

7. WATER SERVICES INFRASTRUCTURE PROFILE

7.1 Existing infrastructure

This section has been compiled using the original WSDP document. A detailed asset database is currently being compiled and will be used in future revisions to extract the data directly. In addition, detailed flow diagrams for each scheme will be completed once the component identification numbers have been issued. The urban areas within the ZDM, have formal water and sanitation infrastructure serving approximately 157,416 persons, with a further 82 rural water schemes¹ serving 229,102 persons and 29 rural sanitation schemes serving 84,853 persons² (Tables 7.1a to 7.1f). An operational or complete implies that the project has been commissioned and is capable of functioning as a scheme. It is however possible that the scheme is currently not physically operational through various factors such as lack of maintenance; no cost recovery; and vandalism. However, with some form of intervention these schemes could be fully functional. It must be noted that the number of people served per LM as reflected under Tables 7.1a and 7.1b may differ from the data in Section 4 as the data in this section assumes that all persons within the scheme footprint are adequately served, whereas the data in Section 4 has been determined from a “service level model” that considers quality, quantity and distance (water) or has calculated the sanitation backlogs on the basis that all households within a settlement area have access to adequate sanitation facilities if covered by a GIS scheme footprint.

Table 7.1a: Summary of schemes commissioned and people served in the ZDM (including hospitals).

LM number	LM name	Urban				Rural			
		Water schemes		Sanitation schemes		Water schemes		Sanitation schemes	
		Number	People served	Number	People Served	Number	People served	Number	People Served
KZ261	eDumbe	2	23,358	2	23,358	10	32,448	3	5,964
KZ262	uPhongolo	1	20,000	1	20,000	14	45,740	6	23,563
KZ263	Abaqulusi	2	55,216	2	55,216	20	50,371	8	21,573
KZ265	Nongoma	1	3,842	1	3,842	14	24,366	2	9,769
KZ266	Ulundi	1	55,000	1	55,000	24	76,177	10	23,984
DC26	Total	7	157,416	7	157,416	82	229,102	29	84,853

Water is abstracted from both ground and surface resources and the spatial distribution of the WTWs, WWTWs, and abstraction points are represented in Figure 3.1 (see Section 3). Further detail on water and sanitation schemes can be extracted from the datasheets in Module 3: Section 2: Towns for urban areas and from Module 3: Section 3: Annexures 1 and 2 for rural areas. However, much of the information for the urban areas still needs to be obtained.

¹ Including seven (7) hospitals that have their own WTWs and/or WWTWs.

² The current situation with regard to the status of each of the identified projects/schemes is primarily based on information as provided by the responsible project/scheme consultant through the completion of datasheets. Additional information to fill the gaps has been obtained from a questionnaire completed by the responsible consultants for a study into the most appropriate Water Service Provider arrangements for the ZDM. With regard to the DWAF projects, project business plans have also been accessed and utilised as a source of information.

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Table 7.1b: Overview of areas served with water and sanitation infrastructure within eDumbe LM.

LM #	LM	Scheme	Settlement type	Function	Traditional Authority	Number of people	Water source	Bulk Water Operator	Reticulation Water Operator	Sanitation Operator
KZ261	eDumbe	Paulpietersburg (eDumbe)	Urban	Water & sanitation	Not applicable	15,200	Paulpieterberg WTW	eDumbe LM	eDumbe LM	eDumbe LM
KZ261	eDumbe	Frischgewaagd	Urban	Water & sanitation	Not applicable	8,158	Unknown	Unknown	Unknown	Unknown
KZ261	eDumbe	Balmoral	Rural	Water	Ndlangamandla	5,356	Borehole	NA	ZDM	NA
KZ261	eDumbe	Bilanyoni	Rural	Water & sanitation	Unknown	Unknown	Bilanyoni WTW	ZDM	eDumbe LM	ZDM
KZ261	eDumbe	Emathunzini (Vlakplaas)	Rural	Water	Ndlangamandla	Unknown	Borehole	NA	ZDM	NA
KZ261	eDumbe	Gwebu/Scotshill	Rural	Water	Dlamini	969	Spring	NA	ZDM	NA
KZ261	eDumbe	Mangosuthu	Rural	Water	Not applicable	8,100	Paulpieterberg WTW	eDumbe LM	ZDM	NA
KZ261	eDumbe	Natal Spa	Rural	Water & sanitation	Unknown	Unknown	Unknown	ZDM	ZDM	ZDM
KZ261	eDumbe	Nqobiswe	Rural	Water	Dlamini	3,024	Borehole	NA	ZDM	NA
KZ261	eDumbe	Obivane	Rural	Water	Dlamini	1,057	Bivane WTW	ZDM	ZDM	NA
KZ261	eDumbe	Ophuzane	Rural	Water	Dlamini	7,980	Bivane WTW	ZDM	ZDM	NA
KZ261	eDumbe	Tholakela	Rural	Water	Dlamini	5,962	Tholakela WTW	ZDM	ZDM	NA
KZ261	eDumbe	Tholakele	Rural	Sanitation	Mthethwa	5,964	Not applicable	NA	NA	NA

Table 7.1c: Overview of areas served with water and sanitation infrastructure within uPhongolo LM.

LM #	LM	Scheme	Settlement type	Function	Traditional Authority	Number of people	Water source	Bulk Water Operator	Reticulation Water Operator	Sanitation Operator
KZ262	uPhongolo	Pongola/Ncotshane	Urban	Water & sanitation	Not applicable	20,000	Pongola WTW	uPhongolo LM	uPhongolo LM	uPhongolo LM
KZ262	uPhongolo	Belgrade	Rural	Water & sanitation	Ndlangamandla	5,359	Belgrade WTW	ZDM	uPhongolo LM	Unknown
KZ262	uPhongolo	Dumenkungwini	Rural	Sanitation	Ntshangase	6,978	Not applicable	NA	NA	NA
KZ262	uPhongolo	Dwarsrand	Rural	Water	Not applicable	320	Borehole	NA	ZDM	NA
KZ262	uPhongolo	Gulela	Rural	Water & sanitation	Unknown	Unknown	Unknown	ZDM	ZDM	ZDM
KZ262	uPhongolo	Highlands – Ndlagamandla	Rural	Water	Ndlangamandla	1,157	Unknown	ZDM	ZDM	NA
KZ262	uPhongolo	Illovo	Rural	Water	Unknown	Unknown	Unknown	ZDM	ZDM	NA
KZ262	uPhongolo	Itshelejuba Hospital	Rural	Water & sanitation	Not applicable	900	Itshelejuba WTW	ZDM	ZDM	ZDM
KZ262	uPhongolo	Khiphunyawo/Siyaphambili	Rural	Water	Sibiya	3,554	Siyaphambili WTW	ZDM	ZDM	NA
KZ262	uPhongolo	Magudu	Rural	Water & sanitation	Not applicable	380	Unknown	Unknown	Unknown	Unknown
KZ262	uPhongolo	Mavuso	Rural	Water	Mavuso	3,000	Borehole	NA	ZDM	NA
KZ262	uPhongolo	Mkhwakhweni	Rural	Sanitation	Ntshangase	9,946	Not applicable	NA	NA	NA
KZ262	uPhongolo	Msibi	Rural	Water	Msibi	1,099	Msibi WTW	ZDM	ZDM	NA
KZ262	uPhongolo	Nkosentsha	Rural	Water	Mavuso	1,620	Nkosentsha WTW	ZDM	ZDM	NA
KZ262	uPhongolo	Ntungwini	Rural	Water	Dlamini	1,704	Spring	NA	ZDM	NA
KZ262	uPhongolo	Ombimbini	Rural	Water	Msibi	6,664	Msibi WTW	ZDM	ZDM	NA
KZ262	uPhongolo	Simdlangentsha	Rural	Water	Ntshangase & Mthethwa	19,983	Unknown	ZDM	ZDM	NA

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Table 7.1d: Overview of areas served with water and sanitation infrastructure within Abaqulusi LM.

LM #	LM	Scheme	Settlement type	Function	Traditional Authority	Number of people	Water source	Bulk Water Operator	Reticulation Water Operator	Sanitation Operator
KZ263	Abaqulusi	Vryheid (Bhekuzulu)	Urban	Water & sanitation	Not applicable	33,666	Klipfontein & Bloemveld WTWs	Abaqulusi LM	Abaqulusi LM	Abaqulusi LM
KZ263	Abaqulusi	eMondlo	Urban	Water & sanitation	Not applicable	21,550	Emondlo WTW	Abaqulusi LM	Abaqulusi LM	Abaqulusi LM
KZ263	Abaqulusi	Alpha	Rural	Water & sanitation	Not applicable	Unknown	Alpha WTW	ZDM	ZDM	ZDM
KZ263	Abaqulusi	Atdoro	Rural	Water	Not applicable	910	Spring	NA	ZDM	NA
KZ263	Abaqulusi	Bhekephi	Rural	Water	Khambi	3,500	Unknown	NA	ZDM	NA
KZ263	Abaqulusi	Bhekumthetho Phase 1 and 2	Rural	Water	Disputed area	4,765	Emondlo WTW	Abaqulusi LM	ZDM	NA
KZ263	Abaqulusi	Bhekumthetho Phase 3	Rural	Water	Disputed area	3,434	Emondlo WTW	Abaqulusi LM	ZDM	NA
KZ263	Abaqulusi	Cliffdale	Rural	Water & sanitation	Not applicable	5,434	Coronation WTW	Abaqulusi LM	Abaqulusi LM	Abaqulusi LM
KZ263	Abaqulusi	Coronation	Rural	Water & sanitation	Not applicable	3,143	Coronation WTW	Abaqulusi LM	Abaqulusi LM	Abaqulusi LM
KZ263	Abaqulusi	Dlomodlomo	Rural	Water	Khambi	684	Borehole	NA	ZDM	NA
KZ263	Abaqulusi	Enyathi	Rural	Water & sanitation	Not applicable	734	Enyathi WTW	ZDM	ZDM	ZDM
KZ263	Abaqulusi	Gluckstad	Rural	Water & sanitation	Not applicable	176	Unknown	Unknown	Unknown	Unknown
KZ263	Abaqulusi	Hlobane	Rural	Water & sanitation	Not applicable	2,400	Hlobane WTW	Abaqulusi LM	Abaqulusi LM	Abaqulusi LM
KZ263	Abaqulusi	Isulabasha Mvunyane	Rural	Water	Hlahlindlela	10,000	Boreholes	NA	ZDM	NA
KZ263	Abaqulusi	Kromellenboog	Rural	Water	Othaka	1,305	Borehole	NA	ZDM	NA
KZ263	Abaqulusi	Louwsberg	Rural	Water & sanitation	Not applicable	3,120	Louwsberg WTW	Abaqulusi LM	Abaqulusi LM	NA
KZ263	Abaqulusi	Mvuzini	Rural	Water	Hlahlindlela	2,500	Mvuzini WTW	ZDM	ZDM	NA
KZ263	Abaqulusi	Mountain View Mission	Rural	Water	Not applicable	1,700	Mountain View WTW	ZDM	ZDM	NA
KZ263	Abaqulusi	Ncome Prison	Rural	Water	Unknown	Unknown	Unknown	ZDM	ZDM	NA
KZ263	Abaqulusi	Nkongolwane	Rural	Water & sanitation	Not applicable	6,566	Coronation WTW	Abaqulusi LM	Abaqulusi LM	Abaqulusi LM
KZ263	Abaqulusi	Sikhwebezi	Rural	Water	Unknown	Unknown	Unknown	Unknown	ZDM	NA
KZ263	Abaqulusi	Vrede	Rural	Water	Not applicable	Unknown	Coronation WTW	Abaqulusi LM	Abaqulusi LM	NA

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Table 7.1e: Overview of areas served with water and sanitation infrastructure within Nongoma LM.

LM #	LM	Scheme	Settlement type	Function	Traditional Authority	Number of people	Water source	Bulk Water Operator	Reticulation Water Operator	Sanitation Operator
KZ265	Nongoma	Nongoma	Urban	Water & sanitation	NA	3,842	Nongoma Vuna & Mbile WTWs	ZDM	Nongoma LM	Nongoma LM
KZ265	Nongoma	Bukhalini	Rural	Water	Mandhlakazi	Unknown	Package plant	ZDM	ZDM	NA
KZ265	Nongoma	Buxedeni	Rural	Water	Mandhlakazi	3,050	Borehole	NA	ZDM	NA
KZ265	Nongoma	Enyokeni Palace	Rural	Water	NA	50	Enkonyeni WTW	ZDM	ZDM	NA
KZ265	Nongoma	Esiphambanweni	Rural	Water	Mandhlakazi	3,731	Unknown	Unknown	ZDM	NA
KZ265	Nongoma	Fankoma	Rural	Water	Usuthu	Unknown	Unknown	Unknown	ZDM	NA
KZ265	Nongoma	Gobamagagu	Rural	Water	Matheni	1,150	Spring	NA	ZDM	NA
KZ265	Nongoma	Gwebu	Rural	Water	Mandhlakazi	2,000	Nongoma WTWs	ZDM	ZDM	NA
KZ265	Nongoma	Hlanganisa	Rural	Sanitation	Usuthu	3,375	Not applicable	NA	NA	NA
KZ265	Nongoma	Kangela Palace	Rural	Water	NA	100	Kangela WTW	ZDM	ZDM	NA
KZ265	Nongoma	Kombuzi	Rural	Sanitation	Mandhlakazi	6,394	Not applicable	NA	NA	NA
KZ265	Nongoma	Kwakheta Palace	Rural	Water	NA	100	Kwakheta WTW	ZDM	ZDM	NA
KZ265	Nongoma	Kwamajamelo	Rural	Water	Usuthu	Unknown	Unknown	Unknown	ZDM	NA
KZ265	Nongoma	Kwashoshamasa	Rural	Water	Usuthu	1,510	Borehole	NA	ZDM	NA
KZ265	Nongoma	Matshemhlope	Rural	Water	Matheni	1,560	Package plant	ZDM	ZDM	NA
KZ265	Nongoma	Njoko/Msebe	Rural	Water	Mandhlakazi	8,795	Borehole	NA	ZDM	NA
KZ265	Nongoma	Sidinsi	Rural	Water	Mandhlakazi	2,320	Sidinsi WTW	ZDM	ZDM	NA

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Table 7.1f: Overview of areas served with water and sanitation infrastructure within Ulundi LM.

LM #	LM	Scheme	Settlement type	Function	Traditional Authority	Number of people	Water source	Bulk Water Operator	Reticulation Water Operator	Sanitation Operator
KZ266	Ulundi	Ulundi	Urban	Water & sanitation	NA	55,000	Ulundi WTW	ZDM	Ulundi LM	ZDM
KZ266	Ulundi	Babanango	Rural	Water & sanitation	NA	3,000	Babanango WTW	ZDM	Ulundi LM	NA
KZ266	Ulundi	Ceza Hospital	Rural	Water & sanitation	NA	2,400	Ceza WTW	ZDM	ZDM	ZDM
KZ266	Ulundi	Dlabane	Rural	Sanitation	Buthelezi	3,141	Not applicable	NA	NA	NA
KZ266	Ulundi	Emakhosini	Rural	Water	Nobamba	4,992	Emakhosini WTW	ZDM	ZDM	NA
KZ266	Ulundi	Esidakeni	Rural	Sanitation	Ndebele	3,921	Not applicable	NA	NA	NA
KZ266	Ulundi	Esigodiphola	Rural	Water	Nobamba	2,174	Unknown	ZDM	ZDM	NA
KZ266	Ulundi	Esikhumbeni	Rural	Sanitation	Buthelezi	732	Not applicable	NA	NA	NA
KZ266	Ulundi	Ezembeni	Rural	Water	Ndebele	9,170	Unknown	ZDM	ZDM	NA
KZ266	Ulundi	Hlungulwane	Rural	Water	Nobamba	794	Borehole	NA	ZDM	NA
KZ266	Ulundi	Isangoyane	Rural	Water	Mpungose	5,435	Unknown	ZDM	ZDM	NA
KZ266	Ulundi	James Nxumalo Hospital	Rural	Sanitation	NA	350	Not applicable	NA	NA	ZDM
KZ266	Ulundi	Mabedlane	Rural	Water	Mpungose	7,139	Unknown	ZDM	ZDM	NA
KZ266	Ulundi	Mahlabatini	Rural	Water & sanitation	NA	370	Unknown	Unknown	Ulundi LM	Unknown
KZ266	Ulundi	Mpungamhlope / Denny / Dalton	Rural	Water & sanitation	NA	2,650	Mpungamhlope WTW	ZDM	Ulundi LM	NA
KZ266	Ulundi	Mvula	Rural	Water	Mlaba	4,275	Borehole	NA	ZDM	NA
KZ266	Ulundi	Njomelwane	Rural	Water	Mlaba	2,673	Borehole	NA	ZDM	NA
KZ266	Ulundi	Nkonjeni Hospital	Rural	Water & sanitation	NA	120	Nkonjeni WTW	ZDM	NA	ZDM
KZ266	Ulundi	Nkonjeni	Rural	Water	Buthelezi	578	Borehole	NA	ZDM	NA
KZ266	Ulundi	Nodwengu	Rural	Water	Mbatha	1,500	Unknown	ZDM	ZDM	NA
KZ266	Ulundi	Nodayana	Rural	Water	Buthelezi	1,801	Package plant	ZDM	ZDM	NA
KZ266	Ulundi	Nsukazi/Mfabeni	Rural	Water	Buthelezi	8,330	Borehole	NA	ZDM	NA
KZ266	Ulundi	Sikhwebezi	Rural	Water	Ndebele	3,500	Not applicable	NA	NA	NA
KZ266	Ulundi	Thokoza/Mtikini	Rural	Water	Mpungose	6,397	Unknown	ZDM	ZDM	NA
KZ266	Ulundi	Thulasizwe Hospital	Rural	Water & sanitation	NA	4,500	Thulasizwe WTW	ZDM	NA	ZDM
KZ266	Ulundi	Thuthukani	Rural	Water	Mlaba	3,429	Borehole	NA	ZDM	NA
KZ266	Ulundi	St Francis Hospital	Rural	Sanitation	NA	600	Not applicable	NA	NA	ZDM
KZ266	Ulundi	Ukuku	Rural	Water	Unknown	Unknown	Unknown	Unknown	ZDM	NA
KZ266	Ulundi	Zamukuphila	Rural	Sanitation	Mbatha	3,150	Not applicable	NA	NA	NA

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7.3 Existing groundwater infrastructure

There are 24 groundwater schemes within the ZDM, and a further 34 schemes for which the water resource is unknown and are potentially supplied through groundwater (listed in Section 5.2). There is currently a lack of known detail relating to the groundwater scheme infrastructure, however the information obtained is given in Table 7.3. It must be noted that springs are considered to be a groundwater resource for the purposes of this WSDP.

In addition to the groundwater resources listed in Table 7.3, the ZDM makes use of boreholes equipped with hand pumps and protected springs in their rudimentary programme. A comprehensive list of these almost 3,750 resources is given in Appendix 8.

Table 7.3: Groundwater infrastructure in the ZDM.

General information	BH1	BH2	BH3	BH4	BH5
Component name	Itsjelejuba Hospital BH	Enyokeni Palace Spring	Excelsior BH	Silutshane BH	Witkop BH
Component ID					
Scheme name					
Local Municipality name	uPhongolo	Nongoma	Ulundi	Ulundi	Ulundi
Local Municipality number	KZ262	KZ265	KZ266	KZ266	KZ266
Traditional Authority	NA	NA	Not declared	Not declared	Not declared
Reference number	Unknown	Unknown	KN275	KN306	KN315
Institutional status					
Current owner	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works
Current operator	WSSA	WSSA	WSSA	WSSA	WSSA
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment					
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity					
Depth (m)		Surface spring			
Delivery capacity (m ³ /day)	Unknown	Unknown	Unknown	Unknown	Unknown
Power source	Unknown	Unknown	Unknown	Unknown	Unknown
Type of superstructure	Unknown	Unknown	Unknown	Unknown	Unknown
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown
Operation					
How often is groundwater quality tested?	Unknown	Unknown	Unknown	Unknown	Unknown
How often is groundwater depth measured?	Unknown	NA	Unknown	Unknown	Unknown
Is borehole yield monitored?	Unknown	Unknown	Unknown	Unknown	Unknown
Is abstraction recorded?	Unknown	Unknown	Unknown	Unknown	Unknown
Is the abstraction registered with DWAF?	Yes	Unknown	Yes	Yes	Yes
Previous vandalism or theft	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality					
Describe the physical condition	Good	Good	Functional	Fair	Fair
How well is the infrastructure maintained?	Planned	Planned	Planned	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown

7.4 Surface Water Infrastructure

Water is drawn from the surface water resources listed in Tables 7.4a and 7.4b to supply both urban and rural communities.

Table 7.4a: Surface water infrastructure in the ZDM.

General information	SW1	SW 2	SW3	SW4	SW5	SW6	SW7
Component name	Frischgewaagd Weir	Belgrade Weir	Mvuna River Dam	Kangela Palace Weir	Vuna Dam	Ceza Hospital Weir	Mphungamhlope Weir
Component ID							
Scheme name	Frischgewaagd	Belgrade	Vryheid		Nongoma		Mphungamhlope
Local Municipality name	eDumbe	uPhongolo	Abaqulusi	Nongoma	Nongoma	Ulundi	Ulundi
Local Municipality number	KZ261	KZ262	KZ263	KZ265	KZ265	KZ266	KZ266
Traditional Authority	Not declared	Ntshangase	Hlahlindlela (partly)	NA	Not declared	NA	Nobamba
Reference number	KN278	KN269	KN292	Unknown	KN304		KN294
Institutional status							
Current owner	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works
Current operator	WSSA	WSSA	Aquafund	WSSA	WSSA	WSSA	WSSA
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment							
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity							
Catchment area (km ²)							
Full supply storage capacity (m ³)	NA	NA	Unknown	NA	Unknown	NA	NA
Type of structure	Weir abstraction	Weir abstraction	Dam	Weir abstraction	Dam	Abstraction	Abstraction
Spillway capacity (m ³ /sec)							
Total annual assured yield (m ³ /annum)							
Can the dam capacity be increased?	NA	NA	Unknown	NA	Unknown	NA	NA
Capacity available for development?	NA	NA	Unknown	NA	Unknown	NA	NA
Operation							
Dam safety registration	NA	NA	Unknown	NA	Unknown	NA	NA
% Allocation for domestic consumption		100	100	Unknown	100	Unknown	100
% Of domestic allocation used		100	100	Unknown	100	Unknown	100
Is the abstraction registered with DWAF?	Yes	Yes	Unknown	Yes	Unknown	Yes	Yes
When was the last dam safety inspection?	NA	NA	Unknown	NA	Unknown	NA	NA
When was the last water restriction?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of water restrictions in the last 5 years?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality							
How well is the infrastructure maintained?	Planned	Planned	Planned	Planned	Planned	Planned	Planned
Are spare parts readily available?	Yes	Yes	Unknown	Yes	Unknown	Yes	Yes
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Describe the physical condition	Fair	Fair	Poor	Good	Fair	Good	Poor
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.4b: Surface water infrastructure in the ZDM.

General information	SW8	SW9
Component name	Thulasizwe Hosptial Weir	Ulundi Weir
Component ID		
Scheme name		Ulundi
Local Municipality name	Ulundi	Ulundi
Local Municipality number	KZ266	KZ266
Traditional Authority	NA	Mbatha
Reference number		KN309
Institutional status		
Current owner	Dept of Works	Dept of Works
Current operator	WSSA	WSSA
Future owner / WSA	ZDM	ZDM
Future operator / WSP	Unknown	Unknown
Asset assessment		
Date constructed	Unknown	Unknown
Expected total lifespan	Unknown	Unknown
Estimated replacement value	Unknown	Unknown
Annual operating cost	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown
Type & capacity		
Catchment area (km ²)		
Full supply storage capacity (m ³)	NA	NA
Type of structure	Abstraction	Abstraction
Spillway capacity (m ³ /sec)		
Total annual assured yield (m ³ /annum)		
Can the dam capacity be increased?	NA	NA
Capacity available for development?	NA	NA
Operation		
Dam safety registration	NA	NA
% Allocation for domestic consumption	Unknown	Unknown
% Of domestic allocation used	Unknown	Unknown
Is the abstraction registered with DWAF?	Yes	Yes
When was the last dam safety inspection?	NA	NA
When was the last water restriction?	Unknown	Unknown
Number of water restrictions in the last 5 years?	Unknown	Unknown
Functionality		
How well is the infrastructure maintained?	Planned	Planned
Are spare parts readily available?	Yes	Yes
Number of breakages / failures per year	Unknown	Unknown
Describe the physical condition	Good	Poor
Cost of refurbishment?	Unknown	Unknown
Cost of replacement?	Unknown	Unknown

7.5 Existing treatment works infrastructure

7.5.1 Water treatment works

There are thirty-eight (38) WTWs (or water treatment facilities) servicing the ZDM areas, the details of which are given in Table 7.5.1.

Table 7.5.1a: Water treatment works in the ZDM.

General information	WTW1	WTW2	WTW3	WTW4	WTW5	WTW6	WTW7	WTW8
Component name	Paulpietersburg WTW	Bilanyoni WTW	Bivane WTW	Tholakela WTW	Pongola WTW	Belgrade WTW	Magudu WTW	Itsjelejuba WTW
Component ID	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Scheme name	Paulpietersburg	Frischgewaagd/Bilanyoni	Obivane	Tholakela	Pongola/Ncotshane	Belgrade	Magudu	Itsjelejuba Hospital
Local Municipality name	eDumbe	eDumbe	eDumbe	eDumbe	uPhongolo	uPhongolo	uPhongolo	uPhongolo
Local Municipality number	KZ261	KZ261	KZ261	KZ261	KZ262	KZ262	KZ262	KZ262
Traditional Authority	Not applicable	Not declared	Dlamini	Dlamini	NA	Ntshangase	Not applicable	Not applicable
Reference number	Unknown	KN278	Unknown	Unknown	Unknown	KN269	Unknown	Unknown
Institutional status								
Current owner	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	uPhongolo LM	ZDM
Current operator	eDumbe LM	ZDM	ZDM	ZDM	uPhongolo LM	ZDM	uPhongolo LM	ZDM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment								
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	R 260,350	Unknown	Unknown	Unknown	R 430,350	Unknown	R 727,500
Annual operating cost	Unknown	R 369,800	Unknown	Unknown	Unknown	R 369,800	Unknown	R 133,000
Annual maintenance cost	Unknown	R 60,200	Unknown	Unknown	Unknown	R 60,200	Unknown	Unknown
Type & capacity								
Type of plant	Unknown	Package filtration	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Water source	Dumbe Dam	Pongola River	Bivane Dam/River	Unknown	Pongola River	Pongola River	Unknown	Borehole
Physical water quality: Turbidity	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Chemical causing quality problem (>10 mg/l)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Chemical causing quality problem (>10 mg/l)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Design Capacity (Ml/d)	Unknown	0.93	Unknown	Unknown	Unknown	1.08	Unknown	0.12
Capacity available for development (%)	Unknown	0.00	Unknown	Unknown	Unknown	0.00	Unknown	Unknown
Operation								
Total volume of water treated per year (Ml)	#VALUE!	339.45	#VALUE!	#VALUE!	#VALUE!	394.2	#VALUE!	#VALUE!
Operating hours per day	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
How often is water quality monitored?	Unknown	Monthly	Unknown	Unknown	Unknown	Monthly	Unknown	Monthly
What laboratory is used?	Unknown	In house	Unknown	Unknown	Unknown	In house	Unknown	In house
% Of the time that water is chlorinated	100%	100%	100%	100%	100%	100%	Unknown	Unknown
% Of water lost through process	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality								
Describe the physical condition	Unknown	Fair	Unknown	Unknown	Unknown	Poor	Unknown	Good
How well is the infrastructure maintained?	Unknown	Planned	Planned	Planned	Planned	Planned	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	R 110,250	Unknown	Unknown	Unknown	R 200,000	Unknown	R 10,000
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Consumers								
Consumer base	Urban	Urban	Rural	Rural	Urban	Rural	Rural	Hospital & rural
Population served	15,200	10,000	Unknown	Unknown	20,000	5,359	380	900

Table 7.5.1b: Water treatment works in the ZDM.

General information	WTW9	WTW10	WTW11	WTW12	WTW13	WTW14	WTW15	WTW16
Component name	Siyapambili WTW	Msibi WTW	Nkosentsha	Klipfontein WTW	Bloemveld WTW	eMondlo WTW	Coronation WTW	Hlobane WTW
Component ID	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Scheme name	Khiphunyawo/Siyapambili	Msibi &	Nkosentsha	Vryheid	Vryheid	eMondlo	Nkongolwane	Hlobane
Local Municipality name	uPhongolo	uPhongolo	uPhongolo	Abaqulusi	Abaqulusi	Abaqulusi	Abaqulusi	Abaqulusi
Local Municipality number	KZ262	KZ262	KZ262	KZ263	KZ263	KZ263	KZ263	KZ263
Traditional Authority	Sibaya	Msibi	Mavuso	Not applicable	Not applicable	Hlahlindlela (partly)	Not applicable	Not applicable
Reference number	Unknown	Unknown	Unknown	Unknown	Unknown	KN292	KN302	Unknown
Institutional status								
Current owner	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Current operator	ZDM	ZDM	ZDM	Abaqulusi LM	Abaqulusi LM	Abaqulusi LM	Abaqulusi LM	Abaqulusi LM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment								
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	R 13,300,000	R 120,000	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	R 1,559,000	R 80,000	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	R 212,000	Unknown	Unknown
Type & capacity								
Type of plant	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Water source	River	River	River	Klipfontein Dam	Bloemveld Dam	Mvunyana River (dam)	Hlobane Dam	Hlobane Dam
Physical water quality: Turbidity	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Chemical causing quality problem (>10 mg/l)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Chemical causing quality problem (>10 mg/l)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Design Capacity (Ml/d)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	7.00	0.16
Capacity available for development (%)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	0.00	0.00
Operation								
Total volume of water treated per year (Ml)		#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	2555	58.4
Operating hours per day	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
How often is water quality monitored?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Monthly	Monthly
What laboratory is used?	Unknown	Unknown	Unknown	Unknown	In house	In house	In house	Unknown
% Of the time that water is chlorinated	Unknown	Unknown	Unknown	Unknown	100%	100%	100%	Unknown
% Of water lost through process	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality								
Describe the physical condition	Unknown	Unknown	Unknown	Unknown	Unknown	Poor	Good	Unknown
How well is the infrastructure maintained?	Planned	Planned	Planned	Planned	Planned	Planned	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	R 850,000	R 0
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Consumers								
Consumer base	Rural	Rural	Rural	Urban	Urban	Urban	Rural	Rural
Population served	Unknown	Unknown	Unknown	16,833	16,833	21,550	4,000	2,400

Table 7.5.1c: Water treatment works in the ZDM.

General information	WTW17	WTW18	WTW19	WTW20	WTW21	WTW22	WTW23	WTW24
Component name	Louwsburg WTW	Mvuzini WTW	Enyathi WTW	Alpha WTW	Mountain View WTW	Nongoma Vuna WTW	Nongoma Mbile WTW	Enyokeni WTW
Component ID	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Scheme name	Louwsburg	Mvuzini	Enyathi	Alpha Mines	Mountain View	Nongoma	Nongoma	Enyokeni Palace
Local Municipality name	Abaqulusi	Abaqulusi	Abaqulusi	Abaqulusi	Abaqulusi	Nongoma	Nongoma	Nongoma
Local Municipality number	KZ263	KZ263	KZ263	KZ263	KZ263	KZ265	KZ265	KZ265
Traditional Authority	Not applicable	Hlahlindlela	Not applicable	Not applicable	Not applicable	Not declared	Not declared	Not applicable
Reference number	Unknown	Unknown	Unknown	Unknown	Unknown	KN304	KN304	Unknown
Institutional status								
Current owner	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Current operator	Abaqulusi LM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment								
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	R 14,513,100	Unknown	R 577,060
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	R 1,711,000	Unknown	R 112,534
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	R 289,000	Unknown	Unknown
Type & capacity								
Type of plant	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Water source	Louwsburg Dams	River	Unknown	Unknown	River	Vuna & Vukwana Dams	Mbile Dam	Springs
Physical water quality: Turbidity	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Chemical causing quality problem (>10 mg/l)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Chemical causing quality problem (>10 mg/l)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Design Capacity (Ml/d)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	4.50	Unknown
Capacity available for development (%)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	0.00	Unknown
Operation								
Total volume of water treated per year (Ml)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	1642.5	#VALUE!
Operating hours per day	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
How often is water quality monitored?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Monthly	Monthly
What laboratory is used?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	In house	In house
% Of the time that water is chlorinated	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	100%	0%
% Of water lost through process	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality								
Describe the physical condition	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Poor	Good
How well is the infrastructure maintained?	Planned	Planned	Planned	Planned	Planned	Planned	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	R 500,000	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Consumers								
Consumer base	Rural	Rural	Rural	Rural	Rural	Urban	Urban	Hospital
Population served	3,120	Unknown	Unknown	Unknown	Unknown	Unknown	15,250	15,250

Table 7.5.1d: Water treatment works in the ZDM.

General information	WTW25	WTW26	WTW27	WTW28	WTW29	WTW30	WTW31	WTW32
Component name	Kangela WTW	Kwakheta WTW	Usuthu	Mandlakazi WTW	Sindinsi WTW	Khombuzi WTW	Ulundi WTW	Babanango WTW
Component ID	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Scheme name	Kangela Palace	Kwakheta Palace	Usuthu	Mandlakazi	Sindinsi	Khombuzi	Ulundi	Babanango
Local Municipality name	Nongoma	Nongoma	Nongoma	Nongoma	Nongoma	Nongoma	Ulundi	Ulundi
Local Municipality number	KZ265	KZ265	KZ265	KZ265	KZ265	KZ265	KZ266	KZ266
Traditional Authority	Not applicable	Not applicable	Unknown	Unknown	Mandlakazi	Unknown	Mbatha	Not applicable
Reference number	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	KN309	Unknown
Institutional status								
Current owner	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Current operator	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment								
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	R 1,049,550	R 658,300	Unknown	Unknown	Unknown	Unknown	R 20,604,700	Unknown
Annual operating cost	R 83,274	R 15,000	Unknown	Unknown	Unknown	Unknown	R 1,890,000	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	R 210,000	Unknown
Type & capacity								
Type of plant	Unknown	Unknown	Unknown	Unknown	Package plant	Unknown	Unknown	Unknown
Water source	River	Unknown	Unknown	Unknown	River	Unknown	White Mfolozi River	Unknown
Physical water quality: Turbidity	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Chemical causing quality problem (>10 mg/l)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Chemical causing quality problem (>10 mg/l)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Design Capacity (Ml/d)	0.06	0.015	Unknown	Unknown	Unknown	Unknown	27.00	Unknown
Capacity available for development (%)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	0.00	Unknown
Operation								
Total volume of water treated per year (Ml)	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	9855	Unknown
Operating hours per day	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
How often is water quality monitored?	Monthly	Monthly	Unknown	Unknown	Unknown	Unknown	Monthly	Unknown
What laboratory is used?	In house	In house	Unknown	Unknown	Unknown	Unknown	In house	Unknown
% Of the time that water is chlorinated	0%	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
% Of water lost through process	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality								
Describe the physical condition	Good	Unknown	Unknown	Unknown	Unknown	Unknown	Poor	Unknown
How well is the infrastructure maintained?	Planned	Unknown	Unknown	Unknown	Unknown	Unknown	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	R 70,000	R 0	Unknown	Unknown	Unknown	Unknown	R 650,000	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Consumers								
Consumer base	Hospital	Hospital & school	Rural	Rural	Rural	Rural	Urban	Rural
Population served	100	100	Unknown	Unknown	Unknown	Unknown	55,000	3,000

Table 7.5.1e: Water treatment works in the ZDM.

General information	WTW33	WTW34	WTW35	WTW36	WTW37	WTW38
Component name	Ceza WTW	Emakhosini WTW	Nodayana WTW	Nkonjeni WTW	Mphungamhlope	Thulasizwe WTW
Component ID	TBD	TBD	TBD	TBD	TBD	TBD
Scheme name	Ceza Hospital	Emakhosini	Nodayana	Nkonjeni Hospital	Mphungamhlope	Thulasizwe Hospital
Local Municipality name	Ulundi	Ulundi	Ulundi	Ulundi	Ulundi	Ulundi
Local Municipality number	KZ266	KZ266	KZ266	KZ266	KZ266	KZ266
Traditional Authority	Not applicable	Nobamba	Buthelezi	Not applicable	Nobamba	Not applicable
Reference number	Unknown	Unknown	Unknown	Unknown	KN294	Unknown
Institutional status						
Current owner	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Current operator	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment						
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	R 1,260,740			R 1,645,900	R 366,400	R 801,160
Annual operating cost	R 284,000			R 149,000	R 344,000	R 149,000
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	R 56,000	Unknown
Type & capacity						
Type of plant	Unknown	Unknown	Package plant	Unknown	Unknown	Unknown
Water source	River	River	River	Boreholes	White Mfolozi	River
Physical water quality: Turbidity	Unknown	Unknown		Unknown	Unknown	Unknown
Chemical causing quality problem (>10 mg/l)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Chemical causing quality problem (>10 mg/l)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Design Capacity (Ml/d)	0.24	Unknown	Unknown	0.12	0.65	0.12
Capacity available for development (%)	Unknown	Unknown	Unknown	Unknown	0.00	Unknown
Operation						
Total volume of water treated per year (Ml)	#VALUE!	#VALUE!	#VALUE!	#VALUE!	237.25	#VALUE!
Operating hours per day	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
How often is water quality monitored?	Monthly	Unknown	Unknown	Monthly	Monthly	Monthly
What laboratory is used?	In house	Unknown	Unknown	In house	In house	In house
% Of the time that water is chlorinated	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
% Of water lost through process	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality						
Describe the physical condition	Good	Unknown	Unknown	Fair	Poor	Good
How well is the infrastructure maintained?	Planned	Planned	Planned	Planned	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	R 30,000	Unknown	Unknown	R 156,500	R 400,000	R 51,500
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Consumers						
Consumer base	Hospital & schools	Rural	Rural	Hospital	Rural	Hospital & community
Population served	2,400	4,992	1,801	120	6,000	4,500

7.5.2 Wastewater treatment works

There are twenty (20) WWTWs servicing the ZDM areas, the details of which are given in Table 7.5.2.

Table 7.5.2a: Wastewater treatment works in the ZDM.

General information	WWTW1	WWTW2	WWTW3	WWTW4	WWTW5	WWTW6	WWTW7
Component name	Paulpietersberg WWTW	Bilanyoni WWTW	Pongola WWTW	Itsjelejuba Hospital	Gulela	Vryheid WWTW	eMondlo WWTW
Component ID	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Scheme name	Paulpietersberg	Frischgewaagd/Bilanyoni	Pongola	Itsjelejuba Hospital	Gulela	Vryheid	eMondlo
Local Municipality name	eDumbe	eDumbe	uPhongolo	uPhongolo	uPhongolo	Abaqulusi	Abaqulusi
Local Municipality number	KZ261	KZ261	KZ262	KZ262	KZ262	KZ263	KZ263
Traditional Authority	Not applicable	Not declared	Not applicable	Not applicable	Unknown	Not applicable	Hlahlindlela
Reference number	Unknown	KN279	Unknown	Unknown	Unknown	Unknown	KN293
Institutional status							
Current owner	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Current operator	eDumbe LM	ZDM	uPhongolo LM	ZDM	ZDM	Abaqulusi LM	Abaqulusi LM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment							
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	R 290,000	Unknown	R 617,130	Unknown	Unknown	R 11,600,000
Annual operating cost	Unknown	R 184,000	Unknown	R 104,728	Unknown	Unknown	R 1,506,000
Annual maintenance cost	Unknown	R 16,000	Unknown	Unknown	Unknown	Unknown	R 80,000
Type & capacity							
Type of plant	Unknown	Oxidation ponds	Unknown	Grid channel & screens	Unknown	Unknown	Activated sludge system, clarifiers & maturation pond
Water source (dsicharge)	Unknown	Pongola River	Unknown	Maturation ponds	Unknown	Unknown	Stream (Mvunyana River)
Physical water quality: Turbidity	Unknown	Unknown	Unknown	Not applicable	Unknown	Unknown	Unknown
Chemical causing quality problem (>10 mg/l)	Unknown	Unknown	Unknown	Not applicable	Unknown	Unknown	Unknown
Chemical causing quality problem (>10 mg/l)	Unknown	Unknown	Unknown	Not applicable	Unknown	Unknown	Unknown
Design Capacity (MI/d)	Unknown	Unknown	Unknown	0.18	Unknown	Unknown	4
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	0
Operation							
Total volume of water treated per year (MI)	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	1460
Operating hours per day	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
How often is water quality monitored?	Unknown	Occasionally	Unknown	Not applicable	Unknown	Unknown	Occasionally
What laboratory is used?	Unknown	Unknown	Unknown	Not applicable	Unknown	Unknown	Unknown
% Of water lost through process	Unknown	Unknown	Unknown	Not applicable	Unknown	Unknown	Unknown
Functionality							
Describe the physical condition	Unknown	Good	Unknown	Good	Good	Unknown	Good
How well is the infrastructure maintained?	Planned	Planned	Planned	Planned	Planned	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	R 0	Unknown	R 46,500	Unknown	Unknown	R 15,000
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Consumers							
Consumer base	Urban	Rural	Urban	Hospital	Rural	Urban	Urban
Population served	15,200	2,000	20,000	400	Unknown	33,666	21,550

Table 7.5.2b: Wastewater treatment works in the ZDM.

General information	WWTW8	WWTW9	WWTW10	WWTW11	WWTW12	WWTW13	WWTW14	WWTW15
Component name	Coronation WWTW	Hlobane WWTW	Nkongolwane WWTW	Cliffdale WWTW	Enyathi WWTW	Alpha WWTW	Nongoma WWTW	Ulundi WWTW
Component ID	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Scheme name	Coronation	Hlobane	Nkongolwane	Cliffdale	Enyathi	Alpha Mines	Nongoma	Ulundi
Local Municipality name	Abaqulusi	Abaqulusi	Abaqulusi	Abaqulusi	Abaqulusi	Abaqulusi	Nongoma	Ulundi
Local Municipality number	KZ263	KZ263	KZ263	KZ263	KZ263	KZ263	KZ265	KZ266
Traditional Authority	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Mpungose
Reference number	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	KN310
Institutional status								
Current owner	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Current operator	Abaqulusi LM	Abaqulusi LM	Abaqulusi LM	Abaqulusi LM	ZDM	ZDM	Nongoma LM	ZDM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment								
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	R 16,011,050
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	R 1,330,000
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	R 70,000
Type & capacity								
Type of plant	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Settling tanks, biofilters, chlorination
Water source (dscharge)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	White Mfolozi River
Physical water quality: Turbidity	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Chemical causing quality problem (>10)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Chemical causing quality problem (>10)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Design Capacity (MI/d)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	5
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	0
Operation								
Total volume of water treated per year (MI)	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	1825
Operating hours per day	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
How often is water quality monitored?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Occasionally
What laboratory is used?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
% Of water lost through process	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality								
Describe the physical condition	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Poor
How well is the infrastructure maintained?	Planned	Planned	Planned	Planned	Planned	Planned	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	R 200,000
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Consumers								
Consumer base	Rural	Rural	Rural	Rural	Rural	Rural	Urban	Urban
Population served	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	3,842	33,000

Table 7.5.2c: Wastewater treatment works in the ZDM.

General information	WWTW16	WWTW17	WWTW18	WWTW19	WWTW20
Component name	Ceza WWTW	James Nxumalo WWTW	Nkonjeni WWTW	St. Francis WWTW	Thulasizwe WWTW
Component ID	TBD	TBD	TBD	TBD	TBD
Scheme name	Ceza Hospital	James Nxumalo	Nkonjeni Hospital	St. Francis	Thulasizwe
Local Municipality name	Ulundi	Ulundi	Ulundi	Ulundi	Ulundi
Local Municipality number	KZ266	KZ266	KZ266	KZ266	KZ266
Traditional Authority	NA	NA	NA	NA	NA
Reference number	Unknown	Unknown	Unknown	Unknown	Unknown
Institutional status					
Current owner	ZDM	ZDM	ZDM	ZDM	ZDM
Current operator	ZDM	ZDM	ZDM	ZDM	ZDM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment					
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	R 246,802	R 1,063,145	R 499,470	R 689,240	R 260,460
Annual operating cost	R 94,728	R 104,000	R 45,000	R 96,000	R 64,000
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity					
Type of plant	Activated sludge system	Grid channel & screens	Grid channel & screens	Grid channel & screens	Facultative pond
Water source (dsicharge)	Maturation ponds	Maturation ponds	Maturation ponds	Maturation ponds	Maturation ponds
Physical water quality: Turbidity	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Chemical causing quality problem (>10)	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Chemical causing quality problem (>10)	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Design Capacity (MI/d)	0.2	0.16	0.136	0.199	0.062
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown
Operation					
Total volume of water treated per year (MI)	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Operating hours per day	Unknown	Unknown	Unknown	Unknown	Unknown
How often is water quality monitored?	Occasionally	Occasionally	Occasionally	Occasionally	Occasionally
What laboratory is used?	Unknown	Unknown	Unknown	Unknown	Unknown
% Of water lost through process	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality					
Describe the physical condition	Fair	Fair	Fair	Fair	Poor
How well is the infrastructure maintained?	Planned	Planned	Planned	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	R 92,350	R 56,500	R 121,490	R 121,490	R 408,800
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown
Consumers					
Consumer base	Hospital	Hospital	Hospital	Hospital	Hospital
Population served	800	350	120	600	320

7.6 Existing pump stations infrastructure

The pump station infrastructure is given in Table 7.6. However, this data is not complete and will be supplemented when the asset register database has been compiled and verified.

Table 7.6a: Pump station infrastructure in the ZDM.

General information	PS1	PS2	PS3	PS4	PS5	PS6
Component name	Frischgewaagd Weir PS	Frischgewaagd WTW PS	Belgrade Weir PS	Belgrade WTW PS	Itsjelejuba Hospital BH PS	Mondlo Bulk PS
Component ID						
Scheme name	Frischgewaagd	Frischgewaagd	Belgrade	Belgrade		Vryheid
Reservoir supplied	Frischgewaagd WTW	Frischgewaagd storage	Belgrade WTW	Belgrade storage	Itsjelejuba Hospital Res	Mondlo storage
Local Municipality name	eDumbe	eDumbe	uPhongolo	uPhongolo	uPhongolo	Abaqulusi
Local Municipality number	KZ261	KZ261	KZ262	KZ262	KZ262	KZ263
Traditional Authority	Not declared	Not declared	Ntshangase	Ntshangase	NA	Hlahlindlela (partly)
Reference number	KN278	KN278	KN269	KN269	Unknown	KN292
Institutional status						
Current owner	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works
Current operator	WSSA	WSSA	WSSA	WSSA	WSSA	Aquafund
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment						
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity						
Number of pumps		4		8	2	15
Pumping head (m)						
Discharge rate (ml/day)						
Pump station Kilowatt		5.6*2		7.5*2 + 4*2		
Motor speed						Various
Type of power supply						Electric
Type of superstructure	Unknown	Container	Unknown	Unknown	Unknown	Unknown
Capacity available for development?					Unknown	Unknown
Operation						
Operating hours per day	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Are there any standby pumps available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality						
Describe the physical condition	Fair	Fair	Fair	Fair	Fair	Poor
How well is the infrastructure maintained?	Planned	Planned	Planned	Planned	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.6b: Pump station infrastructure in the ZDM.

General information	PS7	PS8	PS9	PS10	PS11
Component name	Nkongolwane WTW	Enyokeni Palace Bulk PS	Enyokeni Palace Retic PS	Kangela Palace Bulk PS	Kangela Palace Retic PS
Component ID					
Scheme name	Nkongolwane (Coronation)				
Reservoir supplied		Enyokeni Palace storage	Enyokeni Palace Res	Kangela Palace storage	Kangela Palace Res
Local Municipality name	Abaqulusi	Nongoma	Nongoma	Nongoma	Nongoma
Local Municipality number	KZ263	KZ265	KZ265	KZ265	KZ265
Traditional Authority		NA	NA	NA	NA
Reference number	KN302	Unknown	Unknown	Unknown	Unknown
Institutional status					
Current owner	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works
Current operator	WSSA	WSSA	WSSA	WSSA	WSSA
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment					
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity					
Number of pumps	1	1	1	1	1
Pumping head (m)					
Discharge rate (ml/day)					0.144
Pump station Kilowatt					
Motor speed					
Type of power supply					
Type of superstructure	Unknown	Unknown	Unknown	Unknown	Unknown
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown
Operation					
Operating hours per day	Unknown	Unknown	Unknown	Unknown	Unknown
Are there any standby pumps available?	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality					
Describe the physical condition	Good	Good	Good	Good	Good
How well is the infrastructure maintained?	Planned	Planned	Planned	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.6c: Pump station infrastructure in the ZDM.

General information	PS12	PS13	PS14	PS16	PS17
Component name	Kwakheta Palace School PS	Nongoma (Vuna) Bulk PS	Ceza Hospital Bulk PS	Nkonjeni Hospital Bulk PS	Nkonjeni Hospital Elevated PS
Component ID					
Scheme name		Nongoma			
Reservoir supplied	Kwakheta Palace Elevated Res	Nongoma (Vuna) WTW	Ceza Hospital WTW	Nkonjeni Hospital Bulk Res	Nkonjeni Hospital Retic Res
Local Municipality name	Nongoma	Nongoma	Ulundi	Ulundi	Ulundi
Local Municipality number	KZ265	KZ265	KZ266	KZ266	KZ266
Traditional Authority	NA	Not declared	NA	NA	NA
Reference number	Unknown	KN304			
Institutional status					
Current owner	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works
Current operator	Unknown	WSSA	WSSA	WSSA	WSSA
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment					
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity					
Number of pumps	1	3	1	2* GEC D88 4/5	2* Salwier NT 40/200
Pumping head (m)					
Discharge rate (ml/day)					
Pump station Kilowatt					
Motor speed					
Type of power supply		Electric			
Type of superstructure	Unknown	Unknown	Unknown	Unknown	Unknown
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown
Operation					
Operating hours per day	Unknown	Unknown	Unknown	Unknown	Unknown
Are there any standby pumps available?	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality					
Describe the physical condition	Unknown	Poor	Good	Fair	Fair
How well is the infrastructure maintained?	Unknown	Planned	Planned	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.6d: Pump station infrastructure in the ZDM.

General information	PS18	PS19	PS20
Component name	Mphungamhlope Bulk PS	Thulasizwe Hosptial Bulk PS	Ulundi Bulk PS
Component ID			
Scheme name	Mphungamhlope		Ulundi
Reservoir supplied	Mphungamhlope WTW	Thulasizwe Hosptial WTW	
Local Municipality name	Ulundi	Ulundi	Ulundi
Local Municipality number	KZ266	KZ266	KZ266
Traditional Authority	Nobamba	NA	Mbatha
Reference number	KN294		KN309
Institutional status			
Current owner	Dept of Works	Dept of Works	Dept of Works
Current operator	WSSA	WSSA	WSSA
Future owner / WSA	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown
Asset assessment			
Date constructed	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown
Type & capacity			
Number of pumps	9	1	4* Harland Uniglide 5DC 125.150 & 2* submersibles
Pumping head (m)			
Discharge rate (ml/day)			
Pump station Kilowatt			
Motor speed			55
Type of power supply			
Type of superstructure	Unknown	Unknown	Unknown
Capacity available for development?	Unknown	Unknown	Unknown
Operation			
Operating hours per day	Unknown	Unknown	Unknown
Are there any standby pumps available?	Unknown	Unknown	Unknown
Functionality			
Describe the physical condition	Poor	Good	Poor
How well is the infrastructure maintained?	Planned	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown

7.7 Existing bulk pipeline infrastructure

The known bulk pipeline infrastructure detail is given in Table 7.7. However, this data is not complete and will be supplemented when the asset register database has been compiled and verified.

Table 7.7a: Bulk pipeline infrastructure in the ZDM.

General information	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Component name	Frischgewaagd Bulk	Belgrade Bulk	Itsjelejuba Hospital Bulk	Mondlo Bulk	Nkongolwane Bulk	Enyokeni Palace Bulk
Component ID						
Scheme name	Frischgewaagd	Belgrade		Vryheid	Nkongolwane (Coronation)	
Local Municipality name	eDumbe	uPhongolo	uPhongolo	Abaqulusi	Abaqulusi	Nongoma
Local Municipality number	KZ261	KZ262	KZ262	KZ263	KZ263	KZ265
Traditional Authority	Not declared	Ntshangase	NA	Hlahlindlela (partly)		NA
Reference number	KN278	KN269	Unknown	KN292	KN302	Unknown
Institutional status						
Current owner	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works
Current operator	WSSA	WSSA	WSSA	Aquafund	WSSA	WSSA
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment						
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity						
Pipe material (Most common)	Unknown	Unknown	Unknown	Unknown	HDPE	Unknown
Avg. Diameter (mm)	Unknown	Unknown	Unknown	Unknown	50	Unknown
Avg. Pipe Class	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Avg. Discharge rate (m ³ /sec)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Total Length above ground (m)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Total Length below ground (m)	2,500	500	Unknown	8,000	1,200	Unknown
Total Length of river crossings (m)	0	0	0	0	0	0
Total Length of road crossings (m)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Operation						
Is there any leakage control? (Pressure regulation)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
How many illegal connections to date?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Have illegal connections be formalised?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Have servitudes been registered?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality						
Describe the physical condition	Fair	Fair	Fair	Poor	Good	Good
How well is the infrastructure maintained?	Demand	Demand	Demand	Demand	Demand	Demand
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.7b: Bulk pipeline infrastructure in the ZDM.

General information	Zone 7	Zone 8	Zone 9	Zone 10	Zone 11
Component name	Kangela Palace Bulk	Kwakheta Palace Bulk	Nongoma (Vuna) Bulk	Ceza Hospital Bulk	Nkonjeni Hospital Bulk
Component ID					
Scheme name			Nongoma		
Local Municipality name	Nongoma	Nongoma	Nongoma	Ulundi	Ulundi
Local Municipality number	KZ265	KZ265	KZ265	KZ266	KZ266
Traditional Authority	NA	NA	Not declared	NA	NA
Reference number	Unknown	Unknown	KN304		
Institutional status					
Current owner	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works
Current operator	WSSA	Unknown	WSSA	WSSA	WSSA
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment					
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity					
Pipe material (Most common)	Unknown	Unknown	Unknown	Unknown	Unknown
Avg. Diameter (mm)	Unknown	Unknown	Unknown	Unknown	Unknown
Avg. Pipe Class	Unknown	Unknown	Unknown	Unknown	Unknown
Avg. Discharge rate (m ³ /sec)	Unknown	Unknown	Unknown	Unknown	Unknown
Total Length above ground (m)	Unknown	Unknown	Unknown	Unknown	Unknown
Total Length below ground (m)	Unknown	Unknown		3,000	Unknown
Total Length of river crossings (m)		0	0	0	0
Total Length of road crossings (m)	Unknown	Unknown	Unknown	Unknown	Unknown
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown
Operation					
Is there any leakage control? (Pressure regulation)	Unknown	Unknown	Unknown	Unknown	Unknown
How many illegal connections to date?	Unknown	Unknown	Unknown	Unknown	Unknown
Have illegal connections be formalised?	Unknown	Unknown	Unknown	Unknown	Unknown
Have servitudes been registered?	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality					
Describe the physical condition	Good	Unknown	Poor	Good	Fair
How well is the infrastructure maintained?	Demand	Unknown	Planned	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.7c: Bulk pipeline infrastructure in the ZDM.

General information	Zone 12	Zone 13	Zone 14
Component name	Mphungamhlope Bulk	Thulasizwe Hosptial Bulk	Ulundi Bulk
Component ID			
Scheme name	Mphungamhlope		Ulundi
Local Municipality name	Ulundi	Ulundi	Ulundi
Local Municipality number	KZ266	KZ266	KZ266
Traditional Authority	Nobamba	NA	Mbatha
Reference number	KN294		KN309
Institutional status			
Current owner	Dept of Works	Dept of Works	Dept of Works
Current operator	WSSA	WSSA	WSSA
Future owner / WSA	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown
Asset assessment			
Date constructed	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown
Type & capacity			
Pipe material (Most common)	Unknown	Unknown	Unknown
Avg. Diameter (mm)	Unknown	Unknown	500
Avg. Pipe Class	Unknown	Unknown	Unknown
Avg. Discharge rate (m ³ /sec)	Unknown	Unknown	Unknown
Total Length above ground (m)	Unknown	Unknown	Unknown
Total Length below ground (m)	300	Unknown	5,000
Total Length of river crossings (m)	0	0	0
Total Length of road crossings (m)	Unknown	Unknown	Unknown
Capacity available for development?	Unknown	Unknown	Unknown
Operation			
Is there any leakage control? (Pressure regulation)	Unknown	Unknown	Unknown
How many illegal connections to date?	Unknown	Unknown	Unknown
Have illegal connections be formalised?	Unknown	Unknown	Unknown
Have servitudes been registered?	Unknown	Unknown	Unknown
Functionality			
Describe the physical condition	Poor	Good	Poor
How well is the infrastructure maintained?	Planned	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown

7.8 Existing reservoir infrastructure

The known reservoir infrastructure detail is given in Table 7.8. However, this data is not complete and will be supplemented when the asset register database has been compiled and verified.

Table 7.8a: Reservoir infrastructure in the ZDM.

General information	RES 1	RES 2	RES 3	RES 4	RES 5	RES 6
Component name	Frischgewaagd storage	Belgrade storage	Itsjelejuba Hospital Res	Mondlo storage	Mondlo Res	Nkongolwane Res
Component ID						
Scheme name	Frischgewaagd	Belgrade		Vryheid	Vryheid	Nkongolwane (Coronation)
Local Municipality name	eDumbe	uPhongolo	uPhongolo	Abaqulusi	Abaqulusi	Abaqulusi
Local Municipality number	KZ261	KZ262	KZ262	KZ263	KZ263	KZ263
Traditional Authority	Not declared	Ntshangase	NA	Hlahlindlela (partly)	Hlahlindlela (partly)	
Reference number	KN278	KN269	Unknown	KN292	KN292	KN302
Institutional status						
Current owner	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works
Current operator	WSSA	WSSA	WSSA	Aquafund	Aquafund	WSSA
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment						
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity						
Reservoir situation?	Unknown	Unknown	1*ground & 1*elevated	Ground	Unknown	Ground
Type of material	Unknown	Unknown	Concrete	Concrete	Unknown	Unknown
Reservoir capacity (Ml)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Is it a bulk or reticulation reservoir?	Bulk	Bulk	Bulk	Bulk	Retic	Retic
Capacity for development?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Operation						
What is the storage factor (x daily use)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality						
Describe the physical condition	Fair	Fair	Fair	Poor	Poor	Good
How well is the infrastructure maintained?	Demand	Demand	Demand	Demand	Demand	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.8b: Reservoir infrastructure in the ZDM.

General information	RES 7	RES 8	RES 9	RES 10	RES 11	RES 12
Component name	Enyokeni Palace storage	Enyokeni Palace Res	Kangela Palace storage	Kangela Palace Res	Kwakheta Palace School Res	Kwakheta Palace Elevated Res
Component ID						
Scheme name						
Local Municipality name	Nongoma	Nongoma	Nongoma	Nongoma	Nongoma	Nongoma
Local Municipality number	KZ265	KZ265	KZ265	KZ265	KZ265	KZ265
Traditional Authority	NA	NA	NA	NA	NA	NA
Reference number	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Institutional status						
Current owner	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works
Current operator	WSSA	WSSA	WSSA	WSSA	Unknown	Unknown
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment						
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity						
Reservoir situation?	Ground*2	Ground	Ground	Ground	Ground	Elevated
Type of material	Concrete	Concrete	Concrete	Unknown	Unknown	Unknown
Reservoir capacity (M)	0.05	0.05	0.25	Unknown	Unknown	Unknown
Is it a bulk or reticulation reservoir?	Bulk	Retic	Bulk	Retic	Bulk	Bulk
Capacity for development?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Operation						
What is the storage factor (x daily use)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality						
Describe the physical condition	Good	Good	Good	Good	Unknown	Unknown
How well is the infrastructure maintained?	Demand	Demand	Demand	Demand	Unknown	Unknown
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.8c: Reservoir infrastructure in the ZDM.

General information	RES 13	RES 14	RES 15	RES 16	RES 17
Component name	Kwakheta Kings Palace Res	Nongoma (Vuna) Res	Ceza Hospital Res	Nkonjeni Hospital Bulk Res	Nkonjeni Hospital Retic Res
Component ID					
Scheme name		Nongoma			
Local Municipality name	Nongoma	Nongoma	Ulundi	Ulundi	Ulundi
Local Municipality number	KZ265	KZ265	KZ266	KZ266	KZ266
Traditional Authority	NA	Not declared	NA	NA	NA
Reference number	Unknown	KN304			
Institutional status					
Current owner	Dept of Works	Dept of Works	Dept of Works	Dept of Works	Dept of Works
Current operator	Unknown	WSSA	WSSA	WSSA	WSSA
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment					
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity					
Reservoir situation?	Ground	Ground	Ground	Ground	Elevated
Type of material	Unknown	Unknown	Unknown	Concrete	Concrete
Reservoir capacity (Ml)	Unknown	Unknown	Unknown	0.5	0.15
Is it a bulk or reticulation reservoir?	Retic	Retic	Retic	Bulk	Retic
Capacity for development?	Unknown	Unknown	Unknown	Unknown	Unknown
Operation					
What is the storage factor (x daily use)	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality					
Describe the physical condition	Unknown	Unknown	Unknown	Unknown	Unknown
How well is the infrastructure maintained?	Unknown	Unknown	Unknown	Unknown	Unknown
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.8d: Reservoir infrastructure in the ZDM.

General information	RES 18	RES 19	RES 20
Component name	Mphungamhlope Res	Thulasizwe Hosptial Res	Ulundi Res
Component ID			
Scheme name	Mphungamhlope		Ulundi
Local Municipality name	Ulundi	Ulundi	Ulundi
Local Municipality number	KZ266	KZ266	KZ266
Traditional Authority	Nobamba	NA	Mbatha
Reference number	KN294		KN309
Institutional status			
Current owner	Dept of Works	Dept of Works	Dept of Works
Current operator	WSSA	WSSA	WSSA
Future owner / WSA	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown
Asset assessment			
Date constructed	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown
Type & capacity			
Reservoir situation?	Ground	Ground	Ground
Type of material	Unknown	Unknown	Concrete
Reservoir capacity (Ml)	Unknown	Unknown	10
Is it a bulk or reticulation reservoir?	Retic	Retic	Retic
Capacity for development?	Unknown	Unknown	Unknown
Operation			
What is the storage factor (x daily use)	Unknown	Unknown	Unknown
Functionality			
Describe the physical condition	Unknown	Unknown	Unknown
How well is the infrastructure maintained?	Unknown	Unknown	Unknown
Are spare parts readily available?	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown

7.9 Existing reticulation infrastructure (by supply zone)

Known detail of the existing reticulation infrastructure for the ZDM is given in Table 7.9. However, this data is not complete and will be supplemented when the asset register database has been compiled and verified.

Table 7.9a: Reticulation infrastructure in the ZDM.

General information	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Component name	Paulpietersburg Retic	Frischgewaagd Retic	Balmoral/Vlakplaas Retic	Gwebu/Scotthill Retic	Nqibiswe Retic	Ntungwini Retic
Component ID						
Scheme name	Paulpietersburg	Frischgewaagd	Balmoral/Vlakplaas	Gwebu/Scotthill	Nqibiswe	Ntungwini
Local Municipality name	eDumbe	eDumbe	eDumbe	eDumbe	eDumbe	eDumbe
Local Municipality number	KZ261	KZ261	KZ261	KZ261	KZ261	KZ261
Traditional Authority	NA	Not declared	Ndlangamandla	Dlamini	Dlamini	Dlamini
Reference number		KN278				
Institutional status						
Current owner	eDumbe LM	Dept of Works	ZDM	ZDM	ZDM	ZDM
Current operator	eDumbe LM	ZDM	ZDM	ZDM	ZDM	ZDM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment						
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity						
Household density (dwelling/km ²)						
Population served	15,200	10,000	5,356	969	3,024	1,704
Housing layout	Formal	Formal	Formal	Unknown	Unknown	Unknown
Level of service: Access	Higher					
Level of service: Consumption	Higher					
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Operation						
Billing system	Yes	No	Unknown	Unknown	Unknown	Unknown
Tariff (Block definition)	Unknown	None	Unknown	Unknown	Unknown	Unknown
Number of illegal connections to date	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections formalised	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of vandalisms at service points or network controls	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality & condition						
Describe the physical condition	Unknown	Fair	Unknown	Unknown	Unknown	Unknown
How well is the infrastructure maintained?	Unknown	Demand	Unknown	Unknown	Unknown	Unknown
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.9b: Reticulation infrastructure in the ZDM.

General information	Zone 7	Zone 8	Zone 9	Zone 10	Zone 11	Zone 12	Zone 13
Component name	Obivane Retic	Ophuzane Retic	Tholakela Dlamini Retic	Pongola Retic	Belgrade Retic	Itsjelejuba Hospital Retic	Magudu Retic
Component ID							
Scheme name	Obivane	Ophuzane	Tholakela Dlamini	Pongola	Belgrade		Magudu
Local Municipality name	eDumbe	eDumbe	eDumbe	uPhongola	uPhongolo	uPhongolo	uPhongolo
Local Municipality number	KZ261	KZ261	KZ261	KZ262	KZ262	KZ262	KZ262
Traditional Authority	Dlamini	Dlamini	Dlamini	NA	Ntshangase	NA	NA
Reference number					KN269	Unknown	
Institutional status							
Current owner	ZDM	ZDM	ZDM	uPhongola LM	Dept of Works	Dept of Works	ZDM
Current operator	ZDM	ZDM	ZDM	uPhongola LM	WSSA	WSSA	ZDM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment							
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity							
Household density (dwelling/km ²)							
Population served	1,057	7,980	5,962	20,000	5,359	900	380
Housing layout	Unknown	Unknown	Unknown	Formal	Formal	Formal	Unknown
Level of service: Access				Higher	Unknown		Unknown
Level of service: Consumption				Higher	Unknown		Unknown
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Operation							
Billing system	Unknown	Unknown	Unknown	Yes	No	No	Unknown
Tariff (Block definition)	Unknown	Unknown	Unknown	Unknown	None	None	Unknown
Number of illegal connections to date	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections formalised	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of vandalisms at service points or network controls	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality & condition							
Describe the physical condition	Unknown	Unknown	Unknown	Unknown	Fair	Fair	Unknown
How well is the infrastructure maintained?	Unknown	Unknown	Unknown	Unknown	Demand	Demand	Unknown
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.9c: Reticulation infrastructure in the ZDM.

General information	Zone 13	Zone 14	Zone 15	Zone 16	Zone 17	Zone 18
Component name	Magudu Retic	Dwarsrand Retic	Highlan-Ndlagamandla Retic	Khiphunyawo/Siyaphambili Retic	Mavuso Retic	Msibi Retic
Component ID						
Scheme name	Magudu	Dwarsrand	Highlan-Ndlagamandla	Khiphunyawo/Siyaphambili	Mavuso	Msibi
Local Municipality name	uPhongolo	uPhongolo	uPhongolo	uPhongolo	uPhongolo	uPhongolo
Local Municipality number	KZ262	KZ262	KZ262	KZ262	KZ262	KZ262
Traditional Authority	NA	NA	Ndlagamandla	Sibiya	Mavuso	Msibi
Reference number						
Institutional status						
Current owner	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Current operator	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment						
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity						
Household density (dwelling/km ²)						
Population served	380	320	1,157	3,554	3,000	1,099
Housing layout	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Level of service: Access	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Level of service: Consumption	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Operation						
Billing system	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Tariff (Block definition)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections to date	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections formalised	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of vandalisms at service points or network controls	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality & condition						
Describe the physical condition	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
How well is the infrastructure maintained?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.9d: Reticulation infrastructure in the ZDM.

General information	Zone 19	Zone 20	Zone 21	Zone 22	Zone 23	Zone 24	Zone 25
Component name	Nkosentsha Retic	Ombimbini Retic	Simdlangentsha Retic	Vryheid Retic	Mondlo Retic	Hlobane Retic	Coronation Retic
Component ID							
Scheme name	Nkosentsha	Ombimbini	Simdlangentsha	Vryheid	Vryheid	Hlobane	Coronation
Local Municipality name	uPhongolo	uPhongolo	uPhongolo	Abaqulusi	Abaqulusi	Abaqulusi	Abaqulusi
Local Municipality number	KZ262	KZ262	KZ262	KZ263	KZ263	KZ263	KZ263
Traditional Authority	Mavuso	Msibi	Ntshangase & Mthethwa	NA	Hlahlindlela (partly)	NA	NA
Reference number					KN292		
Institutional status							
Current owner	ZDM	ZDM	ZDM	Abaqulusi LM	Dept of Works	Abaqulusi LM	Abaqulusi LM
Current operator	ZDM	ZDM	ZDM	Abaqulusi LM	Aquafund	Abaqulusi LM	Abaqulusi LM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment							
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity							
Household density (dwelling/km ²)							
Population served	1,620	6,664	19,983	33,666	21,550	2,400	3,143
Housing layout	Unknown	Unknown	Unknown	Formal	Formal	Formal	Formal
Level of service: Access	Unknown	Unknown	Unknown	Higher	Higher	Unknown	Unknown
Level of service: Consumption	Unknown	Unknown	Unknown	Higher	Unknown	Unknown	Unknown
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Operation							
Billing system	Unknown	Unknown	Unknown	Yes	No	Unknown	Unknown
Tariff (Block definition)	Unknown	Unknown	Unknown	Unknown	None	Unknown	Unknown
Number of illegal connections to date	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections formalised	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of vandalisms at service points or network controls	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality & condition							
Describe the physical condition	Unknown	Unknown	Unknown	Unknown	Poor	Unknown	Unknown
How well is the infrastructure maintained?	Unknown	Unknown	Unknown	Unknown	Demand	Unknown	Unknown
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.9e: Reticulation infrastructure in the ZDM.

General information	Zone 26	Zone 27	Zone 28	Zone 29	Zone 30	Zone 31
Component name	Enyati Retic	Louwsberg Retic	Nkongolwane Retic	Gluckstad Retic	Atdoro Retic	Bhekephi Retic
Component ID						
Scheme name	Enyati	Louwsberg	Nkongolwane (Coronation)	Gluckstad	Atdoro	Bhekephi
Local Municipality name	Abaqulusi	Abaqulusi	Abaqulusi	Abaqulusi	Abaqulusi	Abaqulusi
Local Municipality number	KZ263	KZ263	KZ263	KZ263	KZ263	KZ263
Traditional Authority	NA	NA		NA	NA	Khambi
Reference number			KN302	KN302		
Institutional status						
Current owner	Abaqulusi LM	Abaqulusi LM	Dept of Works	Abaqulusi LM	ZDM	ZDM
Current operator	Abaqulusi LM	Abaqulusi LM	WSSA	Abaqulusi LM	ZDM	ZDM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment						
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity						
Household density (dwelling/km ²)						
Population served	734	3,120	4000 or 6566	176	910	3,500
Housing layout	Formal	Formal	Formal	Formal	Unknown	Unknown
Level of service: Access	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Level of service: Consumption	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Operation						
Billing system	Unknown	Unknown	No	Unknown	Unknown	Unknown
Tariff (Block definition)	Unknown	Unknown	None	Unknown	Unknown	Unknown
Number of illegal connections to date	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections formalised	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of vandalisms at service points or network controls	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality & condition						
Describe the physical condition	Unknown	Unknown	Good	Unknown	Unknown	Unknown
How well is the infrastructure maintained?	Unknown	Unknown	Demand	Unknown	Unknown	Unknown
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.9f: Reticulation infrastructure in the ZDM.

General information	Zone 32	Zone 33	Zone 34	Zone 35	Zone 36	Zone 37
Component name	Bhekumthetho Ph 1&2 Retic	Bhekumthetho Ph 3 Retic	Coronation Rural Retic	Dlomodlomo Retic	Emvuzini Retic	Enyathi Retic
Component ID						
Scheme name	Bhekumthetho Ph 1&2	Bhekumthetho Ph 3	Coronation Rural	Dlomodlomo	Emvuzini	Enyathi
Local Municipality name	Abaqulusi	Abaqulusi	Abaqulusi	Abaqulusi	Abaqulusi	Abaqulusi
Local Municipality number	KZ263	KZ263	KZ263	KZ263	KZ263	KZ263
Traditional Authority	Disputed area	Disputed area	NA	Khambi	Hlahlindlela	NA
Reference number						
Institutional status						
Current owner	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Current operator	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment						
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity						
Household density (dwelling/km²)						
Population served	4,765	3,434	12,000	684	2,500	734
Housing layout	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Level of service: Access	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Level of service: Consumption	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Operation						
Billing system	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Tariff (Block definition)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections to date	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections formalised	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of vandalisms at service points or network controls	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality & condition						
Describe the physical condition	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
How well is the infrastructure maintained?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.9g: Reticulation infrastructure in the ZDM.

General information	Zone 38	Zone 39	Zone 40	Zone 41	Zone 42
Component name	Isulabasha Mvunyane Retic	Kromellenboog/Gwebu Retic	Mountain View Mission Retic	Enyokeni Palace Retic	Kangela Palace Retic
Component ID					
Scheme name	Isulabasha Mvunyane	Kromellenboog/Gwebu	Mountain View Mission		
Local Municipality name	Abaqulusi	Abaqulusi	Abaqulusi	Nongoma	Nongoma
Local Municipality number	KZ263	KZ263	KZ263	KZ265	KZ265
Traditional Authority	Hlahlindlela	Othaka	NA	NA	NA
Reference number				Unknown	Unknown
Institutional status					
Current owner	ZDM	ZDM	ZDM	Dept of Works	Dept of Works
Current operator	ZDM	ZDM	ZDM	WSSA	WSSA
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment					
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity					
Household density (dwelling/km ²)				NA - hospital	NA - hospital
Population served	10,000	1,305	1,700	50	100
Housing layout	Unknown	Unknown	Unknown	Formal	Formal
Level of service: Access	Unknown	Unknown	Unknown	Higher	Higher
Level of service: Consumption	Unknown	Unknown	Unknown	Higher	Higher
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown
Operation					
Billing system	Unknown	Unknown	Unknown	No	No
Tariff (Block definition)	Unknown	Unknown	Unknown	None	None
Number of illegal connections to date	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections formalised	Unknown	Unknown	Unknown	Unknown	Unknown
Number of vandalisms at service points or network controls	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality & condition					
Describe the physical condition	Unknown	Unknown	Unknown	Good	Good
How well is the infrastructure maintained?	Unknown	Unknown	Unknown	Demand	Demand
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.9h: Reticulation infrastructure in the ZDM.

General information	Zone 43	Zone 44	Zone 45	Zone 46	Zone 47	Zone 48
Component name	Kwakheta Palace Retic	Nongoma (Vuna) Retic	Buxedeni Retic	Esiphambanweni Retic	Gobamagagu Retic	Gwebu Retic
Component ID						
Scheme name		Nongoma	Buxedeni	Esiphambanweni	Gobamagagu	Gwebu
Local Municipality name	Nongoma	Nongoma	Nongoma	Nongoma	Nongoma	Nongoma
Local Municipality number	KZ265	KZ265	KZ265	KZ265	KZ265	KZ265
Traditional Authority	NA	Not declared	Mandhlakazi	Mandhlakazi	Matheni	Mandhlakazi
Reference number	Unknown	KN304				
Institutional status						
Current owner	Dept of Works	Dept of Works	ZDM	ZDM	ZDM	ZDM
Current operator	Unknown	WSSA	ZDM	ZDM	ZDM	ZDM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment						
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity						
Household density (dwelling/km²)	NA - hospital					
Population served	100	30,500	3,050	3,731	1,150	2,000
Housing layout	Formal	Formal	Unknown	Unknown	Unknown	Unknown
Level of service: Access	Higher	Higher	Unknown	Unknown	Unknown	Unknown
Level of service: Consumption	Higher	Higher	Unknown	Unknown	Unknown	Unknown
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Operation						
Billing system	No	Yes	Unknown	Unknown	Unknown	Unknown
Tariff (Block definition)	None	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections to date	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections formalised	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of vandalisms at service points or network controls	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality & condition						
Describe the physical condition	Unknown	Poor	Unknown	Unknown	Unknown	Unknown
How well is the infrastructure maintained?	Unknown	Planned	Unknown	Unknown	Unknown	Unknown
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.9i: Reticulation infrastructure in the ZDM.

General information	Zone 49	Zone 50	Zone 51	Zone 52	Zone 53	Zone 54
Component name	Kwashoshamasa Retic	Matshemhlope Retic	Sidinsi Retic	Ceza Hospital Retic	Nkonjeni Hospital Retic	Mphungamhlope Retic
Component ID						
Scheme name	Kwashoshamasa	Matshemhlope	Sidinsi			Mphungamhlope
Local Municipality name	Nongoma	Nongoma	Nongoma	Ulundi	Ulundi	Ulundi
Local Municipality number	KZ265	KZ265	KZ265	KZ266	KZ266	KZ266
Traditional Authority	Usuthu	Matheni	Mandhlakazi	NA	NA	Nobamba
Reference number						KN294
Institutional status						
Current owner	ZDM	ZDM	ZDM	Dept of Works	Dept of Works	Dept of Works
Current operator	ZDM	ZDM	ZDM	WSSA	WSSA	WSSA
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment						
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity						
Household density (dwelling/km ²)					NA - hospital	
Population served	1,510	1,560	2,320	2,400	120	6000 or 2650
Housing layout	Unknown	Unknown	Unknown	Formal	Formal	Formal
Level of service: Access	Unknown	Unknown	Unknown	Higher	Higher	Higher
Level of service: Consumption	Unknown	Unknown	Unknown	Higher	Higher	Higher
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Operation						
Billing system	Unknown	Unknown	Unknown	No	No	No
Tariff (Block definition)	Unknown	Unknown	Unknown	None	None	None
Number of illegal connections to date	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections formalised	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of vandalisms at service points or network controls	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality & condition						
Describe the physical condition	Unknown	Unknown	Unknown	Good	Fair	Poor
How well is the infrastructure maintained?	Unknown	Unknown	Unknown	Planned	Planned	Planned
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.9j: Reticulation infrastructure in the ZDM.

General information	Zone 54	Zone 55	Zone 56	Zone 57	Zone 58	Zone 59	Zone 60
Component name	Mphungamhlope Retic	Thulasizwe Hosptial Retic	Ulundi Retic	Babanango Retic	Mahlabatini Retic	Emakhosini Retic	Ezembeni Retic
Component ID							
Scheme name	Mphungamhlope		Ulundi	Babanango	Mahlabatini	Emakhosini	Ezembeni
Local Municipality name	Ulundi	Ulundi	Ulundi	Ulundi	Ulundi	Ulundi	Ulundi
Local Municipality number	KZ266	KZ266	KZ266	KZ266	KZ266	KZ266	KZ266
Traditional Authority	Nobamba	NA	Mbatha	NA	NA	NA	Ndebele
Reference number	KN294		KN309				
Institutional status							
Current owner	Dept of Works	Dept of Works	Dept of Works	Ulundi LM	ZDM	ZDM	ZDM
Current operator	WSSA	WSSA	WSSA	Ulundi LM	ZDM	ZDM	ZDM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment							
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity							
Household density (dwelling/km ²)							
Population served	6000 or 2650	4,500	55,000	3,000	370	4,992	9,170
Housing layout	Formal	Formal	Formal	Unknown	Unknown	Unknown	Unknown
Level of service: Access	Higher	Higher	Higher	Unknown	Unknown	Unknown	Unknown
Level of service: Consumption	Higher	Unknown	Higher	Unknown	Unknown	Unknown	Unknown
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Operation							
Billing system	No	No	Yes	Yes	Unknown	Unknown	Unknown
Tariff (Block definition)	None	None	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections to date	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections formalised	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of vandalisms at service points or network controls	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality & condition							
Describe the physical condition	Poor	Good	Poor	Unknown	Unknown	Unknown	Unknown
How well is the infrastructure maintained?	Planned	Planned	Planned	Unknown	Unknown	Unknown	Unknown
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.9k: Reticulation infrastructure in the ZDM.

General information	Zone 61	Zone 62	Zone 63	Zone 64	Zone 65	Zone 66	Zone 67
Component name	Hlungulwane Retic	Isangoyane 1 Retic	Isangoyane 2 Retic	Mabedlane Retic	Mvula Water Retic	Njomelwani Retic	Nodwengu Retic
Component ID							
Scheme name	Hlungulwane	Isangoyane	Isangoyane	Mabedlane	Mvula Water	Njomelwani	Nodwengu
Local Municipality name	Ulundi	Ulundi	Ulundi	Ulundi	Ulundi	Ulundi	Ulundi
Local Municipality number	KZ266	KZ266	KZ266	KZ266	KZ266	KZ266	KZ266
Traditional Authority	Nobamba	Mpungose	Mpungose	Mpungose	Mlaba	Mlaba	Mbatha
Reference number							
Institutional status							
Current owner	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Current operator	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future owner / WSA	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Asset assessment							
Date constructed	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Type & capacity							
Household density (dwelling/km ²)							
Population served	794	2,586	2,849	7,139	4,275	2,673	1,500
Housing layout	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Level of service: Access	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Level of service: Consumption	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Capacity available for development?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Operation							
Billing system	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Tariff (Block definition)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections to date	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of illegal connections formalised	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of vandalisms at service points or network controls	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Functionality & condition							
Describe the physical condition	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
How well is the infrastructure maintained?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Are spare parts readily available?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 7.9I: Reticulation infrastructure in the ZDM.

General information	Zone 68	Zone 69	Zone 70
Component name	Nsukazi/Mfabeni Retic	Sikhwebezi Retic	Thuthukani Retic
Component ID			
Scheme name	Nsukazi/Mfabeni	Sikhwebezi	Thuthukani
Local Municipality name	Ulundi	Ulundi	Ulundi
Local Municipality number	KZ266	KZ266	KZ266
Traditional Authority	Buthlezi	Ndebele	Mlaba
Reference number			
Institutional status			
Current owner	ZDM	ZDM	ZDM
Current operator	ZDM	ZDM	ZDM
Future owner / WSA	ZDM	ZDM	ZDM
Future operator / WSP	Unknown	Unknown	Unknown
Asset assessment			
Date constructed	Unknown	Unknown	Unknown
Expected total lifespan	Unknown	Unknown	Unknown
Estimated replacement value	Unknown	Unknown	Unknown
Annual operating cost	Unknown	Unknown	Unknown
Annual maintenance cost	Unknown	Unknown	Unknown
Type & capacity			
Household density (dwelling/km ²)			
Population served	8,330	3,500	3,429
Housing layout	Unknown	Unknown	Unknown
Level of service: Access	Unknown	Unknown	Unknown
Level of service: Consumption	Unknown	Unknown	Unknown
Capacity available for development?	Unknown	Unknown	Unknown
Operation			
Billing system	Unknown	Unknown	Unknown
Tariff (Block definition)	Unknown	Unknown	Unknown
Number of illegal connections to date	Unknown	Unknown	Unknown
Number of illegal connections formalised	Unknown	Unknown	Unknown
Number of vandalisms at service points or network controls	Unknown	Unknown	Unknown
Functionality & condition			
Describe the physical condition	Unknown	Unknown	Unknown
How well is the infrastructure maintained?	Unknown	Unknown	Unknown
Are spare parts readily available?	Unknown	Unknown	Unknown
Number of breakages / failures per year	Unknown	Unknown	Unknown
Cost of refurbishment?	Unknown	Unknown	Unknown
Cost of replacement?	Unknown	Unknown	Unknown

7.10 Schemes to be transferred: water

The current situation with regard to the status of each of the identified WTWs is primarily based on information as provided by the DWAF Transfer Business Plan for the DWAF owned infrastructure and the "Transfer of Non Core Function Water and Sewage Plants" Business Plan, dated May 2001, for the Department of Works' owned infrastructure. Additional information has been obtained from various role-players with knowledge on the *status quo*³ of the infrastructure. There are 17 WTWs that have been identified for transfer from the Department of Works to the ZDM, as indicated in Table 7.10a, with a summary of the number of WTWs per LM being given in Table 7.10b.

Table 7.10a: Water supply schemes and components requiring ownership transfer.

Description	Name	Settlement type	Transferring from	Transferring to	Proposed date for transfer
WTW	eMondlo	Urban	Dept. of Works	ZDM	June 2003
WTW	Nkongolwane	Urban	Dept. of Works	ZDM	June 2003
WTW	Frischgewaagd	Urban	Dept. of Works	ZDM	June 2003
WTW	Enyokeni Palace	Rural	Dept. of Works	ZDM	June 2003
WTW	Kangela Palace	Rural	Dept. of Works	ZDM	June 2003
WTW	Kwakheta Palace	Rural	Dept. of Works	ZDM	June 2003
WTW	Nongoma (Vuna)	Urban	Dept. of Works	ZDM	June 2003
WTW	Ceza Hospital	NA	Dept. of Works	ZDM	June 2003
WTW	Excelsior	Rural	Dept. of Works	ZDM	June 2003
WTW	Nkonjeni Hospital	NA	Dept. of Works	ZDM	June 2003
WTW	Mphungamhlope	Urban	Dept. of Works	ZDM	June 2003
WTW	Silutshane	Rural	Dept. of Works	ZDM	June 2003
WTW	Thulasizwe Hospital	NA	Dept. of Works	ZDM	June 2003
WTW	Ulundi	Urban	Dept. of Works	ZDM	June 2003
WTW	Witkop	Rural	Dept. of Works	ZDM	June 2003
WTW	Belgrade	Urban	Dept. of Works	ZDM	June 2003
WTW	Itsjelejuba Hospital	NA	Dept. of Works	ZDM	June 2003

Table 7.10b: Summary of the WTWs to be transferred per LM.

Local Municipality	Number of Schemes
Abaqulusi	2
eDumbe	1
Nongoma	4
Ulundi	8
uPhongolo	2
Total	17

³ *Status quo* is based on year 1999.

7.11 Schemes to be transferred: sanitation

The current situation with regard to the status of each of the identified WWTWs is primarily based on information as provided by the DWAF Transfer Business Plan for the DWAF owned infrastructure and the "Transfer of Non Core Function Water and Sewage Plants" Business Plan, dated May 2001, for the Department of Works' owned infrastructure. Additional information has been obtained from various role-players with knowledge on the *status quo*⁴ of the infrastructure. There are 9 WWTWs that have been identified for transfer from the Department of Works to the ZDM, as indicated in Table 7.11a, with a summary of the number of WWTWs per LM being given in Table 7.11b.

Table 7.11a: Sanitation provision schemes and components requiring ownership transfer.

Description	Name	Settlement type	Transferring from	Transferring to	Proposed date for transfer
WWTW	eMondlo	Urban	Dept. of Works	ZDM	June 2003
WWTW	Frischgewaagd	Urban	Dept. of Works	ZDM	June 2003
WWTW	Ceza Hospital	NA	Dept. of Works	ZDM	June 2003
WWTW	James Nxumalo	Rural	Dept. of Works	ZDM	June 2003
WWTW	Nkonjeni Hospital	NA	Dept. of Works	ZDM	June 2003
WWTW	St. Francis	Rural	Dept. of Works	ZDM	June 2003
WWTW	Thulasizwe	Rural	Dept. of Works	ZDM	June 2003
WWTW	Ulundi	Urban	Dept. of Works	ZDM	June 2003
WWTW	Itsjelejuba Hospital	NA	Dept. of Works	ZDM	June 2003

Table 7.11b: Summary of the WWTWs to be transferred per LM.

Local Municipality	Number of Schemes
Abaqulusi	1
eDumbe	1
Nongoma	0
Ulundi	6
uPhongolo	1
Total	9

⁴ *Status quo* is based on year 1999.

7.12 Schemes to be rehabilitated

The schemes to be rehabilitated will be assessed in a future review of the document (Table 7.12), once the asset register has been verified. Rehabilitation of schemes will form part of the overall operations and maintenance strategy for water services within the ZDM that will be based on an active database drafted around the asset register.

Figure 7.12: Schemes to be rehabilitated.

Scheme Name	Component name	Refurbishment needs	Feasibility checked (Y/N)	Scheduled date	Estimated cost

7.13 New infrastructure to be built

New infrastructure to be built generally relates to new schemes as listed in Table 7.13. Details relating to these water and sanitation projects are discussed under Section 12.

7.13: Water and sanitation projects within the ZDM.

LM	Scheme	Settle type	Function	Status	Traditional Authority	Number of people
eDumbe	Frischgewaagd Reticulation	Rural	Water	Planning	NA	NA
eDumbe	Frischgewaagd Intake Works	Rural	Water	Construction	NA	24,600
eDumbe	Mangosuthu	Rural	Water	Construction	NA	8,100
eDumbe	eDumbe Bulk Sewer	Rural	Sanitation	Construction	NA – Paulpietersburg	15,200
eDumbe	eDumbe Rural	Rural	Sanitation	Construction	Dlamini Mthethwa	27,600
eDumbe	Ezibomvu	Rural	Sanitation	Planning		840
eDumbe	Frischgewaagd	Rural	Sanitation	Planning	NA	TBD
eDumbe	Mangosuthu	Rural	Sanitation	Planning	Not applicable	4,500
eDumbe	Ophuzane	Rural	Sanitation	Construction	Dlamini	5,859
uPhongolo	Belgrade	Rural	Water	Construction	Ndlangamandla	5,359
uPhongolo	Saphumula	Rural	Water	Planning	Ntshangase	NA
uPhongolo	Simdlangentsha 2	Rural	Water	Construction	Msibi & Disputed area	9,663
uPhongolo	Belgrade New Sewage Reticulation	Rural	Sanitation	Planning	Ndlangamandla	NA
uPhongolo	Dwarsrand	Rural	Sanitation	Construction	Not applicable	700
uPhongolo	Kortnek	Rural	Sanitation	Construction	Mavuso	2,348
uPhongolo	Ncotshane Bulk Sewer	Rural	Sanitation	Construction	Ntshangase	12,000
uPhongolo	Simdlangentsha 2	Rural	Sanitation	Construction	Dlamini	6,307
uPhongolo	UPhongola Rural	Rural	Sanitation	Construction	Various	5,580
uPhongolo	UPhongola VIPs for Ward 1_3-9 and 11	Rural	Sanitation	Construction	Simelane	12,200
Abaqulusi	Hlahindlela	Rural	Water	Construction	Hlahindlela	13,599
Abaqulusi	Abaqulusi Rural	Rural	Sanitation	Construction	Various	7,200
Abaqulusi	Bhekuzulu Phase 6 Bulk Services	Rural	Sanitation	Planning	Not applicable	3,470
Abaqulusi	Hlahindlela	Rural	Sanitation	Planning	Hlahindlela	38,574
Abaqulusi	Isulabasha Mvunyane	Rural	Sanitation	Construction	Hlahindlela	7,000
Abaqulusi	Mkhwela/Mountain View	Rural	Sanitation	Planning	NA	1,700
Abaqulusi	Nkongolwane Bulk Sewer	Rural	Sanitation	Construction	NA – Nkongolwane Township	1,366
Abaqulusi	Reseb/Mandleni/Sigangani/Madamu/Magama	Rural	Sanitation	Planning	Unknown	TBD
Abaqulusi	Vryheid – Upgrade Sewer	Rural	Sanitation	Construction	NA	60,000
Nongoma	Bukhalini	Rural	Water	Planning	Mandhlakazi	NA
Nongoma	Kombuzi	Rural	Water	Construction	Mandhlakazi	2,200
Nongoma	Kwamajamelo	Rural	Water	Planning	Usuthu	NA
Nongoma	Njoko/Msebe	Rural	Water	Construction	Mandhlakazi	8,795
Nongoma	Ofankomo	Rural	Water	Planning	Usuthu	NA
Nongoma	Osingisingini	Rural	Water	Planning	Mandhlakazi	1,291
Nongoma	Thandokuhle	Rural	Water	Planning	Usuthu	NA
Nongoma	Ekubungazeleni	Rural	Sanitation	Construction	Mandhlakazi	3,420
Nongoma	Mahlanhle	Rural	Sanitation	Planning	Matheni	820
Nongoma	Ndema	Rural	Sanitation	Construction	Mandhlakazi	2,080
Nongoma	Nongoma Rural	Rural	Sanitation	Construction	Various	7,020
Ulundi	Esigodiphola	Rural	Water	Construction	Nobamba	2,174
Ulundi	Kwaxolo	Rural	Water	Planning	Zungu	NA
Ulundi	Mbilane	Rural	Water	Construction	Mpungose	8,340
Ulundi	Mpungamhlope	Rural	Water	Construction	Nobamba	19,780
Ulundi	Nkonjeni	Rural	Water	Construction	Buthelezi	578
Ulundi	Nondayana	Rural	Water	Construction	Buthelezi	1,801
Ulundi	Thokoza/Mtikini	Rural	Water	Construction	Mpungose	6,397
Ulundi	Ezembeni	Rural	Sanitation	Construction	Ndebele	3,598
Ulundi	Ndelu	Rural	Sanitation	Construction	Zungu	1,511
Ulundi	Nkonjeni	Rural	Sanitation	Planning	Nbatha	2,000
Ulundi	Nsabekhuluma	Rural	Sanitation	Construction	NA	5,873
Ulundi	Thokoza/Mtikini	Rural	Sanitation	Construction	Mpungose	6,050
Ulundi	Ulundi Rural	Rural	Sanitation	Construction	Mpungose	17,802

7.14 Future internal and connector infrastructure

The future internal and connector infrastructure is discussed in Section 12 as part of the overall water services planning in the ZDM. However, detailed data to complete Table 7.14 will be assessed in a future review of the document. The asset register database that is currently being compiled and verified will inform this section as part of an active database.

Table 7.14: Future internal and connector infrastructure.

Type of scheme	Component	Short description	Feasibility checked (Y/N)	Scheduled date	Estimated cost

7.15 Future bulk water supply infrastructure

The future bulk water infrastructure is discussed in Section 12 as part of the overall water services planning in the ZDM. Detailed data to complete Table 7.15 will be assessed in a future review of the document. The asset register database that is currently being compiled and verified will inform this section as part of an active database.

Table 7.15: Future bulk water infrastructure.

Type of scheme	Component	Short description	Feasibility checked (Y/N)	Scheduled date	Estimated cost

7.16 Future bulk sanitation infrastructure

Based on the water services planning in Section 12, no bulk sanitation infrastructure is planned in the short- to medium-term within the ZDM. Therefore, Table 7.16 does not require completion.

Table 7.16: Future bulk sanitation infrastructure.

Type of scheme	Component	Short description	Feasibility checked (Y/N)	Scheduled date	Estimated cost