A. EXECUTIVE SUMMARY

A.1 Administration

Name of WSA

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

Status of WSDP

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

- WSDP Steering Committee approval (Draft version) – March 2017
- EXCO approval – May 2017
- Expected Council approval – June 2017

WSDP drafting team

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

Table A1.1: Drafting team

Name	Position	Tel Number	Email
Mr SB Nkosi	Municipal Manager	035 874 5500	mm@zululand.org.za
Mr X Buthelezi	Deputy Director: WSA (Acting)	035 874 5542	xbuthelezi@zululand.org.za
Ms G Nene	HOD: Technical Services (Acting)	035 874 5500	gnene@zululand.org.za
Mr B Mnguni	HOD: Planning	035 874 5617	bmnguni@zululand.org.za

Process followed

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

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

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

Public comments

The WSDP will be advertised during May 2017 for public comment.

Adoption record

The 2016/2017 revision of the WSDP has been approved by the ZDM Council during June 2016.

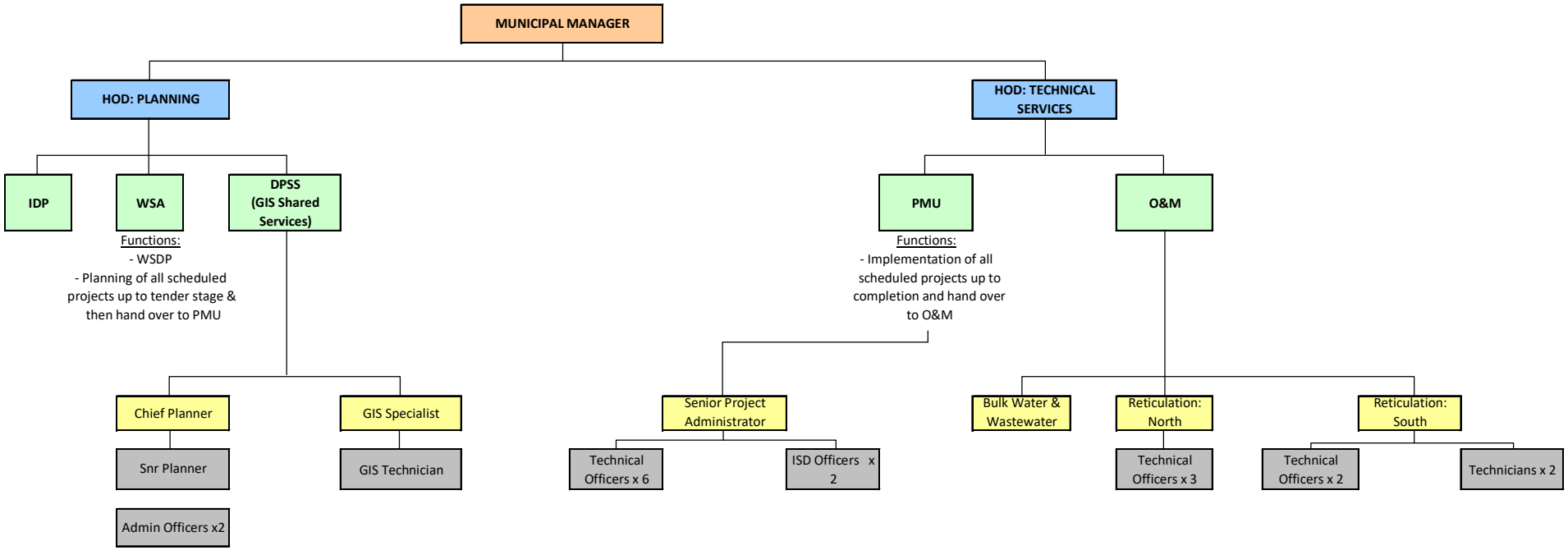
WSDP co-ordinators

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

PMU

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

Table A1.2: Organogram



Water services level policy

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

Table A1.3: Service Levels

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

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

A.2 Backlogs

Tables A.2 (a) & (b) below indicate the status in ZDM with regards to water services backlogs in the district.

Table A.2 (a): Access to water (households)

Water	None or Inadequate	Rudimentary <RDP	Communal standpipes RDP	Yard/House connections >RDP	TOTALS
AbaQulusi LM	0	0	0	17 694	17 694
eDumbe LM	0	0	0	5 492	5 492
Nongoma LM	0	0	0	706	706
Ulundi LM	0	0	0	5 974	5 974
uPhongolo LM	0	0	0	4 259	4 259
Total (urban)	**0**	**0**	**0**	**34 125**	**34 125**
AbaQulusi LM	7 688	4 024	9399	7 113	28 224
eDumbe LM	2 637	783	1004	6 755	11 179
Nongoma LM	12 735	12 982	11 840	7 407	44 964
Ulundi LM	5 941	4 845	15 347	14 343	40 476
uPhongolo LM	3 882	1841	1499	16 987	24 209
Total (rural)	**32 883**	**24 475**	**39 089**	**52 605**	**149 052**
Total (households)	**32 883**	**24 475**	**39 089**	**86 730**	**183 177**

Table A.2 (b): Access to sanitation

	None or Inadequate (Excl. Infills/Replacements)	VIP	Septic tank	Waterborne	TOTALS
		RDP	RDP	>RDP	
AbaQulusi LM	0	0	1035	15 624	16 659
eDumbe LM	0	0	498	2 024	2 522
Nongoma LM	0	0	0	349	349
Ulundi LM	0	0	0	5 185	5 185
uPhongolo LM	0	0	0	4 329	4 329
Total (urban)	**-**	**-**	**1 533**	**27 511**	**29 044**
AbaQulusi LM	11 718	17 728	424	0	29 870
eDumbe LM	4 584	9 033	266	0	13 883
Nongoma LM	11 086	34 278	0	0	45 364
Ulundi LM	3 420	37 741	52	0	41 213
uPhongolo LM	7 199	16 268	336	0	23 803
Total (rural)	**38 007**	**115 048**	**1 078**	**0**	**154 133**
Total (households)	**38 007**	**115 048**	**2 611**	**27 511**	**183 177**

Table A.2 (c): Percentage backlogs (water & sanitation)

WATER	TOTAL HOUSEHOLDS	BACKLOGS	% BACKLOGS	% OF TOTAL BACKLOGS
AbaQulusi LM	45 918	11 712	25.51%	20.42%
eDumbe LM	16 671	3 420	20.51%	5.96%
Nongoma LM	45 670	25 717	56.31%	44.84%
Ulundi LM	46 450	10 786	23.22%	18.80%
uPhongolo LM	28 468	5 723	20.10%	9.98%
Total	**183 177**	**57 358**	**31.31%**	**100.00%**

SANITATION	TOTAL HOUSEHOLDS	BACKLOGS	% BACKLOGS	% OF TOTAL BACKLOGS
AbaQulusi LM	46 529	11 718	25.18%	30.83%
eDumbe LM	16 405	4 584	27.94%	12.06%
Nongoma LM	45 713	11 086	24.25%	29.17%
Ulundi LM	46 398	3 420	7.37%	9.00%
uPhongolo LM	28 132	7 199	25.59%	18.94%
Total	**183 177**	**38 007**	**20.75%**	**100.00%**

Table A.2 (d): 3-year Summary (water and sanitation backlogs against funding allocations)

YEAR	BACKLOGS(Households)		ALLOCATIONS		Household count
	Water	Sanitation	Water	Sanitation	
2013-2014	56 559	56 757	R 288 499 750	R 65 386 250	2010 household count
2014-2015	50 653	46 027	R 300 616 500	R 55 405 500	
2015-2016	47 934	37 650	440 019 250	55 339 750	
2016-2017	45 545	31 071	281 021 250	61 973 750	
2017-2018	57 358	38 007	172 855 075	45 120 650	2013 households

A.3 Summary of content

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

Chapter 1: Socio Economic Profile

The current consumer profile of the district is indicated in Table A.3 (a) below. These figures reflect an updated household count which was done by ZDM from aerial photography taken in 2013 by National Geo-spatial Information (NGI). A total of **182 099 households** and **1078 farm houses** were captured, bringing the total dwellings in ZDM to **183 177**.

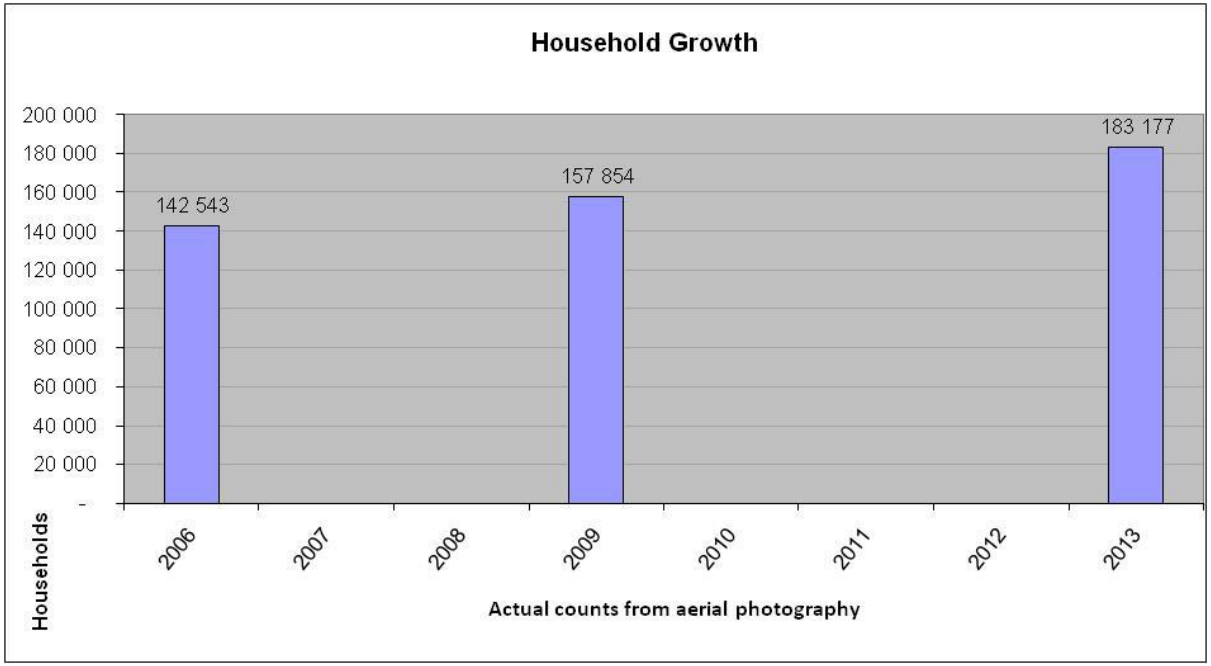
This shows an increase in the number of households of 16% over 4 years when compared with the previous 2009 households count. An **annual average household growth of 3.5%** is therefore evident over the period from 2009 to 2013. The period from 2005/2006 to 2009 shows an average annual household growth of 3.7%.

For population analysis, the 2011 Census figures will be applied to the ZDM household count as per local municipality. A comparison table can be reviewed under Table A3.(a) below, showing household growth and population figures per local municipality.

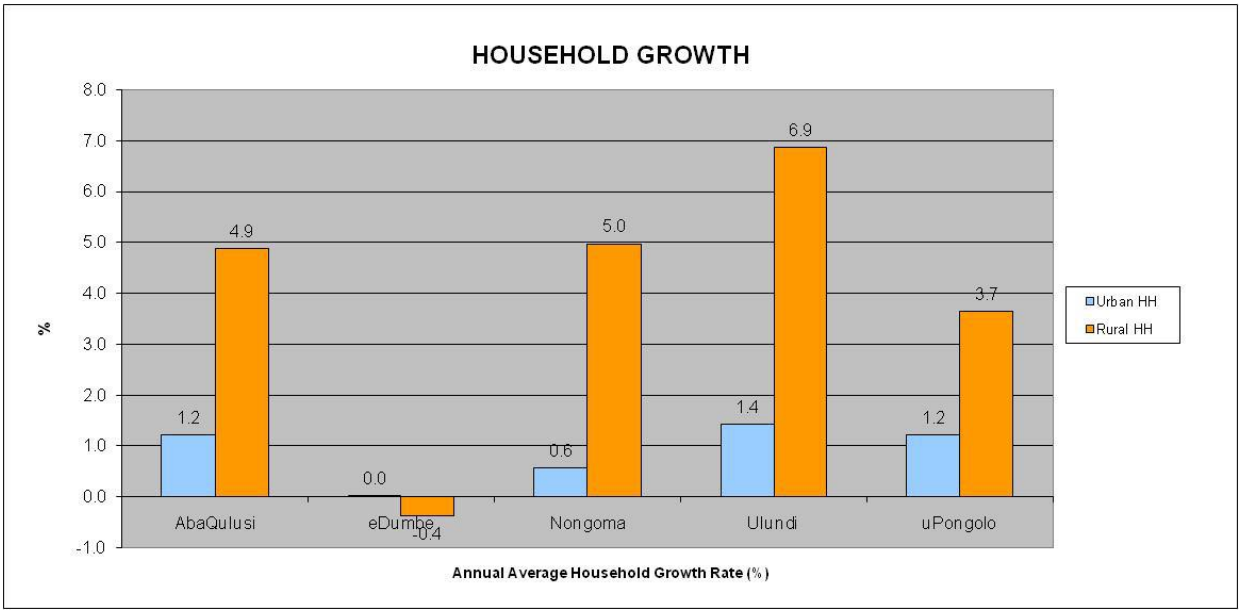
Table A.3 (a): ZDM and STATSSA Census 2011 household growth analysis (2005 - 2017)

	Actual Household Statistics aerial photography over 3 consequtive periods) (Captured from									STATSSA Census 2011	
Local Municipality	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**Annual household growth rate**	**Average Population per household**	**Total Population (ZDM)**
AbaQulusi	36 069			40 302				45 918	3.5%	4.90	224 998
eDumbe	15 011			16 880				16 671	-0.3%	5.10	85 022
Nongoma	34 056			38 171				45 670	4.9%	4.40	200 948
Ulundi	35 309			37 365				46 450	6.1%	5.70	264 765
uPongolo	22 098			25 136				28 468	3.3%	5.40	153 727
Total	**142 543**			**157 854**				**183 177**	**3.5%**	**5.10**	**929 461**

Table A.3 (b): ZDM household growth analysis (2005 - 2017)



In the following graph the household growth per local municipality can be compared between urban and rural growth over the past 4 years. Very little growth has taken place in the urban areas, with most of the growth taken place in the rural areas.



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

With the updated settlement types according to the provincial WSDP guidelines, many households which were previously classified as urban now fall in other categories. This resulted in the urban household count to have decreased. The rural household count has however increased accordingly.

Table A.3 (c): Current consumer profile (units)

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

Chapter 2: Service Level Profile

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

Table A.3 (d): Residential consumers: access to water

Water	None or Inadequate	Rudimentary <RDP	Communal standpipes RDP	Yard/House connections >RDP	TOTALS
AbaQulusi LM	0	0	0	17 694	17 694
eDumbe LM	0	0	0	5 492	5 492
Nongoma LM	0	0	0	706	706
Ulundi LM	0	0	0	5 974	5 974
uPhongolo LM	0	0	0	4 259	4 259
Total (urban)	**0**	**0**	**0**	**34 125**	**34 125**
AbaQulusi LM	7 688	4 024	9399	7 113	28 224
eDumbe LM	2 637	783	1004	6 755	11 179
Nongoma LM	12 735	12 982	11 840	7 407	44 964
Ulundi LM	5 941	4 845	15 347	14 343	40 476
uPhongolo LM	3 882	1841	1499	16 987	24 209
Total (rural)	**32 883**	**24 475**	**39 089**	**52 605**	**149 052**
Total (households)	**32 883**	**24 475**	**39 089**	**86 730**	**183 177**

Table A.3 (e): Residential consumers: access to sanitation

	None or Inadequate (Excl. Infills/Replacements)	VIP RDP	Septic tank RDP	Waterborne >RDP	TOTALS
AbaQulusi LM	0	0	1035	15 624	16 659
eDumbe LM	0	0	498	2 024	2 522
Nongoma LM	0	0	0	349	349
Ulundi LM	0	0	0	5 185	5 185
uPhongolo LM	0	0	0	4 329	4 329
Total (urban)	**-**	**-**	**1 533**	**27 511**	**29 044**
AbaQulusi LM	11 718	17 728	424	0	29 870
eDumbe LM	4 584	9 033	266	0	13 883
Nongoma LM	11 086	34 278	0	0	45 364
Ulundi LM	3 420	37 741	52	0	41 213
uPhongolo LM	7 199	16 268	336	0	23 803
Total (rural)	**38 007**	**115 048**	**1 078**	**0**	**154 133**
Total (households)	**38 007**	**115 048**	**2 611**	**27 511**	**183 177**

Chapter 3: Water Resource Profile

The ZDM falls within the Mfolozi (W2), Mkuze (W3) and Pongola (W4) secondary catchments of the Usuthu/Mhlathuze Water Management Area (WMA)[1]. The aerial extent of the ZDM occupies approximately 22% of this WMA. . The total available water and requirements as at year 2000, based on a 98% assurance of supply within these sub-areas, is summarised in Table A.3 (d). It is evident that apart from the Pongola catchments, water from these sub-areas is currently over-utilised and a deficit is created. However, according

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

to Basson and Rossouw[2], this deficit is a result of the provision made for future implementation of the Reserve. The Reserve is a legislated requirement of the amount of water required to satisfy the ecological needs of a river system (provisionally estimated at 20%) as well as the basic human needs (that have been established as 25 litres per person per day).

Table A.3 (f): Water balance - summary of the water available and required within Zululand District Municipality for the year 2000 (Million m³ (kℓ) per annum).

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

Source: Basson and Rossouw (2003).
**Includes allowance for impacts of the ecological component of the Reserve, river losses, alien vegetation, rain-fed agriculture and urban run-off on yield.*
***Includes allowance for basic human needs component of the Reserve (25 ℓ/c/d).*
****Mining and bulk industrial water uses that are not part of the urban system.*
*****Afforestation quantities refer to the impact on yield only.*

[2] *Op cit 2 at 23.*

Chapter 4: Water Conservation/ Demand Management

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

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

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

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

Chapter 5: Water Services Infrastructure Profile

ZDM has done extensive work on the development of a database that will serve as an asset register, but also to be used as the basis for the development of an asset management system and to capture asset related information electronically for ongoing use. The system has been named ‘MANZI’ and access can be gained on the ZDM website at www.zululand.org.za once the user has been issued with a username and password.
Table A.3 (e) below provides a brief overview of the schemes in the district that have been captured on the MANZI system and a summary of the infrastructure under consideration, as well as a rough estimate of the value of assets. These figures will be refined over time once the asset management system has been rolled out.

Table A.3 (g): Summary of schemes in the district

Summary Data	LOS	Total	Comment
Number of Schemes	Above RDP - Urban	14	
	Above RDP - Rural	46	
	RDP	100	
	Rudimentary	135	
	TOTAL SCHEMES	**295**	

Table A.3 (f) below shows examples of infrastructure data that is currently available on the GIS system and MANZI. Although many gaps still exist in the infrastructure information, ZDM has been systematically updating

its infrastructure details and eliminating data gaps where possible within its capability and resources. This process involves both feature as well as attribute data, and will support the asset management system initiative of ZDM which is currently in development

Table A.3 (h): Summary of infrastructure components available the ZDM GIS

Summary Data	LOS	Total
Number of Schemes	Above RDP - Urban	14
	Above RDP - Rural	56
	RDP	111
	Rudimentary	135
	TOTAL SCHEMES	**316**

Table A.3f

Summary Data	Description	Total
Pipelines	Bulk	998.4 km
	Reticulation	5 689.8 km
Installations	Yard Connection	25 341
	StandPipe - Barrel	302
	StandPipe - Communal	4 792
	Electrical Point	No data
	Valve	12 807
	Meter	1268
	Bulk Metering Points	253
	Handpump	486
	Pump	23
	Pump Station	116
	Source / Abstraction	492
	Break-pressure Tank	397
	Storage - Jojo	205
	Storage - Reservoir	730
	Treatment (Sand filters etc)	11
	Water Treatment Works	40
Replacement Value	Civil	R 1 988 605 029.79
	Mechanical	R 580 779 627.48
	Electrical	R 229 914 773.89
	Telemetry	R 12 255 225.37

Chapter 6: Water Balance

A first order water balance is presented in Chapter 6 from available data at the time.

Chapter 7: Water Services Institutional Arrangements

The ZDM Section 78 investigation process was completed in 2007 and the conclusion was that a single Water Services Provider for the entire district (internal department within ZDM) is the preferred water services

provision arrangement for the future and that this be implemented progressively. Certain specialised functions were also listed that should rather be contracted out to private business, although still being part of the overall WSP structure. These are services that require skilled personnel that are expensive and difficult to source and that are more cost effective to contract in rather than source in-house, for example electrical/mechanical artisans, certain maintenance functions, etc. The detailed outcome of the Section 78 investigation process is captured in Chapter 7 herewith.

Chapter 8: Customer Services Profile

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

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

Chapter 9: Financial Profile

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

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

The details are contained in Chapter 9 but can be summarised in Tables A.3 (g), (h) & (i) below:

Table A.3 (i): Capital requirements: water

WATER	Capital requirements	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	>2022
Regional bulk	R 2 339 962 853	R 380 813 147	R 351 266 350	R 290 925 142	R 294 572 595	R 313 011 521	R 709 374 098
Secondary bulk	R 1 054 030 068	R 48 562 125	R 31 485 265	R 36 487 526	R 33 478 526	R 35 896 523	R 868 120 103
Reticulation	R 165 680 556	R 10 548 752	R 14 254 789	R 12 685 235	R 11 452 635	R 14 758 965	R 101 980 180
Total capital (new)	**R 3 559 673 477**	**R 439 924 024**	**R 397 006 404**	**R 340 097 903**	**R 339 503 756**	**R 363 667 009**	**R 1 679 474 381**
Regional bulk (WTW)	R 599 570 000	TBA	TBA	TBA			
Secondary bulk	TBA	TBA	TBA	TBA			
Reticulation	TBA	TBA	TBA	TBA			
Total capital (refurbishment)	**R 599 570 000**	TBA	TBA	TBA			
Total capital	**R 4 159 243 477**	**R 439 924 024**	**R 397 006 404**	**R 340 097 903**	**R 339 503 756**	**R 363 667 009**	**R 1 679 474 381**

Table A.3 (j): Capital requirements: sanitation

SANITATION	Capital requirements	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	>2022
Bulk infrastructure	R -						
Reticulation	R -						
VIP toilets	R 380 070 000	47 000 000	47 000 000	47 000 000	47 000 000	47 000 000	145 070 000
Total capital (new)	**R 380 070 000**	**R 47 000 000**	**R 47 000 000**	**R 47 000 000**	**R 47 000 000**	**R 47 000 000**	**R 145 070 000**
Bulk infrastructure (WWTW)	322 510 000	TBA	TBA	TBA	TBA	TBA	TBA
Reticulation	TBA	TBA	TBA	TBA	TBA	TBA	TBA
VIP toilets (Replacement Prgrm)	408 880 000	TBA	TBA	TBA	TBA	TBA	TBA
Total capital (refurbishment)	**R 731 390 000**	**R -**	**R -**	**R -**	**R -**	**R -**	**R -**
Total capital	**R 1 111 460 000**	**R 47 000 000**	**R 47 000 000**	**R 47 000 000**	**R 47 000 000**	**R 47 000 000**	**R 145 070 000**

Table A.3 (k): Sources of Capital Income: Water

WATER	Expected Funding	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	>2022
MIG	R 182 604 350	R 182 604 350	TBA	TBA	TBA	TBA	TBA
DWA (RBIG)	R 110 000 000	R 110 000 000	TBA	TBA	TBA	TBA	TBA
Housing							
WSIG	R 107 746 000	R 107 746 000	TBA	TBA	TBA	TBA	TBA
Loans							
TOTAL	**R 400 350 350**	**R 400 350 350**	**R -**	**R -**	**R -**	**R -**	**R -**
Capital requirements	R 4 159 243 477						
Shortfall	**R -3 758 893 127**						

Table A.3 (l): Sources of Capital Income: Sanitation

SANITATION	Expected Funding	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	>2022
MIG	R 104 794 400	47 120 650	57 673 750	TBA	TBA	TBA	TBA
DWA							
Housing	R 4 300 000	R 4 300 000					
Other grant funding							
Loans							
TOTAL	**R 109 094 400**	**R 51 420 650**	**R 57 673 750**				
Capital requirements	R 1 111 460 000						
Shortfall	**R -1 002 365 600**						

Table A.3 (m): Operational costs and income

Operating costs and income	Total 5yr projected	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
Operational costs	R 2 584 611 744	R 431 009 527	R 470 231 394	R 513 022 451	R 559 707 494	R 610 640 876
Personnel costs	R 915 267 755	R 152 629 935	R 166 519 259	R 181 672 512	R 198 204 710	R 216 241 339
Total O&M costs	**R 3 499 879 499**	**R 583 639 462**	**R 636 750 654**	**R 694 694 963**	**R 757 912 205**	**R 826 882 215**
Equitable share: FBS	R 2 328 387 910	R 388 281 673	R 423 615 306	R 462 164 298	R 504 221 250	R 550 105 383
Income: sales (actual payment)	R 133 386 724	R 22 243 553	R 24 267 717	R 26 476 079	R 28 885 402	R 31 513 974
Total income	**R 2 461 774 634**	**R 410 525 227**	**R 447 883 022**	**R 488 640 377**	**R 533 106 652**	**R 581 619 357**
Deficit/surplus	**R -1 038 104 865**	**R -173 114 236**	**R -188 867 631**	**R -206 054 586**	**R -224 805 553**	**R -245 262 859**

Chapter 10: List of Projects

The ZDM Water Master Plan comprises of ten back-to-back regional water schemes. The detailed project list included under Chapter 10 herewith lists sub-projects or phases associated with each regional scheme according to the approved progressive roll-out of the scheme. Sanitation is being rolled out on the back of the water roll-out, except for areas where a water service has already been installed but no sanitation was installed at the time. The water and sanitation projects to be implemented over the next 5 years and beyond are listed in detail in Chapter 10 of the document.

A.4 Background to the area

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

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

Table A 4.1a: Settlement location

Settlement Location	Nr of Settlements
Urban	27
Communal Property	27
Land Reform Areas	75
State-owned	26
Tribal Areas	857
Private Land	256
TOTAL	**1 268**

A revised update of settlements has been done to update settlement boundaries and include new land reform areas as settlements. Household clusters on private farms have also been identified, and will be addressed based on ZDM's policy regarding rural residents on privately owned farm lands. A map showing the existing settlements against the revised settlement database can be reviewed under Figure A4.1b. The major changes and updates can be seen in AbaQulusi and eDumbe LM's, with minor updates and additions in the uPhongolo LM. The new settlement areas will be included as part of the next 5-year review of the WSDP.

A comparison table showing the new revised settlement types can be reviewed in Table A4.1b below.

Table A 4.1b: Settlement Types

Class	Settlement Type	Nr of Settlements	Total households
URBAN	Urban - Formal Town	4	6 277
	Urban - Former Township	5	14 626
	Urban - Ex Homeland Town	13	9 985
	Urban - Working Town	6	1 324
	Urban - Service Centre	8	1 567
	Urban - Squatter Camp	1	95
RURAL	Urban Fringe - Informal Settlement	20	9 398
	Peri-Urban - Squatter Camp	1	278
	Rural - Formal Dense >5000	2	2 803
	Rural - Formal Dense <5000	36	10 485
	Rural - Scattered Dense	5	2 517
	Rural - Scattered Medium Density	5	233
	Rural - Scattered Low Density	58	10 296
	Rural - Scattered Very Low Density	1 104	109 080
	Rural - Scattered households	N/A	4 213
	TOTAL	**1 268**	**183 177**

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

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

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

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

Figure A 4.1a: Locality map of Zululand District Municipality.

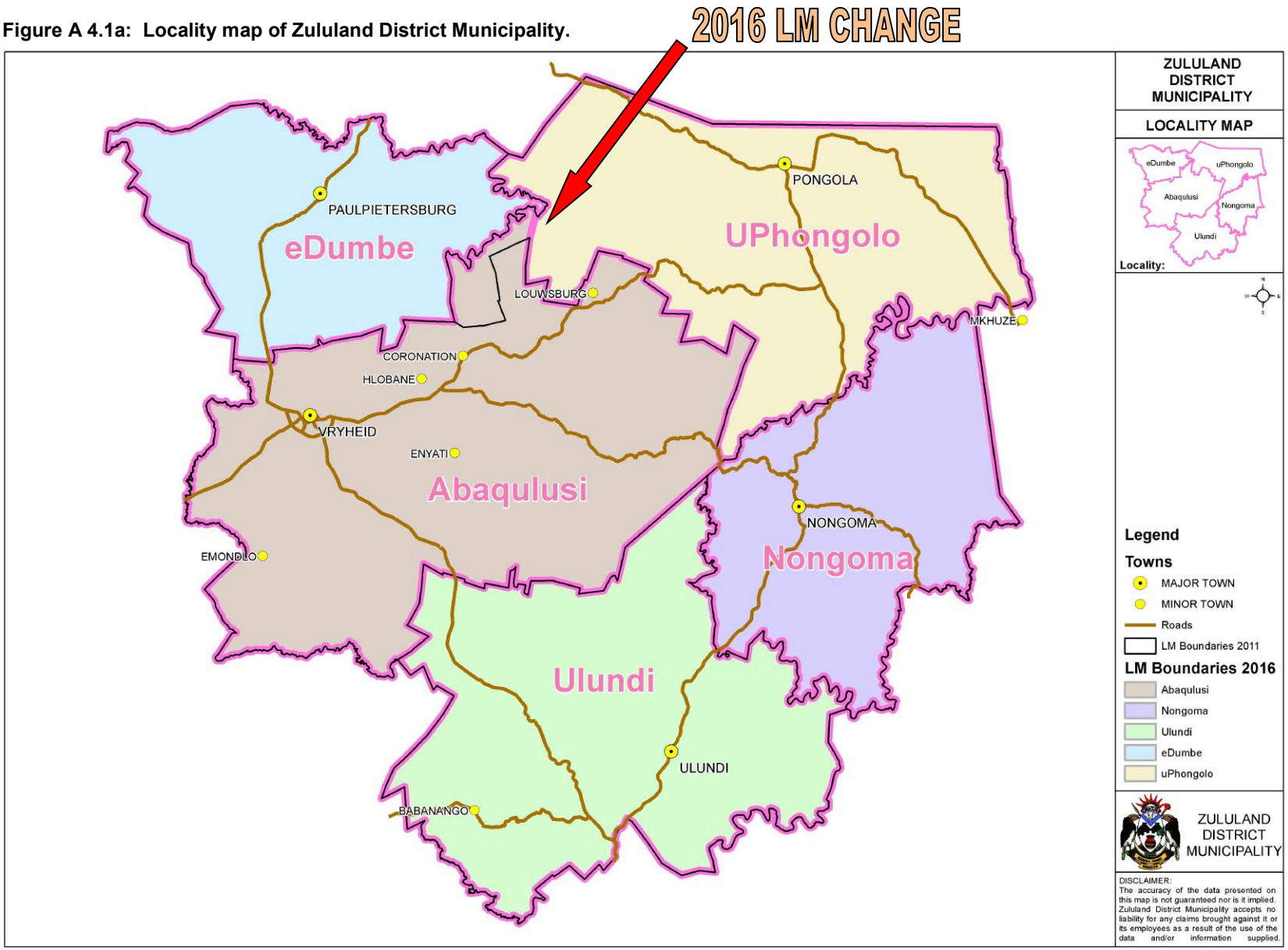


Figure A 4.1b: Demographics of Zululand District Municipality.

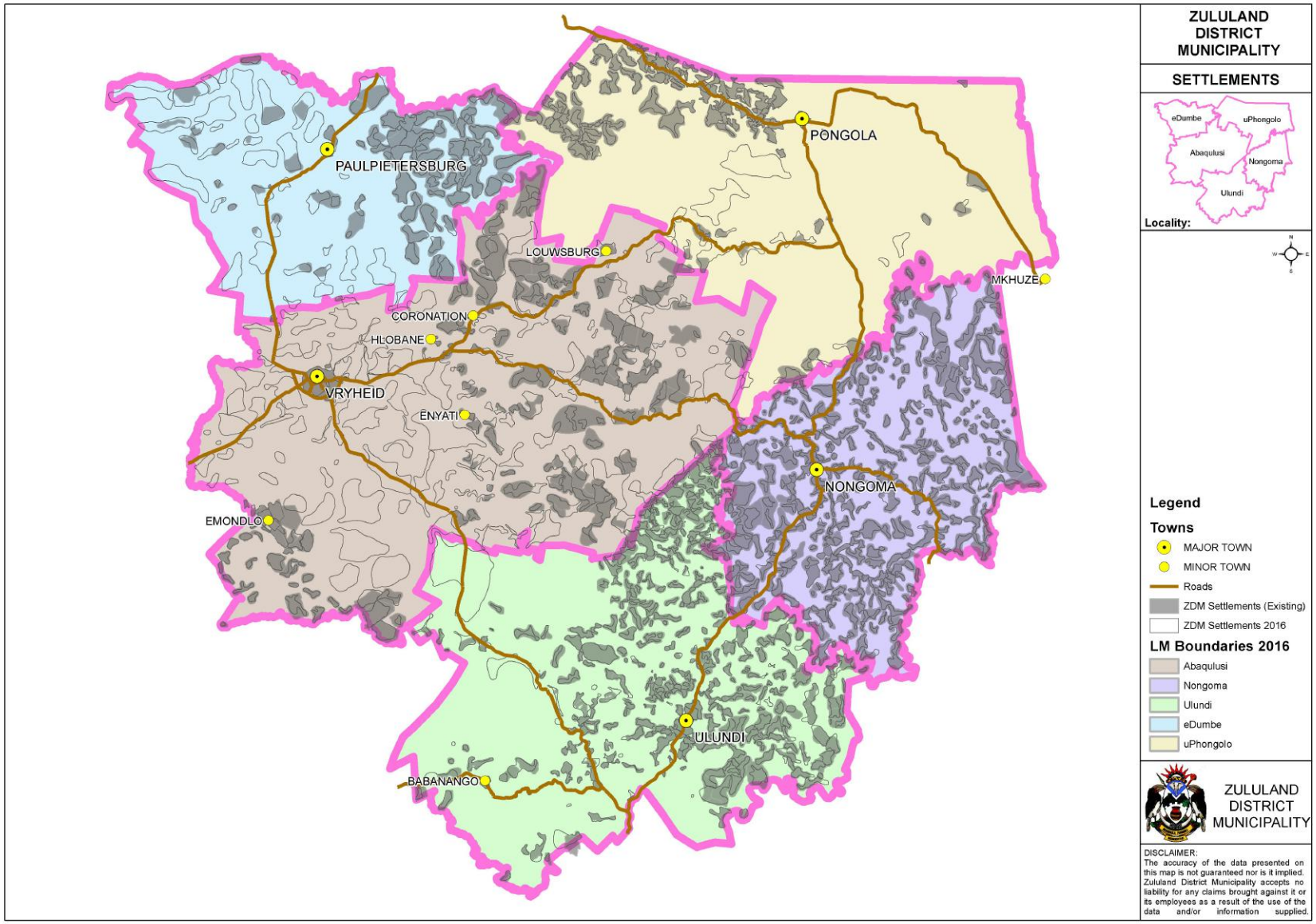
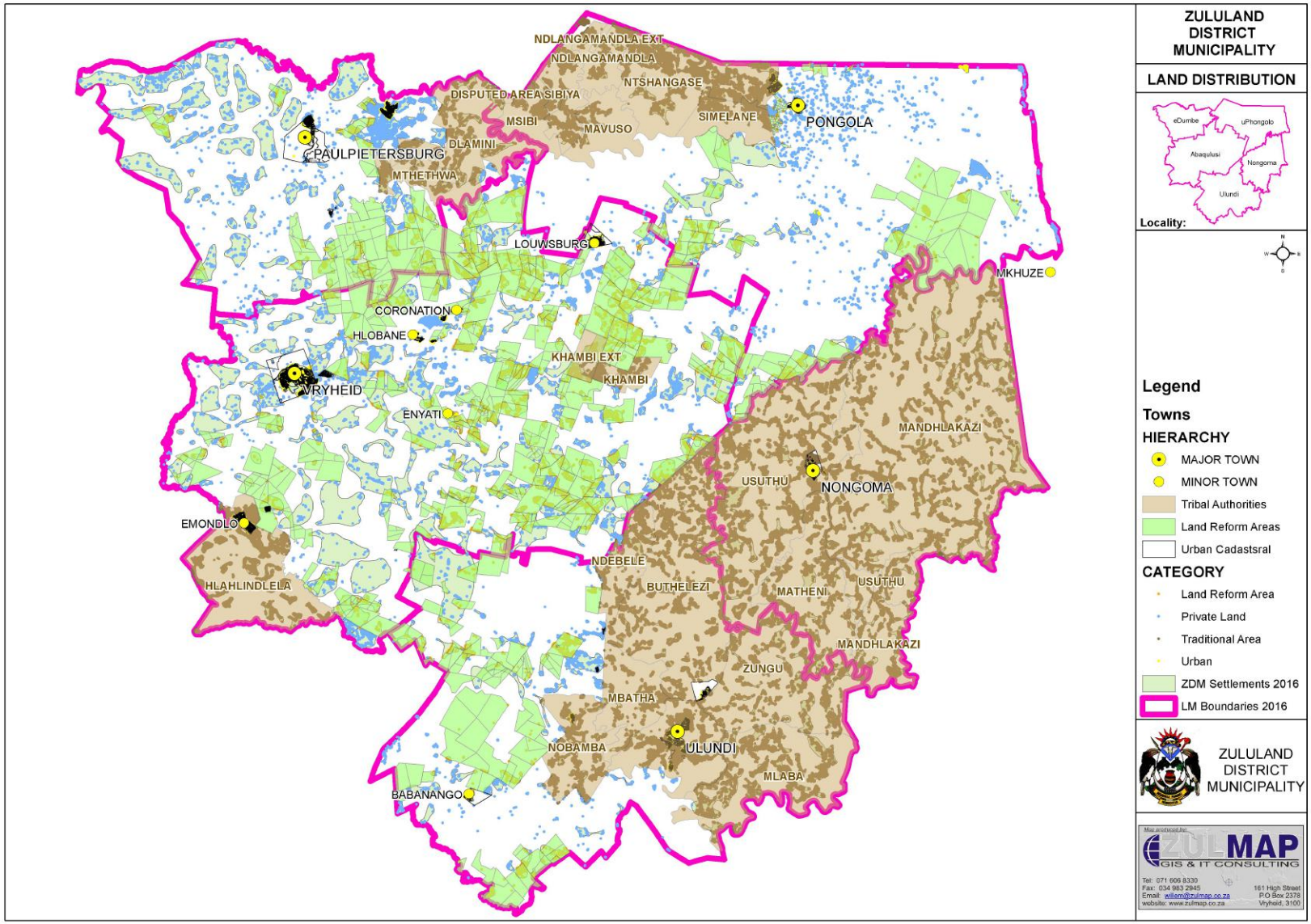


Figure A 4.1c: Land distribution in Zululand District Municipality.



The area forms part of the Pongola, Mkuze and Mfolozi River Catchments of the Usuthu/Mhlathuze Water Management Area that extends from the high lying areas in the north and west to the Indian Ocean in the east. The northern and western edges of the ZDM are characterised by steep terrain. The Skurweberg and Elandsberg Mountains on the Western side of the ZDM are approximately 1,700 m above sea level. In the northeast there are the Lebombo Mountains. In general the topography slopes and gets less steep from west to east, as well as from north to south, consequently all the main rivers flow in this direction. There are some large relatively flat areas between 200 m and 300 m around the town of Pongola, as well as on the lower reaches of the Mfolozi River (Figure A4.2).

Climatic conditions vary significantly from the northern highlands to the eastern low-lying areas around the town of Pongola. Rainfall is strongly seasonal with more than 80% occurring as thunderstorms between October and March, with the peak months being December to February in the inland areas. Rainfall varies from over 1,000 mm in the north and west, dropping to below 600 mm in the central area around Pongola. The resultant Mean Annual Runoff (MAR) ranges from above 200 mm in the north and west, to below 100 mm in the central areas. Overall the Mean Annual Precipitation (MAP) is 840 mm, and the corresponding MAR 102 mm (12 % of MAP) (Figure A4.3). Annual variability of rainfall is indicated by the historic coefficient of variation of the rainfall record, which ranges from (20 % to 25 %) in the west to greater than 35 % in the Pongola area. In accordance with the rainfall pattern the relative humidity is higher in summer than in winter. Potential mean annual gross evaporation ranges from 1400mm in the west to 1600 mm in the lowveld. The highest mean monthly evaporation is in December and the lowest mean monthly evaporation in June. One strategic dam, namely Pongolapoort/Jozini, has been developed. There is a vast amount of water in the area with both surface resources, as well as good ground water potential.

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

Figure A 4.2: Terrain map of Zululand District Municipality.

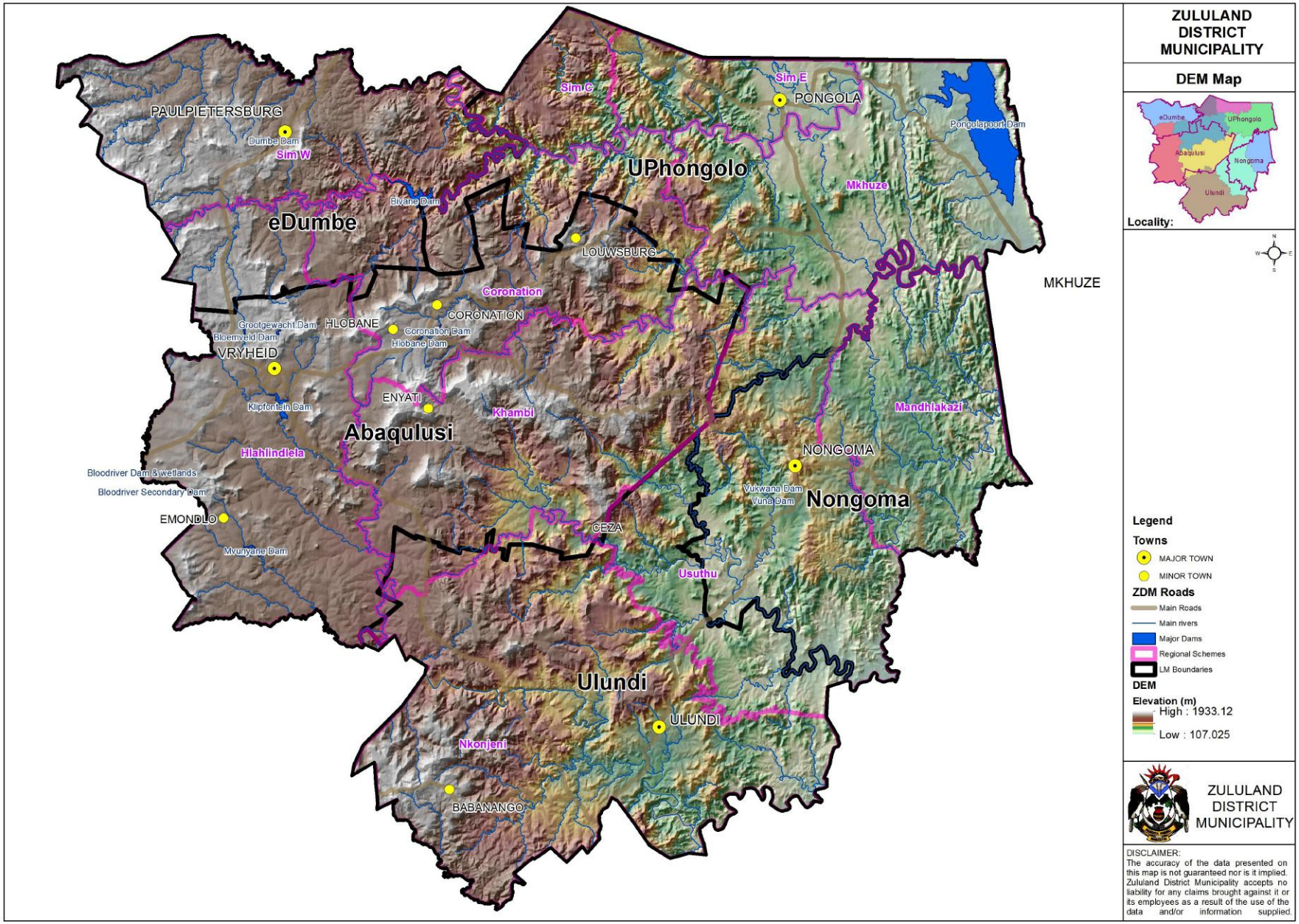
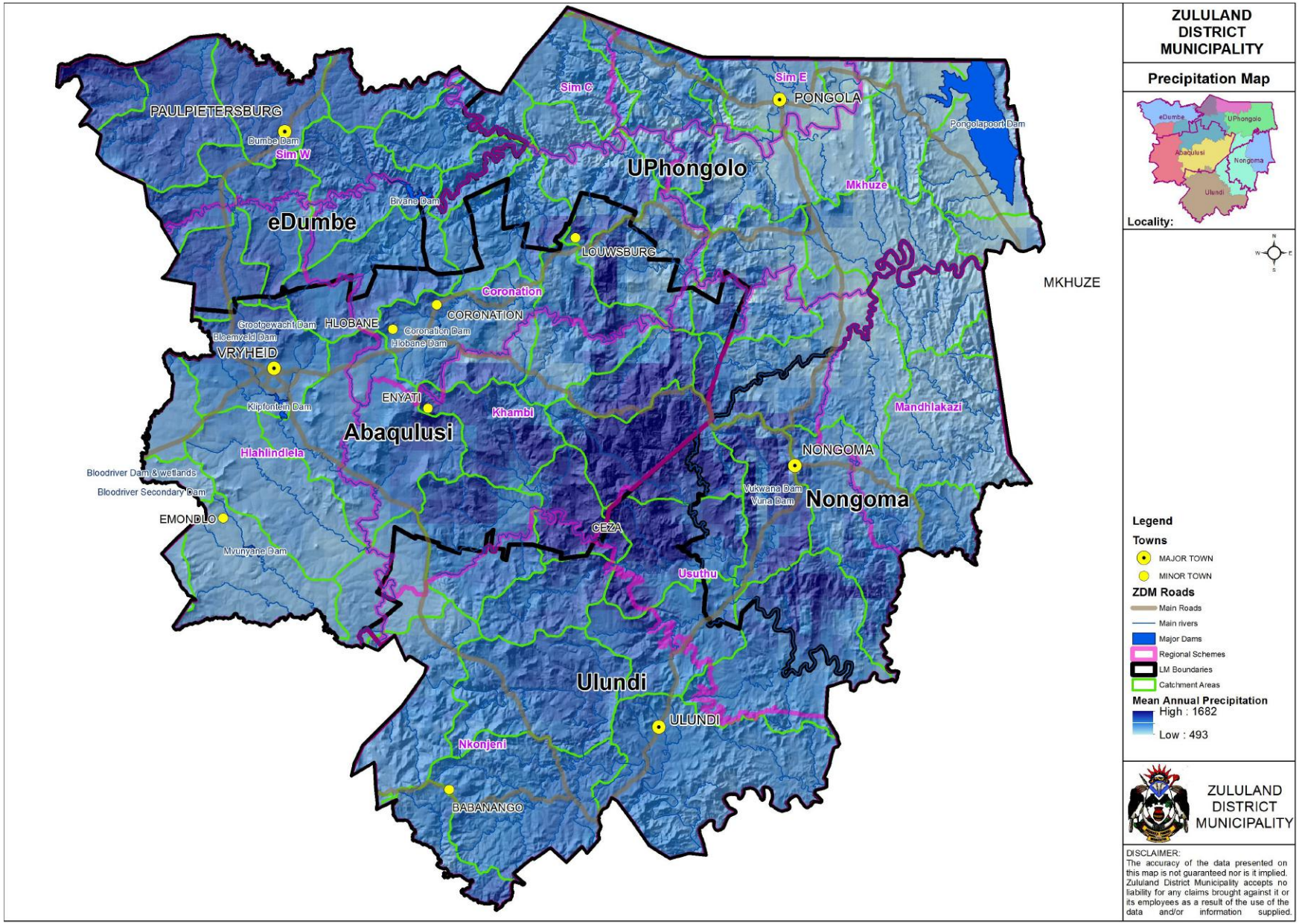


Figure A 4.3: Precipitation map of Zululand District Municipality.



A.5 IDP and WSDP goals

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

IDP vision and mission statement for the municipality

Vision
"*We, the people of Zululand are proud communities that are committed to the development of Zululand through hard work, integrity and a common purpose.*"
 	
Mission
• **To develop an affluent district by:**
  ○ **Optimal delivery of essential services**
  ○ **Supporting sustainable local economic development**
  ○ **Community participation in service delivery**

Part of the development objectives for Zululand is facilitating the delivery of basic services that include water services (i.e. water and sanitation provision), strengthening the local economy with particular emphasis on tourism, agriculture and small business sectors, and the sustainable use of land and the natural environment. The importance of the vision and objectives in terms of the WSDP is the development of Zululand through the provision of equitable and sustainable water services leading to an improvement in the quality of life. It therefore follows that planning in respect of water services must increase the current level of service throughout the region with an improvement experienced by all. Planning must therefore be sustainable in terms of water resources, material resources, contractor capacity, management capacity, as well as funding and maintenance cost.

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

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

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

The priority issues within the IDP that do not relate directly, but that may impact on water services planning are highlighted as follows:

- **Poverty relief pilot programme**
- **AIDS strategy**
- **Disaster management plan**
- **Land use management framework**
- **Environmental management plan**
- **Local economic development plan**
- **Tourism strategy**
- **Skills development for effective service delivery**

The Water and Sanitation rollout maps can be reviewed under Figure A 5.1 - 5.5, and include the following rollouts:

- Regional Water Supply Schemes
- Intermediate Stand-alone Water Supply Schemes
- Rudimentary Water Supply
- Rural Sanitation
    - New infrastructure
    - Phase 3 Replacement Programme

Figure A 5.1: Regional Water Supply Schemes

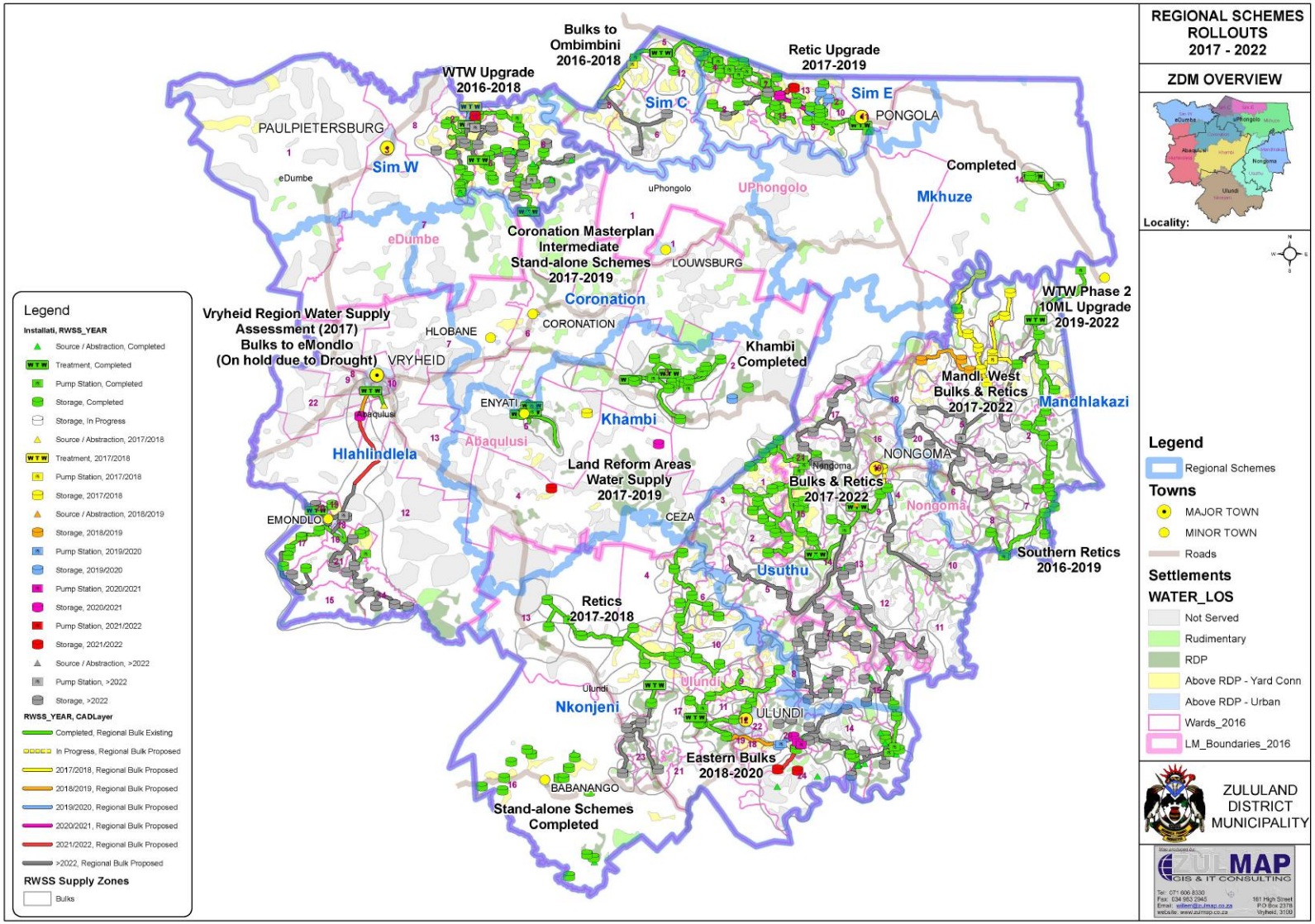


Figure A 5.2: Intermediate Stand-alone Water Supply Schemes

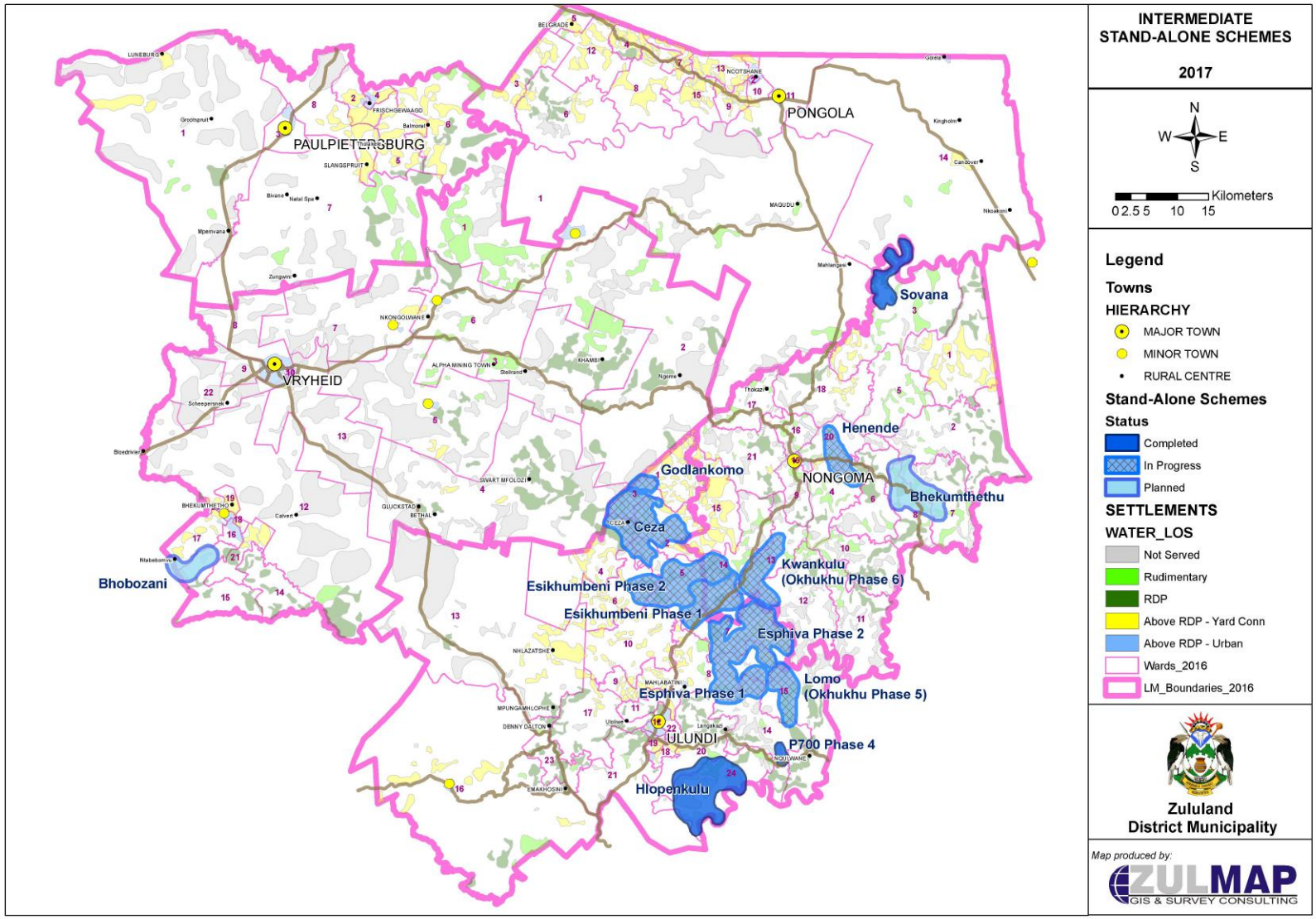


Figure A 5.3: Rudimentary Water Supply

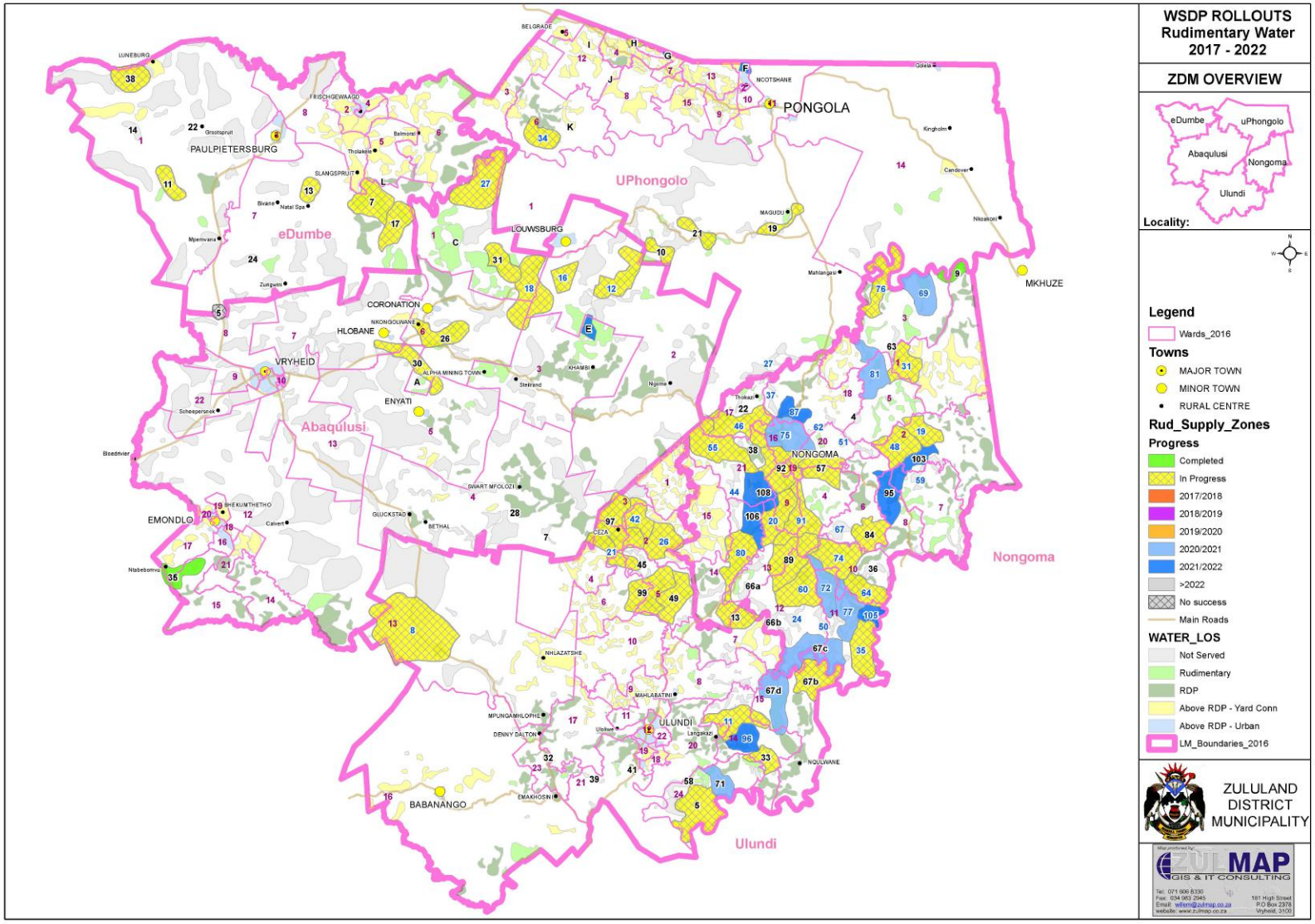


Figure A 5.4: Rural Sanitation (New infrastructure)