



DEVELOPMENT OF A RECONCILIATION STRATEGY FOR THE OLIFANTS RIVER WATER SUPPLY SYSTEM

**MINUTES OF THE 2ND STUDY STEERING COMMITTEE MEETING HELD AT OLIFANTS RIVER LODGE IN
MIDDELBURG ON 24 NOVEMBER 2010 FROM 09:00 TO 13:00**

1. Attendance:

NATIONAL DWA

Cai Ronqui (RC)
Jezewski Witek (WJ)
Mathebe Rodney (RM)
Nditwani Tendani (TN)
Nefale Avhashoni (AN)
Van Jaarsveld Sanet (SvJ)
Van Niekerk Pieter (PvN)
Van Rooyen Johan (JvR)

REGIONAL DWA

Badenhorst Bernie (BB DWA)
Van Aswegen Johann (JvA)

NATIONAL GOVERNMENT DEPARTMENTS

Potgieter Jan (JP) – Agriculture

PROVINCIAL GOVERNMENT DEPARTMENTS

Van Rooyen Marius (MvR) – Agriculture

LOCAL GOVERNMENT

Khoza June (JK) - Metsweding District Municipality
Mahlangu Vusi (VM) – Nkangala District Municipality
Makhwenyane Moses (MM) – Ehlanzeni District Municipality
Rammalo Albertina (AR) – Mopani District Municipality

WATER BOARDS

Le Roux Roelf (RLR) – Magalies Water
Schmahl Carel (CS) – Lepelle Northern Water

ASSOCIATIONS

Bierman Bertus (BB Anglo) – Anglo American Platinum
Parrott Brenton (BP) – Delmas WUA

Rossouw Ossie (OR) – Lebalelo WUA
van der Merwe Alwyn (AvdM) – Eskom

CONSORTIUM OF PROFESSIONAL SERVICE PROVIDERS

Baker Terry (TB)
Beumer Johnny (JB)
Levin Mannie (ML)
Mallory Stephen (SM)
Masogo Cornelia (CM)
Ngomane Lulu (LM)
Timm Dale (DT)
Van Veelen Martin (MvV)
Versfeld Dirk (DV)

Apologies

Gyedu-Ababio Thomas – SANParks
Keet Marius– Regional DWA
Mabuda Solly – National DWA
Matukane Alson– Regional DWA
Mosefowa Kganetsi – National DWA
Mthombeni Reckson– Metsweding District Municipality
Mwaka Beason– National DWA
Van den Berg Ockie (OvdB) – National DWA
Van Zyl Fred – National DWA

2. Acronyms

DWA – Department of Water Affairs
CMA – Catchment Management Agency
CoT – City of Tshwane
NAFU – National African Farmers Union
SALGA – South African Local Government Association
EWR – Environmental Water Requirements
REC – Recommended Ecological Category
KNP – Kruger National Park
BHN – Basic Human Needs
URV – Unit Reference Value
WUA – Water User Association

Agenda point	Subject	Action
3.	Welcome The chairperson, Tendani Nditwani (TN), welcomed all present and thanked the attendees for	

	<p>their presence and envisaged participation. He said the main theme of the meeting is the Draft Preliminary Reconciliation Strategy which will be presented. He pointed out that the meeting is a milestone since it is exactly 12 months since the study was commissioned. He encouraged the attendees to participate actively.</p> <p>He apologised for:</p> <ul style="list-style-type: none"> • the change of venue from the Nkangala District Municipality to Olifants River Lodge, stating that it was for circumstances beyond the planning team's control; and • the incorrect abbreviation for the department reflected on the name badges. <p>He introduced himself as the DWA study manager and then introduced the study team. He also mentioned that there are also various directorates within the Department of Water Affairs and all other participating institutions that are instrumental to the project and are represented at this meeting.</p> <p>He shared the study phases and milestones, reiterating that the Preliminary Reconciliation Strategy to be discussed at this meeting was the 2nd milestone according to the plan. The 1st milestone was the completed Inception Report and the 3rd milestone would be the Final Reconciliation Strategy. Public engagements will run parallel to the work on the milestones and an example of such a public engagement initiative is the first Newsletter displayed on the DWA website: http://www.dwa.gov.za/Projects/OlifantsRecon/.</p> <p>TN tabled the objectives of the meeting i.e.</p> <ul style="list-style-type: none"> • strengthen partnerships between DWA and key stakeholders; • open new communication channels and strengthen existing channels; • facilitate stakeholder involvement in and acceptance of their responsibilities for the water resources in the basin; • present the draft Preliminary Reconciliation Strategy and discuss stakeholders' views and ideas; • identify additional stakeholder representatives for the Study Steering Committee; and • discuss arrangements for the public participation meeting planned for 23 February 2011. <p>He stressed that the most important point of the day is to present the draft Preliminary Reconciliation Strategy and collectively address issues that emanate from the presentation.</p> <p>The process of stakeholder engagement was also discussed.</p> <p>At this point he called upon all present to introduce themselves.</p>	
4.	<p>Agenda</p> <p>The proposed agenda was accepted without change. The agenda is attached (Appendix 1).</p>	
5.	<p>Minutes of the 1st Steering Committee meeting</p> <p>The minutes of the SSC meeting held on 5 May 2010 were accepted with the following changes:</p> <ul style="list-style-type: none"> • Page 5: End of point 5, the spelling for Rossouw to be corrected and the "Water Users Board" should be replaced by "Water User Association"; • Page 5: "were" is missing a 'h' to read as "where";and • Page 3: bullet no 7, "n" should be "on". <p>Matters Arising</p>	

	<ul style="list-style-type: none"> • The Metsweding District Municipality will be incorporated into the City of Tshwane (CoT) and will only cease to exist after the local government elections in 2011. • Vision for the catchment: The CMA will eventually set a vision which could be part of the final strategy recommendations. • Water imports for power generation were excluded from figures that were presented at the previous meeting. This was attended to and all water transfer figures are now included in all presentations and reports. • The list of ongoing studies in the catchment can be viewed on the study page posted on DWA website. • There was a suggestion about the Study Steering Committee representation at the previous meeting. This has been taken into consideration and representation will again be discussed at this meeting. • It was suggested that a list of acronyms should be compiled and included with each set of minutes. <p>At this point, TN handed over to DV to facilitate the proceedings.</p>	CM
6.	<p>Stakeholder Representation Presented by Johnny Beumer (JB)</p> <p>JB presented the current stakeholders of the Olifants Reconciliation Strategy Study and those in attendance were requested to suggest further stakeholders/institutions that were not represented in the current stakeholder list. This point would again be discussed at the end of the meeting.</p> <p>The current institutions are:</p> <ul style="list-style-type: none"> • National DWA; • Regional DWA (Mpumalanga and Limpopo); • National Government Departments; • Provincial Government Departments; • Local Government; • Water Boards, and • Water User Associations. <p>It was agreed that representation from DWA will be discussed within DWA, not at this meeting.</p> <p>Details of other stakeholders are contained in the presentation which is attached hereto as Appendix 2.</p> <p>For Provincial departments, it was agreed that the Premier's office should be contacted for an operational representative other than the Premier himself.</p> <p>Under local government, it was agreed that it should be confirmed who the water service authorities are: the Local Municipalities or the District Municipalities and they should be invited to participate in the Steering Committee.</p> <p>JK confirmed that Nokeng and Khungwini municipalities are Water Service Authorities.</p> <p>It was confirmed that Dean Pelser of Anglo American Platinum will represent the Joint Water Forum.</p> <p>It was agreed that a representative from the Lower Blyde Water User Association and NAFU should be invited to for the Steering Committee.</p> <p>SALGA has not responded to the invitation to the Study Steering Committee meetings and would be approached again to ascertain their interest.</p>	<p>TN</p> <p>CM</p> <p>CM</p> <p>CM</p> <p>CM</p> <p>CM</p>

	The team was requested to run an analysis of stakeholder interest in the Study and revert to the Chairperson.	CM CM
7.	Presentations	
7.1	THE STATUS QUO OF THE WATER BALANCE IN THE STUDY AREA	
7.1.1	Institutional Framework Presented by Mr Johnny Beumer (JB) JB emphasised that the Department of Water Affairs (DWA) is the responsible authority for a catchment management strategy since the Catchment Management Agency has not as yet been established. Although this reconciliation strategy is not a catchment management strategy, it will be a focussed study aimed at ensuring that there will be sufficient water at the required quality for all the water users for which the DWA is taking the lead. Other parties of importance are Irrigation Boards, District Municipalities, Local Authorities, Water User Associations, businesses such as Eskom and mining industries. JB shared the irrigation districts map and pointed out that opportunistic irrigation schemes are not reflected on the map. International obligations impacting on the catchment were explained. In terms of the Revised Protocol on Shared Water Course Systems the utilisation of water in the shared watercourse must be equitable and reasonable and one country should not cause harm to the other country. 7.1.2 South Africa is a signatory to the Revised Protocol on Shared Water Courses in the SADC region. The Reserve Presented by Dr Martin van Veelen (MvV) MvV shared a map of the Olifants Environmental Water Requirement (EWR) sites and pointed out that the Olifants River's Comprehensive Reserve Study was undertaken during 1999 where 18 EWR sites were selected. He discussed the approaches used in the study. The 1999 results of the study were compared with the Olifants River's results of the 2010 Eco-Classification per reach. He tabled the river reach and EWR sites and shared the overall results. He mentioned that there are very few changes in the Recommended Ecological Category (REC) from the 1999 study to 2010 however, the following should be noted: <ul style="list-style-type: none"> • In the upper part of the catchment the Recommended Ecological Category (REC) has changed from a C to a D; • In the lower part of the catchment the REC has changed from a C to a B which is more stringent and which will have a significant impact on the EWR's for this part of the river; and • The EWR for the Olifants River (Mamba) Reach has remained a category B therefore the overall effect on the availability of the water for beneficial use will probably be small. 	
7.1.3	Water availability, Requirements and Balance Presented by Stephen Mallory (SM) SM shared a map of the 3 water management zones, i.e. Upper, Middle and Lower Olifants. Sources include yield of the major dams, small dams and transfers in. Water requirements include domestic, industrial, power generation and irrigation. Provision must also be made for the ecological Reserve. Current estimates are that the Reserve will reduce the available resource by 200 million m ³ /annum at an assurance of supply of 98%.	

	<p>Water balance is currently short by 56 million m³/annum.</p> <p>Water requirements:</p> <ul style="list-style-type: none"> • domestic water requirements are expected to grow by about 3%; • significant growth is expected from mining due to the expansion of platinum mines in the catchment area; • the transfer of water to Mokopane and Polokwane is expected to be a large component of future water requirements; and • new irrigation licences are unlikely to be granted, assuming that irrigation requirements will remain constant. <p>DISCUSSION ON 7.1.1 – 7.1.3</p> <p>PvN suggested that OvdB be contacted to ascertain the exact situation on the international obligations that were considered when the De Hoop Dam was planned.</p> <p>Reserve implication of 200 million m³/annum means a reduction of about 25% of current water use which is in the order of 800 million m³/annum.</p> <p>BP enquired whether water will be brought into the catchment for the new Power Stations e.g. the Kusile Power Station? This was confirmed and SM explained that the presentation figures included the new power station requirements but it comes from outside the catchment. New power stations are expected to be more efficient than the existing ones.</p> <p>JvR enquired on who recommended the REC? MvV explained that a group of specialists looked at how the organisms function and how much water is required at what time of the year. The Reserve was determined under the recommendation made by such scientists. If the scientists do not have all the numbers, they will make sure that what they recommend will be good enough. It could, however, mean that they have made conservative estimations and that e.g. the river water level at a certain point could be reduced by say 1 cm without impacting on the fish. This could make a significant difference on the EWR value. In the last 10 years scientific technology has improved. Before large quantities of water are therefore relinquished by water users, it should be confirmed that the environment really need that water. The Reserve was signed off by Director General of DWA and has gained a status. If a change is made to the REC, it needs to be done via the Minister.</p> <p>PvN enquired how the 200 million m³/annum was made up, i.e. how much water is needed at which points in the river?</p> <p>SM is still working on the information detail. The 200 million m³ is the total for the system. The yield is reduced by about 80 million m³/annum in the Upper Olifants (down to the Loskop Dam). The De Hoop Dam and Flag Boshielo Dam Reserve requirements have also been quantified. The yield is reduced by approximately 50 million m³/annum in the Middle Olifants and by approximately 80 million m³/a in the Lower Olifants.</p> <p>PvN asked whether there is a systems model.</p> <p>SM responded that the model is set up and the team is working on the results. He recently received new figures which he will utilise to model different classes.</p> <p>JvR reminded the participants that the reason for the preliminary strategy is to get solutions from different angles. Further investigations will feed into the final strategy. Figures presented at this meeting are not necessarily the final numbers.</p> <p>BB enquired about the reclamation of water and possibility of using that specifically from coal mining areas and options that lower quality water can be used in other mining areas? This</p>	JB
--	---	----

	<p>point is responded to further in these minutes.</p> <p>SM pointed out that water use is water that is physically abstracted. The model does include some return flows. The figures have included recycled water from coal mines and about 10% return flows from irrigation.</p> <p>MvV cautioned that what was under discussion so far has been the quantity and it should be remembered that the Reserve also has a quality aspect, especially for the Kruger National Park (KNP), the quality issue may be significant.</p>	
7.1.4	<p>Water Quality Presented by MvV</p> <p>MvV mentioned that water quality in terms fitness for use is determined by the activities in the catchment, land use and the geology. Previous studies have found problems e.g. defunct mines discharging acid mine drainage water, overloaded WWTW discharging excess nutrients and irrigation return flows which add to salinity. Problem areas are the upper Olifants for nutrients and salinity in smaller spruits. The problem constituent is sulphate. The problem in the Middle Olifants is salinity associated with low flow.</p> <p>The water quality problems are, however, currently localised. The overall resource has not been impacted to the point that the water is not usable, though trends are a cause for concern. Unquantified problems are pesticides or herbicides, DDT, hormones and other substances.</p> <p>The current water quality at the monitoring points is mostly ideal to good. There is, however, an upward trend in chloride generally. This is associated with human use (salts used by people). Nutrients are also increasing. Furthermore, the electrical conductivity of the water in the Witbank Dam is going up. There is an upward trend in the salt concentrations though not so much that it would change the fitness for use over the study horizon.</p> <p>A water quality situation matrix was shared and MvV drew attention to the upward trend in the water.</p> <p>MvV drew to the conclusion that the water in the study area is generally of good quality with the exceptions of the Middelburg Dam which is under pressure from mining activities, as reflected by the pH levels and the ammonia and nitrite-nitrate levels. Phosphates are slightly high throughout the study area but within an acceptable range.</p> <p>Chlorides and EC values are generally within the ideal range but are also on an upward trend. Most dams in the Olifants River System have low nutrients levels, except for the Bronkhorstspuit Dam which is in a hypertrophic state. The Loskop Dam is approaching a state where the canals have to be cleaned regularly to keep them free of algae. Problems are pollution related and must be dealt with at source.</p> <p>MvV concluded the presentation with a note that the water quality problems in the catchment have to do with contamination from point sources and this needs to be addressed. The water quality problems, however, do not affect the availability of water for the purposes of the reconciliation study.</p>	
7.1.5	<p>Groundwater Availability Presented by Mannie Levin (ML)</p> <p>ML presented figures of groundwater balance, done for the catchment two to three years ago: This availability, however, is spread over the whole area and is not available at a single point like in a dam with surface water.</p> <p>There are 3 types of aquifers:</p>	

	<ul style="list-style-type: none"> • intergranular – sand and alluvium – very low potential yields (<0.5 l/s and <0.5 % of catchment area); • Intergranular and fractured (weathered and hard rock). Potential yields of between 0.5 l/s and 2 l/s covers 96% of catchment area; and • Fractured and Karst (dolomite) rocks – yields of above 5 l/s, covers 3.5% of the catchment area. <p>There are a number of groundwater quality issues in the catchment such as high nitrates and fluorides in the Springbok Flats. Over-abstraction and sinkholes in the Bapsfontein area and water quality problems due to coal mining activities in the Middelburg area are also of concern, as is over-abstraction in the Zebediela area, Burgersfort and KNP and water quality problems in the Burgersfort and KNP areas.</p> <p>It is recommended that the dolomatic area at Bapsfontein should be managed through compulsory licensing, controlled water use and drilling, as well as water level monitoring for stability and sustainability.</p> <p>DISCUSSION ON 7.1.4 AND 7.1.5</p> <p>BP enquired whether any measures in the Bapsfontein area were enforced and how the water use will be policed and by whom.</p> <p>ML responded that the Water Management Associations do not know how much water can be used by the licencees because validation and verification has not been completed. Anybody can freely use water in Bapsfontein at the moment, unless they feel that they will do damage to their own resources.</p> <p>JvA pointed out that a DWA team is currently working on verification and validation, which is expected to be implemented full scale during 2011. A Water User Association (WUA) is being established and the upper area is targeted for 2011. There are comprehensive studies of development after 1998 and these studies are available. Compliance monitoring should be at the lowest level, placed with the WUA.</p> <p>ML responded that recently artificial recharge is receiving more and more attention. The feasibility has not yet been decided on but a number of studies have been completed.</p>	
7.2	FUTURE WATER REQUIREMENTS	
7.2.1	<p>Assumptions Presented by JB</p> <p>JB defined objectives for the reconciliation as the need to balance the social and economic benefits with the protection of the environment and recognition of the international obligations by adhering to the SADC Protocol in terms of fair and equitable sharing of Water Resources.</p> <p>He presented the assumptions for future water requirements as:</p> <ul style="list-style-type: none"> • The need to maintain the provision for Basic Human Needs (BHN) and ecological status of the Olifants catchment; • Meeting the EWR's as soon as practical; • Giving paramount priority above any other economic development to water for strategic use for the benefit of the country; • Discontinuing expansion for irrigation purposes; and • Provision of water for economic growth within the government policy parameters. <p>DISCUSSION</p>	

	<p>JB, in reply to a question raised, confirmed that the current situation in the KNP would be maintained.</p> <p>WJ mentioned that the agreement was that there would be no more allocation for commercial forestry.</p> <p>CS noted that there are still old government schemes where some irrigation allocations must still be made, therefore he doesn't agree with the irrigation constraint. JvR responded by saying that undeveloped allocations are assumed to be allocated. Whether they can afford to be developed is another question.</p> <p>7.2.2 Future Water Requirements Presented by SM</p> <p>A graph on future water requirements was presented. The graph showed:</p> <ul style="list-style-type: none"> • A high and low growth water requirement scenario which were based on growth information in the All Towns Study and work and assumptions on growth in the mining sector. Irrigation water requirements were assumed to remain constant. • In 2010 the water requirements are already exceeding availability. • The De Hoop Dam will push up the water supply curve above the water requirements curve, i.e. the dam will solve the problem of the water deficit. • The Reserve will be phased in over a period of five years after the De Hoop Dam has filled up to its full capacity. <p>DISCUSSION</p> <p>BB commented that the mining sector experienced the 2008/2009 crisis which absolutely influenced the mines significantly and slowed down the development of possible new mines, but in the long term this trend will stabilize. JvR appealed to the mining sector to come up with reasonable scenarios for future water requirements for mining.</p> <p>PvN expressed his uneasiness with the chosen high and low water requirement scenarios, i.e. if the All Towns Study figures were provided, it should not be a low scenario but rather a realistic scenario.</p>	
<p>7.3</p> <p>7.3.1</p>	<p>RECONCILIATION OPTIONS</p> <p>Reducing Water Requirements Presented by JB</p> <p>JB presented the following reconciliation options for reducing water requirements: eliminating unlawful water use, Water Conservation and Water Demand Management (WCDM), rainwater harvesting, compulsory licensing, compulsory levy to purchase water entitlements and operating rules.</p> <p>He mentioned that the elimination of unlawful water use is not an option to choose from but rather an obligation in terms of the National Water Act. On WCDM three sectors are considered; irrigation, urban/domestic and mining. Where irrigation is concerned, the focus is on the possibility of bulk infrastructure refurbishment and more efficient irrigation. For these two focus areas, a 10% overall saving is possible and can be achieved. In mining a 10% saving is encouraged and for the domestic water use sector a 15% saving was viewed to be possible.</p> <p>The option to introduce a compulsory levy to purchase water entitlements hasn't been tried before in this country and the success of such a measure is not certain.</p> <p>DISCUSSION</p>	

	<p>AvdM expressed concern about double counting. This concern was shared by PvN, who gave an example of an irrigator on whom CL was imposed and he/she is required to reduce water consumption by 10%. Such a person will automatically implement WCDM and the ability to implement further WCDM would not be possible.</p> <p>Another comment was made by JvR that operating rules are actually increasing the water supply as opposed to reducing the water requirements.</p> <p>It was asked what the KNP can do to reduce their water requirements and what the possibilities were for creating storage in the Park.</p> <p>MM expressed his doubts whether municipalities would be able to reduce their water requirements by 15%. The response from the floor was that it is indeed possible and that it is imperative that water conservation and demand management be implemented to improve water quantity.</p>	
7.3.2	<p>Increasing the Supply Presented by D Timm (DT)</p> <p>DT presented options that have been investigated as:</p> <ul style="list-style-type: none"> • Import treated sewage effluent from Ekurhuleni; • Import raw water from the Vaal Dam; • New dam at or near Rooipoort; • New dam in the Olifants River gorge: Godwinton site and Chedle site; • Raising of the Blyderivierspoort Dam; • New dam in the Lower Olifants: Epsom site, Mica site and Madrid site; • Desalination of Sea Water; • Water re-use and recycling; • Groundwater management and development, and • Rainfall enhancement. <p>He further presented a map of the possible dam sites pointing out that there are concerns about dolomite foundations at the Godwinton site which is approximately 10km downstream from the Steelpoort/Olifants Rivers confluence. The Blyderivierspoort Dam site is also favourable but raising the dam would pose challenges in terms of the foundation conditions on the left flank. He also tabled unit reference values (URVs) for the various options.</p> <p>DISCUSSION</p> <p>JvR commented that recommendations should not be made on assumptions and that further studies should rather be recommended.</p> <p>PvN made a few points, i.e.</p> <ul style="list-style-type: none"> • He suggested that the best would be to either build the Godwinton Dam or get water from the Vaal River because the road construction for the Rooipoort site would be too costly; • He enquired how the options would be phased in to avoid social impact; and • He also pointed out that water trading is missing from the presentation as an alternative. <p>The following further points were made by various participants:</p> <ul style="list-style-type: none"> • The Rooipoort Dam would be subject to high sediment loads which could also have negative effects further downstream and • Changes in treatment processes to treat water are not foreseen up to 2030. Silt is a 	

	<p>problem, mainly in the Phalaborwa area.</p> <p>A question was asked whether DDT is being monitored? This study will however, not study DDT. This study looks at making the quantity available and making sure that the quality is acceptable. The condition for the water to stay in an acceptable state is conditional on the management measures being kept in place.</p>	
8.	<p>Public participation</p> <p>A public participation meeting was scheduled for 23 February 2011. Due to the extent of the study area, the study team were requested to revisit the approach and revert to the Chairperson.</p>	JB, CM
9.	<p>Closure</p> <p>TN thanked all present and stated his trust that the objectives of the meeting were achieved. The date of the next SSC meeting will be somewhere in May 2011 and the exact date will be communicated to the members.</p> <p>The meeting adjourned.</p>	