



water affairs

Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

Directorate: National Water Resource Planning

**VAAL RIVER SYSTEM
STRATEGY STEERING COMMITTEE FOR INTEGRATED WATER RESOURCE
MANAGEMENT
MINUTES OF MEETING 4**

DATE: Wednesday, 13 April 2011
TIME: 09:00 – 13:30
VENUE: Motsweding Conference Room, 16th Floor,
Gauteng Regional Office, Department of Water Affairs,
Bothongo Plaza East, 285 Schoeman Street, Pretoria

ACTION

1. **WELCOME AND INTRODUCTION OF MEMBERS**
The Chairman, Mr Peter van Niekerk (Department of Water Affairs – DWA), welcomed all to the fourth meeting of the Vaal River System (VRS) Strategy Steering Committee (SSC).
2. **ATTENDANCE AND APOLOGIES**
The attendance register has been attached. The following apologies were received:
Mr Hanke du Toit, DWA, Northern Cape.
Ms Rachalet Cronje, DWA.
Mr Anesh Surendra, Eskom. Mr Ian Midgley attended on his behalf.
Mr Coenie Erasmus, Free State Tourism, Environment and Economic Affairs.
Mr Martin Ginster, Sasol. Mr Andries Meyer attended on his behalf.
Mr Fred van Zyl, DWA. Mr Mike Warren attended on his behalf.
Ms Barbara Weston, DWA.
Mr Johan Hendriksz. Mr Giepie Hefer attended on his behalf.
3. **ACCEPTANCE OF AGENDA**
Presentation of Sasol's initiatives on Water Conservation and Water Demand Management was added to Point 7.2.
4. **APPROVAL OF MINUTES OF THE PREVIOUS MEETING**
The minutes of the Meeting 3 on 21 October 2010 was approved with small changes and will be circulated to all members along with the documentation of this meeting.

14/4/12/14/1: Vaal River System Strategy Steering Committee - Meeting 4 - Minutes

ACTION

5. MATTERS ARISING FROM SSC MEETING 2 ON 24 FEBRUARY 2010

Page 4, Point 6.2: Mr Paul Herbst (DWA) was asked to work out a uniformed reporting system with the four big Gauteng metros/municipalities and all now use the same template to report back to this meeting.

Page 11, Point 6.7: Mr Ntsikelelo Gosani (TCTA) was asked to work out tariffs for 2014 when there should be a drop in demand due to water conservation and water demand management (WC/WDM). He said it could be done, but the TCTA needs the relevant projections from the DWA.

Mr Seef Rademeyer (DWA) said the TCTA always uses the lowest projection to work out its tariffs. He asked if the TCTA could do a sensitivity analysis on the other, higher projection as well. It was agreed that Messrs Gosani and Rademeyer will meet outside this meeting to take this discussion further. Mr Kobie Maré (Rand Water) said it is important for this meeting to hear the response from the TCTA and it was agreed that Mr Gosani would report back at the next meeting of this committee.

**Mr Gosani
Mr Rademeyer**

Page 11, Point 6.7: Mr Johan van Rooyen (DWA) asked Mr Herbst to take responsibility for the issue of explaining to top management the need for funding at municipal level for WC/WDM to prevent future water restrictions.

Mr Herbst

Page 12, Point 6.7: Mr Pieter van Rooyen (WRP) said information from the metros/municipalities has been used in refining the North-South Split. Initial results indicate anomalies in the resulting return flow factors and further work is required.

**Mr P Van
Rooyen**

Page 12, Point 9: A Progress Report and Media Release were sent to all members for comment. Mr Johan van Rooyen said the DWA Chief Directorate: Communication Services sent it to the media in January 2011 and an article appeared in Beeld. The SSC members will be notified when the next media release is released.

**Mr J Van
Rooyen**

Page 13, Point 9: A draft newsletter has been written. It will be updated with information from this meeting before being sent out to all stakeholders.

Mr Joubert

6. BACKGROUND

Mr Johan van Rooyen (DWA) said he is assured that we will not run out of water due to the calibre of people serving on this committee. The members of this committee must ensure that there is water in the Vaal River System (VRS) for future generations.

As long as we follow and implement the Reconciliation Strategy, there will be enough water in the VRS for the future. The Strategy has six pillars:

- Eradicate unlawful water use.
- Implementation of WC/WDM to reduce losses (Project 15%).
- Implement Phase 2 of Lesotho Highlands Water Project.
- Assess water effluent treatment and re-use – focus on mine water.
- Implement Integrated Water Quality Management Strategy.
- The Strategy Steering Committee

This Strategy should be changed and adapted to ensure the sustainability of our water resources and it is the job of this committee to ensure that this Strategy is followed.

7 FEEDBACK ON KEY STRATEGIC ACTIVITIES
(The full presentations have been attached to this email)

7.1 WATER USE COMPLIANCE AND ENFORCEMENT

Mr Hennie Smit (DWA) reported back on the latest developments and progress regarding water use compliance.

Validation has been completed in the Upper and Middle Vaal Water Management Areas (WMAs) and has commenced in the Lower Vaal WMA. Verification is underway in the Upper and Middle Vaal WMAs.

Preparation for the publishing of regulations for measuring irrigation water is being finalised together with the revision of delegations, which will greatly assist in enforcing water use compliance.

The present focus of Compliance Monitoring and Enforcement (CME) is on the bigger unlawful water users which represents 39% of the total possible unlawful use. So far 244 million m³/a (180 million m³/a in the Upper Vaal WMA, 34 million m³/a in the Middle Vaal WMA and 30 million m³/a in the Lower Vaal WMA) of water is allegedly being used unlawfully in the VRS.

The current priority is to address 92% of possible unlawful use in VRS by March 2012, three months after the initial deadline.

Discussion

Mr Lourens Lötter (City of Tshwane) asked if unlawful water use will be legalised or reduced.

Mr Smit said the aim is to totally eradicate all unlawful water use in the VRS. The verification process is showing that unlawful water use could actually be higher than what was initially thought, which makes it vital to eradicate it as soon as possible. Ongoing compliance monitoring and enforcement of water use will be difficult and expensive, but it is something that must be done. The DWA is busy with recruitment and training to have the necessary capacity for sustained enforcement.

Mr Benedict Itholeng (Gauteng Department of Agriculture and Rural Development) asked if the Irrigation Boards are involved in this process.

Mr Smit said there are no Irrigation Boards or Water User Associations in the Upper Vaal WMA, the area with the most unlawful water use. Areas in the Middle and Lower Vaal WMAs with Irrigation Boards / Government Water Schemes (GWS) have much less unlawful water users due to the control exerted by the Irrigation Boards / on GWS.

Mr Lötter asked what the economic implications will be if unlawful water use is eradicated. Mr Smit said it will have economic implications, but it must be weighed up against the interest of urban and industrial users who must be protected against unlawful water users. Mr Johan van Rooyen said unlawful water use should be seen in the same light as illegal cigarette smuggling. Food security is an important consideration however it should not be achieved through unlawful use of water.

Mr Maré asked how sensitive is the unlawful water use volumes to weather patterns? Mr Smit said farmers will use less water if rainfall is above normal. The estimates given are based on optimal production in each particular area. We have had above average rainfall during the last few years, but there will be a major problem if we have a drought, because then unlawful water use will have a major impact. Then there will not be enough water for all lawful water users in the VRS.

Should we have a drought, then water restrictions, including farmers, will be the only option to protect our water resources.

7.2 WATER CONSERVATION / WATER DEMAND MANAGEMENT

Mr Paul Herbst (DWA) said a Sub-Task Team was established to determine funding options for the municipalities. The Sub-Task Team identified how the municipalities could source funding from National Treasury and this was further discussed with the respective municipal Chief Financial Officers.

A meeting was also held with National Treasury who indicated that the DWA is not likely to obtain “bulk” funding; the preferred option for municipalities is to apply directly for funding from National Treasury for water conservation and water demand management (WC/WDM) programs.

Municipalities must budget for WDM and individually submit proposals to National Treasury for funding. The DWA will, however, be involved in this budgeting process.

Municipalities must prioritise funding for the implementation of WC/WDM to achieve the required savings and ensure quarterly reporting to the DWA and the Presidency.

The Municipal Financial Indaba (MFI) has elevated and advocated close co-operation between technical and financial departments within municipalities to ensure the achievement of financial savings, water savings and also prevent a water crisis and associated economic crisis.

Mr Herbst said money is available within governmental structures but no-one is applying for the money.

A meeting will also be held with the relevant Gauteng MEC and new Councillors early in June 2011 during which the importance of WC/WDM will be highlighted.

Discussion

Mr Johan van Rooyen said he gets the impression that there is much more support and commitment on a political level for WC/WDM. He also commented that not all municipalities share the same level of success. Should it be necessary to implement water restrictions in future, then municipalities who successfully implemented WC/WDM and achieved the goal of a 15 % saving should have lower levels of water

restrictions than municipalities who did little to improve WC/WDM.

- a **City of Tshwane** – Mr Lourens Lötter said the City of Tshwane is one of the few Municipalities / Metros that are currently in a position to achieve the required WC/WDM targets set by the DWA for Project 15%. Over the last three years Tshwane has managed to reduce water demand and water losses consistently and has the lowest percentage Unaccounted for Water (UAW) of all Metros in South Africa.

The City of Tshwane, however, needs the following funding to implement more initiatives to reduce UAW and to sustain the initiatives that are already undertaken:

- R100 million per year for the next ten years to replace asbestos cement pipes,
- R4.5 million per year for new pressure reducing valve installations,
- Install 55 000 water metering devices over 5 years at R 12.6 million per year,
- Initiate programmes to repair / retrofit customer internal water systems and cisterns at R5 million per year,
- Formalisation of 20 000 un-proclaimed erven in new townships and installing water meters over two years at R10 million per year, and
- Improve reaction time for repairing water leaks.

Discussion

Mr Phineas Malapela (Vaal Environmental Justice Alliance) asked why Mamelodi and Atteridgeville have lower water consumption than Centurion. Mr Lötter said the properties are larger in Centurion and the gardens are bigger. Consumers with gardens spend about 80% of their water consumption watering their gardens.

Mr Johan van Rooyen asked what this committee can do for the City of Tshwane to improve WC/WDM and assist with Project 15%. Mr Lötter said funding is the biggest issue for all municipalities. The importance of WC/WDM has reached the Chief Financial Officers at most municipalities; we now have to target junior and middle managers to convince them of how vital WC/WDM is.

Mr Johan van Rooyen asked Mr Herbst to send a follow-up letter to all municipalities regarding the importance and benefits of WC/WDM.

Mr Herbst

- b **Johannesburg Water** – Mr Etienne Hugo said the City of Johannesburg is the biggest consumer in the Vaal River System (VRS), supplying some 650 000 domestic, commercial and industrial customers and serves an estimated consumer base of 3.8 million people. Johannesburg Water developed a comprehensive WC/WDM Strategy. The short term actions are:

- Extended active leakage control,
- Extend water networks replacement programme,
- Install pressure reducing valves (PRV's) in zones with high pressure,
- Implement a routine PRV maintenance programme, and
- Investigate alternative water resources i.e. effluent re-use.

The long term actions are:

- Meter un-metered fire connections,

ACTION

- Undertake reservoir storage optimisation study,
- Maintain and repair inlet valves to eliminate overflows,
- Promote grey water re-use and rain water harvesting,
- Extend educational programmes in schools,
- Design and implement innovation programmes to enhance behavioural change, and
- Provide on-going technical training for officials at all levels in WC/WDM.

The programmes and interventions put in place to limit or reduce real losses within the water reticulation system is contributing to the reduction in the water demand in an effort to contribute to the overall 15% reduction.

Budget allocation is still a problem and the required money for WDM is not available. Alternative funding opportunities is being investigated. If funding is not available it will be difficult to achieve the required 15% savings.

Discussion

Mr Malapela asked if Johannesburg Water follow the WC/WDM Strategy or does crisis management plays a part in the management of its water resources. Mr Hugo said the Strategy is followed.

- c **Ekurhuleni Metropolitan** – Mr Francois Olivier said Ekurhuleni Metro focuses on three main WDM projects:

- Bulk Meter Consolidation (Top 500 Consumers)

A few large consumers are responsible for a large percentage of bulk purchases in Ekurhuleni. A survey of a few top consumers' meters revealed the following:

- Unmetered connections
- Faulty water meters
- Database inaccuracies.

- Indigent Leak Repair Project

Registered indigent householders in Ekurhuleni are entitled to a free basic allocation of 9 kl/household/month. The consumption in some indigent households far exceeds this allocation due to excessive leakage on their properties. This is a direct loss to the municipality as water is not only wasted but no payment is received for the wastage. Ekurhuleni decided to embark on a pilot project of all registered indigent households to assess the impact of fixing their internal plumbing leaks and to establish the impact of such a project on saving water and money.

The project impact was far better than expected. The average repair cost per house was R818. The average monthly water consumption per house was 59.65 kl before the repairs. After the repair the average water consumption was reduced to 15.49 kl, a saving of 44,16 kl. The average annual saving was R2 135,58 per house, which compared very favourably to the repair cost of R818.

- Bulk Meter Upgrading/Monitoring

Significant savings can be achieved by repairing internal plumbing leaks on private properties especially on properties from which very little or no payment is received. Sustainability remains a challenge – A Management Information System and

ACTION

Operations and Maintenance System need to go hand-in-hand with the project. The project will be extended to include all households in specific areas.

Discussion

Mr Willem Wegelin (WRP) asked exactly what are fixed in the Indigent Leak Repair Project. Mr Olivier said everything inside the house that can leak is fixed including toilets and cisterns.

- d **Emfuleni Municipality** – Mr Sydney Chauke reported that political buy-in, a shortage of skills and a lack of funding are the major challenges facing Emfuleni Municipality in its quest to save 15% with WC/WDM.

Between June and December 2010, the municipality showed non-revenue water of 21 475 075 kl or 50.08% of the water bought from Rand Water.

Progress made with regard to WC/WDM include the following:

- Completed 30% of a meter audit of the Sebokeng / Evaton area,
- Comprehensive Business Plan to source funding,
- Reports for reservoir leaks are in place,
- A tender is out for the Palm Springs - Rand Water connection, and
- Procured 1000 water meters.

Discussion

Mr Malapela asked why the water consumption for Vanderbijlpark is much higher than the other measuring points. Mr Chauke explained that the point in question includes many areas around Vanderbijlpark as well.

- e **Rand Water** – Mr Kobie Maré said that after the last VRS SSC meeting, Rand Water was requested to investigate and explain the variations in growth of certain bulk consumers that are not part of the large metros. The Metros and some mines were consuming less than their projected volumes, while Emfuleni Municipality and other consumers were exceeding their projected water requirements.

A growth in its Unaccounted for Water (UAW) from 2.9% in 2004/05 to 4.3% in 2009/10, has resulted in Rand Water starting a process to investigate its internal UAW to determine the potential to reduce unnecessary demand.

Due to the general under-investment in WC/WDM in its area of supply, Rand Water started a process to partially co-fund approved water demand reduction projects with municipalities. The DWA and several municipalities have appointed Rand Water to implement WC/WDM projects in its area of supply as well as in adjacent areas such as Western Highveld.

Rand Water applied for a water use license to make provision for the anticipated growth in demand in its area of service. The DWA has indicated that it might not be able to approve such an application unless WC/WDM has been implemented to its satisfaction. These and other conditions still have to be negotiated in the near future, but its potential impact on all interested and affected parties could be significant.

Should Rand Water reach a stage where the DWA informs it that it will not be possible to supply all the water requested for a specific year, then Rand Water will

have to pass this reduction on to its clients.

Mr Dave Smith (Sappi) said industry and organisations will be penalised should they not achieve a 15% reduction in water use. The same rules and penalties should also apply to municipalities that do not attain their 15% target.

- f **Sasol** – Mr Andries Meyer reported that Sasol and the South African Irrigation Institute (SABI), in collaboration with Agri SA and Grain SA, are presenting two information sessions in the Upper Vaal WMA in May 2011 on WC/WDM in the irrigation sector, with specific focus on irrigation water use efficiency.

Sasol is also in discussions with the Emfuleni Municipality to see how Sasol along with other financing institutions can be of assistance in implementing WC/WDM.

7.3 **IMPLEMENTATION OF THE INFRASTRUCTURAL AUGMENTATION OPTION**

Mr Peter Pyke (DWA) reported that the negotiations on the implementation of Phase 2 of the Lesotho Highlands Water Project (LHWP) are on track.

As reported in the previous meeting, Lesotho has a serious electrical energy shortage and wishes to become more energy independent.

Lesotho wanted to revise the agreed plans to maximise hydropower generation from Phase 2 which would have delayed the delivery schedule to transfer the full yield of Phase 2 to South Africa. This was pointed out to Lesotho in high level negotiations who agreed to revert back to the original Phase 2 rollout plan.

A pumped storage scheme is currently being investigated to provide Lesotho with electricity. The Katse Dam could be the lower dam while another dam could be built higher up for this scheme.

It looks as if a final agreement will be signed between South Africa and Lesotho before the end of 2011.

7.4 **WATER QUALITY STRATEGY AND FOCUS ON ACID MINE DRAINAGE**

Mr Jurgo van Wyk (DWA) reported on progress with the Implementation of the Integrated Water Quality Management (IWQM) Strategy. The focus areas of the Strategy are:

- Salinity;
- Eutrophication;
- Microbiological pollution; and
- Institutional challenges.

Reasonable progress had been made with some studies that had been initiated to address facets of the Vaal River IWQM Strategy; however, limited capacity hampers swift progress. Maintenance and improvement of resource quality remains the ultimate goal.

The establishment of the Vaal River Integrated Water Quality Management Strategy

ACTION

Implementation Committee (VWQIC) should assist, and provide more impetus and momentum to WQM efforts in the Vaal River System.

The following studies are in different stages of being initiated:

- Feasibility study for a long-term solution to address the Acid Mine Drainage associated with the East, Central and West Rand underground mining Basins;
- Development of a salinity management strategy to address coal mining in the Grootdraai Dam System;
- Water Quality Modelling and Water Resources Planning Model salinity setup requirements for the Orange River;
- Establishment of an integrated water quality management strategy for the Orange River Basin;
- Piloting of the Waste Discharge Charge System in the Vaal WMAs;
- Revision of Government Notice 704 on the use of water for mining and related activities aimed at the protection of water resources; and
- Revision of the General Authorisations for waste discharge and disposal related water uses.

Mr Marius Keet (DWA) reported on the latest developments regarding the Acid Mine Drainage problem in Gauteng. An Inter-Ministerial Committee has been appointed to assess what has been done thus far, reappraise the risk; assess available solutions and technology; interrogate and assess the viability and costs of critical short-term interventions; propose integrated lasting and sustainable medium- and long-term solutions/measures and explore possible partnerships with the private sector.

Cabinet approved the Team of Experts Report on 9 February 2011. The TCTA was appointed on 6 April to:

- Do emergency work such as to assist with the installation of pumps,
- Construct an on-site treatment plant in each of the three basins with an option to refurbish existing plants,
- Install the infrastructure to convey treated water to nearby water courses, and
- Operate the pump stations and treatment works.

Discussions with mines to use their infrastructure are currently taking place. The institutional arrangements between the various role players are challenging and something like a levy payable by the mines to fund this project will take a very long time to negotiate.

Discussion

Mr Van Rooyen said cleaning up the AMD is vital for the VRS, because it is seen as a water resource that must be developed by 2014 or else we will not have enough water in Gauteng. This point must be emphasised to the top management of the DWA.

**Mr Johan van
Rooyen**

Mr Malapela commented that legislation should be used to enforce financial assistance from the mining sector for cleaning up AMD.

Mr Francois Olivier commented that the possibility of using the mine water

management also for hydroelectricity was investigated in the past.

Mr Van Wyk said the DWA feasibility study will investigate all aspects of AMD.

7.5 VAAL WATER MANAGEMENT AREAS CLASSIFICATION STUDY

Ms Tovho Nyamande (DWA) gave a concise update on progress made with the classification of significant water resources in the three Vaal WMAs.

The Inception Report for this study has just been accepted, the first meeting of the Project Steering Committee was held in February 2011 and Integrated Units of Analysis (IUAs) for each of the three WMAs have been identified.

The next steps in this study are:

- A detailed evaluation and interpretation of information,
- The extrapolation and socio-economic status of the IUAs,
- Formulate a multi-criteria decision aid system,
- Social, economic, ecological criteria, and
- Integration with Reconciliation Strategy Maintenance Study.

7.6 RECONCILIATION SCENARIOS REVIEW

Mr Seef Rademeyer (DWA) presented the projected water balances and reconciliation scenarios for the Vaal River System. He reported that there are possible changes in the future water requirements that will be incorporated into scenarios for the next meeting.

He highlighted that Scenario 11 for the Lephalale area originally provided for up to four new Eskom power stations plus Sasol's Mafutha 1 development in the Lephalale district which would have needed a water transfer scheme from the VRS to the Crocodile West System. This has now changed, because the Department of Energy's Draft Integrated Electricity Resource Plan (October 2010) now focuses on renewable energy sources and nuclear power and the next coal power station will only be developed in 2028. Sasol has also delayed its plan to develop Mafutha 1.

With this decrease in the needs of the Lephalale district, it looks likely that a water transfer will no longer be necessary, freeing up more water for the VRS.

Eskom will soon be updating its planning information and this will be reported at the next meeting. The Crocodile West and Olifants River systems' reconciliation strategies are also being reviewed and revised scenarios of possible transfers will be incorporated in the revision of the Vaal River System balance.

8 DISCUSSIONS and COMMENTS

Mr Meyer asked if the scenarios already developed incorporate the proposed short term and long term measures proposed for managing AMD. Mr Pieter van Rooyen confirmed that this is indeed the case.

Mr Johan van Rooyen said that the Crocodile West Strategy will produce confirmed transfer requirements where various scenarios will be formulated in the Olifants Strategy for consideration in the Vaal River Strategy.

ACTION

Mr Itholeng said the Johannesburg Water WC/WDM Strategy lists water re-use as an option. Is this the re-use of effluent? Mr Hugo confirmed that it is and said a desktop study was done. This study links up with the study being undertaken by the DWA who is also looking at the re-use of water.

Mr Itholeng said many housing developments are being completed without water, because the relevant infrastructure has not yet been built. How can this be prevented. Mr Van Niekerk said this is part of our collective effort to look at a balanced point of providing housing with all municipal services before people take occupation.

8. CONFIRMATION OF MEMBERSHIP

Will be discussed again at the next meeting.

9. COMMUNICATION

Mr Johan van Rooyen said the minutes should be finished as soon as possible and send out to members within a week.

He requested the meeting members to comment on the documentation and thanked Sasol for the valuable comments on the last media release.

10. DATE OF NEXT MEETING

The next meeting will be on Wednesday, 19 October 2011 from 09:00 until 15:00 in order to cover all points on the agenda.

11. WAY FORWARD AND CLOSURE

Mr Van Niekerk thanked the members of the SSC for their attendance.