5.6 Upper Mvoti System

5.6.1 Description

There are currently no large bulk water supply schemes that draw water from the upper reaches of the Mvoti River to supply the inland regions of both the Umzinyathi and Ilembe District Municipalities. Where it exists, water supply is generally provided through small stand-alone reticulation schemes.

In July 2007 Umgeni Water became the bulk potable water provider to Ilembe District Municipality (excluding the Mandini Local Municipality) and as such has the responsibility of assessing all areas within the municipality for bulk water provision. The local municipalities of Ndwedwe and Maphumulo are positioned inland within the Ilembe District Municipality. These local municipalities are recognised as having a high percentage of backlogs and Umgeni Water has initiated a number of feasibility investigations to assess the options of serving bulk potable water to areas within Ndwedwe and Maphumulo in the short, medium and long-term.

In addition, the WTP at Ngcebo has been upgraded and both a 19.9 km 150 mm diameter pipeline and a 1.9 km 80 mm diameter pipeline have been constructed to serve the backlog areas of Ngcebo. This scheme will ultimately serve a 155 km^2 rural area.

5.6.2 Recommendations

The demand for water on the KwaZulu-Natal North Coast, and in particular the inland rural areas of the Ilembe District Municipality, are forecast to increase significantly in the future. The requirement for potable water supply to rural backlog areas along the coastal belt has prompted Umgeni Water to plan a new potable bulk water supply scheme with a source on the Imvutshane River and supply to the Ilembe District Municipality. This scheme has been named by Umgeni Water as the Maphumulo Bulk Water Supply Scheme (BWSS) and Phase 1 was commissioned in May 2013. Phase 2 is planned for construction within the next three years and will be partially funded by Umgeni Water.

The Maphumulo BWSS (**Section 7.7.4**) includes an abstraction works, a dam on the Imvutshane River, a treatment plant higher up and bulk rising and gravity mains to supply the water from the water treatment works into the Ilembe District Municipality's greater Maphumulo area.

The bulk infrastructure will consist of the Bulk Water Supply from the Imvutshane Dam to the Maphumulo Distribution Reservoir, including the abstraction works, WTPs, reservoirs, pump stations and other ancillary works. Ilembe District Municipality are preparing secondary bulk reticulation to extend from the bulk main to the planned future consumers.

The objective of the Maphumulo BWSS is to provide a sustainable and reliable supply of treated water to the rural communities located in and around the town of Maphumulo including Masibambisane, Kwasizebantu, Maqumbi, Ngcebo 2 & Ashville.

The Maphumulo BWSS will be implemented in 6 Phases, as follows:

- **Phase 1.1A** – Consists of the construction of the temporary abstraction works on the Imvutshane River, a raw water abstraction pipeline, a raw water pump station ,a raw water rising main, a 6Mℓ/day WTP and the upgrade of ESKOM's electrical reticulation required to service the entire scheme. This phase was commissioned in May 2013.

  This phase will provide potable water for the entire scheme.

- **Phase 1.1B** – Consist of the construction of a 3 stage rising main lifting water from the new 6Mℓ/day WTP to the existing Masibambisane WTW via a 11.5km pipeline ranging from 400mm dia. to 250mm dia. The construction and commissioning of 4 pump stations, 3 reservoirs ranging from 200Kl to 1Mℓ in capacity and 110mm dia. gravity main to the Mpumulo Hospital is complete and operational.

  This phase is currently providing potable water to the areas of Maphumulo, Masibambisane, Kwasizebantu & a portion of Ngcebo 2.

- **Phase 1.2** - Includes a 3 stage rising main lifting water from the booster pump station just south of the town of Maphumulo to the existing Maqumbi Command reservoirs via 15km of pipelines ranging from 350mm dia. to 200mm dia. This phase will also include the construction of 2 pump stations and a 1Mℓ reservoir. Completion of this phase is anticipated by end of November 2013.

  This phase will ultimately provide water to the areas of Maqumbi and a portion of Ngcebo 2.

- **Phase 1.3** – Includes the construction of a 9km long 160mm dia. gravity main from the existing command reservoir at Maqumbi to the Ashville command reservoir. This phase will be completed by March 2014.

  This phase will ultimately provide water to Ashville.

- **Phase 2** - Includes the construction of the Imvutshane Dam. Construction of the Imvutshane Dam has started and completion is anticipated by the end of 2014.

- **Phase 3** - Includes the upgrade of the WTW from 6Mℓ/day to 12 Mℓ/day and the upgrade of the pump stations required to service the ultimate demand on a "Just In Time" basis. The growth in demand will be monitored and the implementation of this phase will be timed to meet the growth in demand.

As a long-term solution to provide a sustainable regional water supply to the region, DWA intend investigating the feasibility of constructing the Mvoti-Poort Dam in the upper reaches of the Mvoti River, near Greytown. This would provide the raw water source for the proposed Upper Mvoti BWSS, a regional scheme to supply both the Umvoti Local Municipality (within the Umzinyati District Municipality) as well as Maphumulo Local Municipality within the Ilembe District Municipality. If feasible, this scheme would link into both the Ngcebo and Maphumulo schemes under gravity thereby either augmenting or replacing their water sources.

A strategy to supply bulk potable water to the Ozwathini area, situated in the inland portion of the Ndwedwe Local Municipality is being investigated. The intention is to extend potable water pipelines from the Greater uMshwathi Regional Bulk Water Supply Scheme to the area of Ozwathini (**Section 7.4.12**). This long-term strategy will include the construction of a potable water pipeline from

Wartburg via Dalton and on to Ozwathini. The Greater uMshwathi Regional Bulk Water Supply Scheme will be supplied with potable water from the D.V. Harris WTP on the Mgeni System. An extension of this bulk supply system could also provide water to the northern backlog areas of the Ndwedwe Local Municipality that are not served from the existing Ndwedwe Supply System. A pre-feasibility study will be undertaken by Umgeni Water in 2012 to assess the best options for supplying potable water to these rural areas in Ndwedwe.