

Development of a Reconciliation Strategy for the Luvuvhu and Letaba Water Supply System

Study Management Team Meeting No. 3 Minutes

Held at WorleyParsons Pretoria office, V3 Forum Building, 160 Garsfontein Road, Ashlea Gardens, on 27 January 2012

1. WELCOME AND INTRODUCTION

ACTION

The Chairperson, Mr. T Nditwani opened the meeting by welcoming those present at the third Study Management Team (SMT) meeting for the Development of a Reconciliation Strategy for the Luvuvhu and Letaba Water Supply System. TN requested that members should in future reply on the meeting invitation and indicate whether they will attend the meeting or not or if they will send someone else on their behalf. There is in total almost thirty SMT members, and it is therefore very important for logistical purposes that the number of people that will attend the meeting, is known before the time.

SMT members

2. ATTENDANCE AND APOLOGIES

2.1 ATTENDANCE

An attendance register was circulated, as noted below:

T Nditwani (TN): DWA: NWRP - In chair

W Jezewski (WJ): DWA: NWRP S van Jaarsveld (SvJ): DWA: OA OJS van den Berg (OvdB) DWA: OA DWA: WRPS M Fayazi (MF) ML Mosoa (MLM) DWA: WRPS WQ E Nel (EA) **DWA: WRPS** OT Mboto (OTM) **DWA: WRPS SO DWA: WRPS EES** MA Salagae (MAS) R Nengovhela (RN) DWA: RDM WRC

B Badenhorst (BB) DWA: Water Sector: Planning & Development

B Haasbroek (BH) Hydrosol
HG Maré (HGM): WRP
A Joubert (AJb): Zitholele
PG van Rooyen (PvR): WRP

2.2 APOLOGIES

It was noted that the following people apologised for not attending the meeting:

J Venter (JV): DWA: Limpopo Infrastructure Tzaneen Office

N Motebe (NMT): DWA: RDM: RR - GWRR

H Maluleke (HM): DWA: RDM

C Ntuli (CN): DWA: WRPS F Fourie (FF): DWA: WRPS

3. APPROVAL OF THE AGENDA

The agenda was accepted with the following changes.

• Item 7 be renamed to: "Coordination with other studies and processes"

HGM

• It was also requested that Item 8.1 (Site Visit) should in future be an item on its own, and numbered as Item 7 with the current item 7 (Coordination with other studies and processes) renumbered as Item 8 and so forth.

HGM

4. MINUTES OF THE PREVIOUS MEETING

4.1 APPROVAL

The minutes was approved with the following changes:

HGM

- 1. Page 1, Item 2.1 change "WRPS WQ" to "WRPS WQP".
- 2. Page 1, Item 2.1 change "Polokwane Regional Office: Institutional" to "Polokwane RO: Institutional Establishment".
- 3. Page 1, Item 2.2 : N Motebe was included under the list of apologies, should be part of attendance list
- 4. Page 2, Item 4.2 change "AJ" to "AJb"
- 5. Page 2, Item 4.2 change "EvN" to "EVN"
- 6. Page 6, Distribution list for minutes Telephone numbers for OJS van den Berg and S van Jaarsveld need to be corrected

4.2 MATTERS ARISING

Previous Items 4.2 Study Website: The task to setup and activate the study Website is still on going. AJb did in the meantime provide WJ with all the information required to be able to set up the Website. The information as provided in the Background Information Document (BID) was not sufficient, as initially thought. WJ will provide this information to the web site developers later during the day. TN reminded that he requested this to be done already three times before, and that the responsibility to ensure that this task is completed resides with the study team.

WJ & AJb

5. RECURRING TASKS

5.1 TASK 19: STAKEHOLDER ENGAGEMENT AND PUBLIC PARTICIPATION

5.1.1 Matters arising

All the matters arising from the previous meeting were completed as well as the request to place the study BID at libraries within the study area.

5.1.2 Progress

AJb briefly provided feedback on the SSC meeting that took place close to Tzaneen on 23 November 2011. The meeting was attended well and good feedback was in general received. The list of SSC members are mostly sorted out, but might still require some representation for the north-eastern part of the Luvuvhu catchment. To be followed up with JV.

AJb

5.2 TASK 20: PROJECT MANAGEMENT – WORK PROGRAMME

5.2.1 Matters arising

At the previous meeting it was requested to provide brief feedback on the financial matters as discussed in the Study Administration Meeting (SAM). HGM therefore provided feedback to the members regarding the financial matters and showed that the study expenditure is well on target.

5.2.2 Progress

PvR explained the suggestion by Johan van Rooyen to postpone the preliminary strategy until after the completion of the hydrology and yield analysis tasks. If it was done before as initially requested in the TOR it means that the preliminary strategy would have been based on the old hydrology and related yields, which is not sensible. This suggestion was accepted by both TN and PvR and resulted in the movement of the intensity of work that needs to be completed within year one of the study. Small adjustments to the study programme might still occur as part of the inception phase.

TN requested that the updated study programme be distributed with the minutes and that the date of the last revision of the programme be included as part of the heading.

HGM

The next key milestone will be the Preliminary Screening Workshop in April, which will co-inside with a SSC meeting. OvdB and SvJ requested that the hydrology for the Upper Letaba catchment be provided first, due to the uncertainties around the current hydrology and related yields from the raised Tzaneen Dam and the proposed Nwamitwa Dam. The updated programme therefore included an additional milestone for this hydrology in early May 2012.

ВН

EA mentioned that there is a hydrology report available on the Mutale catchment. Marcel Roux at DWA can be contacted in this regard.

BH

EA asked what record period the updated hydrology would cover. BH replied that it will cover the period 1920/21 to 2009/10 hydrology years. EA said that the DWA hydro team is already busy with the evaluation of the stream flow gauges in the area. BH will follow up on the availability of the evaluations.

BH

OvdB said that he had difficulty to obtain the reserve releases for the proposed Nwamitwa Dam from the report. PvR added that he is not sure which structure was used to simulate that in the WRYM. One will need to study the reserve report and see if the required information is available.

The final strategy will however only be available by the end of the study. Some of the tasks therefore shows a second phase or activity to allow for refinements close to the formulation of the final strategy.

6. ACTIVE TECHNICAL TASKS

PvR provided feedback on the progress for the current active tasks. Detail is given in the attached progress report (Appendix A).

6.1 INCEPTION REPORT

The first draft Inception report was distributed to the team members for comments. The Table of Contents was handed out to each of the members at the SMT Meeting. The draft Inception Report will be delivered to DWA by 6 February 2012.

HGM

6.2 TASK 1: SUMMARY OF PREVIOUS AND CURRENT STUDIES

6.2.1 Matters arising

- Previous Item 4.2: Additional reports received since previous meeting was added to the list
- Previous Item 4.2:Martiens Gouws was contacted regarding the RESIS program and information in this regard was already received from him.
- Previous Item 6.2: The DVD containing all the previous reports must still be compiled. This will be done when all the reports are available.

HGM

6.2.2 Progress

The extended list of the previous study reports was handed out to all attendees at the SMT meeting. EN added the Mutale report to the list. EA further mentioned that a lot of effort goes into the archiving of reports and that there is a manual available with guidelines in this regard. EN will e-mail the latest guidelines available.

ΕN

A copy of the Table of contents for the Literature Review report was distributed to all attendees at the SMT meeting. Any comments can be forwarded to HGM or PvR. The study team will identify intervention measures or schemes from the information captured in the Literature Review report. These options will be evaluated and the ones that are still valid recommended to be discussed at the preliminary screening workshop.

SMT Members

OvdB mentioned that the Letaba studies showed large uncertainties regarding river losses between Tzaneen Dam and the future Nwamitwa Dam. There are also uncertainties around the yield for Nwamitwa Dam. This all need to be firmed up, as part of the LLRS study. PvR stated that losses are always a problem and that measurement is the key to the solution. The team need to work closely with JV and A Sparks (Aurecon) in this regard.

Study team

6.3 TASK 2: PRELIMINARY SCREENING WORKSHOP

No activities

6.4 TASK 3: HYDROLOGICAL ANALYSIS

6.4.1 Matters arising

Previous Item 4.2: BH did follow up with AD Maumele from DWA Polokwane
 Office to discuss and obtain data from the Validation Study.

6.4.2 Progress

BH gave feedback on the hydrology task progress. WR2005 data was used as the basis for this work. Most of the rainfall related work is already completed. BH showed examples of some of the stastionarity plots used to evaluate rainfall data. The main problem within the study area is the number of available rainfall stations. In the WR2005 study a total of 47 rainfall stations was used. Currently only 24 of these stations are still open. The eastern part of the study area is in particular a problem in this regard. The meeting requested that a strong recommendation be included in the report on the lack of rainfall stations within this area.

BH sourced the latest AIP related data from Environmental Affairs. This data is from the last re-assessment as given in their 2010 report. This assessment unfortunately did not include AIPs within the riparian zone.

Water use related data was obtained from the Validation/Verification study. At this stage, no work was done on the verification of the data. Approximately 32 small dams were added to the list of dams from the Validation database, as these dams were not captured in the Validation data set. BH used information from the Dam safety database to determine area capacity characteristics for the small dams, as this data in the Validation database seem suspect. The data on the forestry coverage looked good, although one still needs to differentiate between the different species. BH is very concerned about the irrigation data given in the Validation database. No ground truthing was done, and irrigation areas are significantly more than those given in previous studies. Another major concern is that the sources used to supply irrigation water, are not clearly defined. It was assumed in the proposal prepared for the LLRS study, that the information from the Validation & Verification study will be available as input to the LLRS study. Due to the associated problems with the data, it was therefore listed as a risk that can result in additional time and cost for the execution of the LLRS study. BH will in the meantime summarise the data available from the Validation study and compare that with previous work done.

It was mentioned that a new contract would soon be awarded for the Validation work to be continued. It will then be important to request the consultants to first start with the work in the Upper Letaba catchment. The uncertainty around the yields for raised Tzaneen and Nwamitwa dams is partly as result of farm dams and irrigation and the way they were modelled. Most of the irrigation in this area uses ground and surface water conjunctively. BH mentioned that there is no irrigation water demand estimations included in the Validation database, and these therefore still need to be determined.

EA mentioned some uncertainties regarding the hydrology upstream of Tzaneen Dam and that aerial photos is the solution to distinguish between commercial and natural forests. The CSIR did some work in this regard.

6.5 TASK 4: WATER REQUIREMENTS AND RETURN FLOWS

ВН

BH

An xls spread sheet database was set-up to be used in support of the water resource models. The team is currently in the process to update and expand on the existing data in the database. HGM and PvR visited Murango and EVN in Polokwane on 2 February 2012 to discuss the study and to obtain relevant data from them.

BB stated that Vembe and Mopane District Municipalities are priority areas and population updates were done for these areas. S Pienaar (EVN) and D Hovy (Murango) should have the relevant information.

The re-establishing of farmers in the Letaba catchment as addressed in the Groot Letaba Study need to be included in the programme prepared for the LLRS study.

RΑ

DM

6.6 TASK 5: WATER CONSERVATION AND DEMAND MANAGEMENT

WW arranged to visit the Vhembe and Mopani District Municipalities. At arrival he was only able to meet with the Vhembe municipality as workers of the Mopani Municipality was on strike and refuse to allow him to enter the building. The discussion with Vhembe municipality revealed very high vacancies of 55% in the Municipality and very low cost recovery. Although dams are full, some towns receive intermittent supply. This shows that in some areas the distribution of the water is rather the problem and not the water availability from the source. Information from the municipal studies is in general not good, as information gaps clearly exist.

EN mentioned that approximately 10 years ago some work was carried out regarding the Giyani water supply system. TN referred to recent work done by D Hovy (Murango) regarding the possible transfer of water (± 5 million m³/a) from Nandoni to Giyani.

6.7 TASK 8: WATER QUALITY

Water quality modelling will not be carried out as part of this study. This task will therefore be used to determine areas where future water quality modelling should take place. OvdB remarked that water quality is not a major problem in the study area.

6.8 TASK 17: ASSEMBLY OF INFORMATION AND FORMULATION OF SCENARIOS

OvdB and SvJ requested that some risk analysis be carried out on the existing hydrology for Tzaneen and Nwamitwa dams.

A first draft schematic for the entire system was prepared from existing reports and system schematics. A copy of the schematic was given to all participants at the meeting. They were requested to provide any comments to PvR or HGM. This schematic will be improved as the study progresses.

OvdB mentioned the possible weir on the Klein Letaba River which forms part of a possible future scheme to transfer water from the Klein Letaba to the Middel Letaba Dam. Some work was carried out in the past regarding this option, most probably by EVN.

TN said that the first investigations on the Middel Letaba Scheme also considered the possibility of a dam just below the confluence of the Klein and Middel Letaba rivers. A dam on the Mutale River was also investigated, but was not given the go-ahead due to foundation problems. These options need to be included in the preliminary screening workshop.

Work on the improving and completion of the All Town Study strategies should continue.

MAS remarked that there are plans to refurbish the Middel Letaba canal. The initial yield of the Middel Letaba Dam was estimated to be in the order of 60 million m³/a and was after 2000 re-estimated to be only 18 million m³/a. Currently the dam can hardly supply the urban/rural demand and spilled only once (year 2000) in its lifetime. The canal links the Middel Letaba and Nsami dams.

(Details of progress on the above tasks are provided in the progress report).

7. COORDINATION WITH OTHER STUDIES

Coordination with other studies is already in place. TN requested that due to the Presidential focus on the Municipalities, care should be taken through the course of the study to consult properly consult with the municipalities involved.

8. GENERAL

8.1 Site Visit

A draft itinerary was prepared for the site visit. TN proposed to spend time with HGM next week to work through the details and to finalise the itinerary as well as the logistics.

TN/HGM

The week of 13 February seems to be a problem for some and the week of 20 February 2012 was therefore also suggested as an option. The site visit need to be limited to three days. TN mentioned that Dr Thomas will assist us if we need to visit sites in the Kruger National Park as part of the site visit.

It was finally decided to go ahead with the planning of the site visit for the week of 13 February 2012. TN requested that HGM send out a calendar to the relevant members to block out the week of 13 February for site visit purposes.

HGM

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9.	DATE FOR NEXT MEETING				
	The next meeting is scheduled Pretoria. The venue will still be		n 2012 and will take place in		
				HGM	
10.	CLOSURE				
	TN thanked everyone attending	ng the meeting and closed th	e meeting.		
Minutes certified as correct and final					
PSP Study Leader		Date	DWA Study Leader	Date	

DISTRUBUTION OF MINUTES

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MINUTED BY: HG Maré (with input from Project team Members)

Appendix A

Progress Report



Directorate: National Water Resource Planning

DEVELOPMENT OF A RECONCILIATION STRATEGY FOR THE LUVUVHU AND LETABA WATER SUPPLY SYSTEM

STUDY MANAGEMENT TEAM MEETING NO 3

TECHNICAL PROGRESS REPORT NO 2

Date: 26 January 2012 Period: 11 November 2011 to 26 January 2012

TASK	WORK DESCRIPTION			
	INCEPTION PHASE (TASK LEADER: PG VAN ROOYEN)			
	 First draft of report completed and was distributed for comments from Task Leaders Some comments already received. Deadline for comments 30 January 2012. Review of previous studies completed. 			
1	SUMMARY OF PREVIOUS AND CURRENT STUDIES (TASK LEADER: A JELENI)			
	 More copies (hard or electronic) of reports from previous studies were obtained. These were scanned and electronic copies made available on FTP site for easy access. Team members completed the summary of information in previous reports (Chapter 2 of the summary report). Chapter 1 & 2 of draft summary report completed and sent out to team members to provide their inputs for chapter 3. 			
2	PRELIMINARY SCREENING WORKSHOP (TASK LEADER: PG VAN ROOYEN)			
	No activities during the progress period.			
3	HYDROLOGICAL ANALYSIS (TASK LEADER: B HAASBROEK)			
	 Obtained validation results from the partially completed Validation and Verification Study. Corresponded with V&V consultants to try and understand the source and meaning of the data supplied. Summarized irrigation, forestry and farm dam results from the Validation and 			

TASK	WORK DESCRIPTION		
	Verification Study.		
	Obtained all registered dam safety data and undertook clean up and grouping of data to derive area-capacity relationships.		
	 Obtained the latest information regarding the types and distribution of AIP from the DEAT. Communication with specialist to obtain clarity on the use of the data and how to derive % of AIP in riparian zones. 		
4	WATER REQUIREMENTS AND RETURN FLOWS (TASK LEADER: D MNGUNI)		
	 Demand spread sheet base to be populated at a later stage when updated data becomes available was completed. 		
	 Relevant water requirements information was gathered from latest study reports a used to populate the above-mentioned demand spreadsheet. The informat includes all known demand centres (irrigation demand centres as well), latest kno actual water use for certain demand centres and projected demands in the Luvu and Letaba Catchments 		
	 Latest information was received from the Limpopo Department of Agriculture on the Revitalisation of Small Holder Irrigation Schemes (RESIS) in the Luvuvhu and Letaba Catchments. The Information will be used to quantify the current and future irrigation requirements. 		
5	WATER CONSERVATION AND DEMAND MANAGEMENT (TASK LEADER: W WEGELIN)		
	 Meeting were held with Vhembe and Mopani District municipalities on the 24 and 25 of January 2012. The Mopani DM meeting did not materialise as the municipal staff were on strike due to unpaid salaries. The questionnaires will be forwarded to the relevant people. 		
	The meeting with Vhembe DM revealed the following key issues:		
	 There is a major staff (55% vacancies) and skill shortage in the municipalities. 		
	 There is no water business approach with very limited cost recovery. The results is that water use is abused, leakage is high and the system has deteriorated to such an extent that towns like Thohoyandou are operating on intermittent supply from 16h00 until 04h00. 		
	 Some usable information has been obtained from the WSDPs and other studies. 		
6	WATER RE-USE (TASK LEADER: T COLEMAN)		
	No activities during the progress period.		
7	INVASIVE ALIEN PLANTS (TASK LEADER: B HAASBROEK)		
	No activities during the progress period		
8	WATER QUALITY (TASK LEADER: T COLEMAN)		
	 Water quality sites for rivers (69), dams (11) and canals (5) have been identified in and are now being assessed in terms of water quality data for current status and historical. This number will therefore decrease depending on the quality and relevance of the data. 		

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No activities during the progress period.		
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FINAL SCREENING WORKSHOP (TASK LEADER: PG VAN ROOYEN)		
No activities during the progress period.		
STAKEHOLDER ENGAGEMENT AND PUBLIC PARTICIPATION (TASK LEADER: A LÖTTER)		
No activities during the progress period.		

TASK		WORK DESCRIPTION		
		meeting.		
	•	Organise venue for first SSC meeting on 23 November 2011 in Tzaneen.		
	Attend the first SSC meeting.			
	•	 Write minutes of the meeting, distribute and include comments. 		
	•	 Send background information document to five libraries and the Kruger Nation Park information centres. 		
	•	Prepare documentation for website.		
20	STUDY MANAGEMENT (TASK LEADER: PG VAN ROOYEN)			
	•	Preparations for SSC meeting were done (several presentations).		
	SSC meeting was attended and presentations were made at the meeting.			
	Maintain and update list of Study Management Team (SMT) members.			
	 Preparations for SMT (SMT member list, agenda's and meeting invitations.) 			
	Held SMT meeting 2 and SM meeting 1.			
	Complete minutes, include comments and distribute			
	Second invoice and progress report			
	•	Start with preparations for Site Visit		
	•	Progress report for SMT 3		
21	STUDY	TERMINATION (TASK LEADER: PG VAN ROOYEN)		
	•	No activities during the progress period.		

Appendix B

List of Current and Previous Studies

	Completed Studies			
No.	Study Name	Year	Number of Reports	Remarks
	•		Total	
1	Water Resources Planning of the Luvuvhu River Basin	1990	38	
	Kruger National Park Rivers Research program, Water	1990	1	
2	for Nature: Hydrology, Luvuvhu River Water Resources Planning of the Letaba River Basin	1990	ı ı	
	Study of development Potential and Management of the	1990	36	
3	Water Resources Kruger National Park Rivers Researchprogram, Water			
4	forNature: Hydrology, Letaba River.	1990	1	
_	Letaba Water Resource Development Pre-feasibility Study	1004	9	
6	Luvuvhu River Dam Feasibility Study	1994 1997	31	
	Groot Letaba Water Resource Development Feasibility Natural Water Resource Strategy	1998	9 1	
-	Internal Strategic Perspective: Luvuvhu/Letaba Water	2003	'	
	Management Area Luvuvhu River System Annual Operating Analysis	2004	1	
	Letaba River System Annual Operating Analysis	2005 2006	1	
	Groot Letaba River Water Development Project	2009/10	29	
13	Water Resources Systems Development Business Support Phase 3	2010	1	
13		2010	,	
14	Luvuvhu Government Water Scheme: Bulk Water Supply Preliminary Design's	1999	1	
15	Luvuvhu River Government Water Scheme	2000	3	
16	Albasinidam (a9r001): Stogastiese Leweringsontleding	1993	3	
	A Reconnaisance Study to Augment the Water			
17	Resources of the Klein Letaba and Middle Letaba River Catchments	2003	9	
18	Letaba Catchment Reserve Determination Study	2006	13	
19	GRIP Study	Latest Data		
20	GRIP Study Extension by Fanie Botha			
21	Letaba Groundwater Reserve	2004	1	
22	Socio-Economic and Ecological Impacts of Water Restrictions in the Letaba catchment	2010	2	
	Middle Letaba Water Supply Scheme: WC/WDM	2010		
23	Situation Assessment	2003	1	Reports for work done
24	Luvuvhu/Letaba WMADevelopment of a Comprehensive WC/WDM Strategy and Business Plan	2010	1	before the study was ceased.
25	The Development of a Comprehensive WC/WDM Strategic Business Plan for the Limpopo WMA	2010	1	Reports for work done before the study was ceased.
26	Levuvhu/Letabe Water Resources Situation	2003	1	
	Assessment Damani Regional Water Scheme Technical Report	2010	1	
	Nwamitwa RWS: LPR006: Feasibility Study			
28	Implementation Readiness Overview: Preparation for Project Implementation in Future Years	2009	3	
29	Middle Letaba Regional Water Scheme: Masakona Bulk	2006	1	
	Water Supply - Technical Report Mutale River Water Resources Investigation	1999	20	
	Middle Letaba Scheme Reports			
	Total number of reports		220	
	Studies currently been undertaken by the DWA	DIA/A	Den	Comments
No.	include: Great Lataba Davidsoment Project (Nivemita Dam)	O IS you don Borg	PSP	Comments
1	Development of Reconciliation Strategies for All Towns	OJS van den Berg T Nditwani	Aurecon SRK	See above Received some
2	in the Northern Region (on going)	i Nullwani	SKK	Strategies Washy will e-mail
3	Operatings Rules Stand alone Dams	L Bapela	Washy	completed strategies
4	Validation and Verification of Water Use in the Luvuvhu- Letaba Water Management Area	Doris Maumela	MHP Geospace	Information currently available were reveived
5	Department of Agriculture Resis Programme	Martiens Gouws		Have 1 report, Waiting for further info
6	Real Time Modelling	Jenny Pashkin		Have relevant draft reports (2 reports)
	Water Demand and Water Conservation Study for the	Koena Moabelo		
	Limpopo WMA and the Lucyvlus-Letaba WMA Jimenis Downloads LLNO 3M 13 Minutes VS1.Doc Rapid Response Unit project	W Wegelin	WRP	Will supply available data Will share data