



water affairs

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Water supply in the Crocodile West River System

The Department of Water Affairs (DWA) is exploring various new planning scenarios to ensure continued adequate water supply in the Crocodile West River System. A Strategy Steering Committee for the Crocodile West River System (SSC) was established to assist the Department in implementing, reviewing and updating the system's bulk water supply Reconciliation Strategy.

There is great competition for the scarce water resource in this area and the bulk water providers in the Crocodile West River system, such as Tshwane Metro, Rand Water, Magalies Water and others, are to meet to discuss their projected water requirements for the future, to understand differences in projected growth and achieve a more integrated approach to water supply planning and optimal use of water resources

In addition, the committee is ensuring that long term plans for water supply in the Crocodile West River System are continuously adapted to accommodate shifts in developmental objectives such as the Integrated Resource Plan of the Department of Energy, municipal service provision programs and market dependant economic trends.

At their September 2011 meeting the SSC evaluated the implications these scenarios of future water requirements and urban return flows, recently approved water use licenses, further proposed bulk water abstraction projects and developments around the coal reserves close to Lephalale will have on the water balance of the system up to the year 2030.

The following observations and recommendations were made:

The emphasis has shifted from securing sufficient water for transfer to several proposed future developments in Lephalale, such as Sasol's Mafuta Coal to Liquid Plant and five new power stations, to the current situation where the surplus in the Crocodile catchment is greater than the projected transfer requirements for Lephalale. This is largely due to the release of the Integrated Resource Development Plan of the Department of Energy which indicates a reduced number of planned power stations and associated water needs to only the existing Matimba and Medupi (under construction) power stations. Sasol's Mafutha plant has also been put on hold. However, the need to reserve water for transfer from the Crocodile West River to Mokolo, to reduce the risk of shortage for Matimba and Medupi power stations and to provide for future development in the Waterberg coal field, remains. The scope of such a transfer scheme is therefore being reviewed in a parallel process.

Attention is given to the options on how best to utilise and manage the expected and very valuable surplus of water in the Crocodile catchment. This is also a growing resource as Gauteng is growing and using more and more water from the Vaal River system and the effluent from northern Gauteng is draining to the Crocodile catchment

Although the requirement for water has been significantly reduced in the Lephalale area, the first claim on this surplus water should still be for the possible coal-based developments in this area. Another power station is planned to be built sometime after 2020 and the coal could also be supplied to extend the life of power stations in Mpumalanga and/or exported. Water would be required for mining purposes. A sound assessment of the possible water needs for this area is thus essential and forms part of the review of the scope of the water transfer scheme.

In the Crocodile catchment there are still some uncertainties about the water that would be required in future in the Magalies Water supply areas that could only be supplied from the Crocodile River. Higher up in the catchment, Tshwane Municipality has already made plans to replace some of its demand from Rand Water (out of the Vaal River system) with the re-use of effluent

for urban supply. This “Tshwane Potable Water Augmentation Programme” has the potential to use all the surplus effluent and possibly more.

Water Conservation and Demand Management activities, such as addressing water losses through replacement of leak prone pipelines, leak detection, pressure reduction, rezoning and the improvement of reservoir integrity, are hugely important in this area. It is already being implemented by some municipalities in the Crocodile West River System including the City of Tshwane – which has resulted in the reduction of non-revenue water to 24.4% at the end of June 2011.

The Strategy Steering Committee was also informed about the good progress that is being made with the development of a Decision Support System for the Crocodile West River System to evaluate and establish operating rules to regulate all the dams and abstractions as well as derive restriction rules to protect the resource during droughts. Monthly water release schedules for the different reservoirs will be determined and progress will be provided to the System Operating Forum, probably towards the end of 2011.

The Committee was also informed about a DWA study that did an evaluation of the available data to assess the resource water quality of the Crocodile West catchment. The assessment has found that water quality downstream of the Hartbeespoort Dam is a concern and the sources of pollution will have to be identified. As a way forward it was recommended that a DWA Crocodile West River Water Quality Technical Task Team be established. The team will investigate the option of developing a phased approached Water Quality Management Plan for the catchment.

The Crocodile West River catchment is not an isolated system and therefore its linkages to neighbouring catchments have to be considered in all planning aspects.

The next SSC is scheduled for February 2012 where the results of technical assessments will be presented and a revision of the Reconciliation Strategy will be discussed and debated. DWA will then use the guidance of the SSC members to formulate an updated Water Resource Reconciliation Strategy for the Crocodile West River system.

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