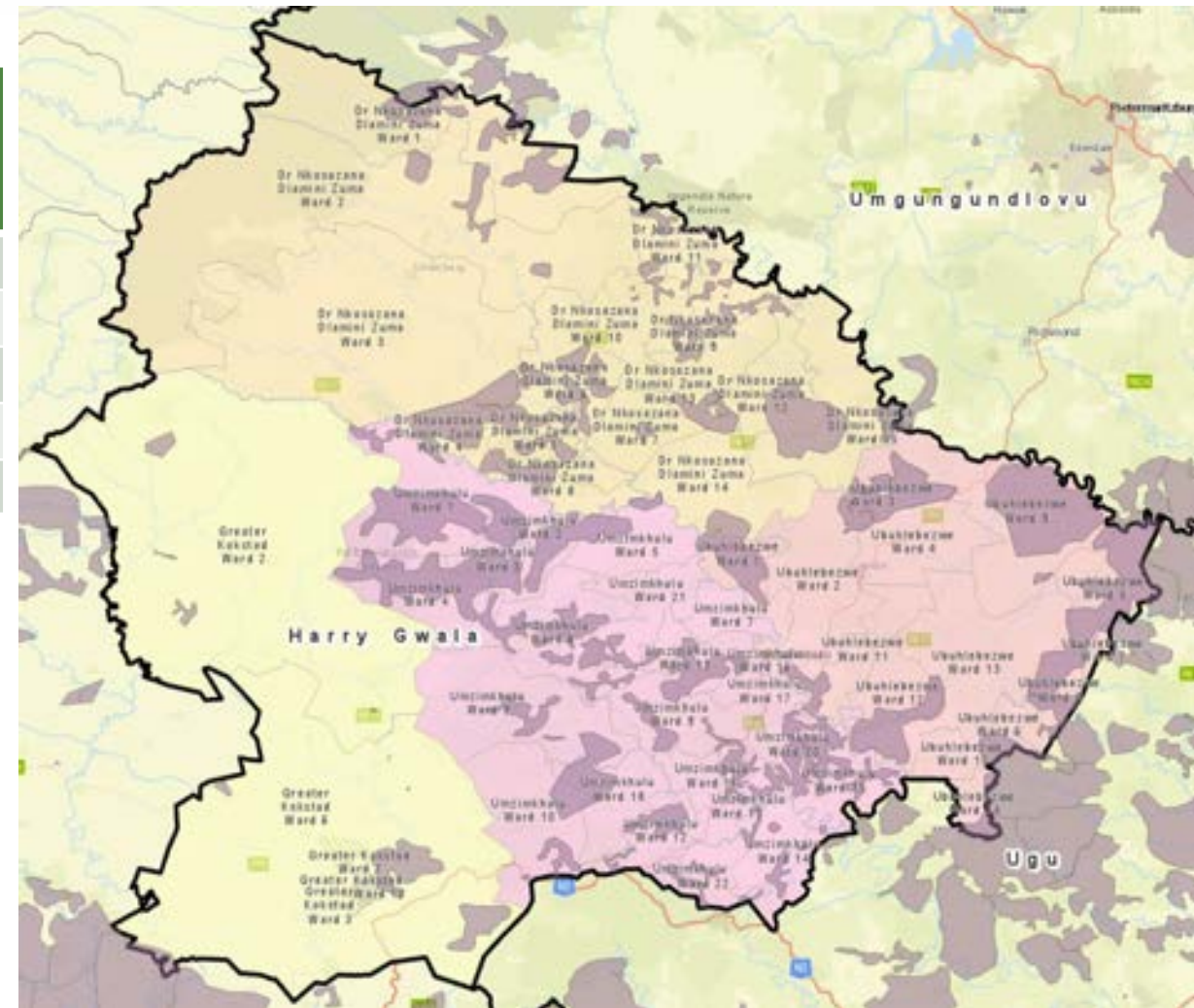
HARRY GWALA DM ELECTRIFICATION BACKLOG

*Electrification Backlog based on 2019 Desktop exercise

Municipality Name	Estimated Number of Connections	Estimated Budget
Greater Kokstad LM	655	R11 790 000
uBuhlebezwe LM	3 500	R63 000 000
uMzimkhulu LM	3 388	R60 984 000
Dr Nkosazana Dlamini-Zuma LM	3 430	R61 740 000
TOTAL	10 973	R197 514 000

*Electrification Backlog based on 2022 Desktop exercise

Municipality Name	Estimated Number of Connections	Estimated Budget
Greater Kokstad LM	500	R10 000 000
uBuhlebezwe LM	897	R17 940 000
uMzimkhulu LM	1 698	R33 960 000
Dr Nkosazana Dlamini-Zuma LM	1 590	R31 800 000
TOTAL	4 685	R93 700 000



CHALLENGES: IMPACT OF LOADSHEDDING ON WATER INFRASTRUCTURE

ENERGY REQUIREMENTS FOR WATER AND SANITATION

- ❖ Energy usage in the water treatment sector is dominated by pumping activities with KZN as a rural province and its topography.
- ❖ This also impacts the municipality revenue for those who are reliant on revenue from water services.
- ❖ Approximately 85% – 99% of water treatment plant energy consumption can be attributed to pumping
- ❖ **PROPOSED APPROACH:** Quantifying total budget in terms of section 25 of the PFMA
- ✓ All municipalities to complete generic or technical scope of works in relation to the acquisition of gensets for emergency situations Municipalities to do needs assessment associated with funding requirements to acquire generators to supplement energy.
- ✓ Consideration of solar panels for water and waste water systems
- ✓ Consideration of exemptions of key infrastructure from load shedding and collaborative planning between municipalities and Eskom to allow filling up reservoirs.

