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 5

DATE: Wednesday, 19 October 2011
TIME: 09:00 – 14:00
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 fifth 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:

Ms Rachalet Cronje, DWA
Mr Johan Hendriksz, Erwat
Mr Etienne Hugo, Johannesburg Water
Mr Marius Keet, DWA
Mr Andries Meyer, Sasol
Mr William Moraka, Salga
Mr Helgard Muller, DWA
Mr Tseliso Ntili, DWA, Free State
Mr Louis Snyders, DWA, Northern Cape
Mr Mike Warren, DWA
Ms Barbara Weston, DWA.

3. ACCEPTANCE OF AGENDA

The agenda was accepted with the following changes:

- Water Tariff Scenarios to be presented by Mr Ntsikelelo Gosani (TCTA) under Point 6.3 while the rest of Point 6 moved one number up.
- Three points were added to Point 9. Communication:
    - 9.1 Media Release

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- 9.2 Newsletter
- 9.3 Progress Report.

4. APPROVAL OF MINUTES OF THE PREVIOUS MEETING

The minutes of Meeting 4 held on 13 April 2011 were approved with minor changes.

5. MATTERS ARISING FROM MEETING 4 ON 13 APRIL 2011

All matters arising from Meeting 4 were discussed under Point 6. Actions of Meeting 4 were all discussed later in this meeting.

6 FEEDBACK ON KEY STRATEGIC ACTIVITIES

(The full presentations have been attached)

6.1 WATER USE COMPLIANCE AND ENFORCEMENT

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

The Department has had some success in dealing with 'blatant' unlawful use in cases where the use is clearly unlawful. 'Blatant' unlawful use represents 39% of total possible unlawful use in the VRS.

However, where there is existing lawful use and part of the current use is unlawful, it is difficult to deal with from a legal perspective as the present legal tools are not sufficiently robust to successfully prosecute transgressors. A large percentage (61%) of unlawful use falls in this category. Regulations required to enforce measurement is a prerequisite for action against partially unlawful water users. Draft regulations will be published soon for public comment as a required step in implementing these new Regulations.

Validation of water use has been completed in the Upper and Middle Vaal Water Management Areas (WMA) and has commenced in the Lower Vaal WMA. The verification of water use is underway in the Upper and Middle Vaal WMAs.

The eradication of all unlawful use in the VRS will not be met by the targeted date at the end of 2011. The programme has been revised by a few months and the aim is to address 75% of possible unlawful use in the VRS by March 2012. This does not mean that unlawful water use will stop immediately by March 2012, because legal processes take time and can take years to resolve.

Unlawful water use in the VRS is still estimated at 244 million m^3/a.

Discussion

Mr Phineas Malapela (Vaal Environmental Justice Alliance) asked who the unlawful water users in the VRS are.

Mr Smit said this study concentrates only on commercial irrigation farmers in the VRS. Even 'blatant' unlawful water use must be proved in a court of law, which makes for a very complex

legal process. Most of these 'blatant' unlawful cases can, however, be dealt with by simply writing a letter to the alleged unlawful user before the new regulations are in place.

Mr Martin Ginster (Sasol) asked if there has been a significant change in the statistics of water use compliance in the VRS.

Mr Smit said small changes in the statistics has been picked up, such as that 3,9% of alleged unlawful water users were in fact deemed to be legal water users.

Mr Johan van Rooyen (DWA) said the total unlawful water use is unfortunately still standing at 244 million m^3/a. The DWA realises it will not be possible to recoup 100% of the unlawful water use and uses a figure of 85% of that in its scenario planning.

Mr Samson Mokoena (Vaal Environmental Justice Alliance) asked what measures are currently being taken to recover some of the costs of unlawful water use.

Mr Smit said unlawful water use must first be proven by following a legal process. Until that has happened, people are innocent until proven guilty and therefore, no costs can be recovered at this stage.

Mr John Critchley (Rand Water) said court cases could go on for many years. Does the DWA have any alternative options for this problem?

Mr Smit said the DWA plans to first take the most complex cases to court that would then set a precedent for all other unlawful water cases. A simple written warning to an unlawful water user has also been effective in many of the cases.

Mr Jan Potgieter (Department of Agriculture, Forestry and Fisheries) asked what criteria were used to identify 'blatant' unlawful water users.

Mr Smit said a validation process was done to see how much water the farmers were using. A verification process was then followed to find out if this water use was legal. When these processes show that a specific farmer has no right to irrigate, then it is deemed as 'blatant' unlawful use.

6.2 WATER CONSERVATION / WATER DEMAND MANAGEMENT

a) Presentation by the DWA

Mr Paul Herbst (DWA) said the total water demand for the Gauteng municipalities has increased and follows the projected high demand with no Water Conservation and Water Demand Management (WC/WDM) interventions.

The City of Tshwane is the only municipality on track with Project 15%. The other municipalities must increase their drive on the implementation of Project 15%. Regular meetings with municipalities are being held to monitor progress and performance and municipalities have to report regularly to the DWA.

Funding remains the main key stumbling block for the implementation of WC/WDM. Most municipalities' capacity to budget reliably for infrastructure spending is weak. This is reflected by the declining allocations for future years, whereas in practice infrastructure spending will in all probability increase. This is because most municipalities only plan their infrastructure spending within a one-year time horizon. Even then the quality of planning is poor, resulting in significant under spending of capital budgets. In 2009/10 municipalities underspent their capital budgets by R15 billion.

National Treasury has written to all municipalities stating that Non Revenue Water (NRW) is a

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significant threat to municipal revenue and impacts negatively on overall financial sustainability and that all possible steps must be taken to reduce NRW.

National Treasury wants municipalities to save money and sees WC/WDM as the perfect tool for municipalities to obtain that goal. This created a synergy between Treasury who is interested in the monetary value of water provided, sold and managed and the DWA, who is interested in volume water provided and sold.

Discussion

Mr Fred van Zyl commented that it is extremely worrying that most municipalities are on the projected high curve demand. It must be asked why municipalities are not successful with WC/WDM and if they are applying WC/WDM at all. Maybe higher growth is the reason for an increase in water use. We must find out what problems the municipalities are facing.

Mr Herbst said WC/WDM was carefully assessed at all Gauteng municipalities during the Reconciliation Study. All municipalities have a WC/WDM target to reduce water use by 15%.

Mr Johan van Rooyen also asked if the inability to reduce water use is maybe due to a higher growth in water demand than what we have anticipated. Municipalities should be measured against real demand.

Mr Lourens Lötter (City of Tshwane) stated that many different items needed to be in place for WC/WDM to succeed.

Mr Malapela said the authorities should not raise the price of water to decrease water use.

b) Presentations by the municipalities

Ekurhuleni Metropolitan Municipality – Mr Connie Ras (Ekurhuleni Metro) said they know exactly what to do with regard to WC/WDM, but the problem lies in challenges regarding the execution of the projects. There has been a slight decrease in NRW, but it still stands at 38,5% To further decrease NRW, Ekurhuleni is currently focusing on four main projects:

- **Replacement of Mid-Block Mains** - Mid-block mains is one of the biggest contributors towards water losses. Ekurhuleni has a definite plan to eradicate the mid-block problems over the next couple of years. R39 million has been budgeted over the next 3 years for this purpose.
- **Pipeline Upgrading** - The upgrading of municipal water mains is an on-going pipeline rehabilitation process and R113 million has been budgeted over the next 3 years to replace old pipelines.
- **Pressure Management -** Pressure management is regarded as a quick-win initiative to reduce water losses and the setting up of pressure management zones in Ekurhuleni is well advanced. However, the management of the installations needs to be outsourced until sufficient internal capacity has been created and an as-and-when contractor needs to be appointed for day-to-day maintenance.
- **Leak Repair Project** - Based on the prioritisation / sorting of zones from the highest to the lowest NRW, Tsakane/Langaville/Geluksdal was identified as the area within Ekurhuleni with the highest losses and therefore as the area with the biggest potential to reduce water losses. A ingident leak repair project is already showing signs of promise.

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Discussion

Mr Ginster wanted more information on municipal metering problems.

Mr Ras said resentment will build up in a community if meters show high usage immediately after installation due to existing leaks. All leaks must therefore first be fixed at a property before a meter can be installed. The return on investment for the municipality will be so good that it is worth the while to invest in retrofitting thereby fixing all visible and invisible (underground) leaks. Depending on circumstances specific to a site, the return on investment for leak repair projects is normally between 6 to 24 months.

Metering should however go hand in hand with leak repair projects, as ownership of consumption must be transferred to the consumer, including the repair of future leaks that may develop. Many leak repair projects have failed in the past throughout SA because no meters were installed. The Water Services Act actually requires municipalities to meter all properties within their supply area as part of the core business of a water utility.

Mr Malapela asked what intervention measure has the best impact on WC/WDM.

Mr Ras said pressure management and leak repairs are the two measures with the best water saving results. Pressure management result in quick-win water savings, whilst leak repair projects take longer to execute but achieve good potential regarding water loss reductions.

Mr Ras said a WC/WDM project can only work if the community is roped in to take ownership of the process through a public participation campaign. The community can be won over by explaining the benefits of a project to them. The utilization of local labour to execute the project will definitely enhance buy-in, but further measures such as writing off bad municipal debt accrued over many years will go a long way to obtain support. Obviously the leak repairs should be done free of charge to the community. Once the community is on your side and support the project, then everything else will be easy.

Johannesburg Water – Ms Mbalie Matiwane (Johannesburg Water) said the City of Johannesburg has drafted a revised WC/WDM strategy that is awaiting approval to align it with the Project 15% requirements. NRW currently stands at 40%.

Funding is still the biggest problem facing Johannesburg Water who requested a budget of R447,945,000 but was allocated only R130,000,000 for the 2011/12 financial year. Based on the budget available for WC/WDM, only the following interventions were implemented:

- Water Mains Replacement; and
- Soweto Infrastructure Upgrade project.

Existing programmes maintained through Operation and Maintenance budget include:

- Pressure Management;
- Active and passive leakage control; and
- Reservoir and Tower Monitoring.

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.

Currently demand will exceed supply capacity of the current system by 2014, implying that no

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growth in demand can be accommodated between 2013 and 2018.

If funding is not available it will be difficult to achieve the required savings to contribute to the 15% reduction that's required in the upper Vaal System.

Discussion

Ms Nino Manus (City of Johannesburg) said the reduced budget is due to the financial problems facing the City of Johannesburg. The Mayor has made a statement recently that Johannesburg Water will be receiving more funding as a matter of urgency.

Mr Willem Wegelin (WRP Consulting Engineers) said the Mazibuko court case regarding the installation of pre-paid water meters in Phiri, Soweto has put back WC/WDM back by several years in this area. The average water consumption in Soweto is 65 kilolitres per property per month, which is extremely high, and the main reason why Johannesburg Water embarked on Operation Gcin'Amanzi.

In 2004, Operation Gcin'Amanzi was well on track and an estimated 70 million m^3/annum could be saved if the average consumption could be reduced to 30 kilolitres per property per month. This is approximately a third of the total saving required for the VRS. Ms Manus agreed that massive savings can be made in Soweto with WC/WDM.

City of Tshwane – Mr Lourens Lötter, City of Tshwane

Mr Lourens Lötter (City of Tshwane) presented a report on progress made with reducing water demand and improving NRW, which is currently at 24, 4%.

The City of Tshwane has a water demand strategy containing 25 main items with each item vital for reducing water use in a municipality. A scoring system is also used to measure the strategy and to see if Tshwane is providing the service expected by the ratepayers.

Funding is also a major problem and the biggest headache for the next few years will be upgrading the water infrastructure of the municipalities (Nokeng and Kungwini) that were incorporated into Tshwane in May 2011. There are many unmetered housing estates in these two former municipalities that receive water.

WC/WDM interventions at Tshwane include:

- Preparing detailed monthly water balance (very few municipalities in South Africa prepare regular water balances);
- Meter audits in 15 industrial areas. Results determined for 4 of 15 areas to date show an increase in revenue of R 3 million per year.
- Meter audits for all irrigated road islands (293 connections).
- 2179 domestic meters installed for unmetered houses in Mamelodi and Soshanguve in 2009. If a low consumption of 15kl per property per month assumed then additional metered consumption of 292 220 kl/year @ R6.71 = additional income of R2.6 million per year.
- 32760 bursts/leaks repaired per year;
- 50927 water meters replaced per year;
- 282,2 km length of mains replaced from 2005 to August 2011;
- 30 School's workshops held in 2010/11 to promote water conservation; and

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- 90 Community workshops held in 2010/11 to promote water conservation reaching 2881 community members.

Discussion

Mr Malapela asked if Tshwane is using prepaid or conventional water meters.

Mr Lötter said conventional meters are being used. Tshwane policy states that no prepaid meters will be installed, but it also mentions that a water monitoring device must be installed in all dwellings.

Mr Thomas du Toit (Save the Vaal Environment - SAVE) congratulated Mr Lötter on his presentation and suggested it be sent to other municipalities to serve as a model of how WC/WDM must be done.

Mr Critchley asked if Tshwane has investigated the possible re-use or recycling of water.

Mr Lötter said this is being investigated.

Mr Van Rooyen said while water re-use is a very good idea, it should not be counted as part of Project 15%, which concentrates on reducing water use through WC/WDM.

c) Presentation by Rand Water

Rand Water – Mr Kobie Maré (Rand Water) said about 14 million people are served by Rand Water. NRW is standing at 4% which compared well with international bulk water suppliers, but an action plan has just started to look at measures to reduce water wastage.

Risks and mitigation measures facing Rand Water include:

- The demand is already exceeding the yield;
- The risk of high and growing demands lies in the increasing vulnerability of the system to cope in times of drought;
- The yield of the VRS will remain nearly constant over the next 10 years until the new Polihali dam in Lesotho has been built;
- This increasing demand and constant yield will cause the assurance of supply to be less than the agreed upon probability;
- This will lead to restrictions to be imposed on all demand;
- The most effective measure to ensure reduced demand will be to increase sales tariffs at all stages (raw, bulk and retail). This will have the effect of reducing the demand of paying customers; and
- Unfortunately certain aspects of the demand will not easily respond to calls for reduction in demand, i.e. leaks and wasteful demand.

Some consumers have a high growth in volume and in percentage and they are of most concern from a water scarcity point of view. Other consumers have grown less and some have even reduced. Apart from the City of Tshwane, only Metsimaholo (Sasolburg) has reduced consumption as required by Project 15%. However, no mentionable reduction in water use can be observed due to WC/WDM.

ACTION

Discussion

Mr Coenie Erasmus (Free State Department of Tourism, Environment and Economic Affairs) said awareness campaigns of his department during the past few years in schools and industry in Metsimaholo could have contributed to the success of Project 15%.

Mr Peter Pyke (DWA) stated that what he missed in this programme was a massive campaign to win the hearts and minds of consumers of the value of effective use of water. Consumers must be convinced to take ownership of their water use and encouraged to reduce water wastage. People need to be told that there is no such thing as free water. If water is given for free, somebody is paying for it somewhere else. The country can no longer afford water wastage.

Mr Mokoena said the municipalities attending today know what to do regarding WC/WDM. Municipalities not taking WC/WDM serious should be taken to task or else we will not be able to reduce water use.

Mr Du Toit agrees and said Emfuleni Municipality is not doing anything regarding WC/WDM and has, for example, not read his water meter in two years.

Mr Herbst said a lot of good work has already being done regarding WC/WDM, but we cannot sit back now, because so much still needs to be done. We must continue with the hard work.

6.3 WATER TARIFF SCENARIOS

Mr Ntsikelelo Gosani, TCTA was asked at the previous meeting to do a sensitivity analysis on the higher projection as well and not just on the lowest projection when working out the TCTA tariffs for water from Lesotho.

Mr Gosani said the four main DWA scenarios were taken and using project finance models, it was found that the change in demand will not affect the tariffs – the changes is reflected in the debt period to be serviced by TCTA.

6.4 IMPLEMENTATION OF THE INFRASTRUCTURAL AUGMENTATION OPTION

Mr Peter Pyke (DWA) reported that South Africa and Lesotho signed an agreement in Maseru on 11 August 2011 for the implementation of the second phase of the Lesotho Highlands Water Project (LHWP). Phase 2 of the LHWP will consist of the building of the Polihali Dam and a water delivery system to supplement the water in the VRS.

The agreement should be ratified by Parliament during November 2011. The project is still on schedule and the dam should deliver water by 2020.

6.5 WATER QUALITY STRATEGY AND FOCUS ON ACID MINE DRAINAGE

a) Mr Jurgo van Wyk (DWA) reported that progress was made with various elements of the Integrated Water Quality Management (IWQM) Strategy since the last meeting on 13 April 2011.

The aim of the Strategy is to:

- Maintain or improve the water quality of the water resources within the VRS in order to assist in securing ecologically sustainable development, while also promoting justifiable

social and economic development;

- Manage the water resources in order to comply with the determined integrated resource water quality objectives (RWQOs);
- Control the salinity, eutrophication and microbiological contamination;
- Improve source management controls and measures as a means to limit and control point and diffuse sources that significantly impact on the water resources; and
- Improve management of the water resources by more effective monitoring, assessment, reporting and management participation.

Mr Van Wyk compared the water quality status and trends for salinity (TDS) and nutrients (phosphate) of the various level 1 monitoring points along the Vaal River main stem.

He informed stakeholders that total dissolved solids (TDS) concentrations generally comply to the RWQOs, with non-compliance observed below Vaalharts up to the confluence with the Lower Orange River. Comparisons of the 95 percentile TDS concentrations for 2005 and 2011 yielded improving trends all over, with the exception again of below Vaalharts up to the confluence.

In addition, the 50 percentile phosphate concentrations for the 4 phosphate management reaches were compared for 2005 and 2011, and to the RWQOs. Although comparisons of the phosphate concentrations for 2005 and 2011 yielded improving trends all over, phosphate concentrations observed in the Middle-Vaal River generally do not comply with the determined RWQOs, potentially causing hypertrophic conditions conducive to the growth of nuisance algae.

Salinity Modelling: Golder & Associates was appointed to assist the Department with the calibration of WQT (salinity model) and the integration of all salinity modelling in the Vaal-Orange River System in conjunction with the WRPM (Water Resource Planning Model).

Integrated Management: The study to establish an Integrated Water Quality Management Strategy for the larger Orange River Basin is to be initiated early next year.

Coal Mining: It is planned to investigate the application of lessons-learned in the Upper Olifants River Basin to the Upper Vaal WMA, specifically in order to manage and curb the expected adverse mining impacts that are likely to manifest should pro-active interventions not be implemented timeously in order to protect the strategically important water resources of the Upper Vaal WMA.

Mine water management: A tender was afforded to review Government Notice 704. The preferred bidder is being appointed.

Waste discharge standards: The preferred bidder is in the process of being appointed to assist the Department with the piloting of the Waste Discharge Charge System (WDCS) in the Vaal River system.

Waste discharge standards: Waste discharge standards will be made available for public comment in due course.

b) Mr Van Wyk presented a progress report on Acid Mine Drainage (AMD): Short-term interventions on behalf of Mr Marius Keet (DWA).

The problem area is divided into three basins, with decanting already taking place in the Western Basin in the Krugersdorp area while the Central and Eastern Basins have not yet began to decant.

The TCTA has appointed BKS and Golder Associates Africa to conduct a Due Diligence Review on available infrastructure and potential solutions which was concluded in July 2011

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and short-term treatment solutions for each basin has been conceptualised.

An immediate solution approved for the Western Basin will improve the discharge of treated mine water from 12 Ml/day to 32 Ml/day. It will be increased to 60 Ml/day until the environmental critical level (ECL) has been achieved. Surface and groundwater monitoring systems are in place with further improvements planned to support the short-term interventions.

Attempts are made to identify potential users of the semi-treated mine water in the Western and Central Basins and the DWA and the TCTA have met with liquidators to understand the situation at the Grootvlei Mine (ex Pamodzi Gold) in the Eastern Basin. Environmental impact assessment processes have commenced as well as engagement with interested and affected parties (I&APs). The ECL have been finalised for all three Basins.

Some of the future steps are:

- Monitoring systems to be upgraded to assist with decision making;
- The TCTA to implement the immediate engineering solution in the Western basin;
- Consultation with I&APs will be improved;
- A service provider will be appointed for operations and maintenance of short-term solutions; and
- Additional funding of ± R700 million is required from National Treasury to ensure the implementation of the short term measures. A total of R225 million has already been made available for the near future.

c) Mr Van Wyk also presented on the feasibility study for a long-term solution to address AMD in the West, Central and East Rand basins. He will be the project manager and Dr Beason Mwaka, the departmental project director.

In terms of the Vaal River IWQM Strategy, the following steps need to be taken in the interim:

- Allow for the release of semi-treated AMD to the VRS after neutralisation and metal removal;
- Dilution releases required from the Vaal Dam to comply with the 600 mg/l TDS operating rule set for the Vaal Barrage; and
- “Dilution water” used downstream;

However, the interim scenario will not be sustainable in the long run.

In the long run:

- Return flow volumes from waste water treatment works will steadily increase over time;
- Excess “dilution” water in the Vaal River main stem will build up in Bloemhof Dam, causing the dam to spill and water to be lost from the system;
- Salt loading should be curtailed, by first removing the AMD-induced salinisation;
- This should lower the demand for dilution releases; and
- Delay the implementation of costly future water supply augmentation options.

Characteristics of an ideal solution include:

- Suitable technology;
- Limited waste products (preferably with an economic value);

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- Eliminate underground mine water related salt-loading;
- Appropriate institutional and economic models;
- Financially sustainable (without a subsidy from the fiscus);
- Legally sound;
- Acceptable risk profile;
- Public buy-in;
- Protect the environment;
- Mechanism to facilitate mine closure; and
- A "self-sustainable" solution.

The proposed long term AMD strategy will:

- Address the immediate risk of water restrictions;
- Delay costly future augmentation schemes;
- Promote efficient use of water; and
- Improve water quality to meet the RWQOs in tributaries and Vaal River main stem.

A feasible solution (technically sound, economically viable, institutionally feasible and legally acceptable) needs to be sought as a matter of great urgency.

Discussion

Mr Mokoena commented that the mines are nowhere to be found during this search for solutions to this problem and it is left to Government and the taxpayer to carry the cost of this clean up. The Chamber of Mines and Anglo American should be taken to task. They must pay and not the taxpayer.

Mr Van Wyk said the apportionment of liability is part of the process and the mining industry will be involved.

Mr Mokoena said the DWA must also enforce the laws pertaining to water pollution. The DWA officials do not take action against polluters of the Vaal River.

Mr Du Toit agreed with Mr Mokoena and said SAVE is extremely unhappy about the DWA not acting against Emfuleni Local Municipality who is pumping raw sewage into the Vaal River. Civil society is spending its own money to take the municipality to court.

Mr Van Wyk said specific problems need to be reported to the relevant catchment forums, and thereafter escalated through the Regional Offices. He added that a water quality committee, similar to the Vaal River Strategy Steering Committee, is to be established soon to address water quality issues in the Vaal River system from a strategy perspective.

6.6 VAAL WATER MANAGEMENT AREAS CLASSIFICATION STUDY

Mr Lawrence Mulangaphuma (DWA) gave a concise report back on progress made with the classification of significant water resources in the three Vaal WMAs. The goal of the study is the implementation of the Water Resource Classification System (WRCS) in the three Vaal

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WMAs according to the 7-step process proposed by the WRCS.

The Status Quo assessment of the VRS has been completed. It described the status quo of water resources within each Integrated Unit of Analysis (IUA), in terms of the following:

- Water resource infrastructure and availability;
- Ecological status;
- Socio-economic conditions; and
- Goods and services.

The first three steps of the 7-step process have almost been completed:

Step 1: The IUAs have been delineated. The identification and selection of the IUAs were based on the following considerations:

- The resolution of the hydrological analysis and available water resource network configurations;
- Location of significant water resource infrastructure;
- The biophysical nodes, Present Ecological State and Recommended Ecological Category for each node were also considered; and
- Socio-economic zones.

Step 2: The socio-economic and ecological value and condition of the water resources have been linked.

Step 3: The process to quantify ecological water requirements and changes in non-water quality ecosystem goods, services and attributes have begun and the first draft report has been handed in to the DWA.

Mr Malapela asked why water resources must be classified.

Mr Mulangaphuma said it is to keep a balance between the need to use the water resources for development and the need to protect it.

6.7 RECONCILIATION SCENARIOS REVIEW

Mr Seef Rademeyer (DWA) said the system water balance and reconciliation scenarios are constantly being revised as information changes regarding water use and return flows; revised water requirement and return flow scenarios; possible transfers to the Crocodile West River System, mine effluent management scenarios as well as the eradication of unlawful irrigation water use.

Revised water requirement scenarios were received from Eskom, Sasol, Midvaal Water Company, Sedibeng Water as well as from the All Town Reconciliation Strategy Study.

The three sets of scenarios are:

1. High water requirement scenarios derived from a high population growth scenario accounting for migration patterns driven by socio economic conditions;
2. The “High with Eradication of Unlawful Water Use” scenarios represent the case where 85% of the perceived unlawful irrigation water use is removed; and
3. In addition to item 2 above, the third scenario, “High Water Requirement Scenario with Water Conservation and Water Demand Management” incorporate the potential savings that need to be achieved through the implementation of Project 15%.

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All scenarios show lower water requirements which reflect the reductions in the revised projection scenarios received from Eskom (lower projected water use over the period up to the year 2018), Sasol (lower for both the Secunda and Sasolburg plants), Sedibeng Water as well as Mittal Steel.

The outcome of the target reconciliation scenario shows that a positive water balance can be maintained until the year 2050 if all the strategy actions are implemented.

Due to the high levels of the dams (May 2011) the system balance shows a short term excess for the first few years.

The discharge of high salinity mine water (Acid Mine Drainage) will increase once the underground compartments fill and this will require large volumes of releases from Vaal Dam for dilution, which reduces the system yield due to excessive spills and wastage from Bloemhof Dam. Desalination and the potable use of the mine effluent prevent these wastages and the system yield increases to about 3 000 million m^3/annum by the year 2014.

The eradication of unlawful irrigation water use by 2013 and the savings through WC/WDM will maintain a positive water balance until the year 2020.

The implementation of Phase II of the LHWP (Polihali Dam and conveyance infrastructure) by 2020 will ensure sufficient water is available until the year 2049. The full yield of LHWP Phase 2 can only be transferred to the VRS if a yield replacement scheme is developed in the Orange River catchment and commissioned by the year 2034.

The situation in the Crocodile and Lephalale area is constantly changing. At the recently held SSC for the Crocodile West River System, it was indicated that there are several bulk water supply project proposals from local authorities and water service providers to utilise the surplus water in that catchment. In addition, augmentation to the Lephalale area is needed from the Crocodile West River System and the water balances indicated there is insufficient surplus water to supply all the proposed bulk abstraction projects.

These developments, together with what is happening in the Olifants catchment, needs to be carefully monitored to see what the future influence is going to be on the Vaal.

Discussion

Mr Wandile Nomquphu (Water Research Commission) asked if risk of drought has been taken into consideration in the scenario planning.

Mr Johan van Rooyen said drought has been taken into account using sophisticated modelling. The problem is that the VRS catchment has had above average rainfall for the past 16 years, so the chance of drought is increasing.

It was proposed that results from the risk analysis be presented at the next meeting. **Mr Rademeyer**

7 DISCUSSIONS and COMMENTS

Mr Maré suggested this SSC should give a score out of five (With 5 being excellent and 1 being very bad) for each of its strategic actions to show how confident we feel about each action.

Water Use Compliance and Enforcement 4/5

This action was slow to start due to the relevant regulations not yet being in place, but will soon pick up momentum. So many aspects of this action have fallen into place which gives

hope that the DWA will succeed in eradicating unlawful water use. There are, however, risks involved such as the potential legal quagmire.

Mr Ginster has reservations about this project meeting its target within a reasonable period of time.

Mr Benedict Itholeng (Gauteng Department of Agriculture and Rural Development) said there is a big difference between a strategy and an operational plan. We must look at this from a strategic level.

Water Conservation / Water Demand Management 2/5

There are major risks to this project due to a lack of funding. However, the successes of the few metros and municipalities who are achieving a 15% reduction in water use must also be mentioned.

Mr Malapela said we have a good strategy in place, but we have a problem with the implementation.

Ms Matiwane said water reduction or water savings should be used to calculate the performance agreements of municipal water managers.

Mr Deon Dippenaar (Sedibeng Water) said water has no value if you see how people treat it. We must change the hearts and attitude of people towards water and get them to understand how valuable water actually is.

Mr Philip van der Walt (City of Tshwane) said all municipalities have a limited budget and WC/WDM is not high on the list of municipal priorities and will also never be. Educating adults and children about the value of water and how to save water is a highly effective and inexpensive tool used by the City of Tshwane. An increase in water tariffs have also made people aware of the cost of water and resulted in a decrease in water use.

Implementation of Infrastructural Augmentation Option 4/5

Construction of Phase 2 of the LHWP is still far away but everything is going according to schedule. Potentially there are major risks ahead, such as a lack of funding or delays during construction that could make this project even more expensive.

A tight rein must be kept on the time frames, because the VRS needs a new operational dam by 2020.

Water Quality Management 2/5

This project did not kick off very well, because Government was seen as dragging its feet. There is not a lot of time left to act and there is not even a feasibility study on the table. There is very little time for such a major project.

The SSC is extremely worried about the lack of funding and the timeframes of this project. Government and the DWA must take major decisions in a very short period of time or else this project will fail.

8. CONFIRMATION OF MEMBERSHIP

The chairperson asked if the members would like to nominate any other organisations, bodies or persons that are not represented on this committee. Everybody was satisfied that the SSC is well-represented.

ACTION

9. COMMUNICATION

Mr Johan van Rooyen apologised on behalf of the DWA for not sending a copy of the last media release to all members. The media release went out in September 2011 after the signing of the Phase 2 of the LHWP. A copy of the media release was distributed at the meeting.

Mr Johan van Rooyen said the draft progress report and draft media release will be sent to members within a week of this meeting (26 October 2011). Another week will then be allowed for all members to discuss it with their colleagues and management and send their comments in by 2 November 2011 before the final progress report and final media release will be distributed a week later on 9 November 2011. Mr Rademeyer said care must be taken to prevent the two documents contradicting each other. **All**

A draft newsletter will be given to the DWA three weeks from today (9 November 2011). This will also be circulated amongst the members for comment. **Mr Joubert**

This will be distributed to the comprehensive VRS database. Mr Du Toit said civil society must also be included on the newsletter distribution list. **Mr Joubert**

Mr Maré said the newsletter must also be sent to all the new councillors to educate them on challenges facing the water sector. **Mr Herbst**

A suggestion was made that DWA should be sending out personalised letters to all municipalities (to either the Mayor or Municipal Manager) to emphasise the importance of "Project 15%" and the consequences if the target is not met, or to compliment them on their positive achievements with "Project 15%". A request was made that members of the Steering Committee be informed when these letters are sent out. **Mr Herbst** **Mr Rademeyer**

The Chairperson asked Mr Rademeyer to send copy of the letters out to committee members once these have been sent to the municipalities. **Mr Rademeyer**

Ms Marina Krüger (Midvaal Water Company) said the DWA has a training programme in association with SALGA to educate and train the new councillors on relevant water matters which can also be used to spread the message of WC/WDM.

Mr Johan van Rooyen suggested that members must be approached about a month before the next meeting (mid-March 2011) to briefly report on what happened at their organisation during the past six months. This can then be written up in a short report and circulated to all members a few days before the next meeting. **Mr Joubert**

Mr Johan van Rooyen said all documentation must be placed on the DWA website and this address must also be included in the newsletter. **Mr Joubert**

10. DATE OF NEXT MEETING

The next meeting will be on 18 April 2012 at 09:00.

11. WAY FORWARD AND CLOSURE

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

Meeting 5 of the SSC – 19 October 2011
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