DWA Report Number: P RSA 000/00/18813/1

water affairs
Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA
DIRECTORATE: NATIONAL WATER RESOURCE PLANNING

CONTINUATION OF THE NORTHERN PLANNING REGION'S ALL TOWN RECONCILIATION STRATEGIES: PHASE 1

INCEPTION REPORT

FINAL

JUNE 2013

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REFERENCE

This report is to be referred to in bibliographies as:

Department of Water Affairs, South Africa, 2013. **CONTINUATION OF THE NORTHERN PLANNING REGION'S ALL TOWN RECONCILIATION STRATEGIES: PHASE 1: INCEPTION REPORT**

Prepared by:

UWP Consulting (Pty) Ltd in association with WRP Consulting Engineers (Pty) Ltd.

Report No. P RSA 000/00/18813/1

Title:	***Inception Report***
Authors:	*Study Team*
Project Name:	***Continuation of the Northern Planning Region's All Town Reconciliation Strategies: Phase 1***
DWA Report No:	*P RSA 000/00/18813/1*
Status of Report:	*Final*
First Issue:	*13 May 2013*
Final Issue:	*11 June 2013*

Consultants: UWP Consulting (Pty) Ltd in association with WRP Consulting Engineers (Pty)

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CONTINUATION OF THE NORTHERN PLANNING REGION'S ALL TOWN RECONCILIATION STRATEGIES: PHASE 1

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ACRONYMS

BPDM	Bojanala Platinum District Municipality
BWMP	Bulk Water Master Plan
CESA	Consulting Engineers South Africa
DWA	Department of Water Affairs
EIA	Environmental Impact Assessment
GIS	Geographic Information System
HDI	Historically Disadvantaged Individual
IDP	Integrated Development Plan
IWULA	Integrated Water Use License Applications
LED	Local Economic Development
NRW	Non-Revenue Water
NW	North West (Province)
NWPG	North West Provincial Government
O&M	Operation and Maintenance
PSP	Professional Service Provider
RBIG	Regional Bulk Infrastructure Grant
ToR	Terms of Reference
WC/WDM	Water Conservation and Water Demand Management
WMA	Water Management Area
WSA	Water Services Authority
WSP	Water Services Provider
WSDP	Water Services Development Plan
WTW	Water Treatment Works
WWTW	Wastewater Treatment Works

1. INTRODUCTION

1.1 BACKGROUND

The Department of Water Affairs (DWA) has commissioned four three-year studies for the continuation and maintenance of the bulk water supply reconciliation strategies for all towns in the country. The studies cover the four Water Resource Planning Areas - North, South, East and Central and this study covers the Northern Planning Area. A number of larger Reconciliation Strategy studies have already been undertaken for the main urban metropolitan and economic centres of the country. The "All Towns Studies" for the various DWA planning regions, are extensions of the larger Reconciliation Strategy studies.

The All Towns Studies' strategies were developed in 2011 and need to be revised to remain relevant under prevailing conditions. The study is part of an on-going process to ensure sufficient water can be made available for pertinent developmental imperatives in and around all towns.

Although each town's strategy is different, key common themes were highlighted as listed below:

- Improved management will solve a significant portion of immediate problems;
- In the Northern Planning Region, the water requirements in 2010 exceeded water source availability in 64 towns;
- Lack of water metering impedes the confidence in planning and the strategies;
- High per capita use in many towns points to the potential of saving through Water Conservation and Water Demand Management (WC/WDM);
- Groundwater remains a viable source of water for many towns; and
- Supply problems relate to infrastructure constraints rather than water source availability limitations in many towns.

This study is the Continuation of the 2011 study for the Development of Reconciliation Strategies for All Towns in the Northern Planning Region, which developed rudimentary reconciliation strategies for 211 towns or clusters. This was based on estimated present and future water requirements, and the potential water sources available to meet these requirements. In many cases, information on water use was not readily available for the development of reconciliation strategies.

Since the 2011 study, various additional water resource planning studies (local and regional) have been undertaken and water services projects implemented, which are not yet reflected in the existing strategies. The 2011 Census for South Africa was completed and the results are possibly available on a planning level by the middle of 2013. These developments need to be reflected in the refined and updated reconciliation strategies.

The updated reconciliation strategies will enable the regional offices of the DWA to provide a much better service to the municipalities and the public. Municipalities are also under pressure to include water resource information in their Integrated Development Plans (IDPs) and Water Services Development Plans (WSDPs). The information that will be generated by this study will go a long way in assisting municipalities to develop such plans.

This Inception Report for the Continuation of the All Towns Studies, provides the results of the reconnaissance review of the existing reconciliation strategies and describes the methodology and programme for the remaining duration of the study.

1.2 MAIN OBJECTIVES OF THE STUDY

This study is a continuation of the first All Towns study and aims to systematically improve certain high priority strategies in the reconciliation of water requirements, with water sources. It includes the review of demographics, service levels, water requirements, water services infrastructure, water resource availability, water quality and updating of the water balance. Scenarios will be developed and evaluated and recommendations made for the purpose of ensuring a positive water balance and sustainable management of water resources, based on a planning horizon of twenty years, up to 2035.

The study and strategies ensure integrated planning through stakeholder engagement, confirming that the reconciliation strategies stay relevant, are technically sound and sustainable. It will be used for current and future water services and water resources planning and management, guiding the DWA, National, Provincial and Local Government in ensuring "some for all". The focus of the reconciliation strategies is on the domestic sector, but with due consideration and inclusion of aspects related to other water use sectors and institutions where water sources are shared.

1.3 OVERVIEW OF THE STUDY AREA AND ITS WATER RESOURCES

The study area includes the Water Management Areas (WMA) of Limpopo, Luvuvhu and Letaba, Crocodile (West) and Marico, and Olifants. It encompasses the entire province of Limpopo, the eastern part of the North West province and the northern parts of the Gauteng and Mpumalanga provinces as shown on **Figure 1**. All four of the WMA's included in this study area share water resources with the neighbouring countries of Botswana, Zimbabwe and Mozambique.

The major cities and towns within the study area, to name but a few, are: Johannesburg, Pretoria, East Rand are, Mahikeng (Mafikeng), Rustenburg, Brits, Polokwane, Musina, Thabazimbi, Thohoyandou, Giyani, Modimolle, Bela-Bela, Burgersfort and eMalahleni (Witbank), etc.

The driving forces behind development and economic growth within these WMAs are urban development, industrialisation and power generation, agriculture, eco-tourism and mining that place a high demand on the availability of water sources. Livestock farming also occurs in some parts and a large proportion of the population residing within the Luvuvhu and Letaba WMA depends on subsistence farming. However, the development and implementation of water conservation and water demand management (WC/WDM) programmes are lacking in the majority of the towns located within the WMAs.

Figure 1. Northern Planning Region Study Area.

According to the DWA Registered List of Dams (October 2011), there are 722 dams located across these WMAs – serving the domestic, irrigation and/or industrial and mining sectors. Of these, 87 dams serve the domestic or municipal sector (may be shared by other sectors), of which 15 are

classified as large[1]. Some of the most prominent dams in the study area include the Hartbeespoort, Molatedi, Rooikoppies, Vaalkop, Mokolo, Glen Alpine, Nandoni, Vondo and De Hoop.

Groundwater is used in many areas (predominantly rural areas with scattered villages) for water supply. The groundwater potential in the study area vary, but appears to be predominantly of minor to major potential (high yielding water of good quality). Some rudimentary groundwater supply areas do experience problems with water quality and treatment is required.

The major rivers include the Crocodile (West), Marico, Limpopo, Matlabas, Mokolo, Lephalala, Mogalakwena, Sand, Nzhelele, Mutale, Luvuvhu, Letaba, Elands, Wilge, Steelpoort and Olifants. The Limpopo River is shared with Botswana and Zimbabwe (contiguous – being a country boundary) and Mozambique (trans-boundary – across country boundaries). It is subject to the 1997 United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses and is managed through the Revised Protocol on Shared Watercourses in the Southern African Development Community (2000).

1.4 STRUCTURE OF THE INCEPTION REPORT

This report is structured in the following manner:

Section 1 provides the background, purpose and overview of the study area.

Section 2 outlines the scope of work as defined by the ToR.

Section 3 outlines the work undertaken and results obtained during the Inception Stage of the study.

Section 4 describes the proposed methodology to be followed for each task, continuing from the Inception Stage.

Section 5 describes general tasks to be undertaken during all Stages of the study.

Section 6 includes a study programme.

Section 7 discuss the composition and rates of the PSP team members

Section 8 includes the proposed study budget.

[1] Classification of dams based on the Regulations published under Government Notice R 1560 relating to dam safety risk (July, 1986). A large dam is classified as a dam with a maximum wall height of equal to, or more than30 metres.

2. SUMMARY OF SCOPE OF WORK AND PROCESS FLOW

This section describes our understanding of the scope of work as specified in the ToR. It also provides and outline of our approach to task solving, illustrating the process flow and the sequence in which the tasks will be executed. The ToR is attached in **Appendix A**.

2.1 UNDERSTANDING THE SCOPE OF WORK

The DWA has recently developed Water Resource Reconciliation Strategies that aimed to ensure the reconciliation of current and future water requirements with water availability in the main towns and clusters of villages. This was done through the study commissioned in 2008 and completed in 2011, titled the "*Development of Water Reconciliation Strategies for All Towns in the Northern Region"*.

The reconciliation strategies developed during the aforementioned study, investigated 285 schemes within the Northern Planning Region and the strategies that were prepared varied in completeness and strategic content.

The scope of this follow-up study is to systematically improve the reconciliation strategies for high priority clusters selected according to the current water resources situation and stakeholder input – based on the latest available information – to ensure that they stay relevant, technically sound and sustainable. Therefore, activities need to be undertaken to continuously update the prioritised strategies and to implement revised plans of action aimed at ensuring on-going adequacy of water availability into the future. Further to this, these strategies need to be incorporated within the development and management frameworks of Water Services Authorities (WSA's) such as their Integrated Development Plans (IDP's) and Water Services Development Plans (WSDP's). It is therefore also important that the communication between DWA and WSA's is further developed and improved.

2.2 OUTLINE OF PROPOSED APPROACH

This section provides an outline of our approach, the process flow and the sequence in which the tasks will be executed.

In order to achieve cost efficiency, we propose that the study is undertaken in three Stages, namely **Inception; Continuation of the Reconciliation Strategies' Development;** and **Reconciliation Strategies' Revision and Implementation**.

Stage 1: Inception

- Set-up of study team;
- Reconnaissance review of existing strategies and initial screening to establish priorities;
- Development of District Municipality Summary Reports; and
- Strategies Steering Committee Workshop 1.

Stage 2: Continuation of the Reconciliation Strategies' Development

- Finalisation of the list of priority strategies;
- Detail review of priority strategies, including water requirements, water source availability, water supply infrastructure and the status of WC/WDM programmes implemented;
- Update of the water balance and recommendations for the reconciliation of water requirements and water sources; and
- Strategies Steering Committee Workshop 2.

Stage 3: Reconciliation Strategies' Revision and Implementation

- Finalisation of reconciliation strategies; and
- Final delivery of reviewed and updated strategies and District Municipality Summary Reports.

2.3 STAGED APPROACH TO THE STUDY

The study is structured in various stages to allow for the planning and execution of various tasks. The various stages should not be viewed as separate activities being performed in isolation of each other – some overlaps may occur and some tasks apply to one or more stages.

2.3.1 STAGE 1: INCEPTION

The purpose of Stage 1 is firstly to obtain and analyse the existing information from previous strategies, to conduct limited verification and to firm up on the extent and methodology for further investigations required for updating the information. Secondly, to review the methodology and the level of detail of investigations included in the Study Proposal, and if necessary, to revise the approach, methodology, programme and budget for the remaining stages of the study. The deliverables of this stage will be the compilation of an Inception Report that will be reviewed and approved by the Study Management.

As part of this stage, each study task leader has carried out initial work and has reviewed the proposed methodology for further studies. This Inception Report incorporates the findings of the initial investigations. The following activities were carried out for each task:

- Arranged a project start-up meeting with the Study Management Team (SMT), Support Group (SG) to discuss the initial study proposal, approach, time plan, lines of communication, reporting, etc. and to obtain copies of previous study reports and other relevant information.
- In consultation with the project manager finalised the composition of the SMT/ SG and Strategies Steering Committee (SSC). Also nominate the individual/s from the DWA to benefit from skills transfer and training programme for the duration of this study.
- Obtained and conducted a reconnaissance review of the existing reconciliation strategies for the towns or clusters in the study area and of relevant available information from previous studies. Identified any potential gaps and/or overlaps, identified sources of information and determine the extent of water deficit/surplus within clusters. Further to this, obtained input from the DWA in order to prioritise the strategies that require updating according to budget requirements.
- Developed a Background Information Document (BID).
- Developed District Municipality Summary Reports based on the existing reconciliation strategies.
- Initiate the information collection and verification process, considering sources such as municipal master plans, drawings, GIS databases, feasibility study reports, metering information, IDP's, WSDP's, SDF's; then the Blue Drop and Green Drop Reports of 2011 and onwards; regional study reports (related to water supply, sanitation and water resources); and 2011 Census data.
- Based on the above, in close collaboration with the Client, refined the scope of work, level of detail, deliverables, priorities, programme and budget for this study. Issued an Inception Report – this report.
- Consolidated and documented the findings of the reconnaissance review. Convened and conducted the first workshops (per province) to inform stakeholders of the study, to establish lines of communication, to obtain comments and guidance regarding the findings of the reconnaissance review; obtain buy-in into the proposed methodology and programme, confirm the list of prioritised strategies requiring updating and agree on the way forward, further information sharing and co-operation.

2.3.2 STAGE 2: CONTINUATION OF THE RECONCILIATION STRATEGIES' DEVELOPMENT

The purpose of Stage 2 is to update the prioritised reconciliation strategies by providing an updated water balance (including water requirements and water source yield analysis), identifying the problematic systems, evaluating existing infrastructure and by screening all possible reconciliation interventions. The following activities will be included:

- Carry out a detailed assessment of the prioritised strategies and other relevant studies undertaken to date, collate all data in an appropriate format for further planning and modelling, and assess the reliability of the base data and assumptions.
- Carry out a detailed assessment of the water requirements for the prioritised clusters, as well as current water use efficiencies and opportunities for WC/WDM practices, including preference to utilising local water sources, and re-use of treated effluent, etc. Due cognisance to be given the water requirements for all user sectors, within the local and regional context. Develop revised water requirement projections (for the next 20 years) for the clusters where the water use and water requirement projections presented in the strategies have been identified as incorrect or inaccurate.

- Contact knowledgeable individuals or institutions to obtain new information and gain insight of current and future development plans.
- Involve DWA officials identified during the SMT meetings in opportunities of skills transfer and maintenance of the reconciliation strategies.
- Identify potential development scenarios/options that can meet the long term water requirement projections for areas where shortfalls/deficits occur over the planning period. These could include appropriate combination of individual schemes previously investigated, or new development options for regional or local schemes identified during this study. The ideal criterion for identification of the development scenarios would be the ability of each scenario to fulfil the long term water requirements for a cluster with the required assurance of supply and within the required water quality parameters.
- Bi-monthly to quarterly submission of updated strategies to DWA and WSA for review; upload on the DWA study website and database.
- Convene and conduct the second round of workshops to present the updated strategies (based on priority areas), obtain comments, further guidance and agreement on the acceptability of the strategies.

2.3.3 STAGE 3: RECONCILIATION STRATEGIES' REVISION AND IMPLEMENTATION

The purpose of Stage 3 is to conduct further studies in areas identified during Stage 2 and in consultation with the Support Group, as well as to compile the necessary strategies. Depending on the interim results, Stage 3 will include some, or all of the following tasks:

- Consider the comments and input received from SSC workshops, for the final review and update of prioritised reconciliation strategies. Based on the above, compile the final draft reconciliation strategies and submit to DWA for provisional approval.
- Distribute the final draft reconciliation strategies for review by all stakeholders and obtain comments.
- Consider the comments and finalise the reconciliation strategies.
- Correct the editorial format (cover page) for the remainder of strategies – where applicable and where budget allows.
- Provide a status page where applicable for strategies where they were reviewed and updated or where since the development of a strategy, projects were implemented that addressed the recommendations in the strategy (particularly RBIG projects).
- Update the District Municipality Summary Reports.
- Arrange the skills transfer workshop (full day presentation) for officials nominated by the DWA.
- Submission of reconciliation strategies and District Municipality Summary Reports to the DWA for upload on the DWA website and for incorporation into the National Information System (NIS).

3. WORK UNDERTAKEN TO DATE DURING THE INCEPTION STAGE

A more detailed description of the findings during the Inception Stage is provided in **Appendix G** of this report. The following main activities have been carried out during the Inception Stage of the study:

3.1 CONDUCTED A PRE-INCEPTION MEETING: DISCUSSED AND AGREED WITH THE CLIENT UPON:

- The composition of SMT members, responsibilities and communication protocol;
- The proposed approach and overall study programme, with a focus on the Inception Stage (first six months of the study period); and
- The activities envisaged for the PSP within the Strategies Steering Committee (SSC), the Support Group (SG) and the Study Management team (SMT). SSC workshops are conducted at provincial level (Limpopo, North West and Mpumalanga province) once in 2013 and once in 2014 (i.e. 3 meetings per year and a total of 6 meetings) and that combined SG and SMT meetings take place approximately every two months (not more than 20 meetings over the study period). Minutes of SMT meetings held are attached under **Appendix C** (excluding the minutes' appendices in order to reduce this report's file size). The PSP to arrange the SSC workshops for the Limpopo and North West Provinces. The PSP to support and participate similarly in the SSC arrangements concerning the Mpumalanga Province, of which most part falls within the DWA's Eastern Planning Region.

3.2 BACKGROUND INFORMATION DOCUMENT (BID):

Developed a Background Information Document to introduce the study to stakeholders and provide an overview of the study methodology and key contact persons. The Background Information Document is provided in **Appendix F**.

3.3 EXISTING STRATEGIES: RECONNAISSANCE REVIEW, PRIORITISATION, DISTRICT MUNICIPALITY SUMMARY REPORTS AND INFORMATION SOURCING:

- Performed a reconnaissance review of the existing strategies, assessed their completeness and information sources used;
- Summarised the existing strategies into District Municipality Summary Reports, for each of the DM's within the study area. The summaries' tables are attached in **Appendix D** of this report;
- Preliminary prioritisation of strategies to be refined during of this study, based on a methodological evaluation applying criteria such as being of strategic importance, the status of water surplus/deficit, quality of strategies and considering proposed Regional Bulk Infrastructure Grant (RBIG) Projects. Of the 211 strategies evaluated, 50 were identified as priorities. This list was presented and discussed during the SSC workshops;
- Obtained the latest WSDP, SDF and IDP documents as well as the Blue Drop and Green Drop Reports of 2011 and onwards from relevant WSAs, Local Authorities and DWA to review and compare information reported on the aspects mentioned under the first bullet above as well as the economic driving factors that would have an impact on future water requirements. Where possible, obtained master plans, drawings, GIS databases, feasibility study reports (related to water supply,

sanitation and water sources) to supplement and verify information. Study and incorporate relevant information from the Reconciliation Strategies prepared for the larger economic and metropolitan centres such as for the Vaal River (2009), Crocodile (West) River (2012), Olifants River (2011) and the Luvuvhu and Letaba Water Supply System (in progress, commissioned in 2012). Obtain the latest national data as maintained by the DWA on water use licensing (WARMS) and water quality (NGDB). This will be an on-going activity for the duration of the study period; and

- Conducted a screening session, based on the preliminary prioritisation process, with the DWA NWRP and Regional Offices, to further refine the priorities of strategies for the continuation of the study. The study programme and budget would give preference to the prioritised areas – as identified in the screening session and planned stakeholder workshops.

3.4 PREPARE AN INCEPTION REPORT

This Inception Report was prepared based on the findings obtained during the tasks described under item 3.3, including the District Municipality Summary Reports as well as recommendations on priority areas for the continuation of the All Towns reconciliation strategies study. The tasks, programme and budget in the Inception Report, as approved by DWA, would apply for the duration of this study.

3.5 FIRST WORKSHOPS AND PRESENTATION TO STRATEGIES STEERING COMMITTEE (SSC)

- The PSP, with the input from DWA, established a contact list of members representing relevant institutions and organisations to invite to the first workshops, held in the Limpopo and North West Provinces respectively. A Letter of Introduction of this study was prepared to accompany the invitations to SSC members – a sample of the invitation is provided under **Appendix E**. Note that many officials and representatives from municipalities changed position or left the organisation during the invitation process, and additional follow-ups were required. A presentation was prepared to introduce the study and present the preliminary priorities to stakeholders; and
- Upon completion of this task and this Stage, a refined list of priorities for the Continuation of the All Towns Strategies – DWA Northern Planning Region was drafted. Stage 2 of this study to commence with the review and update of the prioritised list of reconciliation strategies, listed in **Appendix C**, now totalling 42.

4. DETAILED METHODOLOGY

This section provides a detailed description of the proposed methodology to undertake the remaining activities of the study.

4.1 STAGE 2: CONTINUATION OF THE RECONCILIATION STRATEGIES' DEVELOPMENT

During Stage 2, bi-monthly Study Management Team (SMT) meetings would be held as discussed in **Section 5,** General Tasks Undertaken During All Stages.

4.1.1 DETAILED ASSESSMENT OF THE SELECTED PRIORITISED STRATEGIES

At the Inception of this study, a few of the strategies were prioritised based on their strategic importance and the detailed assessment commenced. The following strategies fall within this scope:

- Musina;
- Matoks;
- Giyani – system C water supply area;
- Mafikeng; and
- Lambani Thulamela.

Based on the input received during the SSC workshops, the priority strategies can be finalised and the detailed review can commence. The order in which the detail review will take place (over the remainder of the study period) has not yet been established. The guiding criteria would include the causes of deficit in the water balance for a particular cluster.

The prioritised strategies will be reviewed and evaluated based on their completeness, sustainability and viability with regard to demographics, services levels, current and future water requirements, water conservation and water demand management (WC/WDM), existing and future scheme developments, surface water hydrology, groundwater, water quality, water re-use, etc. The purpose of this process is to establish the areas where shortfalls occur and where inputs will be required from the various specialists included in the study team.

Stage 2 includes the bulk of work required for the execution of this study, including the engagement of stakeholders, information sourcing, verification of data, evaluation of scenarios and determining of reconciliation measures. It is anticipated that some of the activities may be recurring during the study period to allow for the change in financial years both on a national and local government level. During the study period, changes and updates may occur as a result of the implementation of projects, new planning activities and growth and development. Typical examples are the review and update of

IDP's, WSDP's, master plans and the implementation of WC/WDM and metering programmes or water infrastructure projects. Where possible, the PSP will consider such changes and updates as they become available for inclusion in this study.

The following activities are planned for this task:

- Abstract **information** from the various sources mentioned in the Inception Stage and **incorporate** into the GIS database and information library developed for the purpose of this study;
- **Obtain** new information from knowledgeable individuals or institutions to gain insight of current and future development plans inter alia on:
  - Historical, current and projected water usage and geographical distribution within the study area;
  - Existing water services infrastructure and potential scheme development;
  - Service levels;
  - Extent of metering of consumers;
  - Geo-hydrological information;
  - Water quality;
  - Operational management;
  - Development needs, water services project identified and implemented (RBIG, MIG, etc.);
  - Potential impacts of climate change on water usage and scheme yields;
  - Implementation of WC/WDM measures; and
  - Determine the inclusion of the first reconciliation strategies (2008 – 2010/2011) in planning instruments such as the WSDP and IDP.
- The present **water requirement estimates** will be brought to the same base year, being 2011/2012, and future water requirement projections will be provided until 2035 (thus 2012, 2015, 2020, 2025, 2030 and 2035) based on the following methodology:
  - Domestic sector: Where information is not available from the WSA, we will estimate the present and projected water requirements using the methodology adopted by the DWA. The population numbers in the settlements will be determined by reconciling available data from the official 2011 Census release (if released to a suitable level of detail) and the previously developed Demographic Scenario Report (2010)). The projected population growth rates, the daily water requirements per capita and the indirect water use (municipal, business, industrial) will be determined. The per capita water requirements will be obtained from the DWA guidelines for the design of rural water supply schemes, or based on the Red Book for Human Settlement Planning and Design[2] (CSIR, 2000) for urban areas. Provision will be made for water losses;

[2] This book, consisting of two volumes, was developed to guide the progressive improvement and servicing of sustainable human settlements. It provides the quantitative and qualitative framework to plan and develop local services such as public spaces, water supply, sanitation, stormwater, roads, solid waste management and electrification.

- Agricultural sector (only if water used from the same source as the cluster): Where possible, information will be sourced from the DWA water use licensing database and available studies on water use and water sources (previous catchment studies). The Department of Agriculture will be consulted to obtain information about present and future irrigable lands and water requirements;
- Other bulk water users (only if water used from the same source as the cluster): Other major bulk water users (such as industries and mines) will be identified through the review of available information and discussions with key stakeholders. Water requirements of these users will be incorporated where possible; and
- A general assumption will be made on the level of water losses where information is not readily available on water supply and consumption.

- Assess the level of detail in the existing strategies, compared to the newly sourced information on **infrastructure**, considering updated databases, implemented projects (new schemes) and operation of existing infrastructure components;
- Review and update the **service levels** for water[3] and sanitation. Consideration to be given to the minimum standards for water supply and sanitation as published in the Regulations Relating to Compulsory National Standards and Measures to Conserve Water (No. R. 509, 8 June 2001);
- The surface water availability or yield will be reassessed using hydrological modelling techniques (simplified yield estimate used in the Central Region All Towns Recon Study or Water Resource Yield Model (WRYM));
- Identify the potential impact of **climate change** and possible interventions required to mitigate its effects. Report on current events affecting water sources and water supply such as drought, floods or contamination of sources;
- Where potential gaps or inaccuracies are identified in terms of surface **water availability**, information will be sourced from the Establishment of Drought Operating Rules for Stand Alone Dams and Schemes Typical of Rural/Small Municipal Water Supply Scheme (Northern Region) Study, which is currently taking place;
- Evaluate the **water quality** within a cluster taking into account existing sources (surface water and groundwater), infrastructure (operational status, type of sanitation) and the impact of new scheme developments on water quality. Suggest measures to ensure continued or improved water supply considering water quality of the resource and operational efficiency of infrastructure;
- Compare the water requirements with the water source availability to confirm the **water balance** status over the planning period i.e. whether deficits/shortfalls occur;
- Identify options for **groundwater development**, conjunctive surface and groundwater usage including aquifer recharge and storage in areas where shortfalls/deficits occur over the planning period. These could include appropriate combination of individual schemes previously investigated, or new development options for regional or local schemes identified during this study;
- Evaluate the **status and impact of WC/WDM** interventions within the affected WSAs including pressure management, leakage detection and pipe repairs, consumer education programmes,

[3] Basic water supply includes the provision of appropriate education in respect of water use; water quantity of 25 litres per capita per day or six kilolitres per household per month; minimum flow rate of 10 litres per minute; 98% reliability and within 200 meters walking distance.

metering, credit control, grey water use, etc. Report on the programmes developed, budgets made available for the development and implementation and success rate of interventions, including that of reducing Non-Revenue Water (NRW). Identify opportunities to learn and share experiences between DWA / WSA's where successful WC/WDM programmes where implemented. The use of rain water tanks as an augmentation option should also be considered;

- Determine the opportunities for **water re-use** (current and future effluent return flows, the quality thereof and potential re-use) and other alternative options for water supply efficiency and improvement;
- Assess the existing **operational and management capacity of WSA's** for the continuation and implementation of the reconciliation strategies;
- For strategies where **information gaps** or potential inaccuracies have been identified in terms of current and future water use, water requirement estimates and projections for the various user sectors will be modelled based on industry standards;
- Assembly of information and **formulation of scenarios**: During this activity, information obtained and assimilated above will be used to formulate scenarios and strategies per scheme or cluster area to ensure that **water requirements are reconciled** with water availability and interventions are proposed that would assist in sustainable water resource management and provision of adequate services. This activity should highlight the critical factors in order to achieve and ensure technical soundness, economic viability, social acceptability and sustainability of water services. It should assist the DWA and WSA's to identify priority areas for intervention, considering the timeframes and financial resources for planning and implementation of such interventions;
- Based on all the above, update reconciliation strategies. Strategies can only be enhanced based on the quality and extent of existing information and cooperation and input from stakeholders;
- **Submission** of updated reconciliation strategies on a **bi-monthly or quarterly interval** to DWA and WSA for review and upload on the DWA study website and database Ensure notification of uploaded strategies to the relevant WSA's for consideration and inclusion in their planning activities;
- Involve DWA officials identified or nominated for skills transfer, during the processes of reviewing, updating and maintenance of the reconciliation strategies;
- Update the Methodology Report for the development of the strategies; and
- Preparation of a **Status Quo Report** – also to be used as a progress report – based on the reviewed and updated strategies.

Deliverables:

First draft updated reconciliation strategies for selected priority areas.

Interim (bi-monthly or quarterly) submission of updated strategies to DWA.

Updated Methodology Report.

Status Quo Report.

4.1.2 UPDATE OF PRIORITISED, SELECTED STRATEGIES, DEVELOPMENT OF ADDITIONAL STRATEGIES

- Review and refine updated, prioritised strategies, having progressed in the study and apply any new information obtained during the study and consider input from DWA and stakeholders – where it may affect the recommendations;
- Review and update (editorial changes to the cover page) the remainder of strategies where the study budget and timeframe allow, based on the format provided by DWA;
- Where appropriate, issue a one page statement per strategy, indicating minor changes or that the status quo remains for the particular strategy where since the development of a strategy, projects were implemented that addressed the recommendations in the strategy (particularly RBIG-funded projects); and
- Development of new reconciliation strategies – where possible and as appropriate – where there are currently none.

Deliverable: Updated reconciliation strategies.

4.1.3 SECOND WORKSHOPS AND PRESENTATION TO STRATEGIES STEERING COMMITTEE (SSC)

- Workshops will be conducted per Province, separate workshops will be held for the North West, Limpopo and Mpumalanga Provinces. Organisation of these workshops must be in close collaboration (where applicable) with the neighbouring DWA Central and Eastern Planning Regions' PSP's appointed for the Continuation of the All Towns Strategies;
- The Status Quo Report will be presented to the Strategies Steering Committee on a provincial level to inform all relevant stakeholders on the updated strategies and potential scenario developments or interventions to ensure sustainable water supply and management of resources. The second SSC offers the opportune time for the strategies to be presented and discussed for inclusion in the planning activities (WSDP, IDP, etc.) of the WSAs; and
- Obtain comments and input from stakeholders.

Deliverable: Second SSC Workshops.

4.2 STAGE 3: RECONCILIATION STRATEGIES' REVISION AND IMPLEMENTATION

This is the final and third Stage of the study, aiming to review and finalise the reconciliation strategies, to update the District Summary Reports and to submit all deliverables, including the GIS and document library developed for the purpose of this study, to DWA.

4.2.1 CONSIDER COMMENTS AND PREPARE FINAL DRAFT RECONCILIATION STRATEGIES FOR REVIEW AND APPROVAL BY DWA

- During this task, the information collated and comments received during Stage 2 will be incorporated into revised draft reconciliation strategies per cluster; and
- Submit updated draft reconciliation strategies to DWA for provisional approval.

Deliverable: Draft reconciliation strategies for review and approval by DWA.

4.2.2 FINAL DRAFT STRATEGIES FOR INPUT BY STAKEHOLDERS

- The final draft reconciliation strategies to be distributed to all stakeholders for comment.

Deliverable: Final draft reconciliation strategies to stakeholders.

4.2.3 FINALISE RECONCILIATION STRATEGIES AND UPDATE DISTRICT MUNICIPALITY SUMMARY REPORTS

- Consider the comments and finalise the reconciliation strategies; and
- Update the District Municipality (DM) Summary Reports from the reconciliation strategies to illustrate the impact thereof on water resource management, efficient water usage, distribution, management and quality monitoring. Ensure that priority areas are highlighted based on critical factors such as deficit in water quantity, problems of water quality and other technical or operational challenges. It is assumed that the existing DM Summary Report format would apply.

Deliverables:

Prepare final reconciliation strategies for review and approval by DWA.

Prepare final District Municipality Summary Reports.

4.2.4 PROVIDE REVISED RECONCILIATION STRATEGIES TO DWA (UPLOAD TO NIS AND DWA'S WEBSITE).

- Finalise reports and provide updated strategies, summary reports and GIS to the DWA to be uploaded and stored on the DWA web-page; and
- Deliverables to be in e-copy and hard copy format (e-copies only for the individual cluster strategies).

Deliverables:

Five (5) e-copies representing the final reconciliation strategies per cluster area.

Five (5) e-copies representing the final District Municipality Summary reports.

Five (5) hard copies representing the final District Municipality Summary reports.

5. GENERAL TASKS UNDERTAKEN DURING ALL STAGES

The following tasks will run concurrently with the study Stages:

5.1 PROJECT MANAGEMENT AND ADMINISTRATION

This task will be undertaken throughout the duration of the study and will include the management and co-ordination of all study tasks, as well as regular liaison with the client, provincial workshops, the submission of progress reports, attendance of project management meetings and PSP coordination meetings representing all DWA Planning Regions.

- Provision for bi-monthly Study Management Team (SMT) meetings was made. The PSP will prepare agendas, meeting notes, progress reports, etc. and will be responsible their distribution to all members. Brief progress reports will be submitted with the fee accounts. Bi-monthly fee accounts will be prepared and submitted by UWP on behalf of the study team. A status report to be submitted 12 months after appointment of the PSP;
- We have made provision for 20 Combined SMT and SG meetings and six (6) presentations to the Strategies Steering Committee to present the preliminary priority strategies and then the final strategies. It is envisaged to have one SSC workshop, per province (Limpopo, North West and Mpumalanga), during 2013 and 2014; and
- Workshops or site visits to be conducted per DM to ensure buy-in by the WSA/s, WSPs and other stakeholders, and to enable the monitoring and sustainability of the proposed reconciliation strategies' implementation. There are currently one (1) Metro, five (5) DM's and 20 LM's with WSA status – some of which are not fully enclosed by the study area. The PSP will prepare agendas, meeting notes, etc. and will be responsible their distribution to all members. Provision was made for:
  - Gauteng Province: one site visit;
  - Limpopo Province: ten (10) workshops / site visits;
  - Mpumalanga Province: three (3) workshops / site visit; and
  - North West Province: five (5) workshops / site visits.

At the second SMT meeting held on 3 December 2012 (SMT minutes attached under **Appendix B**), it was decided to rotate the venue for the SMT meeting between the provinces. The original study budget made provision for all SMT meetings to be held in Pretoria. During the 2013 calendar year, there will be one SMT per province. It is expected that not more than one SMT will be held at a venue per province during the subsequent calendar years. No additional costs for venue hire or catering have been included in this study budget for SMT meetings held not in Pretoria.

5.2 AD-HOC SUPPORT

This task makes provision for a call-down facility to provide support to the SG as and when required and will include activities that are requested to be performed to support the Client in e.g. technical enquiries, ministerial enquiries and the preparation of presentations for special DWA forums / management meetings relevant to the project, etc. A minimal budget has been allocated to this activity, as illustrated in **Section 8** Study Budget.

5.3 SKILLS TRANSFER WORKSHOP

During the DWA information session held on 23 January 2013, a proposal was made to coordinate the skills transfer workshop between all PSPs and DWA Regional Offices. Once PSPs have indicated their specialist fields for contribution to the skills transfer workshop (due by 8 February 2013), DWA: NWRP would obtain input and feedback from the Regional Offices. It is anticipated that the skills transfer workshop be held at a central venue, based on a programme of activities as decided by DWA: NWRP considering the input from PSPs and Regional Offices.

The activities of this task may include the following:

- Obtain nominees from the DWA to attend the skills transfer workshop.
- Arrange, with the assistance of DWA, the skills transfer workshop at a suitable venue.
- Prepare and submit the presentation on the skills transfer workshop for approval by the SMT.
- Conduct the skills transfer workshop.

5.4 CAUTIONS AND EXCLUSIONS

As noted during the DWA information session held on 23 January 2013, the budgets available for the studies (all planning regions) are not sufficient for the complete review and update of all reconciliation strategies. This was also confirmed at the SMT meeting held on 11 February 2013 – refer to the SMT meeting minutes attached under **Appendix B**. It is therefore important to agree on the methodology to assign priorities and to address those priorities first. The preliminary assessment and priority allocation of existing cluster reports, based on priority criteria as decided during the SMT meetings and SSC Workshops, is provided in **Appendix C**. The prioritisation status of some of the strategies (strategies' priority marked as "maybe" in **Appendix C**) can only be confirmed once preliminary investigations have been conducted after which these strategies will either be prioritised for updating or removed from the prioritisation list, depending on the findings.

This study does not include ground truth investigations in order to establish the yield and quality for all water sources, the status of existing water supply infrastructure or site surveys of population/households. Limited field verification will be conducted if necessary to confirm details of water use or resource availability. This study may provide guidance on the economic aspects of reconciliation options, but does not replace the planning Stages of pre-feasibility or feasibility to attain a bankable level of confidence in the potential implementation of a particular reconciliation option.

The Continuation of the All Town Reconciliation Strategies study involves the engagement of stakeholders, obtaining input from officials, obtaining and utilising information at hand for the modelling of scenarios. The outcome of the information assessment and modelling would be to develop the reconciliation strategies to guide the DWA and WSA's towards implementation of short to long term interventions in sustainable water services and resources management. The quality of the strategies is highly dependent on the quality of information available. The implementation of adequate metering programmes is still a problem as not all bulk components and consumers in all the WSA's are metered (and metered consumption recorded, accurately). Water use license confirmation, developing the water balance and making reliable water requirement estimates rely on information such as water abstracted, supplied, consumed and discharged.

The PSP team would ensure their best efforts in obtaining the latest and detailed information possible for the purpose of this study. Where such information is not available, recommendations will be made as appropriate for consideration by the DWA and WSA.

6. PROPOSED STUDY PROGRAMME

The study is for a period of 36 months. It commenced in October 2012 and will continue till 30 September 2015. The Inception Stage is six months from the date of signing the contract between the DWA and the PSP. Thereafter the study continues with the review and update of the prioritised reconciliation strategies for the DWA's Northern Planning Region.

The study includes the following main activities:

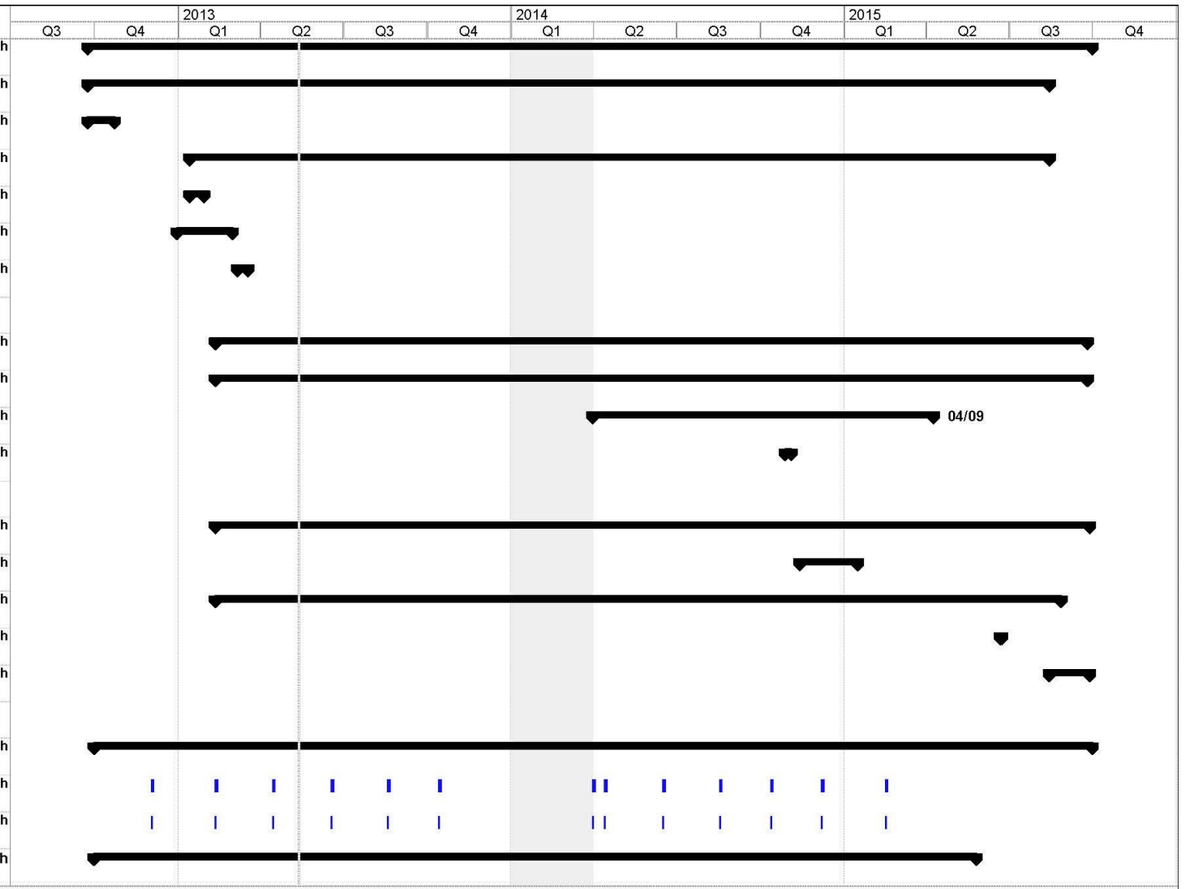
- Inception (October 2012 – April 2013);
- Updating Priority Reconciliation Strategies (May 2013 – April 2015)
- Incorporate Comments and Finalise Reconciliation Strategies (May 2015 – July 2015)
- Study Closure (September 2015)

An overview of the study programme is provided overleaf.

6.1 STUDY PROGRAMME

An overview of the study programme is provided below.

ID	WBS	Task Name	Start	Finish	Duration	Cost	Work
1	1	WP10587_27525 All Town Reconciliation Strategies -	2012/09/24	2015/09/30	668 d?	R 5 083 658	5 967.42 h
2	1.1	STAGE 1: INCEPTION	2012/09/24	2015/08/14	634.99 d	R 643 844	1 219.42 h
3	1.1.1	Inception and Pre-Inception	2012/09/24	2012/10/23	21.5 d	R 122 929	215 h
7	1.1.2	DM Summaries, prioritisation, information s	2013/01/14	2015/08/14	554.99 d	R 377 955	823.32 h
11	1.1.3	Develop a Communication Strategy and Sta	2013/01/14	2013/01/29	11.5 d	R 10 400	11 h
13	1.1.4	Inception Report	2012/12/31	2013/03/01	45 d	R 70 060	72.57 h
15	1.1.5	SSC Workshop 1	2013/03/07	2013/03/18	7.75 d	R 62 500	97.53 h
17							
18	1.2	STAGE 2: CONTINUATION OF THE RECONCILI/	2013/02/11	2015/09/25	564.41 d?	R 3 254 540	3 412 h
19	1.2.1	Detailed assessment of existing strategies a	2013/02/11	2015/09/25	564.41 d?	R 2 706 954	2 812 h
65	1.2.2	More detailed assessment and update of str	2014/04/01	2015/04/09	261.6 d?	R 420 478	440 h
73	1.2.3	SSC Workshop 2	2014/10/29	2014/11/04	4.72 d	R 127 108	160 h
76							
77	1.3	STAGE 3: RECONCILIATION STRATEGIES REV	2013/02/11	2015/09/27	565 d?	R 625 291	754 h
78	1.3.1	Final draft reconciliation strategies	2014/11/14	2015/01/16	45.66 d	R 339 084	320 h
82	1.3.2	Final reconciliation strategies and update D	2013/02/11	2015/08/27	543.64 d?	R 188 095	274 h
92	1.3.3	Skills transfer workshop	2015/06/22	2015/06/23	1.79 d	R 34 915	40 h
96	1.3.4	Submission for DWA NIS and website updat	2015/08/14	2015/09/27	30.5 d	R 63 196	120 h
101							
102	1.4	PROJECT MANAGEMENT AND AD HOC SUPPO	2012/10/01	2015/09/30	663 d?	R 559 982	582 h
103	1.4.1	Task 14.1: Project management and admini	2012/10/12	2015/09/30	654 d?	R 321 782	330 h
127	1.4.2	Task 14.2: Conduct SMT Meetings	2012/10/12	2015/08/21	626 d?	R 161 800	180 h
151	1.4.3	Task 14.3: Ad hoc Support to Specialist Gro	2012/10/01	2015/05/26	571.54 d?	R 76 400	72 h



Project: 27525_130409 StudyProg
Date: 2013/05/13

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

Page 1

7. PSP TEAM AND RATES

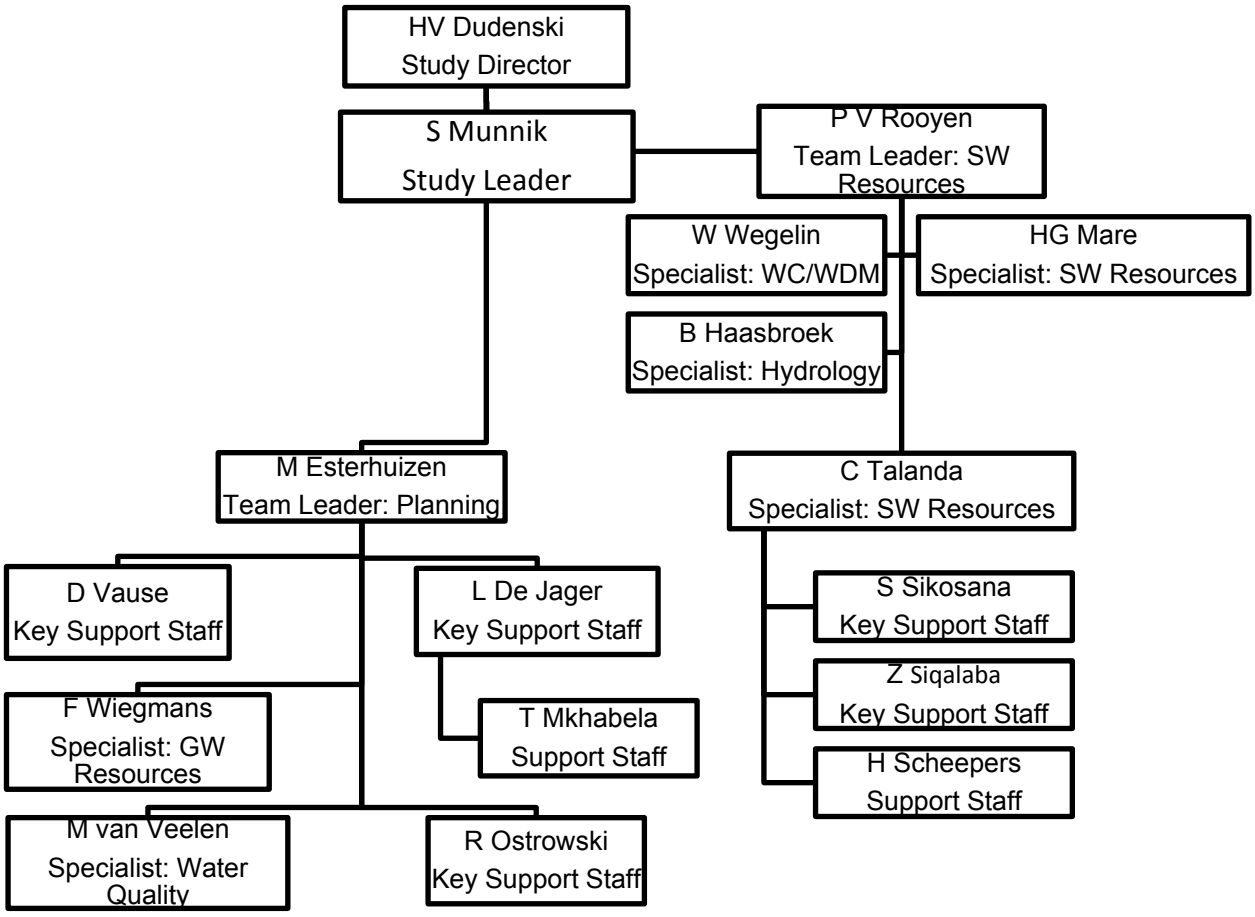
7.1 PSP TEAM

The PSP comprises of UWP, in association with WRP as main consultants, supported by other specialist consultants to address the various study elements defined by the ToR.

UWP, being the lead consultant, will be responsible for the overall study management and administration, as well as task-specific activities related to demographic analysis and water requirements, water services infrastructure and engineering, planning, reconciliation and review of strategies. In association, WRP will be responsible for surface water resource planning, WC/WDM and specific planning activities to complete the strategies. Other specialist service providers will be engaged as required, to address specific study components such as groundwater sources and water quality.

7.2 PSP TEAM ORGANOGRAM - OVERVIEW

An overview of the PSP team organogram (management and key members) is illustrated below:



8.4 CASH FLOW PROJECTION

A cash flow projection for the study is provided in **Table 8.4** overleaf. It should be noted that the quarterly expenditure listed here represents the expected invoicing amount and not necessarily payments. Below is a graphic representation of the cash flow projection for this study: professional fees, disbursements and total cost (quarterly and cumulative).

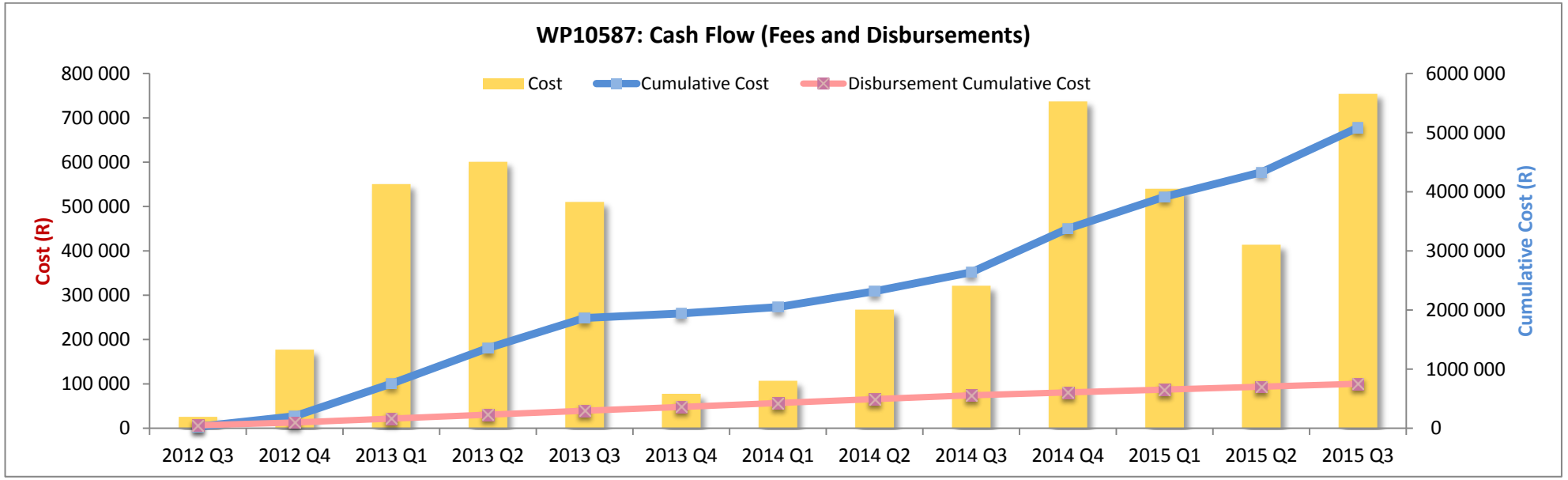


Table 8.4: Cash Flow Projection (Fees and Disbursements)

Year	Quarter	Costs: Professional Fees (R)		Costs: Disbursements (R)		Costs: Total (R)		% of total
		Excl. VAT	Cumulative	Excl. VAT	Cumulative	VAT	Incl. VAT	
2012	Q3	R 25 628	R 25 628	R 48 572	R 48 572	R 10 388	R 84 588	1%
	Q4	R 177 316	R 202 945	R 48 572	R 97 143	R 31 624	R 257 512	4%
2013	Q1	R 550 612	R 753 556	R 65 700	R 162 843	R 86 284	R 702 596	11%
	Q2	R 600 839	R 1 354 395	R 65 700	R 228 542	R 93 315	R 759 854	11%
	Q3	R 510 472	R 1 864 869	R 65 700	R 294 242	R 80 664	R 656 836	10%
	Q4	R 77 658	R 1 942 527	R 65 700	R 359 942	R 20 070	R 163 428	2%
2014	Q1	R 106 900	R 2 049 427	R 65 700	R 425 641	R 24 164	R 196 764	3%
	Q2	R 267 565	R 2 316 991	R 65 700	R 491 341	R 46 657	R 379 922	6%
	Q3	R 321 429	R 2 638 418	R 65 700	R 557 041	R 54 198	R 441 327	7%
	Q4	R 736 950	R 3 375 367	R 48 344	R 605 385	R 109 941	R 895 235	13%
2015	Q1	R 540 550	R 3 915 518	R 48 344	R 653 730	R 82 445	R 671 339	10%
	Q2	R 413 840	R 4 329 390	R 48 344	R 702 074	R 64 706	R 526 890	8%
	Q3	R 753 896	R 5 083 658	R 48 344	R 750 418	R 112 314	R 914 553	14%
Total		**R 5 083 655**	**R 5 083 658**	**R 750 418**	**R 5 376 913**	**R 816 770**	**R 6 650 845**	**100%**

APPENDIX A WP10587 – TERMS OF REFERENCE

DEPARTMENT OF WATER AFFAIRS
Directorate: National Water Resource Planning

WP 10587

IMPLEMENTATION AND MAINTENANCE OF RECONCILIATION STRATEGIES FOR ALL TOWNS

IN THE NORTHERN PLANNING REGION

Terms of Reference

July 2011

1. INTRODUCTION

In the process of compiling the Internal Strategic Perspectives (ISPs) for the original 19 Water Management Areas (WMAs) in the country, the then Department of Water Affairs and Forestry (DWAF) identified the need to develop strategies that will ensure adequate future reconciliation of water requirements and water availability in the main metropolitan areas, as well as in smaller municipal areas, towns, villages and clusters of villages.

Following on the development of the ISPs, the DWA Directorate: National Water Resource Planning (NWRP) has completed a series of reconciliation strategy studies for the metropolitan areas and larger cities in the country and, as the next step towards covering the rest of the country, carried out studies aimed at developing similar reconciliation strategies for the towns, villages and village clusters in the four planning regions (Northern, Eastern, Central and Southern).

The reconciliation strategies development for towns and village clusters focused on existing water resources and supply schemes, considered both current and expected future water requirements, along with the potential water resources available to meet these requirements. Strategies have aimed to reconcile water requirements with availability, with the overall objective being to keep towns and village clusters always with a positive water balance, at least for the planning horizon of 25 years (up to 2035 and beyond). Water resource management/development interventions necessary to achieve this objective form part of the strategies.

Strategies have been prepared with greater or lesser levels of certainty, depending on the availability and quality of information on actual water use, sources of water, demographics, growth initiatives, water losses, state of infrastructure etc. Towns and village clusters identified as already being in water deficit (where the water requirements exceeds availability), or likely to go into deficit in the near future; have been prioritised for more detailed work.

In many instances basic information for proper strategy development has been unavailable or sub-standard. Whilst a considerable effort has gone into providing good population data and realistic expected population growth rates, using both low-growth and high-growth scenarios modelled on local circumstances, demographic trends are not always easy to predict. One of the biggest gaps has been in information on actual water use, with water resource abstraction, supply and delivery volumes often woefully absent, due to the absence of proper metering. Strategies have been prepared from the best information base available at the time and where information was found poor this must be improved upon once metering systems are established and more reliable information becomes available.

In almost all areas water resources are either sufficient, or it should be possible to secure adequate resources, at least for the projected growth over the next 25 years. In some cases more storage will be required, in many additional groundwater will have to be sourced, and in almost all situations (and this includes the large metros) implementing Water Conservation and Water Demand Management (WC/WDM) measures is essential, to use a scarce resource efficiently.

The water reconciliation strategies for the towns and village clusters will enhance the ISPs or Catchment Management Strategies (CMSs) where they exist (and replaced the ISPs) and these strategies will be included in updates of the ISPs/CMSs.

These reconciliation strategies were developed with the intention to support DWA Regional Offices in giving consistent direction to District/Local Municipalities (Water Service Authorities) on efficient and sustainable water supply to towns.

Furthermore, the reconciliation strategies were also intended to be accepted by local government (WSAs) for the inclusion of water resource planning information in their Water Services Development Plans (WSDPs) and Integrated Development Plans (IDPs) which are aligned with the CMSs/ISPs.

For the reconciliation strategies to be implemented and to properly fulfil its purpose the water balance situation needs to be continuously monitored and all the strategies must be regularly reviewed, updated and maintained in general. This will ensure that intervention planning that form part of such a reconciliation strategy can be adjusted to account for any changes or developments that may have an impact on the projected water balance, or take cognisance of interventions implemented.

The purpose of this Terms of Reference (TOR) is to aid Professional Services Providers (PSPs) in submitting detailed proposals for the study: **Implementation and Maintenance of Water Reconciliation Strategies for All Towns in the Northern Planning Region.**

2. OBJECTIVE OF EACH STUDY

The overall objective of this project is systematic maintenance and improvement of water resource reconciliation strategies so that these strategies remain relevant, technically sound, economically viable, socially acceptable and sustainable thus enabling their implementation in the local government planning instruments (WSDPs and IDPs). The study is also to provide support with strategic interpretation of the additional water required in the strategies and to develop a separate strategy for proper communication of the strategies and their contents to Water Services Authorities.

3. STRATEGY STEERING COMMITTEE

To ensure the successful implementation of the All Towns Reconciliation Strategies the DWA will facilitate the establishment of regional **Strategy Steering Committee(s) (SSC)** for the **Implementation and Maintenance of Water Reconciliation Strategies for All Towns in the Northern Planning Region**. The **Strategy Steering Committee** will include relevant DWA directorates (National and relevant **Regional Offices**), Water Boards, Municipalities (District and Local) and other major stakeholders. In line with the required interventions identified in the reconciliation strategies for the towns and village clusters, the Strategy Steering Committee(s) will have the following objectives:

- To ensure that the scenario assumptions are monitored against actual data and that the strategies are updated as new data become available to maintain or improve their relevancy, technical soundness and economical viability, social acceptability and sustainability.
- To monitor and co-ordinate the effective inclusion of the recommended interventions and related actions proposed in the strategies in the local government planning instruments (WSDPs and IDPs). (The interventions include quantity and quality related measures);

- To recommend planning activities that will ensure reconciliation of requirements and available supply in the areas covered by the reconciliation strategies; To identify water quality related planning activities that are necessary to improve and sustain the water quality in the supply areas covered by reconciliation strategies; and
- To give support to the Directorate: NWRP in summarising and collating information derived from the completed and/or updated strategies on LM, DM or provincial level, as required for various Departmental planning initiatives.

4. SUPPORT GROUP AND PSP

For the Strategy Steering Committee (SSC) to achieve its objectives, technical, scientific and administrative support is required. This support will be facilitated through the DWA Directorate: National Water Resource Planning. The **Support Group (SG)** will include relevant DWA directorates (National and **Regional Offices**), and a **Professional Service Provider** (PSP) that needs to be appointed and co-opted into the **Support Group** to provide technical, scientific and administrative assistance.

Relevant Directorates of DWA Regional Offices (Limpopo, North West, Mpumalanga and Gauteng Regions) will form part of the Study Management Team and play a key role in the **Support Group** and the **Strategy Steering Committee** directing maintenance and implementation of the reconciliation strategies in District/Local Municipalities (Water Service Authorities).

4.1 Functions and scope of work of the Support Group

4.1.1 Supporting the Strategy Steering Committee in establishing and maintaining appropriate stakeholder engagement, e.g. regularly providing the latest information on strategy issues and recommendations to all local authorities and obtaining stakeholder inputs to those recommendations;

4.1.2 Assisting the Strategy Steering Committee in all activities that may arise from the execution of its responsibilities, where such activities require the inputs of the Support Group.

4.1.3 Assistance with the implementation of the current (updated and maintained) reconciliation strategies for the towns and village clusters:

- Monitoring implementation status and acceptance of all reconciliation strategies within the assigned area of responsibility (Planning Region)
- Revising of strategies where these were found to be flawed (not technically sound or economically viable), unsustainable, or unacceptable to the WSA.

4.1.4 Improve and update reconciliation strategies to prevent these becoming insufficient, inadequate, or out of date:

- Monitor the effectiveness of the strategies through the regular comparison of water requirements and water availability and making recommendations to the Strategy Steering Committee regarding maintenance or updates of the strategies;
- Periodically review and update the requirement scenarios based on the latest information such as population statistics based on new census data,

improvement in the service levels, reduction of losses (effective implementation of WC/WDM), implementation of augmentation interventions, etc;

- Monitor changes in water resource availability and update the strategies incorporating new schemes (typically RBIG and other grant schemes) as they come on line and revising water availability data as river flows and dam yields are periodically re-calculated and updated;
- Ensure that updated strategies are stored on the DWA database.

4.1.5 Combine reconciliation strategies for supply areas that depend on the same local resource and investigate effect of the combined strategy on the water availability from the resource.

4.1.6 Develop and implement a strategy to properly inform WSA's about the strategies and their content.

4.1.7 Water Conservation and Water Demand Management

- Monitor whether WC/WDM strategies and plans are being developed and implemented in WSAs and adequate budgets provided, as required by almost all strategies. This must be addressed in the earliest stages of these studies and the WSA or Local/ District Municipality must be encouraged and supported in this task. The Support Group and PSP will not be responsible for direct support but should alert the **Strategy Steering Committee** where progress is not visible or where help is needed, and should facilitate the WSA in drawing on expertise where required.
- Water Services Authorities must identify the occurrence and meter the extent of unaccounted-for or non-revenue water where WC/WDM is to be implemented. Losses occur at the resource, between the source and the Water Treatment Works, within the distribution network (WTW to tap), or as a result of wasteful and unmetered use.
- Clear and realistic targets must be set and regular assessments done to ensure that the targets are met.
- Draw on the experience of other provinces/WSAs and share successes and failures with both DWA and appropriate WSAs.

4.1.8 Groundwater, the re-use of water, rainwater harvesting

- Monitor and report on degree of and success in adoption and implementation of these technologies.
- Draw on the experience of other provinces/WSAs and share successes and failures with both DWA and appropriate WSAs.

4.1.9 Monitor variations of factors affecting water resources at local, regional (and national) level

- Water quality and how this impacts on resource availability.
- Identify and highlight situations where drought conditions are being experienced. Report on curtailments and other emergency measures. Ensure that water resource supply and disaster management plans are in place – both to meet immediate drought needs and for future resource security.

- Ensure that monitoring of the condition of rivers (water quality and quantity) and implementation of the Ecological Reserve is being done.
- Monitor whether theoretical supply is in harmony with actual availability of water as experienced by users. Is the planned supply sufficient and sustainable? And does actual water availability meet reasonable livelihood expectations? Is there room for improving service levels?
- Impacts of policy, technical or technology developments within government and DWA. Typically there may be changes to benchmark requirements, improvements to desalination technology, improvement in sustainable power supplies, etc. that could affect strategy direction.
- Climate change - identify the parameters that need to be monitored, ensure that monitoring networks are in place and maintained.

4.1.10 Monitor the impact of implementation of strategies

- Assess the success of each water resource reconciliation strategy in improving management, in bringing about efficiencies in water supply, distribution and use, and in reducing risk and water insecurity experienced by towns.

4.1.11 Liaison and consultation

- Where strategies have not been accepted/signed off by Water Services Authorities, seek reasons for their failure/reluctance to sign it off and attempt to remedy, revising strategies where these were found to be flawed (not technically sound or economically viable), unsustainable, or socially unacceptable to the WSA.
- Keep the content of the strategies high on the management agenda of the relevant District/Local Municipalities (WSAs) and encourage these structures to develop and maintain mechanisms for monitoring, support and implementation of the strategy recommendations.
- Prepare documentation and distribute information on request to keep relevant structures informed on water resource issues.

4.1.12 Capacity building and training

- The PSP being integrated into the Support Group will provide capacity building and training of the designated (up to 10) DWA Regional Office interns and or learner technicians within the scope of compiling, maintaining and implementing reconciliation strategies for the towns and village clusters.

4.2 Functions and scope of work of the PSP

4.2.1 The PSP being integrated into the Support Group will assist the Support Group in all activities that may arise from the execution of its responsibilities. The functions and scope of work of the PSP are practically identical with the Support Group activities listed above.

4.2.2 The PSP will also be required to provide technical and administrative support related to strategy maintenance, including:

- Compiling quarterly progress reports on major tasks performed;

- Updating all the reconciliation strategies in the Planning Region;
- Preparing proposals, evaluating technical reports and putting together presentations and conducting general technical and administrative tasks as requested by the Support Group; and
- Administrative support such as arranging meetings, preparing agendas and taking minutes of meetings and distributing these to all Support Group and Steering Committee members.

4.2.3 Skills Required

The PSP team must have the proven skills and capacity to undertake the assignment functions described in the previous sections. Some of the particular skills that would be required are:

- Experience in developing water requirement scenarios for municipalities;
- Experience in water resources planning including hydrology, the determination of system yields and water savings, the formulation and costing of infrastructure and other interventions and the determination of URVs, the unit cost of water and the effect on tariffs of incorporating new infrastructure;
- Experience in interpreting the results of the Water Resources Yield Model (WRYM) and Water Resources Planning Model (WRPM);
- Good knowledge of the processes and time lines that must usually be followed in order to implement an intervention;
- Experience in the determination of the environmental and social impacts of interventions;
- Ability to utilize selection processes to identify the most appropriate series of options to meet various requirement scenarios;
- Ability to synthesize recommendations in a complex environment;
- Ability to interact with and successfully manage multidisciplinary teams;
- Ability to communicate and interact with senior officials, decision makers and the stakeholdes;
- Ability to put together concise technical reports and presentations that would be understood by non-technical members; and
- Ability to manage stakeholder participation processes.

5. GENERAL INFORMATION

5.1 Area of responsibility

Four baseline studies for the Development of Reconciliation Strategies for All the Towns in the four Planning Areas were undertaken by the DWA, each in one of the four water resource planning regions in the country (North, East, South and Central), with between 200 and 400 strategies for each region. As the follow-up, **Implementation and Maintenance of Water Reconciliation Strategies for All Towns in the Northern Planning Region** study (same for the Eastern, Central and Southern Planning Regions) will be commissioned on the basis of the current NWRP planning regions. There will be one appointment per planning region as indicated in the table below.

DWA Planning Region	*Provincial division (approximate)*	*Water Management Areas (new definition)*
Northern (this Terms of Reference)	**Limpopo, Mpumalanga (part of), Gauteng (part of), North West (part of)**	**1 Limpopo, Crocodile West, Marico, Luvuvhu** **2 Olifants, Letaba**
Central	North West (part of), Gauteng (part of), Free State, Northern Cape	5 Vaal, Upper Orange 6 Lower Orange
Eastern	Mpumalanga (part of),KZN	3 Inkomati - Usutu 4 Pongola to Mtamvuna
Southern	Western Cape, Eastern Cape	7 Mzimvubu to Keiskamma, Fish to Tsitsikamma, 8 Gouritz, Breede 9 Olifants, Doring, Berg

Bearing in mind limited availability of PSP resources capable of undertaking these studies and in order to prevent undesirable scattering of the resources, the **PSPs will be allowed to bid for the study in one planning region only.**

Overall coordination and attendance to national issues will remain the function of the D: NWRP within the DWA.

5.2 Programme

It is envisaged that the study will cover a 36 months period, including a **6 months** Inception Phase.

5.3 Study Management

Management of PSP activities will be performed by the DWA Directorate: National Water Resource Planning. Relevant Directorates of DWA Regional Offices (Limpopo, North West, Mpumalanga and Gauteng Regions) will form part of the Study Management Team (SMT). Study Management Team meetings will take place at appropriate intervals. It is envisaged that these would coincide or be integrated with **Support Group (SG)** meetings, which in turn will be determined by the programme of **Strategy Steering Committee (SSC)** meetings. The extent of technical work stemming from Strategy Steering Committee requests for support and other instructions issued by the Committee, will also influence the need for Support Group and SMT meetings.
At this stage it is envisaged that **Strategy Steering Committee** meetings will take place twice a year, with **Support Group**/study management meetings at the same time as well as once or twice in between as required.

5.4 Reporting

Reporting will be structured as far as possible as an integral part of the information management task. The key to reporting will be the building and improving of knowledge databases so that knowledge is centralised rather than dispersed. Revised strategies will be added to the database. Reporting should as far as possible be through the viewing and interrogation of these databases. One approach

could be to write reporting programmes that generate reports from database information.

DWA will maintain a database of all strategies.

The PSP(s) will report to the Directorate: National Water Resource Planning, through the relevant DWA Project Managers, in accordance with their responsibilities for the original development of the reconciliation strategies.

Status of all strategies will be reported on within 6 months and again within 12 months of appointment, and then bi-annually, prior to the scheduled meetings of the SSC. A regional database of all strategies, indicating status, degree of implementation, and water resource situation, will be maintained by the Support Group. This could be in terms of a template directly on the DWA database. It must be possible for the DWA to interrogate this database at any time within three months of commencement of the task. Reporting will include (i) issues and the need for revision (ii) revised strategies.

Opportunities and prospects for local sustainable management structures to do monitoring must be highlighted.

6. INFORMATION TO BE PROVIDED IN THE PROPOSAL BY THE PSP

6.1 Extent of the Proposals

The text of the Proposal should be to the point and not longer than fifteen pages (A4) excluding CVs, at a font size of 11 and a line spacing of 1.5.

6.2 Summary of PSP Capacity and Capability

The Proposal must contain information about the capacity and capability of the study leader and other key personnel in the water resources planning domain. This information should include details of appropriate educational qualifications and previous involvement in water resources planning studies. PSPs that do not have all the required in-house capacity, capability or specific technical or scientific expertise in any particular aspect of the assignment are free to form associations or joint ventures with other PSPs that would provide the necessary expertise.

The Proposal documentation must provide details about the nature of such collaborations. The Study Leader must be specifically identified and the main responsibility structure to support him must be briefly presented. The capability and experience of the study leader in developing water requirement and availability reconciliation strategies will be especially important.

The Technical Proposal must give a detailed human resource (personnel) application breakdown specified in hours for each study Task. The Financial Proposal must give the same human resource application breakdown specified in hours and cost for each study Task, which would be a part of Study Cost Schedule.

6.3 Summary of Relevant Experience

The proposal submission must contain brief summaries of the PSP team's:

- Experience in planning, implementation and management of water resource development projects in Southern Africa;
- Experience of working in multi-disciplinary teams in the water resources and water services domain;
- Experience of water resource-related work in typical supply areas/ catchments that represent the range of catchment conditions and complexities in South Africa; and
- Experience in technical inputs and administrative support to meetings and related water resource study aspects.

6.4 CVs

Abridged CVs of all key personnel on the study team should be attached to the text of the proposal. The extent of each CV should be no longer than 1 (one) A4 page at font-size 11 and at single line spacing.

6.5 Transformation and Capacity-Building

6.5.1 General

The PSP being integrated into the Support Group will provide capacity building and training of the designated (up to 10) DWA Regional Office (Limpopo, North West, Mpumalanga and Gauteng) interns and or learner technicians within the scope of compiling, maintaining and implementing reconciliation strategies for the towns and village clusters (see par. 4.1.12).

PSPs are encouraged to put forward Historically Disadvantaged Individuals (HDIs) as key personnel and to form associations or joint ventures with Historically Disadvantaged Enterprises (HDEs). The Proposal documentation must provide clear details about the nature of such collaborations.

In the case of collaboration among different PSPs, the proposal shall be accompanied by a suitably worded letter from each participating firm, confirming their participation in the Association or Joint Venture, signed by a Principal of each participating firm.

The definition of an HDI/HDE follows that of DWA's current Policy.

Proposals must be explicit about the following:

- Percentage HDI ownership of each participating firm in Associations or Joint Ventures formed for this study;
- The roles of HDIs in Key Personnel and Technical Support positions; and
- The composition of HDEs that participate in Associations or Joint Ventures formed for this Project.

Two sets of data are required to be submitted by PSPs in the proposal and after completion of the project, namely: HDI ownership and HDI participation rate/fees earned

6.5.2 HDI ownership % and Project Rand Value

The ownership % for a single PSP is calculated as a direct % and in the case of JV's as a weighted average % based on the participation rate. Project Rand Value refers to the total contract value. This information has to be summarized in the following format:

HDI Ownership %	Total PSP Expenditure(Rm)	% of Total
0-10		
11-20		
21-30		
31-40		
41-50		
51-60		
61-70		
71-80		
81-90		
91-100		
TOTAL		100

A weighted average HDI expenditure % can be calculated using median ownership % values.

6.5.3 HDI Participation Rate and Professional Fees Earned

This requires a breakdown by project team member of fees earned on the basis of gender and disability. Professional fees earned information is important as it measures the extent of actual project involvement of all team members. This information needs to be summarized in the following format:

Project Staff Category	Professional Fee Expenditure (Rm)	% of Total
Black Male		
Black Female		
White Female		
Disabled Person		
Sub-total		
White Male		
TOTAL		100

6.6 Intellectual Property

All deliverables and product produced out of this assignment are the sole property of the Department of Water Affairs. If anyone or the PSPs wishes to use them or apply them elsewhere should do so after receiving approval by the Department.

6.7 Evaluation Criteria

6.7.1 Phase 1: Functional/technical Evaluation

CRITERIA	WEIGHT
Past Experience: Provide details of work of a similar nature undertaken by the bidding organisation. Specific details must be given to indicate the extent to which these previous studies relate to the work described in the Terms of Reference	20
Methodology: Present a short concise description of the scope of work, such as to reveal their **understanding of the study**. The proposed approach and methods to be used during the study should be outlined with emphasis on the important or critical aspects of each task. This section may also be used by the Consultant to briefly present alternative proposals, innovative approaches or other special features of their proposal.	45
Team Capability: A study team organogram must be provided indicating key positions such as Study Leader, Task Leader and supporting Specialists. The organogram shall also indicate the levels at which there will be interaction with the client and/or other interested bodies. Persons proposed for these positions must be identified and supported by CV's of one page each to be included in an **Appendix**. Brief capability statements must be given for each designated team member, emphasizing recent experience relevant to the task envisaged.	35
TOTAL	100

On the receipt of the proposals, the criteria shown in **Appendix A** will be used for the selection of the most suitable bidder to undertake the assignment.

This study is a highly technical work, which will also include application of supplicated models such as the Water Resources Yield Model and the Water Resources Planning Model. In order to demonstrate its ability to undertake this study successfully a bidder is required to offer a high degree of technical expertise and capability and present technically excellent study methodology.

For the above reason a bidder is expected to achieve a minimum threshold/required score for functionality of 70%, in order to qualify for further evaluation. Further evaluation is based on Price and Preference after the minimum score has been achieved by the bidder.

6.7.2 Notice

Please note that preference points claimed in the standard bidding documents provided will be audited by an independent professional service provider. PSPs that provide incorrect or false information regarding the ownership of their company run the risk of being restricted from participating in contracts with any Department in the sphere of Government. Particular attention should be given to the content of SBD 6, Paragraph 9.10.

7. STUDY BRIEFING

A briefing session will be held for the interested PSPs to introduce the study and clarify the tendering process. Attending a briefing session is compulsory. A briefing session will be held on a date that will be confirmed once the proposals have been invited at 10:30, Sedibeng Building Room 845 at DWA's head office at 185 Schoeman Street, Pretoria.

8. TAX CLEARANCE CERTIFICATE

No contract may be awarded to a person who has failed to submit an original and valid Tax Clearance Certificate from the South African Revenue Service ("SARS") certifying the taxes of that person to be in order or that suitable arrangement has been made with SARS. Note, that **copies** of the SARS Tax Clearance Certificate **are not valid** even if the expiry date on the copied certificate is not exceeded.

9. ARRANGEMENTS FOR SUBMISSIONS OF PROPOSALS

9.1 Format of Proposal Documentation and Contact Persons

Proposal documentation (Technical Proposal and Financial Proposal) is to be submitted in two (2) hard copies (Original and Copy). Receipt of each submission will be acknowledged. Enquiries about any aspect of this Proposal invitation can be obtained from the following persons:

- for administrative or procurement matters

  Mr. Fluks Koos Ntuli
  Telephone: 012-336-6677 or
  E-mail: ntulif@dwa.gov.za

- for technical matters

  Northern Region
  Mr. T Nditwani
  Telephone: 012-336-8189 or
  E-mail: nditwanit@dwa.gov.za

9.2 Deadline and Address for Submissions

Proposal documentation is to be submitted in accordance with form SBD 1.1 "Invitation to Bid", which will be issued with the bid documents.

APPENDIX B MINUTES OF SMT MEETINGS HELD

(SMT Meeting Minutes without the appendices)

DEPARTMENT OF WATER AFFAIRS

Project (WP10587): Continuation of the Northern Planning Region All Town Reconciliation Strategies (NP-RATS)

STUDY MANAGEMENT TEAM (SMT) MEETING No. 01

Date: 12/10/2012
Time: 14:30
Venue: UWP Consulting, Suite 205, Block 2, Monument Office Park, Monument Park, Pretoria

MINUTES OF MEETING

1. WELCOME

Mr T Nditwani, Department of Water Affairs, National Water Resource Planning (NWRP), welcomed all to the meeting.

2. ATTENDANCE AND APOLOGIES

All present introduced themselves and the attendance and apologies were noted. The attendance register is attached as **Appendix A**.

2.1 Attendance and Apologies

	NAME	ORGANISATION	CONTACT NO.	PRESENT/APOLOGY
1	Mr Johan van Rooyen	DWA: NWRP	082 808 5652 / 012 336 8814	A
2	Mr Tendani Nditwani	DWA: NWRP	082 888 5113	P
3	Mr Witek Jezewski	DWA: NWRP	082 809 5609	P
4	Mr Rens Botha	DWA: NW	082 808 9560 / 012 392 1308	P
5	Mr Seeff Rademeyer	DWA: GP	012 336 8358	A
6	Mr Bernie Badenhorst	DWA: LP	083 627 5912 / 015 290 1218	A
7	Mr Fluks Ntuli	DWA: NWRP	012 336 6677 072 1431 488	P
8	Mr Ockie van den Berg	DWA: NWRP	012 336 8613 082 809 2011	A
9	Mr Friedrich Slabbert	UWP	082 600 5798	P
10	Ms Sandra Munnik	UWP	082 822 8211 / 012 424 9707	P
11	Ms Monja Esterhuizen	UWP	084 580 5808 / 012 424 9709	P

12	Mr Pieter van Rooyen	WRP	012 346 3496	A
13	Mr Colin Talanda	WRP	012 346 3496	P
14	Mr Robert Ostrowski	UWP / Nurizon	083 285 8455	P

2.2 Distribution

All present and apologies as well as the following additional persons for information.

Name	Organisation	E-Mail
To be determined	DWA: WUE	

3. ADOPTION OF AGENDA

The agenda was approved by all and no additional items were proposed.

ITEM & TASK	ACTION
4. MATTERS ARISING FROM THE PREVIOUS MINUTES	
4.1 There are no matters arising from the previous meeting as this was the first meeting.	Info
5. PURPOSE OF THE MEETING	
5.1 Mr Nditwani opened the meeting and explained the purpose being the pre-inception meeting for the study, Continuation of the Northern Planning Region All Town Reconciliation Strategies. Note the title change from the Terms of Reference: Implementation and Maintenance of Reconciliation Strategies for All Towns in the Northern Planning Region.	Info
6. LITERATURE REVIEW	
6.1 Mr Botha stated that during the last meeting of the Crocodile West Reconciliation Strategy Review and Maintenance, it was decided not to impose any restrictions on operation, untill September 2013.	Info
6.2 The status of Water Management Area (WMA) Reconciliation Strategies for the DWA Northern Planning Regions are as follows: ➢ Crocodile (West) and Marico: review of the 2008 study currently in progress and developing system operating rules ➢ Levubu and Letaba: the study commenced in November 2011 ➢ Limpopo: not yet started ➢ Olifants: completed in March 2012	Info
6.3 Ms Munnik presented an overview of the status of Water Conservation and Water Demand Management (WC/WDM) in the Northern Planning Region, attached as **Appendix B**. In the red areas, no WC/WDM activities are currently taking place, in the green areas, there are WC/WDM activities and in the grey areas, no information is available. WC/WDM is a critical element in water services and water resources	Info, PSP (19/10/2012)

	planning. Mr Nditwani indicated priority areas that were identified and to take precedence in this study, being: ➢ Polokwane (Limpopo) ➢ Giyani (Limpopo) ➢ Musina (Limpopo) ➢ Makhado / Louis Trichardt (Limpopo) ➢ Mahikeng / Mafikeng (North West)	
6.4	Mr Botha noted other areas, such as the Madibeng Local Municipality (LM) in North West where WC/WDM is urgently required. It remains a challenge to all municipalities in developing and implementing such programmes. WC/WDM is a critical element for funding application from DWA programmes, but also to ensure the sustainability of water services infrastructure.	Info
6.5	Mr Botha indicated that the PSP should take note of the studies currently in the agriculture sector (Hartbeespoort and Groot Marico Irrigation Boards) to improve water efficiency.	Info
6.6	Mr Botha mentioned that the DWA Directorate involved with the Regional Bulk Infrastructure Grant Programme, specifically Mr George Constantinides, to be consulted during the course of the study.	Info
6.7	Ms Munnik will provide the presentation which was made at the Interm Water Supply Strategy Technical Task Team meeting (IWSSTTT) on 28 September 2012. It is provided with these minutes as **Appendix C**. There were 23 least resourced districts identified in South Africa, related to water services and water resources planning and interventions.	PSP (19/10/2012)
6.8	Mr Nditwani also mentioned the Strategic Infrastructure Projects (SIP's) as announced by national government, which need to be taken into consideration during this study, namely: ➢ SIP 1: Unlocking the Northern Mineral Belt with Waterberg as the Catalyst ➢ SIP 4: Unlocking the economic opportunities in North West Province ➢ SIP 6: Integrated Municipal Infrastructure Project (23 least resourced districts) ➢ SIP 9: Electricity Generation to support socio-economic development ➢ SIP 17: Regional Integration for African cooperation and development	Info
6.9	Ms Esterhuizen briefly outlined the potential demographic and service level data sources, such as the Census 2001, Census 2011 (may be available by November 2012), DWA National Information System (NIS) and ESKOM's Spot Dwelling Count (2010). Mr Nditwani mentioned the Kayamandi report which did a reconciliation of available demographic information.	Info
6.10	The DWA's Water Use Licensing database or WARMS would provide input where possible on rightful water use and licensing.	Info
6.11	Other data sources such as the Water Services Development Plans (WSDP), Water and Sanitation Master Plans and linkages to the Integrated Development Plan (IDP) processes of municipalities are important considerations.	Info
7.	**PROJECT ORGANISATION SET-UP AND MEETING SCHEDULE**	

7.1	The Study Management Team (SMT) would consist of the study leader, Mr Nditwani, representatives from each DWA region (applicable to the study) and the Professional Service Provider (PSP). The SMT would meet bi-monthly to discuss project progress, deliverables and other items as deem necessary.	Info
7.2	The Support Group refers to specialist input as required.	Info
7.3	Mr Jezewski explained that the Strategy Steering Committee would consist of the SMT and stakeholders. The composition of the latter not yet defined at this stage.	Info
8.	**COMMUNICATION**	
8.1	The PSP to prepare the minutes of the SMT meeting and provide to Mr Nditwani within a week for approval.	PSP (13/12/2012)
8.2	Mr Nditwani stated that a letter to introduce the study to stakeholders be prepared, once the project programme has been reviewed based on today's discussions.	DWA (26/10/2012)
8.3	The DWA maintains a website for similar studies. Once this study has progressed sufficiently, the PSP should coordinate with the DWA on the content to be made available on the internet for this specific study.	DWA, PSP (04/2013)
8.4	The PSP to provide bi-monthly progress reports in preparation of the SMT meeting, based on an existing format which Mr Nditwani will provide.	PSP (13/12/2012)
8.5	No news release to be made untill such time as all the PSPs have been appointed for all DWA Regions' All Towns studies.	Info
9.	**DISCUSSION AND COMMENTS**	
9.1	Mr Nditwani expressed the need for summary reports of the All Town Strategies for the Northern Planning Region, similar to the summary reports available for the Southern Planning Region. This activity to be considered in the review of the project programme and deliverables.	DWA, PSP (19/10/2012)
9.2	Mr Nditwani confirmed that the existing All Towns Strategies for the Northern Planning Region has only been signed off by the DWA National Water Resource Planning Directorate. The PSP to obtain sign-off of the acceptible strategies from the applicable Water Services Authorities to ensure the strategies form part of the WSDP and IDP process.	PSP (
9.3	The representative of the DWA Gauteng Region, Mr Seef Rademeyer to be invited for future SMT meetings.	PSP (13/12/2012)
9.4	The representative of the DWA Water Use Efficiency Directorate, (Mr Nditwani to provide details) to be invited for future SMT meetings.	DWA, PSP (13/12/2012)
10.	**PROJECT PROGRAMME AND DELIVERABLES**	
10.1	Mr Nditwani requested the PSP to review the project programme and deliverables based on today's Pre-Inception Meeting and provide an updated project programme and deliverables, together with the minutes of this meeting.	PSP (19/12/2012)

10.2	The DWA Directorate Water Services is arranging a workshop between the DWA Directorates Water Services and Integrated Water Resource Planning, and the appointed PSPs for the All Towns Studies. Mr Nditwani would provide the details of the workshop by Tuesday, 16 October 2012.	DWA, TN (16/10/2012)
11.	**DATE OF NEXT MEETING AND CLOSURE**	
11.1	The next SMT meeting will be held in December 2012, date and venue to be confirmed.	All 13/12/2012
11.2	Mr Nditwani thanked all members for their participation and adjurned the meeting at 16:30.	Info

Meeting notes compiled by Ms M Esterhuizen of UWP Consulting

water affairs
Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

Project (WP10587): Continuation of the Northern Planning Region All Town Reconciliation Strategies (NP-RATS)

STUDY MANAGEMENT TEAM (SMT) MEETING No. 02 MINUTES

Held at UWP Consulting Suite 205, Block 2, Monument Office Park, Monument Park, Pretoria, on 3 December, 2012 at 14h30.

1. WELCOME

Mr T Nditwani, Department of Water Affairs, National Water Resource Planning (NWRP), welcomed all to the meeting.

2. ATTENDANCE AND APOLOGIES

All present introduced themselves and the attendance and apologies were noted. The attendance register is attached as **Appendix A**. Mr T Nditwani confirmed the invitees from DWA, representing the Regional Offices (North West, Limpopo, Mpumalanga and Gauteng) and applicable Directorates to attend this (SMT) meeting. The following positions still require representation at this meeting and Mr T Nditwani to confirm and provide the relevant contact persons:

DWA (04/01/2013)

- DWA: Mpumalanga Regional Office (Ms Mamogala Musekene);
- DWA: Limpopo Regional Office (Mr Bernie Badenhorst / Mr Rexson Mtileni);
- DWA: Directorate Water Use Efficiency (Mr Moabelo Koena); and
- DWA: Directorate: National Hydrological Services (groundwater planning and quality, Mr Fanus Fourie).

2.1 ATTENDANCE

Mr Tendani Nditwani	DWA: NWRP (North)
Ms Dragana Ristic	DWA: NWRP (Central)
Mr Ockie van den Berg	DWA: OA
Mr Friedrich Slabbert	UWP
Ms Sandra Munnik	UWP
Ms Monja Esterhuizen	UWP
Mr Pieter van Rooyen	WRP
Mr Colin Talanda	WRP
Mr Robert Ostrowski	UWP / Nurizon

2.2 APOLOGIES

Mr Witek Jezewski	DWA: NWRP (North)
Mr Rens Botha	DWA: NW
Mr Seef Rademeyer	DWA: NWRP (Central)
Mr Bernie Badenhorst	DWA: LP
Mr Fluks Ntuli	DWA: NWRP
Mr Paul Herbst	DWA: WUE

2.3 DISTRIBUTION

All present and apologies as well as the following additional persons for information: Mr Niel van Wyk, DWA: NWRP (East).

3. APPROVAL OF AGENDA

One additional item was proposed to add to the agenda: to provide feedback on the DWA All Towns PSP coordination workshop held on 19 October 2012. Mr T Nditwani also requested that the matters arising from the previous minutes, be added as sub-items to the agenda. Mr T Nditwani further suggested removing the item “Discussion and Comments” unless it relates to a presentation or specific items leading up to a discussion.

4. PURPOSE OF THE MEETING

4.1 The purpose of today’s meeting is to report on progess of the Inception Phase of this study.

5. MINUTES OF THE PREVIOUS MEETING

5.1 APPROVAL

The minutes were approved with the following corrections:

5.1.1 Page 1, item 2.1: Mr Johan van Rooyen is not part of the SMT.

5.1.2 Page 1, item 2.1: Correction of spelling – Mr Seef Rademeyer.

5.1.3 Page 1, item 2.1 and page 4, item 9.3: DWA: GP to be DWA: NWRP (Central) where applicable.

5.2 MATTERS ARISING (NOT DISCUSSED IN THE ITEMS TO FOLLOW)

5.2.1 Item 6.3: The PSP took into consideration the five (5) areas of priority for the continuation of the All Towns Strategies, in the overall evaluation and prioritisation of existing strategies.

5.2.2 Item 6.7 and 6.8 Ms Munnik provided the presentations which were made at the Interm Water Supply Strategy Technical Task Team Meeting, held on 28 September**.** The PSP took into consideration the 23 District Municipalities (SIP: 6),

along with the other SIP's in the overall evaluation and prioritisation of existing strategies	
5.2.3 Item 8.2: The PSP to provide a draft Letter of Introduction of the Study to Mr T Nditwani for consideration.	07/12/2012
5.2.4 Item 8.4: The PSP to provide a statement of progress together with the first invoice and a progress report before 13/12/2012.	12/12/2012
5.2.5 Item 9.1: The PSP to provide the DM Summary Report (presented today in hard copy format), to Mr T Nditwani for comment.	04/12/2012
5.2.6 Item 9.2: Mr T Nditwani to discuss the sign-off of approved strategies with the various DWA Regional Offices applicable to the Northern Planning Region.	25/01/2013
5.2.7 Item 9.3: The PSP invited Mr Seef Rademeyer – DWA NWRP (Central) – to the SMT as requested by Mr T Nditwani.	
5.2.8 Item 9.4: The PSP to request DWA: WUE to nominate a representative to attend the next SMT meeting.	
5.2.9 Item 10.1: The PSP reviewed the project programme, but have not yet updated the programme based on the latest strategy evaluation and prioritisation.	11/02/2013
5.2.10 Item 10.2: The PSP attended the DWA workshop to coordinate PSP's appointed for the All Towns Strategies – all regions – and provided feedback at today's meeting under item 6.2 Communication.	
6. RECURRING TASKS	
6.1 PROJECT ORGANISATION SET-UP AND MEETING SCHEDULE	
6.1.1 The PSP to provide prospective dates for the 2013 SMT meetings, with due consideration of other DWA activities and initiatives. Mr P van Rooyen to assist in providing appropriate dates, based on WRP's involvement in the Letaba and Levuvhu Water Reconciliation Strategy.	PSP (11/12/2012)
6.1.2 It was decided that the SSC (comprising of WSA's, WSP's, DWA representatives, etc.) workshops be held per province and that the All Towns PSP's integrate the workshops as follows (applicable to the Northern Planning Region): ➢ North West: DWA NWRP North to coordinate; ➢ Limpopo: DWA NWRP North to coordinate; ➢ Mpumalanga: DWA NWRP Central to coordinate; and ➢ Gauteng: DWA Central to coordinate.	
6.1.3 Mr P van Rooyen to provide Ms M Esterhuizen the minutes of the last SSC held on the Levuvhu and Letaba Water Reconciliation Strategy in order to supplement the stakeholder contact list for the purpose of this study.	PSP (07/12/2012)
6.1.4 The target date to start with the provincial workshops (SSC meetings) is March 2013. The PSP and DWA to inform potential stakeholders of the study (letter of introduction) and SSC meeting by February 2013.	DWA, PSP (05/02/2013)

6.2 COMMUNICATION

6.2.1 Ms M Esterhuizen provided feedback on the DWA Coordination Workshop, held on 19 October 2012 highlighting some of the key items discussed such as allocation of DWA officials to regions, information management, WC/WDM and inter-relations between DWA Directorates.

6.2.2 Mr T Nditwani enquired from Ms D Ristic whether the process to upload documents on the project website is now easier. Mr T Nditwani and relevant DWA officials will discuss the project website functionality and specification during an internal (DWA) meeting. — DWA (31/01/2013)

6.2.3 Progress reports were addressed under Matters Arising.

6.2.4 The Inception Phase to be nearing completion and DWA to discuss the approach before an official news release can be made to announce this study. WRP to prepare a background document to accompany / be used for the news release. — DWA, PSP (15/02/2012)

6.3 PROJECT PROGRAMME AND DELIVERABLES

6.3.1 Ms M Esterhuizen discussed the format and layout of the draft District Municipality Summary Report – prepared for the Bojanala Platinum DM. A hard copy was provided to Mr T Nditwani and a soft copy to be provided by the PSP for comment. All present were in agreement as to the approach (based on existing strategies only) and that the document should be informative enough for managerial purposes, but not too technical as these details can be obtained from the individual strategies. — PSP, DWA (13/12/2012)

6.3.2 Ms Esterhuizen explained the process of prioritisation of existing strategy reports – for the continuation of this study. The first order priorities, based on the five (5) identified areas by DWA and the strategies indicating a current deficit in the water balance, came to 113 out of the total existing strategies of219. The list of strategies and priorities will be further discussed during the SSC workshops to be held in 2013. — DWA, PSP (29/03/2012)

6.3.3 Mr T Nditwani confirmed that one of the five priority areas – Giyani – is applicable to the whole system, including all schemes constituting the Giyani cluster.

6.3.4 The SIP areas are still not defined and will be considered as more information becomes available.

6.3.5 Mr T Nditwani mentioned that the DWA NWRP prepared a letter earlier in the year for the DWA Directorate: RBIG Programme, in order to state the available water resources for RBIG projects in the Limpopo Province. Mr T Nditwani to provide the letter to the PSP. — DWA (13/12/2012)

6.3.6 It was noted that of the existing strategies to be updated, some may only require minor updates to reflect the current situation. Other strategies would require significant updates to incorporate new information on water services and water resources. The study budget should be managed accordingly.

6.3.7 Ms M Esterhuizen noted that there are some clusters for which documents were not available or not yet provided – the list of these to be provided to Mr T Nditwani. — PSP, DWA (07/12/2012)

7. FEE ACCOUNTS

7.1 WRP provided an invoice format used for DWA: NWRP to UWP, to consider together with UWP's internal invoice format used for DWA:NWRP in the preparation and submission of the first invoice. Ms S Munnik indicated that the first invoice will be delivered still before the end of 2012. — PSP (12/12/2012)

8. GENERAL

Mr Nditwani indicated his availability to the PSP team for ad-hoc discussions should the need arise in order to ensure continued progress in this study.

9. NEXT MEETING

9.1 The next SMT meeting will be held on 11 February 2013, at the offices of UWP Consulting, Monument Park, at 13h00. — All (11/02/2013)

10. CLOSURE

10.1 Mr Nditwani thanked all members for their participation and adjurned the meeting at 16:35.

Meeting notes compiled by Ms M Esterhuizen of UWP Consulting

water affairs
Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

Project (WP10587): Continuation of the Northern Planning Region All Town Reconciliation Strategies (NP-RATS)

STUDY MANAGEMENT TEAM (SMT) MEETING No. 03 MINUTES

Held at UWP Consulting Suite 205, Block 2, Monument Office Park, Monument Park, Pretoria, on 11 February, 2013 at 13h00.

1. WELCOME

1.1 Mr T Nditwani, Department of Water Affairs, National Water Resource Planning (NWRP), welcomed all to the meeting.

2. ATTENDANCE AND APOLOGIES

2.1 The attendance and apologies were noted. The attendance register is attached as **Appendix A**. Mr T Nditwani noted the continuous absense of DWA Regional Offices' (RO) representatives to the SMT meeting. It was decided that the SMT meeting venues would be rotated amongst the RO's. The next SMT meeting may be at the North West RO – Mr Rens Botha (RB) to confirm a suitable venue. PSP (14/03/2013)

2.2 Ms M Esterhuizen received an apology from Mr Fanus Fourie (Directorate: Water Resource Planning Systems). Mr Fourie suggested Mr Willem du Toit (Groundwater – Limpopo) to be invited to the SMT. Mr T Nditwani indicated that Mr du Toit to be invited as and when groundwater-related issues pertaining to the Limpopo Province arise (providing specialist input).

2.3 A letter to be sent to the North West and Mpumalanga RO's, stating the importance of attending the SMT. Mr Witek Jezewski emphasised the initial requirement as part of the procurement process, to have close involvement of the RO's in this study. DWA, PSP (15/02/2013)

2.4 The PSP to ensure that the new RBIG Programme Managers within each province (North West, Limpopo, Gauteng and Mpumalanga) are invited to the SMT. PSP (15/02/2013)

2.5 It was noted that representatives from the DWA: NWRP Central Region offered their apologies. They would attend matters of specific importance related to the Central Region (applicable to this study: Gauteng Province) as and when required. (They have partial proxy via the sub-consultants WRP, present in this meeting, which are also involved in the All Town Study for the Central Region).

2.6 ATTENDANCE

Mr Tendani Nditwani	DWA: NWRP (North)
Mr Witek Jezewski	DWA: NWRP (North)
Mr Rens Botha	DWA: NW
Mr Bernie Badenhorst	DWA: LP
Mr Ockie van den Berg	DWA: OA
Ms Monja Esterhuizen	UWP
Ms Tsako Mkhabela	UWP
Mr Pieter van Rooyen	WRP
Mr Colin Talanda	WRP
Mr Robert Ostrowski	UWP / Nurizon

2.7 APOLOGIES

Mr Seef Rademeyer	DWA: NWRP (Central)
Ms Dragana Ristic	DWA: NWRP (Central)
Mr Fluks Ntuli	DWA: NWRP
Mr Fanus Fourie	DWA: NGS Project Manager
Mr Jabu Maluleke	DWDA: RBIG PM - GP
Mr Koena Moabelo	DWA: WUE
Ms Mamogala Musekene	DWA: MP
Ms Sylvia Rikhotso	DWA: RPM - LP
Mr Niel van Wyk	DWA: NWRP
Mr Friedrich Slabbert	UWP
Ms Sandra Munnik	UWP

3. DISTRIBUTION

All present and apologies.

4. APPROVAL OF AGENDA

4.1 The agenda was approved by all present at the meeting, except for one addition: Mr Ockie van den Berg requested an item to be added to discuss Lephalale, under item 9.1 – Overview of Prioritised Strategies.

5. PURPOSE OF THE MEETING

5.1 The purpose of today's meeting is to report on progess on the Continuation of the Northern Planning Region All Town Reconciliation Strategies.

6. MINUTES OF THE PREVIOUS MEETING

6.1 APPROVAL

6.1.1 The minutes were approved with the following corrections:

- Page 3, item 6.1.2: Mpumalanga: DWA NWRP to be corrected as Eastern (Region) and not Central (Region); Add the DWA Directorate to Gauteng: DWA (NWRP) Central.

7. MATTERS ARISNG FROM THE PREVIOUS MINUTES

7.1 LETTER OF INTRODUCTION AND INVITATION TO SCC WORKSHOP

7.1.1 It was confirmed that the letter of invitation to the SCC Workshop has been approved by DWA; however confirmation of venues and costs for the SCC Workshops to be hosted in Limpopo and North West are pending. Mr T Nditwani indicated that an electronic signature would be used on the invitation letters – still to be provided to the PSP. — PSP (15/02/2013)

7.2 DM SUMMARY REPORTS

7.2.1 Mr T Nditwani issued the new MS Excel format of the District Summary Reports: tabular format of core information, water balance graphs, extracted Executive Summaries and extracted Conclusions and Recommendations, per cluster report. It was noted that the purpose of this Report is to indicate the water situation in each town/cluster whilst making the required information from the individual cluster strategies easily available. The PSP to apply this format for the development of the DM Summary Reports, based on the existing strategies. — PSP (28/02/2013)

7.2.2 Mr P van Rooyen suggested that in future the water balance graph (currently an image) in the DM Summary Report, be rather created in MS Excel and linked to the real data to reflect changes and updates.

7.2.3 Mr R Ostrowski suggested that a locality map also be included to indicate the town and scheme areas.

8. PROJECT ORGANISATION SET-UP AND MEETING SCHEDULE

8.1 CONFIRMATION OF SMT MEMBERS

8.1.1 Confirmation of the SMT members was discussed under item 2 of the Agenda, Attendance and Apologies.

8.2 SMT MEETING SCHEDULE FOR 2013

8.2.1 It was noted that following SMT meeting is intended to be held in the NW Region, Mr R Botha to confirm a suitable venue (between the Hartbeespoort Dam and Mmabatho offices). — DWA (08/03/2013)

8.2.2 Ms M Esterhuizen to prepare and forward preliminary dates for the SMT meetings for 2013 to Mr T. Nditwani for approval. For noting, the SMT meetings, held bi-monthly, may be scheduled (subject to confirmation of date and venue) as follows:

- 8 April 2013 (NW);
- 10 June 2013 (LP);
- 12 August 2013 (MP);
- 14 October 2013 (GP); and
- 9 December 2013 (GP).

PSP (15/02/2013)

9. COMMUNICATION

9.1 REPORT BACK BY MEMBERS TO ORGANISATIONS / INSTITUTIONS SINCE PREVIOUS MEETING.

9.1.1 Ms M Esterhuizen reported that the DWA had an All Towns National Coordination meeting on 23 January 2013. Mr Stephen Marais (Water Services Planning & Information) and Mr Paul Herbst (Water Use Efficiency) made presentations. During this meeting, Ms Isa Thompson from the DWA: NWRP (Southern Region) indicated that the study budget may not allow for all strategies to be reviewed and updated in detail. Mr T Nditwani confirmed that this may be the case and as explained by Mr P van Rooyen, some of the existing strategies may only require an addendum addressing the status / relevancy of the current strategy.

9.1.2 Mr R Botha informed members that there is a new Project Planning Committee established by COGTA (Dept. of Cooperative Governance and Traditional Affairs) in the NW Province. The Committee plays a role in the evaluation and funding of major projects, but noted that participation of local government is lacking. Mr R Botha indicated that one function is to evaluate feasibility study reports, upon which Mr van Rooyen requested Mr Botha to provide such reports (applicable to this study and the Central Region's study).

DWA (28/02/2013)

9.2 WEBSITE

9.2.1 Mr W Jezewski noted that the link on the DWA website (All Town Strategies – Strategy Portal) for the Koster strategy is incorrectly displaying another document. DWA to resolve internally.

DWA (28/02/2013)

9.2.2 Mr T Nditwani is to discuss internally with DWA if the Northern Planning Region All Town Reconcilliation Strategies will have its own website (similar to that of the bigger Reconciliation Strategies on Water Management Area level).

DWA (05/04/2013)

9.2.3 Mr B Badenhorst requested a short presentation providing an overview of the Northen Planning Region All Town Reconcilition Stratgies study that can be used in regional meetings. Ms M Esterhuizen to provide a draft by the end of next week. Mr T Nditwani indicated that there is a presentation on the National Water Resource Strategy (NWRS), which could serve a starter template.

PSP (22/02/2013)

9.3 PROGRESS REPORT

9.3.1 Ms M Esterhuizen indicated that a short progress report along with a fee account will be issued to Mr T Nditwani. In addition to the reconnaissance review of existing strategies, their prioritisation and the DM Summary Reports, the PSP obtained the current release (provided only up to ward level) of the Census 2011 data. This and the national geodatabase from the DWA Directorate: Water Services Planning & Information is being used to develop a GIS for this study. Mr B Badenhorst noted that the Limpopo Region had done an extensive exercise to determine water services levels on a town level and it should be taken into consideration if not done already.

9.4 NEWS RELEASE

9.4.1 There is no official news release yet from the DWA on this study (or the other Planning Regions). It was further noted that this would be retained on the agenda.

10. PROJECT PROGRAMME AND DELIVERABLES

10.1 OVERVIEW OF PRIORITISED STRATEGIES

10.1.1 Mr O van den Berg indicated that the DWA:OA is still evaluating the water requirements (and water resources) in the Lephalale Local Municipality (LLM), based on the domestic, industrial and mining needs. The LLM recently indicated the rural areas to be provided with high levels of service and Mr van den Berg enquired from Mr B Badenhorst if the DWA: LP has made provision for this expected higher water requirements. The PSP to ensure that this area is included as a priority area, based on the high development needs (domestic as driven by mining and power generation). — PSP (08/03/2013)

10.1.2 Ms M Esterhuizen provided a brief overview of the priority allocation of existing strategies. The list and maps are attached under **Appendix B**. At present, 113 out of 222 strategy reports fall within the prioritisation criteria. Mr R Botha requested that an explanatory note be added in the list to clarify the priority allocation per strategy. Mr T Nditwani stressed the importance of the DWA RO's providing input on the priority allocation. The PSP to arrange a session in order to review the list together with DWA: NWRP and the RO's (this to take place prior to the first SSC Workshops). — DWA, PSP (20/03/2013)

10.2 PROVINCIAL SCC WORKSHOPS

10.2.1 Mr T Nditwani to discuss the DWA RO contribution to the SCC workshops with the DWA North West and Limpopo Regions. — DWA (15/02/2013)

10.2.2 It was decided that all affected stakeholders, i.e.: local government, COGTA, SALGA, Water Boards and big water users such as from agriculture, industry mining be invited to the SSC workshops. Even though non-domestic users will be invited, they are included as many share the same water resources as the domestic users. Ms M Esterhuizen to discuss the invitation list with Mr T Nditwani for approval. — DWA, PSP (19/02/2013)

10.2.3 The PSP to finalise and send the invitations once the SSC workshop dates, venues — PSP (22/02/2013)

and stakeholder list have been confirmed.

10.2.4 Tentative dates and locations for the first SSC workshops are as follows:

- Limpopo: 17 April 2013 (Polokwane); and
- North West: 24 April 2013 (Mmabatho or Klerksdorp).

10.2.5 The agenda of the workshops to include a presentation to introduce the study, followed by the priority allocation of strategies. Delegates will then provide their input in the priority allocation in the form of break-away sessions, lead by faclitiators.

10.3 INCEPTION REPORT

10.3.1 The Inception Report to include an updated study programme, budget allocation and approach for the study period three (3) years. — PS (19/04/2013)

10.3.2 Mr T Nditwani confirmed that the Inception Report is due in April 2013. — PSP (19/04/2013)

10.3.3 The PSP to arrange a screening session with Mr Tendani to identify obvious errors or gaps (and extent of) in the strategies in order to assist in determining the activities and priorities for Phase 2 of the study. — PSP, DWA (22/03/2013)

10.3.4 Ms M Esterhuizen prepared a draft Communication and Stakeholder Engagement Strategy. It is attached for review by SMT members under **Appendix C**. — DWA (28/03/2013)

11. FINANCIAL

11.1 The first (01) invoice since the commencement of this study was issued to Mr T Nditwani (DWA) – receipt by Mr W Jezewski. — DWA (28/02/2013)

11.2 Mr T Nditwani mentioned that the DWA announced some budget cuts which will not affect the budget of the study, but may have an influence on the forecast and cashflow for the 2013/2014 financial year. The PSP to provide an indicative cash flow for the study for the three financial years (2013/2014, 2014/2015 and 2015/2016). — PSP (28/02/2013)

12. NEXT MEETING

12.1 The next SMT meeting will be held on 08 April 2013, at the offices of DWA – North West Region, at 13h00. The venue to be confirmed (DWA Metsi a Me offices, Kurper Oord: on Simon Bekker Ave, next to Hartbeespoort Boating Club, Hartbeespoort Dam). — DWA, PSP (08/03/2013)

13. CLOSURE

13.1 Mr Nditwani thanked all members for their participation and adjourned the meeting at 15:35.

Meeting notes compiled by Ms T Mkhabela of UWP Consulting

water affairs
Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

Project (WP10587): Continuation of the Northern Planning Region All Town Reconciliation Strategies (NP-RATS)

STUDY MANAGEMENT TEAM (SMT) MEETING No. 04 MINUTES

Held at DWA North West Offices, Kurper Oord (on Simon Bekker Ave, next to Hartbeespoort Boating Club), Hartbeespoort, on 08 April, 2013 at 13h00.

1. WELCOME

1.1 Mr T Nditwani, Department of Water Affairs, National Water Resource Planning (NWRP), welcomed all to the meeting.

2. ATTENDANCE AND APOLOGIES

2.1 The attendance and apologies were noted. The attendance register is attached as **Appendix A**. Mr T Nditwani noted the absence of the representatives from the DWA Mpumalanga Regional Office and as well as some of the representatives from the DWA North West Regional Office (Water Services). However a representative from the Mpumalanga DWA Regional Office was present at the strategies screening session held on 04 April 2013.

2.2 Ms M Esterhuizen informed SMT members that the project director of the PSP for this study changed from Mr GFB Slabbert to Mr (HV) Christo Dudenski due to Mr Slabbert taking early retirement.

2.3 ATTENDANCE

Mr Tendani Nditwani	DWA: NWRP (North)
Mr Witek Jezewski	DWA: NWRP (North)
Ms Dragana Ristic	DWA: NWRP (Central)
Mr Fanus Fourie	DWA: WRPS (Integrated Hydrology Planning - Groundwater)
Mr Rexson Mtileni	DWA: LP (Water Sector Support)
Ms Rhandzu Maringa	DWA: LP (Regional Bulk Infrastructure Programme)
Mr Rens Botha	DWA: NW (Water Resource Management)
Ms Monja Esterhuizen	UWP
Ms Tsako Mkhabela	UWP
Mr Colin Talanda	WRP

Ms Hester Scheepers	WRP

2.4 APOLOGIES

Mr Seef Rademeyer	DWA: NWRP (Central)
Mr Ockie van den Berg	DWA: OA (North)
Mr Paul Herbst	DWA: Water Use Efficiency
Mr Koena Moabelo	DWA: Water Use Efficiency
Mr Bernie Badenhorst	DWA: LP (Development and Planning)
Mr Lesiba Richard	DWA: LP (Regional Bulk Infrastructure Programme)
Ms Mamogala Musekene	DWA: MP (Water Use and Regulation)
Mr Johan van Aswegen	DWA: MP (Planning and Development)
Mr Ernest Kubayi	DWA: MP (Regional Bulk Infrastructure Programme Project Manager)
Ms Mandisa Matiso	DWA: MP (Water Sector Support)
Mr Silo Kheva	DWA: NW (Regional Bulk Infrastructure Programme Project Manager)
Mr Neo Thulo	DWA: NW (Water Sector Support)
Ms Shongi Fiona Maluleke	DWA: LP (Water Sector Support)
Mr Jabu Maluleke	DWA: GP (Regional Bulk Infrastructure Programme)
Ms Sylvia Rikhotso	DWA: GP (Water Sector Support)
Mr Niel van Wyk	DWA: NWRP (Eastern)
Mr Pieter van Rooyen	WRP
Mr Robert Ostrowski	Nurizon

3. ACCEPTANCE OF AGENDA

3.1 The agenda was approved by all present, with the following changes: Mr Nditwani made the request to rename item 10 from “Fee Accounts” to “Financial Matters” and that an item be added (as item 9.3) for the discussion of the WC/WDM programme implemented by Magalies Water.

4. PURPOSE OF THE MEETING

4.1 The purpose of today’s meeting is to report on progess on the Continuation of the Northern Planning Region All Town Reconciliation Strategies.

5. MINUTES OF THE PREVIOUS MEETING

5.1 APPROVAL

5.1.1 The minutes were approved with the following corrections:

- Page 1, item 2.5: Central Region (applicable to this study: Gauteng Province) to be corrected as Central Region (applicable to this study: Gauteng and North West Province).
- Page 2, item 2.7: Mr Fanus Fourie – DWA: NGS Project Manager to be corrected as Mr Fanus Fourie – DWA: Water Resource Planning Systems and Ms Sylvia Rikhotso – DWA: RPM – LP to be corrected to Ms Sylvia Rikhotso – DWA: GP (Water Sector Support).
- Page 2, item 2.6 and 2.7 Mr Nditwani requested that the designation of DWA SMT members be indicated and not only the province.

6. MATTERS ARISNG FROM THE PREVIOUS MINUTES

6.1 DM SUMMARY REPORTS

6.1.1 Ms M Esterhuizen noted that the DM Summary Reports which are based on the existing strategies were completed and submitted to DWA on 11 March 2013.

6.2 PRESENTATION TO SERVE AS INTRODUCTION TO THE ALL TOWNS STUDY

6.2.1 It was noted that the presentation which is to serve as an introduction to the All Towns Study is still being developed and will include the latest available material from the strategy screening sessions. It was confirmed that this presentation will also be used at the provincial SSC workshops and should be ready no later than 19 April 2013. Ms M Esterhuizen to provide the presentation by Friday 12 April 2013 to Mr Nditwani for comments. PSP (12/04/2013)

6.3 OUTCOME OF THE STRATEGY SCREENING SESSIONS

6.3.1 The screening sessions of the existing strategies were held on 3 and 4 April 2013 respectively with the DWA: NWRP and input from the Regional Offices (Limpopo, North West and Mpumalanga). Strategies were prioritised based on the current situation considering water resources, water infrastructure, projects identified or completed, water quality, etc.

6.3.2 The outcome of the screening sessions resulted in 50 strategies identified as priority areas, in summary:

- Limpopo Province – 27 strategies (note that the majority of the consumers in the Greater Sekhukhune District Municipality are earmarked to benefit from the newly developed De Hoop Dam Regional Water Supply Scheme);
- Mpumalanga Province – 6 strategies; and
- North West Province – 17 strategies.

6.3.3 These strategies may change during the first provincial SSC workshops based on input from stakeholders. PSP (24/04/2013, 26/04/2013)

6.3.4 Mr R Mtileni indicated that the Giyani area's main problem at this stage is not water infrastructure, but water resources. Mr Nditwani mentioned that the Luvuvhu and Letaba hydrological system analysis which is undertaken as part of the Development of the Luvuvhu Letaba Reconciliation Strategy may be completed by October 2013, which will provide more

guidance on potential options for this area. The use of groundwater still requires further investigation. The current plan to transfer 5 million m^3/a from the Nandoni Dam to Giyani and environs in the Middle Letaba area is not mentioned in the current strategy.

6.3.5 Mr Mtileni enquired whether the local municipalities were consulted prior to the prioritisation of strategies. Mr Nditwani ensured Mr Mtileni that the municipalities were involved during the first development of the All Towns Studies and would also provide their input during the upcoming SSC workshops.

6.3.6 Mr F Fourie noted that it should be emphasised that this study is considering water resources (for domestic and to a certain extent industrial/mining supply) as the main criteria for further investigation meaning that this study focuses on consideration of areas where there is a deficit in the balance (water requirements versus water resources).

6.4 COMMUNICATION AND STAKEHOLDER ENGAGEMENT STRATEGY

6.4.1 Ms M Esterhuizen indicated that no comments were received on the Communication and Stakeholders Engagement Strategy.

6.4.2 Mr R Mtileni requested that a more detailed timeline of the study be included in the Strategy. Mr T Nditwani stated that it still has to be decided how the timeline will be presented as some of the phases run concurrently. — PSP (03/05/2013)

6.4.3 Ms D Ristic requested that the diagrammatic illustration of the study organisation be revised as it may be misinterpreted in the current form. — PSP (19/04/2013)

7. PROJECT ORGANISATION SET-UP AND MEETING SCHEDULE

7.1 SMT MEETING SCHEDULE FOR 2013

7.1.1 Ms M Esterhuizen referred to the meeting schedule, provided with the previous minutes and that the next SMT meeting 10 June 2013 will be held in the Limpopo Province. Mr Mtileni to confirm the details of the venue and provide to the PSP. — PSP, DWA LP (19/04/2013)

8. COMMUNICATION

8.1 REPORT BACK BY MEMBERS TO ORGANISATIONS / INSTITUTIONS SINCE PREVIOUS MEETINGS

8.1.1 Ms M Esterhuizen noted that the study: Consolidation of Feasibility Studies into a Bulk Water Master Plan for the Bojanala Platinum District Municipality (BPDM) was finalised and a presentation given to the DWA (Regional Bulk Infrastructure Grant Programme – RBIG) on Friday 05 April 2013. The Mater Plan would guide the consideration and implementation of RBIG projects in the BPDM.

8.1.2 Ms M Esterhuizen made mention of the Municipal Water Infrastructure Grant (MWIG) Programme which is specifically focused on the 24 priority District Municipalities and is expected to start soon.

8.2 WEBSITE

8.2.1 Ms D Ristic indicated that the Director (DWA: NWRP) preferred that there is one website portal for all the All Towns studies (all planning regions).

8.2.2 Mr T Nditwani noted that it would be discussed further internally (DWA) on the composition of the portal for the purpose of this study. — DWA (31/05/2013)

8.3 PROGRESS REPORT

8.3.1 Ms M Esterhuizen noted that the next progress report would be submitted with the next invoice submission (May 2013) to DWA. — PSP (06/05/2013)

8.4 NEWS RELEASE

8.4.1 Mr Nditwani indicated that DWA would still decide on the format and issue of an official news release to announce this study. — DWA (31/05/2013)

9. COMMUNICATION

9.1 PROVINCIAL SSC WORKSHOPS

9.1.1 The PSP to send the Communication and Stakeholder Engagement Strategies (Northern and Central Planning Regions respectively) and list of strategies and priorities to SSC members prior to the provincial workshops. — PSP (17/04/2013)

9.1.2 Ms D Ristic noted that DWA NWRP Central Region representatives have not received an invitation to the North Wets Province SSC Workshop and further requested to view the invitees that are being considered for the workshop. — PSP (10/04/2013)

9.1.3 Mr Nditwani suggested that as the PSP paid for the first SSC Workshop venues in order to secure the venue booking, the DWA Regional Offices would sponsor the next SSC Workshops. — DWA (09/2014)

9.1.4 **Invitations and responses**

a.) It was confirmed that the SSC workshops would be held on the following dates (and listed venues) in each of the provinces.

- NW – 24 April 2013 at Bona Bona Game Lodge, Farm Klipfontein near Klerksdorp; and
- LP – 26 April 2013 at Grincourt Nature Reserve, Polokwane.

— All (24/04/2013, 26/04/2013)

b.) Mr R Mtileni requested that the DWA Limpopo Regional Office be included in the finalisation of the workshop in their region to ensure the inclusive participation of stakeholders. The PSP to provide the SSC invitation list to Mr Mtileni for consideration. — PSP, DWA LP (10/04/2013)

c.) Mr Mtileni indicated that the contact person for the Limpopo Provincial office is not Ms Hanli du Plessis anymore, but he will provide the relevant contact person and — DWA LP (12/04/2012)

details to the PSP for invitation to the SSC Workshop.

9.1.5 **Presentation**

a.) Mr T Nditwani requested that it be made clear in the presentation that some of the current strategies would require minor updates or changes to reflect the correct circumstances. — PSP (19/04/2013)

b.) Mr Nditwani requested the PSP to provide the presentation and agenda/programme for the SSC workshops for review — PSP, DWA (12/04/2013)

9.1.6 **Prioritised strategies and break-away sessions**

a.) Mr T Nditwani noted that the review of some prioritised strategies have already commenced, such as for the Lambani-Thulamela, Giyani, Mafikeng, Musina and Matoks areas.

b.) Ms M Esterhuizen explained that the "break-away" sessions would be guided by facilitators and grouped per District Municipality in order to discuss the preliminary priorities of strategies from the screening sessions.

9.2 INCEPTION REPORT

9.2.1 Mr T Nditwani again emphasised that the existing strategies are not necessarily perfect but are based on the information available at the time and participation of stakeholders. Some minor changes may be applied to the non-prioritised strategies during this PSP's appointment (based on the budget and time available). — PSP (30/04/2013)

9.2.2 Mr Nditwani noted that the Inception Report will include the outcomes from the strategies screening sessions and SSC workshop. — PSP (30/04/2013)

9.3 WC/WDM

9.3.1 This was an additional item added to the agenda – Mr Phatela, from Magalies Water provided a brief description of the WC/WDM programme they have been appointed (by DWA NW) to implement. Some activities of the All Towns Study may affect the WC/WDM programme and vice-versa. At present, Magalies Water will perform a desktop study to assess the status of the WC/WDM programmes implemented in the municipalities in the North West Province.

10. FEE ACCOUNTS

10.1.1 It was decided that this item will in future be referred to as "Financial Matters" and reporting at the SMT to be general financial matters related to the progress of the study. A specific meeting between the PSP and DWA NWRP (Northern) to be held prior to the next SMT meeting to discuss details on financial matters (meeting to be referred to as Study Administration meetings). The PSP team and DWA NWRP (Northern) to meet 30 minutes prior to the next SMT meeting – the PSP to send a meeting request in this regard. — PSP (19/04/2013)

10.1.2 Mr T Nditwani noted that DWA are now in a new financial year which will end in March 2014 and that due to financial constraints only limited activities will be conducted during the course

this financial year.

11. GENERAL

11.1 Mr Nditwani requested that an item an item called “General” be added to the agenda to allow for the general matters of discussion related to this study — PSP (18/04/2013)

12. DATE OF NEXT MEETING AND CLOSURE

12.1 NEXT MEETING

The next SMT meeting will be held on 10 June 2013, Polokwane, at 10h00. The venue to be confirmed. — PSP, DWA LP (18/04/2013)

12.2 CLOSURE

Mr Nditwani thanked all members for their participation and adjourned the meeting at 14:45.

Meeting notes compiled by Ms T Mkhabela of UWP Consulting

APPENDIX C LIST OF RECONCILIATION STRATEGIES AND PRIORITY ALLOCATION FOR CONTINUATION OF THIS STUDY

water affairs
Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

Northern Planning Region: All Town Reconciliation Strategies

Priority Allocation for the Continuation of the Study, Phase 1 (WP10587) **

(Per Province, DM, LM and All Towns Report Name)

13-May-13

Step 1	Identification of Category 4 strategies (towns with a water balance currently in deficit)
Step 2	Eliminate towns where solutions are in an advance stage of planning or implementation (RBIG projects)
Step 3	Add towns where RBIG or other processes are in an early stage of planning – can still be influenced by strategies' recommendations
Step 4	Add any other hot spot areas identified on a national, provincial or local strategic level
Step 5: SSC	Obtain input and comments from the Strategies Steering Committee Workshop and finalise priorities

Province	District Municipality Name (based on approximate geographic location)	Local Municipality Name (based on approximate geographic location)	Water Magement Area	All Towns Report ID No.	All Towns Report Name (per water supply cluster) *	Step 5: SSC	Step 1	Step 4	Strategies Cluster	
Prov	**DM Code and Name**	**LM Code and Name**	**WMA Name**	**AT Rpt ID No.**	**Report Name**	**SSC Priority**	**Deficit**	**5 Strategic Areas**	**Cluster**	**Comments**
GT	TSH: City of Tshwane Metro	TSH: City of Tshwane	Olifants	48	Bronkhorstspruit & Surrounding Settlements(Kungwini) Strategy	No	Low			
GT	TSH: City of Tshwane Metro	TSH: City of Tshwane	Crocodile (West) and Marico	49	Centurion Water Scheme Strategy	Maybe	Medium			Possible resource protection & management
GT	TSH: City of Tshwane Metro	TSH: City of Tshwane	Olifants	220	Cullinan & Surrounding Towns/Nokeng	No	High			
GT	TSH: City of Tshwane Metro	TSH: City of Tshwane	Crocodile (West) and Marico	50	Mamelodi Water Scheme Strategy	No	High			
GT	TSH: City of Tshwane Metro	TSH: City of Tshwane	Crocodile (West) and Marico	51	Montana NPMSS and Montana WS Strategy	No	Medium to high			
GT	TSH: City of Tshwane Metro	TSH: City of Tshwane	Crocodile (West) and Marico	52	Odi Water Scheme Strategy	No	Medium to high			
GT	TSH: City of Tshwane Metro	TSH: City of Tshwane	Crocodile (West) and Marico	53	Pretoria Water Scheme Strategy	No	Medium to high			
GT	TSH: City of Tshwane Metro	TSH: City of Tshwane	Crocodile (West) and Marico	54	TembaKekana Gardens WS Strategy	No	Medium			
LP	DC33: Mopani	LIM331: Greater Giyani	Luvuvhu and Letaba	55	Greater Giyani Systems A and B Strategy	Yes	Low	yes	Greater Giyani System A B	From 5 strategic priority areas
LP	DC33: Mopani	LIM331: Greater Giyani	Luvuvhu and Letaba	58	Greater Giyani Systems C Strategy	Yes	Low	yes	Greater Giyani System C	From 5 strategic priority areas
LP	DC33: Mopani	LIM331: Greater Giyani	Luvuvhu and Letaba	59	Greater Giyani Systems D Strategy	Yes	Low	yes	Greater Giyani System D	From 5 strategic priority areas
LP	DC33: Mopani	LIM331: Greater Giyani	Luvuvhu and Letaba	56	Greater Giyani Systems F1 Strategy	Yes	Low	yes	Greater Giyani System F1	From 5 strategic priority areas
LP	DC33: Mopani	LIM331: Greater Giyani	Luvuvhu and Letaba	57	Greater Giyani Systems F2 Strategy	Yes	Low	yes	Greater Giyani System F2	From 5 strategic priority areas
LP	DC33: Mopani	LIM331: Greater Giyani	Luvuvhu and Letaba	8	Makhado Mapuve System RWS Strategy	No	High		Makhado Mapuve System RWS Strategy	
LP	DC33: Mopani	LIM331: Greater Giyani	Luvuvhu and Letaba	8	Makhado Mapuve System RWS Strategy	No	High		Makhado Mapuve System RWS Strategy	
LP	DC33: Mopani	LIM332: Greater Letaba	Luvuvhu and Letaba	218	Modadji Dam Regional Water Supply Scheme Area	No	High		Modjadji Dam	
LP	DC33: Mopani	LIM332: Greater Letaba	Luvuvhu and Letaba	60	Sekgopo Local GWS Strategy	No	Low		Sekgopo Individual	Problems seem to be mainly infrastructure related
LP	DC33: Mopani	LIM332: Greater Letaba	Luvuvhu and Letaba	61	Sekgosese Individual GW Scheme Strategy	Yes	High		Sekgosese Individual	At workshop regarded as priority as boreholes are already running dry. They are already looking at other possible resources
LP	DC33: Mopani	LIM333: Greater Tzaneen	Luvuvhu and Letaba	62	Modjadjiskloof WS Strategy	Yes	High		Modjadjiskloof	Their allocation seem to be a problem. Water purification plant need to be upgraded.
LP	DC33: Mopani	LIM333: Greater Tzaneen	Luvuvhu and Letaba	63	Ritavi I Letaba WSS Strategy	Maybe	High		Ritavi I Letaba	Concerns about their allocation
LP	DC33: Mopani	LIM333: Greater Tzaneen	Luvuvhu and Letaba	64	Ritavi II RWS Strategy	Maybe	Low		Ritavi II	Concerns about their allocation
LP	DC33: Mopani	LIM333: Greater Tzaneen	Olifants	233	Stand alone town - Greater Tzaneen 1 - see ATRptID 62	No	Unknown			
LP	DC33: Mopani	LIM333: Greater Tzaneen	Luvuvhu and Letaba	65	Thabina RWS Strategy	No	Medium		Thabina	
LP	DC33: Mopani	LIM333: Greater Tzaneen	Luvuvhu and Letaba	66	Thapane Dam RWS Strategy	Yes	High		Thapane	Dam did run dry. Borehole yields in general low.
LP	DC33: Mopani	LIM333: Greater Tzaneen	Olifants	67	Tours RWS Strategy	Yes	High		Tours	Dam did run dry. Already using groundwater resources. There are also small scale irrigation farmers using water from the dam. Proper operating rule for water use by irr and domestic use from the dam might need attention
LP	DC33: Mopani	LIM333: Greater Tzaneen	Luvuvhu and Letaba	68	Tzaneen Individual Supply Strategy	No	Low		Tzaneen Individual Supply	
LP	DC33: Mopani	LIM334: Ba-Phalaborwa	Luvuvhu and Letaba	69	Ba-Phalaborwa Individual Supply 2 Strategy	No	Low		Ba Phalaborwa Individual Supply II	
LP	DC33: Mopani	LIM334: Ba-Phalaborwa	Olifants	228	Leydsdorp Local WS	No	Unknown			
LP	DC33: Mopani	LIM334: Ba-Phalaborwa	Olifants	70	Murchison Local WS Strategy	No	Low		Murchison	
LP	DC33: Mopani	LIM334: Ba-Phalaborwa	Olifants	71	Namakgale Olifants River/Namakgale/Lulekani RWS Strategy	No	Low		Namakgale-Lulekani	
LP	DC33: Mopani	LIM335: Maruleng	Olifants	72	Hoedspruit Kampersrus WS Strategy	No	Low		Hoedspruit Kampersrus	
LP	DC33: Mopani	LIM335: Maruleng	Olifants	73	Mametja Sekororo RWS Cluster Strategy	No	High		Mametja Sekororo	Although there is an RBIG project it seems it is not getting off the ground. Permits for abstraction also a problem
LP	DC33: Mopani	LIM335: Maruleng	Olifants	230	Maruleng Farms Supply [balance of the population, not a specific scheme area]	No	Unknown			
LP	DC33: Mopani	LIM335: Maruleng	Olifants	6	Maruleng Individual Supply Calais	No	High		Marulang Individual Supply Calais	
LP	DC33: Mopani	LIM342: Mutale	Luvuvhu and Letaba	20	Luphephe Nwanedzi Main RWS Strategy	No	Low		Luphephe Nwanedzi Main RWS Strategy	
LP	DC33: Mopani	LIM342: Mutale	Limpopo	21	Luphephe-Nwanedzi North Strategy	No	Low		Luphephe-Nwanedzi North Strategy	
LP	DC33: Mopani	LIM342: Mutale	Luvuvhu and Letaba	22	Makuya Mutale	No	High		Makuya Mutale	
LP	DC33: Mopani	LIM342: Mutale	Luvuvhu and Letaba	23	Masisi Strategy	No	Low		Masisi Strategy	

Prov	DM Code and Name	LM Code and Name	WMA Name	AT Rpt ID No.	Report Name	SSC Priority	Deficit	5 Strategic Areas	Cluster	Comments
LP	DC33: Mopani	LIM342: Mutale	Luvuvhu and Letaba	24	Mutale Main Strategy	No	High		Mutale Main Strategy	
LP	DC33: Mopani	LIM343: Thulamela	Luvuvhu and Letaba	39	Damani Thulamela Strategy	No	Low		Damani Thulamela Strategy	
LP	DC33: Mopani	LIM343: Thulamela	Luvuvhu and Letaba	42	Mutale Makuya Strategy	No	Low		Mutale Makuya Thulamela Strategy	
LP	DC33: Mopani	LIM343: Thulamela	Luvuvhu and Letaba	43	North Malamulele-East Thulamela Strategy	No	Low		North Malamulele East Thulamela Strategy	
LP	DC33: Mopani	LIM343: Thulamela	Luvuvhu and Letaba	45	South Malamulele Strategy	No	Medium to high		South Malamulele Thulamela Strategy	
LP	DC33: Mopani	LIM343: Thulamela	Luvuvhu and Letaba	47	Vondo Strategy	No	Low		Vondo Thulamela Strategy	
LP	DC34: Vhembe	LIM341: Musina	Limpopo	74	Luphephe Nwandedzi North RWS Musina Strategy	Maybe	Medium to high		Luphephe Nwandedzi North RWS Musina Strategy	GWQ problem. The area is supplied by groundwater. The town is currently not in deficit but is experiencing water quality issues (Strategy also mentioned that the groundwater water quality is in a Class 2 and Class 3).
LP	DC34: Vhembe	LIM341: Musina	Limpopo	75	Musina RWS Strategy	Yes	Low	yes	Musina RWS Strategy	From 5 strategic priority areas.
LP	DC34: Vhembe	LIM343: Thulamela	Luvuvhu and Letaba	40	Lambani Thulamela Strategy	Yes	High		Lambani Thulamela Strategy	
LP	DC34: Vhembe	LIM343: Thulamela	Luvuvhu and Letaba	41	Malamulele West Strategy	Yes	High		Malamulele West Thulamela Strategy	
LP	DC34: Vhembe	LIM343: Thulamela	Limpopo	44	Nzhelele Strategy	Yes	High		Nzhelele Thulamela Strategy	
LP	DC34: Vhembe	LIM343: Thulamela	Luvuvhu and Letaba	46	Tshifudi Strategy	Yes	High		Tshifudi Thulamela Strategy	
LP	DC34: Vhembe	LIM344: Makhado	Limpopo	7	Buysdorp Strategy	No	High		Buysdorp Strategy	
LP	DC34: Vhembe	LIM344: Makhado	Luvuvhu and Letaba	234	Levubu CBD	No	Low			
LP	DC34: Vhembe	LIM344: Makhado	Luvuvhu and Letaba	9	Makhado Strategy	Yes	Low	yes	Makhado Strategy	From 5 strategic priority areas
LP	DC34: Vhembe	LIM344: Makhado	Limpopo	10	Matshavhawe Kunda Strategy	No	Low		Matshavhawe Kunda Strategy	
LP	DC34: Vhembe	LIM344: Makhado	Luvuvhu and Letaba	11	Middle Letaba Strategy	Yes	High		Middle Letaba Strategy	
LP	DC34: Vhembe	LIM344: Makhado	Luvuvhu and Letaba	11	Middle Letaba Strategy	Yes	High		Middle Letaba Strategy	
LP	DC34: Vhembe	LIM344: Makhado	Limpopo	12	Nzhelele Makhado Strategy	Yes	High		Nzhelele Makhado Strategy	Coal mines are being developed in the area (Mudimeli, close to Nzhelele Dam) and are looking for water. Need to confirm whether the impact of mining development has been accounted for in the strategy. Note: There is also an unused dam in forestry area (re
LP	DC34: Vhembe	LIM344: Makhado	Limpopo	235	Nzhelele North RWS	No	Low			
LP	DC34: Vhembe	LIM344: Makhado	Limpopo	13	Sinthumule Kutama Strategy	No	High		Sinthumule Kutama Strategy	
LP	DC34: Vhembe	LIM344: Makhado	Luvuvhu and Letaba	15	Tshakuma RWSS Strategy	No	Medium to high		Tshakuma Strategy	
LP	DC34: Vhembe	LIM344: Makhado	Limpopo	14	Tshifiri Murunwa Strategy	No	Medium		Tshifiri Murunwa Strategy	
LP	DC34: Vhembe	LIM344: Makhado	Luvuvhu and Letaba	16	Tshitale RWS Strategy	No	Medium to high		Tshitale Strategy	
LP	DC34: Vhembe	LIM344: Makhado	Luvuvhu and Letaba	17	Valdezia RWS Strategy	No	Medium to high		Valdezia Strategy	
LP	DC34: Vhembe	LIM344: Makhado	Limpopo	18	Vhembe Individual Strategy	No	Low		Vhembe Individual Strategy	
LP	DC34: Vhembe	LIM344: Makhado	Luvuvhu and Letaba	19	Vondo South Strategy	No	Low		Vondo South Strategy	
LP	DC35: Capricorn	LIM351: Blouberg	Limpopo	76	Alldays Groundwater Scheme Strategy	No	High		Alldays GWS	
LP	DC35: Capricorn	LIM351: Blouberg	Limpopo	77	Archibald Groundwater Scheme Strategy	No	High		Archibald GWS	
LP	DC35: Capricorn	LIM351: Blouberg	Limpopo	78	Avon GWS Strategy	No	High		Avon GWS	
LP	DC35: Capricorn	LIM351: Blouberg	Limpopo	226	Blouberg LM Farms supply [balance of the population, not a specific scheme area]	Maybe	Unknown			A concern is the sharing of water resources for domestic supply and irrigation in the Dendron, Vivo, Bochum area (triangle). About 20% of RSA potato production is done in this area. Possible over utilisation of the resource. Study Team to assess the rel
LP	DC35: Capricorn	LIM351: Blouberg	Limpopo	79	Blouberg RWS Strategy	No	Medium to high		Blouberg RWS	
LP	DC35: Capricorn	LIM351: Blouberg	Limpopo	80	Ga-Hlako RWS Strategy	No	High		Ga Hlako RWS	
LP	DC35: Capricorn	LIM351: Blouberg	Limpopo	81	Ga-Rawesi GWS Strategy	No	Low		Ga-Rawesi GWS	
LP	DC35: Capricorn	LIM351: Blouberg	Limpopo	82	Gorkum GWS Strategy	No	High		Gorkum GWS	
LP	DC35: Capricorn	LIM351: Blouberg	Limpopo	83	Senwabarwana GWS Strategy	Maybe	Medium to high		Senwabarwana GWS	A concern is the sharing of water resources for domestic supply and irrigation in the Dendron, Vivo, Bochum area (triangle). About 20% of RSA potato production is done in this area. Possible over utilisation of the resource. Study Team to assess the rel
LP	DC35: Capricorn	LIM351: Blouberg	Limpopo	84	Silwermyn / Kirstenspruit GWS Strategy	No	Low		Silwermyn_Kirstenspruit GWS	
LP	DC35: Capricorn	LIM351: Blouberg	Limpopo	85	Taaiboschgroet GWS Strategy	No	High		Taaiboschgroet GWS	
LP	DC35: Capricorn	LIM351: Blouberg	Limpopo	86	Thalahane GWS Strategy	No	High		Thalahane GWS	
LP	DC35: Capricorn	LIM352: Aganang	Limpopo	87	Aganang East GWS Aganang Strategy	No	High		Aganang East GWS	
LP	DC35: Capricorn	LIM352: Aganang	Limpopo	88	Aganang North GWS Aganang Strategy	Maybe	Low		Aganang North GWS	In the Towns; Aganang North (ID 88), Bakone (ID 89) and Ga-Mokobodi (ID 90) the boreholes are running dry, indicating current water resource problems. Bernie Badenhorst indicated the consultants EVN are doing a feasibility study which is looking at optio
LP	DC35: Capricorn	LIM352: Aganang	Limpopo	89	Bakone GWS Aganang Strategy	Maybe	Medium to high		Bakone GWS	In the Towns; Aganang North (ID 88), Bakone (ID 89) and Ga-Mokobodi (ID 90) the boreholes are running dry, indicating current water resource problems. Bernie Badenhorst indicated the consultants EVN are doing a feasibility study which is looking at optio
LP	DC35: Capricorn	LIM352: Aganang	Limpopo	90	Ga-Mokobodi GWS Aganang Strategy	Maybe	Low		Ga-Mokobodi GWS	In the Towns; Aganang North (ID 88), Bakone (ID 89) and Ga-Mokobodi (ID 90) the boreholes are running dry, indicating current water resource problems. Bernie Badenhorst indicated the consultants EVN are doing a feasibility study which is looking at optio
LP	DC35: Capricorn	LIM352: Aganang	Limpopo	91	Houtrivier RWS Aganang Strategy	No	Medium		Hout River RWS	
LP	DC35: Capricorn	LIM352: Aganang	Limpopo	92	Moletje South GWS Aganang Strategy	No	High		Moletje South GWS	
LP	DC35: Capricorn	LIM353: Molemole	Limpopo	3	Matoks Supply Area Strategy	Maybe	High		Matoks Supply Area	Has been updated, recheck formatting etc.
LP	DC35: Capricorn	LIM353: Molemole	Limpopo	94	Molemole West Individual GWS Molemole Strategy	Maybe	High		Molemole West Supply Area	A concern is the sharing of water resources for domestic supply and irrigation in the Dendron, Vivo, Bochum area (triangle). About 20% of RSA potato production is done in this area. Possible over utilisation of the resource. Study Team to assess the rel
LP	DC35: Capricorn	LIM354: Polokwane	Limpopo	95	Badimong RWS Polokwane Strategy	Yes	High		Badimong	To confirm from SSC workshop

Prov	DM Code and Name	LM Code and Name	WMA Name	AT Rpt ID No.	Report Name	SSC Priority	Deficit	5 Strategic Areas	Cluster	Comments
LP	DC35: Capricorn	LIM354: Polokwane	Limpopo	225	Bergnek GWS Polokwane	No	Unknown			
LP	DC35: Capricorn	LIM354: Polokwane	Olifants	96	Boyne RWS Polokwane Strategy	No	High		Boyne	
LP	DC35: Capricorn	LIM354: Polokwane	Olifants	97	Chuene Maja RWS Polokwane Strategy	Yes	High		Chuene Maja	To confirm from SSC workshop
LP	DC35: Capricorn	LIM354: Polokwane	Limpopo	98	Houtrivier RWS Polokwane Strategy	Yes	High		Hout River	To confirm from SSC workshop
LP	DC35: Capricorn	LIM354: Polokwane	Limpopo	99	Laaste Hoop RWS Polokwane Strategy	Yes	High		Laaste Hoop	To confirm from SSC workshop
LP	DC35: Capricorn	LIM354: Polokwane	Limpopo	100	Mankweng RWS Polokwane Strategy	Yes	High		Mankweng	To confirm from SSC workshop
LP	DC35: Capricorn	LIM354: Polokwane	Olifants	101	Molepo RWS Polokwane Strategy	Yes	High		Molepo	To confirm from SSC workshop
LP	DC35: Capricorn	LIM354: Polokwane	Limpopo	102	Moletje East GWS Polokwane Strategy	Yes	High		Moletje East	To confirm from SSC workshop
LP	DC35: Capricorn	LIM354: Polokwane	Limpopo	103	Moletje North GWS Polokwane Strategy	Yes	High		Moletje North	To confirm from SSC workshop
LP	DC35: Capricorn	LIM354: Polokwane	Limpopo	104	Moletje South GWS Polokwane Strategy	No	Low		Moletje South	
LP	DC35: Capricorn	LIM354: Polokwane	Limpopo	105	Mothapo RWS Polokwane Strategy	Yes	High		Mothapo	To confirm from SSC workshop
LP	DC35: Capricorn	LIM354: Polokwane	Limpopo	1	Olifants-Sands Strategy	Yes	Low	yes	Olifants-Sands	From 5 strategic priority areas. 4.2 Polokwane population figures used in the strategy was highlighted as a concern. A Study by Glen Stein (GS) for Lebalelo has been done and should be considered in the update of the strategy. Report will be sent to the
LP	DC35: Capricorn	LIM354: Polokwane	Limpopo	232	Polokwane LM Farms Supply Polokwane [balance of the population, not a specific scheme area]	No	Unknown			
LP	DC35: Capricorn	LIM354: Polokwane	Limpopo	106	Sebayeng-Dikgale RWS Polokwane Strategy	Yes	High		Sebayeng-Dikgale	To confirm from SSC workshop
LP	DC35: Capricorn	LIM354: Polokwane	Olifants	107	Segwasi RWS Polokwane Strategy	No	High		Segwasi	
LP	DC35: Capricorn	LIM355: Lepele-Nkumpi	Olifants	108	Flag Boshielo RWS/West Lepelle -Nkumpi Strategy	No	High		Flag Boshilo RWS West	
LP	DC35: Capricorn	LIM355: Lepele-Nkumpi	Olifants	109	Groothoek RWS Lepelle-Nkumpi Strategy	Maybe	Medium		GSM RWS	Bernie Badenhorst asked that WC/WDM in Lebowakgomo need to be a priority. Study Team to identify which strategies are in Lebowakgomo. Then ask WC/WDM team to identify if there are WC/WDM plans for these areas – give a status assessment based on readily a
LP	DC35: Capricorn	LIM355: Lepele-Nkumpi	Olifants	110	Mafefe Individual GWS Lepelle-Nkumpi Strategy	No	Low		Mafefe Individual GWS	
LP	DC35: Capricorn	LIM355: Lepele-Nkumpi	Olifants	111	Mathabatha Individual GWS Lepelle-Nkumpi Strategy	No	Low		Mathabatha Individual GWS	
LP	DC36: Waterberg	LIM361: Thabazimbi	Crocodile (West) and Marico	112	Leeupoort Strategy	No	High		Leeupoort & Raphuti	
LP	DC36: Waterberg	LIM361: Thabazimbi	Crocodile (West) and Marico	113	Northam Strategy	No	Low		Northam	
LP	DC36: Waterberg	LIM361: Thabazimbi	Crocodile (West) and Marico	114	Rooiberg Strategy	No	Low		Rooiberg	
LP	DC36: Waterberg	LIM361: Thabazimbi	Crocodile (West) and Marico	25	Thabazimbi Urban Strategy	No	Low		Thabazimbi Urban	
LP	DC36: Waterberg	LIM362: Lephalale	Limpopo	115	Ga-Seleka RWS Strategy	No	High		Ga-Seleka	
LP	DC36: Waterberg	LIM362: Lephalale	Limpopo	116	Lephalale (Ellisras Urban) Strategy	Yes	Medium to high		Lephalale (Ellisras Urban)*	It was felt that this priority could be reconsidered as projects are underway and at an advanced stage to ensure water supply to Lephalale - the extreme strategic importance of the supply to Lephalale could however mean that the priority should remain
LP	DC36: Waterberg	LIM362: Lephalale	Limpopo	117	Lephalale Shongwane Strategy	No	High		Lephalale Shongwane	
LP	DC36: Waterberg	LIM362: Lephalale	Limpopo	118	Mokuranyane RWS Strategy	No	Low		Mokuranyane	
LP	DC36: Waterberg	LIM362: Lephalale	Limpopo	119	Witpoort RWS Strategy	No	Low		Witpoort	
LP	DC36: Waterberg	LIM364: Mookgopong	Olifants	231	Mookgophong LM Farms Supply [balance of the population, not a specific scheme area]	No	Unknown		Mookgophong LM Farms	
LP	DC36: Waterberg	LIM364: Mookgopong	Limpopo	120	Mookgophong RWS (Naboomspuit) Strategy	No	High		Mookgophong RWS (Naboomspuit)	
LP	DC36: Waterberg	LIM365: Modimolle	Limpopo	121	Mabaleng (Alma) Strategy	No	High		Mabaleng (Alma)	
LP	DC36: Waterberg	LIM365: Modimolle	Limpopo	122	Mabatlane (Vaalwater) Strategy	No	High		Mabatlane (Vaalwater)	
LP	DC36: Waterberg	LIM365: Modimolle	Limpopo	123	Modimolle Urban (Nylstroom) Strategy	No	Medium		Modimolle Urban (Nylstroom)	
LP	DC36: Waterberg	LIM366: Bela-Bela	Crocodile (West) and Marico	124	Bela-Bela Urban Supply Strategy	No	High		Bela-Bela Urban	
LP	DC36: Waterberg	LIM366: Bela-Bela	Crocodile (West) and Marico	125	Pienaarsrivier RWS Strategy	No	Low		Pienaarsrivier	
LP	DC36: Waterberg	LIM366: Bela-Bela	Olifants	126	Rapotkwane Supply Strategy	No	Low		Rapotkwane	
LP	DC36: Waterberg	LIM367: Mogalakwena	Limpopo	127	Bakenberg Strategy	Maybe	High		Bakenberg	It was felt that this priority could be reconsidered as the potential future Magalies Water pipeline from Rust de Winter dam to Moogophong and Mogalakwena should also supply Bakenberg. Supply from Flag Boshielo is also an option. (B Badenhorst)

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LP	DC36: Waterberg	LIM367: Mogalakwena	Limpopo	128	Ga-Phahladira Strategy	No	High		Ga-Phahladira	
LP	DC36: Waterberg	LIM367: Mogalakwena	Limpopo	129	Mapela Cluster Strategy	No	High		Mapela	
LP	DC36: Waterberg	LIM367: Mogalakwena	Limpopo	130	Mokopane Cluster Strategy	No	Low		Mokopane	
LP	DC36: Waterberg	LIM367: Mogalakwena	Limpopo	131	Rebone & Glen Alpine Strategy	No	Medium to high		Rebone & Glen Alpine	
LP	DC47: Greater Sekhukhune	LIM471: Ephraim Mogale	Olifants	132	Flag Boshielo RWS/Flag Boshielo Central Strategy	No	High		Flag Boshielo RWS/ Marble Hall	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM471: Ephraim Mogale	Olifants	133	Kwandebele/Renosterkop/Marble Hall Strategy	No	High		Kwandebele/Renosterkop/Marble Hall	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM471: Ephraim Mogale	Olifants	134	Marble Hall Strategy	No	Low		Marble Hall	
LP	DC47: Greater Sekhukhune	LIM472: Elias Motsoaledi	Olifants	137	De Hoop/Nebo Plateau/Carbonatites/Spitskop Strategy	No	High		De Hoop/Nebo Plateau/Carbonatites/Spitskop	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM472: Elias Motsoaledi	Olifants	135	De Hoop/Nebo Plateau/Monsterlus Strategy	No	Low		De Hoop/Nebo Plateau/Monsterlus	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM472: Elias Motsoaledi	Olifants	136	De Hoop/Nebo Plateau/Sephaku Strategy	No	High		De Hoop/Nebo Plateau/Sephaku	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM472: Elias Motsoaledi	Olifants	138	Elias Motsoaledi/Lukau Strategy	No	Medium		Lukau	
LP	DC47: Greater Sekhukhune	LIM472: Elias Motsoaledi	Olifants	139	Kwandebele/Renosterkop/Elias Motsoaledi Strategy	No	High		Kwandebele/Renosterkop/Elias Motsoaledi	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM472: Elias Motsoaledi	Olifants	140	Roossenekal Strategy	No	Low		Roossenekal	
LP	DC47: Greater Sekhukhune	LIM472: Elias Motsoaledi	Olifants	2	Zaaiplaas Strategy	No	Low		De Hoop/Nebo Plateau/Zaaiplaas	
LP	DC47: Greater Sekhukhune	LIM473: Makhuduthamaga	Olifants	143	De Hoop Group 2 Middle Ngwaritsi Strategy	No	High		De Hoop Group 2 Middle Ngwaritsi	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM473: Makhuduthamaga	Olifants	4	De Hoop Group 3 Vergelegen	No	High		De Hoop Group 3 Vergelegen	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM473: Makhuduthamaga	Olifants	5	De Hoop Group 4 Ngwaritsi	No	High		De Hoop Group 4 Ngwaritsi	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM473: Makhuduthamaga	Olifants	141	De Hoop Group 5 Lepellane Strategy	No	High		De Hoop Group 5 Lepellane	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM473: Makhuduthamaga	Olifants	144	De Hoop Group 6 Nkadimeng Strategy	No	High		De Hoop Group 6 Nkadimeng	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM473: Makhuduthamaga	Olifants	145	De Hoop Group 7 Schoonoord Strategy	No	High		De Hoop Group 7 Schoonoord	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM473: Makhuduthamaga	Olifants	146	De Hoop Group 9 Spitskop Strategy	No	High		De Hoop Group 9 Spitskop	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM473: Makhuduthamaga	Olifants	147	Flag Boshielo_Makhuduthamaga Strategy	No	High		Flag Boshielo RWS/Makhuduthamaga	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM473: Makhuduthamaga	Olifants	148	Leolo Local Sources Strategy	No	High		Leolo Local Sources	
LP	DC47: Greater Sekhukhune	LIM473: Makhuduthamaga	Olifants	157	Mampuru Strategy	No	High		De Hoop Group 8 Mampuru	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM473: Makhuduthamaga	Olifants	150	Piet Gouws Veeplaas Strategy	No	Low		Piet Gouws Veeplaas	
LP	DC47: Greater Sekhukhune	LIM473: Makhuduthamaga	Olifants	149	Piet Gouws/Masemola Strategy	No	Medium		Piet Gouws/Masemola	
LP	DC47: Greater Sekhukhune	LIM474: Fetakgomo	Olifants	151	De Hoop/Nebo Plateau/Lephellale Strategy	No	High		De Hoop/Nebo Plateau/Lephellale	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM474: Fetakgomo	Olifants	152	Lebalelo North WS Strategy	No	High		Lebalelo North	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM474: Fetakgomo	Olifants	153	Olifantspoort South Strategy	No	Low		Olifantspoort South	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM475: Greater Tubatse	Olifants	154	Blyde Local Sources Strategy	No	High		Blyde Local Sources	
LP	DC47: Greater Sekhukhune	LIM475: Greater Tubatse	Olifants	155	Burgersfort Strategy	No	High		Burgersfort	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM475: Greater Tubatse	Olifants	142	De Hoop Group 8 Nebo Plateau Mampuru Strategy	No	High		De Hoop Group 8 Nebo Plateau Mampuru	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM475: Greater Tubatse	Olifants	156	De Hoop/Nebo Plateau/Malekana Strategy	No	High		De Hoop/Nebo Plateau/Malekana	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM475: Greater Tubatse	Olifants	158	Lebalelo Central North & South WS Strategy	No	High		Lebalelo Central North & South WS	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM475: Greater Tubatse	Olifants	159	Lower Steelpoort Strategy	No	Medium		Lower Steelpoort Tubatse Prakitseer	But, consider Olifants Recon - review & update strategy when new information available
LP	DC47: Greater Sekhukhune	LIM475: Greater Tubatse	Olifants	224	Lower Steelpoort Tubatse/Mooihoek Water Scheme	No	High		Lower Steelpoort Tubatse/Mooihoek	
LP	DC47: Greater Sekhukhune	LIM475: Greater Tubatse	Olifants	161	Ohrigstad Strategy	No	High		Ohrigstad	
LP	DC47: Greater Sekhukhune	LIM475: Greater Tubatse	Olifants	162	Phenge Local Sources Strategy	No	High		Phenge Local Sources	
LP	DC47: Greater Sekhukhune	LIM475: Greater Tubatse	Olifants	160	Steelpoort Town Strategy	No	High		Steelpoort Town	But, consider Olifants Recon - review & update strategy when new information available
MP	DC31: Nkangala	MP311: Victor Khanye	Olifants	163	Delmas Botleng Sundra Eloff Strategy	No	Low		Delmas/Botleng/SundraEloff	
MP	DC31: Nkangala	MP312: Emalahleni	Olifants	164	Benicon And Speekfontein Strategy	No	Low		Benicon/Speekfontein	
MP	DC31: Nkangala	MP312: Emalahleni	Olifants	165	Emalahleni and Springvalley Clusters Strategy	Yes	Medium		Emalahleni _Springvalley	update strategy - new info, incl Olifants ReconSTRAT - TN
MP	DC31: Nkangala	MP312: Emalahleni	Olifants	166	Ga-Nala Strategy	No	Medium		Ganala	
MP	DC31: Nkangala	MP312: Emalahleni	Olifants	169	Kamatsheka Saaiwater Klipoortjie Strategy	No	High		Kamatsheka_Saaiwater_Klipoortjie	
MP	DC31: Nkangala	MP312: Emalahleni	Olifants	167	Rietspruit Cluster Strategy	No	Low		Rietspruit	
MP	DC31: Nkangala	MP312: Emalahleni	Olifants	168	Rooiboom Cluster Strategy	No	Medium to high		Rooiboom	
MP	DC31: Nkangala	MP312: Emalahleni	Olifants	170	Vandyksdrif Strategy	No	High		Vandyksdrif	
MP	DC31: Nkangala	MP313: Steve Tshwete	Olifants	171	Bankfontein Strategy	No	Low		Bankfontein	
MP	DC31: Nkangala	MP313: Steve Tshwete	Olifants	172	Doornkop Strategy	No	Low		Doornkop	
MP	DC31: Nkangala	MP313: Steve Tshwete	Olifants	173	Hendrina Strategy	No	Low		Hendrina	
MP	DC31: Nkangala	MP313: Steve Tshwete	Olifants	227	Komati [Private]	No	Unknown			
MP	DC31: Nkangala	MP313: Steve Tshwete	Olifants	229	Mafube [Private]	No	Unknown			
MP	DC31: Nkangala	MP313: Steve Tshwete	Olifants	174	Middelburg Strategy	Yes	Medium to high		Middelburg	wres options to be investigated
MP	DC31: Nkangala	MP313: Steve Tshwete	Olifants	175	Rietkuil Strategy	No	Low		Rietkuil	

Prov	DM Code and Name	LM Code and Name	WMA Name	AT Rpt ID No.	Report Name	SSC Priority	Deficit	5 Strategic Areas	Cluster	Comments
MP	DC31: Nkangala	MP314: Emakhazeni	Olifants	219	Belfast Water Supply Area	No	Medium to high		Belfast	
MP	DC31: Nkangala	MP315: Thembisile Hani	Olifants	176	KwaNdebele Bronkhorstspruit Langkloof Strategy	No	Medium to high		KwaNdebele / Bronkhorstspruit	
MP	DC31: Nkangala	MP315: Thembisile Hani	Olifants	176	KwaNdebele Bronkhorstspruit Langkloof Strategy	No	Medium to high		Langkloof	
MP	DC31: Nkangala	MP316: Dr JS Moroka	Olifants	26	Ga-Ramantshane Strategy	Yes	Low		GaRamantshane	yes - JSM LM
MP	DC31: Nkangala	MP316: Dr JS Moroka	Olifants	177	Kameelpoort Strategy	Yes	Low		Kameelpoort	yes - JSM LM
MP	DC31: Nkangala	MP316: Dr JS Moroka	Olifants	27	Siyabuswa Strategy	Yes	Medium to high		Siyabuswa	possible future scheme augmentation - RBIG check. Ops issue as well
MP	DC32: Ehlanzeni	MP321: Thaba Chweu	Olifants	223	Lydenburg Water Supply Scheme - see ATRptID 178	No	High			
MP	DC32: Ehlanzeni	MP321: Thaba Chweu	Olifants	222	Moremela Water Supply Scheme - see ATRptID 178	No	High			
MP	DC32: Ehlanzeni	MP321: Thaba Chweu	Olifants	178	Thaba Chweu WS Strategy	Yes	High			See new grouping for split of reporting. Check water source per group/cluster. Lydenburg = priority. Remainder GW avail for augmentation
NW	DC37: Bojanala Platinum	NW371: Moretele	Crocodile (West) and Marico	182	Dikgophaneng and Fafung Strategy	Maybe	Low		Dikgophaneng	GWQ problem
NW	DC37: Bojanala Platinum	NW371: Moretele	Crocodile (West) and Marico	182	Dikgophaneng and Fafung Strategy	Maybe	Low		Fafung	GWQ problem
NW	DC37: Bojanala Platinum	NW371: Moretele	Crocodile (West) and Marico	181	Gahabedi-Ngobi Transactie Wellfields Cluster Strategy	No	High		GaHabedi-Ngobi Transactie Wellfields	
NW	DC37: Bojanala Platinum	NW371: Moretele	Crocodile (West) and Marico	179	Moretele 1 GWS Strategy	No	Low		Moretele GWS	WC/WDM to address. RBIG, MIG being implemented
NW	DC37: Bojanala Platinum	NW371: Moretele	Crocodile (West) and Marico	180	Selepe-Tloonane Cluster Strategy	No	Medium		Selepe Tloonane	
NW	DC37: Bojanala Platinum	NW372: Madibeng	Crocodile (West) and Marico	183	Hartebeespoort Supply Area Strategy	Maybe	Medium to high		Greater Brits	Split strategy, review & update strategy information
NW	DC37: Bojanala Platinum	NW372: Madibeng	Crocodile (West) and Marico	183	Hartebeespoort Supply Area Strategy	Maybe	Medium to high		Hartbeespoort Dam area	Split strategy, review & update strategy information
NW	DC37: Bojanala Platinum	NW372: Madibeng	Crocodile (West) and Marico	184	Sandspruit Rand Water Strategy	Maybe	High		Sandspruit ODI1&ODI2B	Split strategy; East - apply WC/WDM. West - review & update strategy
NW	DC37: Bojanala Platinum	NW373: Rustenburg	Crocodile (West) and Marico	185	Bafokeng RWS Strategy	Maybe	High		Bafokeng (Luka,Phokeng)	Review & update strategy information - better information available. Get input from Magalies Water
NW	DC37: Bojanala Platinum	NW373: Rustenburg	Crocodile (West) and Marico	186	Kortbegrip Water Supply Strategy	No	Low		Kortbegrip (Vaalkop BWS Southern)	
NW	DC37: Bojanala Platinum	NW373: Rustenburg	Crocodile (West) and Marico	32	Rustenburg Vaalkop BWS Strategy	Maybe	High		Rustenburg	Resolve institutional items - planning (DWA, WSAs, Water Boards), regional water supply problem; review & update strategy - better information available.
NW	DC37: Bojanala Platinum	NW374: Kgetlengrivier	Crocodile (West) and Marico	187	Borolelo and Swartruggens Cluster Strategy	Yes	Low		Borolelo Swartruggens	Review & update strategy - migration & growth due to nearby Rustenburg development & employment node
NW	DC37: Bojanala Platinum	NW374: Kgetlengrivier	Crocodile (West) and Marico	188	Koster Dam Strategy	Yes	High		Koster	Review & update strategy - migration & growth due to nearby Rustenburg development & employment node
NW	DC37: Bojanala Platinum	NW375: Moses Kotane	Crocodile (West) and Marico	189	Baphalane Water Supply Scheme Strategy	No	Low		Baphalane	
NW	DC37: Bojanala Platinum	NW375: Moses Kotane	Crocodile (West) and Marico	190	Bapong Water Supply Scheme Strategy	No	High		Bapong	
NW	DC37: Bojanala Platinum	NW375: Moses Kotane	Crocodile (West) and Marico	191	Disake Water Supply Scheme Strategy	No	Low		Disake/Morgalwaneng	
NW	DC37: Bojanala Platinum	NW375: Moses Kotane	Crocodile (West) and Marico	192	Koffiekraal Water Supply Scheme Strategy	Maybe	Low		Koffiekraal,Mankwe-Madikwe	GWQ problem
NW	DC37: Bojanala Platinum	NW375: Moses Kotane	Crocodile (West) and Marico	193	Madikwe & Pella Water Supply Strategy	No	High		Madikwe	
NW	DC37: Bojanala Platinum	NW375: Moses Kotane	Crocodile (West) and Marico	194	Magong Water Supply Scheme Strategy	Maybe	High		Magong	GWQ problem
NW	DC37: Bojanala Platinum	NW375: Moses Kotane	Crocodile (West) and Marico	195	Mankaipaya Water Supply Scheme Strategy	Maybe	Low		Mankaipaya	GWQ problem
NW	DC37: Bojanala Platinum	NW375: Moses Kotane	Crocodile (West) and Marico	196	Mmatau Water Supply Scheme Strategy	Maybe	Low		Mmatau	GWQ problem
NW	DC37: Bojanala Platinum	NW375: Moses Kotane	Crocodile (West) and Marico	197	Molatedi Bulk Water Supply Strategy	No	High		Molatedi	
NW	DC37: Bojanala Platinum	NW375: Moses Kotane	Crocodile (West) and Marico	30	Pella Strategy	No	Low		Pella	
NW	DC37: Bojanala Platinum	NW375: Moses Kotane	Crocodile (West) and Marico	198	Pitsediselujang Water Supply Scheme Strategy	Maybe	Low		Pitsediselujang	GWQ problem
NW	DC37: Bojanala Platinum	NW375: Moses Kotane	Crocodile (West) and Marico	199	Vaalkop Bulk Water Supply Strategy	Maybe	Medium		Vaalkop	Resolve institutional items - planning (DWA, WSAs, Water Boards), regional water supply problem; review & update strategy. Get input from Magalies Water. Water quality of Vaalkop Dam - to verify.
NW	DC38: Ngaka Modiri Molema	NW383: Mafikeng	Crocodile (West) and Marico	201	Madibe Western Community Base Supply Strategy	No	High		Madibe-Western	
NW	DC38: Ngaka Modiri Molema	NW383: Mafikeng	Crocodile (West) and Marico	202	Mafikeng Urban Strategy	Yes	Medium to high	yes	Mafikeng	Everyone agreed that this strategy should remain a priority. Update strategy to show that RBIG is at advanced stage of design of an upgrade to the WTW to 20 Ml/d.
NW	DC38: Ngaka Modiri Molema	NW383: Mafikeng	Crocodile (West) and Marico	203	Miga-North Community Base Supply Strategy	No	High		MigaNorth	
NW	DC38: Ngaka Modiri Molema	NW383: Mafikeng	Crocodile (West) and Marico	204	Wondermere-Slurry Community Base Supply Strategy	No	Low		Wondermere	
NW	DC38: Ngaka Modiri Molema	NW384: Ditsobotla	Crocodile (West) and Marico	209	Matikiring & Carlisonia Cluster Strategy	No	Low		Matikiring	
NW	DC38: Ngaka Modiri Molema	NW384: Ditsobotla	Crocodile (West) and Marico	210	Shiela Water Supply Scheme Strategy	No	Low		Shiela	
NW	DC38: Ngaka Modiri Molema	NW385: Ramotshere Moiloa	Crocodile (West) and Marico	211	Braklaagte and Leeufontein Strategy	No	Low		Brakaagte, Leeufontein	
NW	DC38: Ngaka Modiri Molema	NW385: Ramotshere Moiloa	Crocodile (West) and Marico	212	Dinokana Strategy	Yes	High		Dinokana	Everyone agreed that this strategy should remain a priority. Engineers appointed to formalise informal connections. Reports that aquifer levels are dropping
NW	DC38: Ngaka Modiri Molema	NW385: Ramotshere Moiloa	Crocodile (West) and Marico	34	Khunotswane Strategy	No	High		Khunotswane	

Prov	DM Code and Name	LM Code and Name	WMA Name	AT Rpt ID No.	Report Name	SSC Priority	Deficit	5 Strategic Areas	Cluster	Comments
NW	DC38: Ngaka Modiri Molema	NW385: Ramotshere Moiloa	Crocodile (West) and Marico	35	Madutle Strategy	No	High		Madutle	
NW	DC38: Ngaka Modiri Molema	NW385: Ramotshere Moiloa	Crocodile (West) and Marico	213	Molatedi-Gabarone WS Strategy	No	Low		Kopfontein, Molatedi/Gabarone	
NW	DC38: Ngaka Modiri Molema	NW385: Ramotshere Moiloa	Crocodile (West) and Marico	214	Mosweu Strategy	No	Low		Mosweu	
NW	DC38: Ngaka Modiri Molema	NW385: Ramotshere Moiloa	Crocodile (West) and Marico	36	Motswedi-Gopane Strategy	Yes	Medium		Motswedi-Gopane	It was suggested that this be considered a priority as well - apparently already water supply issues at the moment as ground water resources seem to be "drying up". Water supply from boreholes not reaching high-lying areas. Study team to obtain test information from boreholes drilled in the area and re-evaluate the water balance.
NW	DC38: Ngaka Modiri Molema	NW385: Ramotshere Moiloa	Crocodile (West) and Marico	215	Ngotwane Strategy	No	Low		Ngotwane	
NW	DC38: Ngaka Modiri Molema	NW385: Ramotshere Moiloa	Crocodile (West) and Marico	37	Reboile Strategy	No	Low		Reboile	
NW	DC38: Ngaka Modiri Molema	NW385: Ramotshere Moiloa	Crocodile (West) and Marico	216	Supingstadt Strategy	Yes	Medium to high		Supingstadt	Water shortages reported - review water balance components and other information that may make this strategy a priority.
NW	DC38: Ngaka Modiri Molema	NW385: Ramotshere Moiloa	Crocodile (West) and Marico	217	Witleigat - Lehurushe RWS Strategy	No	High		Witleigat/Lehurutse	
NW	DC38: Ngaka Modiri Molema	NW385: Ramotshere Moiloa	Crocodile (West) and Marico	38	Zeerust Strategy	Maybe	Medium		Zeerust	It was suggested that this be considered a priority as well due to the potential development of 3000 new erven soon. Consider whether these 3000 new even will be occupied by people from existing erven.

Summary

SSC Workshop Priority Allocation - DWA Northern Planning Region

Province	Maybe	No	Yes	Grand Total
GT	1	7	0	8
LP	12	112	30	154
MP	0	18	6	24
NW	14	23	6	43
Grand Total	27	160	42	229

* Note that some strategies include more than one water supply scheme in the report - based on a supply area using the same water resource

** The allocation of priorities is based on the water balance, strategic importance and water source quality

APPENDIX D DISTRICT MUNICIPALITY SUMMARY REPORTS

water affairs
Department: Water Affairs
REPUBLIC OF SOUTH AFRICA

DWA Contract No. WP9711

All Town Reconciliation Strategies - Northern Planning Region - Summary for Limpopo Province

ATRpt ID No.	Province	DM	LM	Cluster / Towns	Comment	Water Balance	Executive Summary	Conclusions & Recom-mendations	Estimated population, 2008 - 2030, High scenario						Water Requirements (mil m³/a), High Scenario (WC/WDM not included)						Unit Consumption (l/cap/day)		WC/WDM possible savings (mil m³/a)						Water Balance, high scenario (mil m³/a, with WC/WDM, WITH augmentation)						Water Source - Current							
									2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	2008	2030	2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	Name of Dam/River/Scheme	SurfaceW Licensed / Allocation (mil m³/a)	SW Supply (mil m³/a)	SW Quality	GroundW Licensed / Allocation (mil m³/a)	GW Supply (mil m³/a)	GW Quality	Level of Confidence in Info
69	Limpopo	Mopani	Ba-Phalaborwa	Ba Phalaborwa Individual Supply II		Graph 69	Exec Sum	Recomm	1 295	1 340	1 416	1 475	1 520	1 569	0.084	0.087	0.096	0.108	0.115	0.119	177.59	207.65	-	-	-	-	-	-	0.28	0.28	0.27	0.26	0.25	0.25	Letaba River	-	0.37	-	-	-	-	Low
70				Murchison		Graph 70	Exec Sum	Recomm	1 085	1 140	1 206	1 257	1 296	1 339	0.070	0.070	0.080	0.090	0.090	0.100	176.64	204.47	0.00	0.00	0.01	0.01	0.01	0.01	0.23	0.23	0.23	0.23	0.22	0.22	Thabina Dam and Tzaneen Dam	Tzaneen Dam: 7.13. Thabina Dam: 0.3.	0.30	-	0.03	0.00	-	Low
71				Namakgale-Lulekani		Graph 71	Exec Sum	Recomm	127 732	131 266	137 799	142 567	146 202	150 312	8.812	9.115	9.881	10.998	11.676	12.004	188.88	218.65	0.19	0.19	0.18	0.19	0.20	0.20	14.38	14.07	13.29	12.18	11.52	11.19	Olifants River Barrage Water Works	-	23.00	-	-	0.00	-	Low
55				Greater Giyani System A B		Graph 55	Exec Sum	Recomm	33 697	32 147	28 892	26 474	24 428	22 940	1.242	1.172	1.119	1.169	1.145	1.075	100.91	128.30	0.00	0.01	0.10	0.15	0.15	0.14	0.01	0.09	0.23	0.23	0.25	0.31	Middle Letaba Dam and Nsami Dam	1.25	1.25	-	0.44	0.00	Poor	Low
58				Greater Giyani System C		Graph 58	Exec Sum	Recomm	35 017	36 610	39 682	41 911	43 656	45 389	1.431	1.546	1.766	2.093	2.299	2.390	111.88	144.16		0.00	0.00	0.00	0.00	0.00	0.97	0.87	0.79	0.58	0.40	0.32	Middle Letaba Dam and Nsami Dam	2.40	2.40	-	-	0.00	-	Low
59				Greater Giyani System D		Graph 59	Exec Sum	Recomm	71 392	74 266	79 742	83 705	86 786	89 945	2.665	2.861	3.253	3.870	4.248	4.403	102.20	134.02	0.00	0.03	0.29	0.50	0.55	0.57	1.34	1.17	1.04	0.93	0.75	0.62	Middle Letaba Dam and Nsami Dam	4.00	4.00	-	4.45	0.00	-	Low
56				Greater Giyani System F1		Graph 56	Exec Sum	Recomm	26 004	25 521	24 487	23 941	23 525	23 501	0.946	0.931	0.949	1.058	1.104	1.102	99.60	128.38	0.00	0.01	0.09	0.14	0.14	0.14	0.16	0.19	0.25	0.19	0.15	0.15	Middle Letaba Dam and Nsami Dam	1.11	1.11	-	0.13	0.00	Marginal to Good	Low
57				Greater Giyani System F2		Graph 57	Exec Sum	Recomm	18 757	19 613	21 263	22 461	23 400	24 334	0.661	0.716	0.824	0.993	1.098	1.142	96.48	128.49	0.00	0.01	0.07	0.13	0.14	0.15	0.49	0.44	0.40	0.29	0.20	0.16	Middle Letaba Dam and Nsami Dam	1.15	1.15	-	1.25	0.00	-	Low
11			Greater Letaba	Middle Letaba		Graph 11	Exec Sum	Recomm	289 430	298 070	309 004	317 655	324 389	331 662	13.526	14.133	15.744	19.029	20.864	21.321	127.95	176.00	0.00	0.14	1.42	2.47	2.71	2.77	-4.50	0.51	1.14	0.16	-1.43	-1.83	Middle Letaba Dam and Nsami Dam	-	5.26	Good	-	3.77	Good	Medium
218				Modjadji Dam		Graph 218	Exec Sum	Recomm	109 457	105 541	99 901	95 893	92 419	90 314	3.640	3.560	3.600	3.980	4.089	3.998	91.05	121.20	0.00	0.04	0.32	0.52	0.53	0.52	-2.31	0.11	0.35	0.17	0.07	0.15	Modjadji Dam	1.33	1.33	Good	-	0.00	Good	Medium
60				Sekgopo Individual		Graph 60	Exec Sum	Recomm	25 638	25 428	24 981	24 810	24 651	24 797	1.016	1.019	1.057	1.185	1.245	1.252	108.50	138.23	0.00	0.01	0.10	0.15	0.16	0.16	0.01	0.01	0.06	0.07	0.02	0.01	-	-	-	-	1.45	1.02	-	Low
61				Sekgosese Individual		Graph 61	Exec Sum	Recomm	21 710	21 657	21 389	21 345	21 278	21 456	0.917	0.924	0.961	1.075	1.130	1.139	115.64	145.34	0.00	0.01	0.09	0.14	0.15	0.15	-0.79	-0.04	0.05	0.05	0.01	0.00	-	-	0.00	-	0.20	0.13	-	Low
62			Greater Tzaneen	Modjadjiskloof		Graph 62	Exec Sum	Recomm	31 056	31 685	33 317	35 032	36 835	38 731	0.935	0.988	1.115	1.364	1.534	1.613	82.43	114.02	0.00	0.01	0.10	0.18	0.20	0.21	0.63	0.59	0.55	0.38	0.23	0.16	Vergelegen Dam and Tzaneen Dam	3.08	0.46	Acceptable	0.49	0.00	Good. BH between Class 0 and Class 1.	Low
63				Ritavi I Letaba		Graph 63	Exec Sum	Recomm	81 965	83 176	85 315	86 984	88 240	90 049	2.506	2.600	2.860	3.389	3.678	3.753	83.71	114.11	0.00	0.00	0.26	0.44	0.48	0.49	0.95	0.89	0.86	0.51	0.26	0.20	Letaba River	-	2.20	-	0.26	0.26	Acceptable. Several boreholes Poor.	Low
64				Ritavi II		Graph 64	Exec Sum	Recomm	95 076	96 470	98 933	100 862	102 319	104 422	3.125	3.214	3.520	4.137	4.475	4.567	89.99	119.74	0.02	0.03	0.32	0.54	0.58	0.59	1.14	1.06	1.04	0.65	0.35	0.27	Letaba River	-	3.50	-	1.45	0.65	Good. BH between Class 0 and Class 1. Some BH Class 2 (marginal use).	Low
65				Thabina		Graph 65	Exec Sum	Recomm	101 011	102 129	103 518	103 855	104 007	104 229	3.876	4.039	4.424	5.136	5.539	5.671	105.06	148.96	0.00	0.04	0.40	0.67	0.72	0.74	1.17	1.05	1.02	0.78	0.43	0.32	Thabina Dam	-	2.80	Acceptable	-	2.25	Good. BH between Class 0 and Class 1. Some BH Class 2 (marginal use).	Low
66				Thapane		Graph 66	Exec Sum	Recomm	53 446	55 479	59 413	62 298	64 544	66 817	1.613	1.731	1.988	2.424	2.687	2.781	82.63	113.95	0.00	0.02	0.18	0.32	0.35	0.36	0.92	0.81	0.72	0.42	0.19	0.11	Thapane Dam	-	1.20	Acceptable	-	0.33	Acceptable. Some BH Class 3 (Poor).	Low
67				Tours		Graph 67	Exec Sum	Recomm	61 400	62 999	66 038	68 254	69 935	71 776	2.392	2.514	2.785	3.250	3.520	3.612	106.66	137.78	0.00	0.03	0.25	0.42	0.46	0.47	0.77	0.67	0.63	0.33	0.10	0.02	Tours Dam	-	1.46	-	2.46	0.00	Good	Low
68				Tzaneen Individual Supply		Graph 68	Exec Sum	Recomm	42 154	43 036	45 129	47 186	49 248	51 459	0.944	0.984	1.134	1.442	1.639	1.713	61.31	91.14	0.00	0.00	0.10	0.19	0.21	0.22	1.62	1.58	2.23	2.01	1.83	1.77	George's Valley Treatment Works	-	2.56	-	-	0.00	-	Low
72			Maruleng	Hoedspruit Kampersrus		Graph 72	Exec Sum	Recomm	3 909	4 101	4 316	4 443	4 519	4 595	0.202	0.217	0.243	0.281	0.305	0.317	141.48	188.88	0.00	0.22	0.22	0.25	0.27	0.28	0.12	0.32	0.30	0.29	0.28	0.28	Blyde River Irrigation Scheme	3.70	0.28	Acceptable	0.03	0.04	Good. Some BH class 3 (marginal).	Low
73				Mametja Sekororo		Graph 73	Exec Sum	Recomm	96 565	100 035	104 335	107 548	110 001	112 909	5.310	5.310	5.780	6.540	6.990	7.170	150.55	173.86	0.05	0.05	0.52	0.85	0.91	0.93	-1.22	0.54	1.34	1.31	1.12	0.96	Metz Dam	-	2.68	Poor	1.37	1.37	55% of GW is Acceptable.	Low
6				Marulang Individual Supply Calais		Graph 6	Exec Sum	Recomm	3 027	2 801	2 497	2 275	2 092	1 958	0.157	0.146	0.136	0.136	0.131	0.123	142.00	171.99	0.00	0.00	0.01	0.02	0.02	0.02	-0.06	-0.05	-0.01	0.02	0.02	0.03	Selati River	-	0.00	Good	1.36	0.10	Good	Low

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All Town Reconciliation Strategies - Northern Planning Region - Summary for Limpopo Province

ATRpt ID No.	Province	DM	LM	Cluster / Towns	Comment	Water Balance	Executive Summary	Conclusions & Recom-mendations	Estimated population, 2008 - 2030, High scenario						Water Requirements (mil m³/a), High Scenario (WC/WDM not included)						Unit Consumption (l/cap/day)		WC/WDM possible savings (mil m³/a)						Water Balance, high scenario (mil m³/a, with WC/WDM, WITH augmentation)						Water Source - Current							
									2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	2008	2030	2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	Name of Dam/River/Scheme	SurfaceW Licensed / Allocation (mil m³/a)	SW Supply (mil m³/a)	SW Quality	GroundW Licensed / Allocation (mil m³/a)	GW Supply (mil m³/a)	GW Quality	Level of Confidence in Info
75	Limpopo	Vhembe	Musina	Musina RWS Strategy		Graph 75	Exec Sum	Recomm	23 914	24 322	25 154	26 526	27 684	28 579	1.515	1.605	1.753	1.980	2.122	2.186	173.45	209.42	0.00	0.02	0.02	0.02	0.02	0.02	0.11	0.12	0.12	0.12	0.11	0.11	Limpopo River	10.40	10.41	Good. There are some water quality problems.	-	-	Good. There are some water quality problems.	Medium
74				Luphephe Nwandedzi North RWS Musina Strategy		Graph 74	Exec Sum	Recomm	4 604	5 064	5 064	6 418	6 988	7 493	0.282	0.312	0.367	0.445	0.504	0.540	167.70	197.31	-	-	-	-	-	-	0.07	0.14	0.08	0.10	0.04	0.01	-	-	0.00	-	0.00	0.35	Marginal	Low
20			Mutale	Luphephe Nwanedzi Main RWS Strategy		Graph 20	Exec Sum	Recomm	18 924	20 076	20 076	22 742	23 752	24 633	0.720	0.773	0.876	1.051	1.162	1.205	104.17	133.93	-	-	-	-	-	-	0.58	0.53	0.42	0.25	0.14	0.10	Nwanedi Dam	-	-	No issues relating to water quality are noted in this area	-	1.30	Marginal to poor	Low
24				Mutale Main Strategy		Graph 24	Exec Sum	Recomm	11 613	12 324	12 324	13 964	14 584	15 126	0.418	0.449	0.511	0.617	0.684	0.709	98.55	128.33	-	-	-	-	-	-	0.32	0.29	0.23	0.12	0.06	0.03	Masis RWS	0.03	0.03	-	-	0.71	Unclear.	Low
21				Luphephe-Nwanedzi North Strategy		Graph 21	Exec Sum	Recomm	9 189	9 751	9 751	11 048	11 540	11 967	0.340	0.365	0.414	0.499	0.552	0.573	101.30	131.09	-	-	-	-	-	-	0.36	0.34	0.29	0.20	0.15	0.13	-	-	-	-	-	0.70	Marginal to poor	Low
22				Makuya Mutale		Graph 22	Exec Sum	Recomm	5 158	5 150	5 150	4 474	4 227	4 006	0.194	0.193	0.191	0.202	0.202	0.192	102.97	131.22	-	-	-	-	-	-	-0.04	0.01	0.01	0.02	0.02	0.03	-	-	-	-	-	0.15	Acceptable. BH between Class 0 and Class 2. Some BH above Class 2 (marginal use).	Low
23				Masisi Strategy		Graph 23	Exec Sum	Recomm	11 613	12 324	12 324	13 964	14 584	15 126	0.418	0.449	0.511	0.617	0.684	0.709	98.55	128.33	-	-	-	-	-	-	0.32	0.29	0.23	0.12	0.06	0.03	Masis RWS	0.03	0.03	-	-	0.71	Unclear.	Low
7			Makhado	Buysdorp Strategy		Graph 7	Exec Sum	Recomm	1 735	1 674	1 687	1 705	1 722	1 744	0.108	0.105	0.109	0.120	0.125	0.127	170.43	199.37	0.00	0.00	0.01	0.02	0.02	0.02	-0.03	-0.02	-0.02	-0.02	-0.03	-0.03	-	-	0.00	-	0.08	0.08	-	Low
9				Makhado Strategy		Graph 9	Exec Sum	Recomm	13 857	14 369	15 013	15 564	16 009	16 412	0.847	0.889	0.989	1.176	1.286	1.319	167.35	220.04	0.00	0.01	0.09	0.15	0.17	0.17	2.76	3.52	3.50	3.38	3.28	3.25	Albasini till 2010 /Nandoni Dam after 2010	Albasini: 2.4. Nandoni: 3.819	2.40	-	-	1.21	-	Low
10				Matshavhawe Kunda Strategy		Graph 10	Exec Sum	Recomm	2 454	2 550	2 665	2 765	2 846	2 918	0.084	0.088	0.098	0.117	0.128	0.132	93.72	123.85	0.00	0.00	0.01	0.02	0.02	0.02	0.19	0.18	0.18	0.17	0.16	0.16	-	-	0.00	-	-	0.27	-	Low
11				Middle Letaba Strategy		Graph 11	Exec Sum	Recomm	289 430	298 070	309 004	317 655	324 389	331 662	13.526	14.133	15.774	19.029	20.864	21.321	127.95	176.00	0.00	0.14	1.42	2.47	2.71	2.77	-4.50	0.51	1.14	0.16	-1.43	-1.83	Middle Letaba Dam and Nsami Dam	-	5.26	Good	-	3.77	Good	Medium
12				Nzhelele Makhado Strategy		Graph 12	Exec Sum	Recomm	94 383	97 848	102 225	105 953	108 978	111 720	3.731	3.912	4.319	5.052	5.493	5.631	108.23	138.00	0.00	0.04	0.39	0.66	0.71	0.73	-0.80	-0.74	-0.80	-1.27	-1.65	-1.77	Mutshedzi Dam	2.94	2.94	-	-	0.00	-	Medium
13				Sinthumule Kutama Strategy		Graph 13	Exec Sum	Recomm	80 607	82 408	85 439	88 047	90 220	92 271	3.269	3.380	3.698	4.289	4.641	4.746	111.03	140.82	0.00	0.03	0.33	0.56	0.60	0.62	-2.33	-2.41	-1.13	-1.49	-1.80	-1.89	-	-	0.00	-	0.94	0.94	-	Low
15				Tshakuma Strategy		Graph 15	Exec Sum	Recomm	37 496	35 988	36 075	36 246	36 527	36 961	1.423	1.382	1.467	1.671	1.784	1.805	103.90	133.70	0.00	0.01	0.13	0.22	0.23	0.24	0.17	0.22	0.26	0.14	0.04	0.02	Tshakuma WTW	1.42	1.42	-	-	0.17	-	Low
14				Tshifiri Murunwa Strategy		Graph 14	Exec Sum	Recomm	21 560	21 560	22 528	23 355	24 023	24 628	0.727	0.763	0.849	1.007	1.101	1.129	92.32	125.51	0.00	0.01	0.08	0.13	0.14	0.15	0.12	0.09	0.07	0.07	0.04	0.01	Tshifiri and Murunwa Weirs	0.50	0.50	-	0.35	0.35	-	Medium
16				Tshitale Strategy		Graph 16	Exec Sum	Recomm	31 652	32 459	33 710	34 784	35 672	36 503	1.091	1.134	1.254	1.483	1.618	1.655	94.37	124.13	0.00	0.01	0.11	0.19	0.21	0.22	0.08	0.05	0.13	0.11	0.04	0.00	Nandoni Dam	0.34	0.34	-	-	0.84	-	Low
17				Valdezia Strategy		Graph 17	Exec Sum	Recomm	10 541	10 740	11 116	11 438	11 712	11 972	0.404	0.417	0.459	0.541	0.589	0.603	104.93	137.90	0.00	0.00	0.04	0.07	0.08	0.08	-0.40	0.03	0.02	0.06	0.01	0.00	Nandoni Dam	0.13	0.13	-	-	0.31	-	Low
18				Vhembe Individual Strategy		Graph 18	Exec Sum	Recomm	1 138	1 099	1 108	1 121	1 134	1 152	0.069	0.068	0.071	0.078	0.082	0.083	166.00	197.26	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	-	-	0.00	-	-	0.08	Marginally poor	Low
19				Vondo South Strategy		Graph 19	Exec Sum	Recomm	30 567	31 691	33 108	34 319	35 300	36 190	1.326	1.389	1.526	1.768	1.915	1.963	118.77	148.51	0.00	0.01	0.14	0.23	0.25	0.26	0.53	0.90	0.91	0.80	0.68	0.63	Nandoni Dam	1.75	1.75	-	-	0.10	-	Low
				Makhado Mapuve System RWS Strategy		Graph 8	Exec Sum	Recomm	2049	2130	2228	2132	2379	2441	0.08	0.08	0.09	0.1	0.11	0.12	106.90	134.59	0	0	0.01	0.01	0.02	0.02	0.06	0.06	0.05	0.04	0.04	0.03	GW	0	0	-	0	0.06	Acceptable, between class 0 and 2	Low
39			Thulamela	Damani Thulamela Strategy		Graph 39	Exec Sum	Recomm	77 339	78 123	77 077	75 349	74 059	73 332	3.122	3.189	3.321	3.657	3.796	3.758	110.52	140.30	0.00	0.03	0.30	0.48	0.49	0.49	0.64	0.60	0.74	0.58	0.46	0.49	Damani Dam	3.41	3.41	-	-	0.35	-	Medium
40				Lambani Thulamela Strategy		Graph 40	Exec Sum	Recomm	7 484	7 403	7 051	6 659	6 375	6 190	0.268	0.269	0.272	0.293	0.298	0.289	98.04	127.83	0.00	0.00	0.02	0.04	0.04	0.04	-0.05	-0.05	0.01	0.01	0.01	0.01	Xikundu Weir, Letaba River	0.21	0.21	-	-	0.00	-	Low
41				Malamulele West Thulamela Strategy		Graph 41	Exec Sum	Recomm	68 225	72 206	76 932	81 158	84 513	87 411	2.666	2.858	3.238	3.904	4.320	4.469	106.99	139.98	0.00	0.03	0.29	0.51	0.56	0.58	-2.67	0.10	0.33	0.33	-0.03	-0.16	Malamulele West (Mapuve) Water Treatment works	0.88	0.70	-	-	0.01	-	Medium
42				Mutale Makuya Thulamela Strategy		Graph 42	Exec Sum	Recomm	2 660	2 820	3 007	3 176	3 309	3 424	0.088	0.094	0.107	0.131	0.145	0.150	90.58	119.94	0.00	0.00	0.01	0.02	0.02	0.02	0.07	0.29	0.29	0.30	0.29	0.29	-	-	0.00	-	-	0.16	-	Low
43				North Malamulele East Thulamela Strategy		Graph 43	Exec Sum	Recomm	65 549	69 367	73 905	77 960	81 185	83 967	2.151	2.308	2.626	3.195	3.548	3.669	89.84	119.63	0.00	0.02	0.24	0.42	0.46	0.48	1.93	1.80	1.69	1.30	0.99	0.89	Xikundu and Mhinga Weirs	Xikundu: 3.24. Mhinga: 0.73	3.97	-	-	0.11	-	Low
44				Nzhelele Thulamela Strategy		Graph 44	Exec Sum	Recomm	30 397	32 173	34 280	36 161	37 658	38 952	1.023	1.097	1.247	1.512	1.677	1.735	92.14	121.95	0.00	0.01	0.11	0.20	0.22	0.23	-0.20	0.03	0.14	0.16	0.09	0.04	Mutshedzi Dam	0.73	0.73	-	0.09	0.09	-	Medium
45				South Malamulele Thulamela Strategy		Graph 45	Exec Sum	Recomm	100 549	106 405	113 363	119 583	124 583	128 793	3.336	3.579	4.070	4.944	5.487	5.675	90.84	120.64	0.00	0.04	0.37	0.64	0.71	0.74	0.28	0.16	0.00	-0.60	-1.07	-1.23	Malamulele Weir	3.50	3.50	No problems reported regarding quality of surface water	-	0.11	-	Low
46				Tshifudi Thulamela Strategy		Graph 46	Exec Sum	Recomm	28 562	30 228	32 206	33 974	35 382	36 595	0.944	1.013	1.152	1.400	1.554	1.607	90.49	120.23	0.00	0.01	0.10	0.18	0.20	0.21	-0.09	0.05	0.11	0.14	0.05	0.01	Xikundu Weir, Letaba River	0.86	0.86	-	-	0.00	-	Low
47				Vondo Thulamela Strategy		Graph 47	Exec Sum	Recomm	229 090	237 469	244 540	249 438	253 230	256 943	10.119	10.606	11.533	13.263	14.225	14.431	120.93	153.77	0.00	0.11	1.04	1.72	1.87	3.94	5.23	4.85	4.86	3.81	2.98	2.80	Vondo Dam and Tshakuma Dam	Vondo WTW: 13.3. Phiphidi WTW: 0.37. Dzindi and Dzhinga WTW: 1.46. Nandoni Dam: 6.044.	15.13	-	-	0.22	-	Low

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ATRpt ID No.	Province	DM	LM	Cluster / Towns	Comment	Water Balance	Executive Summary	Conclusions & Recom-mendations	Estimated population, 2008 - 2030, High scenario						Water Requirements (mil m³/a), High Scenario (WC/WDM not included)						Unit Consumption (l/cap/day)		WC/WDM possible savings (mil m³/a)						Water Balance, high scenario (mil m³/a, with WC/WDM, WITH augmentation)						Water Source - Current							
									2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	2008	2030	2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	Name of Dam/River/Scheme	SurfaceW Licensed / Allocation (mil m³/a)	SW Supply (mil m³/a)	SW Quality	GroundW Licensed / Allocation (mil m³/a)	GW Supply (mil m³/a)	GW Quality	Level of Confidence in Info
76				Alldays GWS		Graph 76	Exec Sum	Recomm	3 421	3 761	4 279	4 774	5 187	5 659	0.115	0.129	0.156	0.200	0.231	0.252	92.04	121.92	-	-	-	-	-	-	-0.05	0.06	0.13	0.09	0.06	0.04	-	-	-	-	0.00	0.06	Marginal to poor	Low
77				Archibald GWS		Graph 77	Exec Sum	Recomm	6 921	7 371	8 379	9 348	10 152	11 071	0.344	0.382	0.453	0.556	0.631	0.688	136.08	170.14	-	-	-	-	-	-	-0.12	0.09	0.12	0.12	0.09	0.03	-	-	-	-	-	0.22	Marginal	Medium
78				Avon GWS		Graph 78	Exec Sum	Recomm	27 389	28 429	29 411	30 059	30 494	31 081	1.687	1.736	1.837	2.025	2.126	2.153	168.64	189.65	0.00	0.02	0.17	0.26	0.28	0.28	-0.97	-1.00	0.54	0.45	0.37	0.34	-	-	-	-	-	0.72	High quality	Medium
79				Blouberg RWS		Graph 79	Exec Sum	Recomm	22 500	24 723	28 105	31 358	34 054	37 129	0.885	0.984	1.182	1.490	1.710	1.865	107.69	137.52	0.00	0.01	0.11	0.19	0.22	0.24	0.12	0.03	0.80	0.58	0.39	0.26	-	-	-	-	-	1.00	High quality	Medium
80				Ga Hlako RWS		Graph 80	Exec Sum	Recomm	29 881	28 223	24 979	21 971	19 487	17 377	1.008	0.977	0.942	0.972	0.937	0.853	92.36	134.40	0.00	0.01	0.09	0.13	0.12	0.11	-0.46	0.02	0.13	0.14	0.17	0.24	-	-	-	-	-	0.55	High quality	Medium
81				Ga-Rawesi GWS		Graph 81	Exec Sum	Recomm	7 868	7 852	7 603	7 309	7 069	6 875	0.332	0.335	0.342	0.368	0.375	0.365	115.53	145.35	0.00	0.00	0.03	0.05	0.05	0.05	0.12	0.12	0.15	0.14	0.13	0.14	-	-	-	High	-	0.46	High quality	Medium
82				Gorkum GWS		Graph 82	Exec Sum	Recomm	11 162	11 849	12 713	13 441	13 996	14 640	0.496	0.532	0.600	0.708	1.348	0.810	121.66	151.48	0.00	0.01	0.05	0.09	0.10	0.11	-0.12	0.08	0.16	0.18	-0.40	0.14	-	-	-	-	-	0.38	High quality	Medium
83				Senwabarwana GWS		Graph 83	Exec Sum	Recomm	15 775	17 336	19 705	21 985	23 877	26 034	0.578	0.643	0.776	0.985	1.134	1.237	100.32	130.09	0.00	0.01	0.07	0.13	0.15	0.16	0.17	0.41	0.34	0.39	0.26	0.17	-	-	-	-	-	0.74	Poor in some areas	Medium
84				Silwermyn_Kirstenspruit GWS		Graph 84	Exec Sum	Recomm	16 238	16 880	17 501	17 923	18 210	18 586	0.664	0.698	0.764	0.879	0.943	0.963	111.96	141.86	-	-	-	-	-	-	0.31	0.28	0.21	0.10	0.03	0.01	-	-	-	-	-	0.98	High quality	Medium
85				Taaiboschgroet GWS		Graph 85	Exec Sum	Recomm	51 461	51 447	50 046	48 253	46 582	45 215	1.799	1.846	1.952	2.199	2.303	2.280	95.71	138.06	0.00	0.02	0.18	0.29	0.30	0.30	-0.10	0.49	0.54	0.41	0.32	0.34	-	-	-	-	-	1.63	High quality	Medium
86				Thalahane GWS		Graph 86	Exec Sum	Recomm	3 389	3 684	4 102	4 487	4 776	5 109	0.114	0.128	0.155	0.199	0.230	0.251	92.10	134.51	0.00	0.00	0.01	0.03	0.03	0.03	-0.04	0.04	0.05	0.10	0.07	0.05	-	-	-	High	0.02	0.07	High quality	Medium
87				Aganang East GWS		Graph 87	Exec Sum	Recomm	32 425	33 428	35 107	36 441	37 472	38 783	1.258	1.312	1.458	1.711	1.861	1.927	106.22	136.03	-	-	-	-	-	-	-0.06	0.18	0.29	0.18	0.08	0.02	-	-	-	High	1.19	1.19	High quality	Medium
88				Aganang North GWS		Graph 88	Exec Sum	Recomm	20 645	19 836	18 975	18 259	17 645	17 231	0.779	0.757	0.767	0.838	0.857	0.837	103.31	132.99	0.00	0.02	0.07	0.11	0.11	0.11	-0.01	0.61	0.65	0.62	0.60	0.62	-	-	-	High	1.35	1.35	High quality	Medium
89				Bakone GWS		Graph 89	Exec Sum	Recomm	31 041	30 422	30 038	29 758	29 532	29 609	1.123	1.114	1.168	1.319	1.390	1.393	99.05	128.81	-	-	-	-	-	-	0.01	0.07	0.13	0.09	0.01	0.01	-	-	-	High	-	1.13	High quality	Medium
90				Ga-Mokobodi GWS		Graph 90	Exec Sum	Recomm	29 246	30 529	32 570	34 211	35 493	37 037	1.207	1.274	1.433	1.691	1.851	1.931	112.99	142.74	-	-	-	-	-	-	0.50	0.44	0.28	0.25	0.09	0.01	-	-	-	High	-	1.71	46% of boreholes have good water quality	Medium
91				Hout River RWS		Graph 91	Exec Sum	Recomm	11 824	12 023	12 409	12 711	12 942	13 277	0.453	0.466	0.509	0.591	0.637	0.653	104.89	134.66	-	-	-	-	-	-	0.08	0.06	0.18	0.10	0.05	0.03	Hout River Dam	-	0.21	High	-	0.32	High quality	Medium
92				Moletje South GWS		Graph 92	Exec Sum	Recomm	32 470	33 868	36 099	37 888	39 285	40 971	1.249	1.318	1.487	1.767	1.939	2.022	105.31	135.12	0.00	0.01	0.13	0.23	0.25	0.26	-0.04	0.18	0.41	0.50	0.35	0.28	-	-	-	-	-	1.21	High quality	Medium
3				Matoks Supply Area		Graph 3	Exec Sum	Recomm	72 814	72 765	74 039	74 871	75 303	76 417	2.844	2.875	3.094	3.535	3.761	3.816	106.94	136.72	0.00	0.00	0.10	0.29	0.32	0.33	0.19	0.16	0.81	0.81	0.86	0.81	-	-	0.00	-	0.07	3.04	Varies between Class 0 and Class 4	Low
94				Molemole West Supply Area		Graph 94	Exec Sum	Recomm	36 701	38 836	37 758	38 392	38 728	39 384	1.472	1.494	1.617	1.853	1.974	2.008	109.81	139.59	-	-	-	-	-	-	-0.06	0.16	0.24	0.16	0.03	0.00	-	-	-	-	-	1.41	Varies between Class 0 and Class 2	Low
95				Badimong		Graph 95	Exec Sum	Recomm	42 259	44 962	48 504	51 599	54 010	56 847	1.779	1.913	2.174	2.593	2.861	3.012	115.26	145.06	0.00	0.02	0.20	0.34	0.37	0.39	-0.74	0.25	0.57	0.53	0.54	0.40	Ebenezer main	0.27	0.99	-	0.01	0.06	Varies between Class 1 and Class 3	Medium
96				Boyne		Graph 96	Exec Sum	Recomm	8 488	7 868	6 751	5 785	5 049	4 437	0.356	0.334	0.302	0.290	0.267	0.235	114.83	145.01	0.00	0.00	0.03	0.04	0.04	0.03	-0.07	0.01	0.07	0.09	0.11	0.14	Ebenezer main	0.25	0.25	-	0.13	0.04	Varies between Class 0 and Class 3	Medium
97				Chuene Maja		Graph 97	Exec Sum	Recomm	24 532	23 546	21 424	19 451	17 993	16 756	1.040	1.009	0.966	0.983	0.958	0.893	116.07	145.91	0.00	0.01	0.09	0.13	0.13	0.12	-0.61	0.01	0.13	0.16	0.18	0.24	Chuene Dam	-	0.36	-	0.06	0.08	Varies between Class 1 and Class 3	Medium
98				Hout River		Graph 98	Exec Sum	Recomm	29 970	31 173	32 788	34 115	35 128	36 398	1.086	1.144	1.278	1.515	1.656	1.715	99.21	129.00	0.00	0.01	0.12	0.20	0.22	0.22	-0.45	0.17	0.29	0.33	0.32	0.26	Hout River Dam	-	0.15	-	0.58	0.48	Varies between Class 1 and Class 3	Medium
99				Laaste Hoop		Graph 99	Exec Sum	Recomm	10 638	10 693	10 499	10 233	10 003	9 841	0.493	0.500	0.515	0.557	0.572	0.563	126.88	156.63	0.00	0.01	0.05	0.07	0.07	0.07	-0.30	0.01	0.09	0.09	0.08	0.09	Ebenezer main	-	0.06	-	-	0.14	Varies between Class 1 and Class 3	Medium
100				Mankweng		Graph 100	Exec Sum	Recomm	43 857	46 661	50 338	53 549	56 052	58 995	1.844	1.983	2.253	2.688	2.966	3.122	115.11	144.89	0.00	0.02	0.20	0.35	0.39	0.41	-0.23	0.29	0.60	0.61	0.57	0.43	Ebenezer main	-	1.55	-	-	0.07	Varies between Class 1 and Class 3	Medium
101				Molepo		Graph 101	Exec Sum	Recomm	25 589	25 409	25 051	23 559	22 059	20 907	0.804	0.793	0.776	0.794	0.785	0.749	86.02	98.08	0.00	0.01	0.07	0.10	0.10	0.10	-0.80	0.00	0.08	0.10	0.10	0.14	Molepo Dam	-	0.36	-	0.24	0.33	Varies between Class 1 and Class 3	Medium
102				Moletje East		Graph 102	Exec Sum	Recomm	36 914	37 102	36 432	35 512	34 724	34 163	0.912	0.924	0.941	0.996	1.013	0.996	67.64	79.82	0.00	0.01	0.09	0.13	0.13	0.13	-0.24	0.06	0.15	0.17	0.16	0.17	-	-	-	-	0.72	0.67	Varies between Class 1 and Class 3	Medium
103				Moletje North		Graph 103	Exec Sum	Recomm	9 566	10 053	10 625	11 091	11 438	11 864	0.237	0.251	0.275	0.312	0.335	0.347	67.83	80.08	0.00	0.00	0.03	0.04	0.04	0.05	-0.11	0.03	0.08	0.06	0.07	0.05	-	-	0.00	-	0.18	0.13	Varies between Class 1 and Class 3	Medium
104				Moletje South		Graph 104	Exec Sum	Recomm	12 442	11 627	10 116	8 785	7 772	6 924	0.307	0.289	0.261	0.246	0.227	0.202	67.56	79.87	0.00	0.00	0.02	0.03	0.03	0.03	-0.02	0.00	0.05	0.08	0.09	0.11	-	-	-	-	0.51	0.29	Varies between Class 0 and Class 3	Medium
105				Mothapo		Graph 105	Exec Sum	Recomm	29 770	31 191	32 801	34 073	35 013	36 182	0.735	0.776	0.846	0.955	1.020	1.054	67.60	79.75	0.00	0.01	0.08	0.12	0.13	0.14	-0.07	0.09	0.19	0.18	0.17	0.14	Ebenezer main	0.04	0.04	-	1.34	0.63	Varies between Class 1 and Class 3	Medium
1				Olifants-Sands		Graph 1	Exec Sum	Recomm	168 270	179 018	193 118	205 435	215 003	226 318	11.324	12.191	13.927	16.794	18.615	19.592	184.25	237.01	0.00	0.12	1.25	2.18	2.42	2.55	10.79	10.04	9.44	7.50	5.92	5.07	Ebenezer Dam, Dap Naude Dam, and Olifantspoort weir at the Olifants River	22.11	22.11	-	3.75	0.00	Acceptable	Medium
106				Sebayeng-Dikgale		Graph 106	Exec Sum	Recomm	58 466	58 190	56 233	54 004	52 201	50 774	2.482	2.497	2.540	2.733	2.784	2.708	116.23	146.02	0.00	0.03	0.23	0.36	0.36	0.35	-1.23	0.23	0.44	0.42	0.46	0.52	Ebenezer main	0.04	0.00	-	1.63	1.25	Varies between Class 1 and Class 3	Medium
107				Segwasi		Graph 107	Exec Sum	Recomm	4 653	4 653	4 548	4 412	4 298	4 216	0.123	0.124	0.126	0.132	0.133	0.131	72.37	85.07	0.00	0.00	0.01	0.02	0.02	0.02	-0.03	0.01	0.02	0.02	0.02	0.02	Ebenezer main	0.05	0.05	-	0.03	0.05	Varies between Class 1 and Class 3	Medium
108				Flag Boshilo RWS West		Graph 108	Exec Sum	Recomm	16 694	17 036	18 291	19 214	19 267	19 272	0.527	0.545	0.627	0.763	0.818	0.818	86.43	116.21	0.00	0.00	0.06	0.10	0.11	0.11	-0.10	-0.12	0.21	0.16	0.17	0.17	Olifants River	0.04	0.35	Poor	0.04	0.08	Poor to unacceptable	Low
109				GSM RWS		Graph 109	Exec Sum	Recomm	218 797	211 790	208 480	204 619	200 845	199 615	7.139	7.006	7.369	8.345	8.738	8.684	89.33	119.11	0.00	0.00	0.15	0.17	0.18	0.17	0.46	0.59	1.48	0.52	0.14	0.19	Olifantspoort	-	7.60	Good	0.02	0.00	Varies between Class 1 and Class 4	Low
110				Mafefe Individual GWS		Graph 110	Exec Sum	Recomm	9 049	8 358	7 601	6 969	6 496	6 157	0.351	0.328	0.315	0.327	0.322	0.306	106.20	136.07	0.00	0.00	0.03	0.04	0.04	0.04	0.10	0.12	0.16	0.17	0.17	0.19	Mpholapitse River	-	0.00	Good	-	0.45	Varies between Class 0 and Class 4	Low
111	Limpopo			Mathabatha Individual GWS		Graph 111	Exec Sum	Recomm	8 318	7 849	7 399	7 033	6 791	6 673	0.331	0.316	0.315	0.338	0.344	0.338	108.95	138.68	0.00	0.00	0.03	0.04	0.05	0.04	0.07	0.09	0.11	0.11	0.10	0.11	Mphogodima River	-	0.00	Good	-	0.40	Varies between Class 0 and Class 4	Low

water affairs
Department: Water Affairs
REPUBLIC OF SOUTH AFRICA

DWA Contract No. WP9711

All Town Reconciliation Strategies - Northern Planning Region - Summary for Limpopo Province

ATRpt ID No.	Province	DM	LM	Cluster / Towns	Comment	Water Balance	Executive Summary	Conclusions & Recom-mendations	Estimated population, 2008 - 2030, High scenario						Water Requirements (mil m³/a), High Scenario (WC/WDM not included)						Unit Consumption (l/cap/day)		WC/WDM possible savings (mil m³/a)						Water Balance, high scenario (mil m³/a, with WC/WDM, WITH augmentation) (<0 = red; >4 = blue)						Water Source - Current							
									2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	2008	2030	2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	Name of Dam/River/Scheme	SurfaceW Licensed / Allocation (mil m³/a)	SW Supply (mil m³/a)	SW Quality	GroundW Licensed / Allocation (mil m³/a)	GW Supply (mil m³/a)	GW Quality	Level of Confidence in Info
112	LP	Waterberg	Thabazimbi	Leeupoort & Raphuti	Cluster currently in deficit (if WC/WDM not taken into account). Supply can be augmented via pipeline supplying Rooiberg nearby. High per capita consumption.	Graph 112	Exec Sum	Recomm	2324	2448	2689	2916	3100	3250	0.130	0.147	0.174	0.211	0.239	0.256	153.150	215.658	-	0.001	0.016	0.027	0.031	0.033	0.128	0.113	0.100	0.075	0.050	0.035	BH	N/A	N/A	N/A		0.048	GW high in fluorides, but treated with RO	Med
113				Northam	Water supplied and water requirements to be verified.	Graph 113	Exec Sum	Recomm	8271	8745	9678	10568	11298	11890	0.790	0.868	1.009	1.229	1.382	1.454	261.504	334.805	-	0.009	0.091	0.160	0.180	0.189	3.430	3.361	4.762	4.611	4.478	4.415	Vaalkop Dam		0.730	Good	N/A	N/A	N/A	Med
				Northam	Tables from Executive Summary	Graph 113			8271	8745	9678	10568	11298	11890	0.357	0.392	0.455	0.555	0.624	0.656	118.173	151.054	-	0.004	0.041	0.072	0.081	0.085	0.373	0.707	0.671	0.612	0.552	0.524								
114				Rooiberg	The delivery capacity of the newly built bulk supply pipe line from Zandriverspoort to Rooiberg is less than planned (150mm diameter was installed instead of 250mm), therefore the full allocation of water cannot be utilized. Even so Rooiberg would still have sufficient volumes.	Graph 114	Exec Sum	Recomm	1586	1677	1858	2029	2169	2282	0.068	0.075	0.088	0.107	0.120	0.126	117.386	151.170	-	0.001	0.008	0.014	0.016	0.016	0.685	0.679	0.673	0.660	0.649	0.643	BH	N/A	N/A	N/A		0.753	GW high in fluorides	
25				Thabazimbi Urban	GW supplied to domestic & mining consumers, exact split in quantities not known	Graph 25	Exec Sum	Recomm	18344	19392	21462	23431	25046	26361	0.790	0.868	1.009	1.229	1.382	1.454	117.908	151.012	-	0.009	0.091	0.160	0.180	0.189	3.430	3.361	4.762	4.611	4.478	4.415	Vaalkop Dam		3.285	Good		1.665	Chlorinated prior to distribution	Med
115			Lephalale	Ga-Seleka	Rural commercial farming area, BH use between domestic & irrigation not exactly clear	Graph 115	Exec Sum	Recomm	20440	20770	21439	23169	24754	25845	1.082	1.145	1.290	1.513	1.650	1.698	144.93	179.88	-	0.011	0.116	0.197	0.214	0.221	0.658	0.607	0.566	0.424	0.305	0.262	BH	N/A	N/A	N/A	1.090	1.130	Acceptable, but some areas high N, F, TDS. No WTW.	Low-Med
116				Lephalale (Ellisras Urban)*	Strategic area due to the potential high increase in water requirements (due to domestic developments, power generation, mining). Mines also provide water to domestic consumers (Marapong township).	Graph 116	Exec Sum	Recomm	16018	16534	17870	19091	19930	20520	0.781	0.826	0.933	1.101	1.204	1.239	133.49	165.31	-	0.008	0.084	0.143	0.156	0.161	4.369	4.343	4.329	4.243	4.179	4.170	Mokolo Dam	5.000	5.000			0.150	High fluorides	Med-High (low also reported)
				Lephalale (Ellisras Urban)*	* Super High Scenario - due to potential urban, mining and industrial (power generation) development in the region.	Graph 116	Exec Sum	Recomm	16018	16534	17870	19091	19930	20520	1.004	2.226	8.472	17.307	17.674	18.361	171.61	2 449.79	-	0.022	0.762	2.250	2.298	2.387	4.146	2.947	-2.560	-9.907	-10.226	-10.824	Mokolo Dam, augmentation via transfer scheme from the Crocodile West catchment							
117				Lephalale Shongwane	Cluster currently in deficit.	Graph 117	Exec Sum	Recomm	14221	13605	12408	11494	11035	10530	0.730	0.690	0.657	0.671	0.674	0.643	140.54	167.18	-	0.007	0.059	0.087	0.088	0.084	-0.380	-0.333	-0.248	-0.234	-0.237	-0.210	BH	N/A	N/A	N/A		0.350	Acceptable, but high nitrate & fluoride - requires treatment. No WTW.	Low
118				Mokuranyane		Graph 118	Exec Sum	Recomm	16679	17220	18612	19888	20760	21378	0.832	0.880	0.994	1.170	1.278	1.316	136.57	168.54	-	0.009	0.089	0.152	0.166	0.171	0.508	0.468	0.436	0.322	0.228	0.195	BH	N/A	N/A	N/A		1.340	Acceptable, but some areas high N, F, TDS. No WTW.	Low
119				Witpoort		Graph 119	Exec Sum	Recomm	12541	12946	13991	14951	15609	16069	0.621	0.657	0.742	0.874	0.955	0.983	135.57	167.48	-	0.007	0.067	0.114	0.124	0.128	0.485	0.455	0.431	0.345	0.275	0.251	BH	N/A	N/A	N/A	0.003	1.106	Acceptable, but some areas high N, F, TDS. No WTW.	Low
231			Mookgopong	Mookgophong LM Farms	No strategy available																																			
120				Mookgophong RWS (Naboomspuit)	Cluster currently in deficit. Over-abstraction of GW resources.	Graph 120	Exec Sum	Recomm	30450	32741	35216	37443	39289	40658	1.542	1.673	1.879	2.202	2.417	2.501	138.65	168.41	-	-	-	-	-	-	-0.534	0.055	0.195	0.322	0.107	0.023	Frikkie Geyser Dam, Nyl wellfield	0.420	0.504			0.936	Good	Low
121			Modimolle	Mabaleng (Alma)	Cluster currently in deficit.	Graph 121	Exec Sum	Recomm	1893	1907	1859	1793	1743	1683	0.092	0.095	0.101	0.119	0.127	0.122	133.06	198.47	-	-	-	-	-		-0.007	0.011	0.033	0.031	0.025	0.029	BH	N/A	N/A	N/A		0.085	Variable (good to elevated fluoride levels). No WTW	Low
122				Mabatlane (Vaalwater)	Cluster currently in deficit.	Graph 122	Exec Sum	Recomm	17233	18398	20724	23017	24939	26507	0.787	0.876	1.034	1.274	1.448	1.539	125.03	158.96	-	-	-	-	-	-	-0.107	0.154	0.226	0.158	0.132	0.041	BH	N/A	N/A	N/A	0.036	0.680	Good	Low
123				Modimolle Urban (Nylstroom)		Graph 123	Exec Sum	Recomm	39882	43995	49557	55040	59636	63385	1.883	2.097	2.474	3.048	3.464	3.682	129.27	159.04	-	-	-	-	-	-	1.140	0.926	0.549	0.425	0.219	0.001	Donkerpoort Dam, Roodeplaat Dam, BH	1.990	2.923		0.100	0.100	Good	Med
124			Bela-Bela	Bela-Bela Urban	Cluster currently in deficit. Water requirements include domestic & commercial users.	Graph 124	Exec Sum	Recomm	28821	29663	32234	34472	35590	36252	2.702	2.802	3.053	3.401	3.584	3.637	256.68	274.68	-	-	-	-	-	-	-0.331	0.269	0.318	0.170	0.087	0.034	Platrivier Dam, Roodeplaat Dam, BH	1.209	1.861	Potable water 96% SANS compliant	0.380	0.510	Variable, water treated at WTW.	Med
125				Pienaarsrivier		Graph 125	Exec Sum	Recomm	1998	1980	1976	1962	2002	2028	0.133	0.133	0.137	0.147	0.155	0.157	182.25	211.95	-	0.001	0.012	0.019	0.020	0.020	0.115	0.114	0.098	0.082	0.072	0.070	Roodeplaat Dam	0.248	0.248	Good	N/A	N/A	N/A	Med
126				Rapotkwane		Graph 126	Exec Sum	Recomm	2112	2097	2094	2079	2119	2149	0.031	0.032	0.036	0.047	0.054	0.055	40.19	70.07	-	-	-	-	-	-	0.202	0.201	0.197	0.186	0.179	0.178	BH	N/A	N/A	N/A		0.233	Good	Low
127			Mogalakwena	Bakenberg	Cluster currently in deficit. Poor GW quality. No WTW	Graph 127	Exec Sum	Recomm	61763	61702	61035	61427	61986	62145	2.494	2.519	2.630	2.981	3.177	3.185	110.55	140.32	-	0.025	0.237	0.388	0.413	0.414	-1.634	-1.634	-1.533	-1.733	-1.904	-1.911	BH	N/A	N/A	N/A	0.860	0.860	Poor. No WTW.	Med
128				Ga-Phahladira	Cluster currently in deficit.	Graph 128	Exec Sum	Recomm	1644	1653	1644	1666	1687	1695	0.024	0.025	0.028	0.038	0.043	0.043	39.97	69.46	-	-	0.003	0.005	0.006	0.006	-	-0.001	-0.002	-0.009	-0.013	-0.014	BH	N/A	N/A	N/A		0.024		Low
129				Mapela	Cluster currently in deficit. Poor infrastructure (ageing, O&M lacking)	Graph 129	Exec Sum	Recomm	98212	100957	105648	109741	113396	115823	4.248	4.473	4.920	5.708	6.206	6.339	118.42	149.84	-	0.045	0.430	0.742	0.807	0.824	-2.758	-2.938	-2.988	-3.476	-3.909	-4.025	BH	N/A	N/A	N/A		1.490	Elevated levels of nitrates, fluorides, salts. No WTW. Poor condition of infrastructure.	Med
130				Mokopane		Graph 130	Exec Sum	Recomm	90447	92892	97049	100711	103994	106157	3.634	3.825	4.216	4.922	5.366	5.477	110.00	141.26	-	0.038	0.379	0.640	0.698	0.712	3.319	3.167	3.117	2.671	2.285	2.188	Doorndraai Dam, BH	4.380	4.380	Good		2.573	No information, threats including mining & on-site sanitation	Med
131				Rebone & Glen Alpine	Glen Alpine Dam possible future source for augmentation. O&M causing intermittent water supplies.	Graph 131	Exec Sum	Recomm	65145	71119	78882	84799	89839	93650	2.877	3.173	3.699	4.437	4.945	5.155	120.91	150.71	-	0.032	0.333	0.577	0.643	0.670	0.774	0.509	0.285	-0.209	-0.651	-0.834	BH	N/A	N/A	N/A		0.765	Marginal - elevated levels of nitrates, fluorides, hardness, salts	Med

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									2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	2008	2030	2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	Name of Dam/River/Scheme	SurfaceW Licensed / Allocation (mil m³/a)	SW Supply (mil m³/a)	SW Quality	GroundW Licensed / Allocation (mil m³/a)	GW Supply (mil m³/a)	GW Quality	Level of Confidence in Info
			Makhuduthamaga	See Part 2 xls																																			
			Greater Tubatse	See Part 2 xls																																					
137		G r e a t e r S e k h u k h u n e	**Elias Motsoaledi**	De Hoop/Nebo Plateau/Carbonatites/Spitskop	Priority 4	Graph 137	Exec Sum	Recomm	8371	8839	9569	9768	9889	10183	0.375	0.4	0.455	0.517	0.551	0.567	122.65	152.45	0	0.004	0.041	0.067	0.072	0.074	0.192	0.171	0.153	0.117	0.087	0.073	Magukubjane Dam	No data	0.012	No data	No data	0.130	Class 2	Low
135				De Hoop/Nebo Plateau/Monsterlus		Graph 135	Exec Sum	Recomm	9111	8786	8601	8561	8534	8525	0.391	0.381	0.393	0.438	0.459	0.459	117.50	147.41	0	0.004	0.035	0.057	0.06	0.06	0.079	0.092	0.113	0.089	0.07	0.071	Mahlangu Dam	0.56 (Hlogotlou Water Treatment Plant)	0.370	Compliant	0.020	0.100	Class 0 to Class 2	Low
136				De Hoop/Nebo Plateau/Sephaku	Priority 4	Graph 136	Exec Sum	Recomm	18762	19800	21434	21875	22146	22798	0.785	0.838	0.956	1.094	1.168	1.202	114.55	144.35	0	0.008	0.086	0.142	0.152	0.156	-0.45	-0.315	-0.325	-0.407	-0.461	-0.491	Nkosini Dam	No data	0.200	Compliant	No data	0.039 (5.2.2) 0.135 (T 6.1)	Class 1 to 2	Low
2				De Hoop/Nebo Plateau/Zaaiplaas		Graph 2	Exec Sum	Recomm	30789	31347	32490	35169	35890	36336	1.154	1.233	1.414	1.638	1.757	1.809	102.62	136.30	0	0.012	0.127	0.213	0.228	0.235	0.594	0.527	0.461	0.323	0.349	0.304	Mahlangu and Nkosini Dam	No data	0.148	Compliant	No data	1.600		Low
138				Lukau		Graph 138	Exec Sum	Recomm	74401	78504	84975	86706	87772	90355	4.22	4.488	5.05	5.625	5.933	6.107	155.29	185.05	0	0.045	0.455	0.731	0.771	0.794	1.168	1.945	1.792	1.495	1.227	1.075	Loskop Dam	5.000	4.380	Compliant	No data	1.008	Class 2	Medium
139				Kwandebele/Renosterkop/Elias Motsoaledi	Priority 4	Graph 139	Exec Sum	Recomm	116205	114877	113889	113916	113912	113962	3.894	3.901	4.126	4.746	5.056	5.058	91.74	121.51	0	0.039	0.371	0.617	0.657	0.658	-0.192	-0.16	0.847	0.473	0.203	0.201	Mokhombo (Renosterkop) Dam	3.650	3.690	Compliant	0.012	0.012	Class 2	Low
140				Roossenekal		Graph 140	Exec Sum	Recomm	2242	2215	2197	2202	2202	2206	0.196	0.191	0.189	0.204	0.211	0.214	239.35	265.59	0	0.002	0.017	0.027	0.027	0.028	0.323	0.33	0.347	0.342	0.336	0.332	Tonteldoos River	0.219	0.219	Compliant	0.300	0.300	Class 0	Medium
132			**Ephriam Mogale**	Flag Boshielo RWS/ Marble Hall	Priority 4	Graph 132	Exec Sum	Recomm	70928	72494	75162	77074	78145	80456	3.216	3.355	3.649	4.161	4.431	4.562	124.14	155.24	0	0.034	0.328	0.541	0.576	0.593	1.346	1.24	1.241	0.942	0.707	0.593	Flag Boshielo	1.460	1.460	Compliant	No data	0.400	Class 1 with several boreholes Class 3	Low
133				Kwandebele/Renosterkop/Marble H	Priority 4	Graph 133	Exec Sum	Recomm	48787	50554	52557	53966	54760	56437	1.705	1.787	1.963	2.273	2.438	2.512	95.68	121.86	0	0.018	0.177	0.296	0.317	0.327	0.4	0.336	0.319	0.127	-0.016	-0.081	Mokhombo (Renosterkop) Dam	1.530	1.530	Compliant	No data	0.075	Poor to unsuitable	Low
134				Marble Hall		Graph 134	Exec Sum	Recomm	3237	3377	3513	3608	3662	3777	0.815	0.856	0.941	1.092	1.173	1.211	689.33	877.82	0	0.009	0.085	0.142	0.153	0.157	2.067	2.034	2.025	1.932	1.861	1.828	Loskop Dam	1.825	2.007	Poor	No data	0.010	Class 1 to 2	Medium
153			**Fetakgomo**	Olifantspoort South		Graph 153	Exec Sum	Recomm	73171	74633	78710	81926	84482	87776	2.329	2.43	2.741	3.299	3.632	3.773	87.14	117.68	0	0.024	0.247	0.429	0.472	0.491	2.971	2.894	2.805	2.43	2.141	2.017	Olifants River ds of Flag Boshielo	2.000	2.000	Compliant	No data	1.300	Most Class 1 and 2 and 35% unsuitable	Low
151				De Hoop/Nebo Plateau/Lephellale	Priority 4	Graph 151	Exec Sum	Recomm	31347	32490	35169	35885	36326	37397	1.135	1.212	1.392	1.615	1.734	1.785	99.13	130.68	0	0.012	0.125	0.21	0.225	0.232	0.015	-0.05	-0.116	-0.255	-0.358	-0.403	De Hoop Group5 Lepellane	0.000	0.000	N/A	No data	0.150	Marginal to poor	Low
152				Lebalelo North	Priority 4	Graph 152	Exec Sum	Recomm	7822	7709	7602	7566	7545	7540	0.256	0.254	0.267	0.307	0.327	0.327	89.60	118.74	0	0.003	0.024	0.04	0.042	0.042	0.085	0.09	0.098	0.074	0.057	0.057	Ground water Lebalelo	0.000	0.000	N/A	No data	0.320	Marginal to poor	Low to Medium

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									2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	2008	2030	2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	Name of Dam/River/Scheme	SurfaceW Licensed / Allocation (mil m³/a)	SW Supply (mil m³/a)	SW Quality	GroundW Licensed / Allocation (mil m³/a)	GW Supply (mil m³/a)	GW Quality	Level of Confidence in Info
			Elias Motsoaledi	See Part 1 xls																																				
			Ephriam Mogale	See Part 1 xls																																					
			Fetakgomo	See Part 1 xls																																					
143				De Hoop Group 2 Middle Ngwaritsi	Priority 4	Graph 143	Exec Sum	Recomm	17 248	16 714	16 390	16 271	16 206	16 185	0.485	0.477	0.505	0.590	0.632	0.631	76.99	106.74	0.485	0.477	0.500	0.584	0.626	0.625	-0.342	0.066	0.043	0.009	0.017	0.018	Grounwater	N/A	N/A	N/A	No data	0.143	No data	M
4				De Hoop Group 3 Vergelegen	Priority 4	Graph 4	Exec Sum	Recomm	82 643	87 157	97 377	104 592	109 964	116 826	1.972	2.144	2.589	3.349	3.820	4.059	65.33	95.12	0.000	0.000	0.026	0.033	0.038	0.041	-1.233	-0.005	1.476	0.723	0.257	0.021	Vergelegen Dam	No data	0.439	No data	No data	0.300	Calss 0 to Class 4	M
5				De Hoop Group 4 Ngwaritsi	Priority 4	Graph 5	Exec Sum	Recomm	27 415	29 248	32 309	34 704	36 487	38 765	0.788	0.854	1.017	1.281	1.446	1.536	78.70	108.48	0.000	0.000	0.011	0.013	0.015	0.015	-0.531	0.203	0.168	0.172	0.109	0.019	Ngwaritisi River	No data	0.017	No data	No data	0.140	Class 2 to Class 4	M
141				De Hoop Group 5 Lepellane	Priority 4	Graph 141	Exec Sum	Recomm	4 905	5 073	5 369	5 586	5 739	5 975	0.185	0.193	0.217	0.256	0.278	0.290	103.26	132.88	0.000	0.000	0.002	0.003	0.002	0.003	-0.025	-0.033	0.080	0.042	0.019	0.008	Grounwater	N/A	N/A	N/A	No data	0.160	No data	M
144				De Hoop Group 6 Nkadimeng	Priority 4	Graph 144	Exec Sum	Recomm	29 649	28 732	28 175	27 969	27 854	27 814	1.031	1.012	1.056	1.201	1.272	1.270	95.20	125.01	0.000	0.000	0.010	0.012	0.013	0.013	-0.149	0.070	0.136	0.093	0.023	0.025	Nkadimeng Dam	No data	0.449	No data	No data	0.433	Class 2 to Class 3	M
145			**Makhuduthamaga**	De Hoop Group 7 Schoonoord	Priority 4	Graph 145	Exec Sum	Recomm	30 708	29 869	29 373	29 191	29 093	29 058	1.032	1.017	1.067	1.219	1.294	1.293	92.01	121.83	0.000	0.000	0.011	0.012	0.013	0.013	-0.427	0.058	0.149	0.098	0.024	0.025	Grounwater	N/A	N/A	N/A	No data	0.605	No data	M
157				De Hoop Group 8 Mampuru	Priority 4	Graph 142	Exec Sum	Recomm	2 133	2 119	2 114	2 114	2 115	2 119	0.054	0.054	0.059	0.070	0.076	0.076	69.31	98.20	0.000	0.000	0.000	0.000	0.000	0.000	-0.027	0.005	0.018	0.006	0.002	0.001	Grounwater	N/A	N/A	N/A	No data	0.027	No data	M
146				De Hoop Group 9 Spitskop	Priority 4	Graph 146	Exec Sum	Recomm	20 669	20 028	19 638	19 494	19 415	19 386	0.676	0.664	0.696	0.797	0.846	0.845	89.54	119.34	0.000	0.000	0.007	0.008	0.008	0.008	-0.562	0.050	0.125	0.060	0.011	0.012	Grounwater	N/A	N/A	N/A	No data	0.144	No data	M
147				Flag Boshielo RWS/Makhuduthamaga	Priority 4	Graph 147	Exec Sum	Recomm	53 472	54 105	56 388	58 375	59 883	61 900	1.390	1.437	1.625	2.000	2.215	2.289	71.17	101.24	0.000	0.014	0.146	0.260	0.288	0.298	0.899	0.866	0.810	0.549	0.362	0.297	Flag Boshielo dam	1.110	1.110	Compliant	N/A	N/A	N/A	M
148				Leolo Local Sources		Graph 148	Exec Sum	Recomm	4 749	4 606	4 519	4 489	4 472	4 466	0.143	0.141	0.148	0.172	0.183	0.183	82.44	112.19	0.143	0.141	0.147	0.170	0.182	0.181	0.005	0.007	0.031	0.018	0.006	0.007	Grounwater	N/A	N/A	N/A	No data	0.148	Class 0 to 2	M
150	Limpopo	Greater Sekhukhune		Piet Gouws Veeplaas		Graph 150	Exec Sum	Recomm	2 868	2 934	3 389	3 641	3 828	4 070	0.077	0.083	0.100	0.127	0.144	0.153	73.51	102.92	0.000	0.000	0.000	0.000	0.000	0.000	0.034	0.028	0.012	0.022	0.015	0.006	Olifants River	No data	0.064	Poor	No data	0.046	No data	M
149				Piet Gouws/Masemola		Graph 149	Exec Sum	Recomm	20 697	20 054	19 666	19 524	19 442	19 414	0.356	0.353	0.404	0.475	0.519	0.518	47.09	73.05	0.000	0.000	0.004	0.005	0.005	0.005	0.159	0.162	0.115	0.045	0.001	0.002	Piet Gouws Dam	No data	0.439	No data	No data	0.076	Poor to unsuitable Class 3 to 4	M
154				Blyde Local Sources	Priority 4	Graph 154	Exec Sum	Recomm	17 530	16 897	16 356	16 129	16 007	15 954	1.811	1.758	1.763	1.883	1.940	1.934	282.84	331.89	0.000	0.018	0.159	0.245	0.252	0.251	0.059	0.129	0.266	0.232	0.182	0.188	Groundwater	N/A	N/A	N/A	0.016	1.750	Class 1 to Class 3	L
155				Burgersfort	Priority 4	Graph 155	Exec Sum	Recomm	14 113	15 415	18 757	22 497	26 085	29 513	1.918	2.122	2.820	4.370	5.220	5.437	372.08	504.38	0.000	0.021	0.254	0.568	0.679	0.707	0.017	-0.166	-0.631	-1.867	-2.606	-2.795	Spekboom River	1.460	1.460	Compliant	No data	0.475	Class 1 to Class 2	L
158				Lebalelo Central North & South WS	Priority 4	Graph 158	Exec Sum	Recomm	105 449	108 441	112 793	116 626	119 085	123 046	3.372	3.510	3.870	4.549	4.925	5.088	87.55	113.21	0.000	0.035	0.348	0.591	0.639	0.661	1.018	0.916	1.318	1.183	0.855	0.713	Groundwater	N/A	N/A	N/A	No data	2.050	Poor to unsuitable	L
159				Lower Steelpoort Tubatse Prakitseer	Priority 4 and 2	Graph 159	Exec Sum	Recomm	64 480	66 181	68 606	70 736	72 116	74 335	2.046	2.118	2.318	2.701	2.911	2.996	86.87	110.35	0.000	0.022	0.209	0.352	0.378	0.390	0.424	0.372	0.361	0.121	-0.011	-0.086	Steelpoort River	0.840	0.840	Poor	No data	1.600	Class 0 to 2	L
224			**Greater Tubatse**	Lower Steelpoort Tubatse/Mooihoek	Priority 4	Graph 224	Exec Sum	Recomm	62 480	65 832	70 176	73 649	75 847	79 189	2.100	2.243	2.550	3.077	3.375	3.523	92.02	121.80	0.000	0.022	0.229	0.400	0.439	0.458	1.100	0.979	0.880	0.523	0.594	0.465	Groundwater	N/A	N/A	N/A	No data	1.530	Class 0 to 3	L
161				Ohrigstad	Priority 4	Graph 161	Exec Sum	Recomm	1 222	1 294	1 381	1 453	1 500	1 568	0.077	0.081	0.089	0.100	0.106	0.111	172.52	193.81	0.000	0.001	0.008	0.013	0.014	0.014	0.034	0.030	0.030	0.024	0.018	0.014	Groundwater	N/A	N/A	N/A	No data	0.057	Class 1 to 2	L
162				Phenge Local Sources	Priority 4	Graph 162	Exec Sum	Recomm	6 396	6 743	7 191	7 547	7 775	8 122	0.228	0.243	0.276	0.331	0.362	0.378	97.60	127.42	0.000	0.002	0.025	0.043	0.047	0.049	0.154	0.141	0.131	0.094	0.067	0.053	Groundwater	N/A	N/A	N/A	No data	0.037	Class1 to 2	L
142				De Hoop Group 8 Nebo Plateau Mampuru	Priority 4	Graph 142b	Exec Sum	Recomm	26 339	27 760	29 593	31 063	31 994	33 406	0.775	0.826	0.932	1.107	1.207	1.260	80.56	103.27	0.000	0.008	0.084	0.144	0.157	0.164	0.484	0.441	0.411	0.296	0.209	0.162	Groundwater	N/A	N/A	N/A	No data	0.219	Poor	L
156				De Hoop/Nebo Plateau/Malekana	Priority 4	Graph 156	Exec Sum	Recomm	30 072	31 690	33 782	35 454	36 514	38 126	1.068	1.140	1.292	1.549	1.694	1.769	97.23	127.03	0.000	0.011	0.116	0.201	0.220	0.230	0.705	0.644	0.597	0.426	0.299	0.234	Groundwater	N/A	N/A	N/A	No data	0.733	Class 2	L
160				Steelpoort Town	Priority 4	Graph 160	Exec Sum	Recomm	1 945	1 877	1 818	1 796	1 782	1 777	0.058	0.057	0.059	0.067	0.070	0.070	81.64	107.85	0.000	0.001	0.005	0.009	0.009	0.009	0.013	0.014	0.017	0.013	0.010	0.010	Groundwater	N/A	N/A	N/A	No data	0.037		L

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									2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	2008	2030	2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	Name of Dam/River/Scheme	SurfaceW Licensed / Allocation (mil m³/a)	SW Supply (mil m³/a)	SW Quality	GroundW Licensed / Allocation (mil m³/a)	GW Supply (mil m³/a)	GW Quality	Level of Confidence in Info
179	North West	Bojanala Platinum	**Moretele**	Moretele GWS		Graph 179	Executive Summary	Recommendation	155036	151192	151003	149776	149476	148543	4.36	4.36	4.69	5.47	5.87	5.83	77.00	107.44	0.00	0.04	0.42	0.71	0.76	0.76	1.15	1.16	1.20	1.22	0.87	0.90	Temba WTW, abstracting water from the Apies River	2.70	5.48	no problems reported regarding water quality	0	0	acceptable	low
180				Selepe Tloonane		graph180	Executive Summary	Recommendation	16434	15113	13694	12811	12100	11384	0.46	0.44	0.43	0.47	0.48	0.45	76.13	107.50	0.00	0.00	0.04	0.06	0.06	0.06	0.04	0.07	0.11	0.09	0.09	0.11	GW	-	-	N/A	-	0.44	acceptable	low
181				GaHabedi-Ngobi Transactie Wellfields		graph 181	Executive Summary	Recommendation	43517	42373	42406	42882	42472	41799	1.22	1.22	1.32	1.57	1.67	1.64	76.94	107.42	0.00	0.01	0.12	0.20	0.22	0.21	-0.07	-0.06	-0.13	-0.37	-0.47	-0.45	GW	-	-	N/A	0.163	0	acceptable	low
182			**Madibeng**	Dikgophaneng		graph 182d	Executive Summary	Recommendation	11096	10805	9984	9364	8933	8632	0.51	0.50	0.49	0.51	0.51	0.49	126.58	156.37	0.51	0.50	0.49	0.51	0.51	0.49	0.47	0.48	0.50	0.48	0.48	0.49	GW	-			0	0.987	acceptable,with exception of fluotide and nitrate	low
182				Fafung		graph 182f	Executive Summary	Recommendation	13843	13342	12015	10971	1191	9595	0.64	0.62	0.59	0.60	0.58	0.55	126.58	156.37	0.64	0.62	0.59	0.60	0.58	0.55	0.77	0.79	0.82	0.82	0.83	0.86	GW	-	0.81	accepatable	-	0.61	acceptable,with exception of fluotide and nitrate	low
183				Hartbeespoort Dam area		graph183h	Executive Summary	Recommendation	14199	15445	17015	18913	20890	22836	3.29	3.60	4.14	5.04	5.82	6.36	633.61	762.03	No info	No info	No info	No info	No info	No info	0.36	0.55	1.01	0.81	0.64	0.09	Hartebeespoort Dam	2.75	3.65	Severe water quality problems	-	-	no info	medium
183				Greater Brits		graph 183gb	Executive Summary	Recommendation	168628	183410	202032	216748	228141	236551	7.88	8.65	9.99	11.90	13.14	13.63	127.92	157.71	No info	No info	No info	No info	No info	No info	10.48	9.21	6.87	4.26	2.42	1.93	Crocodile River (doownstream of the Hartebeespoort Dam)	16.46	18.36		-	-	no info	medium
184				Sandspruit ODI1&ODI2B		graph 184	Executive Summary	Recommendation	124325	135228	150140	164434	179743	194131	5.60	6.16	7.17	8.75	10.05	10.86	123.32	153.16	0.00	0.06	0.65	1.14	1.31	1.41	-3.92	1.09	2.16	2.37	2.24	1.54	Vaal Dam	1.68	1.68	No info, monitored by Rand Water	-	-	no info	low
186			**Rustenburg**	Kortbegrip (Vaalkop BWS Southern)		graph 186	Executive Summary	Recommendation	20466	21994	23825	25399	26781	27805	1.02	1.10	1.25	1.47	1.62	1.68	135.92	165.62	1.02	1.10	1.24	1.45	1.60	1.67	1.90	1.82	1.69	1.47	1.32	1.26	Vaalkop Dam	2.92	3.07	No info	-	-	N/A	low
185				Bafokeng (Luka,Phokeng)		graph 185	Executive Summary	Recommendation	47737	47818	46188	45240	44814	44568	2.91	2.94	2.95	3.16	3.27	3.25	166.84	199.59	0.00	0.03	0.27	0.41	0.43	0.42	-0.13	-0.13	0.09	0.03	-0.07	-0.05	Bospoort Dam	-	0.22	very good	-	-	N/A	low
32				Rustenburg		graph 32	Executive Summary	Recommendation	370413	393691	416550	436909	455635	470260	22.62	24.23	26.68	30.62	33.30	34.37	167.17	200.07	-3.40	-0.33	-0.28	2.51	33.30	34.37	2.82	4.27	1.87	0.73	28.84	28.84	Vaalkop Dam, Vaal Dam	21.18	28.84	very good	-	-	good, however fluctuation in potassium,sulphate and nitrate level causes caution for human consumption	low
187			**Kgetlengrivier**	Borolelo Swartruggens		graph 187	Executive Summary	Recommendation	8199	9262	13036	15315	16923	18169	0.90	0.98	1.20	1.50	1.72	1.82	301.53	274.70	0.00	0.00	0.01	0.02	0.02	0.02	0.88	0.81	0.60	0.30	0.19	0.08	the Elandsriver Dam (Swartruggens Dam), GW	0.20	0.90	No problems regarding quality of water	0.36	0.89	acceptable for drinking	low/medium
188				Koster		graph 188	Executive Summary	Recommendation	11395	12361	14151	15806	17126	18229	0.95	1.01	1.15	1.36	1.51	1.58	229.22	237.90	0.00	0.00	0.01	0.01	0.02	0.02	0.69	0.63	0.50	0.30	0.15	0.07	Koster Dam	-	0.49	acceptable, however	-	0.05	acceptable for drinking	low
29				Derby		graph 29	Executive Summary	Recommendation	3114	3349	3909	4422	4811	5111	0.19	0.21	0.25	0.30	0.34	0.37	166.17	196.06	0.00	0.00	0.02	0.04	0.05	0.05	-0.02	-0.04	0.14	0.11	0.07	0.05	GW	-	-	N/A	-	0.17	acceptable for drinking	low
190				Bapong		graph 190	Executive Summary	Recommendation	13953	14167	14653	15080	15439	15684	0.52	0.53	0.58	0.68	0.74	0.75	101.05	130.75	-	0.01	0.05	0.09	0.10	0.10	-0.51	0.03	0.08	0.06	0.01	0.00	GW	-	-	N/A	0.00	-	acceptable	low
189				Baphalane		graph 189	Executive Summary	Recommendation	12731	13041	13681	14228	14611	14848	0.55	0.57	0.63	0.73	0.79	0.80	117.63	147.51	-	0.01	0.06	0.10	0.10	0.10	1.05	1.64	1.63	1.57	1.54	1.52	GW	-	-	N/A	-	1.60	generally acceptable quality water, however intercepted with poorer quality boreholes	low
194				Magong		graph 194	Executive Summary	Recommendation	13490	13026	12439	12003	11915	11844	0.53	0.52	0.53	0.57	0.60	0.60	107.97	137.77	-	0.01	0.05	0.07	0.08	0.08	-0.21	0.03	0.06	0.04	0.02	0.02	GW	-	-	N/A	0.32	0.32	generally acceptable	low
192				Koffiekraal		graph 192	Executive Summary	Recommendation	13219	13197	13430	13673	13783	13785	0.52	0.52	0.56	0.65	0.69	0.69	107.08	136.84	-	0.01	0.05	0.08	0.09	0.09	0.43	0.85	0.88	0.87	0.83	0.83	GW	-	-	N/A	-	0.96	marginal	low
198				Pitsediselujang		graph 198	Executive Summary	Recommendation	5223	5095	4930	4764	4798	4864	0.19	0.19	0.20	0.22	0.23	0.23	101.17	131.15	-	0.00	0.02	0.03	0.03	0.03	0.17	0.17	0.18	0.17	0.16	0.16	GW	-	-	N/A	-	0.36	marginal within villages due to poor sanitation and acceptable for drinking in the outskirts of the villages	low
196			**Moses Kotane**	Mmatau		graph 196	Executive Summary	Recommendation	9430	8737	7756	7014	6649	6346	0.36	0.33	0.31	0.32	0.32	0.31	103.65	133.31	-	0.00	0.03	0.04	0.04	0.04	0.59	0.93	0.97	0.98	0.98	0.99	GW	-	-	N/A	0.04	0.95	marginal within villages due to poor sanitation and acceptable for drinking in the outskirts of the villages	low
195				Mankaipaya		graph 195	Executive Summary	Recommendation	5955	5516	4892	4418	4185	3990	0.24	0.22	0.21	0.21	0.21	0.20	108.50	137.92	-	0.00	0.02	0.03	0.03	0.03	0.00	0.02	0.05	0.06	0.06	0.07	GW	-	-	N/A	0.22	-	acceptable (for majority of the boreholes)	low
193				Madikwe		graph 193	Executive Summary	Recommendation	22381	21801	21048	20315	20452	20731	0.91	0.90	0.92	1.01	1.08	1.09	111.44	144.48	-	0.01	0.08	0.13	0.14	0.14	-0.03	0.09	0.14	0.10	0.04	0.03	Madikwe Dam (on Tholwane River)	0.73	0.44	no problems reported regarding water quality	0.803	0.4	generally acceptable for drinking	medium
30				Pella		graph 30	Executive Summary	Recommendation	11364	11364	10295	9498	9186	8947	0.30	0.29	0.27	0.28	0.29	0.28	73.00	85.38	-	0.00	0.02	0.04	0.03	0.03	-0.01	0.01	0.04	0.05	0.04	0.05	Pella Dam (on Lethakane River), GW	0.44	0.21	no problems reported regarding water quality	0.82	0.08	generally acceptable for drinking	medium
197				Molatedi		graph 213	Executive Summary	Recommendation	6245	5957	5548	5256	5220	5220	0.32	0.31	0.31	0.34	0.36	0.36	140.73	189.87	-	0.00	0.03	0.04	0.05	0.05	-0.08	0.00	0.03	0.02	0.01	0.01	Molatedi Dam	5.00	-	no problems reported regarding water quality	-	-	N/A	low
191				Disake/Morgalwaneng		graph 191	Executive Summary	Recommendation	10476	10333	10180	9880	9956	10100	0.45	0.45	0.47	0.51	0.54	0.54	117.87	147.46	-	0.00	0.04	0.07	0.07	0.07	0.15	0.16	0.18	0.16	0.13	0.13	GW	-	-	N/A	0.13		generally acceptable for majority of the boreholes	low
199				Vaalkop		graph 199	Executive Summary	Recommendation	128209	132446	141206	148630	152992	155497	6.73	7.05	8.04	9.79	10.76	10.94	143.76	192.53	-	0.07	0.72	1.27	1.40	1.42	2.17	1.92	1.58	0.78	0.24	0.09	Vaalkop Dam	10.95	10.95	no info	3.29	0.08	acceptable for drinking	low

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All Town Reconciliation Strategies - Northern Planning Region - Summary for North West Province

ATRpt ID No.	Province	DM	LM	Cluster / Towns	Comment	Water Balance	Executive Summary	Conclusions & Recom-mendations	Estimated population, 2008 - 2030, High scenario						Water Requirements (mil m³/a), High Scenario (WC/WDM not included)						Unit Consumption (l/cap/day)		WC/WDM possible savings (mil m³/a)						Water Balance, high scenario (mil m³/a, with WC/WDM, WITH augmentation)						Water Source - Current						
									2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	2008	2030	2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	Name of Dam/River/Scheme	SurfaceW Licensed / Allocation (mil m³/a)	SW Supply (mil m³/a)	SW Quality	GroundW Licensed / Allocation (mil m³/a)	GW Supply (mil m³/a)	GW Quality	Level of Confidence in Info
202				Mafikeng		graph 202	ExecSummary	Recommendation	167470	171756	176103	179848	183130	188315	14.35	14.60	15.66	17.61	18.72	19.09	234.65	277.59	-	0.15	1.41	2.29	2.43	2.48	0.25	0.15	0.85	1.38	0.42	0.09	Setumo Dam, GW	7.30	4.38	deteriorating due to bacteriological contamination and eutrification	10.95	10.22	acceptable for drinking	medium
201			Mafikeng	Madibe-Western		graph 201	ExecSummary	Recommendation	26407	26206	25808	26442	27017	27521	1.25	1.21	1.22	1.26	1.27	1.28	129.50	127.44	1.25	1.22	1.27	1.33	1.37	1.41	-0.60	0.08	0.07	0.06	0.06	0.02	GW	-	-	N/A	-	0.65	Generally acceptable, although 50% is poor around in the Mabibe area	low
200				Driehoek South/Maipeing		graph 200	ExecSummary	Recommendation	55186	52315	52444	52547	52622	53205	2.76	2.62	2.66	2.72	2.76	2.77	137.08	142.39	-	-	-	-	-	-	-1.46	0.18	0.14	0.08	0.04	0.01	GW	-		N/A	1.90	0.65	Varies from acceptable for drinking to poor quality, due to high concentrations of nitrates	low
203				MigaNorth		graph 203	ExecSummary	Recommendation	16247	16666	17146	17573	17932	18462	0.77	0.79	0.83	0.88	0.91	0.93	130.26	138.51	-	0.01	0.08	0.11	0.12	0.12	-0.07	0.07	0.15	0.19	0.16	0.14	GW	0.01	-	No Info	-	0.70	majority of water is acceptable,according to data from water services	low
204				Wondermere		graph 204	ExecSummary	Recommendation	4586	4703	4836	4952	5049	5195	0.21	0.22	0.23	0.24	0.25	0.26	127.16	134.92	-	0.00	0.02	0.03	0.03	0.03	2.39	2.38	2.39	2.39	2.38	2.38	GW	-	-	No Info	-	2.60	acceptable for drinking	low
34				Khunotswane		graph 34	ExecSummary	Recommendation	4357	4442	4658	4824	4887	4925	0.21	0.22	0.24	0.28	0.29	0.29	133.84	163.44	-	0.00	0.02	0.04	0.04	0.04	-0.21	0.01	0.02	0.02	0.01	0.01	GW, Molatedi – Gaborone, Ngotwane and Motswedi - Gopane WSS	-	-	N/A	0.00	0.00	good	low
35				Madutle		graph 35	ExecSummary	Recommendation	1088	1069	1060	1055	1060	1074	-	0.00	0.01	0.01	0.01	0.01	-	20.39	-	0.00	0.01	0.01	0.01	0.01	0.05	-	0.00	0.01	0.00	0.00	GW, Molatedi – Gaborone, Ngotwane and Motswedi - Gopane WSS	-	-	N/A	-	-	good	low
36				Motswedi-Gopane		graph 36	ExecSummary	Recommendation	24509	23335	22325	21513	21483	21776	-0.01	0.03	0.12	0.15	0.14	0.13	-1.12	15.97	-	0.01	0.07	0.11	0.11	0.12	0.85	0.82	0.81	0.85	0.88	0.89	Sehujwande dam	0.84	0.84	No Info	0.04	No Info	Good - siutable for domestic use, water quality could be enriched with with total dissolved salts in areas overlain by sedimengts	medium
37				Reboile		graph 37	ExecSummary	Recommendation	2308	2220	2520	2076	2076	2105	0.11	0.11	0.12	0.12	0.13		129.30	-	-	0.00	0.01	0.02	0.02	0.02	0.01	0.02	0.03	0.02	0.02	0.02	GW	-	-	N/A	1.70	0.13	78% - Ideal/Good 22% - health risk	low
38				Zeerust		graph 38	ExecSummary	Recommendation	19037	19557	20785	21725	21831	22126	1.13	1.17	1.29	1.48	1.56	1.58	162.23	195.26	1.13	1.17	1.29	1.48	1.56	1.58	0.25	0.22	0.20	0.09	0.03	0.01	GW	-	-	No Info	-	1.38	Good	low
211				Brakaagte, Leeufontein		graph 211	ExecSummary	Recommendation	15987	15648	15559	15424	15438	15656	0.72	0.71	0.74	0.82	0.86	0.88	123.47	153.19	-	0.01	0.07	0.11	0.11	0.11	0.18	0.62	0.67	0.68	0.64	0.63	GW	-	-	N/A	0.36	0.60	poor, could be localised faecal and nitrate contimination of water due to porosity of the overlaying soils	low
212			Ramotshere Moiloa	Dinokana		graph 212	ExecSummary	Recommendation	49570	50337	52646	54361	54569	55309	2.15	2.20	2.39	2.71	2.84	2.88	118.53	142.32	-	0.02	0.22	0.35	0.37	0.37	2.15	0.22	0.52	0.49	0.48	0.45	GW	-	-	N/A	-	1.50	good	low
213				Kopfontein, Molatedi/Gabarone		graph 213	ExecSummary	Recommendation	450	438	425	413	413	421	0.02	0.02	0.02	0.02	0.03	0.03	133.85	162.58	-	-	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	Molatedi Dam	-	0.03	Accepatable, no problems reported	-	-	no data available, however ogther data for ZQMDDP22426AC0001 for 2007 indicates poor quality (class 4)	low
214				Mosweu		graph 214	ExecSummary	Recommendation	5550	5710	6073	6347	6380	6468	0.27	0.28	0.31	0.36	0.38	0.36	132.21	153.65	-	0.00	0.03	0.05	0.05	0.05	0.13	0.12	0.12	0.09	0.07	0.07	GW	-	-	N/A	No Info	0.40	Good, elevated concentrations ofchloride, magnesium and nitrate	low
215				Ngotwane		graph 215	ExecSummary	Recommendation	11286	11412	11863	12191	12234	12407	0.55	0.56	0.61	0.69	0.73	0.74	133.42	163.08	-	0.01	0.06	0.09	0.10	0.10	0.25	0.50	0.50	0.45	0.44	0.43	Ngotwane Dam, GW	-	-	No Info	-	0.80	data limited, 96% - ideal/accepatable 4% - poor	low
216				Supingstadt		graph 216	ExecSummary	Recommendation	5186	5300	5583	5799	5825	5905	0.25	0.26	0.26	0.33	0.35	0.35	131.98	161.81	-	0.00	0.03	0.04	0.05	0.05	0.03	0.02	0.06	0.06	0.05	0.05	GW	-	-	No Info	0.00	0.28	acceptable, due to elevated concetrations of magnesium and nitrate	low
217				Witleigat/Lehurutse		graph 217	ExecSummary	Recommendation	19073	18239	17576	16948	16923	17154	0.86	0.83	0.84	0.90	0.95	0.96	123.59	153.38	-	0.01	0.08	0.12	0.12	0.13	-0.26	0.03	0.13	0.16	0.15	0.13	GW, Molatedi – Gaborone, Ngotwane and Motswedi - Gopane WSS	-	-	N/A	-	0.60	good	low
192				Koffiekraal,Mankwe-Madikwe		graph 192	ExecSummary	Recommendation	13219	13197	13430	13673	13783	13785	0.52	0.52	0.56	0.65	0.69	0.69	107.08	136.84	-	0.01	0.05	0.08	0.09	0.09	0.43	0.85	0.88	0.87	0.83	0.83	GW	-	-	N/A	0.96	0.94	marginal, poorer groundwater quality could be associated with elevated magnesium and nitrates levels	low
209				Matikiring		graph 209	ExecSummary	Recommendation	1914	1969	2024	2037	2035	2084	0.10	0.10	0.10	0.12	0.12	0.12	135.89	162.90	-	-	0.00	0.00	0.00	0.00	1.80	1.79	1.79	1.78	1.77	1.77	GW	-	-	N/A	1.89	1.89	acceptable for drinking	low
210			Ditsobotla	Shiela		graph 210	ExecSummary	Recommendation	57783	60074	61208	61821	62247	63863	2.87	2.97	3.17	3.54	3.73	3.83	136.03	164.07	-	-	0.03	0.04	0.04	0.04	2.33	2.23	2.06	1.70	1.51	1.41	Polfonteinspruit River, GW	-	2.40	No Info	2.80	2.84	acceptable for drinking	low

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All Town Reconciliation Strategies - Northern Planning Region - Summary for Mpumalanga Province

ATRpt ID No.	Province	DM	LM	Cluster / Towns	Comment	Water Balance	Executive Summary	Conclusions & Recom-mendations	Estimated population, 2008 - 2030, High scenario						Water Requirements (mil m³/a), High Scenario (WC/WDM not included)						Unit Consumption (l/cap/day)		WC/WDM possible savings (mil m³/a)						Water Balance, high scenario (mil m³/a, with WC/WDM, WITH augmentation) (<0 = red; >4 = blue)						Water Source - Current							
									2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	2008	2030	2008	2010	2015	2020	2025	2030	2008	2010	2015	2020	2025	2030	Name of Dam/River/Scheme	SurfaceW Licensed / Allocation (mil m³/a)	SW Supply (mil m³/a)	SW Quality	GroundW Licensed / Allocation (mil m³/a)	GW Supply (mil m³/a)	GW Quality	Level of Confidence in Info
163	Mpumalanga	Nkangala	Victor Khanye	Delmas/Botleng/SundraEloff	Population and water requirements to be verified (including metered water supply). WWTW in Delmas & Botleng overloaded. Risk of GW pollution.	Graph 163	Exec Sum	Recomm	49 605	51 126	53 491	55 622	57 578	59 085	2.8520	3.0070	3.2680	3.7000	3.9870	4.0910	157.41	189.57	0.0000	0.0300	0.2940	0.4810	0.5180	0.5320	2.4730	2.3480	2.3510	2.1060	1.8560	1.7650	Rand Water, 4 BH fields		1.825		3.030	3.500	Ground water contains high levels of iron and manganese which are oxidized by chlorine dosing	Low
164				Benicon/Speekfontein	Service levels to be verified.	Graph 164	Exec Sum	Recomm	1 158	1 211	1 286	1 353	1 416	1 462	0.0170	0.0180	0.0220	0.0310	0.0360	0.0370	40.19	69.29	0.0000	0.0000	0.0020	0.0040	0.0050	0.0050	0.1430	0.1420	0.1400	0.1330	0.1290	0.1280	BH	N/A			0.160	0.160	No info, but point source pollution sources nearby	Low/med
165				Emalahleni_Springvalley	Emalahleni Dam over-utlised. Water loss of approximately 17.949 Million m³a (49.18Ml/d)! GW registered as 3.9mil m³/a, including mining.	Graph 165	Exec Sum	Recomm	224 180	233 646	246 696	258 283	268 915	276 804	12.7070	13.6260	14.9470	17.0530	18.4860	19.0290	155.19	188.21	0.0000	0.1360	1.3450	2.2170	2.4030	2.4740	3.3210	2.5380	4.9770	3.7420	2.4950	2.0230	Emalahleni Dam	26.140	14.918 (47 Million m3/a is extracted.Dam is over-utilised)	Concern in the quality of water in the Emalahleni areas	3.900	0.800	High nitrate levels of 100mg/l. Localised contamination sources from mining, waste water treatment works, landfills etc.	Low/med
166				Ganala	Current source: Jericho Dam far (>100km) away, . Require study for future water supply options.	Graph 166	Exec Sum	Recomm	16 108	17 129	18 996	20 639	22 007	22 901	0.8760	0.9690	1.1170	1.3260	1.4740	1.5340	148.89	183.39	0.0000	0.0100	0.1010	0.1720	0.1920	0.1990	0.3240	0.2410	0.1830	0.0460	-0.0820	-0.1340	Jericho Dam via Usutu Government Water Scheme	2.000	2.3 of which 1.2 for domestic use	No info	N/A			Low
169				Kamatsheka_Saaiwater_Klipoortjie	Water supplied via water tank.	Graph 169	Exec Sum	Recomm	1 852	1 910	1 971	2 033	2 101	2 163	0.0970	0.1030	0.1110	0.1250	0.1350	0.1390	143.40	175.94	0.0000	0.0010	0.0100	0.0160	0.0180	0.0180	0.0060	0.0010	-0.1010	-0.1090	-0.1180	-0.1210	Assumed water tanks by Municipality		0.103	Good	N/A		GW quality assumed unacceptable for human consumption.	Low
167				Rietspruit	Supply to the cluster to be institutionalised with the WSA.	Graph 167	Exec Sum	Recomm	3 342	3 553	3 942	4 284	4 570	4 756	0.2060	0.2270	0.2610	0.3070	0.3400	0.3540	168.76	203.78	0.0000	0.0020	0.0230	0.0400	0.0440	0.0460	0.8890	0.8700	0.8580	0.8280	0.7990	0.7870	Rietspruit Dam	1.280	1.095	Tested, but not reported.	N/A			Med
168				Rooiboom	Service levels to be verified.	Graph 168	Exec Sum	Recomm	2 728	2 738	2 631	2 557	2 530	2 550	0.0400	0.0410	0.0460	0.0580	0.0640	0.0650	40.14	69.79	0.0000	0.0000	0.0040	0.0080	0.0080	0.0080	0.0010	0.0000	0.0000	-0.0100	-0.0150	-0.0160	BH	N/A			0.041 (unregistered)	0.041	No info	Low
170				Vandyksdrif	Water supplied to be verified.	Graph 170	Exec Sum	Recomm	2356	2366	2272	2208	2185	2202	0.1380	0.1400	0.1390	0.1480	0.1520	0.1530	160.37	190.23	0.0000	0.0010	0.0130	0.0190	0.0200	0.0200	0.0000	0.0000	0.0110	0.0100	0.0060	0.0050	BH	N/A			0.138	0.138	chlorine dosing required, high O&M	Low
171				Bankfontein		Graph 171	Exec Sum	Recomm	1 945	1 979	2 048	2 114	2 194	2 271	0.0280	0.0300	0.0350	0.0480	0.0560	0.0580	39.41	69.92	0.0000	0.0000	0.0030	0.0060	0.0070	0.0080	0.0320	0.0310	0.0280	0.0180	0.0110	0.0100	BH	0.00	0.00	N/A	0.00	0.60	Acceptable	Low
172				Doornkop		Graph 172	Exec Sum	Recomm	1 812	1 932	2 133	2 318	2 458	2 567	0.0260	0.0290	0.0370	0.0530	0.0630	0.0650	39.28	69.33	0.0000	0.0000	0.0030	0.0070	0.0080	0.0090	0.0440	0.0410	0.0360	0.0240	0.0160	0.0130	BH	0.00	0.00	N/A	0.00	0.07	Acceptable	Low
173				Hendrina	The Hendrina cluster is well supplied with water for the foreseeable future thanks to good management of the resource, and to the foresight that has resulted in the introduction of a processing plant for the reclamation of mine water to domestic standards. This is an important example of water reclamation technology in action.	Graph 173	Exec Sum	Recomm	15 063	15 859	17 166	18 379	19 374	20 149	0.8770	0.9550	1.0730	1.2490	1.3690	1.4240	159.40	193.49	0.0000	0.0100	0.0970	0.1620	0.1780	0.1850	-0.3470	0.6790	0.6490	0.5390	0.4340	0.3860	Nooitgedacht dam via Nkomati pipeline (transfer scheme),Optimum mine water reclamation	1.63	1.63	Unknown	N/A	0.00	N/A	High
174			Steve Tshwete	Middelburg		Graph 174	Exec Sum	Recomm	175 845	182 578	194 107	204 469	213 896	221 608	11.3340	12.0790	13.2850	15.1140	16.3960	16.9870	176.47	209.87	0.0000	0.1210	1.1960	1.9650	2.1310	2.2080	1.1840	5.3600	5.2290	4.1690	3.0540	2.5390	Middelburg Dam, Athlone Dam, Pienaar Dam	12.52	12.52	Severe problems due to coal mining activity in the area	0.00	0.00	N/A	Med
175				Rietkuil		Graph 175	Exec Sum	Recomm	2 611	2 657	2 749	2 834	2 941	3 041	0.1550	0.1600	0.1720	0.1930	0.2080	0.2150	162.53	193.57	0.0000	0.0020	0.0150	0.0250	0.0270	0.0280	0.2450	0.2410	0.2430	0.2320	0.2190	0.2130	Vyeboom / Nooitgedacht Dam (interbasin transfer)	0.80	0.40	Acceptable	0.00	0.00	N/A	Low
219			Emakhazeni	Belfast	Licensed allocation higher than safe yield of dams.	Graph 219	Exec Sum	Recomm	11 494	16 764				27 289	1.0900	1.2400	1.4500	1.6000	1.8200	2.0800	259.64	208.68	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3300	0.1800	-0.0300	-0.1800	-0.4000	-0.6600	Belfast Dam, Kraaispruit Dam	2.68	1.10	None reported	0.00	0.00	N/A	Med
176		Nkangala	Thembisile	KwaNdebele / Bronkhorstspruit		Graph 176	Exec Sum	Recomm	351 889	357 071	371 395	385 123	394 788	402 166	19.1410	19.7190	21.3520	24.2350	25.9170	26.4010	148.93	179.73	0.0000	0.1970	1.9220	3.1510	3.3690	3.4320	1.7360	1.3550	1.4470	4.3920	2.9290	2.5080	Rand Water, Bronkhorstspruit Dam	0.00	20.81	No information	0.00	0.00	N/A	Low
176				Langkloof		Graph 176	Exec Sum	Recomm	1 850	1 944	2 162	2 358	2 438	2 501	0.0260	0.0290	0.0370	0.0540	0.0620	0.0640	38.48	70.06	0.0000	0.0000	0.0030	0.0070	0.0080	0.0080	0.0510	0.0480	0.0430	0.0300	0.0230	0.0220	BH	0.00	0.00	N/A	0.08	0.07	No information	Low
26			Steve Tshwete	GaRamantshane		Graph 26	Exec Sum	Recomm	57 847	59 115	63 739	68 198	69 744	70 022	2.6260	2.7400	3.0990	3.6860	3.9600	3.9750	124.29	155.42	0.0000	0.0010	0.0023	0.0029	0.0031	0.0032	0.0720	0.0650	0.0473	0.0189	0.0061	0.0052	BH	0.00	0.00	N/A	0.00	0.16	No information	Low
177				Kameelpoort		Graph 177	Exec Sum	Recomm	2 158	2 257	2 580	2 888	2 983	2 997	0.0880	0.0960	0.1150	0.1440	0.1570	0.1580	111.65	144.34	0.0000	0.0900	0.8500	1.3760	1.4520	1.4520	0.0400	0.1110	0.4100	-0.2110	-0.7160	-0.7160	BH	0.00	0.00	N/A	0.00	4.06	GW contamination - likely due to pit latrines	Low
27			Moroka	Siyabuswa		Graph 27	Exec Sum	Recomm	214 290	213 141	212 643	212 467	212 512	212 530	8.9600	8.9790	9.4390	10.5870	11.1670	11.1680	114.48	143.87	0.0000	0.1180	1.1313	1.8579	1.9701	1.9722	1.5490	1.5260	1.7003	0.6639	-0.0919	-0.1068	Mkhombo Dam	0.00	9.00	2005 information available only - good quality water	0.00	0.00	N/A	Low

APPENDIX E LETTER OF INVITATION TO SSC WORKSHOP

water affairs
Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X313, Pretoria, South Africa, 0001
185 Francis Baard Street, Pretoria, South Africa
Tel: +27 12 336 8189, Fax: +27 12 336 8295, e-mail: NditwaniT@dwa.gov.za

Enquiries: T. Nditwani
Reference: 14/4/12/7/2

18 March 2013

ATTENTION : Mr Johan van Rooyen

Department of Water Affairs
Director: National Water Resource Planning
Private Bag X313
PRETORIA
0001

Dear Sir

CONTINUATION OF THE NORTHERN PLANNING REGION'S ALL TOWN RECONCILIATION STRATEGIES: PHASE 1. INVITATION TO SERVE AS A STRATEGY STEERING COMMITTEE MEMBER

1. Introduction and invitation to serve on the Strategy Steering Committee

The Department of Water Affairs (DWA) developed water reconciliation strategies for all towns in the Northern Planning Region that will address the growing water requirements of consumers. The Northern Planning Region comprises the whole of the Limpopo Province, the eastern part of the North West Province and the northern part of the Gauteng and Mpumalanga Provinces respectively.

We have recently started with the Continuation of the Northern Planning Region All Town Reconciliation Strategies. This assignment will monitor the implementation of the strategies, recommend adjustments to the strategies when required and communicate to all stakeholders and the public about the strategies in their respective areas.

As the Department wishes to follow a transparent process and include stakeholders as prescribed by the National Water Act of 1998, an extensive public engagement process will be followed. Part of this process involves establishing a Strategy Steering Committee (SSC) that is representative of sectors important to the study. The SSC will be a voluntary body operating at a strategic level and ensuring that the technical aspect of the study is transparent, open and consultative and that cooperative governance is embraced.

Your organization is regarded as a key stakeholder in this process. I therefore have the pleasure to invite you to serve as a member of Northern Planning Region's All Town Reconciliation Strategies' SSC or nominate a representative that can serve on this committee. The background to these assignments and the developed strategies can be assessed on the DWA website: http://www6.dwa.gov.za/iwrp/dss/DashboardEngine.aspx?DashboardID=IWRP\Map_Search.

The first SSC will be held on Friday, 26 April 2013 at Grincourt Nature Reserve, Polokwane, at 09:30. See Annexure B for details.

Your attendance and contributions will be of great importance to the project.

Further information on the study is attached in Annexure A.

2. Costs to attend the workshop

It will be expected that the representatives or their institutions pay for their own travelling expenses. Tea/Coffee and a lunch will be provided.

3. Contacts

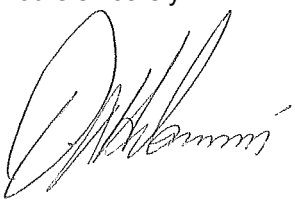
The Department of Water Affairs has appointed a consortium of consulting engineers to assist in the continuation of the development of the reconciliation strategies. For any enquiries regarding your organisations' involvement or logistics with regards to the first SCC workshop, please contact one of Ms M Esterhuizen, Ms L Le Roux or Mr T Nditwani, contact details provided overleaf.

4. How To Register

Kindly complete and forward the attached nomination form and confirm your attendance of SSC Workshop 1, to Ms Leoni Le Roux, using the email address or fax number in the table below, by no later than 10 April 2013.

We look forward to your/your nominee's participation.

Yours sincerely



Mr T Balzer
DIRECTOR-GENERAL (Acting)
DATE: 26/03/2013
Letter signed by: Mr T Nditwani
Designation: Chief Water Resource Planner: National Water Resources Planning

water affairs
Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

CONTINUATION OF THE NORTHERN PLANNING REGION'S ALL TOWN RECONCILIATION STRATEGIES: PHASE 1

REPLY SHEET FOR THE STRATEGY STEERING COMMITTEE (SSC)

Please complete and return by Wednesday, 10 April 2013 to:

Ms Leoni Le Roux, Study Administrator, UWP Consulting (Pty) Ltd, Postnet Suite 334, Private Bag X82245, Rustenburg, 0300

Tel: +27 14 597 1223/ 1347, Fax: 086 537 2721

E-mail: leonilr@uwp.co.za

TITLE		**FIRST NAME**	
INITIALS		**SURNAME**	
ORGANISATION			
ADDRESS			
		POSTAL CODE	
TEL NO		**FAX NO**	
E-MAIL			
Dietary Requirements			
I will be attending the inaugural Strategy Steering Committee (SSC) Workshop at Grincourt Nature Reserve, Polokwane on 26 April 2013 at 09:30 (mark with an X)		**YES**	**NO**

KINDLY COMPLETE AND FAX OR E-MAIL BACK TO US AT THE DETAILS GIVEN ABOVE

Please add the following colleagues/friends who may have an interest in the project to your mailing list:

Name and sector / organization: _____

Telephone or address:_____

THANK YOU FOR YOUR REGISTRATION

ANNEXURE A

GENERAL INFORMATION ON THE STUDY

1. Study Background

In 2008 the DWA commissioned four three-year studies covering all South African towns to determine whether there are sufficient water resources to adequately meet the current and future water needs. The purpose of the studies was to gather information about the bulk water balance situation of all towns in the country and develop first order strategies, to select the towns that are most in need of detailed strategies for reconciliation of water availability with future water requirements, and to identify the most appropriate series of interventions that will form part of such strategies. Individual reconciliation strategies were drawn up from a water resource perspective for each town.

The four studies were allocated according to the four DWA Water Resource Planning Areas - North, South, East and Central.

This is a continued endeavour to ensure “some for all” founded on principles set in the Water Services Act (108 of 1997) and the National Water Act (NWA, 36 of 1998), and was followed by the National Water Resource Strategy (NWRS) of 2004 to help implement the NWA. The 2012 NWRS (second draft) was released for comment during August 2012. The ‘All Towns Studies’ are extensions of the reconciliation studies undertaken for the major economic centres of South Africa.

Due to the requirements for Integrated Water Resource Management (IWRM), the DWA is constantly under immense pressure to provide information on available water resources and water supplied to towns. The results of these studies will enable the regional offices of the DWA to provide a much better service to the municipalities and the public. Municipalities are also under pressure to include water resource information in Integrated Development Plans (IDPs) and Water Services Development Plans (WSDPs) and the kind of information that will be generated by this study will go a long way in assisting municipalities.

An important outcome of these studies is that the gap between the two disciplines - Water Services and Water Resources - will be narrowed, and this is an opportunity to improve communication lines with municipalities and Water Services Authorities (WSA’s).

2. Scope of work

The scope of this study is to systematically improve the existing reconciliation strategies, based on the latest available information, to ensure that they stay relevant and technically sound and sustainable. Therefore, activities need to be undertaken to continuously update the strategies and to implement revised plans of action aimed at ensuring on-going adequacy of water availability into the future. Further to this, these strategies need to be incorporated within the development and management frameworks of the WSA’s. The establishment of the SSC is to ensure the buy-in of the WSA’s in the process.

The first reconciliation strategies (commenced in 2008) investigated 285 schemes within the Northern Planning Region and the strategies that were prepared varied in completeness and strategic content. Further to this, strategies are not available for all the affected towns and it is necessary to ensure all towns in the Northern Planning Region are covered in terms of this study.

The study will be conducted in three Phases as briefly described in the next section.

3. Study Programme

- Phase 1: Inception and establishment of management structures, including the SSC. Preparation of District Municipality Summary Reports, revision of study programme (based on prioritisation of reconciliation strategies) and issue of an Inception Report. SSC Workshop 1.
- Phase 2: Detail review of existing reconciliation strategies, information collection, water resources and water services assessment, stakeholder engagement, updating of reconciliation strategy reports, identification and development of interventions to address current and future water requirements. SSC Workshop 2.
- Phase 3: Finalisation of reconciliation strategy reports, finalisation of District Municipality Summary Reports. SSC Workshop 3. Submission of reports and study information to DWA for inclusion in the National Information System (NIS).

It is anticipated that Phase 1 will be completed in six months, Phase 2 will be conducted in an estimated 26 months and Phase 3 to be concluded in four months.

ANNEXURE B


Grin Court
Nature Reserve
Accommodation - 083 793 7085
Pretoria
R101
Polokwane Showgrounds
N1 Pretoria
Landmark Lodge
Over Bridge
Railway Tracks
R101
Coordinates: S23° 58. 605`
E29° 23. 722`
N1 Pretoria
Polokwane
N

APPENDIX F BACKGROUND INFORMATION DOCUMENT (BID)

Continuation and Maintenance of Reconciliation Strategies for All Towns in the Northern Planning Region

Information Document

April 2013

water affairs
Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

Purpose of this document

The purpose of this document is to announce the study for the continuation and maintenance of water reconciliation strategies for towns in the northern region by the Department of Water Affairs.

The document provides background information, explains the rationale for the study and requesting participation from stakeholders to assist DWA to ensure enough water can be made available for all towns for the next thirty years.

As the Department wishes to follow a transparent process and include stakeholders as prescribed by the National Water Act of 1998, an extensive public engagement process will be followed. Part of this process involves establishing a Strategies Steering Committee (SSC) that is representative of sectors important to the study.

The SSC will be a voluntary body operating at a strategic level and ensuring that the technical aspect of the study is transparent, open and consultative and that cooperative governance is embraced.

Your organization is regarded as a key stakeholder in this process. We therefore have the pleasure to invite you to serve as a member of Northern Planning Region's All Town Reconciliation Strategies' Steering Committee and participate in regional activities during the implementation of this study.

Introduction and Context

The Department of Water Affairs (DWA) has commissioned four three-year studies for the continuation and maintenance of the bulk water supply reconciliation strategies for all towns in the country.

The studies cover the four Water Resource Planning Areas - North, South, East and Central and **this study covers the Northern Planning Area**.

These strategies were developed in 2011 and need to be revised to remain relevant under prevailing conditions. The study is part of an on-going process to ensure sufficient water can be made available for pertinent developmental imperatives in and around all towns.

Although each town's strategy is different, key common themes were highlighted as listed below:

- Improved management will solve a significant portion of immediate problems.
- In the Northern Planning Region, the water requirements in 2010 exceeded water resources availability in 64 towns.
- Lack of water metering impedes the confidence in planning and the strategies.
- High per capita use in many towns points to the potential of saving through Water Conservation and Water Demand Management (WC/WDM).
- Groundwater remains a viable source of water for many towns.
- Supply problems relate to infrastructure constraints rather than water resource availability limitations in many towns.

Study Area

The Northern Region study area is made up of the entire Limpopo Province, the north-west part of the North West Province and the northern parts of the Gauteng and Mpumalanga Provinces respectively. Please see the map for more detailed information.

The area covers eight Districts and one Metropolitan Municipality and 229 separate town strategies were developed.

A number of towns in this region are supplied from Water Boards, which to a large extent, are already incorporated in the larger Reconciliation Strategies for the Vaal River (2009), Crocodile (West) River (2012) and Olifants River (2011) Water Supply Systems respectively.

DWA also commissioned a further study at the end of 2012 for the Development of a Reconciliation Strategy for the Luvuvhu and Letaba Water Supply System, to be completed in three years.

Documentation on these strategies is available on the DWA web page: http://www.dwa.gov.za/projects.aspx

In brief, this study is a further endeavour to aspire to make the slogan, "some for all", to become a reality.

The intention is to continue the maintenance, review and implementation of the reconciliation strategies even after completion of this study and phase.

OBJECTIVE FOR THE STUDY

The primary objectives of the study are to review and refine all strategies, identify priority or "hot spot" towns requiring full revisions and document the progress on how the recommended interventions (strategy actions) were implemented.

This will be carried out in collaboration with the respective Regional Offices (ROs) in the Northern Planning Region. The ROs will serve as the conduit through which the study team will engage with the designated Water Service Authorities - either Local or District Municipalities.

A further key objective is to promote the reconciliation strategies as a core planning product giving the actions needed to secure the required water resources.

The vision is for the strategies to be considered and incorporated when other plans such as the Water Services Development Plans and Integrated Development Plans are developed.

RECONCILIATION STRATEGIES: COMPONENTS

Lessons learned from strategies being reviewed and implemented in other parts of the country identified the components shown in **Figure 1,** as the main elements to consider in a reconciliation strategy. At the centre of the diagram the questions regarding how much water is **needed**, what water resources are **available** or could be made available, and which **interventions** can be considered to achieve a balance between demand and supply should be answered.

The coloured boxes indicate how each question is answered by undertaking various investigations and synthesising the results of several processes to formulate the most suitable strategy for an area and plan to reconcile the water resources with the requirements.

The particular tasks and activities relevant to the Northern Region were identified from the generic complements provided in **Figure 1** and are presented in the following section.

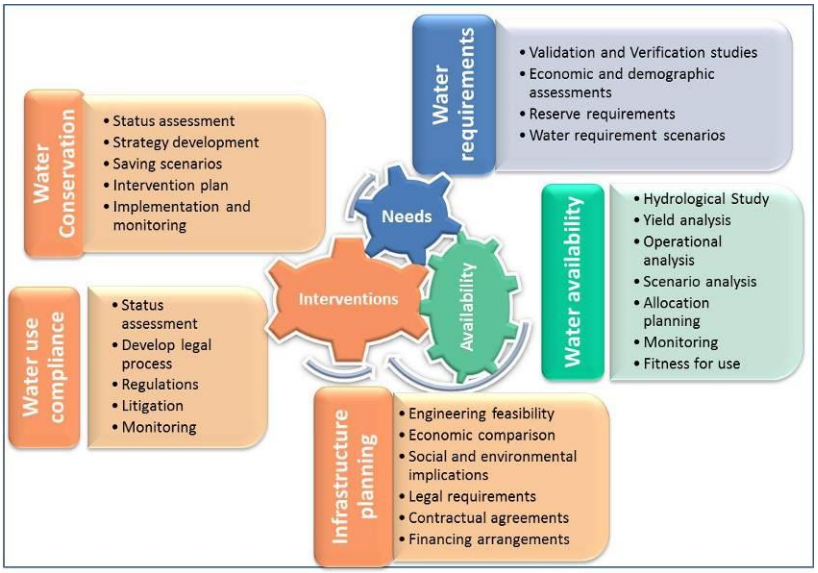
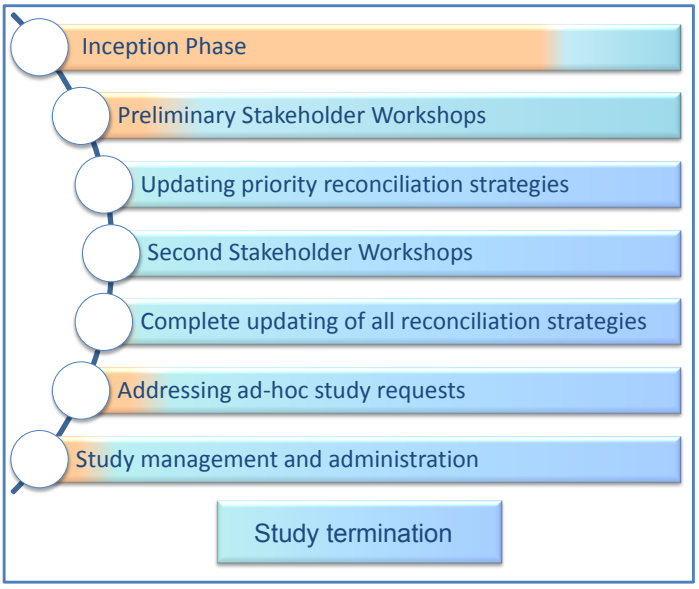


Figure 1: Reconciliation Strategies: Components

STUDY METHOD

The study for the Northern Planning Area will be carried out in eight tasks, listed in the diagram below and briefly described in the following sections.



Inception Phase

The outcomes of Inception Phase are consolidated into an Inception Report which forms the basis for the execution of the study and will serve as the baseline against which progress of each task can be monitored and evaluated.

Once approved by the client, the Inception Report will become the Revised Terms of Reference for the remaining phases and tasks of the study.

Preliminary Strategies Steering Committee Workshops

The purpose of this task is to confirm the strategies that were identified as priority strategies as part of *Task 1: Inception Phase*. The Strategies Steering Committee workshops (one per province) will allow input from stakeholders. These strategies will then be updated during the remainder of the study period (subject to the study budget not being exceeded).

The strategies will be reviewed and evaluated on their completeness with the aim to identify the preliminary priority towns. The priority list will be presented at the workshop for discussion, amendment and the final selection will be confirmed.

Updating priority reconciliation strategies

This phase of the study encompasses the bulk of work required for the execution of this study, including the engagement of stakeholders, information sourcing,

verification of data, modelling, evaluation of scenarios and determining of reconciliation measures. It is envisaged that typical activities involved in the updating of the prioritised reconciliation strategies may include:

- Detailed assessment of the water requirements, demographics, service levels to derive future water requirement projections a planning horizon of at least 25 years (up to 2035).
- The status and impact of WC/WDM interventions within the relevant WSAs will be evaluated and an assessment of potential target savings that can possibly be achieved through WC/WDM will be estimated.
- Opportunities for water re-use will be explored.
- New schemes such as RBIG or other grant schemes will be incorporated in the intervention timeline.
- Potential gaps or inaccuracies in the surface and groundwater availability estimates will be identified and addressed.
- Water quality related planning activities that are necessary to improve and sustain the quality of the water resource in the prioritised areas where this is an issue, will be identified.
- Compare water requirements with the water resources availability to confirm the water balances status over the planning period i.e. whether and when deficits/shortfalls occur.
- Identify development scenarios/options that can meet the long term water requirement projections for areas where shortfalls/deficits occur over the planning period with preference to utilising local resources first (groundwater, re-use etc.).
- The reconciliation strategies for supply areas that depend on the same water resource will be combined (where appropriate) in order to confirm the combined strategy and water balance situation.

The deliverable of this task will be updated reconciliation strategies for the prioritised towns.

Second Strategies Steering Committee Workshops

Once approved by DWA, the strategies will be distributed to stakeholders and the Second Strategies Steering Committee workshops will be arranged for each of the provinces with the following objectives:

- To present the updated/revised strategies, to obtain comments, further guidance and agreement on the acceptability of the results.
- Agree on the preferred development scenarios and on the way forward for the compilation of the reconciliation strategies.

The deliverable of this task will be the Second Provincial Strategies Steering Committee workshops.

Complete updating of reconciliation strategies

The reconciliation strategies will be completed and finalised through the following processes:

- Consider the comments received from the Second Strategies Steering Committee workshops and undertake further studies where possible, that are required to finalise reconciliation strategies.
- Update prioritised strategies with any additional/revised information received.
- Add any significant developments, augmentation options, etc., to any of the strategies. This is to provide descriptive text to indicate where the strategies are superseded.

Based on the above, compile the final reconciliation strategies and submit to DWA for approval.

Addressing ad hoc study requests

During the course of the assignment, the study team may be requested to undertake any other ad hoc studies and/or investigations as may be required in support of the study. The study leader will assess the scope of work, the resources and time that will be required to do the work and make an estimate of the costs involved. On approval by the Client the work will then be undertaken.

Study management and administration

A key success factor for a multi-disciplinary study of this nature is the proper and co-ordinated management of the team. This is to ensure that all aspects of the study are adequately addressed by the appropriate staff and specialist(s) to the correct level of detail without losing focus of the essential holistic approach.

All activities will be monitored continuously to ensure that each one is completed on time and within budget. The management of the study will conform to the latest version of DWA's "Guidelines for Structuring the Management of Studies".

Provision has been made for Study Management Team (SMT) and Support Group (SG) meetings to guide the day-to-day management of the study.

This task ensures efficient and continuous administrative and monitoring activities for the duration of this study.

Study termination

Once approved by DWA, the final priority strategies will be distributed to the stakeholders for signing off by the identified stakeholders.

All study reports and study deliverables will be finalised and submitted during this phase. The final strategies will be incorporated into DWA's database which will then be uploaded onto the DWA's website.

Communication enquiries

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PRIORITISATION PROCESS

The steps that were followed by the study team to identify the preliminary priority towns are presented below:

- **Step 1:** Identification of Category 4 strategies (towns currently in deficit).
- **Step 2:** Eliminate towns where solutions are in an advance stage of planning or implementation (RBIG projects).
- **Step 3:** Add towns where RBIG or other processes are in an early stage of planning and can still be influenced by strategy recommendations.
- **Step 4:** Add any other hot spot areas identified on a national, provincial or local strategic level.
- The final selection was confirmed at a screening sessions held with DWA: National Water Resources Planning (Northern) and DWA Regional Offices.
- Present, discuss and request confirmation from the Strategies Steering Committee.

The 2013 preliminary assessment identified 51 of the strategies (out of the total of 229 strategies assessed) as priority areas. The breakdown per province is listed in the table below.

Province	Number of priority strategies
Gauteng	0
Limpopo	28
Mpumalanga	6
North West	17
Total	**51**

Continuation of the Northern Planning Region's All Town Reconciliation Strategies: Phase 1

APPENDIX G STAGE 1: INCEPTION – STATUS REPORT AND FINDINGS OF RECONNASSANCE REVIEW

1. STAGE 1: INCEPTION – STATUS REPORT

The following is a Status Report on the tasks performed during the Inception Stage in the form of a reconnaissance review and the screening sessions to prioritise strategies.

1.1 TASK 1: PRE-INCEPTION

A pre-inception meeting was held with the Client on 26 September 2012 to discuss the appointment and set the date for the first Study Management Team (SMT) meeting. At the first SMT meeting held on 12 October 2013, the composition of the SMT, Specialist Support Group (to be determined at a later stage) and Strategies Steering Committee were discussed. Meeting frequency of the SMT will be bi-monthly or as required to report progress and discuss issues at hand. Minutes of the SMT meetings held are attached **in Appendix B** of the Inception Report.

1.2 TASK 2: REVIEW OF EXISTING STRATEGIES, DEVELOPMENT OF DISTRICT SUMMARY REPORTS AND PRIORITISATION.

1.2.1 STUDY DOCUMENTATION AND SOURCE INFORMATION

The DWA assisted in providing the reconciliation strategies for the All Towns Northern Planning Region. The reports were provided in MS Doc and PDF format whilst the Directorate: Water Service Planning, provided GIS data from the National Information System (NIS). No database was available that included the water requirements, analysis and water balance applied in all reports. No supporting study documentation was provided that were referenced in the first All Towns Study.

A database was developed (content and design expected to evolve during the execution of this study) to commence with information collection, evaluation and storage process for the purpose of this study. This includes the initial development of a GIS specific to this study and its geographic extent.

1.2.2 RECONNAISSANCE REVIEW OF STRATEGIES

The existing strategies were reviewed in order to gauge the status of content in terms of completeness and accuracy of information, define the geographic extent of strategies applicable to the study area, examining the water balance and evaluation against priority criteria discussed during the first SMT meeting. The 2010 Demographics Scenario Report (Kayamandi Development Services) was obtained, which was used to a greater extent in the 2008 All Towns Study to model and report on the population and water requirements, but there are discrepancies which need to be corrected and verified. The same applies for water services infrastructure and utilised water

resources, including licensed abstraction and water supplied. Information on metered water supply is very limited, especially in areas supplied from groundwater sources.

General assumptions were made in the first All Town study reports on the application of WC/WDM measures and its impact on the water balance for each cluster. It must be noted however that very few WSA's have developed and are implementing any WC/WDM programmes.

Augmentation options were provided where possible for clusters having a current deficit in water supply, or near future (within five years) deficit. These augmentation options will still be subject in most cases to the conduct of detail feasibility studies before implementation. Funding for such augmentation options is likely not yet secured, but this needs to be verified.

The format and layout for all strategies are not consistent and need to be updated to the format as provided by DWA during the prioritisation screening sessions held in April 2013. This will only commence once the review and update of prioritised strategies have made sufficient progress. In addition, there are instances where incorrect references were made to water resources or outdated information was used to report on a particular area. Where possible, these errors will be corrected.

1.2.3 STRATEGIES' PRIORITISATION

Due to the budget constraints of the Continuation of the All Towns Reconciliation Strategies study, not all existing strategies (229) can be updated from a rudimentary level to a more detailed level. It is also accepted that there will be strategies where the status quo remains in terms of the reconciliation of the water requirements with water resources. These strategies will not be updated with new recommendations, only the report format as discussed in the previous section.

The existing strategies were therefore categorised and prioritised in order to select the strategies to benefit from a higher level of detail investigation through this study.

Strategies were initially prioritised based on the key priority criteria (see the minutes of SMT meetings, attached in **Appendix B** of the Inception Report), for the continuation of Stage 2 of this study, the criteria being:

- Five strategic priority areas identified by DWA ;
- Clusters having a deficit in water balance (considering also the quantity in deficit: deficit of 10% of the demand or less and towns in deficit of 0.1 million m^3/a or less were excluded; and time-frame at which such a deficit may occur);
- Clusters being affected by Regional Bulk Infrastructure Grant (RBIG) projects;
- Clusters falling within Strategic Infrastructure Project (SIP) areas; and
- Clusters being affected by water services projects.

Further to this, the DWA (NWRP and Regional Offices) and PSP conducted screening sessions on 3 and 4 April 2013 to discuss the existing priorities and current water supply and water resources situation in the study area. The result being a more refined list of priorities of the existing strategies to present at the SSC workshops and for the continuation of Stage 2 of this study. The initial screening resulted in 50 strategies being classified as a priority, based on strategic importance, the water balance, infrastructure and operation, and water resource quality.

Note that the reconciliation of water resources with water requirements remains the main focus of this study.

Changes to the preliminary priority allocation were applied based on input from stakeholders at the SSC workshops. These changes need to be considered and negotiated with DWA if any major impact on the study scope and programme is envisaged.

A summary of the priority cluster reports, per Province, is provided in **Table 3.1**.

Table 3.1. Summary of Cluster Priority Strategies

Province	Total No. of Strategies	Priority		
		Yes	No	Maybe
Gauteng	8	0	7	1
Limpopo	154	19	131	4
Mpumalanga	24	6	18	
North West	43	5	26	12
Total	**229**	**30**	**182**	**17**

Clusters of possible strategic importance or experiencing water resource quality problems were classified under “Maybe”.

Some of the clusters strategies have actually been included in other cluster reports. The areas without existing strategies generally apply to rural farm areas. In the case of the latter, the cluster area will be evaluated to determine the appropriateness to prepare a reconciliation strategy per area, considering the priorities, population in the cluster area and timeframe of the study.

The detail review and update of the following prioritised strategies have already commenced:

- Musina;
- Matoks;
- Giyani – system C water supply area;

- Mafikeng; and
- Lambani Thulamela.

Other key comments (with some examples) from the screening session include:

- Some strategies (Musina, Middle Letaba, Makhado, Shiela, Ngotwane, Disake) refer to the incorrect (by name or type) source of water;
- The split or combination of a few strategies (Giyani, Hartbeespoort Dam, Odi/Sandspruit, Thaba Chweu) to be reviewed;
- Apply more recent regional study information such as the study on the status of Non-Revenue Water (NRW) in South Africa (WRC Report T522/12) and recently completed or on-going regional water resources studies (Reconciliation Strategy for the Luvuvhu and Letaba Water Supply System);
- In some areas (Flag Boshielo RWS/West Lepelle –Nkumpi, Vaalkop BWS West), the operation of water services infrastructure may result in water shortages to consumers – not necessarily the lack of water resources;
- Correct areas where the water deficit and augmentation options have been incorrectly reported (Mookgophong/Naboomspruit);
- Water source quality is a concern in a few places (Moses Kotane LM, Ngaka Modiri Molema DM) – this to be highlighted, but it will not necessarily be addressed through this study;
- The quality of water supplied (Vaalkop BWS) is also not the focus of this study, but may be highlighted;
- Obtain development plans from water boards (Magalies Water, et. al) to incorporate into the strategies' development;
- Strategies to highlight areas where information gaps occur – this can assist in priority allocation for future funding of studies or projects; and
- In many areas (Koster, Swartruggens, Marble Hall), the water use license allocation is not updated/renewed.

1.2.4 DISTRICT MUNICIPALITY SUMMARY REPORTS

The DM Summary Reports were based on the existing strategies. The DWA NWRP initially provided an MS Word template, but changed it to a template in MS Excel format for the compilation of the summary reports. It aims to provide an overview of each DM, each Local Municipality (LM) within the DM and the individual cluster reports' key information on population, water requirements, WC/WDM, the water balance and water resources.

District Municipality (DM) Summary Reports were developed by the PSP for the following DM's:

Limpopo Province:

- Capricorn DM
- Greater Sekhukhune DM
- Mopani DM
- Vhembe DM
- Waterberg DM

Mpumalanga Province:

- Nkangala DM

North West Province:

- Bojanala Platinum DM
- Ngaka Modiri Molema DM

The Ehlanzeni DM Summary Report was allocated to the current PSP for the Eastern Planning Region as there are only three clusters (of which one partial) falling within the Northern Planning Region. The strategies falling within the Gauteng Province, were dealt with under the larger Vaal River System Bulk Water Reconciliation Strategy Study.

The DM Summary Reports were submitted to DWA for approval on 11 March 2013 and provided in **Appendix D** of the Inception Report (main tables only). The DM Summary Reports were also submitted to the DWA Regional Offices (Limpopo, North West and Mpumalanga) for reference.

A summary of the clusters in water surplus/deficit per Province and per DM – for the 2010 planning year, is provided in **Table 3.2**.

Table 3.2. Summary of the 2010 water balance, per Province and DM

Province	DM	Population (2010)	Clusters in Surplus	Clusters in Deficit	2010 Maximum Surplus mil m³/a (Ml/d)	2010 Maximum Deficit mil m³/a (Ml/d)
LP	Capricorn	1 240 441	35	2	10.043 (27.52)	-0.999 (-2.74)
	Greater Sekhukhune	1 148 394	29	6	2.894 (7.93)	-0.315 (-0.86)
	Mopani	1 056 440	19	2	14.069 (38.55)	-0.05 (-0.14)
	Vhembe	1 357 791	25	4	4.85 (13.29)	-2.406 (-6.59)
	Waterberg	572 441	18	4	4.343 (11.9)	-2.938 (-8.05)
MP	Nkangala	1 168 976	19	0	5.36 (14.68)	N/A
NW	Bojanala Platinum	1 293 517	24	2	9.207 (25.22)	-0.131 (-0.36)
	Ngaka Modiri Molema	452 278	19	0	2.384 (6.53)	N/A
Total		**8 290 278**	**188**	**20**		

In the 2007/2008 planning year, 67 clusters were recorded as having a deficit in water supply. There are 17 clusters which may have a water supply deficit in the 2020 planning year of which the majority falls within the Limpopo Province. Some of these clusters include:

- Mapela (2020 deficit of -3.48 million m³/a or 9.52Ml/d);
- Burgersfort (2020 deficit of -1.87 million m³/a or 5.12Ml/d);
- Bakenberg (2020 deficit of -1.73 million m³/a or 4.75Ml/d);
- Sinthumule Kutama (2020 deficit of -1.49 million m³/a or 4.09Ml/d); and
- Nzhelele Makhado (2020 deficit of -1.27 million m³/a or 3.47Ml/d).

Several options were identified to address water supply of clusters with a current (2007/2008) deficit, ranging from WC/WDM options, to infrastructure extensions or water resource development. The implementation of these augmentation and mitigation measures or their inclusion in current and future planning activities should be confirmed by the respective municipalities.

1.3 TASK 3 SMT, SG MEETING/S.

This is an on-going task. The following SMT meetings were held at the time of completion of this Inception Report:

- SMT 01: Held on 12 October 2012;
- SMT 02: Held on 3 December 2012;

- SMT 03: Held on 11 February 2013; and
- SMT 04: Held on 8 April 2013.

The composition of the Support Group (SG) will still be discussed as and when such team members are required, but preliminary discussions during SMT meetings have resulted in individuals identified for specialist input on Water Use Efficiency, WC/WDM and groundwater quality. Minutes of the SMT meetings held are attached in **Appendix B** of the Inception Report.

Task 4: Inception Report.

An Inception Report, this report, was drafted for approval by DWA and submitted on 13 May 2013.

1.4 TASK 5: FIRST SSC WORKSHOPS.

The workshops were held for the Limpopo (Friday, 26 April 2013) and North West (Wednesday, 24 April 2013) Provinces and coordinated together with the PSP of the Central Planning Region, where an overlap of the provincial boundaries occurs in the study areas. A list of SSC members was drafted and invitations sent – the Letter of Invitation is attached in **Appendix E** of the Inception Report. The latter were accompanied by a Letter of Introduction to the Study and a nomination form to complete and return to the PSP.

Turnout at the SSC workshops in summary:

- North West Province SSC: 40 people, representing the majority of municipalities and fair representation from other institutions or organisations; and
- Limpopo Province SSC: 37 people, representing most municipalities and fair representation from other institutions or organisations.

The PSP prepared a Background Information Document (BID) for distribution to stakeholders, attached in **Appendix F** of the Inception Report. A presentation was prepared to inform stakeholders of the study, discuss the preliminary priority allocation of strategies and lead the break-away discussions to finalise the priorities, and provide an opportunity to solicit information.

1.5 FINAL PRIORITY SELECTION

Based on input received from stakeholders during the SSC workshops, the final number of strategies earmarked as priorities for review and update, is 42. The final list of strategies and priorities is attached in **Appendix C** of the Inception Report.