# A. EXECUTIVE SUMMARY

## A.1 Administration

Name of WSA

| | | |
|---|---|---|
| Name | Zululand District Municipality | |
| Address | Private Bag X76<br>ULUNDI<br>3838 | Lot B400, Gagane Street<br>ULUNDI<br>3838 |

Status of WSDP

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

- 2010/11 Revision being drafted
- WSDP Steering Committee approval – March 2010
- Expected EXCO approval – May 2010
- Expected Council approval – June 2010

WSDP drafting team

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

**Table A1.1: Drafting team**

| Name | Position | Tel Number | Email |
|---|---|---|---|
| Mr JH De Klerk | Municipal Manager | 035 874 5500 | mm@zululand.org.za |
| Mr B Mnguni | Deputy Director: WSA | 035 874 5542 | - |
| Mr SK Khumalo | HOD: Technical Services | 035 874 5500 | skhumalo@zululand.org.za |
| Mr C Nel | HOD: Planning & Comm Dev | 035 874 5617 | cnel@zululand.org.za |

Process followed

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

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

- WSDP and IDP Steering Committee approval (March 2010)

- Representative Forum approval (April 2010) – This forum comprises all Government Departments involved with the IDP process, all Councillors and role players from the private sector
- EXCO approval (May 2010)
- Advertise for public comment
- Council approval (June 2010)
- Submit to DWAF for approval

Public comments

The WSDP will be advertised during May 2010 for public comment.

Adoption record

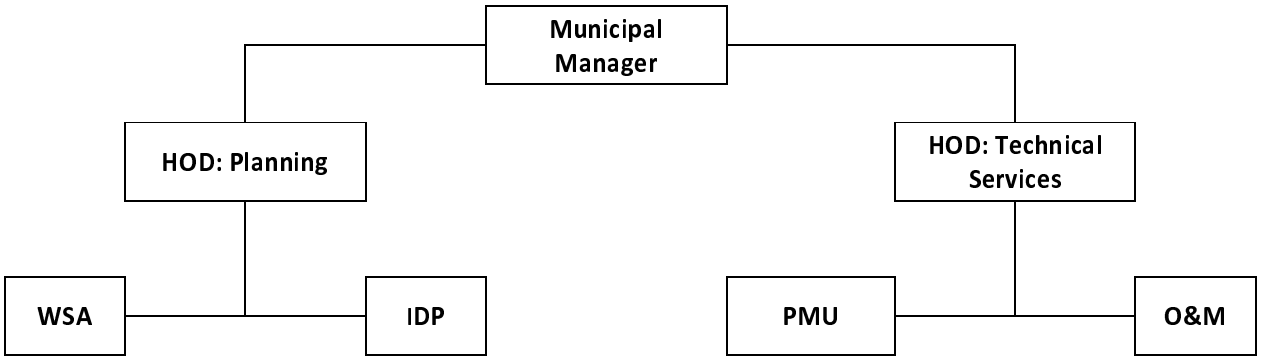
The 2009/10 revision of the WSDP has been approved by the ZDM Council during June 2009.

WSDP co-ordinators

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

PMU

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




Functions:
- WSDP
- Planning of all scheduled projects up to tender stage & then hand over to PMU

Functions:
- Implementation of all scheduled projects up to completion and hand over to O&M

DWAF transfers of assets

All transfer of assets and staff from DWAF to ZDM has been concluded.

Water services level policy

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

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

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

## A.2 Backlogs

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

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

| WATER | None or Inadequate | Rudimentary | Communal standpipes | Yard connections | TOTALS |
|---|---|---|---|---|---|
| | | <RDP | RDP | >RDP | |
| AbaQulusi LM | 0 | 0 | 0 | 20 350 | 20 350 |
| eDumbe LM | 0 | 0 | 0 | 6 162 | 6 162 |
| Nongoma LM | 0 | 0 | 0 | 957 | 957 |
| Ulundi LM | 0 | 0 | 0 | 6 980 | 6 980 |
| uPhongolo LM | 0 | 0 | 0 | 4 135 | 4 135 |
| **Total (urban)** | **0** | **0** | **0** | **38 584** | **38 584** |
| AbaQulusi LM | 6 371 | 2 703 | 264 | 6 381 | 15 719 |
| eDumbe LM | 2 763 | 949 | 1104 | 4 033 | 8 849 |
| Nongoma LM | 11 933 | 9 936 | 8 636 | 2 594 | 33 099 |
| Ulundi LM | 7 566 | 6 624 | 7 579 | 6 560 | 28 329 |
| uPhongolo LM | 3 586 | 967 | 1033 | 12 377 | 17 963 |
| **Total (rural)** | **32 219** | **21 179** | **18 616** | **31 945** | **103 959** |

**Table A.2 (b): Access to sanitation**

| SANITATION | None or Inadequate | VIP | Septic tank | Waterborne | TOTALS |
|---|---|---|---|---|---|
| | | RDP | RDP | >RDP | |
| AbaQulusi LM | 0 | 0 | 0 | 20 350 | 20 350 |
| eDumbe LM | 0 | 0 | 595 | 5 567 | 6 162 |
| Nongoma LM | 0 | 0 | 0 | 957 | 957 |
| Ulundi LM | 0 | 0 | 0 | 6 980 | 6 980 |
| uPhongolo LM | 0 | 0 | 0 | 4 135 | 4 135 |
| **Total (urban)** | **0** | **0** | **595** | **37 989** | **38 584** |
| AbaQulusi LM | 13 811 | 1 871 | 37 | 0 | 15 719 |
| eDumbe LM | 962 | 7 743 | 144 | 0 | 8 849 |
| Nongoma LM | 28 242 | 4 857 | 0 | 0 | 33 099 |
| Ulundi LM | 20 960 | 7 327 | 42 | 0 | 28 329 |
| uPhongolo LM | 5 953 | 11 684 | 326 | 0 | 17 963 |
| **Total (rural)** | **69 928** | **33 482** | **549** | **0** | **103 959** |
| | | | | | |
| **Total (households)** | **69 928** | **33 482** | **1 144** | **37 989** | **142 543** |

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

| WATER | Total Households | Backlogs | % Backlogs | % of Total Backlogs |
|---|---|---|---|---|
| AbaQulusi LM | 36 069 | 9 074 | 25,2% | 17,0% |
| eDumbe LM | 15 011 | 3 712 | 24,7% | 6,9% |
| Nongoma LM | 34 056 | 21 869 | 64,2% | 41,0% |
| Ulundi LM | 35 309 | 14 190 | 40,2% | 26,6% |
| uPhongolo LM | 22 098 | 4 553 | 20,6% | 8,5% |
| **Total (urban)** | **142 543** | **53 398** | **37,5%** | **100,0%** |

| SANITATION | Total Households | Backlogs | % Backlogs | % of Total Backlogs |
|---|---|---|---|---|
| AbaQulusi LM | 36 069 | 13 811 | 38,2% | 19,8% |
| eDumbe LM | 15 011 | 962 | 6,4% | 1,3% |
| Nongoma LM | 34 056 | 28 242 | 82,9% | 40,3% |
| Ulundi LM | 35 309 | 20 960 | 59,4% | 30,0% |
| uPhongolo LM | 22 098 | 5 953 | 26,9% | 8,6% |
| **Total (rural)** | **142 543** | **69 928** | **49,1%** | **100,0%** |

## A.3 Summary of content

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

## Chapter 1: Socio Economic Profile

The current consumer profile of the district is indicated in Table A.3 (a) below:

**Table A.3 (a): Current consumer profile (units)**

| Local Municipalities | Domestic | Industrial/ Business | Farm Houses | Totals |
|---|---|---|---|---|
| AbaQulusi | 20 193 | 157 | 0 | 20 350 |
| eDumbe | 6 108 | 54 | 0 | 6 162 |
| Nongoma | 735 | 222 | 0 | 957 |
| Ulundi | 6 691 | 289 | 0 | 6 980 |
| uPhongolo | 3 903 | 232 | 0 | 4 135 |
| **Total (urban)** | **37 630** | **954** | **0** | **38 584** |
| AbaQulusi | 15 681 | 1 | 37 | 15 719 |
| eDumbe | 8 705 | 0 | 144 | 8 849 |
| Nongoma | 33 098 | 0 | 1 | 33 099 |
| Ulundi | 28 285 | 2 | 42 | 28 329 |
| uPhongolo | 17 637 | 0 | 326 | 17 963 |
| **Total (rural)** | **103 406** | **3** | **550** | **103 959** |
| **Total** | **141 036** | **957** | **550** | **142 543** |

## Chapter 2: Service Level Profile

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

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

| Water | None or Inadequate | Rudimentary <RDP | Communal standpipes RDP | Yard connections >RDP | TOTALS |
|---|---|---|---|---|---|
| AbaQulusi LM | 0 | 0 | 0 | 20 350 | 20 350 |
| eDumbe LM | 0 | 0 | 0 | 6 162 | 6 162 |
| Nongoma LM | 0 | 0 | 0 | 957 | 957 |
| Ulundi LM | 0 | 0 | 0 | 6 980 | 6 980 |
| uPhongolo LM | 0 | 0 | 0 | 4 135 | 4 135 |
| **Total (urban)** | **0** | **0** | **0** | **38 584** | **38 584** |
| AbaQulusi LM | 6 371 | 2 703 | 264 | 6 381 | 15 719 |
| eDumbe LM | 2 763 | 949 | 1104 | 4 033 | 8 849 |
| Nongoma LM | 11 933 | 9 936 | 8 636 | 2 594 | 33 099 |
| Ulundi LM | 7 566 | 6 624 | 7 579 | 6 560 | 28 329 |
| uPhongolo LM | 3 586 | 967 | 1033 | 12 377 | 17 963 |
| **Total (rural)** | **32 219** | **21 179** | **18 616** | **31 945** | **103 959** |
| **Total (households)** | **32 219** | **21 179** | **18 616** | **70 529** | **142 543** |

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

| Sanitation | None or Inadequate | VIP | Septic tank | Waterborne | |
|---|---|---|---|---|---|
| | | RDP | RDP | >RDP | TOTALS |
| AbaQulusi LM | 0 | 0 | 0 | 20 350 | 20 350 |
| eDumbe LM | 0 | 0 | 595 | 5 567 | 6 162 |
| Nongoma LM | 0 | 0 | 0 | 957 | 957 |
| Ulundi LM | 0 | 0 | 0 | 6 980 | 6 980 |
| uPhongolo LM | 0 | 0 | 0 | 4 135 | 4 135 |
| **Total (urban)** | **0** | **0** | **595** | **37 989** | **38 584** |
| AbaQulusi LM | 13 811 | 1 871 | 37 | 0 | 15 719 |
| eDumbe LM | 962 | 7 743 | 144 | 0 | 8 849 |
| Nongoma LM | 28 242 | 4 857 | 0 | 0 | 33 099 |
| Ulundi LM | 20 960 | 7 327 | 42 | 0 | 28 329 |
| uPhongolo LM | 5 953 | 11 684 | 326 | 0 | 17 963 |
| **Total (rural)** | **69 928** | **33 482** | **549** | **0** | **103 959** |
| **Total (households)** | **69 928** | **33 482** | **1 144** | **37 989** | **142 543** |

## Chapter 3: Water Resource Profile

The ZDM falls within the Mfolozi (W2), Mkuze (W3) and Pongola (W4) secondary catchments of the Usuthu/Mhlathuze Water Management Area (WMA)[1]. The aerial extent of the ZDM occupies approximately 22% of this WMA. . The total available water and requirements as at year 2000, based on a 98% assurance of supply within these sub-areas, is summarised in Table A.3 (d). It is evident that apart from the Pongola catchments, water from these sub-areas is currently over-utilised and a deficit is created. However, according to Basson and Rossouw[2], this deficit is a result of the provision made for future implementation of the Reserve. The Reserve is a legislated requirement of the amount of water required to satisfy the ecological needs of a river system (provisionally estimated at 20%) as well as the basic human needs (that have been established as 25 litres per person per day).

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

*[2] Op cit 2 at 23.*

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

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

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

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

## Chapter 4: Water Conservation/ Demand Management

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

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

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

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

## Chapter 5: Water Services Infrastructure Profile

ZDM has done extensive work on the development of a database that will serve as an asset register, but also to be used as the basis for the development of an asset management system and to capture asset related information electronically for ongoing use. The system has been named 'MANZI' and access can be gained on the ZDM website at www.zululand.org.za once the user has been issued with a username and password.

Table A.3 (e) below provides a brief overview of the schemes in the district that have been captured on the MANZI system and a summary of the infrastructure under consideration, as well as a rough estimate of the value of assets. These figures will be refined over time once the asset management system has been rolled out.

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

| Summary Data | Level of service | Total |
|---|---|---|
| Number of Schemes | Above RDP | **9** |
| | RDP | **91** |
| | Rudimentary | **117** |

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

**Table A.3 (f): Summary of infrastructure components available on MANZI system**

| Summary Data | Description | Total |
|---|---|---|
| Km bulk pipeline | Bulk | **175 347km** |
| | Reticulation | **963 359km** |
| Installations | Bulk Metering points | **58** |
| | Pump Stations | **72** |
| | Conveyance (Valve) | **310** |
| | Electrical connection | **66** |
| | Source/Abstraction | **253** |
| | Storage | **387** |
| | Treatment | **21** |
| Replacement values | Civil* | **R 176 869 818.19** |
| | Mechanical | **R 51 655 500.00** |
| | Electrical | **R 20 449 000.00** |
| | Telemetry | **R 1 090 000.00** |

## Chapter 6: Water Balance

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

## Chapter 7: Water Services Institutional Arrangements

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

## Chapter 8: Customer Services Profile

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

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

## Chapter 9: Financial Profile

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

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

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

**Table A.3 (g): Capital requirements: water**

| WATER | Capital requirements | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | >2015 |
|---|---|---|---|---|---|---|---|
| Regional bulk | R 1 747 706 529 | R 118 082 700 | R 140 246 274 | R 132 648 474 | R 118 142 374 | R 118 142 374 | R 1 120 444 333 |
| Secondary bulk | R 1 327 564 922 | R 33 737 914 | R 40 070 364 | R 37 899 564 | R 33 754 964 | R 33 754 964 | R 1 148 347 152 |
| Reticulation | R 157 862 420 | R 16 868 957 | R 20 035 182 | R 18 949 782 | R 16 877 482 | R 16 877 482 | R 68 253 535 |
| **Total capital (new)** | **R 3 233 133 871** | **R 168 689 571** | **R 200 351 820** | **R 189 497 820** | **R 168 774 820** | **R 168 774 820** | **R 2 337 045 020** |
| Regional bulk | tbd | tbd | tbd | tbd | tbd | tbd | tbd |
| Secondary bulk | tbd | tbd | tbd | tbd | tbd | tbd | tbd |
| Reticulation | tbd | tbd | tbd | tbd | tbd | tbd | tbd |
| **Total capital (refurbishment)** | **tbd** | **tbd** | **tbd** | **tbd** | **tbd** | **tbd** | **tbd** |
| **Total capital** | **R 3 233 133 871** | **R 168 689 571** | **R 200 351 820** | **R 189 497 820** | **R 168 774 820** | **R 168 774 820** | **R 2 337 045 020** |

**Table A.3 (h): Capital requirements: sanitation**

| SANITATION | Capital requirements | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | >2015 |
|---|---|---|---|---|---|---|---|
| Bulk infrastructure | R - | R - | R - | R - | R - | R - | R - |
| Reticulation | R - | R - | R - | R - | R - | R - | R - |
| VIP toilets | R 418 168 000 | R 40 830 800 | R 42 398 600 | R 42 398 600 | R 42 398 600 | R 42 398 600 | R 207 742 800 |
| **Total capital (new)** | **R 418 168 000** | **R 40 830 800** | **R 42 398 600** | **R 42 398 600** | **R 42 398 600** | **R 42 398 600** | **R 207 742 800** |
| Bulk infrastructure | tbd | tbd | tbd | tbd | tbd | tbd | tbd |
| Reticulation | tbd | tbd | tbd | tbd | tbd | tbd | tbd |
| VIP toilets | tbd | tbd | tbd | tbd | tbd | tbd | tbd |
| **Total capital (refurbishment)** | **tbd** | **tbd** | **tbd** | **tbd** | **tbd** | **tbd** | **tbd** |
| **Total capital** | **R 418 168 000** | **R 40 830 800** | **R 42 398 600** | **R 42 398 600** | **R 42 398 600** | **R 42 398 600** | **R 207 742 800** |

**Table A.3 (i)**

**Sources of capital income: water**

| WATER | Expected Funding | 2010/11 | 2011/12 | 2012/13 | 2013/14 | >2014 |
|---|---|---|---|---|---|---|
| MIG | R 614 314 031 | R 143 689 571 | R 156 874 820 | R 156 874 820 | R 156 874 820 | Unknown |
| DWAF | R 111 000 000 | R 23 000 000 | R 43 477 000 | R 32 623 000 | R 11 900 000 | Unknown |
| Housing | R - | R - | R - | R - | R - | Unknown |
| Other grant funding | R - | R - | R - | R - | R - | Unknown |
| Loans | R - | R - | R - | R - | R - | Unknown |
| **Confirmed funding** | **R 725 314 031** | **R 166 689 571** | **R 200 351 820** | **R 189 497 820** | **R 168 774 820** | |
| Capital requirements | R 3 233 133 871 | | | | | |
| **Shortfall** | **R -2 507 819 840** | | | | | |

**Table A.3 (j)**

**Sources of capital income: sanitation**

| SANITATION | Expected Funding | 2010/11 | 2011/12 | 2012/13 | 2013/14 | >2014 |
|---|---|---|---|---|---|---|
| MIG | R 166 026 600 | R 38 830 800 | R 42 398 600 | R 42 398 600 | R 42 398 600 | Unknown |
| DWAF | R 2 000 000 | R 2 000 000 | R - | R - | R - | Unknown |
| Housing | R - | R - | R - | R - | R - | Unknown |
| Other grant funding | R - | R - | R - | R - | R - | Unknown |
| Loans | R - | R - | R - | R - | R - | Unknown |
| **Confirmed funding** | **R 168 026 600** | **R 40 830 800** | **R 42 398 600** | **R 42 398 600** | **R 42 398 600** | |
| Capital requirements | R 418 168 000 | | | | | |
| **Shortfall** | **R -250 141 400** | | | | | |

**Table A.3 (k): Operational costs and income**

| Operating costs and income | Total (5 years) | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 |
|---|---|---|---|---|---|---|
| Operational costs | R 666 999 959 | R 114 139 090 | R 126 379 291 | R 133 962 049 | R 141 999 771 | R 150 519 758 |
| Personnel costs | R 444 666 639 | R 76 092 727 | R 84 252 861 | R 89 308 032 | R 94 666 514 | R 100 346 505 |
| **Total O&M costs** | **R 1 111 666 598** | **R 190 231 817** | **R 210 632 152** | **R 223 270 081** | **R 236 666 286** | **R 250 866 263** |
| Equitable share | R 1 003 196 990 | R 170 778 345 | R 190 283 820 | R 201 700 849 | R 213 802 900 | R 226 631 074 |
| Income: sales | R 108 469 608 | R 19 453 472 | R 20 348 332 | R 21 569 231 | R 22 863 385 | R 24 235 188 |
| **Total income** | **R 1 111 666 598** | **R 190 231 817** | **R 210 632 152** | **R 223 270 081** | **R 236 666 286** | **R 250 866 263** |

Chapter 10: List of Projects

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

## A.4 Background to the area

The ZDM is situated in northern KwaZulu-Natal (KZN). It covers an area of 14,808 $km^2$ and is divided into five local municipalities (LMs), namely eDumbe (KZ261), uPhongolo (KZ262), Abaqulusi (KZ263), Nongoma (KZ265), and Ulundi (KZ266) (Figure A4.1). The district is predominantly rural with commercial farmland interspersed by protected areas, towns, and dense to scattered rural settlements within traditional authority areas. The majority of these rural settlements are small, making service delivery to these remote areas extremely costly. The ZDM comprises 1,022 settlements divided into 15 urban areas, 64 dense settlements, 290 villages, 547 scattered settlements and 106 farm settlements.

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

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

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

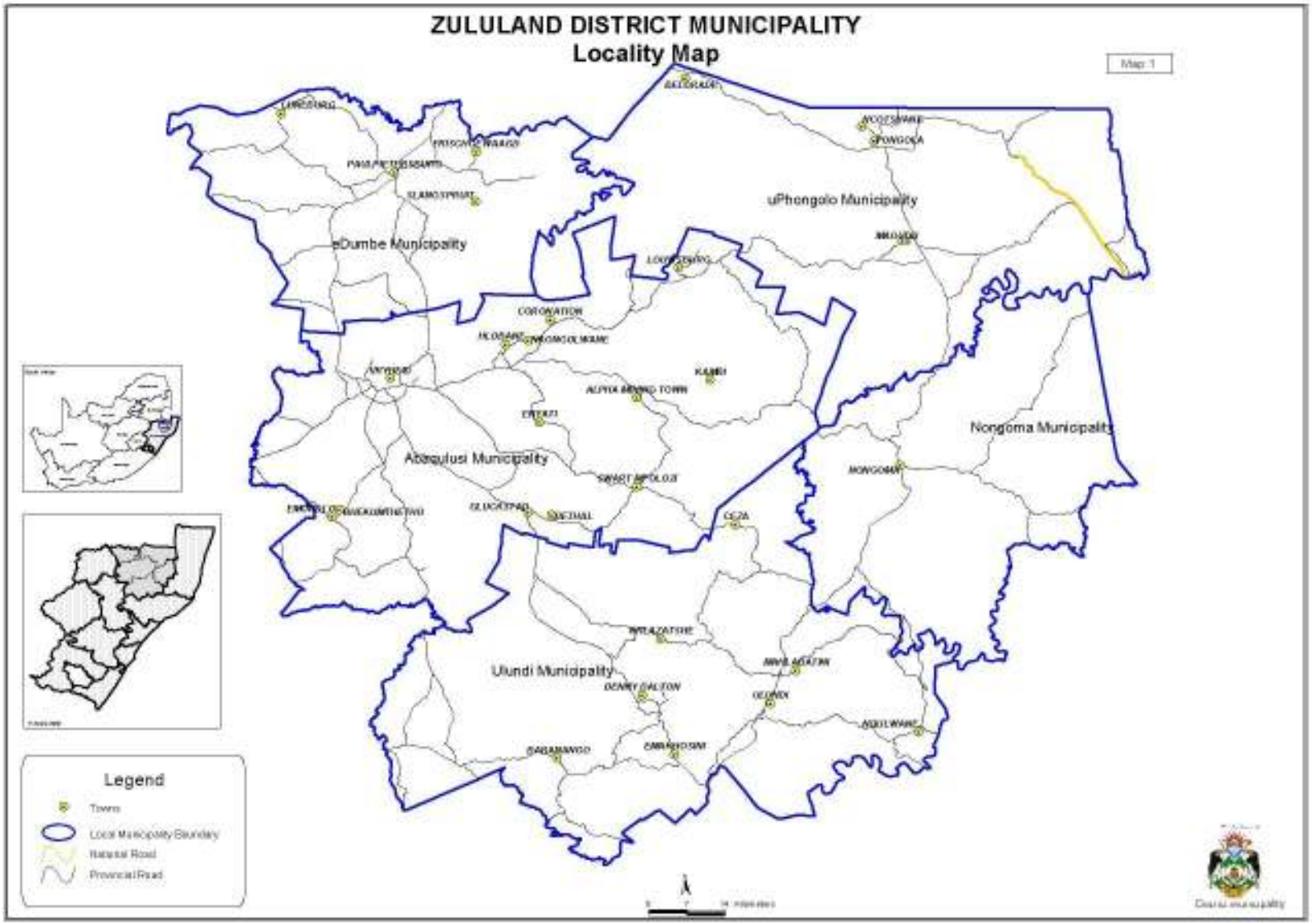
The area forms part of the Pongola, Mkuze and Mfolozi River Catchments of the Usuthu/Mhlathuze Water Management Area that extends from the high lying areas in the north and west to the Indian Ocean in the east. The northern and western edges of the ZDM are characterised by steep terrain. The Skurweberg and

Elandsberg Mountains on the Western side of the ZDM are approximately 1,700 m above sea level. In the northeast there are the Lebombo Mountains. In general the topography slopes and gets less steep from west to east, as well as from north to south, consequently all the main rivers flow in this direction. There are some large relatively flat areas between 200 m and 300 m around the town of Pongola, as well as on the lower reaches of the Mfolozi River.

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

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

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



## A.5 IDP and WSDP goals

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

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

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

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

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

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

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

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