



DEPARTMENT: WATER AFFAIRS AND FORESTRY
Directorate: National Water Resource Planning (NWRP)
WATER RECONCILIATION STRATEGY STUDY FOR
THE KWAZULU-NATAL COASTAL METROPOLITAN AREAS

STUDY STEERING COMMITTEE MEETING No. 2

DRAFT MINUTES

DATE AND TIME:	THURSDAY, 28 FEBRUARY 2008 AT 09H00
VENUE:	PARADISE VALLEY NATURE RESERVE: CONFERENCE CENTRE, 10 OXFORD ROAD, PINETOWN

ITEM	DISCUSSIONS	ACTION
1.	<p>WELCOME AND INTRODUCTIONS</p> <p>Mr Niel van Wyk, Chief Engineer, NWRP (East) DWAF, Pretoria welcomed everyone to the second Strategy Steering Committee Meeting (SSC). He remarked that most of the members were at the first SSC meeting and that he hoped the newcomers would be able to pick up on the discussions.</p> <p>Mr van Wyk thanked Mrs Jean Lindsay (KZN Conservancies Association) for proposing and arranging the venue as the boardroom at DWAF's KZN Regional Office was too small to accommodate everyone. He also remarked that this venue has historical connotations from a water resource point of view as the original Durban Water Works were just down the river.</p>	

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2.	<p>ATTENDANCE AND APOLOGIES</p> <p>A round of introductions was done. Apologies were received from a number of members. The attendance register is attached as Appendix 1.</p>	
3.	<p>ACCEPTANCE OF AGENDA</p> <p>The agenda was accepted as presented. Mr Niel van Wyk indicated that Dr Peter Goodman from (Ezemvelo KZN Wildlife) offered to make a presentation and although it is not part of the agenda time will dictate whether this can be accommodated. Mr van Wyk however said that it is important to get access to the message that Dr Goodman needs to bring to us.</p>	
4.	<p>APPROVAL OF MINUTES</p> <p>Mr Niel van Wyk indicated that the minutes were made available before the meeting and also at the registration table of this meeting. He said that they are quite comprehensive and that the meeting would not have time to go through them page by page. However, if anyone was of the opinion that matters were not correctly captured they should contact the Public Participation office to make the necessary corrections. Furthermore Mr van Wyk suggested that the meeting would not go through the matters arising as many of the actions had been covered by subsequent work as would be reflected in the presentations.</p> <p>No issues that were not covered in the minutes or incorrectly captured were indicated.</p>	
5.	<p>FUNCTIONING OF STUDY STEERING COMMITTEE (SSC)</p> <p>CONFIRMATION OF MEMBERSHIP</p> <p>Ms Rachelle Seymore provided the background to establishing the SSC and explained how the sector representation has been expanded since the public meeting in 2007.</p> <p>Ms Seymore provided a slide which explained the different sectors and its membership.</p>	

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	<p>CONFIRMATION OF ROLES AND RESPONSIBILITIES</p> <p>Ms Seymore explained that a guideline document was developed with the proposed Roles and Responsibilities of the SSC. These were made available at the public meeting in 2007 and were sent individually to all concerned. However, they could still be sent to individuals should they be required. She furthermore explained the terms of reference of the SSC.</p> <p>CONFIRMING SSC ARRANGEMENTS</p> <p>Ms Seymore indicated the formal arrangements for the functioning of the SSC but highlighted that members are welcome to set up informal meetings. The Public Participation office is responsible for recording the proceedings of the formal meetings and making the minutes available. The SSC met on 18 October 2007 and the second SSC was today's meeting (28 February 2008). Future meeting dates are were indicated as:</p> <p>12 June 2008</p> <p>26 February 2009</p> <p>Members were requested to diarise these dates until further notice.</p>	
6.	<p>STAKEHOLDER ENGAGEMENT</p> <p>The stakeholder engagement process was discussed. The slide indicating the process showed that there were link-ups throughout the project - the technical process, stakeholder engagement and the SSC process.</p> <p>The Public Meeting was scheduled for 31 March 2008 and Ms Seymore explained the logistics involved in arranging the meeting especially with regard to inviting the public and ensuring that it is in the public domain through newspaper advertisements.</p> <p>DISCUSSION/QUESTIONS:</p> <ul style="list-style-type: none"> • Mr Steve Gillham (Umgeni Water) enquired whether the information to be presented at the Public Meeting will be the same as presented at the meeting or whether comments from the meeting would be incorporated. Mr van Wyk 	

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	<p>confirmed that the input from the meeting's discussions will be incorporated for presentation at the Public Meeting.</p> <ul style="list-style-type: none"> Ms Di Jones (WESSA) enquired what measures DWAF are putting into place to replace Faeza Ballim that has left the Department and therefore there is no one representing the CMA? Mr van Wyk responded that Mr Jay Reddy is driving the CMA process and that the study team is in close contact with him. Ideally the relevant CMA's staff should be present at these meetings but they do not have available staff at present. Ms Seymore confirmed that Mr Jay Reddy was aware of the meeting but sent his apologies. Mr Bryan Ashe (Water Caucus, representing Civil Society) undertook to provide the necessary feedback to the CMA as he is part of them. Mr van Wyk thanked him and also indicated that Norman Ward and Angela Masefield are attending from the DWAF KZN Regional Office and that they will also provide feedback where necessary. 	<p>Study team</p> <p>Bryan Ashe</p>
<p>7.</p>	<p>RECONCILIATION STRATEGY</p> <p>Mr Niel van Wyk briefly explained that the study is about the availability of water in the metropolitan coastal areas in KZN and indicated that a number of such studies are being conducted country wide. With regards to KZN, the study is crucial as it is one of the most important economic hubs in the country with many developments in the pipeline. He explained that 'reconciliation' refers to a comparison between the water needs (requirements) and its availability. If it shows for instance shortfalls the team should come up with a plan on how to address it.</p> <p>Mr van Wyk said that due the complexity of the situation, a strategy will be developed rather than a fixed plan, which will indicate the available options. An integrated approach needs to be taken when dealing with the issues (the environment, social and economic environment etc) in order to obtain a balanced opinion of what can be done. He stated that the study will not be able to take all the recommendations forward. Some of the recommendations will be taken forward by DWAF with the assistance of partners such as Umgeni Water and the municipalities. The strategy will give direction to the institutions involved with water on the available options. It will also provide a forum where concerns can be discussed in order to come to joint decisions in the interest of society.</p> <p>He said the study is at an advanced stage and the first stage of the strategy was to</p>	

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	<p>be discussed at the meeting. The building blocks and direction have been indicated and the first stage will now be refined, unless there are additional issues that need to be considered. He stated that the SSC's input and judgment is very valuable to inform the study team in order to develop the best possible product.</p> <p>The study leader, Mr Pieter van Rooyen introduced the team and explained the presentation layout.</p> <p>7.1 INTRODUCTION AND OVERVIEW</p> <p>Mr Pieter van Rooyen explained the phases of the project. The purpose of this meeting is for the study team to report back on work being conducted in the development of the First Stage Strategy. Refinement to the strategy will be done after this meeting where after the study will be going into phase three, which is the Second Stage Strategy.</p> <p>Mr Pieter van Rooyen said based on the Mgeni System's 'medium' water use projections (current and historic) the challenge is that demand has exceeded the current yield.</p> <p>7.2 PLANNING SCENARIOS WATER REQUIREMENTS AND RETURN FLOWS</p> <p>Mr Richard Savage presented some of the results of the work that has been undertaken to facilitate the planning scenarios, water requirements and return flows. He explained that Prof Jeff McCarthy developed the population projections.</p> <ul style="list-style-type: none"> • He explained that three population scenarios of high, medium and low were developed. • He discussed the key findings of the work and explained that there are many issues around AIDS, mortality and fertility rates and the impact of it on the industry. Land-use and urbanization were key issues as well as the political and economic considerations in the region. • Mr Savage provided the key findings on the projections for population growth and explained the key growth corridors in the study area. • He further showed that water demand and consumption is population driven, but that the biggest driver of water demand is from upgraded service levels 	

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	<p>and new low income housing rather than the already developed urban sector.</p> <ul style="list-style-type: none"> • From the findings population scenarios were developed, based on data from Stats-SA 2007's figures. • The functioning of the demand and return flow model, the various model parameters and key data for the model calibration were discussed. The model was configured into 53 sewage drainage areas and the information was calibrated on data for the year 2006. • The model results indicated that the rate of water demand grow faster than the population and also showed that there is an increase in the rate of consumption as people progress up the water ladder. • Mr Savage discussed the water requirement and return flow scenarios for the Mgeni, Mdloti and far North Coast systems and emphasized that the information from the iLembe Master Plan was used in the study. <p>Mr Niel van Wyk emphasised that this part of the work is the cornerstone of the study and it is important that it is on a firm base.</p> <p>DISCUSSION/QUESTIONS:</p> <ul style="list-style-type: none"> • Mr Rory Lynsky (South African Sugar Association representing Organised Agriculture) questioned whether the McCarthy report factored in people relocating from outside the borders of KZN. Mr Savage confirmed that the report considered inter-urban migration between KZN and other areas such as Gauteng. • Ms Di Jones (WESSA, representing Ms Di Dold) referred to the power crisis in the country and enquired whether in the case of water it would not be economically wise to let a developer such as Blythedale carry the cost, as he was willing to do, as in the case of the proposed desalination plant in Blythedale. Mr Savage responded that he is aware of the issue and from their perspective the issue with Blythedale was an economic decision. It is however not the only factor but the issue is being addressed by iLembe. • Ms Jean Lindsay (KZN Conservancies Association) requested clarity on the figures provided that eThekwini has the lowest population growth to which Mr 	

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	<p>Savage replied that it refers to the major metros in the country and that the information was based on a report produced by Stats SA.</p> <ul style="list-style-type: none"> • Mr Bryan Ashe (Water Caucus) requested whether the study would look at the issue of increasing the free basic water category in future as communities have requested that it should be increased to between 10 and 14 liters per month per household as well as to the vulnerable groups and therefore asked that it be taken into account. Mr Savage responded that the consumption of a sector was taken into account and not 6000 liters as a unit-consumption. A database of issues needs to be developed. • Julien Kiepiel (Dept Local Government and Traditional Affairs) asked whether the statement of a zero population growth in 2014 refers to a national figure to which Mr Savage replied that it is a KZN based figure which is a zero percent growth. • Clarity was asked by Messrs Rob McInerney (Durban Chamber of Commerce and Industry), Steve Gillham (Umgeni Water) and Prof Chris Buckley (University of KZN) on the use of some of the figures, curves and data. They do not all agree with the data and figures used. It was agreed that a meeting would be held with Prof Buckley to clarify some issues. • Dr Pete Goodman (Ezemvelo KZN Wildlife) said it is possible to meet between 50% and 80% of your household demand from house roof. He asked whether this has been taken into account with regards to the bulk water demand and what effect it could have on the bulk water demand. The proposal is therefore that alternative water supply should be considered. Mr Savage responded that the project does not have such a scenario but it can be considered. Mr Peter van Niekerk (DWAF) added that rain water tanks were considered in the Western Cape but because of their long summers it does not necessarily pose a solution. However in other areas of the country where it rains more frequently it can be an economic solution and should be looked into. <p>7.3 WATER CONSERVATION AND WATER DEMAND MANAGEMENT INTERVENTIONS</p> <p>The study team is considering both the supply and demand side as the latter is especially problematic in the study area. Mr Willem Wegelin explained the results of the first level assessment of potential WC/WDM savings. The study focused mainly on the urban sector, the industrial sector of the municipalities and touched</p>	<p>Mr Savage</p> <p>Study team</p>

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	<p>on the mining sector.</p> <p>Three scenarios have been developed namely Scenario 1 (reduce water losses over 5 years and then sustain it), Scenario 2 (reduce losses over 5 years and introduce efficiency improvements after 5 years) and Scenario 3 (reduce losses over 10 years and sustain it).</p> <p>Key considerations in the study were the following:</p> <ul style="list-style-type: none"> • Not all components of non-revenue water can be saved. System losses will always be present. • The model only allows for current system losses. It is not possible to determine future losses. • The study cannot allow for components of maintenance. A distinction must be made between water conservation and maintenance. <p>The water balance of eThekweni, Msunduzi and iLembe were discussed. The non revenue water at eThekweni is 31%, Msunduzi 50% and iLembe 10%. Mr Wegelin stated the potential water loss savings were assessed with the model. The results for all the scenarios indicated that a 12% reduction can be established in eThekweni and 30% in Msunduzi if efficiency were also introduced. He said that there is room for improvement in Msunduzi. He also noted that the small industries are not well monitored and they get away with unnecessary wastage.</p> <p>Constraints in practicing WCWDM include lack of human resources, technical skills, political and technical motivation, payment for services, funding and consumer perceptions that need to change. He concluded by summarizing that WDM can achieve significant savings. However, the operation cost of WDM outweighs the capital cost. He stressed the importance of using high quality fittings in all areas. Mr Wegelin also stated that WDM activities such as rain water harvesting, low flow plumbing fixtures etc. should be encouraged.</p> <p>DISCUSSION/QUESTIONS:</p> <ul style="list-style-type: none"> • Prof Chris Buckley (University of KwaZulu Natal) enquired whether economic instruments (in other words rising-block tariffs or something similar) are being 	

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	<p>considered to which Mr Wegelin responded that it is already in place.</p> <ul style="list-style-type: none"> Mr Bryan Ashe (Water Caucus) said there was a need to take inequalities into consideration (such as people with water features and those across the road with pre-paid meters). <p>7.4 IRRIGATION WATER REQUIREMENTS</p> <p>Mr Pieter van Rooyen presented on behalf of Mr Manie Mare. He said that experience in other areas show that irrigation could have changed substantially over time and therefore a check and balance of information was necessary. The Department's database on registration of water use was utilized. It is accepted that no verification or validation of this database has been done. The results were compared to previous studies to get a view if there are significant changes in irrigation in the study area. Mr Pieter van Rooyen presented the irrigation information from different sources in the catchment area which indicated that there generally is not a major shift in irrigation water requirements apart from the Mvoti system. The registration numbers have reduced in the Mvoti System, which has been incorporated into the water balances. Irrigation in the Mgeni (South) occurs upstream of major storage dams and when an estimated efficiency is dealt with then the net effect of the irrigation must be accounted for because of the return flows.</p> <p>The Department of Agriculture is following a strategy of savings in irrigation water use but the water will be kept within their sector. From a systems point there will thus not be a net benefit.</p> <p>Mr Niel van Wyk explained that this presentation was as a result of questions at the previous SSC. He said that when water is converted from a less efficient water sector to a more efficient water use sector, irrigation becomes a target as an alternative to obtaining water, which can have big social implications.</p> <p>7.5 WATER QUALITY MANAGEMENT REQUIREMENTS AND REUSE</p> <p>Mr Trevor Coleman provided a brief overview of the water quality assessment in the study area, the reuse options and key aspects of desalination.</p> <p>With regards to water quality he said the Upper Mgeni Catchment has a good water quality. The Midmar, Albert Falls and Nagle dams are somewhat</p>	

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	<p>mesotrophic and there are upward trends. Some water quality problems are emerging and blue-green algae is present in areas.</p> <p>The Msunduzi River however has problems, with high phosphates levels. Inanda Dam has hyacinths trapped at the upper end but the main body is in a good state. With regards to the Umhloti system, Hazelmere has overall good water quality and the salinity balance is good.</p> <p>Mr Coleman indicated that three reuse cases are being considered, namely reuse for irrigation, removal of phosphorous to discharge into a dam for reuse and treatment of the effluent to potable standards for direct reuse. He explained the different technologies, issues and costs associated with each of these options.</p> <p>With regards to the desalination of sea water, Mr Coleman provided some details of costs which were very high. They are following up with other suppliers to understand the basis of these costs. Umgeni Water is also busy with desalination studies and this information will be used when it becomes available.</p> <p>DISCUSSION/QUESTIONS:</p> <ul style="list-style-type: none"> • Mr Johan Geringer (DWAF: Option Analysis) said that it appears the cost of desalination did not include cost for infrastructure required after desalination. He furthermore asked whether any housing developments making use of on-site sanitation will have an impact on the water quality of the dam. Mr Coleman said that it is possible for nitrates to soak into the soil. • Bryan Ashe (Water Caucus) remarked that there are lessons to be learnt from Cape Town where they looked at water reuse for agriculture to which Mr Trevor Coleman responded that he has taken note of it. <p>7.6 INFRASTRUCTURE OPTIONS</p> <p>Mr Nico Serfontein referred to the schematic illustrating the infrastructure in the study area (existing as well as those planned) and he provided feedback on the interventions that were identified to supply water to the demands discussed previously:</p> <p>The Mooi-Mgeni transfer scheme (Spring Grove Dam and pump) is underway and should be completed in 2011. The Mkomazi-Mgeni augmentation option (Phase 1, the Smithfield dam and transfer system) is moving into a feasibility stage and is</p>	

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	<p>planned for 2017. Studies are being conducted for the Mkomazi River to supply water to the South Coast pipeline. On the northern system the raising of Hazelmere dam will be completed in 2009. The north coast pipeline upgrade will also be completed by 2009. Studies have been completed for the building of dams on the Mvoti River system and the choice is either Isithundu or the Welverdiend dams. Isituhundu has been studied substantially and this dam as the best choice has basically fallen away. At this stage the Mvoti View bulk water supply scheme (an existing hydro-electric scheme with infrastructure which can be upgraded to supply water to the central points) is being evaluated and if it goes ahead 2017 will be the delivery date as feasibility studies will still need to be implemented. As an interim solution Umgeni Water is considering abstracting water from the Lower Thukela and transferring it to link up with existing systems.</p> <p>Mr Niel van Wyk suggested that in future a map should be used to indicate the different systems as not everyone has knowledge of the whole area.</p> <p>DISCUSSION/QUESTIONS:</p> <ul style="list-style-type: none"> • Dr Pete Goodman (Ezemvelo KZN Wildlife) proposed the costs related to the rain capture scenario should also be investigated should the option be investigated further. • Mr Bryan Ashe (Water Caucus) said that when the Minister announced the feasibility studies for the dams in KZN in the legislature (November last year) there was a concern raised by communities affected by the dams and also about the social issues related to it. He also suggested that issues mentioned in the World Commission of Dams report should be taken into account. Mr. Johan Geringer said that he will confirm whether the issues were addressed. • Mr Bryan Ashe (Water Caucus) asked in terms of the energy crisis situation, whether the possibility of hydro power has been considered. Mr Johan Geringer responded that it was taken into account. <p>7.7 ENVIRONMENTAL CONSIDERATIONS</p> <p>Dr Ralph Heath is responsible for the environmental considerations and need to identify the broad scale environmental implications of some of these scenarios as they are panning out. He has conducted literature reviews to determine the available information and further work that needs to take place as a consequence</p>	<p>Mr Serfontein</p>

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	<p>of some of the scenarios will be identified. Dr Heath discussed some of the scenarios they evaluated and the typical environmental issues that would result from them.</p> <p>He said that it is important to note that the flow reserve could probably change due to the scenarios. He said that it is evident from the National Water Act that estuaries are an integral part of the systems that are being investigated.</p> <p>He said that a whole list of different levels of reserve determination studies has been compiled. Further environmental reserve work that is taking place includes DWAF's CD: Water Resource Directive Measures who are in the process of drafting a Terms of Reference (TOR) for the comprehensive reserve estimations of the Mkomazi and Mvoti Rivers and an intermediate level estimation for the Mgeni River, which will take place over the next two years. Rapid desk top studies have already been done for Mdloti and Toti Rivers.</p> <p>Dr Heath gave feedback on some of the environmental issues that came up and had to be investigated. Some of these are the impact on water quality due to the identified scenarios, the situation of siltation and beach sand due to dam construction etc, and the environmental operation rules for Inanda Dam. Feasibility studies have been completed and release rules from Inanda Dam are being assessed and will be incorporated into the second stage strategy. Further work that is being conducted is to monitor the programs of the Tongati and Mdloti estuaries and sedimentation.</p> <p>Mr Niel van Wyk said that there are a number of questions being asked on the reserve determination and it is not always easy to make the water available that the reserve requires. The Departmental policy is gradually being implemented. The reserve will rely on treated effluent and there is some competition in this regard as some of the other sectors also have a need for the reuse of water.</p> <p>DISCUSSION/QUESTIONS:</p> <ul style="list-style-type: none"> • Dr Peter Goodman (Ezemvelo KZN Wildlife) raised the concern that the possibility of inter-catchment transfers of organisms have not been taken into account and one needs to be careful of the geographic relationships between the catchments where water will be transferred between as that may add to the cost of infra-structure required to prevent the transfers. 	

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	<ul style="list-style-type: none"> Mr Bryan Ashe (Water Caucus) was of the opinion that the study should be considering the strategic environmental assessments at this stage of the planning and to raise this with the water leadership group. After some debate Mr van Wyk requested Mr Ash to send him some information on this issue. <p>7.8 RESULTS OF SCENARIO ASSESSMENT</p> <p>Mr Pieter van Rooyen explained the difference between the different reconciliation scenarios, what they entail and how they link up with Mr Savage's population figures and Mr Wegelin's WCWDM scenarios.</p> <p>The difference between Scenario I and II is the choice between sourcing water either from the Thukela or the Mvoti. Scenario III is when the WCWDM and improved efficiency is added. Scenario IV includes information that the study team received a few weeks ago on supplying the estuarine water requirements for the Mdloti and Tongati Rivers but further investigation will be necessary.</p> <p>The different existing yield scenarios for the Thukela, Mvoti, Mdloti (Hazelmere) and Mgeni Systems were explained and the existing water balance was explained.</p> <p>Mr Pieter van Rooyen furthermore discussed the relative economic costs (economic assessment) of the different options and said the study team would also appreciate feedback on whether anything was omitted concerning the economic costs. The capital calculations were then explained and it was emphasized that the costs were first order ball park figures calculated for comparative purposes and should be treated as such.</p> <p>He remarked that it is important to note that the unit reference values exclude certain interventions that will have to be made with regards to water quality if the Hazelmere dam is to be raised and this will be taken up with Mr Trevor Coleman.</p> <p>He described other aspects that could influence the reconciliation scenarios but which were not accounted for in these scenarios, such as the water use right trading, implementation of the Reserve in the Mgeni River System, rainwater harvesting and climate change. As rain water harvesting was mentioned earlier he said that further calculations are needed in this regard.</p> <p>Mr Pieter van Rooyen discussed the reserve requirements for the Mgeni River system and the three main storage dams in the system, namely Midmar, Nagle</p>	

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	<p>and Inanda Dams respectively.</p> <p>7.9 FIRST STAGE RECONCILIATION STRATEGY</p> <p>Mr Pieter van Rooyen provided the current perspective on the first phase reconciliation strategy:</p> <ul style="list-style-type: none"> • There are short term deficit situations in most of the systems which cannot be addressed by any of the interventions and the suggestion is therefore that early drought restriction be considered. • The WCWDM waste management measures should be implemented according to WC/WDM Scenario 1. • The Mooi-Mgeni Transfer Scheme should be implemented. • Hazelmere Dam should be raised. • The North Coast Pipeline for the short terms needs to be implemented. • A feasibility study for the Thukela and the Mvoti systems should be commissioned in order to supply water to the Northern Areas. • A feasibility study for water reuse options for supply to the North Coast and Mgeni River System should be commissioned. • The feasibility study for the Mkomazi River Transfer Scheme must be proceeded with in order to understand all the issues regarding the scheme. • The feasibility study to confirm efficiency improvements must be commissioned (WC/WDM Scenario A2) in order to determine the availability of it. • The revised release rules from Inanda Dam that will benefit the ecology must be assessed as mentioned earlier by Dr Ralph Heath. • Preparatory investigations of the water reuse options should be undertaken. • A Water Use Validation study in the Mooi River Catchment must be 	

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	<p>undertaken and perhaps the recommendations should be extended to the other systems as well in order to firm up on what the water use is in the catchment.</p>	
8.	<p>DISCUSSION AND COMMENTS</p> <ul style="list-style-type: none"> • Mrs Jean Lindsey (KZN Conservancies Association) remarked that eThekweni is not present at the meeting which is a serious concern to her and she wanted confirmation that they are included. Mr Niel van Wyk confirmed that they are involved. There are a number of technical meetings outside this SSC, information is sourced from them on a regular basis and they are involved in all the detail. Mr Bill Pfaff would definitely have been here if it was not for a very tight schedule. • Mrs Jean Lindsey (KZN Conservancies Association) further said that the water loss for eThekweni is 33% for 6 years already which is a huge problem to which Mr Niel van Wyk responded that this can be discussed in more detail. • Mrs Jean Lindsay (KZN Conservancies Association) further requested whether rainwater tanks will be subsidised. Civil society has been asking for subsidies for solar heating for a number of years and now we sit with a power crisis. The request was made that subsidies or bylaws be recommended with regards to rain water tanks to which Mr Niel van Wyk said it is not really within the scope of this study but recommendations can be made in this regard. Mr Bryan Ashe added that the Mvula Trust and Management Research have done pilot studies and that lots of work in this regard has been done. • Mrs Jean Lindsay (KZN Conservancies Association) said that waste water and reuse of it has been mentioned and the waste water into the harbour is serious. A request was made that the upgrading or maintenance of infrastructure should be factored into the study. Mr Trevor Coleman said that the costs would be analysed. • Mrs Jean Linday (KZN Conservancies Association) said that climate change is a bigger issue than what was mentioned today. Mr Niel van Wyk agreed that there is not sufficient information on climate change but when it becomes available the study's methodology will be able to accommodate it. • Mr Johan Geringer (DWAF) commented that a number of options were 	

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	<p>proposed. Some of these can be executed by the state but others need partnerships. He said some of these need to be acted on quickly otherwise we may run into problems. The question is how this aspect will be addressed. Mr Niel van Wyk confirmed that this study is in partnership with other organisations and specific conversations will be held with them to clarify responsibilities.</p> <ul style="list-style-type: none"> • Mr Julian Kiepiel (Dept Local Government and Traditional Affairs) said there is a need to understand the cost structure of desalination. He requested clarity whether reference was made to discounted capital cost. Mr Kiepiel furthermore asked to what extent if any, the current energy situation has had a bearing on the plans. Mr Trevor Coleman said that with regards to desalination the electricity cost was included as operating cost. The costs of distributing the electricity to the plant was not included, which will have an impact. • Mr Julian Kiepiel (Dept Local Government and Traditional Affairs) asked in terms of making judgements on the different options to what extent do quantifiable financial cost dictate a decision. Mr Niel van Wyk stated that this study would identify options which need to be investigated. In this investigation phase the implications of the scenarios will have to be analysed and not only the costs. Ecological impacts, environmental impacts, etc. are also accounted for. • Mr Johan van Rooyen (DWAF) remarked that the complexity of what we are dealing with is quite evident and we should not focus on one direction only but to investigate all the alternatives. • Mr Steve Gillham (Umgeni Water) confirmed the complexity issue. According to him the spatial component is missing in the demand curves. Furthermore the capital of supplying infrastructure is not included in the costing. He said what is linked to the spatial component is infra-structure inside the distribution systems and the costing associated with it. Mr Niel van Wyk said that was originally one of the objectives of this study and at the first stage one needs pointers. The comment is accepted as a good pointer of what needs to be firmed up on. • Mr Steve Gillham (Umgeni Water) asked what the cost of the reuse options are and whether it includes the cost of other treatment plants as well? Mr Pieter 	Study team

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	<p>van Rooyen said that the issue will be checked to ensure that the various options are compared on the same base.</p> <ul style="list-style-type: none"> • Mr Bryan Ash (Water Caucus) commented that there is a need to look at the role of civil society partnerships, especially on demand side management. They are embarking on certain pilot studies and can share the lessons learnt and information etc. The same can be done with rain water harvesting and water reuse. He suggested that a session is necessary to share information to which Mr Niel van Wyk responded that it may be investigated. • Mr Norman Ward (DWAF) said that Mr Peter van Niekerk asked whether it would help to bring water from the Mvoti system instead of from the Tugela. The URV's indicated that initially the Tugela water looked a lot cheaper but because of the bigger yield from the Mvoti system the yield for the whole system was very close. At the moment the water in the Tugela is very cheap but if one looks at 2030 one may have to take into account that we may have Jana dam in between. In which case the marginal cost of the water increases substantially and it is thus important what the Tugela Water is costed at. Mr Niel van Wyk said that there are sufficient tools available to verify that. • Dr Pete Goodman (Ezemvelo KZN Wildlife) said that a broad scale plan for the KZN communities is available, similar to the terrestrial plan and estuaries plan. It has implications for this study and also planning on the macro scale for the Province. It clearly indicates the preference of certain options such as the Mvoti vs. the Tugela (Scenario I vs. Scenario II). Scenario I from a conservation perspective is much more preferable than Scenario II because certain elements found in the Mvoti system are also found in systems elsewhere including the Tugela. So if it is cheaper to get water from the Tugela then one can proceed but once the commitment has been made the commitment also needs to be made to setting aside the Mvoti to maintain the ecological desired class and connectivity in that system and similarly for other decisions about whether or not dams are placed in a system. He emphasised the serious connection between the scenarios in conjunction with what is desirable at a macro scale. Mr Niel van Wyk suggested that this is taken outside the meeting to bring effect to it. • Mrs Angela Masefield (DWAF, KZN) raised her concern that some of the most recent decisions of iLembe are not feeding into the process. Ilembe and the team need to engage again about the developments taking place subsequent 	<p>Study team</p>

ITEM	DISCUSSIONS	ACTION
	<p>to the Master Plan. Mr Jogie Naidoo (iLembe) confirmed that the options are covered and the developments need to feed into the study. Mr Niel van Wyk confirmed that good cooperation is needed between all parties.</p> <ul style="list-style-type: none"> • Ms Di Jones (WESSA) said a MIG funding conference was held three years ago. Some of the questions raised were raised there as well about services and funding. Mrs Angela Masefield said that there is no doubt that there is a great competing need to supply people who do not have access to basic services and to keep existing infrastructure and upgrade it to a higher level of service. It is a very difficult balance that municipalities need to reach. Mr Jogie Naidoo confirmed that they have completed their master water plan. Certain work still needs to be done but it is a major task to find the funds for them. Angela Masefield added that conditions must be placed on non-conditional grants. • Mr Julian Kiepiel (Dept Local Government and Traditional Affairs) said that it is important to see the study contextualised provincially, for instance the linkages etc and that the Tugela is quite central to it all. Norms and standards are also needed with regards to urban density. Mr Niel van Wyk said that it is DWAF's business to look at the broader water issue in the province. There are also a new set of studies that are being mobilised which covers the municipal water in this province outside of this particular study. DWAF is also undertaking the first steps towards a reconciliation study for the bigger province where municipalities will be grouped and the most critical problem areas identified. He said that DWAF is therefore also looking at the spatial development plans of the province. Mr Richard Savage however needs to confirm whether this study has taken the urban density into account. • Mr Bryan Ashe (Water Caucus) made a suggestion that an information sharing summit should be held. Mr Niel van Wyk remarked that the regional office is taking note of that. 	
9	<p>STRATEGY STEERING COMMITTEE</p> <p>Mr Niel van Wyk said that this item was already covered in great detail at the first SSC meeting. It is just a reminder that once the study has been completed there must be a mechanism by which the study is taken forward and monitored.</p>	

ITEM	DISCUSSIONS	ACTION
10.	<p>GENERAL</p> <p>Mr Niel van Wyk said that this particular meeting was intended to share the current perspectives on the reconciliation strategy. It will also need to be discussed with the public and the committee members were asked whether the information presented at the meeting could be presented to the public. It was agreed that the information needs to be abbreviated.</p> <p>Mrs Di Dold (WESSA) said that it must be kept in mind that everyone does not necessarily agree with everything that is said and Mr Niel van Wyk agreed that one cannot wait for consensus but that there needs to be a certain level of reasonable consensus.</p>	
11.	<p>CLOSURE AND NEXT MEETING</p> <p>Mr Niel van Wyk confirmed that all the information is available on DWAF's website under 'projects' (www.DWAF.gov.za/projects).</p> <p>Date of next meetings:</p> <p>Public meeting is 31 March 2008</p> <p>SSC is 12 June 2008</p> <p>Mr Niel van Wyk thanked everyone for attending, sharing their contributions and the discussions that took place.</p>	