

developments that damage wetlands, and loss of the wetland systems could affect tourism.

The environmental assessment informed the identification of key issues and priority actions.

7.4 ENVIRONMENTAL KEY ISSUES

Table 38: EMP/SEA Key Issues

| Key Issue | Brief Description |
|---|--|
| Wetland Degradation | Wetland degradation is especially evident near urban or built up areas and occurs mainly as a result of inappropriate formal and informal development. |
| Soil Erosion | Soil erosion occurs throughout the region, but especially in the rural areas and in association with roads, pathways and subsistence agriculture. |
| Low Cost Housing Problems | Typical low cost housing related problems are subsidence, sewage problems and collapsing of houses. |
| Poor Sewage System Maintenance/Infrastructure | Instances of overflowing sewage treatment plants or emergency overflows as a result of failed, incorrectly installed, or vandalised pump houses. |
| Over Utilization of Soils | Over utilisation of soils in some areas (no crop rotation) results in reduced agricultural potential, and eventually soil erosion and subsidence. |
| Sand Winning | Illegal sand winning without permits. |
| Mining and Mine Rehabilitation | Several mines within the Zululand District Municipality have not been rehabilitated, and this is leading to severe environmental degradation, especially in terms of erosion, leaching, proliferation of alien invasive plants, collection of standing water and the associated diseases which result. |

| Key Issue | Brief Description |
|--|--|
| Alien Invasive Weeds | Proliferation of alien invasive plants throughout the region in rural and urban areas, in watercourses, wetlands, and especially around or on the edges of forests and afforested areas. |
| Family Planning and Poverty | While the national population growth rate is currently estimated at around 0%, with possible increases only resulting from influxes of immigrants, the impact of poor family planning on the families involved and their surrounding environment is considerable. |
| Personal Wealth and Environmental Sustainability | It must be noted that financially wealthy families, more often than not, have a tremendous impact on the environment in terms of their rates of consumption of numerous resources, and this issue should be addressed. |
| Management of Water Resources | Incorrect citing of high-impact developments (such as low cost housing with poor sewage, wastewater and storm water management) in close proximity to wetlands, drainage lines, rivers and dams is resulting in water pollution. There is a need to protect water resources as a means to prevent waterborne diseases and ensure adequate supply of quality water for household consumption. |
| Threat from Forestry to the Natural Environment | The municipality is located in an area well suited to commercial forestry, but a forestry threat to the natural environment is evident – especially in terms of encouraging unchecked alien invasive plant growth within or on the borders of afforested areas, and in the utilisation of high priority ecological / biodiversity and tourism areas for forestry. |
| Veld Fires | The veld is currently considerably over-burnt and this is resulting in soil erosion, damage to soil conditions and nutrients and the proliferation of: |

| Key Issue | Brief Description |
|---|---|
| | alien invasive plants; undesirable, less-palatable grass species; and woody species, which in turn create impenetrable thickets and further soil erosion. |
| Requirement for a Municipal Open Space System | A clearly defined municipal open space system (for the entire municipal area, but especially in the 'urban' areas of Vryheid, Ulundi, Paulpietersburg, Louwsburg, and Pongola, and later in the more rural areas (but still built up) of eDumbe, Hlobane and Emondlo etc.) is required for the protection of wetlands, associated rivers, streams and catchments and areas of natural beauty. |
| Amenity and Shelter Planting | Amenity and shelter planting (in all built up areas) is required to improve the residential and commercial centres and the general 'feel' or amenity of the area. This will improve the quality of life for all residents, as well as enhancing the natural environment, and could even attract tourists and business. |
| Solid Waste Management | Address waste disposal issues - solid waste management is a critical issue for the municipality. Almost all the landfill sites within Zululand need upgrading in order to comply with the legal requirements related to waste management. |
| Environmental Accounting | Environmental issues and impacts are often not addressed in developments and projects. Environmental accounting needs to become more integrated into the development planning process and must be considered in the very initial phases of planning any new development or upgrade, prior to any costly mistakes being made. |
| High Tourism Potential | The region has a high tourism potential, which has not been properly exploited, environmentally or otherwise. Numerous sites of tourism significance |

| Key Issue | Brief Description |
|---|--|
| | are being ignored or insufficiently marketed. |
| Illegal Muthi Harvesting | Excessive / illegal muthi harvesting – damages indigenous populations of plants and animals, without restocking (See Ngome, Swart Umfolozi, State Forest). |
| Unsustainable Agricultural Practices/Management | Loss of agricultural land due to development pressure, in which hard surfaced developments use up agricultural land is a serious issue, as this land is usually permanently lost to agriculture once covered over. Only land with low agricultural potential should be utilised for these types of developments. |
| Loss of Indigenous Vegetation Communities | Loss of indigenous vegetation communities and habitats due to: <ul style="list-style-type: none"> ▪ Afforestation ▪ Poor farming practices ▪ Alien plant invasion ▪ Poor catchment management ▪ Informal housing |
| Conservation of Biodiversity | Active protection of valuable environmental resources is regarded as critical (wetlands, indigenous forests, grasslands, and bushveld). Community involvement in viable tourism enterprises, which conserve the environment while providing employment and /or income, should be fostered and encouraged. |
| Rehabilitation of Damages and Degraded Areas | Rehabilitation of damaged and degraded areas does not ordinarily occur, as there was not previously any legislation to enforce it, (this has now changed), and the municipality could begin to enforce this legislation. |
| Management of Cemeteries | Upgrade and institute proper management of cemeteries (according to National Legislation guidelines). |

| Key Issue | Brief Description |
|--|---|
| Management of Biodiversity outside Protected Areas | Critical pieces of land (as identified by Ezemvelo KZN Wildlife) are required to sustain the natural resource base outside Protected Areas; these should be managed under appropriate protection measures. |
| Community Benefits from the Environment | Communities who value biodiversity should be able to share in the benefits of natural resources and community-based tourism initiatives. Environmental management plans should incorporate social issues in order to get 'buy in' from affected communities, including decision makers. |

7.5 PRIORITY ACTIONS

Vegetation and Terrestrial Ecosystems

There will be a balance between the need for development and environmental needs.

Freshwater Resources

There will be pollution free water for all. There will be clean water systems, achieved by proper management of the river catchments and appropriate treatment of sewerage.

Wetlands and Watercourses

No developments will be permitted in or on flood plains, watercourses or wetlands.

Endemic and Threatened Species

Harvesting of indigenous species for firewood and muthi will be monitored and controlled, and will be sustainable.

Waste Generation, Disposal and Management

To cater for waste disposal, both domestic and industrial, there will be properly sited and managed dumpsites and recycle bins. Implement a waste management system, which contributes to sustainable development and a measurable improvement in the quality of life.

Formal Sanitation Facilities

Efforts shall be made to provide all residents of Zululand will be provided with formal sanitation facilities (whether as VIP Latrines, or as water borne sewage, or any of the new low water use designs on the market) by 2010.

Water Use and Conservation

There will be region-wide acknowledgement of the scarcity of water in South Africa, and respect for this valuable resource from all, demonstrated through individual protection and conservation of the water resource.

Invasive Species

There will be region-wide knowledge of alien invasive species and acknowledgement of the negative effects that these plants have on the environment. Compliance with the Conservation of Agricultural Resources Act, No. 43 of 1983.

Sustainable Grazing and Cropping (Farming) and Aforestation

There will be region-wide knowledge and implementation of sustainable agricultural practices, to include cropping practices, plantation / exotic forest management, grazing methods, stocking density, burning regimes etc.

Climate Change and Biodiversity

Industries will be located in the best possible areas for particular emissions, and the emissions will be strictly curtailed and monitored according to the accepted protocols.

Tourism

There should be sustainable 'exploitation' / use of the high tourism potential of the region.

● Mining and Sand Winning

Erosion - Reduce, remedy and ultimately prevent soil erosion in the region.

● Housing

Housing, especially low cost and informal housing will be appropriately located in all instances, and residents will not be permitted to occupy areas which are environmentally or socially unsuitable or unsustainable.

● Health and Social Welfare

A concerted and honest effort will be made to tackle the problems of HIV / Aids and other communicable disease prevention.

● Planning

Planning will adopt a holistic approach and include adequate planning for people with disabilities and environmental constraints. Inappropriately located developments will not be permitted. Fertile agricultural land will be set aside for farming purposes only, and will not be lost due to development pressure.

● General: Governance

Promote co-operative Governance and capacity building.

8. INFRASTRUCTURE ANALYSIS

Large disparities are apparent in terms of the nature and structure of the built environment with the most significant disparity between the level of services and development in the rural and urban areas of the District. The towns have comparatively good levels of infrastructure and services.

With regard to service provision the following should be noted:

- The ZDM has an indigent policy in place.
- Free Basic Services (FBS) in respect of water is provided to all by the ZDM, i.e. 6KL free per household per month.
- The ZDM is not an electricity service provider.

8.1 WATER AND SANITATION PROVISION

The Zululand District Municipality has conducted a Section 78 assessment for the water and sanitation sector in terms of the requirements of the Municipal Systems Act (32 of 2000). The aim of this assessment being to develop options to enable the District Council to make balanced decisions as to which is the most appropriate services provider option to pursue.

The following tables demonstrate the current, and percentage, water and sanitation backlogs:

Table 39: Water and Sanitation Backlogs

| 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 | 5,647 | 3,200 | 264 | 6,608 | 15,719 |
| eDumbe LM | 2,521 | 1,191 | 1,104 | 4,033 | 8,849 |
| Nongoma LM | 11,792 | 9,606 | 9,107 | 2,594 | 33,099 |
| Ulundi LM | 5,487 | 6,808 | 7,810 | 8,224 | 28,329 |
| uPhongolo LM | 3,123 | 1,216 | 1,247 | 12,377 | 17,963 |
| Total (rural) | 28,570 | 22,021 | 19,532 | 33,836 | 103,959 |
| Total (households) | 28,570 | 22,021 | 19,532 | 72,420 | 142,543 |

| 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 | 6,714 | 8,968 | 37 | 0 | 15,719 |
| eDumbe LM | 765 | 7,940 | 144 | 0 | 8,849 |
| Nongoma LM | 21,808 | 11,291 | 0 | 0 | 33,099 |
| Ulundi LM | 17,395 | 10,892 | 42 | 0 | 28,329 |
| uPhongolo LM | 5,953 | 11,684 | 326 | 0 | 17,963 |
| Total (rural) | 52,635 | 50,775 | 549 | 0 | 103,959 |
| Total (households) | 52,635 | 50,775 | 1,144 | 37,989 | 142,543 |

Source: WSDP 2012

Table 40: Percentage Backlogs

| WATER | TOTAL HOUSEHOLDS | BACKLOGS | % BACKLOGS | % OF TOTAL BACKLOGS |
|--------------|------------------|---------------|---------------|---------------------|
| AbaQulusi LM | 36,069 | 8,847 | 24.53% | 17.49% |
| eDumbe LM | 15,011 | 3,712 | 24.73% | 7.34% |
| Nongoma LM | 34,056 | 21,398 | 62.83% | 42.30% |
| Ulundi LM | 35,309 | 12,295 | 34.82% | 24.30% |
| uPhongolo LM | 22,098 | 4,339 | 19.64% | 8.58% |
| Total | 142,543 | 50,591 | 35.49% | 100.00% |
| | | | | |
| SANITATION | TOTAL HOUSEHOLDS | BACKLOGS | % BACKLOGS | % OF TOTAL BACKLOGS |
| AbaQulusi LM | 36,069 | 6,714 | 18.61% | 12.76% |
| eDumbe LM | 15,011 | 765 | 5.10% | 1.45% |
| Nongoma LM | 34,056 | 21,808 | 64.04% | 41.43% |
| Ulundi LM | 35,309 | 17,395 | 49.27% | 33.05% |
| uPhongolo LM | 22,098 | 5,953 | 26.94% | 11.31% |
| Total | 142,543 | 52,635 | 36.93% | 100.00% |

Source: WSDP 2012

Details of the planned **water** and **sanitation** related investment into the district is provided hereunder. As such, a summary table is provided indicating the extent of the capital requirements for water and sanitation provision in the ZDM:

Table 41: Capital Requirements for Water from 2012/13 to 2016/17

| WATER | Capital requirements | 2012/13 | 2013/14 | 2014/15 | 2015/2016 | 2016/2017 | >2017 |
|--------------------------------------|------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|------------------------|
| Regional bulk | R 1,744,257,962 | R 261,833,460 | R 252,013,825 | R 122,947,376 | R 141,194,771 | R 105,133,211 | R 861,135,319 |
| Secondary bulk | R 1,088,374,123 | R 122,088,842 | R 95,981,010 | R 57,291,804 | R 44,491,516 | R 26,385,475 | R 742,135,476 |
| Reticulation | R 130,622,400 | R 14,061,980 | R 13,741,600 | R 5,743,680 | R 3,829,120 | R 2,613,220 | R 90,632,800 |
| Total capital (new) | R 2,963,254,485 | R 397,984,282 | R 361,736,435 | R 185,982,860 | R 189,515,407 | R 134,131,906 | R 1,693,903,595 |
| Regional bulk | TBA | TBA | TBA | TBA | TBA | TBA | TBA |
| Secondary bulk | TBA | TBA | TBA | TBA | TBA | TBA | TBA |
| Reticulation | TBA | TBA | TBA | TBA | TBA | TBA | TBA |
| Total capital (refurbishment) | TBA | TBA | TBA | TBA | TBA | TBA | TBA |
| Total capital | R 2,963,254,485 | R 397,984,282 | R 361,736,435 | R 185,982,860 | R 189,515,407 | R 134,131,906 | R 1,693,903,595 |

Source: WSDP 2012

Table 42: Capital Requirements for Sanitation from 2012/13 to 2016/17

| SANITATION | Capital requirements | 2012/13 | 2013/14 | 2014/15 | 2015/2016 | 2016/2017 | >2017 |
|--------------------------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Bulk infrastructure | R - | R - | R - | R - | R - | R - | R - |
| Reticulation | R - | R - | R - | R - | R - | R - | R - |
| VIP toilets | R 315,820,000 | 59,668,000 | 61,884,000 | 59,190,000 | 59,402,000 | 60,750,000 | 14,926,000 |
| Total capital (new) | R 315,820,000 | R 59,668,000 | R 61,884,000 | R 59,190,000 | R 59,402,000 | R 60,750,000 | R 14,926,000 |
| Bulk infrastructure | TBA | TBA | TBA | TBA | TBA | TBA | TBA |
| Reticulation | TBA | TBA | TBA | TBA | TBA | TBA | TBA |
| VIP toilets | TBA | TBA | TBA | TBA | TBA | TBA | TBA |
| Total capital (refurbishment) | TBA | TBA | TBA | TBA | TBA | TBA | TBA |
| Total capital | R 315,820,000 | R 59,668,000 | R 61,884,000 | R 59,190,000 | R 59,402,000 | R 60,750,000 | R 14,926,000 |

Source: WSDP 2012

8.1.1 APPROACH TO WATER AND SANITATION PROVISION

Water provision is a key development issue in the Zululand District Municipality. The Zululand District Municipality, in terms of the Water Services Act³, is the Water Services Authority in respect of its area of jurisdiction. A Water Services Plan⁴ has been developed and is reviewed on an annual basis. The RDP standard for water supply (and the ultimate goal for water provision) is 25l/person/day within 200m walking distance. However, a rudimentary water supply process is currently underway to expedite the supply of water to all by ensuring that every settlement has access to a minimum of 5 l/person/day within 800 m of the home.

Zululand District Municipality has adopted a Free Basic Water Services policy, as part of the WSDP, as follows:

- All households will receive six kilolitres of potable water free of charge for domestic use.
- Industrial, commercial and institutional consumers do not qualify for free basic services.
- All water supplied from standpipes and rudimentary systems will be free.

The following table defines this policy further:

Table 43: Water Services Policy

| Service Level Number | Level of Water Service | Definition | Free Basic Water Policy |
|----------------------|---|---|---|
| DW1 | Full pressure conventional house connection | Direct unrestricted full pressure (24m) connection to the reticulation system, metered and billed | Stepped block tariff (with first block at zero charge free to all households) |
| DW2 | Yard tank (RDP standard) | Restricted (to 200l per day) individual erf connection | All water at no charge |

³ Act 108 of 1997 Section II G

⁴ Water Services Act Section 12.

| Service Level Number | Level of Water Service | Definition | Free Basic Water Policy |
|----------------------|------------------------------------|--|-------------------------|
| | | with tank in yard | charge |
| DW3 | Communal street tap (RDP standard) | Unrestricted full pressure standpipe not further than 200m from dwellings (shared by a number of consumers) | All water at no charge |
| DW4 | Rudimentary system | Formalised supply: <ul style="list-style-type: none"> • Borehole equipped with hand pump • Protected spring • Communal standpipe further than 200m from dwellings | All water at no charge |

Source: WSDP 2012

Table 44: Free Basic Sanitation Policy

| Service Level Number | Level of Sanitation Service | Definition | Free Basic Sanitation Policy |
|----------------------|---------------------------------|--|--|
| DS1 | Water borne sewage | Unrestricted connection to municipal sewerage system | Included in free basic water allocation |
| DS2 | Septic tank or similar facility | On-site disposal (self treatment) | No charge |
| DS3 | Conservancy tank | Localized sewage temporary storage facility | No charge to selected households in specific areas as determined by the municipality, aligned to free basic water policy for service level DW4 |
| DS4 | Ventilated improved pit | Dry pit with sufficient capacity on-site disposal | No charge |

| Service Level Number | Level of Sanitation Service | Definition | Free Basic Sanitation Policy |
|----------------------|-----------------------------|------------------------|------------------------------|
| | (VIP) latrine | based on set standards | |

Source: WSDP 2012

The developmental approach and motivation for the various levels of service offered by the municipality is explained in the policy. This free basic services policy is based on the same approach and is also subject to affordability and economic viability, so the municipality may review the policy based on practical realities with regard to consumption and financial viability of metering and billing from time to time.

The municipality is aware that consumption in rural areas is steadily increasing. To measure consumption in unmetered zones, the municipality uses the water balance to determine consumption. Although the free basic water policy is implemented and no metering is intended in these zones immediately, the financial viability threshold (based on consumption and costs) will determine whether and when metering and/or billing may be introduced.

The Zululand District Water Services Plan gives a clear indication as to where and when water infrastructure will be provided in the District. It provides a clear indication of what amount of water capital infrastructure will be provided when and at what cost and during which year.

There are two main programmes that are utilized for the implementation of water and sanitation services. The Department of Water Affairs and Forestry provides funding for specifically water and sanitation infrastructure development. The Municipal Infrastructural Grant funds various infrastructure projects, not only limited to water and sanitation, but will exclusively be utilized by the ZDM for water and sanitation infrastructure provision during the next 5 years.

There are 10 regional water schemes that have been developed to roll-out water supply to the whole district. The schemes are listed hereunder and shown in the following image:

- Coronation
- Hlahlindlela
- Khambi
- Mandlakazi
- Nkonjeni
- Simdlangentsha East
- Simdlangentsha Central
- Simdlangentsha West
- Usuthu
- Candover

Each regional scheme footprint as a sustainable water source from where infrastructure is progressively being rolled out to all households within the supply area. The supply footprints have been identified such that water can be provided to all households within the area in a sustainable manner and at the lowest possible cost (R/kl).

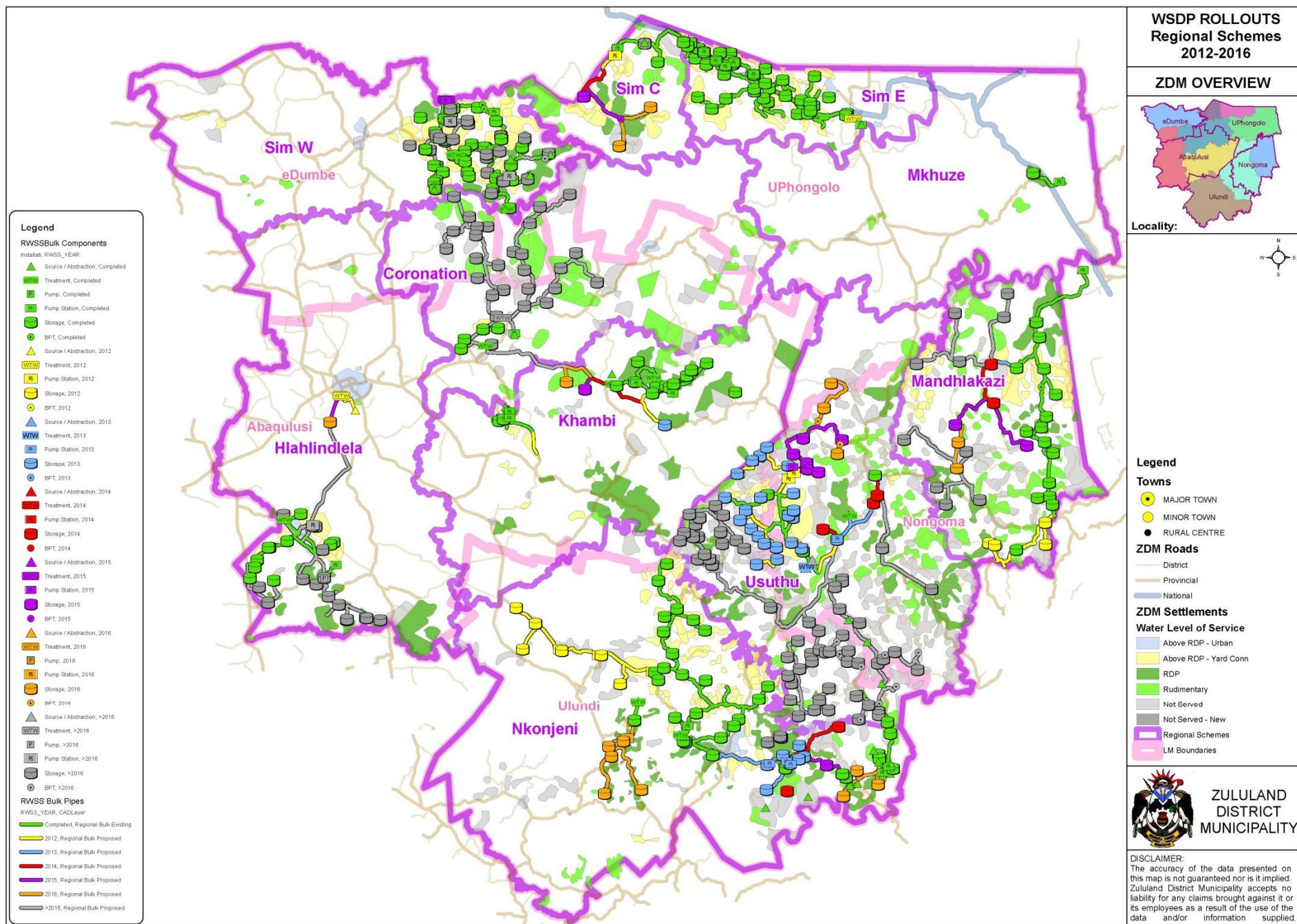
Sanitation in the rural areas is being provided in the form of dry-pit VIP toilets and the strategy is to implement these simultaneously with the roll-out of water services. This ensures a more effective impact with health and hygiene awareness training.

The following should be noted:

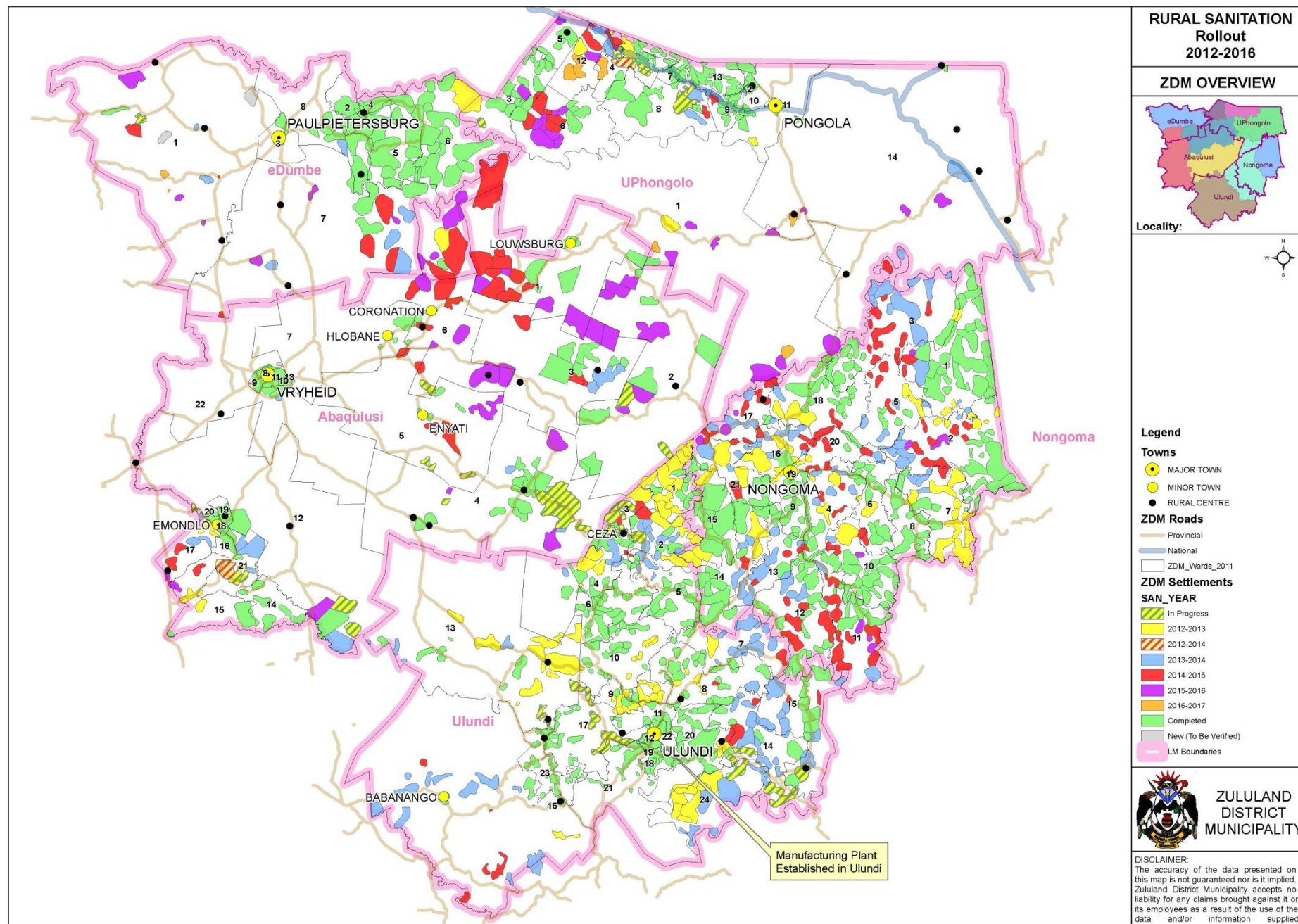
- Rudimentary water supply provides 5l per capita per day within a distance of 800m.
- RDP water supply roll-out (Regional Water Supply). Provides for 25l per capita per day within a distance of 200m.
- Rural Sanitation to the RDP standard of 1 dry-pit VIP per household.

The following series of maps illustrate the roll-out of the Regional Schemes, Sanitation and Rudimentary Water over the next five years.

Map 22: Regional Schemes Rollout 2012 - 2016



Map 23: Rural Sanitation Rollout 2012-2016



Map 24: Rudimentary Rollout 2012-2016

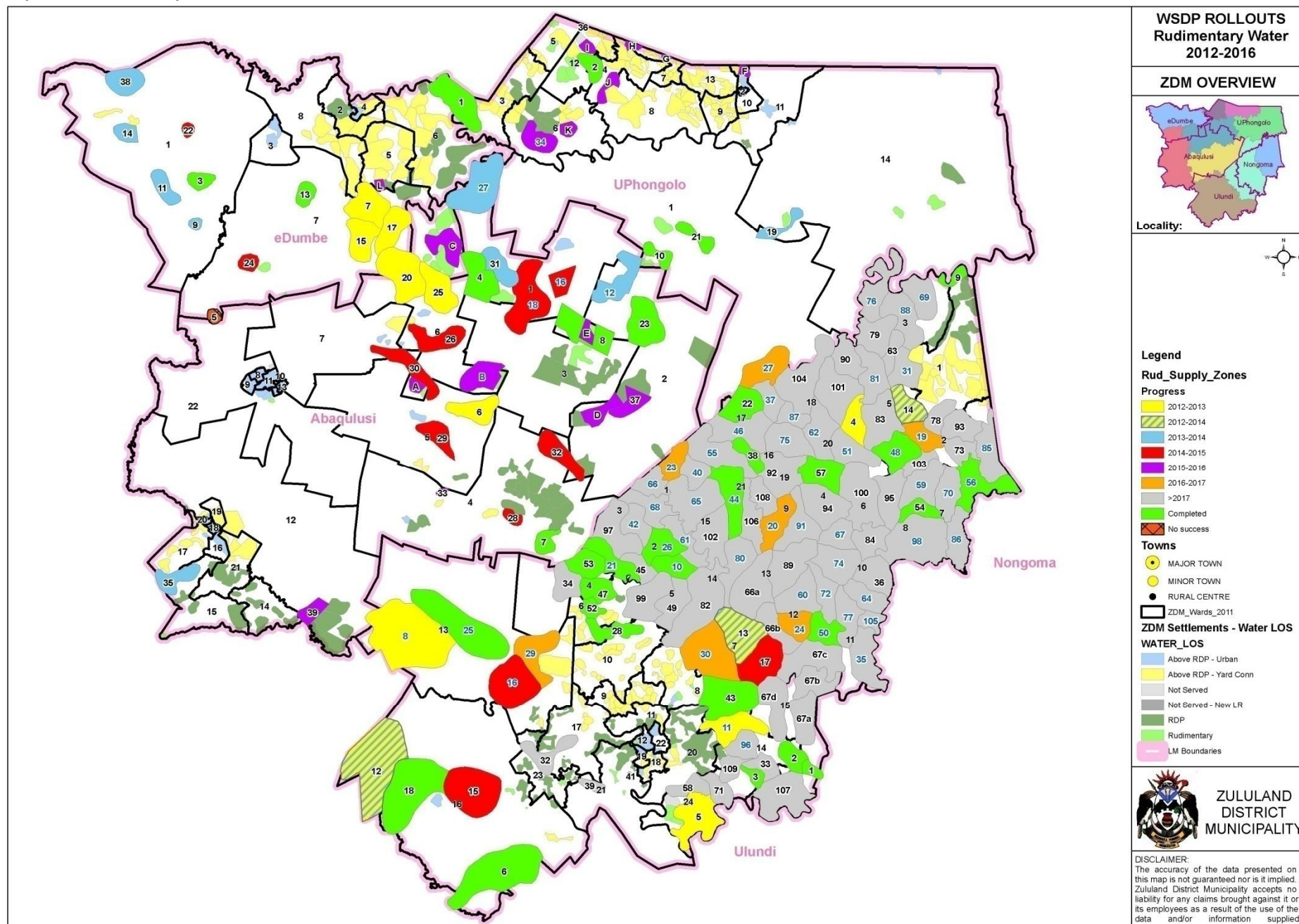


Table 45: Sources of Capital Income: Water

| WATER | Expected Funding | 2012/13 | 2013/14 | 2014/15 | 2015/2016 | 2016/2017 | >2017 |
|----------------------|-------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------|
| MIG | R 1,104,528,000 | R 220,905,600 | R 220,905,600 | R 220,905,600 | R 220,905,600 | R 220,905,600 | unknown |
| DWAF | R 142,700,000 | R 72,700,000 | R 70,000,000 | R - | R - | R - | unknown |
| Housing | R - | R - | R - | R - | R - | R - | unknown |
| Other grant funding | R - | R - | R - | R - | R - | R - | unknown |
| Loans | R - | R - | R - | R - | R - | R - | |
| TOTAL | R 1,247,228,000 | R 293,605,600 | R 290,905,600 | R 220,905,600 | R 220,905,600 | R 220,905,600 | |
| Capital requirements | R 2,963,254,485 | | | | | | |
| Shortfall | R -1,716,026,485 | | | | | | |

Source: WSDP 2012

Table 46: Sources of Capital Income: Sanitation

| SANITATION | Expected Funding | 2012/13 | 2013/14 | 2014/15 | 2015/2016 | 2016/2017 | >2017 |
|----------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------|
| MIG | R 276,132,000 | R 55,226,400 | R 55,226,400 | R 55,226,400 | R 55,226,400 | R 55,226,400 | unknown |
| DWAF | R - | R - | R - | R - | R - | R - | unknown |
| Housing | R - | R - | R - | R - | R - | R - | unknown |
| Other grant funding | R - | R - | R - | R - | R - | R - | unknown |
| Loans | R - | R - | R - | R - | R - | R - | |
| TOTAL | R 276,132,000 | R 55,226,400 | R 55,226,400 | R 55,226,400 | R 55,226,400 | R 55,226,400 | |
| Capital requirements | R 315,820,000 | | | | | | |
| Shortfall | R -39,688,000 | | | | | | |

Source: WSDP 2012

8.1.2 OPERATION AND MAINTENANCE

The Technical Department is divided into three main divisions, namely:

- Project Management Unit (PMU)
- Bulk Water and Wastewater Management
- Rural and Urban Reticulation

The strategic objective for the Technical Services Department is to progressively provide cost effective, reliable water services of good quality to all potential consumers in the district.

The core functions of the Technical Department are therefore:

- To implement the new infrastructure (Water and Sanitation).
- Operation and Maintenance of the secondary bulk and reticulation.
- Management, Operation and Maintenance of Bulk Water and Waste Water Infrastructure.

The key issues faced by the Department are linked with the key performance indicators, which also happen to be linked with the National Key Performance Indicators, to ensure that the relevant aspects of service delivery are addressed, measured and improved. Please refer to the OPMS section.

Project Management Unit

The Project Management Unit is responsible for the implementation of all the capital projects in the district. The unit has a total of 6 technical officers, two Institutional Social Development Officers (ISDO) and a Senior Project Administrator.

The current total Business Plans approved by the Municipal Infrastructure Grant (MIG) is in excess of R 1,541,959,888.40 and this makes Zululand District Municipality to be at least having committed projects for more than eight (8) years ahead, considering the current rate of MIG fund allocation which is approximately R180,000,000.

A large amount of money is currently spent in the development of bulk infrastructure and as the bulk line passes communities, reticulation networks are installed. Where the communities are experiencing acute shortage of water, the rudimentary programme is in place to bring relief and where there are no reliable sources, water tankering is taking place.

Zululand District Municipality, for sustainable water supply, is divided into ten (10) regional schemes with reliable water sources.

Rural and Urban Reticulation

This division deals with the reticulation of water from bulk services, attending to all operation and maintenance of the water infrastructure in both urban and rural areas. It also manages the emergency water/drought relief programme.

Currently all urban areas are serviced with water and sanitation. They are mostly metered and also receive the 6 kilolitre Free Basic Water.

Water Control and Management

In the financial year 2008/9, utility meters were introduced so that water required by the consumer could be measured either on daily or monthly quantities as preferred by the consumer. Those who want to be limited to FBW can also be provided on daily or monthly basis.

The schemes in the rural areas are not metered as they are considered to be consuming water less than the FBW. Zone meters have been installed to monitor the above situation and if the consumption indicate viability of metering water, that will be considered in the due course.

There are six reaction teams managed via a roster of service providers to provide emergency repairs to infrastructure.

8.1.3 BULK WATER SUPPLY AND WASTEWATER MANAGEMENT

The core function for Water Services Provision Bulk is to ensure that water and wastewater infrastructure is managed properly in order to produce a cost effective and class one (1) quality of water that meets stringent compliance while adequately addressing communities. It also addresses Operation and Maintenance of Bulk Infrastructure in order to minimize down time.

The above is carried out in all Local Municipalities with the exception of Abaqulusi Municipality's urban water and waste infrastructure.

8.2 SOLID WASTE

The 2001 Census reported that more than half the households in Zululand dispose of waste in their own dumps. Only 20 % have access to a formal waste disposal system, and these will be in urban areas. Please see the table hereunder:

Table 47: Method of Waste Disposal

| Method of disposal | % households |
|----------------------|--------------|
| Municipal weekly | 29,959 |
| Municipal less often | 2,034 |
| Communal dump | 975 |
| Own dump | 87,104 |
| No disposal | 30,918 |

Source: 2001 Census

The District has commissioned and completed the preparation of a Waste Management Strategy.

New facilities were proposed and the following issues addressed:

- Positioning of facilities
- Sizing of facilities (numbers and land requirement)
- Timing and priorities
- Tariffs
- Management: Local Municipalities or District Municipality
- Legal Responsibilities (Environmental and Water Acts)
- Rural - Cultural Practices
- Groundwater Pollution control
- Health Aspects
- Cost estimates were done on the CAPEX for infrastructure as well as the operational and maintenance cost of facilities.

Recommendations were made on the following:

- Procedures to be followed for the development of new Waste Disposal
- Site facilities and how to maintain the service at a satisfactory level at all times in line with the Minimum Requirements of DWAF (1998).
- Additional services required, e.g. geotechnical investigation, environmental impact assessment, etc.
- Cost recovery.
- Operational Control - local or district. Both alternatives to be evaluated and discussed.

8.3 CEMETERIES

Burial arrangements are closely bound with cultural and religious traditions. In most cases burial sites are needed in relatively close proximity to settlements. Accordingly to the Zululand Cemeteries Master Plan, approximately 700 ha of land will be required in the Zululand District Municipality by the year 2020 to accommodate approximately 800 000 cumulative deaths at that time. The table below shows the breakdown of the land requirements per Municipality for cemetery requirements:

Table 48: Estimated Cemetery Land Requirements (2020)

| Municipality | Projected Population | Cumulative Deaths up to 2020 | Recommended Land Required (ha) |
|--------------------|----------------------|------------------------------|--------------------------------|
| EDumbe (KZ 261) | 67 583 | 52 723 | 46 |
| UPongolo (KZ 262) | 113 149 | 88 274 | 78 |
| Abaqulusi (KZ 263) | 230 191 | 179 558 | 156 |
| Nongoma (KZ 265) | 253 114 | 197 479 | 171 |
| Ulundi (KZ 266) | 366 677 | 286 044 | 249 |
| ZDM | 1 030 714 | 804 078 | 700 |

Source: Cemetery Master Plan

The Districts Cemetery Plan (2003) provides the following information:

- In the urban centres, cemeteries are provided by the Municipalities, who provide gravesites at specified tariffs and keep records of burials.
- Cemeteries are provided and maintained by some religious congregations like the Anglican Church, Catholic Church and Lutheran Church.
- Where land is set aside for cemeteries on tribal land, the cost of burial sites are included in the general fees payable to the tribal authority.
- In selected rural areas with a low population density, burials are allowed near family homesteads.
- On some commercial farms, burial sites are provided for staff, but these provisions are now resisted by farmers as a result of the promulgation of the Extension of Security of Tenure Act.
- Because of the low demand for cremations, there are at present no crematoria in the Zululand District. The nearest crematoria are situated in Newcastle and Eshowe.

8.4 MUNICIPAL ROADS & PUBLIC TRANSPORTATION

Transport infrastructure includes road, rail, and air. Transport infrastructure in the District has an urban bias, such that the urban areas are accessible whilst the rural areas face problems of inaccessibility and poor infrastructure maintenance. With respect to transport infrastructure, the following district responsibilities have to be noted:

- Public transport infrastructure provision; and
- Public transport planning

Road Infrastructure

Road infrastructure is under pressure particularly from heavy vehicles. The responsibility between Local and District municipalities as well as the Department of Transport (DOT) for road provision and maintenance still needs to be finalized and has been flagged as a key development issue.

There are a number of roads in order of priority that are of strategic importance to the Municipality, and that should receive priority as far as the Municipality is concerned.

1. **Nongoma uPhongola link road:** A section of this road between Nongoma and uPhongola (about 35km) need to be upgraded to blacktop.
2. **Nongoma Vryheid link road:** There is a portion of road between Nongoma and Vryheid, from Nongoma to Vryheid that need to be upgraded to blacktop standard.
3. **Ceza R66 road:** A section of the road need to be upgraded to blacktop.

The National Roads Agency together with the Department of Transport provides funding for roads infrastructure development. This funding is however not channeled through the Municipality, but is directly channeled down from Provincial level to implementation in the different Municipalities.

The priorities from Municipalities as identified in the IDP are however taken into account in the funding process.

In addition to the strategic roads listed above (that are also reflected in some way in the SDF) the ZDM has drafted a Public Transport Plan (PTP). The PTP has as its primary objective to provide an appraisal of the public transport system (based on the results of the CPTR) that should assist decision makers in their efforts to improve the public transport system.

The following 2 maps have been derived from the PTP that depict:

- Vehicle Trips
- Vehicle Volumes

The significance, in terms of vehicle trips and volumes of a number of routes become clear, notably the Vryheid - Emondlo route from the following maps.

The backlog determination methodology referred at the start of this section has been applied to determine backlogs to roads and outlined in the table hereunder and also mapped at overleaf:

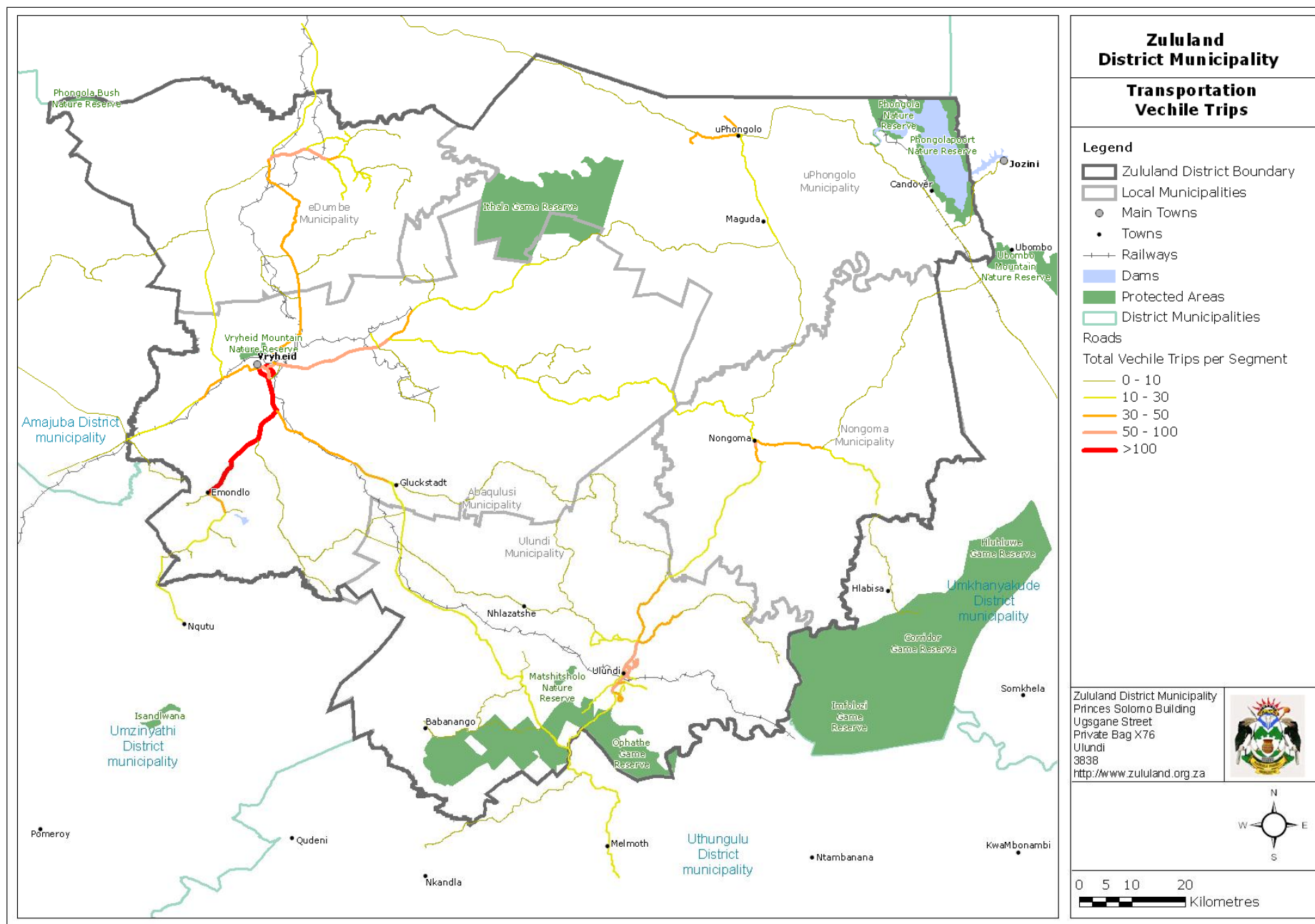
Table 49: Road Access Backlog Determination

| | < 1km | | |
|------------------------|------------|------------|------------|
| Local Municipality | Households | Population | Percentage |
| Abaqulusi Municipality | 30645 | 207252 | 95% |
| eDumbe Municipality | 12124 | 81995 | 89% |
| Nongoma Municipality | 30726 | 207800 | 99% |
| Ulundi Municipality | 28166 | 190487 | 94% |
| uPhongolo Municipality | 20056 | 135639 | 95% |

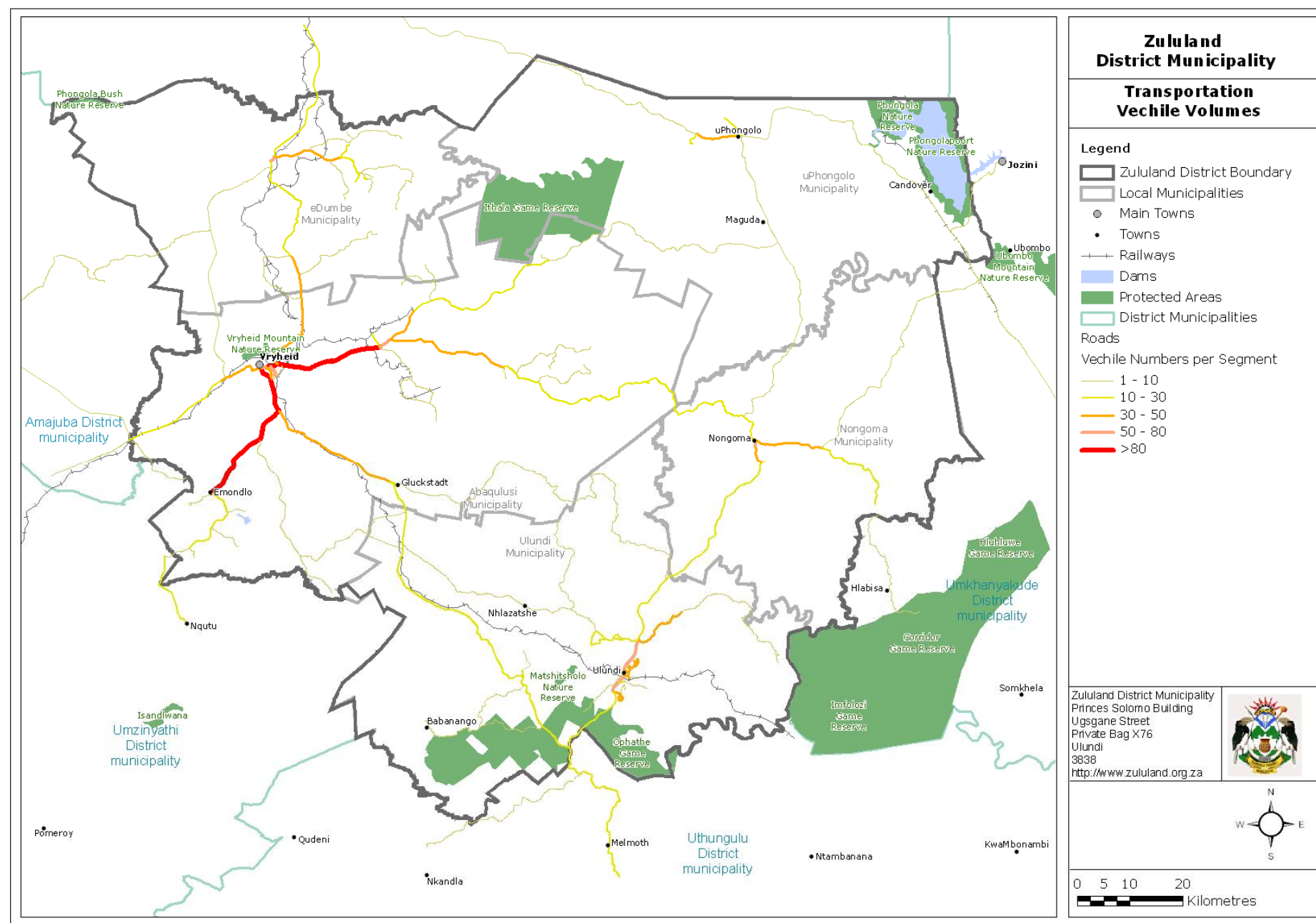
| | 1km - 2.5km | | |
|------------------------|-------------|------------|------------|
| Local Municipality | Households | Population | Percentage |
| Abaqulusi Municipality | 173 | 1170 | 1% |
| eDumbe Municipality | 1121 | 7581 | 8% |
| Nongoma Municipality | 114 | 771 | 0% |
| Ulundi Municipality | 379 | 2563 | 1% |
| uPhongolo Municipality | 541 | 3659 | 3% |

| | >2.5km | | |
|------------------------|------------|------------|------------|
| Local Municipality | Households | Population | Percentage |
| Abaqulusi Municipality | 1484 | 10036 | 5% |
| eDumbe Municipality | 333 | 2252 | 2% |
| Nongoma Municipality | 174 | 1177 | 1% |
| Ulundi Municipality | 1392 | 9414 | 5% |
| uPhongolo Municipality | 412 | 2786 | 2% |

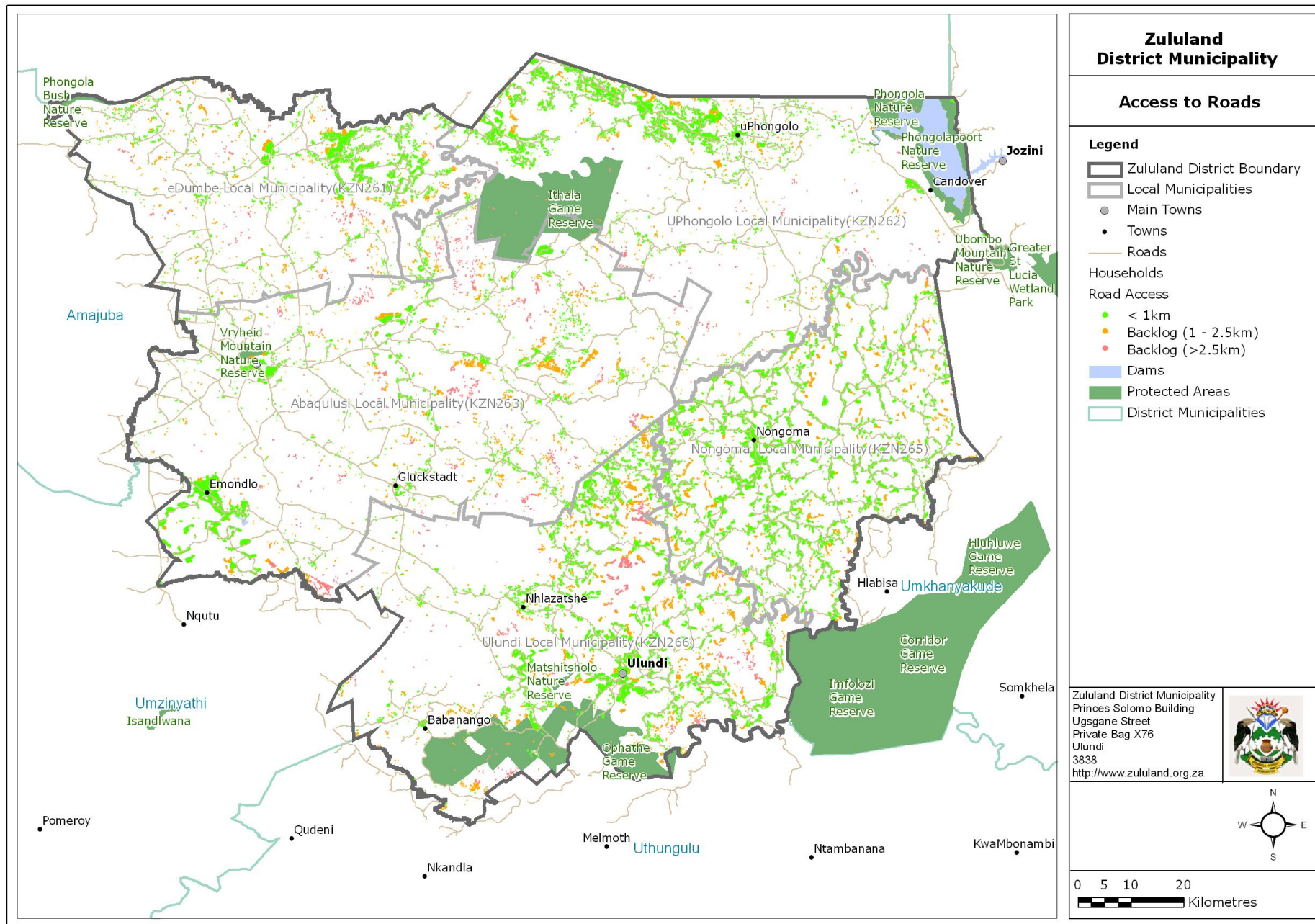
Map 25: Transportation Vehicle Trips



Map 26: Transportation Vehicle Volumes



Map 27: Access to Roads



The following transport related issues should be noted:

- Zululand District Municipality will be required to plan a co-ordination role in the provision and maintenance of roads within the District. The responsibility of roads (excluding Municipal roads) within the district remains the responsibility of the Department of Transport. The planning responsibility is with the district.
- An identification of the road network within the district and their classification has been undertaken based on the Districts GIS information. The classification includes:
 - National and Provincial Roads
 - District Roads
 - Municipal Roads
 - Roads in the Ingonyama Trust area
 - Roads on State land
- Rural Access roads have the most important impact for future development of the district. It is thus essential that the District be given opportunity to provide input into the Department of Transport planning for the District.
- The Provincial department utilizes the Rural Road Transportation Forums (RRTF) and Community Road Safety Committee (CRSC) to determine the road priorities.

Rail Infrastructure

The most important **rail** link is the coal line from Mpumalanga Province through Vryheid to Richards Bay Coal Terminal from where the product is exported. However, railway traffic is generally on the decline, as is the case throughout the province and rest of South Africa.

“The Coal Line, which started operations in 1976, links 44 coal mines in Mpumalanga to the bulk export port of Richards Bay. The line runs from Witbank through Piet Retief, Paulpietersburg, Vryheid East, Ulundi to Richards Bay. Although initially designed to convey 21 million tons of coal exports per

annum the route was upgraded in 1989 and in 1997 it conveyed 62 million tons of coal to Richards Bay (Robinson 1999). This was expected to increase to 70 million tons by the year 2000. Importantly, the Coal Line Study notes that the 200 truck dedicated coal trains (of which there are 23 per day) “do not stop at stations within the corridor except to changes crews. All these trains return empty”.

Further to this it was found that there is approximately 17 general freight trains on the line, transporting 30 000 tons of goods to Richards Bay, including ferro-chrome, granite, chrome, steel and timber. Although most of the freight is loaded north of Zululand substantial amounts of timber is loaded in the eDumbe and Vryheid areas. The trains are reported to return with approximately 10 000 tons of goods (Robinson 1999).”⁵

Air Transport Infrastructure

According to the Zululand Business Sector Plan (May 2006: pg 19), the District has two airports of note, viz. the Ulundi Airport and the Vryheid Airport.

The KZN Provincial Government resolved to transfer the management and ownership of the **Ulundi Airport** to the Zululand District Municipality and representative Joint Task Team was established to (1) facilitate the process and (2) to develop a strategy to ensure the future sustainable operation of the facility.

- The main objective is to make the airport a catalyst and key driver of the District’s IDP and LED programmes. A Strategy document outlining strategies and objectives that need to be implemented to ensure viability of the airport was produced and it is the yardstick according to which progress and achievements made are measured.
- Airport operations are governed by the Civil Aviation Regulations of 1997 as amended from time to time. An Aerodrome Emergency Management System has been developed as per Regulation 139.02.6 and approved by

⁵ ZDM Business Sector Plan, May 2006: pg 19

the South African Civil Aviation Authority (SACAA) as the legislating body monitoring operations of airports in South Africa. A Full-scale Emergency Exercise has also been performed successfully thereby convincing the SACAA Inspector that the airport is capable of responding to an emergency of that specific magnitude.

The following progress on Implementation of the Airport Strategic Objectives:

Airport Management

- An organizational chart has been drawn as the proposed Management structure which is yet to be approved by the council. The most critical post that is mandated by the SACAA regulations have been filled in compliance with ICAO Doc 9137-AN/898 PART 1 on Rescue and Fire Fighting i.e. the Chief Fire Officer.
- An operation Manual has been developed though still under SACAA scrutiny but staff members have started operationalising this document.
- Most staff members have attended a radio communication course i.e. PARTEK and two has already passed with others still having to do their practical examination. A Dangerous Goods Course has also been presented to most airport staff members.
- A Full scale Aerodrome Emergency Exercise has been performed successfully with all stake holders. The SACAA Inspector was impressed by the enthusiasm shown by participants who diligently illustrated different scenarios and thoroughness of Nkonjeni Hospital and EMRS as he found that the patient treatment was realistically simulated, to the point where patient cards were opened; treatments recorded and even some patients with X-Ray request forms, in wheelchairs.

Building and Maintenance

- The airport has deteriorated tremendously i.e. the infrastructure and buildings received minimal attention. Navigation equipment has been

repaired while the DME and one NDB (SMH) that have been identified as obsolete are in the process of being replaced.

- Electrical and drainage systems are receiving minimal attention on ad hock bases also due to financial constrain, with the drainage system posing constant problems denoting a need for major overhaul.
- Local and Regional Tourism Development and Marketing
- Top management of an airline that is readily available to provide scheduled flights, has visited the District's airport and surrounding Tourists Attraction Venues with an aim of confirming viability of scheduled flights and a proposal is expected.
- A company specializing in the provision of flight schools has visited the airport with an aim of gathering information towards developing a proposal for presentation to the Zululand District Municipality.
- A marketing video has been prepared and shown to the senior management team of one of the prospective carriers who were hosted by the Zululand District Municipality at Umfolozi/ Hluhluwe Game Reserve.

The **Vryheid airport** is no longer licensed as scheduled flights to Vryheid were discontinued in the mid-1980s partly because of a change in the operating company and partly because of the closure of major coal mines in the Vryheid area. The municipal parks department maintains the airport.

8.5 ELECTRICITY / ENERGY

In the Zululand District Municipality electricity is provided by way of connections to the Eskom grid or by way of non-grid electricity. It is important to note that the **electricity network** in the southern portions of Zululand has very limited capacity and, as such, no new projects are being commissioned in this part of the District. In the northern portions of the district, notably Edumbe, Ulundi and Abaqulusi, a few projects are proposed.

The calculated backlog for the provision of electricity, in terms of planned grid and non-grid supply is as follow:

- 55237 still to be connected to grid supply – this equates to approximately 39% of the total households
- 13175 still to be connected to non-grid supply – this equates to approximately 9% of the total households

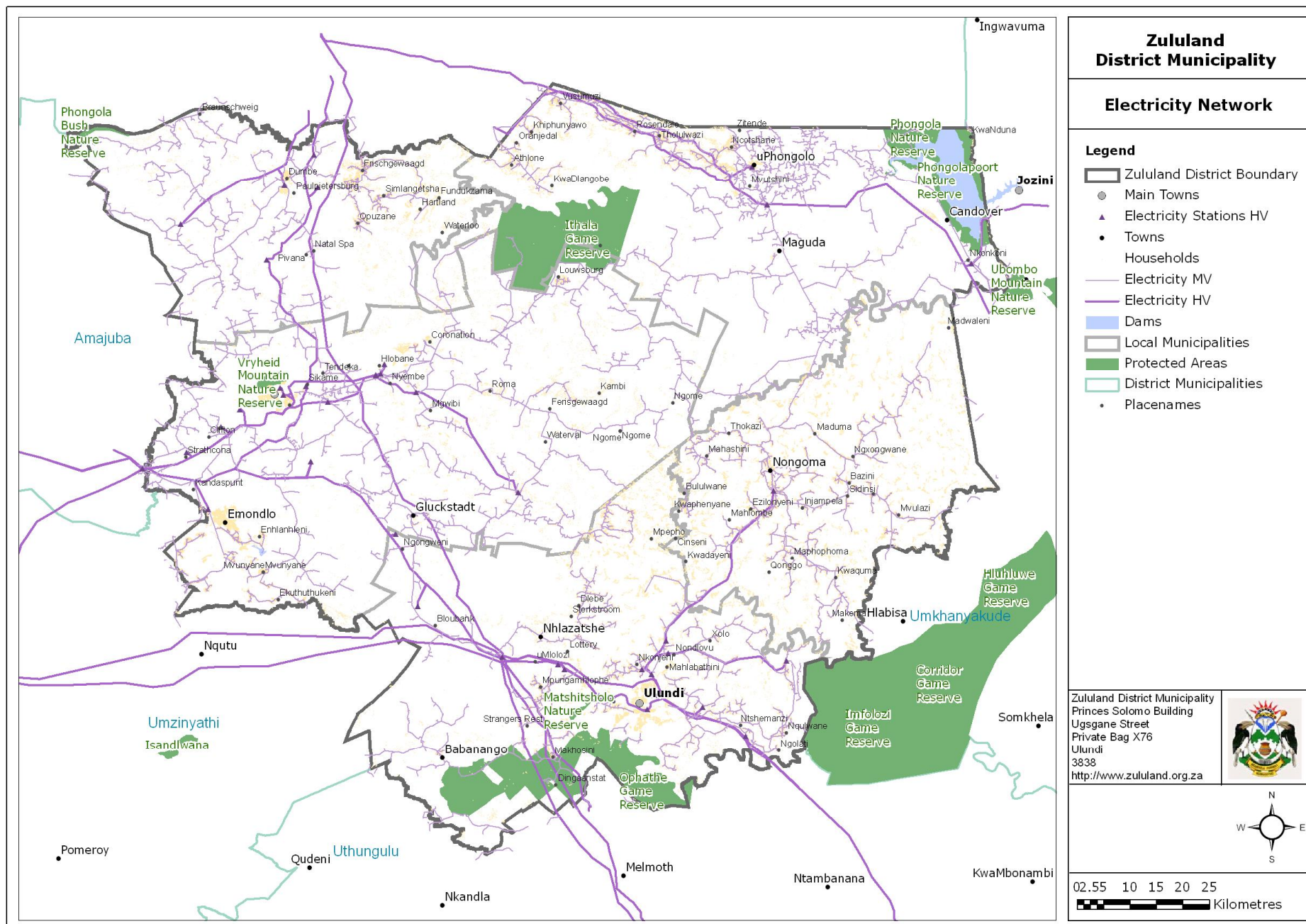
(Note: Updated figures to be provided when available)

More details on the electricity network and accessibility to it as shown in the following table and the maps at overleaf:

Table 50: Status of Electrification

| | Electrified | | |
|------------------------|---------------------|------------|------------|
| Local Municipality | Households | Population | Percentage |
| eDumbe Municipality | 8596 | 58135 | 57% |
| uPhongolo Municipality | 5306 | 35884 | 24% |
| Nongoma Municipality | 25102 | 169765 | 70% |
| Abaqulusi Municipality | 15308 | 103528 | 45% |
| Ulundi Municipality | 19817 | 134022 | 56% |
| BACKLOG | | | |
| | Planned Grid Supply | | |
| Local Municipality | Households | Population | Percentage |
| eDumbe Municipality | 4492 | 30379 | 30% |
| uPhongolo Municipality | 14127 | 95541 | 64% |
| Nongoma Municipality | 6803 | 46009 | 19% |
| Abaqulusi Municipality | 16366 | 110683 | 47% |
| Ulundi Municipality | 13449 | 90956 | 38% |
| | Off Grid Supply | | |
| Local Municipality | Households | Population | Percentage |
| eDumbe Municipality | 1930 | 13053 | 13% |
| uPhongolo Municipality | 2680 | 18125 | 12% |
| Nongoma Municipality | 4131 | 27938 | 11% |
| Abaqulusi Municipality | 2378 | 16082 | 7% |
| Ulundi Municipality | 2056 | 13905 | 6% |

Map 28: Electricity Network



8.6 DISASTER MANAGEMENT

Disaster Management is governed by the following Acts, Regulations and Plan:

- Disaster Management Act No. 57 of 2000
- Disaster Management Regulations
- Disaster Management Framework
- Disaster Management Sector Plan
- Fire Brigade Services Act

The core function of Disaster Management Division is to attend to the following issues, namely:

- Conducting Disaster Awareness throughout the district
- Attending to all disaster incidents in the district,

Among the various types of disasters, common disasters that normally hit the people in the district are natural disasters such as storms and strong winds.

The following forums are in place to attend and align disaster management responses:

- Disaster Management, Health and Safety Portfolio Committee
- Disaster Management Advisory Forum
- Provincial Disaster Management Advisory Forum

Disaster Management operates on grant funds provided provincially and with funds allocated by the by Zululand District Municipality. Amongst others, the funds are utilized for the following purposes:

- Disaster Relief Equipment
- Tents
- Plastic sheeting
- Food parcels for victims
- Disaster Equipments
- Fire Trailers

- Fire fighting vehicles.

Given that Disaster Management responds to emergency situations, it is crucial that this department is prepared for emergency situations. The Disaster Management Centre has been commissioned and operates 24/7 and employs the following staff:

- Centre Manager
- Senior Admin Officer
- 10 Fire Fighters

The ZDM has finalized the preparation of its Disaster Management Plan and procurement processes are underway to ensure the implementation of the said plan.

8.7 INFRASTRUCTURE: SWOT ANALYSIS

8.7.1 STRENGTHS/OPPORTUNITIES

- The ZDM has an indigent policy in place.
- To measure consumption in unmetered zones, the municipality uses the water balance to determine consumption.
- The Zululand District Water Services Plan gives a clear indication as to where and when water infrastructure will be provided in the District. It provides a clear indication of what amount of water capital infrastructure will be provided when and at what cost and during which year. MIG business plans in excess of R1,5 billion have already been approved.
- The following forums are in place to attend and align disaster management responses:
 - Disaster Management, Health and Safety Portfolio Committee
 - Disaster Management Advisory Forum
 - Provincial Disaster Management Advisory Forum