

SECOND DOCUMENT FOR  
COMMENT  
JUNE 2007  
(The first document was the Background  
Information Document)

## DEVELOPMENT OF A WATER RECONCILIATION STRATEGY FOR THE KWAZULU-NATAL COASTAL METROPOLITAN AREAS

Department of Water Affairs and Forestry



water & forestry

Department:  
Water Affairs and Forestry  
REPUBLIC OF SOUTH AFRICA

## DRAFT PROCEEDINGS OF THE PUBLIC / INFORMATION MEETING

Held at the Royal Hotel, Durban on Wednesday, 20 June 2007

For comment by those who attended

## PURPOSE OF THIS DOCUMENT

This document records the proceedings of the public / information meeting of the Department of Water Affairs and Forestry (DWAF) with stakeholders in the study area in Durban on 20 June 2007. The aim of the meeting was to introduce the Water Reconciliation Strategy for the KwaZulu-Natal Coastal Metropolitan Areas to the public and to ensure their involvement in it. The meeting was attended by representatives of the DWAF – both national and regional, provincial and local government, university and research institutions, business, non-governmental organisations, community based organisations, civil society, environmental organisations and the consultant's project team.

The objectives of the meeting were to:

- Present to stakeholders the technical and public engagement process that is being followed to develop a Water Reconciliation Strategy for the KwaZulu-Natal Metropolitan Areas.
- Provide an opportunity for stakeholders to comment on the technical and public engagement process followed to develop a Water Reconciliation Strategy.
- Strengthen the partnership between the DWAF and key stakeholders.
- Explain the roles and functions of the Study Steering Committee and to nominate members for this committee.

This document provides the following:

- Attendance Register (Appendix A),
- A summary of the presentations delivered at the workshops (full presentations in Appendix B),
- The Guidelines for the Study Steering Committee (Appendix C); as well as
- All comments made by stakeholders and participants to date (Appendix D).

## YOUR COMMENTS PLEASE

Within ten working days of receipt

Stakeholders and authority representatives that attended are requested to please ensure that their comments, concerns and suggestions are fully and correctly captured in this document.

Any comments on this document should be sent to the Public Participation Office, attention: Rachelle Seymore, Zitholele Consulting at fax (011) 805 2100 or e-mail at [rachelles@zitholele.co.za](mailto:rachelles@zitholele.co.za)

## TABLE OF CONTENTS

<b>1.</b>	<b>WELCOME.....</b>	<b>1</b>
<b>2.</b>	<b>INTRODUCTION AND OBJECTIVES OF THE MEETING .....</b>	<b>1</b>
<b>3.</b>	<b>BACKGROUND TO THE DEVELOPMENT OF THE WATER RECONCILIATION STRATEGY FOR THE KWAZULU-NATAL METROPOLITAN AREAS .....</b>	<b>1</b>
<b>4.</b>	<b>DESCRIPTION OF THE STUDY.....</b>	<b>3</b>
4.1	Overview and Procedure to Develop the Water Reconciliation Strategy .....	3
4.2	Water Requirements and Return Flow Scenarios .....	4
4.3	Water Conservation and Water Demand Management .....	5
4.4	Water Resource Assessment .....	6
4.5	Infrastructure Task .....	6
4.6	Water Quality and Reuse .....	7
4.7	Environmental Considerations.....	8
4.8	Engagement with Stakeholders.....	8
4.9	Study Review and Strategic Guidance.....	9
4.10	Study Deliverables and Programme .....	9
<b>5.</b>	<b>STUDY STEERING COMMITTEE (SSC) .....</b>	<b>10</b>
5.1	Nomination Process for Members of the SSC.....	11
<b>6.</b>	<b>WAY FORWARD.....</b>	<b>12</b>
<b>7.</b>	<b>CLOSURE.....</b>	<b>12</b>
<b>8.</b>	<b>NEXT STEPS .....</b>	<b>13</b>

### APPENDICES

- Appendix A:** List of Participants
- Appendix B:** Presentations
- Appendix C:** Guidelines for the Study Steering Committee
- Appendix D:** Issues and Response Report

## **1. WELCOME**

The participants, hereafter referred to as stakeholders, were welcomed by Mr James Perkins from the Department of Water Affairs and Forestry's (DWAf) KwaZulu-Natal Regional Office.

In summary, stakeholders were thanked for their contribution and willingness to participate in the development of a Water Reconciliation Strategy for the KwaZulu-Natal Metropolitan Areas. Mr Perkins highlighted that the water requirements in the study area should not be underestimated. He said that as developments, such as the Dube Trade Port and proposed King Shaka airport are implemented, more water is needed. Therefore, planning must be done in time to ensure sufficient water for this area. He emphasised that this study is not a replacement for any other initiatives that are being implemented. Parallel planning, implementation of projects and collaboration of management activities are essential to ensure that the different authorities and implementing agents are meeting the short and long term water requirements of this area.

## **2. INTRODUCTION AND OBJECTIVES OF THE MEETING**

The Facilitator of Zitholele Consulting (Pty) Ltd (Zitholele), Mr Herbert Modupi, stated the objectives of the meeting, introduced his colleagues from Zitholele and was supported by the Study Leader, Mr Pieter van Rooyen from WRP Consulting Engineers (Pty) Ltd. who introduced the project team directly involved with the technical aspects of the project. The Facilitator presented the ground rules for the meeting and participants were requested to complete the attendance registers that were being circulated.

The Facilitator noted that the proceedings will be recorded and distributed to stakeholders present for their verification. Stakeholders were informed that the proceedings will be in English but anyone was welcome to make comments or ask questions in the language of their choice.

## **3. BACKGROUND TO THE DEVELOPMENT OF THE WATER RECONCILIATION STRATEGY FOR THE KWAZULU-NATAL METROPOLITAN AREAS**

Mr Niel van Wyk, Chief Engineer: National Water Resource Planning (East), DWAf, Pretoria and Project Manager of this study presented the background to the development of the Water Reconciliation Strategy. The following was dealt with in the presentation which is appended in Appendix B:

- Why is a Water Reconciliation Strategy for the KwaZulu-Natal Metropolitan Areas necessary?

- What are the objectives of such a strategy?
- What are the linkages with other processes?

He explained the term 'reconciliation' is used in the context of a comparison of the available water with the water requirements in the area. He also noted that the term 'strategy' does not refer to a master plan but that it rather outlines the options available under certain circumstances and that there is a need for it to be flexible.

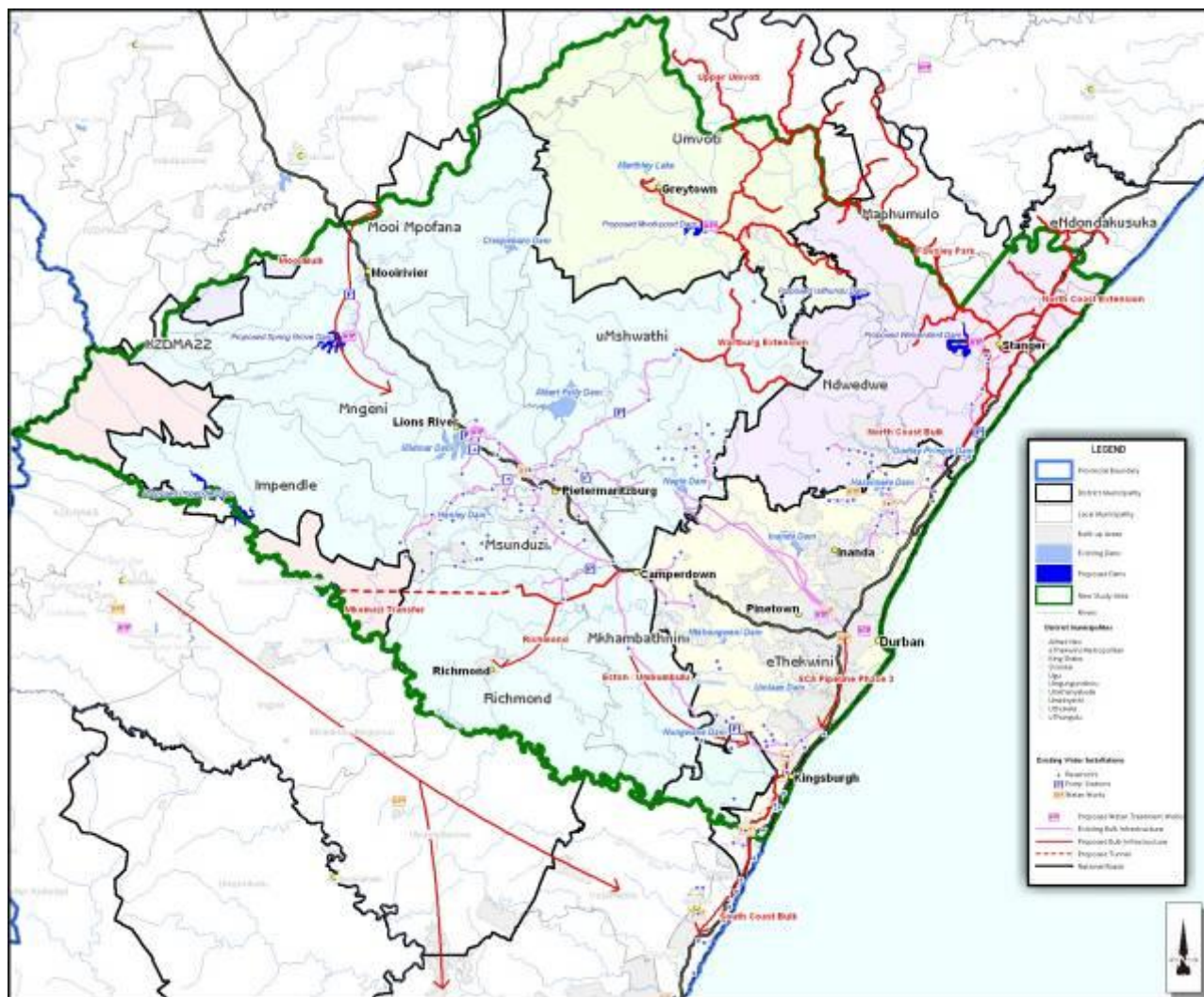
In his presentation, Mr van Wyk outlined the study area to include Pietermaritzburg, Durban, the North Coast and linkages with the South Coast but added that it will be dealt with in more detail later in the presentations.

He stated that South Africa is in a phase of high economic growth and that it is likely to continue for at least another five years. In KZN there are important initiatives such as the Dube Trade Port and the King Shaka Airport that are being developed. With limited resources water conservation has to be one of the cornerstones of future water use cultures.

This project deals with bulk water supply and as a result of growing water requirements medium and long term reconciliation strategies are necessary to sustain the area's water supply up to 2030. He emphasised that water is not unlimited and the more developments that are taking place the more water is needed. He said that DWAF is working closely with its strategic partners on developing this strategy and that it is important for everyone involved to have ownership of the final product. Similar studies, each with its own objectives, are also being done elsewhere in the country as the need for water is increasing at most of the large centres. He stated that water conservation measures are crucial for the future and important work in Water Conservation and Water Demand Management (WC/WDM) is being done in the study area by Water Services Authorities. DWAF is also busy with a WC/WDM study.

Mr van Wyk stated that the intention is not to delay any other water resource work being done at present but rather to coordinate and align the different projects. Some investigations have to run parallel to save time.

He stated that partners such as eThekweni Metropolitan Municipality and Umgeni Water are already well on board whereas others such as iLembe and Msinduzi Municipalities still need to be brought into the study. He emphasised that the study does not aim to reinvent the wheel but to take work that has been done already and to coordinate and add value to it. He gave some examples of projects that are in progress at present such as the iLembe Municipality's development of a master plan, Umgeni Water's work on bulk supply infrastructure, DWAF's augmentation infra-structure feasibility studies, the augmentation scheme at the Mkomazi River, the Mvoti River developments and the Reserve determination studies. He said that although the Mkomazi and Mvoti studies will not be delayed, implementation decisions will only be made once there is sufficient confirmation from the reconciliation study that it is the right option.



Picture 1: Study Area

## 4. DESCRIPTION OF THE STUDY

### 4.1 Overview and Procedure to Develop the Water Reconciliation Strategy

Mr Pieter van Rooyen, from WRP Consulting Engineers (Pty) Ltd and Study Leader introduced the team members who are responsible for the different tasks on the project. They are Mr Richard Savage, Mr Willem Wegelen, Mr Darius Mnguni, Mr Nico Serfontein, Mr Trevor Coleman, Ms Rachelle Seymore, Mr Dennis Behrmun and Dr Thinus Basson. The study team include organisations such as DMM Development Consultants, Kwezi V3, Golder Associates Africa, Zitholele Consulting, WRP Consulting Engineers, and sub consultants.

He provided an overview of the study, the procedure that will be followed to develop the water reconciliation strategy, the scope of work, the deliverables and the programme. His complete presentation is available in Appendix B.

Mr Pieter van Rooyen referred to the maps of the study area that were available in the hall and said that after the first draft the lines of the study area were redrawn. He indicated that the study focuses on the metropolitan area, stretches as far as the KwaZulu-Natal North Coast supply area, it includes the Mgeni System and it has links to the South Coast. The North Coast supply area deals with water requirements from iLembe Municipality as well as the eThekweni Metropolitan, whereas the Mgeni System deals with requirements from Msunduzi Municipality, eThekweni Metropolitan, parts of Mgungundlovu District Municipality and the South Coast augmentation. On the North Coast the Mvoti River has possible options for future increased supply and the Mgeni System could link up with and augment the South Coast's water supply.

Mr Pieter van Rooyen said it is important to understand where the water requirements are and how much water is available.

He explained that the study has three phases. The first phase involves collecting information, undertaking literature reviews and initiate engagement with stakeholders. This leads to the second phase (First Stage Strategy) and eventually the third phase of the project when a Second Stage Reconciliation Strategy will be developed. The decisions taken must however be documented properly and the project will deal with water supply up to 2030.

The next presentations all deal with the different tasks of the study.

## **4.2 Water Requirements and Return Flow Scenarios**

Mr Richard Savage presented the task on water requirements and return flow scenarios. He explained the study procedure that will be followed, the challenges, approach and methodology.

In order to determine realistic water requirements an assessment of the demographic, land-use and development planning profiles of the area has to be done. This is to determine the socio-economic influence on water use and how the water requirement and return flow model will respond. A scenario planning approach will be adopted to ensure that cognisance is taken of the many influences on water requirements in the study area. As part of the process, two water requirement-scenario workshops will be held, which will be convened by Dr Mark Dent from the University of KwaZulu-Natal. The first workshop will take place during the first stage of the development of the strategy and the next workshop during the second stage. The water requirement projection scenarios will be reviewed after the first stage strategy has been developed and the projections refined, based on any new data and the input from stakeholders.

Mr Savage remarked that in a booming economy there is a tendency to use more water which has an impact on sustainability. At times it is difficult to assess the real situation as different views of water requirements are often presented which are not always substantiated. Therefore an integrated approach needs to be followed when dealing with water requirement

scenarios. It is necessary to understand how the different types of consumers, such as agriculture (sugar and forestry) and urban users (domestic, commercial, institutional and industrial) view the future. Understanding their demand characteristics is fundamental to the compilation of the water balance. Certain questions need to be asked, such as, what their different water requirements are and what the effluent return flow factors are. A concern is that the current level of water demand exceeds the predictions made some years ago. It is therefore necessary to map the future water requirements taking all factors into account.

He explained that the historic water demands in the area are driven by population and economic activities. Population figures and demographics will therefore have to be assessed in order to gain insight into future use. The approach and methodology applied will entail consultation with key stakeholders to ensure that the most recent data and research are used. Although the 2001 Census data is being used as a benchmark it has to be aligned with the latest updated revisions for the information to be reliable. Information from Umgeni Water, eThekweni Water Services and the Msunduzi Municipality will be used to determine the baseline water demands.

As land use and urbanisation play a major role, Dr Jeff McCarthy has consequently been co-opted onto this team. The Durban-to-Richards Bay and Cato Ridge-to-Pietermaritzburg corridors will be assessed in terms of various development scenarios and this information will be used to inform the future water requirements for the study area.

### **4.3 Water Conservation and Water Demand Management**

Mr Willem Wegelen is working closely with Dr Ronnie McKenzie of WRP Consulting Engineers on this task. Their objectives are to assess effective and efficient use of water resources in the different sectors, to assess the WC/WDM measures currently planned and implemented in order to determine the savings that can be obtained. They furthermore have to assess the potential for reconciling current and future requirements through WC/WDM strategies.

The task comprises the following:

- Preparing a water balance to establish the status of the present situation, i.e. whether the systems are in deficit or surplus;
- To assess the water losses and the water that can be saved;
- The outcome will inform the water requirement and return flow model to quantify the effects on future water requirements.

Msunduzi Municipality which comprises the Pietermaritzburg area and eThekweni Metropolitan which comprises the area in and around Durban represent about 90% of the urban water use

in the study area. The smaller towns are not being ignored and any recommendations made will factor them in as well.

The methodology used will comprise splitting the focus areas into smaller management areas. Water balances will be prepared and losses will be estimated. This will be followed by an assessment of savings through various interventions. With regards to the industrial, mining and power generation, key users will be benchmarked and realistic, achievable and sustainable strategies developed of potential WC/WDM measures.

Preliminary data and the information obtain thus far show there is potential for further savings. The challenge is however in the implementation of further WC/WDM measures.

#### **4.4 Water Resource Assessment**

Mr Darius Mnguni presented the Water Resource Assessment task. Two tools will be used for this task namely, the Water Resource Yield Model (WRYM) and the Water Resource Planning Model (WRPM). The purpose is to determine the water availability and when the next intervention measures need to be implemented.

He said that the most up to date network systems (from previous studies) must be obtained and used to determine the surface water availability of the water resource. The cross correlation between the different systems will also be taken into consideration since the water resources is already, and will in future be linked through the bulk water supply infrastructure. The extent of the bulk infrastructure is presented in the subsequent presentation.

Yield analysis of the different options will have to be carried out where existing figures are not available. This task will also involve the revision and evaluation of the system operating rules. One of the aspects that will be considered in the development of the strategy is to integrate the proposed water resource schemes with the bulk distribution infrastructure, with the objective to find the most efficient overall solution.

Mr Mnguni said that the possibility of new dams may have to be considered. It is however necessary to determine where the growth will occur to guide the positioning of the bulk infrastructure.

With regards to the ground water the existing schemes will have to be evaluated and the potential assessed for new development. The quality of the ground water will also have to be analysed.

#### **4.5 Infrastructure Task**

Mr Nico Serfontein, the task leader for the Infrastructure Component of the study, presented the proposed approach for the task by focussing on what will be done, why it will be done and how the task will be carried out.

Mr Serfontein said that the infrastructure which is in the three major demand areas, namely iLembe on the North Coast, eThekweni metropolitan area (Durban and upper South Coast) and the remainder of the Mgeni catchment need to be assessed. The bulk water supply networks throughout these areas are linked - directly and indirectly - illustrating the complexity of the supply network. The Mgeni system is already stressed, while major developments along the North Coast will require additional water, most likely from the Mdloti and Mvoti River systems. The locality, quantity and quality of water resources and the position of demand centres, impact on the extent and cost of required infrastructure. Water requirement projections determine the timing of projects. All of these factors affect water tariffs and the phasing of capital funding.

The schemes will be phased in and some will have components that need to be implemented over the short, medium and long term. Mr Serfontein said that information obtained during the inception phase of the study, perusal of investigation reports, will be used to determine the first stage strategy (covering short to medium and long term solutions), while the second stage strategy will incorporate lessons learned from the first stage and confirm the long term solutions. There is however a grey area where the long term solutions could dictate the design and building of earlier scheme phases.

Major components currently under review are the augmentation of the Mgeni system from the Mkomazi River, and the augmentation of the northern aqueduct of the eThekweni metro. He said that Umgeni Water has also been appointed by the iLembe District Municipality to serve as their bulk water provider from 1 July 2007. In the iLembe district, various interim schemes are being studied and the possibility exists of developing infrastructure for certain areas with groundwater as source. Various options are under consideration to extend the south coast pipe line which will receive water from the Wiggins Waterworks in Durban.

#### **4.6 Water Quality and Reuse**

Mr Trevor Coleman is responsible for the water quality and reuse task. For both the water quality and the effluent reuse component he focused on the objectives, approach to be followed and the outcomes.

With regards to water quality Mr Coleman said that the objective is to understand the current water quality situation in the study area in order to provide qualitative information (expert opinion) on the water quality changes that can be expected from the reconciliation strategies. He emphasised that this study will develop a reconciliation strategy and not a catchment strategy although the outcomes will benefit the development of a catchment management strategy. He said the approach that will be followed is to use existing studies and gather the necessary data. The outcome would entail an understanding of what the source of pollution is and the way it affects the system. They will then be able to provide a qualitative assessment of the impact of the reconciliation options on the water quality.

Mr Coleman said the objective of the effluent reuse task is to identify opportunities for reuse of industrial and domestic treated sewage effluent. Different wastewater treatment plants will be investigated to determine their capacities and the processes used. Reuse opportunities will be identified for integration into other reconciliation options.

Concerning desalination the objective is to investigate the potential for using desalination as a source and to incorporate it into the reconciliation strategies as a supply option where applicable. He said the approach is to identify current and future initiatives where desalination can be considered for water supply and to determine the cost thereof as an alternative supply option. He gave examples of plants in Witbank where the mines are treating polluted water through desalination and is only able to recover a portion of the costs by providing the water for urban consumption. Furthermore, in Melbourne and Perth in Australia desalination plants have been built but it is an expensive option. It also needs to be kept in mind that there are significant energy requirements associated with desalination that need to be considered. Mr Coleman said that desalination may be an option for small coastal towns and Umgeni Water is in the process to investigate it as an option for water supply to Zinkwazi.

#### **4.7 Environmental Considerations**

Mr Trevor Coleman presented the Environmental Task on behalf of Dr Ralph Heath.

Mr Coleman said the objective is to provide the necessary environmental information for the development of the reconciliation strategies and to identify potential environmental flaws that could influence the feasibility of options. The study approach is to collect desktop information, to review reports of related environmental studies, obtain data on the Ecological Water Requirements in the relevant water resource systems in order to assess the water balance implications for different implementation scenarios with respect to the existing schemes. The outcome of this task is to formulate a EWR implementation strategy and to identify further studies needed.

#### **4.8 Engagement with Stakeholders**

Ms Rachelle Seymore presented the task that deals with the engagement with stakeholders.

She said it is important to understand that stakeholder engagement does not mean that every individual or organisation is consulted and it is also not aimed at consensus. It is however a process of engagement with stakeholders to raise awareness about the study and to involve stakeholders in the processes followed. She emphasised that the objective is to provide sufficient and accessible information to stakeholders in an objective manner in order for stakeholders to identify issues, make contributions or suggest alternatives to the study.

Ms Seymore said the stakeholder engagement process started with the Catchment Management Forum's database of stakeholders which was developed further through

feedback on the reply sheets. She said the background information document was sent to the stakeholders on the database and it is also available on DWAF's website. Invitation letters to this meeting followed and advertisements were placed in the KZN newspapers. From these activities the following opportunities exist for stakeholders to become involved in the study:

Input: Issues, concerns and contributions can be provided through the Public Participation consultants either in the form of writing or by means of the reply sheets that were in both the background information document and the invitation. Comment can also be given at the Catchment Management Forum meetings, submissions can be made to the Study Steering Committee (SSC) and there are forms at the registration table for further input. Ms Seymore explained that this information is being captured in an issues and response report.

Establishment of the SSC: The nomination process for the SSC will be dealt with later in the meeting.

Review of and comment on the first and second stage reconciliation strategies: These documents will be made available to stakeholders when they have been developed in order to provide their comments.

Public / information meetings: Two more meetings will take place during this study.

Information: Newsletters will be developed and made available to stakeholders together with other information as it becomes available.

Ms Seymore closed off by showing a diagram that indicates that the different processes in the study are all interlinked and she emphasises that no process in the study stands on its own.

#### **4.9 Study Review and Strategic Guidance**

Dr Thinus Basson explained his role namely that he is not a core member of the production team but that his contribution is to be a critic of the study. His role is to review core documents and key elements of the study, and to give guidance and advice. He said furthermore that he will review the results and conclusions of the study and then will finally assist with the recommendations made. He further indicated that he acts as a sound board for the study team to test ideas and options as well as he provides an independent perspective.

#### **4.10 Study Deliverables and Programme**

Mr Pieter van Rooyen provided the deliverables and programme of the main components of the study. He said that reports are necessary as the processes being followed has to be documented. The following reports have to be delivered:

Literature Review: A draft form of this document has been submitted to DWAF for consideration.

Inception Report: This report confirms the scope of work, the financial implications and the human resources involved in the process.

First Stage Strategy: All the inputs of the different tasks will be incorporated in this document, the steps to finalise the strategy and how the reconciliation will be done.

Second Stage Strategy: This document will focus on a phased approach and account needs to be taken of the lessons learnt in the study.

Executive Summary: As the study needs to communicate to a larger audience a layman's executive summary will be developed which will be linked to a newsletter.

Mr van Rooyen provided the study programme which is as follows:

First public / information meeting: 20 June 2007

First Stage Reconciliation Strategy: December 2007

Second public / information meeting: February 2008

Second Stage Reconciliation Strategy: February 2009

Third public / information meeting: April 2009

Mr Pieter van Rooyen further said that a pre-consultation meeting with key stakeholders were held on 27 February 2007. Preliminary dates for the SSC have been set as 18 October 2007, 28 February 2008, 12 June 2008 and the final meeting on 26 February 2009.

## **5. STUDY STEERING COMMITTEE (SSC)**

The Facilitator explained the purpose of the SSC. He explained that the committee is an important element of stakeholder engagement and that the members have to ensure that decisions are taken in the best interest of the people living in the area and of South Africa's water resources. He emphasised that it is a voluntary institution and that the nomination process is one of the outcomes of this public meeting. He explained that it is important that the main sectors are represented in the SSC. A person can either nominate him or herself or be nominated but it is important that the organisation that he or she represents supports this nomination. A nominee needs to commit time and effort to this process. He further explained that the Public Participation consultants will provide a secretariat service to the SSC. The Facilitator continued by explaining the proposed terms of reference for the SSC namely:

- Provide administrative support, guidance and commitment to the direction and outcomes of the study;
- Share information and data where possible;
- Facilitate linkages between this study and other studies;
- Study the strategy reports and give comments on the findings;
- Provide strategic advice to ensure that the study maintains the national perspectives on water management;
- Provide feedback to their constituencies on documentation and issues arising from the studies;
- Act in the interest of all stakeholders and promote consensus reached;
- Take ownership of the final reports and recommendations to DWAF.

The Guidelines for the SSC is in Appendix C.

## 5.1 Nomination Process for Members of the SSC

Discussions followed on the relevant sectors important to the study process. The following sectors were agreed on and the following nominations have been received:

<b>SECTOR</b>	<b>NOMINATION(S)</b>	<b>ORGANISATION</b>
National Government	Ms Mary Jean Gabriel Ms Lebo Molefe	Dept Agriculture Dept Environmental Affairs and Tourism
Provincial Government	Ms Anne Bindoff* Mr Julian Kiepiel Ms Fathima Kolia	Dept Agriculture & Environmental Affairs Dept Local Government & Trad Affairs Dept Economic Development
Premier's office	Prof Siphos Shabalala	
Local Government	Mr Mandla Gumedede* Mr Max Pawandiwa Mr Bill Pfaff Mr Yunus Goga Mr T J Sebusi	iLembe District Schools Ugu Municipality eThekweni Metropolitan Msunduzi Local Municipality uMgungundlovu District Municipality
Research / Universities	Prof Chris Buckley*	KZN University of Technology
Industry	Mr Rob McInerney	Durban Chamber of Commerce and Industry
Business	Mr Andrew Layman	PMB Chamber of Business

Organised Agriculture	Neil Lecler* Rory Linskey*	SA Sugar Association SA Sugarcane Research Institute
Catchment Management Forum	Mr Jay Reddy Ms Faeenza Ballim	DWAF
Non-governmental organisations (NGOs)	Ms Di Dold* / Ms Di Jones*	WESSA
Umgeni Water	Mr Steve Gillham*	Umgeni Water
KwaNaLoga	Mr Bongani Mlambo	
DWAF National	Mr Johan van Rooyen Mr Pieter van Niekerk Mrs Barbara Weston Mr Vusi Kubheka Mr Phila Madondo Mr Neil van Wyk Mr Tendani Nditwani Mr Cain Chunda	
DWAF Regional	Mr James Perkins* / Mr Norman Ward* Mr Thys Badenhorst / Mrs Angela Masefield	
Commercial Forestry	Mr Derrick Airey*	Sappi - Saiccor
Conservancy	Mr Fokko Fokkens* Mrs Jean Lindsay*	Blythesdale Conservancy & KZN wildlife Natal Conservancies Association
Health	Mr Phiwe Shangase* Ms Naomi Myeki*	Siyanyuka Communications Sakhakunyekubekuhle

\*Nominations received on the day of the meeting

## 6. WAY FORWARD

The Facilitator provided the way forward namely that the technical team will continue with their respective tasks. The public participation consultants will continue with their tasks and the Catchment Management Forums will continuously be supplied with information which will be communicated at their meetings.

It was agreed that the nominations received for the SSC at this meeting will be supplied to the Project Manager at DWAF for confirmation and where sectors do not have a representative these will be identified with the regional office to ensure a fully representative SSC membership.

## 7. CLOSURE

Mr Johan van Rooyen, Director: National Water Resource Planning, DWAF closed the proceedings. He stressed the need to use water more efficiently. He expressed the wish that

the stakeholders will attend future meetings and that they will continue to provide their inputs into the study and on the steering committee in order that the problems of the water requirements in this area can be solved. All participants were thanked for their valuable contributions during the workshop.

## **8. NEXT STEPS**


### **THE NEXT STEPS**

- Minutes of this meeting will be sent to the stakeholders at this meeting.
- The issues and concerns received at this meeting and to date are in Appendix D.
- The nominations for the SSC will be confirmed and announced by DWAF.
- The SSC needs to prepare for the first meeting, preliminary scheduled for 18 October 2007..
- The first newsletter will focus on information from this meeting, the SSC nominations, process and work of the study team.
- Contributions are being considered for the development of the Water Reconciliation Strategy for the KwaZulu-Natal Metropolitan Coastal Areas.
- The First and Second Stage Reconciliation Strategies will be made available to stakeholders for their comments towards the end of 2007 and beginning of 2009 respectively.

## APPENDIX A – Attendance Register

## APPENDIX B - PRESENTATIONS MADE DURING THE WORKSHOP –

### BACKGROUND AND DESCRIPTION OF THE STUDY



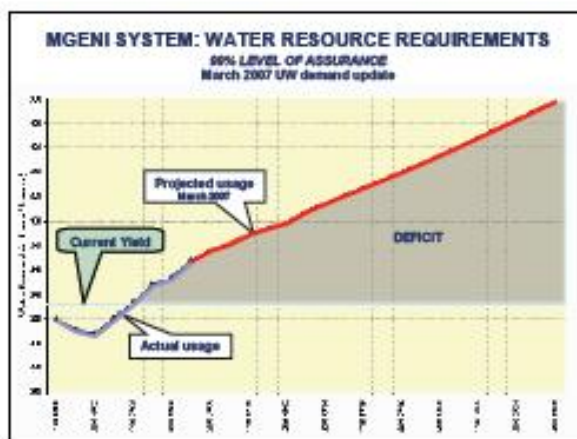
**Water Reconciliation Strategy  
Study for the Kwazulu-Natal  
Coastal Metropolitan Areas**

**Motivation for Reconciliation  
Study**

29 June 2007

### Study Area

- Pietermaritzburg
- Durban
- North Coast
- Linkages with South Coast



### Issue

In both the Mgeni River area and the Ilembe/Mvoti River area the water requirements will soon outstrip availability

### Growing water requirements

- Economic growth, improved water supply services and urbanisation of the population resulted in higher than expected growth in water requirements
- Significant water conservation measures slowed the growth, however, the need for intervention is eminent

### Bulk Water Supply

- Require medium and long term reconciliation strategy for sustainable water supply up to 2030
- Infrastructure development initiatives by water service providers and authorities are underway to deal with short term needs
- Springrove Dam and conveyance infrastructure to augment Mgeni River System (NMTS2)
- Raising of Hazelmere Dam and conveyance infrastructure to augment the North Coast

## **OBJECTIVE OF THE STUDY**

### **Objectives of the study**

- Analysis of the water demand profile and future water requirements
- Identification of interventions that will reconcile the water requirements with the available water for the period up to 2030
- Integration of augmentation and bulk supply options to achieve optimised overall benefits
- The strategy should be flexible to accommodate future changes in actual water use
- Extensive stakeholder engagement to build partnerships and promote co-operation

### **Broad Study Approach**

- Three phase approach is being followed:
  - Inception Phase: Collection and collation of information
  - Second Phase: Develop First Stage Reconciliation Strategy , firm medium term measures and broad long term interventions
  - Third Phase: Compile Second Stage Reconciliation Strategy , refined long term interventions

## **LINKAGE WITH OTHER PROCESSES**


### **Co-ordination with current planning initiatives (1 of 2)**

- eThekweni water supply and wastewater planning initiatives
- WC/WDM projects of WSAs and WSPs
- Ilembe Master Plan
- Umgeni Water Bulk Supply Infrastructure Planning
- DWAF WC/WDM Study
- Mgeni Water desalination study

### **Co-ordination with current planning initiatives (2 of 2)**

- DWAF augmentation infrastructure feasibility studies
  - Mkomazi River
  - Mvoti River
- DWAF Reserve Determination Studies
- Environmental Impact Assessments
  - Airport
  - Other developments
- Other studies and planning processes, WSDPs, IDPs etc.


## OVERVIEW OF THE STUDY PROCEDURE

 water & forestry  
DEPARTMENT OF WATER AND FORESTRY  
REPUBLIC OF SOUTH AFRICA

### Water Reconciliation Strategy Study for the Kwazulu-Natal Coastal Metropolitan Areas

### Study Overview

20 June 2007



### Presentation Layout

- Study Area
- Study procedure
- Scope of work – tasks (details by task leaders)
- Study team
- Study deliverables and programme

### Study Area

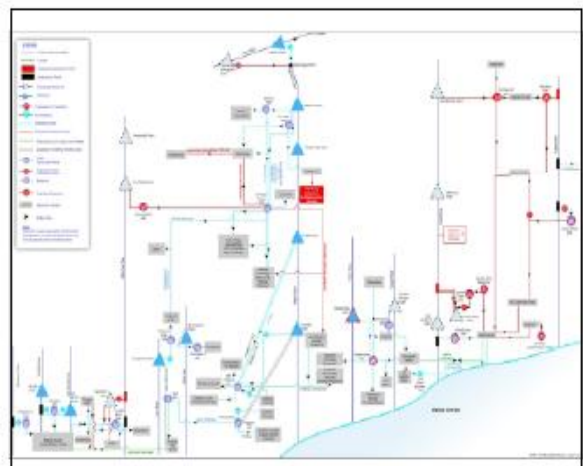
- KwaZulu-Natal North Coast Supply Area
- Mgeni System
- Links to South Coast

### KwaZulu-Natal North Coast Supply Area

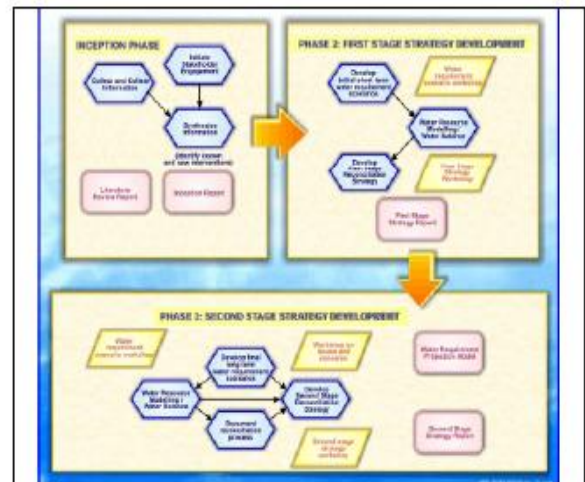
- Water requirements
  - ILembe District Municipality
  - eThekweni Metro
- Supplies:
  - Umgeni Water's North Coast System (Hazelmere Dam)
  - Mvoti River
  - Tongati River
  - Towns supplied from Mhlali River
  - Groundwater

### Mgeni System

- Water requirements
  - Msunduzi Local Municipality
  - eThekweni Metro
  - Portion of uMgungundlovu District Municipality
  - South coast augmentation
- Supplies:
  - Mgeni River System (Midmar, Albert Falls, Nagle and Inanda dams)
  - Mooi River Transfer Scheme Phase 1 (MMTS1)
  - Proposed MMTS2 – Spring Grove Dam



## Study Procedure



- ### Scope of Work – Tasks
- **TASK 1: INCEPTION PHASE**
    - 1.1 Assemble and assimilate available information (Compile Literature Review Report)
    - 1.2 Prepare inception literature review reports
  - **TASK 2: FIRST STAGE RECONCILIATION STRATEGY**
    - 1.2 Develop short term water requirement and return flow scenarios
    - 2.2 Assess intervention options
    - 2.3 Develop first stage reconciliation strategy
    - 2.4 Compile first stage reconciliation strategy report
  - **TASK 3: SECOND STAGE RECONCILIATION STRATEGY**
    - 3.1 Develop long term water requirement and return flow scenarios
    - 3.2 Assess sequence of intervention options – develop second stage reconciliation strategy
    - 3.3 Document reconciliation process
    - 3.4 Consideration of other issues and concerns
    - 3.5 Compile second stage reconciliation strategy document
  - **TASK 4: STAKEHOLDER ENGAGEMENT PROCESS** (Public Participation)
  - **TASK 5: STUDY MANAGEMENT**

- ### 1: Inception Phase
- **1.1 Assemble and assimilate available information**
    - Water requirements and return flows
    - Water resources
    - Bulk infrastructure, existing and planned
    - Water quality, treatment and re-use option information
    - Environmental
  - **1.2 Prepare inception and literature review reports**
  - **(Task 4) Initiate Stakeholder Engagement Process**
    - Identification of stakeholders
    - Compile stakeholder database
    - Arrange first public meeting
    - Compile Background Information Document

- ### 2: First Stage Reconciliation Strategy
- **1.2 Develop short term water requirement and return flow scenarios**
    - Demographic assessment, generation of population scenarios
    - Determine socio-economic influences on water use
    - Water requirement scenario workshop
    - Apply urban water requirement and return flow model
  - **2.2 Assess intervention options**
    - Water conservation and demand management (determine potential savings)
    - Supply infrastructure options
    - Water Resources (water balance), groundwater options
    - Water quality and re-use
    - Environmental screening
  - **2.3 Develop first stage reconciliation strategy**
    - Compile strategy options – starter information for workshop
    - Strategy Workshop
  - **2.4 Compile first stage reconciliation strategy report**

- ### 3: Second Stage Reconciliation Strategy
- **3.1 Develop long term water requirement and return flow scenarios**
    - Scenario generation workshop
    - Apply urban model to generate long term scenarios
  - **3.2 Assess sequence of intervention options**
    - Technical assessments of specific interventions
    - Compile intervention option starter document
    - Workshop second stage reconciliation strategy
  - **3.3 Document reconciliation process**
    - Recommend further investigations
    - Describe monitoring data requirements and processes
    - Present intervention selection decision-making process
  - **3.4 Consideration of other issues and concerns**
  - **3.5 Compile second stage reconciliation strategy document**

#### **4: Stakeholder Engagement Process**

- Stakeholder Database
- Identification of stakeholders
- Announce the project
- One-on-one meetings with reference groups
- Public meetings
- Study steering committee meetings
- Newsletters

#### **5: Study Management (1 of 2)**

- Study technical committee - DWAF and Key stakeholders, focus on technical aspects (20 meetings)
- Study management committee (DWAF and Study Team – administrative matters)
- Study Leader: P van Rooyen
- Team and activity co-ordination: D Behrmann
- Strategic Advisor: T Basson

#### **5: Study Management (2 of 2)**

- Task leaders:
  - Infrastructure: N Serfontein
  - Water requirements: R Savage
  - WC/WDM: R McKenzie
  - Water resources: D Mnguni
  - Water quality and re-use: T Coleman
  - Environmental: R Heath
  - Stakeholder Engagement: R Seymore
  - Documentation and Strategies: P van Rooyen

#### **Consultants**

- DMM Development Consultants
- Golder Associates Africa
- Kwezi V3
- WRP Consulting Engineers
- Zitholele Consulting
- Sub-consultants/Specialists

## SCOPE OF WORK

### WATER REQUIREMENTS AND RETURN FLOW SCENARIOS

**Water Reconciliation Strategy Study for the Kwazulu-Natal Coastal Metropolitan Areas**

**Determination of Water Requirements and Return Flows**

20 June 2007

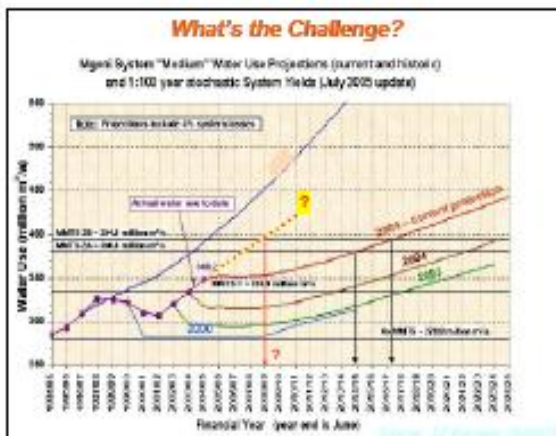
### Scope of Work

- Develop water requirement and return flow scenarios based on
  - Demographic assessment - generation of population scenarios
  - Determine socio-economic influences on water use
  - Convene water requirement scenario workshop
  - Apply urban water requirement and return flow model
- Review water requirement and return flow scenarios after completion of the first stage water reconciliation strategy
  - Convene 2<sup>nd</sup> scenario generation workshop
  - Apply urban model to revised long term scenarios

### Key Consumptive Nodes

- Water requirements
  - eThekweni Metro
  - uMgungundlovu DM (parts of)
  - iLembe District Municipality (parts of)
  - Northern areas of Ugu DM (supplied from Wiggins WTW)
  - Agriculture
  - "Off-grid" rural areas

### Study Procedure



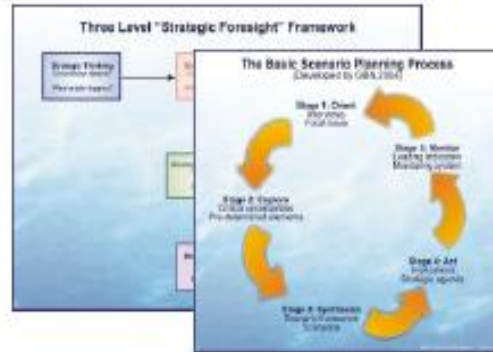
### Approach

- Consultation with key stakeholders to ensure use is made of most recent datasets and research
  - population stats & demographics
  - historic water demands & return flows
  - land-use & urbanisation
  - socio-economic indicators
- Develop water demand scenarios reflecting views of key sectors (eg. commerce & industry, Eskom, forestry, sugar, environment) & realistic possibilities for study area
- Use of interactive water demand & return flow model


### Methodology

- Develop a baseline population and demographic database, referencing work of:
  - State SA – Census 2001
  - DPLG&H, KZN Dept of Education, Demarcation Board, IEC
  - Ethekwini Municipality Transport Authority
- Compile comprehensive records of:
  - historic water demands & return flows
  - land-use maps, water supply & sewerage catchments
- Selection & review of relevant socio-economic indicators
- Develop water demand scenarios which use a multi-variable approach, ensuring realistic cross-correlation between variables

### Scenario Planning Approach




## WATER CONSERVATION AND WATER DEMAND MANAGEMENT



**Water Reconciliation Strategy  
Study for the Kwazulu-Natal  
Coastal Metropolitan Areas**

**Urban, Industrial, Mining  
and Power WC/WDM  
Potential Assessment**

20 June 2007



### Objectives

- Assess effective and efficient use of water resources in urban, industrial, mining and power sectors
- Assess the current and planned WC/WDM measures to develop reliable estimates of the savings that can be expected
- Assess the potential for reconciling current and future requirements through the selection and implementation of sector specific WC/WDM strategies



### Urban Methodology

- Split focus areas into smaller management areas (former municipalities, current management areas, etc)
- Prepare water balance for each management area based on current IWA benchmarking indicators (Calculate losses)
- Assess potential savings through various interventions

### Standard IWA Water Balance

System Input Volume	Revenue Water	Billed and paid for consumption
		Free basic water Billed @ zero rate
		Unpaid for consumption
	Non Revenue Water	Apparent Losses
		IARL (Background losses)
		Potential saving on physical leakage

### Key considerations

- Free basic water allocation per household or per property
- Sanitation level of service
- Water supply level of service
- Reducing / controlling property leakage
- Addressing efficient use – target paying consumer
  - effect on municipal income
  - attracting new businesses, etc

**Industrial, Mining Power  
Methodology**

- Benchmark the water use for key sectors in terms of international best practice
- Asses potential savings / losses
- Identify scope for possible WC/WDM measures within the industries, mines and power sectors
- Assessment potential for recycling and effluent reuse;

**Key deliverables**

- Develop strategies that are realistic, achievable, sustainable and supported by WSA's
- Identify key constraints for implementation
  - Financial
  - Human resources
  - Political support
- Strategies address potential savings, cost implication, programme

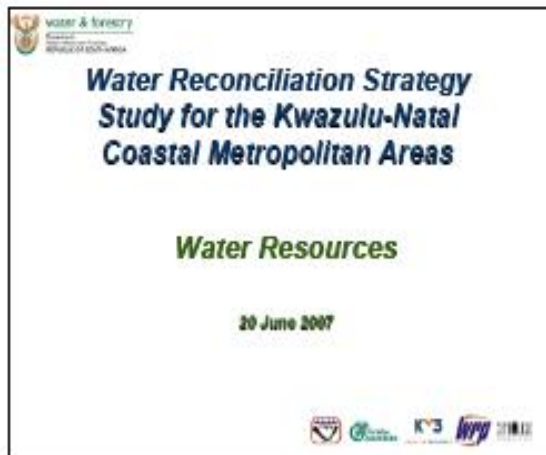
**eThekwini Water Balance**

- System input volume = 300  
mcm/a
- Billed Authorised = 207  
mcm/a
- Unbilled authorised = 24  
mcm/a
- Apparent losses = 14  
mcm/a
- Real losses = 56  
mcm/a

**Msunduzi Water Balance**

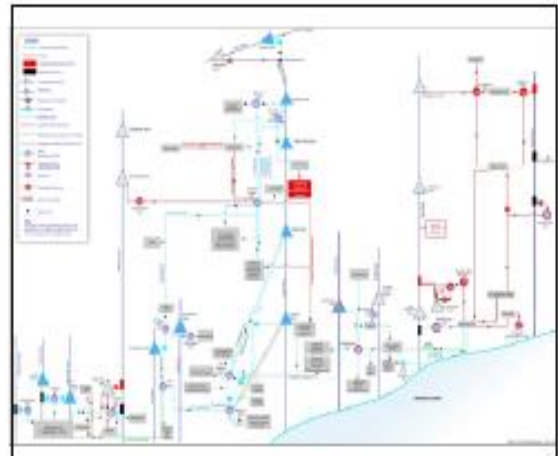
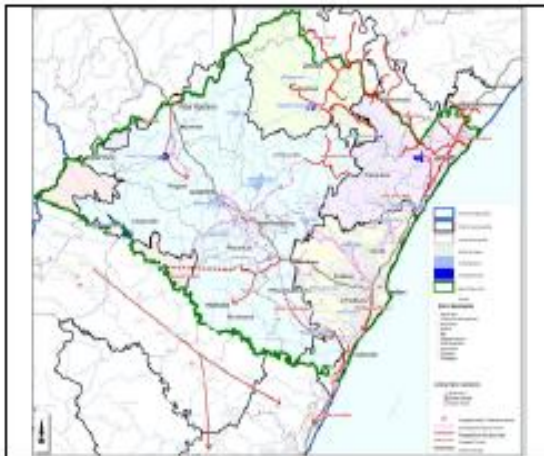
- System input volume = 46.9  
mcm/a
- Billed Authorised = 22.5  
mcm/a
- Unbilled authorised = 5.0  
mcm/a
- Apparent losses = 4.7  
mcm/a
- Real losses = 14.6  
mcm/a

## WATER RESOURCE ASSESSMENT



### Surface Water Component


- Obtain most up to date network system
  - Mgeni, Mooi, Mvoti, Mdloti, Mkomazi
- Linking of existing system networks (cross correlation)
- Yield analysis of options (where applicable)
- Planning analysis of scenarios: Water Requirements and Interventions
- Evaluate operating rules



### Ground Water Component


- Evaluate existing schemes
- Potential for new developments
- Quality assessment

## INFRASTRUCTURE TASK



**Water Reconciliation Strategy  
Study for the Kwazulu-Natal  
Coastal Metropolitan Areas**

**Infrastructure**  
20 June 2007



**Infrastructure Component  
WHAT?**

- All bulk water supply systems
  - Surface & groundwater
- Bulk includes:
  - Dams
  - Major reservoirs
  - Water treatment plants
  - Bulk water pipe lines
    - Distribution
    - Augmentation
- Major sewage treatment plants
  - Possible recycling of sewage

**Infrastructure Component  
WHAT?**

- Infrastructure in three major demand areas:
  - iembe (North coast)
  - Ethekwini municipal area (& upper south coast)
  - Remainder of Mgeni catchment
- Direct and indirect linkages
  - From Mool-Mgeni xfer to ....
  - ..... Hazelmere water works and Stanger .....
  - ..... through eThekwni supply system
  - Including South Coast Pipe line to Port Rynia

**Infrastructure Component  
WHY?**

- Mgeni system already stressed
- Explosion of growth along North coast
- Unsustainable sources serving the upper South coast

**Infrastructure Component  
IMPLICATIONS?**

- Sustainable Water Sources (Locality & quality)
  - Rivers
  - Groundwater
  - Treated sewage
  - Desalinated seawater
- Plus
  - Locality of places that need water

**Infrastructure Component  
IMPLICATIONS?**

- Impact on scope & cost of infrastructure
  - Locality & size of treatment plants, storage
  - Pipe routes & sizes
  - Need for pumping and/or gravity systems
- ALL affecting capital & running costs

**Infrastructure Component  
IMPLICATIONS?**

- Water Demand projections determine
  - Timing of developments
  - Capital requirements & cash flow
  - Affecting operational costs
- Meaning adjustment of water tariffs
  - When?
  - How much?

**Infrastructure Component  
HOW?**

- Therefore
  - Need to get the best overall solution to expand systems in systematic, logical manner
- Strategic approach
  - Initial short term water requirements
  - Long term water requirements
- Only strategies
  - Will not result in designs
  - Will guide WSA's and WSPs on way forward

**Infrastructure Component  
KEY TEAM MEMBERS**

- Kwezi V3 Consulting Engineers
  - Jannie vd Mescht
  - Dolf Smook
  - Providing engineering facilities/capacity
- Lead by Nico Serfontein
  - Local contact and knowledge

**Infrastructure Component  
PROCESS**

- Inception Stage (complete)
  - Discussions with key role-players
  - Inception report
  - Literature study

**Infrastructure Component  
PROCESS**

- "Preliminary Strategy" Stage (current)
  - Interim infrastructure measures
  - To meet short term water requirements
- "Final Strategy" Stage
  - Identify long range activities required
  - Long term water requirements

**Infrastructure Component  
COMPONENTS UNDER REVIEW**

Augmentation of Mgeni River system

- Mkomazi River augmentation

Mgeni Central System


- Augmentation of the Northern Aquaduct
  - Western Aquaduct
  - Upstream interim measures

*Infrastructure Component*  
**COMPONENTS UNDER REVIEW**

Ilembe District

- Mvoti River development
  - Upper & lower reaches
- Various interim schemes
- Groundwater utilization
- Note:
  - Umgeni Water appointed from 1 July 07
  - Bulk water provider

## WATER QUALITY AND REUSE




Water & Forestry  
Department of Environmental Affairs  
Republic of South Africa

**Water Reconciliation Strategy  
Study for the Kwazulu-Natal  
Coastal Metropolitan Areas**

**Water Quality and Re-use Task**

20 June 2007



### **Water Quality Assessment**

- Objective
  - Understand current water quality situation in study area to provide qualitative input into water quality changes that can be expected from recon strategies

### **Water Quality Assessment**

- Approach
  - Use existing studies as starting point – 1994 study for the Department and Umgeni Water
  - Collect water quality data at key points and analyse data – Focus on salinity and nutrients
  - Discuss water quality issues with Department, Water Boards and municipalities
  - Review reports and available information

### **Water Quality Assessment**

- Outcome
  - Develop understanding of pollution sources
  - Provide qualitative assessment of impact of reconciliation strategies on water quality
  - Undertake basic quantitative modelling where required

### **Effluent Re-use**

- Objective
  - Identify opportunities for re-use of industrial and treated sewage effluent to form part of the reconciliation strategy

### **Effluent Re-use**

- Approach
  - Determine locations, plant capacities and treatment processes used at wastewater treatment plants
  - Collect discharge volume and water quality data of influent and effluent
  - Understand future planning of wastewater effluent
  - Integrate re-use opportunities into recon strategies for analysis

### **Effluent Re-use**

#### **Outcome**

- **Identify re-use opportunities for integration into recon strategies.**
- **Determine and cost plant upgrades required for effluent re-use**
- **Give indication on lead times**

### **Desalination**

#### **Objective**

- **Investigate the potential for using desalination for water supply**
- **To incorporate desalination in the reconciliation strategies as a supply option where applicable**

### **Desalination**

#### **Approach**

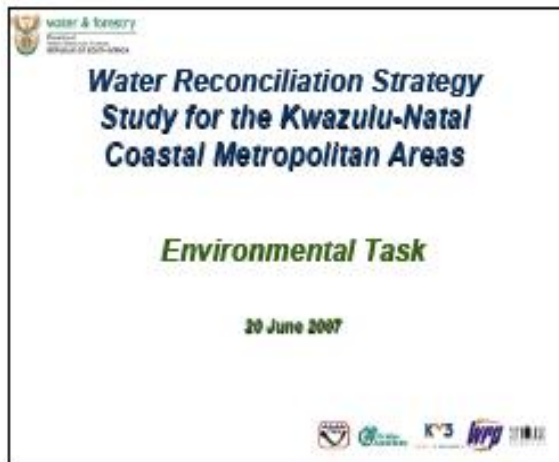
- **Identify current and future initiatives at using desalination technologies to supply water in the study area**
- **Formulate options as part of the reconciliation strategies**
- **Cost desalination options for comparison to alternative supply options**

### **Desalination**

#### **Outcomes**

- **Desalination an option for small coastal towns – Has been assessed for Zinkwasie**
- **Umgeni Water is preparing a TOR to investigate desalination as an option to supply the Ethekwini Local Municipality**

## ENVIRONMENTAL CONSIDERATIONS



water & forestry  
Department of Water & Forestry  
REPUBLIC OF SOUTH AFRICA

**Water Reconciliation Strategy  
Study for the Kwazulu-Natal  
Coastal Metropolitan Areas**

**Environmental Task**

20 June 2007

Water & Forestry KZN WPP

**Environmental Task**

- **Objective**
  - Provide environmental input to development of recon strategies
  - Identify potential environmental flaws

**Environmental Task**

- **Approach**
  - Collate desktop level information
  - Type of information will largely be GIS
  - Land cover, sensitive landscapes, natural history sites, red data species, ecological sensitive areas
  - Collect available ecological Reserve EWR information
  - Review reports on ecological requirements and impacts of schemes

**Environmental Task**

- **Outcomes**
  - Recommend EWR as they relate to the recon strategies
  - Identify information gaps
  - Identify further studies needed

## ENGAGEMENT WITH STAKEHOLDERS



**Water Reconciliation Strategy  
Study for the Kwazulu-Natal  
Coastal Metropolitan Areas**

**Engagement with Stakeholders**

### **What is Stakeholder Engagement?**

- It cannot consult every individual or organisation
- It is not aimed at consensus

It is a process of engagement with stakeholders to raise awareness about the study and to involve stakeholders in the study

### **Why Stakeholder Engagement?**

- Recognises the need for the integrated management of all aspects of WR and the delegation of functions so as to enable everyone to participate (National Water Act - No 36 of 1998)
- Participation by water users and other stakeholders in all aspects of WRM in their areas of operation must be promoted (NWRs – 2004)
- PP is to improve decision-making, to bring about sustainable development and to normalise the attitudes of stakeholders (DWAF's Generic PP Guidelines – 2001)
- Prescribes a process in which the public, including I&AP, are given the opportunity to comment on, or to raise relevant issues to specific matters (NEMA – No 107 of 1998)

### **Objectives of Stakeholder Engagement**

To provide sufficient and accessible information to stakeholders in an objective manner to assist them to:

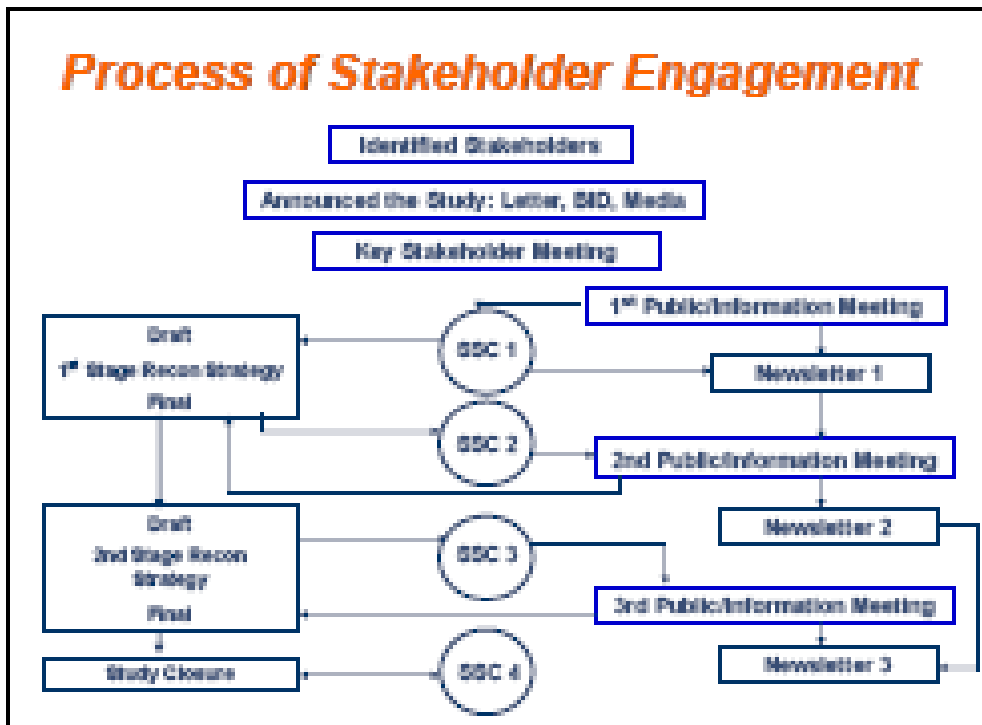
- Identify issues of concern
- Make suggestions for enhanced benefits; and to
- Suggest alternatives

### **Components of Stakeholder Engagement**

- Database of stakeholders
- Recording issues / concerns / comments from the public
- Announcing the project
- Establishing a Study Steering Committee
- Review of 1<sup>st</sup> and 2<sup>nd</sup> Stage Reconciliation Strategies
- Public / Information Meetings
- Awareness creation

### **Procedure for Comments and Input**

- Comment / Reply Sheet
- Written comments / input
- Comment / input at this meeting
- Submission to the SSC
- Comments at the CMF meetings

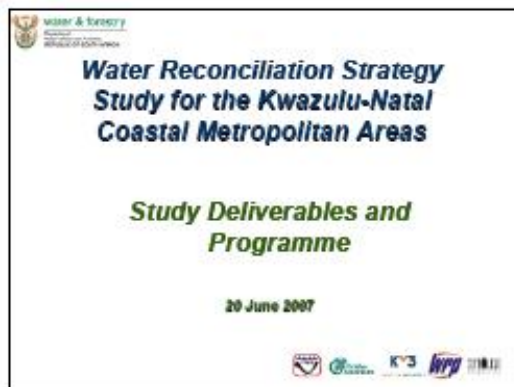


## STUDY REVIEW AND STRATEGIC GUIDANCE

### ***Study Review and Strategic Guidance***

- **Review core documentation and key elements of work plan**
- **Attend stakeholder and Steering Committee meetings**
- **Give guidance and advice on items to be attended to**
- **Review results and conclusions, and assist with recommendations**

## STUDY DELIVERABLES AND PROGRAMME



Deliverable	Details
<b>REPORTS</b>	
Literature Review report	Summary of information and reports
Inception report	Description of scope of work, study programme, project human and financial resources.
First stage strategy	Water requirement and return flow scenarios, Water conservation / demand management, Water resources, Infrastructure, Water Quality and re-use and Environmentals.
Second stage strategy	Water requirement and return flow scenarios, Water conservation / demand management, Water resources, Infrastructure, Water Quality and re-use, Environmental and Documentation of strategy implementable procedures.
Executive summary	Layman friendly executive summary of strategy
<b>WORKSHOPS</b>	
Workshop 1	First demand and return flow scenarios
Workshop 2	Second demand and return flow scenarios
Workshop 3	First stage strategy
Workshop 4	Second stage strategy
Workshop 5	Other issues and concerns
<b>MODELS</b>	
Projection model	Water requirement projection model
WATERWPS	Integrated water resources yield and planning model

<b>Study programme</b>	
<ul style="list-style-type: none"> <li>• <b>Main milestones:</b> <ul style="list-style-type: none"> <li>- Inception and literature review reports</li> <li>- First public meeting: 20 June 2007</li> <li>- First stage reconciliation strategy: December 2007</li> <li>- Second public meeting: February 2008</li> <li>- Second stage reconciliation strategy: February 2008</li> <li>- Third public meeting: April 2008</li> </ul> </li> <li>• <b>Study Steering Committee (SSC) meetings:</b> (preliminary dates)                             <ul style="list-style-type: none"> <li>- 1: 27 February 2007 (Pre-consultation with key stakeholders)</li> <li>- 2: 18 October 2007</li> <li>- 3: 28 February 2008</li> <li>- 4: 12 June 2008</li> <li>- 5: 26 February 2008</li> </ul> </li> </ul>	

## **APPENDIX C: GUIDELINES DOCUMENT FOR THE STUDY STEERING COMMITTEE (SSC)**



**DEPARTMENT: WATER AFFAIRS AND FORESTRY**

### **KWAZULU-NATAL WATER RECONCILIATION STRATEGY STUDY**

#### **GUIDELINES TO FACILITATE DISCUSSION OF THE ROLES AND RESPONSIBILITIES AND THE TERMS OF REFERENCE FOR THE STUDY STEERING COMMITTEE (SSC)**

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#### **INTRODUCTION**

The water requirements of the KwaZulu-Natal Metropolitan Coastal Areas are growing rapidly and therefore a strategy has to be developed that will accommodate the future water requirements of this area.

The institutional framework is one of the most important aspects of water resource management because it determines the effectiveness of policy implementation. Institutions are also important because they are the focus for the National Water Act's requirements to consult widely with water users and other interested persons before policies relating to the management and use of natural resources are implemented.

A Study Steering Committee (SSC) has been identified as one of the essential institutions in the process to develop a Reconciliation Strategy for the KwaZulu-Natal Metropolitan Coastal Areas. The Study Steering Committee (SSC) has to ensure that decisions are taken in the best interest of the people living in this area and of the country's water resources. It further has to ensure public involvement in this process. The purpose of this document is to provide guidance in the establishment of the Study Steering Committee (SSC).

#### **STUDY STEERING COMMITTEE (SSC)**

The proposed Study Steering Committee (SSC) is a voluntary institution to be established by the nomination of sector representatives in the KwaZulu-Natal Metropolitan Coastal Areas. The SSC will provide guidance in steering the study by providing advisory support to the study team, identifying problems and/or problem areas in the study as well as sensitive technical and political issues.

The SSC members will be nominated during the Public Meeting which is to take place on 20 June 2007 at the Royal Hotel in Durban.

### **CRITERIA FOR NOMINATION OF MEMBERS**

- The SSC should be of a manageable size (not too big or too small);
- The SSC should be representative of all significant sectors in the study area;
- A person can nominate him or herself or be nominated by a second party;
- Nominees should have institutional knowledge of the organisation he/she represents;
- Nominees should ensure that his/her organisation mandates the nomination and provides the necessary support;
- Nominees should be willing to dedicate time and commitment to the committee;
- The Department of Water Affairs and Forestry (DWAF) should not play a dominating role in numbers.

### **PREREQUISITES AND GUIDELINES FOR A SUCCESSFUL SSC**

- The committee must have sufficient information to provide support and/or feedback on recommendations made by the study team;
- The committee must study documentation and react timeously;
- The SSC should come to a decision on the outcomes of the study and support they can provide through consensus;
- The committee must ensure that they understand the outcomes pertaining to options/alternatives and suggestions and are able to give feedback to their respective organisations and/or constituents;
- The committee must ensure that cooperative governance is demonstrated at all times;
- Commitment from members is needed regarding preparation and attendance of meetings. This includes having an alternate person available to attend if a member is unavailable;
- Committee members must ensure that they provide the necessary input/recommendations as decisions of the SSC will not be revisited or postponed due to the absence of any member;
- Means of communication with the committee member's constituent needs to be in place or put in place, e.g. posting information on organisation's web sites to enable constituents to monitor their representative's participation.
- SSC members have to act individually and collectively as vocal and visible study champions in their representative organisations/sectors. Depending on how the SSC members organise themselves, this committee can also act as the link between the study management team and the broader body of stakeholders in the study area and beyond;

#### **PROPOSED TERMS OF REFERENCE**

- Providing executive support, guidance and commitment to the direction and outcomes of the KwaZulu-Natal Water Reconciliation Strategy Study;
- Sharing, or facilitating the sharing of information and data where possible;
- Facilitating strategic linkages between this study and other studies and stakeholders;
- Studying of reports and giving comments on the findings;
- Providing strategic advise to ensure that the national perspectives on water management are maintained in the course of the studies;
- Providing feedback to constituencies on documentation and issues arising from the study;
- Acting in the interest of the study and promote consensus that has been reached;
- Taking ownership of final reports and recommendations presented by the study team to the Department of Water Affairs and Forestry (DWAF).

**The Public Participation Consultants will provide Secretariat support to the Study Steering Committee**

## APPENDIX D

### ISSUES AND RESPONSE REPORT

DEVELOPMENT OF A WATER RECONCILIATION STRATEGY FOR THE  
KWAZULU-NATAL COASTAL METROPOLITAN AREAS

# Issues and Response Report

All questions raised to date have been recorded in this Issues and Response Report.

1.	ISSUES CONCERNING THE STUDY AREA .....	2
2.	ISSUES CONCERNING DESALINATION .....	3
3.	ISSEUS CONCERNING WATER QUALITY .....	3
4.	ISSUES TO BE CONSIDERED / INVESTIGATED BY THE STUDY TEAM.....	4
5.	ISSUES REGARDING THE CMA'S AND CMF'S.....	6
6.	ISSUES REGARDING THE TECHNICAL AND PUBLIC ENGAGEMENT PROCESS.....	8
6.1	ISSUES REGARDING STUDY STEERING COMMITTEE.....	10
7.	OTHER ISSUES.....	11

ISSUE	RAISED BY	RESPONSE	RESPONSE BY
<b>1. ISSUES CONCERNING THE STUDY AREA</b>			
That the study area should include the whole of the iLembe DM as they have just completed a Water Master Plan up to 2036 in conjunction with DWAF and this should form part of the reconciliation study.	Mr JK (Jogie) Naidoo (correspondence)	Comment noted with thanks	Public Participation office
That whether the study is involving the areas north of the Tugela river such as the uMhlatuze catchment?	Mr Freddy Matagne (correspondence)	The study does not include catchments and water users north of the Thukela River. However, if the study identifies the Thukela River as a possible water source to supply water users south of the Thukela River, all users receiving water from the Thukela River will be taken into consideration in the assessments of such an option. This will include water transferred from the Thukela River to augment the Mhlathuze River System through the Middel drift Transfer Scheme.	Niel van Wyk (DWAF), Solly Manyaka, Rachelle Seymore (Zitholele Consulting)
That whether the Tugela is part of the study as it was not mentioned specifically since the northern parts are being supplied from the Tugela?	Mr Alan Davis, Tolloch Consultants (Public / information meeting, Royal Hotel, Durban)	The water resource augmentation options at the Tugela Ngebo scheme on the Upper Tugela and Lower Tugela are relevant. The Tugela will be considered in the study.	Darius Mnguni (WRP)
That both the study area and the catchment boundaries should be shown on the "Study Area" map as it must not be assumed that the study area is specifically catchment based.	Unknown (CMF meeting Isipingo-Mbokodweni)	Comment noted with thanks	Richard Savage (Restor, Africa)
That the study area should be extended to include the Mvoti Catchment because of the option to provide the north coast from the Mvoti System.	Mr SA (Fanus) Fourie (Correspondence)	Comment noted with thanks	Public Participation Office
That DWAF's regional office was complimented on the work that they are doing on catchment management forums and establishing the CMA. However the question was raised about why the study area is only focusing on the coastal metropolitan area while there are other areas that also need such studies. A suggestion was made that the study is marketed more widely and articles placed in the local newspapers.	Mr Petrus Ngubane, Umvoti Municipality (Public / information meeting, Royal Hotel, Durban)	The comment is noted and it was explained that the study is primarily aimed at the metropolitan area although there are limited links to the rural areas. Once the information on the study has been verified and the source is understood some guidance can be given to water services in these areas. Greytown is not a primary target area although it is in the catchment. Water supply is however not part of the terms of reference of this study but the study can contribute to providing some guidance. Consultants have been appointed by the Water Services Authority in that area and that person has been in consultation with this study team.	Mr Niel van Wyk (DWAF)

ISSUE	RAISED BY	RESPONSE	RESPONSE BY
<b>2. ISSUES CONCERNING DESALINATION</b>			
That whether desalination will be investigated as an option in this study?	Mr Niel Wallace, Zinkwazi Beach Ratepayer Association (Public / information meeting, Royal Hotel, Durban)	Desalination in Zinkwazi is a possible option	Darius Mnguni (WRP)
That what is the cost benefit of the desalination plant in Zinkwazi so as to get water to other communities as well?	Mr Pat Reddy, DWAF, KZN (Public / information meeting, Royal Hotel, Durban)	Umgeni Water has done pre-feasibility studies on the plant. It will form part of the reconciliation strategy and the full option will be integrated.	Trevor Coleman (Golder Associates, Africa)
That how much water is needed to produce electricity for desalination?	Mr John Harrison, eThekweni Water and Sanitation (Public / information meeting, Royal Hotel, Durban)	Eskom has moved away from wet-cooled to dry-cooled stations, which uses significantly less water. Current plans are for new powers stations to be dry-cooled. Information on the water use per unit energy is available.	Johan van Rooyen (DWAF)
That whether desalination plants are being considered.	Unknown (CMF meeting Isipingo-Mbokodweni)	Confirmed that it is being considered	Richard Savage (Restor, Africa)
That clarity should be provided on the reason why research of a desalination plant in Blythesdale was dropped, only to have studies continuing further North.	Di Jones, WESSA, Dolphin Coast Conservancy (Public / information meeting, Royal Hotel, Durban)	During the initial planning stages there was no other source of water available therefore desalination was investigated. In the meantime Umgeni Water proposed to the area a water supply solution by pipeline. An economic comparison of the options show that the pipeline option is the most cost effective and was therefore selected as the preferred solution.	Steve Gillham (Umgeni Water)
That KZN should investigate desalination of water. Although desalination is expensive at present towards 2008 it will be more economical. The stakeholder is involved in desalination and provided information to this effect.	Yves Engona (correspondence)	Comment noted with thanks	Public Participation Office
<b>3. ISSUES CONCERNING WATER QUALITY</b>			
That clarification is required on whether the study will assess the bacterial levels?	Mr Pat Reddy, DWAF, KZN (Public / information meeting, Royal Hotel, Durban)	The focus will be on assessing the eutrophication and salinity levels but the bacterial aspect will not be ignored	Trevor Coleman (Golder Associates Africa (Pty)Ltd)

Appendix D - Draft Proceedings of the Public/Information Meeting

ISSUE	RAISED BY	RESPONSE	RESPONSE BY
That wastewater management strategies (as a consequence of increased water demand) should be addressed.	Unknown (CMF meeting Isipingo-Mbokodweni)	Confirmed that it is being addressed	Richard Savage (Restor, Africa)
That dirty water is coming out of the taps and the community does not know the reason (Bhekuzulu, Vryheid area).	Mr XC (Xolani Christopher) Mazibuko (Correspondence)	Comment noted with thanks	Public Participation Office
That water pollution is a big problem. People need clean water and they need to know how to conserve water.	Miss NJ (Ntombinkulu) Thabethe (Correspondence)	Comment noted with thanks	Public Participation Office
That whether there is a water quality element to the work that is being done on the study?	Mark Dent, University of KwaZulu-Natal (Public / information meeting, Royal Hotel, Durban)	Confirmed that water must be fit for use. The golden rule is that water has to have a certain quality	Niel van Wyk (DWAF)
<b>4. ISSUES TO BE CONSIDERED / INVESTIGATED BY THE STUDY TEAM</b>			
That municipalities should introduce compulsory water measuring systems to prevent loss of water	Mr Alimuthu Perumal (correspondence)	Comment noted with thanks	Public Participation Office
That the study should investigate the existing and potential developments (housing, commercial, resort, industrial and agriculture) within the defined scope of the project.	Mr NA Nkopodi (correspondence)	Comment noted with thanks	Public Participation Office
That the study needs to investigate the existing water supply and demand balance.	Mr NA Nkopodi (correspondence)	Comment noted with thanks	Public Participation Office
That the water reticulation network both within existing supply areas and potentially new development areas, especially in the Northern areas of eThekweni and iLembe should be investigated.	Mr NA Nkopodi (correspondence)	Comment noted with thanks	Public Participation Office
That the study needs to consider the impact of developments in iLembe DM (Saunders and Wium), Uthungulu DM and City of Mhlathuze that will draw water from the Thukela (Middle Drift or Sundumbili and the cascading water from Mhlathuze to Hluhluwe (Mhlathuze Water with Bigen Africa)	Mr MW (Morton) du Preez (correspondence)	Comment noted with thanks	Public Participation Office

Appendix D - Draft Proceedings of the Public/Information Meeting

ISSUE	RAISED BY	RESPONSE	RESPONSE BY
That the study needs to observe in-flow stream requirements and the ecological reserve downstream of Nagle and Inanda Dam (not yet implemented 20 years after construction of Inanda Dam and 10 years after the Water Act)	Mr DA (David) Still (correspondence)	Comment noted with thanks	Public Participation Office
That the impact of infrastructure costs (on tariffs) for infrastructure outside of the Ethekewini Municipality should not be carried by residents, commerce and industry in Ethekewini only.	Unknown (CMF meeting Isipingo-Mbokodweni)	This is beyond the scope of a study of this nature, but the issue has always been a contentious one. Umgeni Water has used an equalised tariff structure for their Mgeni/Mdloti systems, which overall, benefits all parties, albeit some more than others.	Richard Savage (Restor, Africa)
That small holding or plot irrigation demands be assessed.	Unknown (CMF meeting Isipingo-Mbokodweni)	The agricultural demands were being assessed in general and the study could look at the relative significance of the small holding irrigation. Many of these use boreholes, so a registered borehole audit in their study area would be useful. Where they are using potable water, this will be part of their billed consumption	Richard Savage (Restor, Africa)
That the serious water shortage – accessibility of municipal services should be investigated	Mr Alimuthu Perumal (correspondence)	Comment noted with thanks	Public Participation Office
That consideration be given to rain water harvesting for individual households.	Mrs Gillian Noyce, Ethekewini councillor (Public / information meeting, Royal Hotel, Durban)	This will be followed up and put on the list to investigate further. Research is available and it is a measure we should not forget about.	Pieter van Rooyen (WRP)
That whether the study will consider rainfall harvesting as the stakeholder has had success with it and suggested subsidised rain water tanks for every household.	Mr Fokko Fokkens. KZN Wild Life TCD, KZN Conservancy Association, Blythedale Conservancy (Public / information meeting, Royal Hotel, Durban)	This will be followed up. Water Conservation will look at it from a scenario point of view. Mr Johan van Rooyen added that in the Western Cape Reconciliation Study it was found that rainwater harvesting is an expensive option.	Pieter van Rooyen (WRP)
That cognisance must be taken of the ecological reserve in the assessment of water resources. The non-implementation of the ecological reserve is increasing the risks to public health by for e.g. increasing the prevalence of bilharzia.	Unknown (Msunduzi CMF, PMB)	Comment noted with thanks	Richard Savage (Restor, Africa)

ISSUE	RAISED BY	RESPONSE	RESPONSE BY
That consideration be given to the effect downstream and what will the impact be after the process, especially engagement with municipalities regarding emissions.	Mrs Anne Bindoff, Department of Agriculture and Environmental Affairs, iLembe District (Public / information meeting, Royal Hotel, Durban)	Inputs-output sophisticated hydrological impacts follow through the water cycle. It is from source to ocean. It involves permitting. Not concentrating on it but it must be taken into account	Niel van Wyk (DWAF)
That whether both the agriculture and the domestic sector are included in the study	Mr Pat Reddy, DWAF, KZN (Public / information meeting, Royal Hotel, Durban)	The agriculture and domestic sectors are definitely included in the study. The study is not restricted to urban supply. Agriculture, both forestry and the sugar industry are major players in the area where the work is being done.	Richard Savage (Restor, Africa)
That the study team should come and investigate the water problems in the area (map attached) as communities do not have water.	Mr MGumede (correspondence)	Comment noted with thanks	Public Participation Office
<b>5. ISSUES REGARDING THE CMA'S AND CMF'S</b>			
That whether the study is ignoring the CMA and the stakeholders who will interact through it as stakeholders need to understand the process and where they can make their input. It is time consuming and it creates confusion if there are too many initiatives.  In future the CMA will be the main organisation through which all stakeholder sectors interact and they are mandated to draw up a CM Strategy and a CM Plan which will have to cover the same issues as this Water Reconciliation Strategy. What is the reason why there is no mention of the CMA, CMP and CMS, even though the CMA has not yet begun to function?	Dr MC (Mark) Dent (correspondence)	There is close cooperation with the Department of Water Affairs and Forestry's Catchment Management Directorate in KZN, more specifically with Jay Reddy and Faeenza Ballim.  The following has been done so far:: 1. The CMF's stakeholder database was used as a basis and developed further. 2. The CMF is key to all discussions, especially with regards to stakeholder engagement. 3. The BID was made available to and discussed at the CMF meetings in the study area. 4. The SSC will be nominated during the Public Meeting and it is imperative that the CMF members are already informed of this study, attends the meeting, that they have a nominated member on the SSC and that they become involved in the study.	Rachelle Seymore (Zitholele Consulting).

Appendix D - Draft Proceedings of the Public/Information Meeting

ISSUE	RAISED BY	RESPONSE	RESPONSE BY
<p>That the 1998 NWA does not give the CMFs any real teeth, unlike the CMAs which are legally powerful, well resourced and have the necessary responsibilities. The CMFs will have to feed into the CMA. It is envisaged that the CMA will have to commission a water reconciliation strategy and it needs to be coordinated with the study from DWAF. The BID has not made any mention of the CMA.</p>	<p>Dr MC (Mark) Dent (correspondence)</p>	<p>The National Water Act (No 36 of 1998) Section 72(1) states that “In areas for which a catchment management agency is not established or, if established, is not functional, all powers and duties of a catchment management agency, including those powers and duties described in sections 79 and 80 and in Schedule 3, vest in the Minister”. The urgent need for this study dictates that it cannot wait for the CMA to become operational and therefore the Minister of Water Affairs and Forestry has the responsibility to conduct the study which will ultimately form part of the Catchment Management Strategy of the relevant CMA. Close cooperation is being maintained between DWAF’s National Water Resource Planning Directorate responsible for this study, DWAF’s KZN Regional Office responsible for Catchment Management and the relevant Catchment Management Forums, through which the study is also being communicated.</p>	<p>Niel van Wyk (DWAF)</p>
<p>That liaison with the Mvoti-Mzimkulu CMA will be very important. Nominations have been received (7) for the 13 seats on the Board. The proposed state infrastructure agency (including TCTA) may be promulgated by Parliament during the course of the study and there may be overlap with the CMA. This needs to be taken account of in the infrastructure planning and stakeholder liaison.</p>	<p>Unknown (Msunduzi CMF, PMB)</p>	<p>Comment noted with thanks</p>	<p>Richard Savage (Restor, Africa)</p>
<p>That two meetings of the CMF were already abandoned because of lack of attendance. In Mvoti area only 4 people attended. It is not acceptable if the leaders are not available. What can be done by DWAF who is leading the process and people who are not committed?</p>	<p>Mr Fokko Fokkens. KZN Wild Life TCD, KZN Conservancy Association, Blythedale Conservancy (Public / information meeting, Royal Hotel, Durban)</p>	<p>We need people who are committed and who can provide a back-up in case they are not available.</p>	<p>Herbert Modupi (Zitholele Consulting):</p>
<p>That whether the study team is consulting with Catchment Management Forums and where do these forums fit into the organisational structure?</p>	<p>Di Jones, WESSA, Dolphin Coast Conservancy (Public / information meeting, Royal Hotel, Durban)</p>	<p>The project team has consulted with the Catchment Management Forums and they are assisting the project team with disseminating information and encouraging discussion of the project and will continue to be involved.</p>	

ISSUE	RAISED BY	RESPONSE	RESPONSE BY
<b>6. ISSUES REGARDING THE TECHNICAL AND PUBLIC ENGAGEMENT PROCESS</b>			
That in the workshops on the water requirements scenarios, we will encounter great resistance from industrial stakeholders to their 'strategic view' of the future. The best we can expect will be from one-on-one meetings	Unknown Msunduzi CMF, PMB)	Comment noted with thanks.	Richard Savage (Restor, Africa)
That why the planning period ends in 2030.	Unknown (Msunduzi CMF, PMB)	The level of uncertainty of projections increased substantially after 15 years, let alone 25, but that a 25-year period offered the time required to identify and implement certain long-lead issues, while at the same time allowing for flexibility to be built into the WRSS. Clearly, the WR Strategy would be reviewed at regular intervals, and the 2030 horizon would be shifted out incrementally with each review.	Richard Savage (Restor, Africa)
That further clarity is needed on the interpretation of the graph in Presentation 1: Background to the study.	Mr Fokko Fokkens. KZN Wild Life TCD, KZN Conservancy Association, Blythedale Conservancy (Public / information meeting, Royal Hotel, Durban)	The graph was used only for illustration purposes. The presentations to follow will deal with the water issues in the study area.	Niel van Wyk (DWAF)
That the use of the 2001 Census information was questioned as it may be obsolete.	Phiwe Shangase, Siyanyuka Communications (Public / information meeting, Royal Hotel, Durban)	There is universal acceptance that the use of the Census 2001 data leads to problems. How the census component will be unpacked poses challenges. A lot of research has however been undertaken in the KZN and reference will be made to this data. The water demands made must be correlated against that.	Richard Savage (Restor, Africa)
That the study should focus on timeous provision of water resources.	Mr NA Nkopodi (correspondence)	Comment noted with thanks.	Public Participation Office
That clarification is needed on whether the modelling systems are critical in terms of the time lines namely May 2009 to 2030 and whether stakeholders will have access to these models and be able to utilise them?	Dr Mark Dent, University of KwaZulu-Natal (Public / information meeting, Royal Hotel, Durban)	The process was explained that the information needs to be captured and fed into DWAF's Information Management System. Once the analysis has been done it will be available.  Niel van Wyk: Attempts will be made to work from a common base. As the Catchment Management Agency becomes established the information will be fed to them. Also fed in at the Catchment Management Forums as they have more meetings and they are fully aware of the work that is being done.	Pieter van Rooyen (WRP)

Appendix D - Draft Proceedings of the Public/Information Meeting

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That more information should be shared on whether a machine that converts air into water is advisable as some people do not want to use water from the river.	Ms Naomi Myeki, Sakhakunyekubekuhle (Public / information meeting, Royal Hotel, Durban)	Converting air to water is called cloud harvesting. It is limited and small source of water for individual use. The technology uses electrical energy and has limited application for bulk water supply.	Nico Serfontein (WRSS – Visipro)
That it should be clarified what is meant by short term water supply as children do not have water at their schools and the old people are dying.	Mr Mandla Gumede, Ilembe Schools and communities (Public / information meeting, Royal Hotel, Durban)		
That the process should involve all stakeholders especially affected communities, municipalities and private sector development companies.	Mr NA Nkopodi (correspondence)	Comment noted with thanks.	Public Participation Office
That the study should ensure that all stakeholders, in particular affected communities, municipalities and private sector development companies are considered.	Mr NA Nkopodi (correspondence)	Comment noted with thanks.	Public Participation Office
That consultation has taken place and all seems fine so far.	Mr MW (Morton) du Preez (correspondence)	Comment noted with thanks.	Public Participation Office
That people must become involved and the language used should be understood by all.	Mr KJ (Khumbulani) Xaba (correspondence)	Comment noted with thanks.	Public Participation Office
That the initiative and proactive planning are supported.	Mr NA Nkopodi (correspondence)	Comment noted with thanks.	Public Participation Office
That community representatives were not present at this meeting.	Phiwe Shangase, Siyanyuka Communications (Public / information meeting, Royal Hotel, Durban)	In addition to inviting close to 300 stakeholders with personalised invitation letters, advertisements were placed in the four main KZN newspapers including newspapers printed in Zulu	Herbert Modupi (Zitholele Consulting).
That how the study team envisage to communicate to those not in the meeting and how the broader public will be informed?	Mr Stephen Coan, The Witness (Public / information meeting, Royal Hotel, Durban)	Stakeholders will be kept informed through newsletters and media releases can be considered at crucial times but the study team will rely on the media to then publicise it further.	Rachelle Seymore (Zitholele Consulting)

ISSUE	RAISED BY	RESPONSE	RESPONSE BY
That whether any of the information will be available on dedicated websites? It is also noticed that the map in the BID differs from the one on the wall.	Mr Dave Rimmer, DBSA, iLembe DM (Public / information meeting, Royal Hotel, Durban)	A web page has been developed on DWAF's website and the information will continue to be placed there.	Rachelle Seymore (Zitholele Consulting)
<b>6.1 ISSUES REGARDING STUDY STEERING COMMITTEE</b>			
That whether the Study Steering Committee members will be elected from experienced people or just anyone?	Mr Joseph Dlamini, Gamalakhe Development Forum (Public / information meeting, Royal Hotel, Durban)	The Study Steering Committee will be dealing with technical reports and the members will have to have understanding of it to make the necessary recommendations.	Herbert Modupi (Zitholele Consulting)
That there is concern about the make-up of the SSC as it should have synergy with the CMAs. Since this also impacts on lack of attendance and capacity at these meetings.	Peter Roberts, Forestry SA (Public / information meeting, Royal Hotel, Durban)	<p>These are forums, not statutory bodies and information is disseminated but it is also forums for discussion of issues. The forums are however only as strong as the organisations that commit to them. We also need these forums to capacitate people and lessons learnt from the CMF processes will not be ignored by the study.</p> <p>It was explained that this is not a parallel process to the CMA and the idea is not to duplicate existing structures. This is a high level technical study that is looking at bulk water and forms part of the bigger picture. It is important for the Department to get the input from major stakeholders in the study.</p>	<p>Faeza Ballim (DWAF CMA)</p> <p>Johan van Rooyen (DWAF)</p>
That whether the SSC will deal directly with municipalities, communities or with DWAF and where it will be located?	Mr Nkonqwenhle Mqadi, Emaquadini Communications and Researcher (Public / information meeting, Royal Hotel, Durban)	SSC members will have to deal with their constituencies and obtain feedback from various groupings regarding the work that is being done.	Niel van Wyk (DWAF)
That the Study Steering Committee members be elected from experienced people or just anyone?	Mr Joseph Dlamini, Gamalakhe Development Forum (Public / information meeting, Royal Hotel, Durban)	The Study Steering Committee will be dealing with technical reports and the members will have to have understanding of it to make the necessary recommendations	Herbert Modupi (Zitholele Consulting)

ISSUE	RAISED BY	RESPONSE	RESPONSE BY
That the stakeholder sectors of the CMA's must be considered in deciding on the sectors for the SSC as these two will have to link up with one another.	Dr Mark Dent, University of KwaZulu-Natal (Public / information meeting, Royal Hotel, Durban)	The sector list will be put up after lunch.	Herbert Modupi (Zitholele Consulting)
That clarity is requested about who the sectors are that will be represented on the SSC.	S'bongiseni Vilikazi, Iswelihle Development Consultants (Public / information meeting, Royal Hotel, Durban)	The sectors will be listed later in the programme.	Mr Herbert Modupi (Zitholele Consulting)
<b>7. OTHER ISSUES</b>			
That water must be affordable for all as it is a basic need	Mr KJ (Khumbulani) Xaba (correspondence)	Comment noted with thanks.	Public Participation Office
That discussion is needed on water meters for the poor	Mr Alimuthu Perumal (correspondence)	Comment noted with thanks.	Public Participation Office
That this stakeholder belongs to a small club with highly experienced and travelled members who may be able to offer some help and solutions.	Helen McCulloch (correspondence)	Comment noted with thanks.	Public Participation Office
That communities should be trained to drink clean water if it is not safe to use – boiling or adding jik.	Miss NJ (Ntombinkulu) Thabethe (correspondence)	Comment noted with thanks.	Public Participation Office
That places such as dams should be fenced to prevent cows from polluting clean water.	Miss NJ (Ntombinkulu) Thabethe (correspondence)	Comment noted with thanks.	Public Participation Office
That privatisation of water in Southern Africa should be considered.	Mr KJ (Khumbulani) Xaba (correspondence)	Comment noted with thanks.	Public Participation Office
That some people are not technically skilled and programmes should be put in place to mentor them.	Mr Pat Reddy, DWAF, KZN (Public / information meeting, Royal Hotel, Durban)	Comment noted with thanks.	Herbert Modupi (Zitholele Consulting)

Appendix D - Draft Proceedings of the Public/Information Meeting

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That many DWAF officials from Pretoria are present at this meeting. Yet, the area is short of foot soldiers.	Di Jones, WESSA, Dolphin Coast Conservancy (Public / information meeting, Royal Hotel, Durban)	This study deals with national infrastructure which means that DWAF's head office is responsible for the planning. We will not solve the problem by sending head office people to the regional office. However, the CMA forums were established to place the management of water resources on a local level.	Johan van Rooyen (DWAF)
That communities don't have water. A pipeline is necessary.	Miss PJ (Jabu) Ngobo (correspondence)	Comment noted with thanks.	Public Participation Office