

# **THE CLASSIFICATION OF SIGNIFICANT WATER RESOURCES IN THE OLIFANTS WATER MANAGEMENT AREA**

## **Issues and Responses Report**

### **Version 11**

### **March 2013**

This Issues and Responses Report (IRR) captures the issues raised by stakeholders during the classification study of significant water resources in the Olifants Water Management Area (WMA). The purpose of this report is to ensure that the concerns and comments raised by stakeholders are noted and adequately and satisfactorily addressed through the study process. This study has been commissioned by the Department of Water Affairs (DWA). The report will form part of the supporting documentation of the classification component of the Integrated Water Resources Management template that will be submitted to the delegated authority of DWA with the recommendations on the approval of proposed Management Classes (MCs).

All written and oral submissions received from stakeholders to date are also summarised in this report and it has been updated on a regular basis, to the conclusion of the study.

	<b>COMMENTS, QUESTIONS AND ISSUES</b>	<b>COMMENTATOR(S)</b>	<b>SOURCE(S)</b>	<b>RESPONSE(S)</b>	<b>ACTION(S)</b>
1.	We have information that we can share with the study team. The mines in the Steelpoort area have a lot of water quality information that can be used by the study team. Most of this information is given through to the DWA, but he is not certain how it is being applied by the DWA. He will collect the information and pass it on the study team.	Mr Tendani Nditwani (DWA), Mr Mark Surmon (Rio Tinto) and Mr Bertus Bierman (Olifants River Joint Water Forum).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Trevor Coleman (Study Leader) thanked members for their offers of assistance and said the study team needs all the information it can get.	Some information obtained by study team.
2.	Areas adjacent to the Olifants WMA such as Mokopane and Polokwane which receive water from this WMA should also be included in the study. Members of the PSC should be made aware that water is currently being transferred to users outside the Olifants WMA. Water users falling outside the WMA have been included in the water demands used for the Reconciliation Strategy study, which will be used as a source of information for this study.	Mr Ockie van den Berg (DWA) and Mr Nditwani (DWA)	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Coleman indicated that the Reconciliation strategy will be obtained by the study team.	Water demands have been included.
3.	The mining area is not only confined to the Steelpoort area, but goes into neighbouring districts as well.	Mr Bertus Bierman (Olifants River Joint Water Forum).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Coleman has indicated that all information regarding the mining area has been reviewed	The mining areas have been included.
4.	There is, for example a major difference between the Blyde River and the Blyde Dam, yet they are both in the same Integrated Unit of Analysis (IUA). He enquired whether these differences will be accounted for.	Mr Mark Surmon (Rio Tinto).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Coleman said this is the reason why sub-nodes are being used – to acknowledge major differences in the same IUA and to account for ecological important and sensitive areas.	Sub-nodes have been included in each IUA to account for the more ecologically important areas.
5.	Mr Surmon asked if the same will apply to sub-catchments in an IUA. Will it be possible to have a different Management Class (MC) for a sub-catchment in an IUA?	Mr Mark Surmon (Rio Tinto).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Coleman said it will be possible if there are major differences.	Sub-nodes will be set up within an IUA to address ecologically important and sensitive areas within the IUA
6.	Mr Surmon asked if the international commitments of the Olifants WMA have been thought of.	Mr Mark Surmon (Rio Tinto).	Meeting 1 of Project Steering Committee at Loskop Dam on	Mr Coleman said the commitment to Mozambique' has been taken care of at the start of this study.	These have been accounted for in the yield model used in the Reconciliation Strategy.

			18 February 2011.		This yield model has been used in the classification study
7.	Has future economic development been taken into consideration during this study?	Ms Stephinah Mudau (Chamber of Mines).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Coleman said that the scenario analysis and economic modelling will look at the impacts of future economic development. The models will be run considering different development scenarios.	Future growth scenarios have been included as part of the scenario analysis.
8.	Will the Management Classes (MCs) be reviewed after a specific period of time?	Ms Stephinah Mudau (Chamber of Mines).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Coleman said each MC will have a specific timeframe (probably around four or five years) when it has to be reviewed (in terms of the National Water Act).	No action required.
9.	Is there enough information available to do this study?	Ms Stephinah Mudau (Chamber of Mines).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Coleman said there is enough information and if something is not available, then the study team will not assess that aspect in detail.	No action required.
10.	Will there be an opportunity for PSC members to go through the finer details of the models to be used during this study.	Dr Koos Pretorius (Federation for a Sustainable Environment).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Coleman said this can be done, but the format (workshop/meeting) must first be decided upon. Dr Harrison Pienaar (DWA) said if there is a need for more meetings from the PSC members or stakeholders, then these meetings must take place.	The models and supporting information has been distributed to the PSC members for comment. The details of the models and the data assessment were discussed at the TTG meeting of 7 July 2011 and 31 January 2012.
11.	How will the MCs be decided upon by the study team? He suggested the most sensitive IUAs be assigned the ecological classes first then cascaded to the areas of less ecological sensitivity.	Dr Thomas Gyedu-Ababio (SANPARKS).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Coleman said this forms an important part of this study. The status quo will most probably be used as the base scenario to undertake the first round of modelling and then the MC will be moved up or down, which will depend on various factors and scenarios that are agreed upon.	The alternate catchment scenarios analysis has taken different ecological categories into consideration as agreed upon by the PSC.

12.	Dr Pretorius asked how the study team will decide what the status quo of a water resource will be. Do you start high or low?	Dr Koos Pretorius (Federation for a Sustainable Environment).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Coleman said this will be decided by the results of the study, but it is probably better to start low and then try and improve it when the review comes up.	The study used the present ecological state as the starting point in the establishment of the ESBC scenario.
13.	Dr Pretorius asked if seasonal differences will also be taken into account.	Dr Koos Pretorius (Federation for a Sustainable Environment).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Coleman said seasonality will be part of the study.	Yield modelling analysis accounts for the seasonality.
14.	It is good news to see that wetlands and pans will also be investigated as part of this study. This area is critical for the mining sector.	Mr Duane MacPherson (Anglo American).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Comment and no further action required	No action required.
15.	Wetlands and pans are becoming a major issue in the mining sector due to the mitigation measures that must be taken into account as per instructions from the Department of Environmental Affairs. It will assist the mining sector if the classification process can identify areas that may be mined as well as areas that cannot be accessed. The latter areas can then be classified as protected zones that may not be developed.  This will be of great help to the coal mining sector in the Upper Olifants who can then concentrate on specific areas that may be developed for an energy resource.	Mr Duane MacPherson (Anglo American).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Coleman has indicated that this study will not address the area that can be mined.	Study has not addressed identification of areas that can be mined (no identification of protected zones – wetlands and pans was done as part of this study). Wetlands are addressed as part of the river system and may have higher ecological protection through sub-nodes.
16.	How will the classification system be managed and enforced. How will an organisation, for example, be able to object to a specific classification?	Dr Hannes Botha (Mpumalanga Tourism and Parks Agency).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Coleman explained that any proposed development near a water resource with a MC must do an environmental impact assessment as is the case with any proposed development.	The final proposed classes will go through a gazetting process. Stakeholders will have an opportunity to comment and lodge objections. For the Olifants study this will take place by October

					2012.
17.	Will the tributaries of the Olifants River such as the Letaba River be investigated? It is not part of this WMA, but it plays a significant role. The DWA is also investigating combining the Olifants WMA with the Luvuvhu-Letaba WMA in the near future.	Dr Thomas Gyedu-Ababio (SANPARKS).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Dr Pienaar said the DWA will investigate this request.	Letaba will be investigated as a separate project. The DWA is in the process of initiating a classification study in the Letaba Catchment.
18.	This is a very complex project and the workload should never be underestimated. Maybe a few workshops/meetings are needed before the next planned PSC meeting in November to handle problems that will crop up before then. We want this classification to become a reality and we are willing to help.	Dr Vik Cogho (Olifants River Forum).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Dr Pienaar said the Project Management Committee must take note of this suggestion.	Technical task group meetings have been held when required. To date two such meetings were held to address issues (on 7 July 2011 and 31 January 2012).
19.	He agrees with Dr Cogho. There are critical decisions that must be made at the beginning of the project that must first be thrashed out. It will be of no use if we have disagreements at the next PSC meeting in November, because then there will not be enough time to do address those problems. Rather have workshops/ meetings now to identify potential problems.	Dr Koos Pretorius (Federation for a Sustainable Environment).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Ms Naidoo said the classification process has a set of guidelines that must be followed. This will also assist the process and cut down on potential problems. A schedule of the planned meetings by the Technical Task Group will be made available to PSC members for their attendance.	As per action for comment 18, above.
20.	What role will the Catchment Management Agency (CMA) play in the classification process?	Mr Duane MacPherson (Anglo American).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Dr Pienaar said a CMA will manage the MCs in its area. These areas will in the meantime be managed by the DWA until a CMA is in place.	No action required.
21.	He is not sure what is expected from his Department in this classification process. There is a lot of information available from his Department and he asked the study team to send through the specific requests for relevant data/information needed.	Mr Jan Potgieter (Department of Agriculture, Forestry and Fisheries).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Dr Pienaar said as the process unfolds the sectors will see what is expected of them and their role will become clearer when specific sectors are engaged.	Liaison with Mr Potgieter has been established. Discussions have been held and the correct data has been sourced by the study team. Mr Jan Potgieter and his Department are satisfied with data that has been used by the study team.

22.	There are two distinctly different mining sectors in the Olifants WMA: coal mining in the Upper Olifants and the eastern sector of the Olifants with a variety of minerals such as platinum and chrome. Both areas need a separate meeting, because they differ vastly from each other.	Mr Bertus Bierman (Olifants River Joint Water Forum).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Coleman has indicated that this will be further investigated	Study team has held discussions with representatives of the mining sector.
23.	Will the study team also be using maps and information other than provided by the DWA for this study?	Dr Koos Pretorius (Federation for a Sustainable Environment).	Meeting 1 of Project Steering Committee at Loskop Dam on 18 February 2011.	Mr Coleman said a vast variety of resources from many sources are being used and will be used in this study.	All data sources have been acknowledged in study reports and where required.
24.	The scale of the Integrated Units of Analysis (IUA) for significant water resources is too wide as it includes tributaries, sub-quaternaries etc, for instance in the Blyde River the selection is not appropriate as some of the tributaries is in an A class category and of great ecological significance. With the IUA selection these important areas are in danger of being grouped together with less sensitive tributaries in a management class that does not recognise the different ecological sensitivity. There is a real danger that areas of irreplaceable aquatic importance can be compromised in decision making for authorising water licenses for developments etc. As an example the gorge in the Olifants River upstream of Loskop Dam currently fall IUA No 1 while the rest of the river in the Nature Reserve fall in IUA No 3. Therefore these two parts of the same sensitive ecosystem may very well have very different management class values and therefore very a different conservation value or status. The same is true for the Blyde River which fall two different IUA's.	Dr. M. Coetzee Senior Manager: Scientific Services Mpumalanga Tourism and Parks Agency (MTPA).	Letter via Email on 28 February 2011.	The study will include a number of sub-nodes within IUAs to address the issue of the smaller more sensitive, important and "higher protected" tributaries. The process that has been developed is such that these smaller tributaries will be afforded higher protection levels even if the IUA is classified as a less protected class. The ecological importance and sensitivity of smaller tributaries will be accounted for taking into consideration their current PES. The reason that some ecosystems have been included in two separate IUAs is for the very reason – to try to delineate more sensitive, protected areas from impacted, 'hardworking' rivers so that their conservation value or status is protected.	Sub-nodes have been included in the system to address areas of higher ecological protection within an IUA. IUA 9 (Blyde River and Orighstad) have been split into 2 IUAs (IUA 9 – Orighstad and IUA 13 Blyde River).
25.	With reference to IUA numbers 1-12 and their Present Ecological Status (PES) rating, we do not agree with the PES ratings given for the IUA's and the project team should please indicate who decided on these ratings, and what methodology was used in determining the PES. There is presently a process underway to determine the latest PES and EIS ratings for the Olifants River. This	Dr. M. Coetzee Senior Manager: Scientific Services Mpumalanga Tourism and Parks Agency.	Email on 28 February 2011.	The PES used in the questionnaire is based on the latest information that was available per quaternary catchment based on the report from Water for Africa that was completed in 2006. This report is an update on the 1999 desktop study and the	The updated PES/EIS (2010) for the Olifants WMA was obtained and used in this study.

	process is also being driven by the DWA and the question therefore becomes: Would it not be more acceptable to rather use the latest information and ratings that was determined through sound scientific methods?			results of the 2001 Olifants River Comprehensive Reserve study undertaken. The approach included will be using the updated the PES/EIS (2010) as currently being determined through a parallel DWA study. Results are expected by June 2011.	
26.	It would make more scientific sense to survey and determine the PES of all streams in all IUA's individually and then to determine a central tendency statistically in order to calculate the integrated PES for all IUA's individually. The concern here is that the current method which seem to rely on the opinions and sentiments of stakeholders (many of whom are not aquatic scientists) to determine a PES value / management class for the IUA's are scientifically unsound and will not give any indication of the true status of the resource.	Dr M. Coetzee Senior Manager: Scientific Services Mpumalanga Tourism and Parks Agency.	Email on 28 February 2011.	The PES listed per IUA was an indication where the system is for the entire IUA (average status) and does not exclude the fact that there are specific reaches that are still in a good state. During the classification study process these reaches will be acknowledged, as they will form part of the scenarios that we will be considered to determine the final MC. The PES of all streams will be considered individually based on the latest information received from the 2010 PES/EIS update study.	The latest information received from the 2010 PES/EIS update study has been used and discussed with the MPTA.
27.	The danger in widening the management classes (and therefore in effect then lowering their values) is without doubt that additional extensive pressure will be put on an already stressed river.	Dr M. Coetzee Senior Manager: Scientific Services Mpumalanga Tourism and Parks Agency.	Email on 28 February 2011.	Management classes will be set so that they are technically sound, scientifically credible, practical and achievable. They will apply to an IUA where applicable and where so defined to the smaller tributary catchments as determined. Sub-nodes (to which different MCs may apply) will be used to address areas that are ecologically different.	A meeting was held with the MPTA on 27 June 2011 to discuss and address concerns raised. A set of sub-nodes was established with the MPTA in the different IUAs.
28.	It seems very likely that the proposed new management classes and the approach to substitute PES for management classes will be to the advantage of water users who make use of the resource for purposes other than conservation / environmental flow requirements / ecological water requirements.	Dr M. Coetzee Senior Manager: Scientific Services Mpumalanga Tourism and Parks Agency.	Email on 28 February 2011.	The management classes will not be a substitute for the PES of water resources. The PES will be used as a key input into the scenarios that will be considered to determine the final MC. The scenarios will be formulated such that no one water user will be favoured. The scenarios will be	A meeting was held with the MPTA on 27 June 2011 to discuss and address concerns raised.

				reviewed by the PSC before any MCs are proposed.	
29.	In view of these concerns under points 24 to 28, the MPTA proposes that the concerns be addressed through an expert workshop where aquatic specialists could provide inputs in this very important process, or that a Task Team consisting of expert aquatic specialists be set up to guide the project team in the classification of significant water resources in the Olifants Water Management Area. Completion of the questionnaire will be pending such as workshop or specialist task team meeting.	Dr M. Coetzee Senior Manager: Scientific Services Mpumalanga Tourism and Parks Agency.	Email on 28 February 2011.	The concerns raised will be also be clarified through the first technical task group meeting that will be held as part of the study process. It does not require a specific workshop.	A meeting was held with the MPTA on 27 June 2011 to discuss and address concerns raised.
30.	How are Management Classes (MCs) going to be determined? How will the water use authorisation process be incorporated? Will new and future developments be taken into account?	Ms Stephinah Mudau, Chamber of Mines.	Meeting between the DWA and the Chamber of Mines on 7 April 2011.	A Water Quality Strategy is in place and the MCs will inform that strategy. Source Directed Controls (SDC) will inform users of how to dispose of discharges and what the standards or conditions of these discharges will be. Future development will be taken into account, because a MC cannot be reviewed constantly. It will be reviewed every 4 to 5 years.	Future development has been considered in the alternate catchment scenario analysis.
31.	Will a MC take into account what was previously decided regarding water resources as the control scheme at the Witbank Dam?	Mr Lucas Nengovhela, Optimum Coal.	Meeting between the DWA and the Chamber of Mines on 7 April 2011.	Yes, this is a key aspect which will be taken into account.	Resource Water Quality Objectives set and management measures set during previous initiatives have been used in this study.
32.	When is the project ending? Will efforts from other Departments such as the Mineral Resources be incorporated in the classification process? What is the goal of the classification?	Mr Cecil Khoza, Harmony Gold.	Meeting between the DWA and the Chamber of Mines on 7 April 2011.	The project will end late in 2012. The Department will review a MC after 4 to 5 years. In the National Water Resources Strategy there will be a reference to other strategies. The objectives of other Departments need to talk to the DWA objectives, especially from a biodiversity point of view.	No action required.
33.	Wetlands and Pans – What will happen to water use licences applied for before classification?	Ms Carol Dixon, Anglo American.	Meeting between the	The Reserve requirements are looked at for the area applied for in	No action required

			DWA and the Chamber of Mines on 7 April 2011.	order to protect the Reserve. So, ecological requirements will be met, but cumulated impacts will be looked at by the MC.	
34.	There should be a balance between protection of the environment and socio-economic elements. What will happen to companies without a water use license?	Ms Melani Naidoo-Vermaak, Harmony Gold.	Meeting between the DWA and the Chamber of Mines on 7 April 2011.	There will be a phased process to clear up the backlog of license applications.	No action required
35.	What do you do when stakeholders disagree on the specific MC for a water resource?	Mr Reginald Mabalane, Chamber of Mines.	Meeting between the DWA and the Chamber of Mines on 7 April 2011.	The best option is to make stakeholders understand the process and the implications of each class.	No action required
36.	Is there an opportunity for the Chamber of Mines to understand the baseline of the study?	Mr Gavin Anderson, De Beers.	Meeting between the DWA and the Chamber of Mines on 7 April 2011.	The Inception Report will be in place for public use to understand the baseline of the study.	Discussions were held with the Chamber of Mines. A follow up presentation was made on 2 June 2011.
37.	We were informed by the Department of Water Affairs that the Letaba System is now part of the Lower Olifants CMA	Mr Dries Enslin, Chairperson, Agri-Letaba.	Email on 3 May 2011.	The merging of the Letaba and the Olifants will only be formalized once the updated National Water Resources Strategy is gazetted. Until then, the original WMA demarcations remain.	No action required
38.	Please let me know when you do classification study for the Letaba River.	Ms Cathy Dzerefos, Provincial Programme, Manager: Limpopo Eco-Schools.	Email on 5 May 2011.	The specific legislation to classify significant water resources was only promulgated in September of last year. Of the 19 Water Management Areas (WMAs) in South Africa, five (Olifants-Doorn WMA in the Western Cape, the three Vaal River System WMAs and the Olifants WMA) are being studied. The 14 other WMAs will also eventually be done, but no dates have yet been set.	Ms Cathy Dzerefos has been included in the proposed PSC members list for the proposed Letaba Catchment study and will be contacted when this study commences.
39.	Which water quality data are you going to use in this	Mr Simon Mporetji,	Waterval Forum	The recently completed Reserve	Available in-stream

	classification project?	Rand Water	meeting in Secunda on 19 May 2011.	study had a water quality component that will be used as well as a wide variety of studies done on this WMA.	water quality from the DWA WMS database for the Olifants WMA as informed by the river classification process was used for water quality analysis. Where additional data was made available from water users this was incorporated.
40.	When was the project started?	Ms Nicole Houghton, Harmony EGM.	Waterval Forum meeting in Secunda on 19 May 2011.	The project started in October 2010.	No action required
41.	When is the next PSC meeting?	Ms Jackie Jay, Water Resource Planning, DWA.	Waterval Forum meeting in Secunda on 19 May 2011.	The next PSC meeting will be around October 2011.	The second PSC meeting was held on 08 November 2011.
42.	Where will we get classification information?	Mr Jaco Linde, Sasol, Synfuels.	Waterval Forum meeting in Secunda on 19 May 2011.	Classification information is available on the DWA website – <a href="http://www.dwa.gov.za">www.dwa.gov.za</a>	All classification information is available on the DWA website: <a href="http://www.dwa.gov.za/r dm/WRCS/default.aspx">http://www.dwa.gov.za/r dm/WRCS/default.aspx</a>
43.	Mr Kyle Harris from Prime Africa who is doing the socio-economic modelling for this study gave a presentation to the Chamber of Mines. He will forward a complete data needs request to the Chamber who will send it on to its members. Mr Harris will send this list via Ms Tovho Nyamande at the DWA who will be the contact person between the study team and the Chamber.	Mr Kyle Harris, Prime Africa	Chamber of Mines meeting on 2 June 2011.	The Chamber of Mines noted the request.	Ms Nyamande sent through the data needs request to the Chamber of Mines.
44.	Contact the Olifants River Forum for a previous socio-economic study that was conducted by Oberholtzer <i>et al</i> recently. The study has a large spatial component, which may be of use to this study.	Mr Henk Lodewijks, Anglo Coal	Chamber of Mines meeting on 2 June 2011.	Mr Harris indicated that the study will be sourced.	The team was not able to find this report.
45.	The Present Ecological State (PES) and Ecological Importance and Sensitive (EIS) data of 1999 were initially used in this Classification Study as input to the delineation of the IUAs. The new PES EIS data that was released in June 2011 has been used to update information for the	Mr Trevor Coleman (Study leader of project team).	Meeting in Lydenburg with the Mpumalanga Tourism and	Meeting members agreed on this point.	No action required.

	final selection of IUAs.		Parks Agency (MTPA) and South African National Parks (SANParks) on 27 June 2011.		
46.	What scales of Integrated Units of Analysis (IUAs) will be used in this study?	Dr Hannes Botha, (MTPA).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Ms Retha Stassen (project team) said 12 IUAs have initially been identified during this study taking into consideration a number of criteria (socio-economic, water resource boundaries, PES/EIS data, etc). All quaternary catchments were listed for each IUA, including the smaller rivers with a good PES of high/very high EIS that have been added with the aid of the 2011 PES EIS information provided by Dr Neels Kleynhans (DWA).	No action required.
47.	A complete list of all the nodes and sub-nodes will be emailed to the MTPA and SANParks for consultation.	Ms Retha Stassen (project team).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Mr Coleman has indicated that a complete list will be emailed to the MPTA and SANPARKS.	The list of nodes and sub-nodes was sent through to the MTPA and SANParks. The final list has been included in the Olifants IUA report.
48.	What are nodes?	Dr Andrew Deacon, (SANParks).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	A node or hydro node is a static point in a water resource where measurements are taken at specific intervals or being used for modelling purposes. These are usually at the outlet of a quaternary catchment, below dams or large developments or even on sub-quaternary level. A sub-node is typically a measuring point to protect a smaller water resource within a larger area, e.g. to protect a specific region or area within an IUA. Areas high upstream, could be classified a Class I sub-node, while downstream, due to a	No action required.

				variety of developments, the same water resource could be classified a Class II or even a Class III.	
49.	If a Class I sub-node is downstream of a proposed development, then such a proposed development could be turned down due to the classification of the sub-node. This safety net is important for protecting the resources.	Dr Neels Kleynhans (DWA).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Ms Barbara Weston (DWA) agreed that sub-nodes are vital for this process. If there are smaller rivers that require protection in a large IUA with a Class III classification, then there must be a mechanism to protect these rivers. Mr Coleman also agreed and said this is where a sub-node can protect the resource within a Class III IUA.	No action required.
50.	Resource Quality Objectives (RQOs) and/or Resource Water Quality Objectives (RWQOs) are vital in the protection of these smaller resources	Ms Retha Stassen (project team).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Meeting members agreed on this point.	No action required.
51.	What was the basis for IUA delineation?	Dr Neels Kleynhans (DWA).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Mr Coleman said the following were taken into consideration: Similar land use and/or developments, ecological characteristics, presence of an Ecological Water Requirements (EWR) site in an IUA, Catchment boundaries and socio-economic criteria. Ms Stassen said it is, however, impossible to get a 100% similarity for a specific IUA due to the various economic activities undertaken in these catchments.	13 IUAs have been delineated for the Olifants WMA as part of the classification study.
52.	Was a structured approach used in choosing the IUAs?	Dr Neels Kleynhans (DWA).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Mr Coleman said this was indeed the case and that the approach is provided as part of the delineation report that will be available in July 2011.	No action required.
53.	Will you be looking at consequences at the EWR sites?	Ms Barbara Weston (DWA)	Meeting in Lydenburg with the MTPA and SANParks on 27	Ms Stassen said this was covered by the Reconciliation Study. The draft report is available and will be used for interpretation during classification.	The Reconciliation Study results have been assessed and incorporated. Some

			June 2011.		ecological consequences are in the process of being assessed as part of the Olifants study.
54.	A meeting has been planned with Mr Johan Engelbrecht (project team) for 28 June 2011 to look at sub-nodes and to identify smaller rivers that are still in a good condition. The new PES EIS 2011 data will be used for this meeting. The meeting will also be used to identify those rivers where the existing EWR sites cannot be used for extrapolation and/or where the estimation approach is not applicable. Rapid assessments will be proposed for these rivers.	Ms Retha Stassen (project team).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Upon his request, Mr Francois Roux (MTPA) was also invited to this meeting. Mr Coleman said a map of the Olifants WMA with all the hydro nodes will be sent to all parties when finalised.	Meeting was held and sub-nodes were identified for smaller rivers requiring higher ecological protection.
55.	Upstream and downstream conditions of most small streams differ vastly and a solution must be found for this problem.	Ms Retha Stassen (project team).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Noted. - Existing EWR information is mostly only for the main stem and major tributaries. Some additional assessments (rapids) will need to be undertaken for the smaller rivers to get an indication of the ecological requirements.	Rapid Reserve assessments were undertaken for smaller rivers during August 2011.
56.	Some of the smaller rivers do not have any information available. We will most probably do two or three rapids. These assessments will include hydraulics, fish and macro-invertebrate surveys and a rapid habitat integrity assessment.	Mr Trevor Coleman (Study leader of project team).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Dr Kleynhans suggested doing more comprehensive testing, especially on the existing comprehensive EWR sites by re-working the hydraulics for use in the Rapid Habitat Assessment Method (RHAM) and Fish Flow Habitat Assessment (FFHA) models. Dr Kleynhans said the hydraulics for the old EWR sites is available. The hydraulics must be redone according to the new depth/flow classes as developed by Drew Birkhead. The base flows must also be assessed using the methods developed by Denis Hughes. He does not have budget, but will calculate the data if the project team supply him with the relevant information. Mr Coleman said that the team will	This was done.

				consider this and make recommendations, starting with the rapid assessments.	
57.	Please inform the DWA: RDM when you will be doing the rapids, because we would like to assist.	Ms Barbara Weston (DWA)	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Meeting members agreed on this point.	DWA: RDM was informed prior to the Rapid Reserve Assessments.
58.	All this information discussed today must also be shared with our colleagues in Limpopo.	Dr Andrew Deacon, (SANParks).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Ms Stassen said she will send Limpopo the relevant information.	This was done.
59.	Nodes were added to all the IUAs based on the PES EIS data of 2011.	Ms Retha Stassen (project team).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Meeting members agreed on this point.	No action required.
60.	There is a big concern regarding IUA 8 due to a lack of information as no ecological water requirements apart from desktop assessments are available. Also, the information from the existing EWR sites can't be used for extrapolation.	Ms Retha Stassen (project team).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Noted. Suggest that rapid assessments be undertaken for the Spekboom, Dorps and Watervals Rivers to provide information for the ecological water requirements.	Rapid Reserve assessments were undertaken during August 2011.
61.	IUA 9 has two main rivers each with distinctly different characteristics, the pristine Blyde River and the Ohrigstad River that is heavily used by agriculture.	Ms Retha Stassen (project team).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Dr Kleynhans indicated that it is a good example of the difference between upstream and downstream. Mr Engelbrecht said the top section (Blyde) is in an excellent condition. Mr Kyle Harris (project team) indicated that from a socio-economic view, the Blyde and Ohrigstad Rivers can be studied together. Mr Hannes Marais (MTPA) said there is some decanting into the Blyde River near Pilgrims Rest. The proposed gold mine in this town and crop spraying are problems in this area. Mr Marais said the Treur and Lisbon Rivers are both in good condition.	IUA 9 has been split into two IUAs. IUA 9 is now Orighstad catchment area and IUA 13 includes the Blyde River Catchment area.

62.	Will you be investigating the possibility of splitting IUA 9 into two?	Mr Rufus Nengovhela, (DWA)	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Ms Stassen said this will be investigated.	IUA 9 has been split into two IUAs. IUA 9 is now Orighstad catchment area and IUA 13 includes the Blyde River Catchment area
63.	The Treur wetland near Graskop is in danger due to a mining application for gold as well as illegal gold mining.	Mr Johan Engelbrecht, (project team).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Mr Marais added that land claims in this area could also be a problem in future. Ms Stassen said the Treur must be protected, because it is still in good condition.	IUA 9 has been split into two IUAs. IUA 9 is now Orighstad catchment area and IUA 13 includes the Blyde River catchment area (which accounts for protection of the Treur River).
64.	We must look at all the areas where we have completed Reserve Determination Studies for license applications. The DWA has a comprehensive list with GPS coordinates (not reliable) of all water use license applications (WULA). Mostly, only according to the names of companies. It will also show how many mining applications have been made for the Upper Olifants. This information will, however, be of assistance to this study.	Ms Barbara Weston (DWA)	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Ms Weston will provide the project team with the list of applications	The Classification project does not need this level of data, because classification project need a higher level of Reserve determination (intermediate and Comprehensive) than low confidence Reserves that were determined for individual license applications.
65.	We have a map listing all mining application in Mpumalanga that you may use.	Mr Francois Roux (MTPA)	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Mr Harris said this will be very useful for the socio-economic study as well.	The project team used data on mining activities availbale from the Council for Geoscience.
66.	Do we need to protect smaller rivers in protected areas such as nature and game reserves, because these areas are already being protected by law?	Ms Retha Stassen (project team).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Mr Marais said some of the rivers, such as the Klaserie, within a protected area originate from outside these protected areas. These upstream areas also need protection to ensure that the lower parts are protected. Negotiations are underway to create	These areas have been addressed through sub-nodes.

				a protected area near the Klaserie River and Sandspruit close to Mariepskop. Sedimentation is a big problem in the Sandspruit. Working for Water did a lot of research in the Sandspruit that could be useful to this study.	
67.	The rapids will be part of the capacity building in this study and we will liaise with the DWA before we go out for the field work.	Mr Trevor Coleman (Study leader of project team).	Meeting in Lydenburg with the MTPA and SANParks on 27 June 2011.	Meeting members agreed on this point.	Liaison was done. DWA accompanied study team on field visits.
68.	The water use data sourced during the Reconciliation Study of the Olifants Water Management Area is available and should be included in your study.	Mr Johan van Rooyen (DWA)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Mr Kyle Harris (Study team) said they are aware of the Reconciliation Study and will include this data once it is made available.	The Reconciliation Strategy water use data has been sourced and used in the Olifants Classification study.
69.	Please send documentation for meetings well in advance of a meeting so that it can be studied beforehand.	Various people	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Meeting members agreed on this point.	Meeting documentation has been sent out in advance.
70.	Rewrite the term services in your report so that it goes beyond households.	Dr Thomas Gyedu-Ababio (SANParks)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Meeting members agreed on this point.	This was addressed.
71.	Have you taken households into account that are from outside the WMA? For example, people visiting the Kruger National Park.	Mr Johan van Rooyen (DWA)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Mr Jackie Crafford (Study team) said this has been taken into account for this study.	No action required.
72.	Water for the generation of power under the heading electricity in the report comes from outside this WMA.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Meeting members agreed on this point.	Addressed as such in this study.
73.	Some of the water in this WMA is also transferred for use outside the WMA.	Mr Johan van Rooyen (DWA)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Mr Crafford said for the purpose of this study it is not important where the water from the Olifants is used. All water use is being measured. The Olifants River is seen as an asset and whether it is used outside or inside the WMA, it still impacts on	Addressed as such in this study.

				the water resource.	
74.	This study looks at the classification of water resources, but sometimes I get the idea it is a catchment classification study. How do you separate these two issues?	Mr Pieter Viljoen (DWA)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Mr Crafford emphasized that the focus is on water resources.	No action required.
75.	For the purpose of this study, the total area of wetlands in the Olifants WMA is taken as 72 000 hectares. Why not use the latest SANBI estimation of 120 000 hectares?	Mr Johan van Rooyen (DWA)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Mr Harris said this will be investigated and the SANBI study will be taken into consideration.	The SANBI estimate of 126,129 ha was adopted
76.	More time should be spent on groundwater resources, because there is great concern about the irrigation in the Delmas district due to over-abstraction. You should also investigate the groundwater resources belonging to mines.	Mr Johan van Rooyen (DWA)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Meeting members agreed on this point.	This was addressed through the scenario options proposed by the Reconciliation Strategy
77.	You must double check the PES data in your report, because the information does not look correct.	Mr Johan van Rooyen (DWA)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Mr Coleman said the latest PES EIS data released in June 2011 will be used to rectify the current information.	The latest information received from the 2010 PES/EIS update study has been used.
78.	The DWA officials must see to it that all project teams are using the same data, in other words, the most up-to-date information. We cannot have a situation where different project teams are using different sets of data.	Mr Johan van Rooyen (DWA)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Ms Shane Naidoo will see to it that this does not happen with the three classification studies.	There is continuous alignment of data in all the classification projects. The project leaders constantly check if the project teams are using the latest data and are aligned with the recent studies that have been undertaken by the Department such as the Olifants Reconciliation Strategy.
79.	It would be interesting to see the latest PES EIS data that was released in June 2011.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Mr Coleman said he is waiting for the official documentation and will send it on to Dr Pretorius when he receives it.	The PES/EIS spreadsheets with the data were sent to Dr Pretorius.
80.	I would like a copy of the report mentioned by Mr Harris: The nature, distribution and value of aquatic ecosystem services of the Olifants, Inkomati and Usutu to Mhlathuze water management area, DWA 2010	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Mr Harris said he will send a copy to Dr Pretorius.	Report was sent to Dr Koos Pretorius.
81.	This study by Anchor Environmental was never meant to	Ms Shane Naidoo,	Technical Task	Meeting members agreed on this	No action required.

	be a stand-alone project. It was the forerunner for the classification process.	(DWA)	Group Meeting, 7 July 2011, Loskop Dam	point.	
82.	It is important to have the correct figures when doing your modelling. I feel more research must go into your statistics on employment in the agricultural sector, because your figures are too low.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	This information will be revisited.	Employment figures were sourced from Statistics South Africa
83.	I do not agree with your statistics regarding the tourism sector. Something is wrong, because the Kruger National Park falls in IUA 12, yet there is no tourism statistics in your Table 19.	Dr Thomas Gyedu-Ababio (SANParks)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Mr Crafford explained that national accounting convention does not have an explicit tourism category. Tourism activities general form part of the accommodation, transport and retail sectors.	No action required
84.	Did you incorporate the Department of Trade and Industry figures are well?	Ms Carolyn Ah Shene, BirdLife South Africa	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Yes.	No action required.
85.	We must deal with all sectors in an equal manner and not be biased for whatever reason. The same methodology must be used and the same information/figures/data for each sector.	Mr Johan van Rooyen (DWA)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Ms Naidoo said the three classification project teams are in constant contact with each other.	No action required.
86.	I feel electricity should not be listed under your Key Economic Drivers.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Mr Crafford said this point will be investigated.	Power generation is a strategically important sector in the Olifants WMA and cannot be ignored.
87.	Industry should be separate from mining, because the whole of Witbank is there to support the generation of electricity.	Mr Pieter Viljoen (DWA)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Noted. This will be investigated.	The economic model was set up to analyse these sectors separately.
88.	Resource Quality Objectives must be used when looking at the water quality requirements of industry, because it has stricter water quality requirements.	Mr Pieter Viljoen (DWA)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Meeting members agreed on this point.	Resource Water Quality Objectives where available for the Olifants WMA have been used. (these are available for the Upper and Middle Olifants catchments).
89.	Domestic water use should be included in your list of Key Economic Drivers.	Mr Pieter Viljoen (DWA)	Technical Task Group Meeting,	Mr Crafford said this will be investigated.	This was done.

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90.	Has forestry been included with agriculture?	Mr Jan Potgieter, (Department of Agriculture, Forestry and Fisheries - DAFF)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Yes	No action required.
91.	The information on subsistence farming looks like old data. What information did you use?	Mr Jan Potgieter, (DAFF)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	The 2007 Agricultural census data (Stats SA) was used as well as the land cover data (CSIR 2001). Mr Harris said he sourced information from the DAFF and also the CSIR. Detailed information is available for Mpumalanga but not much for Limpopo. The main focus is water use, especially irrigation.	No action required.
92.	The agricultural sector realises there is no extra water available and therefore looks at water use efficiency and only using the best soils for irrigation.	Mr Jan Potgieter, (DAFF)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Meeting members agreed on this point.	No action required.
93.	Regardless of dry land agriculture not being declared as a stream flow reduction activity (SFRA), should it not still be investigated as it does reduce stream flow. Dry land agriculture does contribute to the economics of the catchment but then probably not to the economic value of the water resource itself. Rain water is the sole source of water but both dry land agriculture and forestry will reduce the volume of water available in the water resource and both contribute to the economic value of water in the water cycle of that catchment.	Mr Pieter Viljoen (DWA)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Meeting members agreed on this point.	Information about the extent of the dryland agriculture was important for calibrating the economic model. The scenario analysis focussed only on water resources.
94.	Clear definitions are needed for dry soil/dry land, because there is a difference between the dry land in the Upper Olifants compared to the area around the Loskop Dam. You cannot use European models in these areas. Look at the current monitoring of electrical conductivity (EC) levels. It is normal in the Upper Olifants but in the Loskop area it is a serious problem.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Meeting members agreed on this point.	Definitions used as per the Agricultural Census of StatsSA and DAFF.
95.	Did you link the cost of water pollution to air pollution such as acid rain? Eskom has models depicting acid rain.	Mr Jan Potgieter, (DAFF)	Technical Task Group Meeting, 7 July 2011,	No.	No action required.

			Loskop Dam		
96.	The cost of pollution goes further. Look at the cumulative impact of mines in the future.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Meeting members agreed on this point.	The water quality treatment model assumed continuous treatment of cumulative pollution.
97.	The Water Waste Discharge System is fundamentally flawed, because the funds received from it will not be spent in the area where the pollution takes place.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Meeting members agreed on this point.	No action required.
98.	A major concern is funding to keep the waste water treatment plants at mines up and running after the mines have ceased operations.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Mr Crafford said discount rates are often open to abuse. He will be using a standard discount rate methodology, which tests discount rate scenarios based on Reserve Bank discount rates.	No action required
99.	How do you construct your socio-economic model? Do you only look at agricultural sectors that can influence water resources?	Mr Johan van Rooyen (DWA)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Mr Crafford said they must be pragmatic and only look at information that can influence the level of a Management Class (MC).	The economic model adjusted for all salient aspects of scenarios modelled (not only agriculture), including that of the Reconciliation Strategy
100.	Has a projection been done for 50 years from now when all coal has been mined out? Will the scenarios change? There is still, however, a lot of coal left to be mined in this WMA.	Dr Garth Batchelor, (Mpumalanga - Economic Development, Environment and Tourism)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Mr Crafford said a robust model will be able to handle this projection.	Two 2035 scenarios were tested.
101.	We must have a scenario to project what the catchment will look like 50 years from now and also set management objectives for now until 50 years from now. Even if there is still coal available for the next 200 years, there should be no scope-creep by the mines. The mines must operate according to our terms.	Mr Pieter Viljoen (DWA)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Two 2035 scenarios were tested.	Two 2035 scenarios were tested.
102.	The three Management Classes (MC) could also have different costs for the same type of pollution. In a pristine MC I, for example, it would be heavy, less in MC II and even less in III.	Mr Pieter Viljoen (DWA)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	It's true, the three Management Classes (MC) will have different costs for the same type of pollution.	No action required.
103.	Why are we always mentioning the Reserve last? We	Dr Thomas Gyedu-	Technical Task	The Reserve and ecology have	The EWR has been

	should first determine the needs of the Reserve and ecotourism before we look at the need of industry and mining. In terms of scenario development, the Reserve is very important.	Ababio (SANParks)	Group Meeting, 7 July 2011, Loskop Dam	priority for protection.	considered in the scenario analysis.
104	The resilience test of the classification system will be when there is a severe ten year drought. There will be less water with the same pollution meaning that the pollution will be more concentrated in the remaining water. This could mean that a MC I could deteriorate to a MC III due to water quality deterioration.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Mr Johan van Rooyen said there are rules in Reserve Determination that must be followed during droughts to counter water quality deterioration.	No action required.
105	Double check your data regarding the hectares of underground and open cast mining for this WMA. Historical mining data is also necessary for this study, because old mines are decanting in Witbank.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	Ms Naidoo and Mr Coleman said the Department of Mineral Resources and the Chamber of Mines will be contacted to verify these statistics and to get information regarding old mining operations.	The available data was collated from the mining companies for use in the study.
106	Study the draft Report on Socio-economic Evaluation and tell us if there is anything missing. Please due this by 15 July 2011	Ms Shane Naidoo, (DWA) and Mr Jackie Crafford (Study team)	Technical Task Group Meeting, 7 July 2011, Loskop Dam	All feedback received from PSC members were incorporated	All feedback received from PSC members were incorporated
107	Is PSC scrutiny needed before moving on to the next step of the WRCS?	Mr Matome Makwela (Chamber of Mines)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Ms Nyamande said the PSC does discuss the various steps before moving on to the next step as is taking place in this meeting today.	No action required.
108	Is the 60 day comment period additional to the four stakeholder workshops that will be held?	Mr Duane MacPherson (Anglo Coal Environmental Services)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Ms Nyamande said the four stakeholder workshops would be held up until step 6 of the WRCS process to discuss the various scenarios with the public. In addition to this, before step 7 the proposed management classes will be gazetted for a period of 60 days when final public comment can be given.	No action required.
109	Why did the study create its own four socio-economic zones and not use the zones created by the provinces.	Mr Simphiwe Mazibuko (DWA)	Meeting 2 of Project Steering Committee at Loskop Dam on	Mr Jackie Crafford (Study Team) said it was necessary to do this, because two provinces (Mpumalanga and Limpopo) intersect the study area.	No action required.

			8 November 2011.	These zones were discussed at the PSC meeting 1 in February 2011 and at the Technical Task Group meeting in July 2011 as an intermediary step to delineate the IUAs.	
110	Tourism is not listed as one of the main socio-economic zones.	Mr Simphiwe Mazibuko (DWA)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Crafford said tourism activities are spread over all 13 Integrated Units of Analysis, are described within the zonal descriptions, and are incorporated in the socio-economic analysis.	No action required.
111	When was the ecological data used in this study collected and how long did it take.	Mr Duane MacPherson (Anglo Coal Environmental Services)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Ms Stassen said that the Comprehensive Reserve study (2001) data was collected over a three year period, the PES/EIS data over a three month period in 2010. A few RAPIDS were also done during this year which took about three months to complete. It is the most recent and best ecological data available for this study area.	No action required.
112	I am concerned about IUA 10 (Lower Olifants) being an Ecological Category (EC) C, because it is at the receiving end of activities higher up on the Olifants River. We must decide if we want to maintain it at an EC C, because then other measures must come into play to keep it at that level.	Mr Sydney Nkuna (DWA: Mpumalanga)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Coleman said most of the tributaries on the Lower Olifants are an EC B which helps to improve the water of the Lower Olifants.	No action required.
113	Are there any 'hotspots' in the study area that could be a problem in future?	Mr Duane MacPherson (Anglo Coal Environmental Services)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Coleman and Ms Stassen said there are certain problem areas in the Upper Olifants and the main stem of the Middle Olifants that must be improved, because it is an EC E. Mr Coleman said this study is not trying to solve issues, but setting targets for other people to solve.	No action required.
114	What feasibility studies were done for the ESBC scenario?	Mr Ockie van den Berg (DWA)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November	Mr Coleman said this was done during the socio-economic modelling. We need to be realistic in our scenarios, because we cannot have all of the rivers as a MC of I.	All scenarios tested were based on the recommendations of the Reconciliation Strategy.

			2011.	Developments and the water situation in a specific IUA must be taken into account. If we make all the MCs too high, then we will need too much water to maintain those MCs. Then there is the question of where this additional water will come from, because the Water Balance of the Olifants WMA already has a deficit of 160 million m <sup>3</sup> per year.	
115	Rivers downstream of dams are difficult to manage. How were these areas treated in the study?	Mr Ockie van den Berg (DWA)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Coleman said floods were taken out of the EWR flows but the drought flows and freshettes required were maintained in the modelling.	No action required.
116	Did you use data from the National Freshwater Ecosystem Priority Areas (NFEPA)?	Mr John Dini (SANBI)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Coleman said it was used and it made a valuable input to the study. Information from the Mpumalanga Tourism and Parks Agency as well as the Present Ecological State and Ecological Importance & Sensitivity (PES EIS). Study recently completed by the DWA for the Olifants WMA were also used.	NFEPAs were considered and assessed as part of the Olifants study.
117	The main stem of the Olifants inside the KNP is a EC C and its tributaries are a EC B. What is preventing us from improving the EC of the main stem to a B?	Dr Thomas Gyedu-Ababio (Kruger National Park - KNP)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Coleman said not enough flow reaches the Olifants inside the KNP.	A scenario with the EC B in IUA 12 was investigated as a scenario.
118	Were the raised dam level data used for the Flag Boshielo and Loskop Dams?	Mr Ockie van den Berg (DWA)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Coleman said the modelling did include the capacity of the raised levels of the two dams.	No action required.
119	Why will the transfer of water from the Vaal River System to the Olifants cause a R1 billion drop in the Gross Domestic Product (GDP) of the region?	Ms Lerato Bapela (DWA)	Meeting 2 of Project Steering Committee at	Mr Kyle Harris (Study Team) said the Water Balance has a deficit of 160 million m <sup>3</sup> per year and transferring	No action required.

			Loskop Dam on 8 November 2011.	the water at R18 per m <sup>3</sup> will result in a drop in the WMA GDP of approximately R1 billion.	
120	Where will this R1 billion be sourced to pay for an eventual transfer of water.	Mr Yakeen Atwaru (DWA)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Harris said that the current assessment split the required cost across all sectors of the WMA economy, which resulted in the R1 billion decreases in GDP.	No action required.
121	Is a transfer the only option available for the Olifants WMA?	Ms Lerato Bapela (DWA)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Harris said there are many other options available that are currently being investigated by the Olifants Reconciliation Strategy Study. Mr Coleman added that we need 160 million m <sup>3</sup> per year if we want to maintain the Olifants WMA in its current state. There are cheaper options available, which are being proposed by the Reconciliation Strategy. These include amongst other water conservation and demand management, removal of alien vegetation, use of excess mine water and construction of new dams.	A hierarchy of reconciliation options are being considered in the scenario analysis (as defined in the Reconciliation Strategy Report).
122	There is an estimated 600 million m <sup>3</sup> excess water in the underground mine compartments in the study area that can also be used.	Mr Duane MacPherson (Anglo Coal Environmental Services)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Coleman said the problem with this underground water is that it will take a very long time for the compartments to recharge once it has been pumped out.	The available excess mine water in the Upper Olifants Catchment was considered in achieving reconciliation.
123	Were only river systems investigated in the study?	Mr Duane MacPherson (Anglo Coal Environmental Services)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Harris said wetlands and pans were also incorporated, through the use of the NFEPA database.	No action required.
124	This study shows that the agricultural sector only contributes R 6,5 billion to the economy of the Olifants WMA. That figure is far too low and not an accurate reflection of agriculture's role in the study area.	Mr Jan Potgieter (DAFF)	Meeting 2 of Project Steering Committee at Loskop Dam on	Mr Harris said that the downstream value adding activities of agriculture is significant. This is captured in the multiplier effect of agriculture.	The project team liaised with Mr Potgieter and addressed his concerns. See point 21 above.

			8 November 2011.	Mr Crafford said the best available data and sources were used to come up with this information. The project team will however meet with Mr Potgieter to discuss his concerns.	
125	The study should also investigate what sector invests its money in the Olifants WMA, because the coal industry provides profit to investors living outside the Olifants WMA and even overseas. Agriculture keeps its profits in the region.	Mr Jan Potgieter (DAFF)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Crafford agrees and said the same can be said about all the power stations in the Olifants WMA that pollute the local water and air, but provide energy to the whole of South Africa.	The study included all economic activities that take place within the study area. Their contribution to national GDP was assessed.
126	I am concerned that agriculture could lose its allocation of water, because the coal industry provides a far better return on the water than agriculture.	Mr Jan Potgieter (DAFF)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Crafford said this is unlikely to happen and one should not allocate water based on a single criterion, such as willingness to pay for water, alone. Such a comparison is not even being investigated. He said what is of importance to the study is the multiplier effect caused in the agricultural sector when commercial production value is added to agricultural products. Some rural communities also do not generate any income with the water they use, but the ecosystem services provided by rivers to them are very important and, in fact, a matter of life and death. They are highly dependent on the rivers. So, it does not matter if one sector is bigger or smaller than the other. All sectors need water.	No action required.
127	Coal is a finite resource and power stations have a limited lifespan. Will the study team be investigating MCs 50 years from now to see what the changes in the MCs could be?	Mr Duane MacPherson (Anglo Coal Environmental Services)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Crafford said this was not factored in, but it could be done with the current economic model as a future scenario without coal and power stations.	Two 2035 scenarios were tested.
128	Is the 8% margin for error built into the economic model enough to cater for all the mines using water without	Mr Siphos Skosana (DWA)	Meeting 2 of Project Steering	Mr Harris said information has been received from the Chamber of Mines	No action required.

	water use licences.		Committee at Loskop Dam on 8 November 2011.	and drawn from the annual reports of the mining houses affiliated to the chamber, to come up with these statistics. Only production output was taken. The 8% margin should cover any illegal operations that were not counted.	
129	Can anything be done to reduce the 8% margin for error?	Mr Donald Mabada (DWA: Limpopo)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Crafford said the 8% is mostly for the sector called 'other commerce', because it is impossible to count all the businesses in an area and work out their turnover. It is relatively easier with agriculture and with the mining industry, because water Statistics SA data, Council for Geosciences data and annual report data could be used. Data for the two provinces were used but there will always be uncertainty when measuring anything. However, when comparing scenarios, the nature of this error becomes less important as the comparison of scenarios eliminates the error.	No action required.
130	Was the cost of pollution included?	Mr Simphiwe Mazibuko (DWA)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Crafford said it was included.	No action required.
131	What is meant by carbon sequestration under Ecosystem Services?	Mr Simphiwe Mazibuko (DWA)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Harris said it is where the environment naturally absorbs carbon in the riparian zone of the river system.	No action required.
132	How was the water discharge charge system (WDCS) incorporated into the economic model?	Ms Shane Naidoo (DWA)	Meeting 2 of Project Steering Committee at Loskop Dam on	Mr Crafford said the concept of cost of load reduction to an applicable resource water quality objective was used.	No action required.

			8 November 2011.		
133	What is the definition that will be used for 'future development' in the additional scenarios.	Mr Ockie van den Berg (DWA)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Coleman said the Olifants Reconciliation Strategy 2030 water requirement projections will be used. The scenarios will be described appropriately to indicate this.	Scenarios have defined as such.
134	Is there an international agreement for the Olifants River System?	Ms Lerato Bapela (DWA)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Nditwani said there is a very old agreement signed between South Africa and Portugal on behalf of Mozambique. Current relations between the two countries are based on good faith. Dr Gyedu-Ababio said it is just a matter of time for Mozambique to start looking at water quality and Reserve issues in the Olifants River.	No action required.
135	If MCs are too stringent, then it will become very expensive for municipalities and industry to treat the wastewater discharge to this strict standard. It will, for example become very expensive for all the upstream users in all the IUAs above the KNP to have water resources of a MC I.	Ms Tebogo Ndamase (Eskom)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	There should be a compliance by different water users to a set MCs.	No action required.
136	Are the yield model estimates correct?	Mr Jan Potgieter (DAFF)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Coleman said the hydrological model has been calibrated on the available flow data and he is confident that it is correct.	No action required.
137	It will become a problem if the EC below the De Hoop dam is increased due to the economic and social commitments of that dam.	Mr Ockie van den Berg (DWA)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	A balance has to be sought amongst ecology, economic and social commitments.	No action required.
138	The PSC meeting decided on two issues: <ul style="list-style-type: none"> <li>• Agree with the ESBC ECs of the 13 IUAs; and</li> <li>• Confirm that the Study team can continue with the scenarios discussed today.</li> </ul>	All attendants	Meeting 2 of Project Steering Committee at Loskop Dam on	All present agreed the Study Team may proceed with the proposed additional scenarios	Analysis of alternate catchment configuration scenarios has been undertaken by study

	.		8 November 2011.		team as agreed upon by PSC.
139	<p>The meeting proposed that the following changes be investigated by the Study Team as alternate ESBC ECs in the following IUAs:</p> <ul style="list-style-type: none"> <li>IUA 3: Change the EC from C to a B.</li> <li>IUA 6: Change the EC from D to a C.</li> <li>IUA 11: Change the EC from D to a C.</li> <li>IUA 12: Change the EC from C to a B.</li> </ul>	All attendants	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Coleman said the analysis will be undertaken with the alternate ecological categories as proposed and the results will be discussed at the next PSC meeting in May 2012.	Analysis of alternate catchment configuration scenarios has been undertaken by study team with proposed ECs.
140	Is there enough water in the Vaal River System to assist the Olifants with additional water?	Ms Tebogo Ndamase (Eskom)	Meeting 2 of Project Steering Committee at Loskop Dam on 8 November 2011.	Mr Nditwani said there will be enough water in the Vaal. There are currently four reconciliation studies (Olifants, Vaal, Crocodile West and Luvuvhu & Letaba) being undertaken by the DWA and these studies interact with each other.	No action required.
141	Why are the Irrigation boards of the Middle Olifants Not involved in this study?	Mr Johan van Stryp General Manager Loskop Irrigation, GROBLERSDAL 0470	Email on 7 November 2011	National organisations of agriculture such as AgriSA, the Tranvaal Landbou-Unie and the Nasionale Water Forum are invited to meetings, because it is not possible to invite all interested parties at this stage. Public meetings are planned for April/May 2012 where all interested parties will be invited to.	No action required.
142	<p>We need to have access to the financial and predictive models and the information that was used to populate them. The setting of the water quality requirements for the Olifants is going to have impacts on the receiving environment, economy of the catchment and human activity for decades to come.</p> <p>This access includes the sources of the information and key assumptions, the reliability of the information, degree of confidence in the assumptions and information, time frames used as well as discount rates, inflation costs, depreciation costs, sensitivity analysis and details of the different scenarios.</p> <p>This is critical and was discussed at the last meeting, yet no information has been forthcoming. It was indicated at</p>	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Email on 8 November 2011	Ms Nyamande responded by email: The economic models were discussed at the second Project Steering Committee held at Loskop Dam on 8 November 2011 for the first time with PSC members. Version 1 of the Economic Model will be ready after the DWA has approved it and will be sent out with the Ecologically Sustainable Base Configuration (ESBC) Report and accompanied by a narrative document early in December 2011. This model will also incorporate	Technical Task Group meeting 2 was held on 31 January 2012 to address concerns.

	<p>the last meeting that a specialized focus meeting will be held on this matter, but that has not materialized. You cannot continue on this path and then later say that we are too far down the road to change now. Consultation means , inter alia, that meaningful exchange of ideas on a reciprocal basis should happen at an early enough point in the process so that the outcome of the consultation can still influence the process. This is not what is happening now.</p> <p>I have unfortunately had an experience where I was strung along in a process where the model would be made available, only for us to be refused access on the day that we were supposed to have received the model. Golder was also the consultants there. I will not allow this to happen again. My time is precious, as is everyone else's. If this is going to be a sham process, then rather we find it out at the beginning and not waste time. Please ask the relevant consultants when we can have access to these models.</p>			<p>questions and suggestions raised by the PSC on the 8 November. We will have another Technical Task Group meeting early in 2012 where Version 2 of the Economic Model will be discussed with the stakeholders.</p>	
143	<p>The Environmental Management Framework for the Olifants-Letaba Catchment Area must be considered in this study.</p>	<p>Dr Koos Pretorius, (Federation for a Sustainable Environment)</p>	<p>Email on 9 December 2011</p>	<p>The Framework will be considered</p>	<p>Framework was reviewed</p>
144	<p>We are noting that these are serious allegations made in terms of the due process in classification raised by Koos Pretorius. We are noting these in terms of the Shared River Initiative for all the rivers of the Lowveld funded by the WRC. We raise your attention to the need for CLASSIFICATION to be at a far higher level than consultation as proposed by the IAP2 framework for public participation (and for which the WRC has provided a set of guidelines).</p>	<p>Mr Derick du Toit Project Manager AWARD</p>	<p>Email on 9 December 2011</p>	<p>Ms Nyamande responded by email: What are your concerns specifically in relation to the Olifants Classification Project? All data currently available in this study has been shared with Dr Pretorius. All questions and queries from stakeholders as well as Dr Pretorius have been answered as best as can be answered in a study that is currently at its halfway point. In the email dated 11 November 2011 to Dr Pretorius it was mentioned that the next batch of economic information will be available in December 2011 and</p>	<p>Technical Task Group meeting 2 was held on 31 January 2012 to address concerns.</p>

				<p>more specifically on 19 December 2011. This information, four separate spreadsheets with raw data and a summary document will be sent to all stakeholders for comment. The various scenarios will only be run in the next phase of the work. This means that analyses done to date have only been for the purpose of demonstrating the methodology. At the previous Project Steering Committee meeting on 8 November 2011 (that Dr Pretorius could not attend due to farming commitments) we took many comments and recommendations from the PSC members and these have already been incorporated into the analysis. The data we will send on 19 December already contains much of those recommendations.</p>	
145	<p>Is it possible to explain to me the seeming discrepancy between the figures in the presentation of 8 November 2011 and the table as to the PES?</p>	<p>Dr Koos Pretorius, (Federation for a Sustainable Environment)</p>	<p>Email on 9 December 2011</p>	<p>Mr Coleman responded by email: The PES per sub-quaternary catchment in the table is the PES that was used in the assessment and determination of the ESBC ecological category. The table of hydro nodes depicts the summary of the information that includes the 2010 PES.</p> <p>In the Olifants WMA, the selected EC was based on the assessment of the present ecological state (PES) and ecological/conservation importance of water resources within the IUAs. The PES of the water resources (at the various ecological water requirements sites and selected hydro nodes) in the Olifants WMA was used as the base condition for</p>	<p>Technical Task Group meeting 2 was held on 31 January 2012 to address concerns. ESBC report was update to reflect alignment.</p>

				<p>the yield analysis. The ESBC per IUA (aggregated PES in the presentation) is representative of the biophysical nodes and associated catchment areas within that IUA. The ESBC EC per IUA however does not necessarily aggregate to the sum of the individual PES categories as the representative nodes do not cover the full catchment area of the IUA. The overall ESBC EC is a proportional aggregation of the nodes and other areas that are in many instances in lower ecological categories. Where a biophysical node has a higher PES and/or a higher ecological importance than the overall aggregated IUA ESBC ecological category, this more protective ecological category was accounted for using sub nodes.</p>	
146	<p>Your agricultural figures are wrong. Your treatment cost is also wrong in these last spread sheets you have sent me on 19 December 2012.</p>	<p>Dr Koos Pretorius, (Federation for a Sustainable Environment)</p>	<p>Email on 19 December 2011</p>	<p>Mr Harris responded by email: The agricultural figures were calculated from a variety of sources as documented in the Preliminary BID document. We consulted with individuals from the Department of Agriculture, Forestry and Fisheries (DAFF) and AgriSA and they were happy with our methodology. We are in the process of scheduling a meeting with officials from DAFF in order to clarify the agricultural areas, but this will only happen in the New Year. The water treatment costs were calculated from municipal water treatment rates. The water quality model I sent to earlier calculated the treatment costs.</p>	<p>Technical Task Group meeting 2 was held on 31 January 2012 to address concerns.</p> <p>Please refer to point 21.</p>

				As I explained in the Executive Summary of the Preliminary BID document, the development of the models is an iterative approach and like we have said in the PSC meetings if you have better information and a better methodology please let us know. A Technical Task Group meeting has been scheduled for 31 January 2012 where you will be consulted on the contents of the spread-sheets.	
147	<p>In the spread sheet “ Olifants water quality model” in sheet Extended initial modelling – the cost of AMD water treatment is stated as R1.76/m<sup>3</sup> in column D. Where does this figure come from?</p> <p>When I increase that 10 fold (the real cost) it makes a smaller difference to the cost in column AV of the same spread sheet which show the treatment cost. This is because of the convoluted method of calculating the cost it seems in what is being reduced – column G, AF and AK. How these figures were gotten at is even a more convoluted process.</p> <p>Instead of calculating the amount of AMD that will have to be treated to an agreed TDS at a specific cost ( DWA must have this information from the mines and the water use licenses, DMR certainly has it and DWA can get it through a directive from the mines if they want to, or we can use the GIS system to map the land surfaces), we have a spread sheet that is very difficult to understand and where there is no assumption sheet which explains the inputs and where it is sourced from and that all the other spread sheets uses. To make any assumptions will mean that every spread sheet will have to be interrogated to see that the inputs have also been changed. An almost impossible task.</p> <p>These spread sheets are going to have to be explained in great detail, and looking at the other spread sheets that use some of this information, and this spread sheet that uses from those spread sheets, I can see us sitting for a</p>	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Email on 19 December 2011	This will be discussed at the meeting on 31 January 2012.	Technical Task Group meeting 2 was held on 31 January 2012 to address concerns.

	<p>week going through the assumptions. Then there are the scenarios?                  The TDS in the column AS of the above sheet also states what the concentration after reduction will be – yet how was this come to? Who decided it was acceptable and on what basis was it found to be acceptable. These are certainly not acceptable to irrigation – according to DWA’s own criteria, or industrial, or the ecology. Who was consulted on these baselines and with whom was it agreed?</p>				
<p>148</p>	<p>There are numerous spread sheets that you had sent me. I work with simple spread sheets on the farm, but know how complicated they can become and how a small change in one assumption can make a huge difference at the end. We, the Interested and Affected Parties (I&amp;APs) therefore need to understand how the model and other spread sheets work and operate and also the input data that went into the spread sheets. There was an undertaking at the beginning of this process to do just that. It is not being done.                  I never build a spread sheet without a separate assumption area which is clearly visible. For some reason the spread sheets sent to me lack this. In the Olifants Hybrid EEA spread sheet the assumption worksheet is empty. You are thus expecting of the I&amp;AP’s to sit and go through every spread sheet and see whether it is an assumption or a calculation and if a calculation – then from what assumption it was calculated. This is an impossible task to perform for I&amp;AP’s.                  Can you thus please send me the following in a table:</p> <ul style="list-style-type: none"> <li>• Assumption</li> <li>• Spreadsheet name</li> <li>• Worksheet name</li> <li>• Cell reference</li> <li>• Source</li> <li>• Verification done/not done</li> <li>• If done - source</li> </ul> <p>I also need to understand on what basis the baseline classification was selected as D, and not a baseline that</p>	<p>Dr Koos Pretorius,                  (Federation for a Sustainable Environment)</p>	<p>Email on 5 January 2012</p>	<p>Mr Crafford responded by email: Thank you very much for all your comments and questions relating to the Olifants WRCS socio-economic data.                  I have carefully read through your comments and the most appropriate way forward is to discuss them in a forum such as the Technical Task Team Meeting scheduled for 31 January 2012.</p>	<p>Technical Task Group meeting 2 was held on 31 January 2012 to address concerns.</p>

	will supply water that is suitable for the use of the water by current and future users.				
149	A full written response in the Issues and Response Report is required. The record of the word “noted” in the “Responses” column is not sufficient. There needs to be more details on how the issue was addressed.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Ms Shane Naidoo (DWA) said in future this term will be avoided and the existing Issues and Responses Report (IRR) will be reviewed to explain and elaborate on responses with the answer “noted”. Mr Trevor Coleman (Study Team) suggested that an “Action” column be added to the IRR. The meeting agreed and the study will add an action column to the Issues and Response report.	IRR to be updated with action column
150	Concern was raised about the process followed with respect to the economic information that is being used in the study. Was this done in a consultative or collaborative manner?	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Jackie Crafford (Study Team) said that at the first TTG meeting in July 2011, members were consulted regarding the sources the study team were going to use. People who attended the TTG meeting were also asked to send data to the study team if they thought it is usable in the study. This offer still stands. If someone has data that can be used in this study, –this can still be sent to the study team. The study team has collaborated with various organisations such as the Chamber of Mines, Council for Geosciences and the Department of Agriculture Forestry and Fisheries to get as much information as possible. Ms Naidoo said that the DWA supports a consultative, collaborative and transparent process and this is the only process the DEWA endeavours to proceed with.	Study team will incorporate any relevant data that comes to light.
151	There are too many acronyms in the study.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 31 January	For the next meeting, the study team will draw up a page with all acronyms used in the study.	List will be sent to all members before the next meeting.

		Environment)	2012, Loskop Dam		
152	Input data or raw data used for the economic models must be put on paper so that it is easily understood? We need to understand this data before a qualified decision can be made.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said all background data was emailed to Project Steering Committee (PSC) members in December 2011 and all data sources were referenced. He realises the data and models are very complex. Mr Crafford said that during the scenario phases to follow he will rework the data and model outputs into a more user-friendly format for PSC members.	Model outputs to be made more user friendly
153	There must be consistency in the relationship between the Ecological Category and Management Class as it is being applied across the different Classification studies.	Mr Dana Grobler (Blue Science - Olifants Doorn Study Team)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Coleman responded that it is aligned but in the Olifants WMA a decision was taken to use the PES as the base scenario rather than using a Category D (Class III) scenario. He said some water resources in this study area were in a higher protection category and will be accommodated by sub-nodes. In terms of the guidelines the following was applied: <ul style="list-style-type: none"> <li>• Ecological Category A or B: Class I</li> <li>• Ecological Category C: Class II</li> <li>• Ecological Category D: Class III</li> </ul> Ms Naidoo said this classification study uses the same system as the other studies being done.  Dr Thomas Gyedu-Ababio (SANParks) said the Management Classes will become very important for the management of the IUAs.	No action required.
154	Where did the Ecological Scenario Base Case (ESBC) definition originate from and how was the ESBC	Dr Koos Pretorius, (Federation for a	Technical Task Group Meeting,	Mr Coleman said that the minimum requirement and configurations for	No action required.

	<p>established?</p>	<p>Sustainable Environment)</p>	<p>31 January 2012, Loskop Dam</p>	<p>the ESBC as per the classification guidelines are based on the lowest level of ecological protection (Category D). However in terms of the Olifants IUAs the lowest level of protection (Category D) was not used as the ESBC but rather the PES was used as the base case. Mr Coleman explained that based on the ESBC the Management Class is either moved up or down (corresponding change in ecological category) to test various scenarios. Mr Grobler added that the ESBC is the theoretical starting point of creating scenarios Where the PES Ecological Category was an "E", this was lifted to a "D", because a "D" is the minimum Ecological Category that is considered sustainable. The PES within in each sub-quaternary catchment in an IUA was aggregated to an overall ESBC for the IUA. Mr Johan van Rooyen (DWA) agreed and said the issue is sustainability.</p>	
<p>155</p>	<p>Where does the word "acceptable" come from and to who is it "acceptable"? The Upper Olifants is 30% eutrophic. This cannot be acceptable to anybody. I am not happy with the use of the term "acceptable".</p> <p>If we say the Loskop Dam is a "C" then we are going to struggle. The problem is that Loskop already struggles with eutrophication. An Ecological Category C allows for total dissolved solids (TDS) of up to 650 mg/l. Currently the TDS in the Loskop Dam is around 300. It will not be acceptable to water users of this dam to increase the TDS.</p>	<p>Dr Koos Pretorius, (Federation for a Sustainable Environment)</p>	<p>Technical Task Group Meeting, 31 January 2012, Loskop Dam</p>	<p>The ESBC is based only on ecological sustainability (acceptable) and does not consider other water quality user requirements in the formal classification process. Once the class is established the Resource Quality Objectives (RQOS) are set to address the requirements of all users. This could imply that a stricter water quality objective is required to protect a specific user. A catchment management strategy is then developed to achieve the RQO.</p>	<p>The lower of the RWQO set in the Upper Olifants and the EC requirements were used in the Scenarios.</p>

				Mr Van Rooyen said if Ecological Category C allows for a TDS of 650 mg/l, then it means the water quality TDS range for ecology can go up to 650 mg/l and still be classified as a C. The crux of the question is if the TDS can be allowed to go up to 650 mg/l. This is where the RQO sets this limit.	
156	Is the ESBC your worst case scenario?	Mr Ramin Pejan, Association for Water and Rural Development (AWARD)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Coleman said the ESBC is the base configuration. The EC could be lowered to a D throughout the catchment which would be equivalent to a MC 3 for all IUAs. This can be considered as worse than the ESBC.	The Scenario with an MC 3 in all IUAs was assessed.
157	The water Eskom uses for its power stations is transferred from outside the Olifants WMA	Mr Johan van Rooyen (DWA)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Coleman responded that this is accounted for in the water balances.	No action required.
158	Did the irrigation areas figures I sent you make any sense.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said that data provided by the DWA Reconciliation report was used, the area under irrigation quoted in this report exceeds the irrigation estimate sent by Dr Pretorius.	No action required.
159	Citrus and other permanent crops cannot be accounted under multi-cropping.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said this will be adjusted to reflect that.	This was revised.
160	What are field crops?	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said field crops include maize, wheat, etc. Maize was used as a basis for this study. This was accepted by the meeting.	No action required
161	There is a big variation in yield between various years in the citrus industry.	Mr Dries Enslin (Agri Limpopo).	Technical Task Group Meeting, 31 January	Mr Crafford said for this study, the 2010 data were used, but agrees there can be annual variations that	Study team to address as per response.

			2012, Loskop Dam	are difficult to incorporate. During the following phase of evaluating scenarios, the team will include commodity price graphs for purposes of sensitivity analysis.	
162	What about mines outside the study area using water from inside the study area?	Mr Tendani Nditwani (DWA)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Coleman said that these mines were not included in the current base case. The meeting discussed the principle around where the GDP of the areas outside the catchment using Olifants water should accrue. The principle adopted was that the GDP should accrue to the catchment supplying the water. This will be adopted in the scenario analysis.	To be addressed in the scenario analysis
163	Mines are currently being planned outside this Water Management Area (WMA) which will be supplied with water from inside the Olifants WMA. The economic implications of this use to the Olifants WMA must be investigated.	Mr Bertus Bierman (Anglo American)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Van Rooyen agreed and said the economic consequences for mines outside this WMA must be taken into account. A higher Management Class could affect these outside mines negatively.	As per point 14. These economic consequences were incorporated.
164	The same set of rules regarding what water is inside or outside a WMA must apply to all WMAs.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Van Rooyen agreed and said the Classification Study of the Vaal River System should add the water delivered to the Eskom power station in the Olifants to the Vaal GDP figures. Mr Crafford said that the team will provide economic information for all relevant activities inside and outside the WMA. It is for the PSC to decide how to use that information in decision-making.	Mr Crafford to provide economic information for all relevant activities inside and outside the WMA in the report
165	Mines producing precious metals generate concentrate and the value is only added outside the WMA. This will also influence your economic model.	Mr Bertus Bierman (Anglo American)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said this is a problem economists have and the main reason why GDP is normally only calculated for a country as a whole and not per region. However, the project team will address this matter by evaluating the multiplier effect of economic activities both inside and	Study team met with Mr Bierman to address this matter.

				outside the WMA.	
166	Coal mines are end users of water and still use water after mine closure. Has this been included in the 50 year projections? The only exception is Anglo American that recycles water near Witbank.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said this has been included as the cost of water quality under Ecosystem Services in the Economic Model.	No action required
167	Why did you include "Livestock watering and grazing" in your Ecosystem services list?	Mr Jan Potgieter, (Department of Agriculture, Forestry and Fisheries - DAFF)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said these activities related to resource-poor farming activities.	No action required
168	Were wetlands and pans investigated?	Mr Duane MacPherson (Anglo Coal)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said these were included as well.	No action required
169	Did you include water use such as informal car washes and informal laundries in your economic model?	Mr Ramin Pejan, AWARD	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said domestic water data for urban and rural was obtained from the DWA and that these uses would be included in that data.	No action required
170	Where did you obtain your public health statistics?	Mr Ramin Pejan, AWARD	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said that the project team did not do a public health analysis but that ecosystem services values were sourced from the Ecosystem Services valuation study from the Department of Water Affairs. It is assumed that the public health aspects are included in the figures reported.	No action required
171	Did you investigate the aesthetic value of water as was done in an earlier study in this WMA (Jane Turpie Report)	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said this was done.	No action required
172	What value was given to wetlands?	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said wetland ecosystem services values were sourced from the Ecosystem Services valuation study from the Department of Water Affairs. Dr Pretorius offered to send	No action required.

				information on the value of wetlands to Mr Crafford.	
173	Did you include forestry plantations in your model?	Mr Jan Potgieter, (DAFF)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said it was included under "Other Agriculture".	No action required
174	How do the Ecological Categories and Management Classes fit into each other?	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	EC A and B = MC I EC C = MC II EC D = MC III This is as per the classification guideline.	No action required.
175	Reverse Osmosis is used in the economic model for waste water treatment, which is expensive. There are less expensive methods that can be used to reduce the cost of treatment.	Mr Henk Lodewijks (Olifants River Forum and Anglo Coal)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said this will be further investigated based on best available information.	The project team met with Anglo to discuss water treatment costs. An alternative cost regime was adopted.
176	In terms of the modelling, up to what level is the wastewater treated?	Mr Ramin Pejan, AWARD	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said up to the discharge water quality required to achieve the ecological category set in the ESBC.	No action required.
177	We need better quality of water in this WMA. Poor water quality has been identified as the reason for the recent crocodile and fish deaths. Farmers exporting cut flowers also need high quality water.	Dr Thomas Gyedu-Ababio (SANParks)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said this is the reason why water quality must be improved in the WMA. In the economic modelling, the water quality costs required to treat the water to meet the ecological sustainable category (ESBC) have been included. Mr Coleman said the bottom line is that we need an ecologically sustainable system, and if the ecological categories are met there should not be fish and crocodile deaths.	No action required.
178	You can also study the EU guidelines on water quality and the DWA guidelines on water quality will also be helpful to your modelling.	Mr Dries Enslin (Agri Limpopo) and Dr Koos Pretorius, (Federation for a	Technical Task Group Meeting, 31 January 2012, Loskop	Mr Crafford said this will be studied.	Mr Dries Enslin to send EU guidelines to study team. The information was received and the

		Sustainable Environment)	Dam		analysis updated.
179	The cost of not having a healthy environment should be investigated. This for instance will include the cost of drinking bottled water, and the deterioration in aesthetics	Mr Jannie Coetzee (Mpumalanga Tourism and Parks Agency)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford agreed that this is important, but it is not possible to do within the scope of this project. Mr Crafford further reiterated that the main reason for implementing the WRCS is to ensure a sustainable water resource environment.	No action required.
180	Who will pay for the treatment costs that are mentioned in your modelling?	Ms Tebogo Ndamase (Eskom)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said these costs are the results of theoretical modelling done thus far and will be internalised into the economy. This means that every person and industry will contribute something towards the costs.	No action required.
181	Can the "polluter pays principle" be incorporated into your modelling and can the management classes (the classification process) be used to assist with this principle?	Mr Ramin Pejan, AWARD	Technical Task Group Meeting, 31 January 2012, Loskop Dam	The polluter pays principle is not addressed in the water resource classification study. However it forms part of the Waste Discharge Charge System (WDCS). The WDCS is based on the "polluter pays principle". Thus, the modelling is broadly based on this principle, in so far as it estimates the cost of pollution load reduction in the system. However the purpose of the current modelling is not to simulate the WDCS.	No action required.
182	The study must also show potential job losses if there is a change in the management classes of an area.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said employment figures will be added to the modelling.	This was addressed.
183	Farmers will not be able to survive financially if water treatment costs were to be added to their expenses. We need to understand the job losses associated with water treatment costs, or the non-treatment of water.	Mr Bertus Bierman (Anglo American)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford said this will be added to the study.	The water quality model internalises all pollutions costs to the economy as a whole and not to specific sectors.

184	It is important to keep track of all these uncertainties (ecosystem services, morbidity, biodiversity, value and jobs)	Mr Johan van Rooyen (DWA)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford agreed that these uncertainties will listed so that decision makers can make informed decisions.	No action required.
185	Do not only target certain polluters. All polluters must assist with the water treatment costs.	Mr Bertus Bierman (Anglo American)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford agreed and said the bottom line of this WMA is that there is not enough water and the water quality is poor in places.	Please also see point 183.
186	There is a lot more anomalies that play a role in the treatment of sulphate. There is not a linear relationship between the treatment cost and plant capacity and discharge quality. The costs must be re-visited.	Mr Duane MacPherson (Anglo Coal)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Crafford agreed and said this modelling is the first step in the process. The costs will be refined based on available information.	To be addressed as per response. Please see point 175.
187	Once all seven steps of the classification process have been completed, will the management classes come into effect immediately?	Mr Duane MacPherson (Anglo Coal)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Ms Naidoo said a date will be gazetted by the Minister as to when the management classes for a specific WMA will come into effect. A management plan, with the relevant Resource Quality Objectives, must also first be written for such an area. The management plan will be drawn up based on various sources such as the reconciliation strategy, comments from stakeholders and the current study. In terms of the Olifants WMA, the class is expected to be implemented by early 2014.	No action required.
188	When will public consultation be done?	Mr Ramin Pejan, AWARD	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Mr Coleman said this will be done at three different stakeholder meetings in the WMA around July 2012.	No action required.
189	A Catchment Management Agency (CMA) will also be established for this WMA. Once this body has been established, it will greatly assist in implementing the management classes.	Mr Johan van Rooyen (DWA)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Comment.	No action required.
190	The recommended reconciliation strategy scenario must	Mr Johan van	Technical Task	Mr Crafford said such a scenario will	Study team to include

	also be analysed and compared to the ESBC scenario. I The two studies should be integrated.	Rooyen (DWA)	Group Meeting, 31 January 2012, Loskop Dam	be done.	reconciliation scenario in modelling.
191	The next Project Steering Committee (PSC) meeting is on 15 May 2012 at Loskop Dam. Please study all the information sent to you in December 2011 and send your comments ( <a href="mailto:andrej@zitholele.co.za">mailto:andrej@zitholele.co.za</a> ) before 15 April 2012 so that they can be included in the study.	Ms Shane Naidoo (DWA)	Technical Task Group Meeting, 31 January 2012, Loskop Dam	Comments to be submitted to the study team as indicated by Shane before the 15 April 2012.	Comments to be submitted to study team.
192	1. The words sustainable and acceptable when used in the sense of the setting of the Baseline Case (Ecological Sustainable Base Case - ESBC): 1.1. The current proposed ESBC was not consulted or collaborated on and should not be considered an ESBC. 1.2. Slide 6 of the presentation states very concisely that there will have to be a trade between the need for development and the need to protect and sustain the water resource. This decision will have to be based on the principal of sustainability. That includes the socio, economic and environmental factors that need to be considered. The above was dealt with in the Fuel Rtailers Case before the Constitutional Court. Without the economic assessment, including all the costs for the life cycle of the costs, the environmental and social disadvantages the decision cannot be made. This includes weighing the alternatives and cumulative impacts to the project. The judges stated as follows (own emphasis): <i>[90] Here NEMA specifically enjoins the environmental authorities to consider, assess and evaluate the social and economic impact of the proposed filling station, including its cumulative effect on the environment as well as its impact on existing filling stations and thereafter to make a decision that is appropriate in the light of such assessment. ...</i> <i>[93] Our Constitution does not sanction a state of normative anarchy which may arise where potentially conflicting principles are juxtaposed. It requires those who enforce and implement the Constitution to find a balance between potentially conflicting principles. It is founded on</i>	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Email on 1 February 2012 summarising his comments made at the Technical Task Group meeting on 31 January 2012	The ESBC is based on ecological sustainability Water quality user requirements is assessed in the evaluation of the scenarios in the formal classification process. Once the class is established the Resource Quality Objectives (RQOS) are set to address the requirements of all users. This could imply that a stricter water quality objective is required to protect a specific user. A catchment management strategy is then developed to achieve the RQO.	No action required

<p><i>the notion of proportionality which enables this balance to be achieved. Yet in other situations, it offers a principle that will facilitate the achievement of the balance. The principle that enables the environmental authorities to balance developmental needs and environmental concerns is the principle of sustainable development. [117] Conversely, if some damage to the environment were to be established, the economic sustainability of a proposed economic enterprise could be highly relevant as a countervailing factor in favour of a finding that on balance the development is sustainable. Thus, an enterprise that promised long-term employment and major social upliftment at relatively small cost to the environment, with damage reduced to the minimum, could well be compatible with NEMA. On the other hand to allow a fly-by-night undertaking either to spoil a pristine environment, or to use up scarce resources, or to introduce undue health hazards, will probably be in conflict with NEMA.</i></p> <p>1.3. This SAM will be fulfilling the economic and part of the social part of the above troika and the ESBC the last leg. The ESBC is thus of critical importance and cannot just be stated without collaboration thereupon.</p> <p>1.4. The above is the reason of why I am so set against the naming it as ESBC. If it is only a departing point – then fine. But why set a departing point against which to measure if that point is not acceptable? The current river is 30% eutrophic in the upper part above Loskop. Setting a C ESBC will only continue and worsen the situation. If the allowance is set at a TDS of 650mg/L (Class C), then that will very quickly become the minimum. Every single polluter will set that as the minimum and argue that he/she is only a few mg/l above that at certain periods of time. This proposed ESBC allows for far higher solids than the current at which level major issues have already evolved.</p> <p>1.5. I therefore suggest that this issue be tackled and that an ESBC be collaborated upon and be set against which future scenarios can be modelled.</p> <p>1.6. I also request a list of the IUA's and the sub IUA's,</p>				
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	with the relevant data, that was used for the setting of the ESBC as shown in the presentation (slide 16).				
193	<p>2. A method of dealing with water being imported into and out of the catchment has to be found.</p> <p>2.1. It simply cannot sometimes be taken into account on the basis of the economic activity generated from it (without the externalities which occur in the other catchment) and sometimes not.</p> <p>2.2. The same for the imported water – the issue of the economic activity it is not being allowed to fulfil in the source catchment will then sometimes be taken into account or not, and the same with the economic activity in this catchment, Once again the externalities can or cannot be taken into account.</p> <p>2.3. The qualification about impact of the water quality in the Olifants (not being an issue with Eskom, but being the deciding factor for the export to the north) is fraught with danger. It was stated that there was no water available for Eskom, even if the quality is acceptable. That raises the question of where the water to be exported from the north then comes from. What must not be lost in this is the increase in water demand from Eskom and other industries if there is a very small decrease in quality. This is of extreme importance since the water use increases will have to be supplied from the local catchment. I suggest that a set of rules are developed and applied throughout South Africa in all catchments.</p>	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Email on 1 February 2012 summarising his comments made at the Technical Task Group meeting on 31 January 2012	Ecological Category C allows for a TDS of approximately between 360 - ≤ 553 mg/l. This means the water quality TDS range for ecology can go up to 553 mg/l and still be classified as a C. The upper and lower limit to be applied in the Loskop Dam catchment area is still to be determined. This is will done through the RQO establishment process.	The RQO project will establish the upper and low limit.
194	<p>3. The cost of bringing in 160million m<sup>3</sup> of water at R18/m3.</p> <p>3.1. There is a double cost associated with this – cost of pumping and the cost of lost economic activity in the source catchment to be offset against the activity generated in this catchment.</p> <p>3.2. The problem is however that the source communities are denied water for economic development – and how will this be made up to them?</p>	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Email on 1 February 2012 summarising his comments made at the Technical Task Group meeting on 31 January 2012	The study area, water demands, water supply options and water import options were aligned to that of the Reconciliation Strategy. The Polokwane/Mokopane area was thus incorporated into the study area. Water imports results from transfer of effluent and Lesotho Highlands Water Project Phase 2.	To recheck the study area water demand

	3.3. There is also the cost of utilising water in the system to be used for purely dilution purposes. This amount of water utilised for dilution needs to be quantified in each IUA. I do not see these figures reflected anywhere.				
195	4. Please send us the list of the input values and where it was sourced and how it was verified. That will be very helpful in giving meaningful input.	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Email on 1 February 2012 summarising his comments made at the Technical Task Group meeting on 31 January 2012	The Reconciliation Strategy presents a detailed set of water supply options and these options were used.	To recheck the Reconciliation strategy options
196	5. The setting of the externalities – sulphate, phosphate and nitrogen treatment: 5.1. This cost is of critical importance. Setting it too high or low will have significant consequences. Too low will result in scenarios whereby treatment cost on an individual water user basis will be crippling. Take treatment cost of mining for instance. If the cost of sulphate treatment is set too low, an ESBC of A can be set since the cost of treatment will be so low that it makes sense when weighing the advantages and disadvantages. Compliance by individual mines will however be impossible due to the far higher cost associated with that treatment. Too high will have the opposite impact. 5.2. The determining of that cost is also very difficult in certain instances – cost is not linear to the parameters that influence the cost. I will take reverse osmosis plants as an example. 5.2.1. Running a relatively large plant close to several mines cost in the region of R12/m <sup>3</sup> if the water is treated to 96+% reduction in solids. Running that same plant at 80% has a significant difference, but the cost of the extra brine is then to be calculated. That depends on the brine site, the distance it is away and the cost of managing that site. 5.2.2. Operating a small site cost in the region of R28/m <sup>3</sup> reduction in solids (with unsustainable low management and labour cost.) In this example we believe it will be	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Email on 1 February 2012 summarising his comments made at the Technical Task Group meeting on 31 January 2012	The purpose of the simple water quality model developed for this study was to estimate the extent of the water quality externality to the Olifants WMA economy. The model estimates pollution load reduction required based on the river water quality standards required to fulfil each scenario. The cost of treatment was based on data received from wastewater treatment works and work done by Golder Associates on treating acid mine drainage.	To recheck the model

	<p>closer to R35/m<sup>3</sup> if more realistic costs are added up. That is also without brine disposal. Once again it is dependent on distance, etc when making up the final cost.</p> <p>5.2.3. Treating lower volumes with less solids to be removed can also open up opportunities for passive systems.</p> <p>5.2.4. The discount rate used in calculating the quantum of financial provision also makes a huge difference in the amount of provision that will have to be set aside. The same amount of m<sup>3</sup> can for example vary between R139 M to R634M if the discount rate is calculated at 4% or 1% for 15 ML of water of a 100 period. (± R12/m<sup>3</sup> scenario.)</p> <p>5.2.5. As can be seen from the above the setting of a single figure will almost be impossible. More detail in certain instances will have to be sought and obtained if the model is going to be a realistic tool to use.</p>				
197	<p>The last issue I wish to raise at this point in time is the issue of jobs which has largely been ignored. That is a critical component of the troika underpinning sustainability. This social impact – especially since the largest part of the population resides in the middle of the Olifants and is also the poorest needs to be addressed urgently. Without buy in and real benefits, this exercise will fail.</p>	<p>Dr Koos Pretorius, (Federation for a Sustainable Environment)</p>	<p>Email on 1 February 2012 summarising his comments made at the Technical Task Group meeting on 31 January 2012</p>	<p>GDP is an indicator of job creation. Where assessed scenarios indicate decreases in GDP, the extent of associated job losses will be assessed.</p>	<p>To assess if they will be any job losses</p>
198	<p>Can you please send me an electronic copy of the printed presentation as well as of the summary of the scenario analysis.</p> <p>Please revert back on the following:</p>	<p>Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])</p>	<p>Email on 16 May 2012 raising questions and queries related to the PSC meeting 3 of 15 May 2012.</p>	<p>Data input sheet will be sent through.</p>	<p>Emailed on 4 June 2012.</p>
199	<p>I have checked and cannot find the data input sheet that was sent on May 5. Please send it to me.</p>	<p>Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])</p>	<p>Email on 16 May 2012 raising questions and queries related to the PSC meeting 3 of 15</p>	<p>Data input sheet will be sent through.</p>	<p>Emailed on 4 June 2012.</p>

			May 2012.		
200	Can we get the attached spread sheet completed that deals with PES and Scenarios completed– this will give a summary of what is needed in each IUA and sub nodes and be very helpful in evaluating the feasibility of each scenario.	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 16 May 2012 raising questions and queries related to the PSC meeting 3 of 15 May 2012.	The PES and sub-nodes are available/listed in the EWR report and ESBC reports. The additional information requested on pollution loads were not gathered for the purpose of this study. Information on present state water quality is available.	Emailed on 4 June 2012.
201	How would the current PES change in each IUA and sub node if: a. the TDS is brought down to <150mg/L  b. all of the reconciliations options dealing with increased yield is implemented.	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 16 May 2012 raising questions and queries related to the PSC meeting 3 of 15 May 2012.	a. The scenarios were assessed using PES as is. Changes to PES were not assessed as part of the Olifants Classification study.  3b. The change in PES with increase in yield was not assessed. The implementation of the REC scenario was assessed.	No action required
202	How much water is to be exported in the future scenarios and to which areas and from which areas.	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 16 May 2012 raising questions and queries related to the PSC meeting 3 of 15 May 2012.	Refer to the DWA Report: Directorate National Water Resources Planning. December 2011. Development of a Reconciliation Strategy for the Olifants River Water Supply System (WP 10197). Final Reconciliation Strategy Report. Report No. P WMA 04/B50/00/8310/14. This is available on the DWA website.	Emailed on 4 June 2012.
203	The slide on water quality status – ( p7) – can I please get the documentation?	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 16 May 2012 raising questions and queries related to the PSC meeting 3 of 15 May 2012.	Slide will be sent through.	Emailed on 4 June 2012.
204	Can we get the EWR report and the report on which the PES is based ( I think it is from the RDM department)	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 16 May 2012 raising questions and	Report will be sent through.	Report emailed on 4 June 2012.

			queries related to the PSC meeting 3 of 15 May 2012.		
205	Can I please get a bigger printout of the following slides a. TDS(p8) b. Ortho-Phosphate(p8) c. IUA's( 2) – with a map of the same but with the sub-nodes. d. PES scenario ( p4) and also one with all the sub-nodes.	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 16 May 2012 raising questions and queries related to the PSC meeting 3 of 15 May 2012.	Slides will be sent through.	Slides e-mailed on 4 June 2012
206	The cost of implementation:  How will the stated goal of no reduction in any sector be reconciled with the huge water deficits.	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 16 May 2012 raising questions and queries related to the PSC meeting 3 of 15 May 2012.	This has not been addressed by the Olifants Classification study. Please refer to the DWA Report: Development of a Reconciliation Strategy for the Olifants River Water Supply System (WP 10197). Final Reconciliation Strategy Report. December 2011.	<a href="http://www.dwaf.gov.za/Projects/OlifantsRecon/documents/ORRS%20Main%20Report%20with%20Executive%20Summaries.pdf">http://www.dwaf.gov.za/Projects/OlifantsRecon/documents/ORRS%20Main%20Report%20with%20Executive%20Summaries.pdf</a> for a detailed options analysis.
207	How much yield increases is hoped for with each of the following and what cost will be associated with each: i. Unlawful irrigation use ii. WC/WD iii. Compulsory licensing iv. Alien plant removal v. Groundwater resources development vi. AMD treatment vii. Sewage water reuse	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 16 May 2012 raising questions and queries related to the PSC meeting 3 of 15 May 2012.	Please refer to the DWA Report: Development of a Reconciliation Strategy for the Olifants River Water Supply System (WP 10197). Final Reconciliation Strategy Report. December 2011, for the relevant information.	<a href="http://www.dwaf.gov.za/Projects/OlifantsRecon/documents/ORRS%20Main%20Report%20with%20Executive%20Summaries.pdf">http://www.dwaf.gov.za/Projects/OlifantsRecon/documents/ORRS%20Main%20Report%20with%20Executive%20Summaries.pdf</a> for a detailed options analysis.
208	Please give me a detailed breakdown of how the “ cost of augmentation” was reached in each scenario ( p10 top right slide)	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 16 May 2012 raising questions and queries related to the PSC meeting 3 of 15 May 2012.	The cost of augmentation was taken directly from the Reconciliation Strategy Final Report.	<a href="http://www.dwaf.gov.za/Projects/OlifantsRecon/documents/ORRS%20Main%20Report%20with%20Executive%20Summaries.pdf">http://www.dwaf.gov.za/Projects/OlifantsRecon/documents/ORRS%20Main%20Report%20with%20Executive%20Summaries.pdf</a> for a detailed options analysis.
209	Does the cost of treatment ( mining) include the cost	Dr Koos Pretorius,	Email on 16	The cost of treatment (mining,	<a href="http://www.dwaf.gov.za/">http://www.dwaf.gov.za/</a>

	<p>from:</p> <p>a. The current level to the required level for scenario 1; or</p> <p>b. The treatment cost from scenario 1 to what is required in the REC; or</p> <p>c. The current level to the REC.</p>	(Federation for a Sustainable Environment [FSE])	May 2012 raising questions and queries related to the PSC meeting 3 of 15 May 2012.	agriculture and wastewater treatment works) aligns to that of the Reconciliation Strategy Final Report, it estimates treatment cost from the current state to the scenario state. The ecosystem service value of waste treatment estimates the	<a href="#">Projects/OlifantsRecon/documents/ORRS%20Main%20Report%20with%20Executive%20Summaries.pdf</a> for a detailed options analysis.
210	Once we have this we can evaluate the scenarios better and also the implications coming out of the models. Please ask the relevant people to get this to us as fast as possible since time is of the essence in order to evaluate the scenarios in order to get back to you.	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 16 May 2012 raising questions and queries related to the PSC meeting 3 of 15 May 2012.	Details provided in the Olifants Scenario Evaluation Report circulated (19 <sup>th</sup> June 2012) to PSC members for comments due 29 June 2012.	Details provided in the Olifants Scenario Evaluation Report circulated (19 <sup>th</sup> June 2012) to PSC members for comments due 29 June 2012.
211	Please see attached doc with some tables from the documents. Also refer to appendix A of the ESBC scenario report of March 2012. The ESBC scenario report does not have a single Cat D in its list. Table 6, 7, and 8 of the report lists many Category D's as being what will be used. (see also below)	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 4 June 2012 raising questions and queries related to Olifants Classification ESBC Report.	Appendix A of the ESBC lists the FEPAs (freshwater ecosystem protected areas) – thus it would not include D categories. These FEPAs are protected through this Classification process by the presence of higher ecological categories at the sub-nodes within the IUAs.	No action required
212	Why is the Blyde yield at 0?	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 4 June 2012 raising questions and queries related to Olifants Classification ESBC Report.	The Blyde yield is 0 as there is no regulation in terms of the yield analysis. The EWR site is upstream of the dam. Flow is maintained by run-of-river.	No action required
213	EWR is listed as 1211 m <sup>3</sup> , yet the Yield is only 983 m <sup>3</sup> ?	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 4 June 2012 raising questions and queries related to Olifants Classification ESBC Report.	This is correct - represents that a water deficit is prevalent. The current yield of the system (983m <sup>3</sup> ) is not adequate to meet the EWRs (1211m <sup>3</sup> ).	No action required
214	How is it possible that certain IUA's EWR is higher than the yield?	Dr Koos Pretorius, (Federation for a	Email on 4 June 2012 raising	This implies that in some IUAs the water required to meet the ecological	Water Resource Classification guidelines

		Sustainable Environment [FSE])	questions and queries related to Olifants Classification ESBC Report.	needs is more than the yield of the catchment. This is possible, as the ecological component needs more water than can be supplied at present. There is a shortage of water in the WMA. The EWRs cannot be met until the deficit has been augmented with the implementation of the Reconciliation Strategy.	available on DWA website: www.dwa.gov.za
215	<p>Table 1 in the attached doc (TDS limits) also shows TDS's of 650 mg/L to be accepted. . Table 2 in the attached doc (out of the WMA – WQ status report) shows ideal, acceptable and tolerable levels. We know from experience that the levels of TDS below 500mg has left the upper Olifants and Loskop devastated.</p> <p>How are these different figures squared? It seems as the lowest possible – tolerable is being used , although not a single area in terms of NFEPA is listed as being sustainable in terms of category D.( attachment A of ESBC report) The 250 mg SO4 listed as tolerable is also in excess of what animals can sustain. From work by myself and Dr Jan Myburgh it is clear that above 200 mg leads to <i>significant</i> Selenium and Cupper uptake inhibition leading to a multitude of erosion diseases and reproductive problems.</p>	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 4 June 2012 raising questions and queries related to Olifants Classification ESBC Report.	<p>The TDS limits used are as per the Classification guidelines, which require that the South African Water Quality Guidelines (SAWQGs) are used to assess present state water quality (Table 2). In terms of table 1, for sites 7 to 16, the SAWQGs are used. However for sites 1 to 6, the interim Water quality objectives set as part of the Upper and Middle Integrated Water Resource Management Strategy (2009) are used. These TDS limits were set with various stakeholders as part of the management strategy for the catchment. The TDS limit for the Loskop dam catchment is set at 260mg/l.</p> <p>The Resource Quality Objectives that will be set following on from the Classification process will specify the exact limits that will apply. This study is using existing information available for the WMA or the SAWQGs.</p> <p>In terms of the SAWQGs, a sulphate range of 0 to 1000mg is the target range specified for livestock watering.</p>	<p>Details provided in Ecological Water Requirements (on website <a href="http://www.dwa.gov.za/r dm/WRCS/default.aspx">http://www.dwa.gov.za/r dm/WRCS/default.aspx</a>) and Ecological Sustainable Base Configuration Reports emailed to PSC members for comments and the contents were presented and discussed on the PSC meeting number 2 and 3 held on 08 November 2011 and 15 May 2012 respectively.</p>
216	Table 4 of the ESBC report also shows that many parts of	Dr Koos Pretorius,	Email on 4 June	The IUA ecological categories	Details provided in

	<p>the Olifants is not a cat D. For example - only 50 % of IUA 1 is a D, the rest are B and C. Now we will allow it all to become a D? look at IUA 4 – to become a D – yet it is currently at 50% C with 17 % E. It is of real importance to understand why these IUA's are where they are and what was prescribed in the WUL's. If the reason for the D's and E's are pollution outside of the WUL's, then that will have to be rectified . the question is then what will the rest of the IUA become? And then what will the impact of the improved water quality have on the availability of water?</p>	<p>(Federation for a Sustainable Environment [FSE])</p>	<p>2012 raising questions and queries related to Olifants Classification ESBC Report.</p>	<p>(overall ecological condition) associated with this ESBC scenario are representative of the management class (MC). The approach applied to determining the proposed MCs for each of the IUAs was to follow the guidelines of the WRCS. In summary the WRCS guidelines recommend that the MC be determined based on the ECs of the biophysical nodes residing in an IUA. The guidelines recommend the application of the method, where the percentage of biophysical hydro-nodes falling into the indicated EC groups determines the IUA's MC. Where a node is different to the overall IUA ESBC ecological category (i.e. requiring a higher level of ecological protection), this higher ecological category is accounted for in the hydrological model by the inclusion of this higher PES for that hydro-node.</p> <p>This Classification study has used the PES information from Ecological Water Requirements (EWR) study on ecological condition. It has not assessed sources of impact or water use licences. This does not fall in the scope of the Classification process.</p>	<p>Ecological Water Requirements (on website <a href="http://www.dwa.gov.za/rm/WRCS/default.aspx">http://www.dwa.gov.za/rm/WRCS/default.aspx</a>) and Ecological Sustainable Base Configuration Reports emailed to PSC members for comments and the contents were presented and discussed on the PSC meeting number 2 and 3 held on 08 November 2011 and 15 May 2012 respectively.</p>
<p>217</p>	<p>Our experts have come back to us and suggest that a phone conversation between the relevant experts is postponed until we have clarity on the following:</p>	<p>Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])</p>	<p>Email on 6 June 2012 raising issues and concerns on the Olifants Classification study raised by</p>	<p>The proposed teleconference of 6 June was cancelled on 6 June by Dr Pretorius until clarity on certain issues had been reached.</p>	<p>Issues and Response Register updated with PSC comments available on website: <a href="http://www.dwa.gov.za/rm/WRCS/default.aspx">http://www.dwa.gov.za/rm/WRCS/default.aspx</a></p>

			the FSE's experts.		
218	We understand that the range of potential scenarios has been described in terms of ecological category and water yield and presented to the stakeholders in the form of Background Info Doc 3 (Classification of significant water resources in the Olifants River Catchment Area). According to the steps involved in the process of the <b>Olifants Classification Process</b> , we have reached <b>stage 5</b> ( <i>Evaluate Scenarios within the integrated water resource management process</i> ) and are about to move to <b>step 6</b> ( <i>Evaluate the Scenarios with Stakeholders</i> ).	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 6 June 2012 raising issues and concerns on the Olifants Classification study raised by the FSE's experts.	This presentation was done on 15 May 2012, comments were taken from the PSC and these will be addressed in preparation for the public meetings.	To arrange another meeting with FSE
219	The economics team still needs to present an economic analysis of the different scenarios before these can be evaluated by the stakeholders.	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 6 June 2012 raising issues and concerns on the Olifants Classification study raised by the FSE's experts.	This presentation was done on 15 May 2012, comments were taken from the PSC and these will be addressed in preparation for the public meetings.	As agreed at the PSC meeting on 15 May 2012, all supporting documents and information regarding the public meeting will be made available to Public members prior to meeting.
220	What is of great concern is that we have not seen a detailed scenario report from the economics side. This report is required to outline specifically which changes in water quality and/or quality needs to occur in each IUA to move from one scenario to another and what the costs and benefits of each change in scenario at IUA level would be. It should also include details about specific assumptions that are made in the modelling process.	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 6 June 2012 raising issues and concerns on the Olifants Classification study raised by the FSE's experts.	The report summarises water quality impacts by scenario, based on all the work done to date. DWA will determine the sufficiency of the report for development of the presentation at the public meetings and will propose amendments to the report where required. Report sent to PSC members on 19 June 2012.	As agreed at the PSC meeting on 15 May 2012, all supporting documents and information regarding the public meeting will be made available to Public members prior to meeting.
221	It is not clear what the consultants will present at the proposed public meetings. The spreadsheets we have received collate economic data and water use per sector and water quality and treatment costs per scenario, yet there is no one model or report where this information is clearly tied together.	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 6 June 2012 raising issues and concerns on the Olifants Classification study raised by the FSE's	The presentation format will be structured to suit the comments and suggestion made at the PSC of 15 May 2012	As agreed at the PSC meeting on 15 May 2012, all supporting documents and information regarding the public meeting will be made available to Public members prior to

			experts.		meeting.
222	None of the spreadsheets or reports provided, contain a full analysis of the costs and benefits of the scenarios, so we can only assume this is a study still very much in progress.	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 6 June 2012 raising issues and concerns on the Olifants Classification study raised by the FSE's experts.	The analysis has been completed and its results were presented to the PSC on 15 May 2012.	As agreed at the PSC meeting on 15 May 2012, all supporting documents and information regarding the public meeting will be made available to Public members prior to meeting.
223	In the materials we have been provided with there are a lot of missing data, missing spreadsheets, missing formulas and missing assumptions. For example: In two of the three spreadsheets there are several cell references to sheets that are not visible, so it is impossible to evaluate the methods used	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 6 June 2012 raising issues and concerns on the Olifants Classification study raised by the FSE's experts.	There are no missing data, rather, some calculation sheets have been hidden in order to simplify the spreadsheet models as per Issue 152.	As agreed at the PSC meeting on 15 May 2012, all supporting documents and information regarding the public meeting will be made available to Public members prior to meeting.
224	In the water quality spreadsheet we are unable to see what baseline has been assumed for the PES scenario but one gets the impression (there is nothing to suggest otherwise) it is simply using the WQ guidelines, which would not be correct.	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 6 June 2012 raising issues and concerns on the Olifants Classification study raised by the FSE's experts.	The water quality baseline is the current state based on the 2001 Reserve Study and 2011 update of eco-classification	As agreed at the PSC meeting on 15 May 2012, all supporting documents and information regarding the public meeting will be made available to Public members prior to meeting.
225	We also need to see some sensitivity analysis since there are a lot of assumptions in the documentation. In order to evaluate the economic analysis, we (and any other interested party) need to see a report which explains the methods and assumptions in detail and presents the results of the analysis in a way that is clear to stakeholders and decision-makers and sufficiently detailed, including in spatial terms, to make well-informed	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 6 June 2012 raising issues and concerns on the Olifants Classification study raised by the FSE's	No sensitivity analysis is required here. Such analyses are important where assumptions about future growth scenarios are subject to certain probabilities and where such probabilities may change the outcome of a scenario. In this case, future growth is based on the DWA	As agreed at the PSC meeting on 15 May 2012, all supporting documents and information regarding the public meeting will be made available to Public members prior to

	choices.		experts.	Reconciliation Strategy options, which are fixed.	meeting.
226	It is our opinion that to ask any stakeholders to make an assessment and choose between the few scenarios that are presented without having sufficient information to understand how exactly the scenarios were reached and what the economic costs and benefits associated with each are, would be unacceptable and would require them to make binding decisions based on insufficient information.	Dr Koos Pretorius, (Federation for a Sustainable Environment [FSE])	Email on 6 June 2012 raising issues and concerns on the Olifants Classification study raised by the FSE's experts.	The purpose of the public meetings is to obtain stakeholder input on the proposed Classification scenarios for the Minister of Water Affairs to consider. The decision is taken by the Minister. The project has developed a large amount of information for decision-making over the past 18 months, with the PSC's input	To send information to the PSC members in time
227	Steps 2, 3 and 4 of the process have not yet been completed, because all the documentation regarding these steps was not sent to PSC members for comment. The Present Ecological State (PES) data, for example, cannot be trusted, because someone could simply have completed it in an afternoon. The Ecological Sustainable Base Case (ESBC) Scenario is also not sustainable. He does not want to see spread sheet with information in it. He wants to find where the information came from.	Dr Koos Pretorius (Federation for a Sustainable Environment)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Trevor Coleman (Study Team Leader) said the PES data were gathered by leading ecologists and this data was updated in 2011. Currently there is not enough water in the Olifants System and the Reconciliation Strategy is looking at augmentation options to make additional water resources available. The study team says the current situation is not sustainable and therefore the ESBC was done with the added 159 million cubic metres of water. The ESBC scenario can be seen as setting a target that must to be met in order to achieve sustainability in the System. Mr Yakeen Atwaru (DWA) offered to do a presentation on the PES data at the next PSC meeting. Ms Shane Naidoo (DWA) asked the study team to send all supporting documents and information regarding the PES study to all the PSC members. Dr Nadene Slabbert (DWA) added that this was a very thorough and highly technical study and the team,	Send all supporting documents and information regarding the PES study to all the PSC members.

				<p>which consisted of leading ecologists and scientists, did more than just a desktop study. Mr Coleman said this study team used the PES data because it came from a trusted source and there was thus no need to repeat the PES study.</p> <p>Ms Nyamande said according to the DWA the requirements for Steps 3 and 4 have been fulfilled, while Step 2 is on-going.</p> <p>Mr Dana Grobler (Blue Science) said ecologists, with support of DWA created the PES eco-classification system in 1999 and this system can be seen as the early forerunner of the current classification process. This current process must use the best available technological information and he thinks the PES data is sound information.</p>	
228	Step 4 (Determine an ESBC scenario) is the most critical step in this study and should be further discussed.	Dr Koos Pretorius (Federation for a Sustainable Environment)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Dr Nadene Slabbert (DWA) commented that Step 4 was discussed at length during the previous PSC meeting in November 2011 and all members present were happy with the proposed ESBC. Mr Rufus Nengovhela (DWA) agreed with Dr Slabbert and said there is no need to go back in the process, because it was discussed at the previous meeting.	No action required
229	When will the proposed augmentation information be available?	Ms Tebogo Ndamase (Eskom)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	It is part of the Olifants System Reconciliation Strategy that has only just been completed. A maintenance process will now begin to fulfil the recommendation of this Strategy.	No action required.
230	The agricultural data does not seem correct and could be	Mr Hennie Laas (Mpumalanga)	Meeting 3 of Project Steering	Mr Coleman said the study team is happy with the agricultural data. It is	No action required.

	out of date.	Agriculture)	Committee at Loskop Dam on 15 May 2012	the best data available and sourced from various reputable resources. Mr Jan Potgieter (Department of Agriculture, Forestry and Fisheries) said the study team updated the agricultural data and maybe Mr Laas is referring to one of the first reports which have since been updated. Ms Naidoo said the study team discussed the agricultural data with Mr Potgieter at length and all parties have since agreed that this data is the most recent information available.	
231	There is a vast difference between the results obtained from a study and reality.	Dr Sharon Pollard (AWARD)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Comment and no further action required	No action required.
232	How was the water deficit worked out?	Mr Dana Grobler (Blue Science)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Coleman said historical yield was used and no stochastic models were done.	No action required.
233	Were the relevant departments in Limpopo and Mpumalanga consulted?	Mr Victor Mongwe (Limpopo DEDET)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Coleman said they were consulted and additional information such as the SANBI NFEPA maps were also used by the study team.	No action required.
234	Was only macro-economic growth investigated in the study?	Mr Victor Mongwe (Limpopo DEDET)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Coleman said this was the case and this was done according to the Reconciliation Strategy. All sectors of the economy were included.	No action required.
235	There are many mining applications in Limpopo that could impact on the results of this study.	Mr Victor Mongwe (Limpopo DEDET)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Coleman said the best available information was obtained from the mining industry. Mr Bertus Bierman (Anglo American and the Olifants River Joint Water Forum – Steelpoort) said he is	No action required.

				aware of 26 new companies that want to open new mines.	
236	Additional augmentation options must also be investigated to add water to the Olifants System such as cleaning acid mine drainage from the coal mining industry on the Mpumalanga Highveld. The mining industry can assist Government to get more water into the System. Around 90 million cubic metres can be added to the System. The mining industry and the DWA must hold discussions to make this opportunity work.	Mr Bertus Bierman (Anglo American and the Olifants River Joint Water Forum – Steelpoort)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Shane indicated that the meeting will be arranged with Mr Bierman.	DWA to set up meeting with Mr Bierman.
237	I am concerned about water quality. The water quality is still meeting the EU standards that must be adhered to by agricultural producers, but the situation will deteriorate, because some municipalities are pumping raw sewage into the rivers. The question must also be asked if the municipalities are capable of managing waste water treatment plants.	Mr Koos Beets (Kranspoort Farmers Association)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Ms Naidoo said the DWA is pressurising the municipalities and the mining industry to prevent water pollution. We cannot wait for the management classes (MCs) to be in place before we act, we must act now to prevent water pollution.	No action required.
238	Will the MCs be reviewed if the water quality deteriorates and how often will it be reviewed.	Dr Thomas Gyedu-Ababio (SANPARKS)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Ms Naidoo said the MCs are not cast in stone and will be reviewed on a regular basis. The DWA will, however, not propose a MC that is not achievable or sustainable. The review, will not be at the same intensity as the current study, because the will be too time consuming.	No action required.
239	Is there an implementation strategy in place for the classification process?	Mr Victor Mongwe (Limpopo DEDET)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Ms Naidoo said there will be a management plan or a catchment management strategy in place to drive the MCs. A study to determine the resource quality objectives (RQOs) for the Olifants WMA has started which will provide ecological and water quality indicators for managing these water resources.	No action required.
240	The disagreement between the DWA and the Department of Mineral Resources (DMR) regarding the relationship between the issuing of mining rights and water use licenses is not helping in the fight against water pollution.	Mr Koos Beets (Kranspoort Farmers Association)	Meeting 3 of Project Steering Committee at Loskop Dam on	Ms Naidoo said the MCs will provide a holistic view of a specific water resource which will assist in solving the problem between the DWA and	No action required.

			15 May 2012	the DMR.	
241	Will the provincial conservation plans be at a lower level than a MC?	Mr Dana Grobler (Blue Science)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Coleman responded that the conservation areas have been considered and will be protected by sub-node ecological categories in the tributary catchments.	No action required.
242	The Olifants System has too little water, yet water is 'exported' out of the System to towns in Limpopo.	Dr Koos Pretorius (Federation for a Sustainable Environment)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Coleman said this is correct and something that will not change.	No action required.
243	Is it correct that the Reconciliation Strategy states that a system must solve its own water problems without augmentation?	Mr Jan Potgieter (Department of Agriculture, Forestry and Fisheries)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Coleman said this is correct. All options will be exhausted before even considering augmentation.	No action required.
244	How is it possible to categorise some of the really polluted water resources as an ecological category (EC) D. You must state that it is actually an EC E that you would like to clean up to an EC D.  Dr Pollard said care should be taken at the public meetings to explain this policy to the public or else they will be confused by the need and value of ECs.	Dr Koos Pretorius (Federation for a Sustainable Environment)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Coleman said this has been stated in the report.	No action required.
245	Is it possible to list all the water quality and quantity issues in each Integrated Unit of Analysis (IUA).	Dr Koos Pretorius (Federation for a Sustainable Environment)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Coleman these factors are listed in the ecological water requirement (EWR) report.	No action required.
246	The GDP of the first three scenarios are very similar. He would have thought there would have been a much bigger difference.	Mr Dana Grobler (Blue Science)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Crafford said the difference between the first three scenarios is more financial, because more investment is required for almost the same profit and not more water is made available.	No action required.
247	Will ecosystem services not decrease in future if	Mr Dana Grobler (Blue Science)	Meeting 3 of Project Steering Committee at	Mr Crafford said the reason for the increase and no decrease in	No action required.

	augmentation takes place?		Loskop Dam on 15 May 2012	ecosystem services is because there is a lot more non-consumptive use due to factors such as population increase.	
248	<p>The data for ecosystem services is incredibly low at 3%. In previous documents it was even lower at 1%. International studies never show ecosystem services that low. It must be a mistake.</p> <p>The public perception will be that ecosystem services is only 3% and not worth the effort.</p>	Dr Sharon Pollard (AWARD)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	<p>Mr Crafford said the ecosystem services were adjusted from the original 1% to 3% as additional information became available. He is confident that the data is correct, because a certain portion (75%) is indirect dependence on ecosystem services and has already been calculated in the GDP.</p> <p>Mr Crafford disagreed and said the 3% calculated to R4,5 billion which is a lot of money.</p>	No action required.
249	<p>The mining industry is constantly expanding putting further strain on water resources and every year more water must be treated. Has the treatment cost also been adjusted to keep up with the cumulative effect?</p> <p>Why is the treatment of waste water listed separately and not as part of mining?</p>	Dr Koos Pretorius (Federation for a Sustainable Environment)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	<p>Mr Crafford said this was done.</p> <p>Mr Crafford said this was done, because it also includes waste treatment from towns and agriculture.</p>	No action required.
250	Some of the final changes to the final Reconciliation Strategy have not been included in this study.	Mr Tendani Nditwani (DWA)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Crafford said this will be done.	Mr Crafford to implement changes
251	Do the augmentation options include the cost of cleaning that water?	Dr Nadene Slabbert (DWA)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Coleman said the cost was included where needed.	No action required.
252	How was the cost of functional ecosystems calculated?	Dr Sharon Pollard (AWARD)	Meeting 3 of Project Steering Committee at	Mr Crafford said the Anchor Consulting report was used. All five	No action required.

			Loskop Dam on 15 May 2012	scenarios are future scenarios and envisage a future state.	
253	Some and not all of the five scenarios must be taken to the public meetings.	Mr Trevor Coleman (Study leader)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	<p>Ms Naidoo said we must think of the consequences of each scenario and must not focus on the financial aspects. It is human nature to take the cheapest option.</p> <p>Ms Naidoo said four scenarios must be taken to the public. Scenario 3 (Maximum Use Scenario) must be taken out. The implications must be better described and the information must be packed better for the public.</p> <p>Mr Crafford said cost is important and must be included to provide perspective for the public.</p>	Maximum Use Scenario must be taken out. The implications must be better described and the information must be packed better for the public.
254	<p>If augmentation from the Vaal River System (VRS) is not an option, then it should not be one of the scenarios (Scenario 5). It will only confuse the public.</p> <p>Other systems such as the Orange are also looking at the Vaal for augmentation.</p>	<p>Dr Koos Pretorius (Federation for a Sustainable Environment) and</p> <p>Dr Thomas Gyedu-Ababio (SANPARKS)</p>	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	<p>Mr Nditwani said the various reconciliation strategies are synchronised and aware of each other's needs.</p> <p>Mr Bierman commented that demand centres and time frames are very important when looking at augmentation. The economic development in the Olifants WMA will be delayed without augmentation from the VRS. All options listed in the Reconciliation Strategy must be implemented which will take time, but the transfer from the VRS is needed now, because the other augmentation options will take a long time to implement.</p>	No action required
255	Is the data on floods and freshettes final?	Mr Bertus Bierman (Anglo American and the Olifants River)	Meeting 3 of Project Steering Committee at	Mr Coleman said he will study the data again.	Mr Coleman to again look at data on floods

		Joint Water Forum – Steelpoort)	Loskop Dam on 15 May 2012		and freshettes.
256	All augmentation options that were removed from the Reconciliation Strategy must be removed from the Scenarios as well.	Dr Nadene Slabbert (DWA)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Coleman indicated that this will be removed on the report.	This information will be removed.
257	The social, economic and ecological implications for the resource must be explained at the public meetings.	Mr Dana Grobler (Blue Science)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Coleman indicated that this will be done in the public meeting.	This will be done.
258	The National Water Act must always be kept in mind. Sustainability, equitability and the ecology are vital. What will the catchment look like in future? Present the full picture and prepare people for the future.	Dr Sharon Pollard (AWARD)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Coleman indicated that this has already been investigated.	This will be done.
259	Acid mine drainage and its effect on MCs should not be ignored.	Mr Jan Potgieter (Department of Agriculture, Forestry and Fisheries)	Meeting 3 of Project Steering Committee at Loskop Dam on 15 May 2012	Mr Coleman indicated that this has already been investigated.	This will be done.
260	Presentation on background, progress to date and challenges encountered on the Olifants Classification project.	Ms Martha Komape, DWA	LIMCOM meeting on 15-16 August 2012	It was an information sharing session.	None required.
261	Is the Mozambican government aware of this study?	Ms Regina Dos Santos (Mozambican citizen)	Stakeholder meeting in Witbank on 17 July 2012	Ms Ndileka Mohapi (DWA) said a Joint Technical Meeting takes care of mutual matters between South Africa and its neighbours.	No action required.
262	Are municipalities aware of this process?	Mr Shirhami Shirinda (Legal Resource Centre)	Stakeholder meeting in Witbank on 17 July 2012	Ms Mohapi said all the district and local municipalities in the study areas have received information of this study and have also been invited to the stakeholder meetings.	To arrange a one-on-one meeting
263	Has the catchment vision exercise already been done and was stakeholder engagement part of this.	Dr Harry Biggs (SANPARKS)	Stakeholder meeting in	Ms Naidoo said this exercise was done at the very first PSC meeting in	The result to be included in the report

			Witbank on 17 July 2012	the beginning of 2011, but the vision focused on the objectives of the classification study and not the broader catchment issues.	
264	Acid mine drainage (AMD) generally comes from abandoned mines. What is the DWA or Department of Mineral Resources doing to rehabilitate these mines?	Stakeholder	Stakeholder meeting in Witbank on 17 July 2012	Ms Mohapi explained that Government has appointed an inter-ministerial committee to look at all aspects of AMD such as finding solutions to the problem and who will be paying for it. This has started in the Witwatersrand and will be rolled out to other regions with similar AMD problems. This is a problem that has to be tackled by all South Africans, including Government.  Mr Coleman added that water quality in rivers is used as an indicator for AMD and has been factored into this study.	No action required.
265	Is the only water transfer currently taking place into the Olifants being done for the power stations?	Stakeholder	Stakeholder meeting in Witbank on 17 July 2012	Yes, this is the only water transferred from the Vaal River System. According to the DWA and the Reconciliation Strategy, solutions to water shortages must be found inside the catchment.	No action required.
266	Why can the estimated 60 million cubic metres being transferred out of the Olifants to nearby towns not be replaced from the Vaal River System.	Dr Koos Pretorius (Federation for a Sustainable Environment)	Stakeholder meeting in Witbank on 17 July 2012	Mr Tendani Nditwani (DWA) replied that the Olifants Catchment can accommodate these transfers and currently do not need augmentation from outside to replace this. A total of 230 million cubic metres are already being transferred into the Olifants for the power stations.  Mr Ockie van den Berg (DWA) added that the Reconciliation Strategy identified intervention measures to	No action required.

				make up the water balance until 2040.	
267	What policing methodology will be followed once the MCs have been gazetted? Currently no policing is being done on compliance and wastewater discharges and how will this process help to improve the policing.	Mr Brent Parrot (Delmas)	Stakeholder meeting in Witbank on 17 July 2012	Ms Mohapi admitted that the regulatory control is not up to standard regarding water resource management, but the DWA is currently improving its regulatory arm such as the Blue Scorpions. Monitoring and policing will improve in future. The DWA supports the "Polluter Pays Principle" and will implement a Waste Discharge Charge System in the near future to force polluters to pay for polluting water resources.	No action required.
268	Were climate change and a possible change in rainfall patterns considered in your study?	Stakeholder	Stakeholder meeting in Witbank on 17 July 2012	Mr Coleman said climate change was not specifically factored, but has been considered in some of the modelling that was done.	No action required.
269	Is it possible to have a distinction between AMD from defunct and operating mines.	Mr Duane MacPherson (Anglo Coal)	Stakeholder meeting in Witbank on 17 July 2012	Mr Coleman said this is not possible at this stage, because not enough information is available and it will be very difficult to differentiate between the two groups.	No action required.
270	Different users in a catchment are responsible for the status of a specific water resource. Guidance should be given to these different users on mechanisms to protect water resources.	Mr Duane MacPherson (Anglo Coal)	Stakeholder meeting in Witbank on 17 July 2012	Mr Coleman added that resource quality objectives will assist in providing guidance of what controls are needed to protect a specific resource.	No action required.
271	What statistics did the study team use for water use in the Olifants WMA?	Mr Ken van Rooyen (Cabanga Concepts)	Stakeholder meeting in Witbank on 17 July 2012	Mr Coleman explained that these statistics were taken out of the Reconciliation Strategy. They are from 2006 and the best information currently available.	No action required.

272	Mr van Rooyen commented that the statistics for agricultural water use is very high. Will this sector also be asked to reduce its usage?	Mr Ken van Rooyen (Cabanga Concepts)	Stakeholder meeting in Witbank on 17 July 2012	Ms Mohapi said all sectors will be asked to reduce usage through a whole host of interventions measures such as water conservation and water demand management to make more water available in the catchment.	No action required.
273	If there is enough water in the Vaal River System, should it one day be possible to transfer water from there to the Olifants.	Mr Peter Zwiegelaar (SASOL)	Stakeholder meeting in Witbank on 17 July 2012	Mr Coleman explained that the Vaal also has a Reconciliation Strategy with intervention options to increase available water. There is, however, huge demand for the Vaal water inside the Vaal catchment and the Olifants must solve its own water issues.  Ms Mohapi added that building the infrastructure to transfer water over a long distance is very expensive and it will definitely increase the cost of water.	No action required.
274	An additional scenario must be evaluated to concentrate on the six IUAs in the Upper and Middle Olifants that could possibly be set at a MC of III. If the mines, agriculture and the human settlements in these six IUAs reduce their pollution, all the water pollution of the lower IUAs in the Olifants will be significantly reduced. This will in turn improve the MCs of the lower Olifants IUAs. This can be based on the "Polluter Pays Principle". This way Government and taxpayers are not sponsoring polluters by cleaning up behind them.	Dr Koos Pretorius (Federation for a Sustainable Environment)	Stakeholder meeting in Witbank on 17 July 2012	Mr Coleman indicated that additional scenario will be investigated.	This will be discussed with Dr Koos Pretorius (Federation for a Sustainable Environment).
275	Why will an IUA stay in a MC III if the AMD is treated?	Dr Koos Pretorius (Federation for a Sustainable Environment)	Stakeholder meeting in Witbank on 17 July 2012	Mr Coleman explained that there are many other factors such as water flow, the river system, habitat, etc that play a role in deciding the MC of a resource. If one of the problems is removed it will not immediately result	No action required.

				in a better MC. This could take a few years.	
276	The study shows that hidden costs have been included in the study, but were hidden benefits also included. The Reserve is not just there for the fauna and flora but also to deliver goods and services. The ecotourism of an area can, for example, improve if the MC improves. We will all make more money out of a healthier river.	Dr Harry Biggs (SANPARKS)	Stakeholder meeting in Witbank on 17 July 2012	Mr Crafford answered that it is difficult to work out the hidden benefits of something, but this was touched upon to some extent in the Goods and Services part of this study.	No action required.
277	Cleaning AMD and releasing it into the Olifants System will not improve the water quality. It will only increase the quantity of water.	Mr Pieter Viljoen (DWA)	Stakeholder meeting in Witbank on 17 July 2012	Mr Coleman has indicated that it is true that releasing cleaned AMD will only increase the quantity of water in the Olifants River.	No action required.
278	Dr Pretorius commented that there are different cost implications between the five scenarios. More scenarios need to be created to provide more options that can be looked at. Society must learn to live within its means. We cannot use what we have not got. We need to understand that the term “tolerable” should be the worst case scenario and we should be careful or all the scenarios will migrate to “tolerable”.	Dr Koos Pretorius (Federation for a Sustainable Environment)	Stakeholder meeting in Witbank on 17 July 2012	Mr Coleman indicated that additional scenarios will be investigated.	This will be discussed with Dr Koos Pretorius (Federation for a Sustainable
279	Each IUA should be given the scenario that fits it best.	Mr Ken van Rooyen (Cabanga Concepts)	Stakeholder meeting in Witbank on 17 July 2012	Ms Mohapi cautioned that this could create problems for upstream IUAs, because the Kruger National Park could, for example, insist on getting a MC I. This could have severe financial implications for the IUAs upstream that will have to spend a lot of money to keep water resources clean and it could even result in closing down industries and developments.	No action required
280	Sulphates in the system must also be closely monitored.	Mr Thembani Mashamba (BHP Billiton)	Stakeholder meeting in Witbank on 17 July 2012	Ms Mohapi answered that the resource quality objectives are being implemented for all water resources in the country that will set specific	This will be addressed by the resource quality objectives project

				limits for what will be allowed in a water resource.	
281	Who will be doing the classification and who will manage the various IUAs?	Mr Brent Parrot (Delmas)	Stakeholder meeting in Witbank on 17 July 2012	The classification will be done by the Minister of Water Affairs and the monitoring of the classes and the management of the IUAs will be done by the DWA.  Mr Viljoen added that it is a participatory process with this stakeholder meeting part of that process. The Minister will sign off on the various MCs. The study team will recommend MCs that will be suitable to a specific IUA and its significant water resources.	No action required
282	Who will be able to assist individuals in fighting water pollution in the Olifants?	Mr Brent Parrot (Delmas)	Stakeholder meeting in Witbank on 17 July 2012	Ms Mohapi urged him to report water pollution to the DWA and the Blue Scorpions will investigate.	No action required
283	The recommendation on the proposed management classes should be handed in to the Minister for approval around November 2012. After consideration, the proposed MCs will be gazetted which is open to the public for a 60-day comment period.  This date is too optimistic. Too much still needs to be done.	Dr Koos Pretorius (Federation for a Sustainable Environment)	Stakeholder meeting in Witbank on 17 July 2012	Ms Mohapi said this date is not cast in concrete and if there is a need to hand the study in later, then it will not be a problem.  Ms Naidoo said the preliminary results of the resource quality objectives will be discussed at the next PSC meeting and these will also be added to this study.	The DWA will consider the extension of this deadline.
284	Has the Validation and Verification study been done for the Olifants WMA?	Mr Francois Roux (Mpumalanga Tourism and Parks Agency – MTPA)	Stakeholder meeting in Lydenburg on 18 July 2012	Mr Trevor Coleman (Study team) said it has not yet been done, but it was identified in the Reconciliation Strategy study as a study that must be done as soon as possible.	No action required

285	<p>The visioning statement at the start of this study is very important, because the whole study was built on it. Was this vision discussed with stakeholders?</p> <p>Is there a specific vision for each Integrated Unit of Analysis?</p>	Mr Danie Pienaar (South African National Parks)	Stakeholder meeting in Lydenburg on 18 July 2012	<p>Mr Coleman said that a balance is being sought between looking after the environment and taking care of future development.</p> <p>Ms Naidoo explained that the visioning statement for this study was discussed at length at the first meeting of the PSC and a questionnaire was also sent to PSC members who could not attend that meeting.</p> <p>Ms Nyamande added that the DWA will use a stakeholder engagement plan to communicate with communities regarding this study. Catchment forums and other engagement structures within the DWA will be used as well.</p> <p>Mr Coleman said the visioning information used at the first PSC meeting will be contextualized in the final scenario evaluation report and sent to stakeholders.</p>	Report to be updated with visioning information and distributed to stakeholders.
286	Do all PSC members had the same idea of water quality regarding the catchment and if the social and economic aspects were included as well.	Dr Marisa Coetzee (MTPA)	Stakeholder meeting in Lydenburg on 18 July 2012	Ms Naidoo explained that the visioning statement was for this specific study. Water quality has been addressed and development goals and future needs were also included in the Classification Study.	No action required
287	Will the 60-day appeal period start in November 2012.	Mr Vinesh Dilsook (Anglo American Platinum)	Stakeholder meeting in Lydenburg on 18 July 2012	Ms Mohapi explained that after consultation it was decided that November 2012 is too optimistic and more time will be given for the study to be finalised. The resource quality objectives (RQOs) study will also first be completed to add this data to this	No action required

				study.	
288	What are the areas of growth identified in the study area?	Mr Andrew Cooper (Letsitele)	Stakeholder meeting in Lydenburg on 18 July 2012	Mr Coleman said the areas of growth are mining, urban development and the improvement of service delivery.	No action required
289	Thank you for including extra nodes in the study area that was requested by the MTPA at a meeting held last year.	Mr Francois Roux (Mpumalanga Tourism and Parks Agency – MTPA)	Stakeholder meeting in Lydenburg on 18 July 2012	Comment and no further action required	No action required
290	Do the water use requirements include the Reserve for the Olifants WMA as well?	Mr Francois Roux (Mpumalanga Tourism and Parks Agency – MTPA)	Stakeholder meeting in Lydenburg on 18 July 2012	Mr Coleman said only usage was included and not the Reserve.	No action required
291	There is a correlation between an improvement in water quality and an increase in costs in the mining and agricultural sectors.	Mr Danie Pienaar (South African National Parks)	Stakeholder meeting in Lydenburg on 18 July 2012	Mr Crafford answered that for water quality to improve, agricultural and mining sectors will need to spend more money on technology that will assist then on discharging quality of good quality.	No action required
292	Why the term 'neutralisation'. Does this mean all salts will be removed from the water?	Ms Sanet de Klerk (Obaro)	Stakeholder meeting in Lydenburg on 18 July 2012	Mr Coleman said it refers specifically to the mining sector that must neutralise all salts before their effluent reaches a water resource.	No action required
293	Was groundwater also investigated?	Mr James Ndou (Modikwa Platinum Mine)	Stakeholder meeting in Lydenburg on 18 July 2012	Mr Crafford replied that the Reconciliation Strategy study identified groundwater as a potential source of additional water. This information was used in the Classification Study.	No action required
294	The transfer of effluent from ERWAT is not mentioned in this study.	Mr Bertus Bierman (Anglo American)	Stakeholder meeting in Lydenburg on	Mr Crafford said it was being used in the evaluation of Scenarios 2 and 5, but the DWA sees this as a last	No action required

			18 July 2012	resort transfer. Mr Coleman said the ERWAT water resources are needed for the Vaal River System. A transfer to the Olifants from Ekurhuleni will severely affect the ecology and the Reserve flow and it could also have a negative water quality influence on the transport river as well.	
295	Too many communities are being given surface water instead of groundwater that is far more cost effective.	Mr Bertus Bierman (Anglo American)	Stakeholder meeting in Lydenburg on 18 July 2012	Ms Mohapi said the DWA feels strong that groundwater must further be exploited. There is unfortunately a perception in some communities that groundwater is inferior to surface water. Groundwater is not of a lesser quality than surface water, in fact, sometimes groundwater is of far better quality.	No action required
296	Will any of the IUAs/catchments be sacrificed for development and allowed to degrade.	Mr Vinesh Dilsook (Anglo American Platinum)	Stakeholder meeting in Lydenburg on 18 July 2012	Ms Mohapi commented that this will not be allowed to happen. This generation must take care of the environment so that future generations can also enjoy and use it. Mr Crafford added the DWA has spent a lot of scientific effort in the Olifants WMA and has a fairly good idea what this system can take. A lot of pressure can be placed on a system before it collapses. However, too much pressure can kill a river and care should be taken to plan sustainable to prevent this from ever happening. The MCs will assist in keeping the water resources sustainable.	No action required
297	All existing mines have billions in closure funding that should also be included in the calculations of this study	Mr Vinesh Dilsook (Anglo American)	Stakeholder meeting in	Mr Crafford answered indicated that	This will also be

	when evaluating future scenarios.	Platinum)	Lydenburg on 18 July 2012	this will be further investigated	included in the report
298	The idea is created that this study only focuses on water quantity and that water quality is not important, something that is vital to agriculture.	Mr Lodewyk de Jager (Watervalsrivier Farmers' Association)	Stakeholder meeting in Lydenburg on 18 July 2012	Mr Coleman said water quality plays an important role in this study. Data such as salts and nutrient levels in the water resources have been sourced from DWA studies and included in the study. This is however, neither a water management nor a water quality study, so no new water quality studies have been done.  Ms Mohapi added that the RQOs study will provide information to set specific standards. The Waste Discharge Charge System is also going to be implemented soon which will improve the regulatory arm of the DWA. Stakeholders must report spillages to the DWA.	This will also be addressed by the resource quality objectives project
299	An additional scenario that concentrates on the six IUAs in the Upper and Middle Olifants is needed. If the mines, agriculture and the human settlements in these six IUAs reduce their pollution, all the water pollution of the lower IUAs in the Olifants will be significantly reduced. This will in turn improve the MCs of the lower Olifants IUAs and provide cleaner water to the Kruger National Park and Mozambique. This can be based on the "Polluter Pays Principle". This way Government and taxpayers are not sponsoring polluters by cleaning up behind them. More scenarios are needed that includes cleaning up the top six IUAs up to a MC II.	Dr Koos Pretorius (Federation for a Sustainable Environment)	Stakeholder meeting in Lydenburg on 18 July 2012	Mr Coleman has indicated that this will be investigated.	A meeting will be convened to define scenario (refer to point 302 -304)
300	The treatment of AMD is negative to the GDP, because it is an internalised cost and there are also not enough funds to clean up AMD.	Dr Koos Pretorius (Federation for a Sustainable Environment)	Stakeholder meeting in Lydenburg on 18 July 2012	Mr Coleman has indicated that this will be investigated.	No action required

301	What is South Africa's international obligation to Mozambique regarding the Olifants River? Is it sufficient just to pass the Reserve on to them?	Mr Francois Roux (Mpumalanga Tourism and Parks Agency – MTPA)		Mr Coleman said there is no fixed agreement between the two countries regarding the Olifants River. There are SADC protocols that are adhered to and South Africa is member of LIMCOM where the shared of rivers in southern Africa is discussed on a regular basis.	To discuss at the LIMCOM by LIMCOM members
302	Can Mozambique be included as a stakeholder on the river?	Dr Koos Pretorius (Federation for a Sustainable Environment)	Stakeholder meeting in Lydenburg on 18 July 2012	Mr Mohapi said this Classification Study is an internal process and there are international structures mentioned above where South Africa and Mozambique can discuss these matters.	No action required
303	I would like to see more water quality in the scenarios.	Mr Francois Roux (Mpumalanga Tourism and Parks Agency – MTPA)	Stakeholder meeting in Lydenburg on 18 July 2012	Mr Crafford said water quality is a fundamental part of the study..	The discussion on the water quality will be elaborated on in the scenario report.
304	Each sector in the Olifants WMA has its own needs and a balance is needed between the needs of the various IUAs.	Dr Marisa Coetzee (MTPA)	Stakeholder meeting in Lydenburg on 18 July 2012	Mr Mohapi agreed and said this study was not started with any preconceived ideas. All options will be weighed before a decision is taken.	Weigh all options during scenario development
305	There is no local laboratory where organic compounds in water and sediment can be tested. Organic compounds can only be tested overseas at great expense.	Mr Danie Pienaar (South African National Parks)	Stakeholder meeting in Lydenburg on 18 July 2012	Comment and no further action required.	No action required
306	Sediment in the Lower Olifants has the potential to become a problem due to the Massingir Dam in Mozambique. This dam was built into a gorge in the Olifants and about 10km of the river is already silted up. This silt will eventually push up into the Kruger National Park and deteriorate the Olifants River water quality if something is not done about this. It is therefore important to manage the down flow of sediment from the Upper	Mr Danie Pienaar (South African National Parks)	Stakeholder meeting in Lydenburg on 18 July 2012	Comment and no further action required.	No action required

	Olifants. It will be difficult, but not impossible and the Phalaborwa Barrage could even be used as a silt trap.				
307	Stakeholders must decide the Management Class (MC) for their section of a river. When will this take place because it is a complex issue to choose a MC.	Dr Sharon Pollard (Association for Water and Rural Development - AWARD)	Stakeholder meeting in Phalaborwa on 19 July 2012	Ms Naidoo explained that this meeting today is part of the classification process. The DWA is busy developing a stakeholder engagement plan to take this process further that will be discussed at the next PSC meeting.  Ms Mohapi added that a separate process will be used to explain this study to community members, because it is very technical and complicated.	Extended stakeholder consultation to be undertaken by the DWA.
308	Dr Pollard asked if November is not too soon.	Dr Sharon Pollard (AWARD)	Stakeholder meeting in Phalaborwa on 19 July 2012	Ms Naidoo said that DWA has recently started with resource quality objectives (RQOs) study and this mechanism will be used to support the classification study finalisation, which could extend beyond November. Timelines will be amended if the Classification Study has not been completed and which will then be run with the RQO process. Good feedback has also been received during the stakeholder meetings which must be included in the study.	The study timelines will be assessed and extended by the DWA if considered necessary.
309	The Mozambican Department of Water Affairs must be part of this study.	Ms Regina Dos Santos (Mozambican citizen)	Stakeholder meeting in Phalaborwa on 19 July 2012	Ms Mohapi explained that this is an internal study and the DWA does not have the mandate to include other countries in this study. There are protocols in place where South Africa and Mozambique discuss issues of mutual interest. The DWA is, however, aware of its obligations to downstream nations and that	South Africa is in contact with all its neighbours at meetings such as LIMCOM and other SADC structures.

				obligation will always be fulfilled. Mr Nditwani added that South Africa is in contact with all its neighbours at meetings such as LIMCOM and other SADC structures.	
310	The DWA has announced that the WMAs will be reduced from the current 19 to 9 WMAs. This will mean that the Olifants WMA will amalgamate with the Letaba WMA to its north. The problem is that then Olifants is a highly utilised system to that of the Letaba and much more studies have been done on the Olifants.	Mr Dries Enslin (Agri Letaba)	Stakeholder meeting in Phalaborwa on 19 July 2012	Ms Mohapi said the reduction of the WMAs is not part of this study, but that a Classification Study has recently been launched for the Luvuvhu Letaba Water System to ensure alignment.	No action required
311	He could not comment on the presentation that was sent to PSC members before these meetings, because he needed more background information to fully understand it.	Mr Dries Enslin (Agri Letaba)	Stakeholder meeting in Phalaborwa on 19 July 2012	Ms Naidoo apologised that not enough information was sent and that it was not sent sooner. A newsletter was sent with the presentation and there is also information available on the DWA website.  Ms Nyamande said that is one of the challenges of this study – a wide range of stakeholders from community members to people with highly technical knowledge of the Olifants WMA.	No action required
312	The stakeholder engagement process should have been initiated with all stakeholders at the beginning of the study. The stakeholders should have been taken through the exact steps of the study. Stakeholders are not aware of what is expected of them at this late stage.	Mr Derick du Toit (AWARD)	Stakeholder meeting in Phalaborwa on 19 July 2012	Ms Mohapi explained that background information documents and newsletters have been sent to PSC members and stakeholders to keep them informed of the process. Not all communities have been part of this study since the beginning, but the DWA is confident that this process can be taken forward with its stakeholder engagement process.  Mr Yakeen Atwaru (DWA) suggested that some of these issues can be	No action required

				further discussed at the next PSC meeting.	
313	Communities must have their say in issues regarding water.	Mr Enny Baloyi (Lepelle Northern Water)	Stakeholder meeting in Phalaborwa on 19 July 2012	Ms Mohapi asked that all present share the responsibility to spread the message of this Classification Study. Not all of the stakeholders can sit on the PSC. There will always be gaps on a database. It is up to all of us to inform people not present about this study.	No action required
314	What will be done to make this study easier to be understood?	Mr Richard Nkwini (Phalaborwa)	Stakeholder meeting in Phalaborwa on 19 July 2012	Ms Mohapi said all PSC members must work together to consult with communities and to inform them of the Classification Study. The local stakeholders present at this meeting must also assist the DWA in spreading information of this study.	No action required
315	Why have no livestock of domestic water use been included in the study under 'Rural' or 'Urban' use.	Mr Shirhami Shirinda (Legal Resource Centre)	Stakeholder meeting in Phalaborwa on 19 July 2012	Mr Coleman explained that domestic use falls under 'Urban' and livestock falls under 'Rural'. This information was taken from the Olifants Reconciliation Strategy.	
316	The Steelpoort area falls in the Middle Olifants and the Lower Olifants cannot have higher mining statistics, because fewer mines fall under the latter.	Mr Mark Surmon (Phalaborwa Mining Company Ltd)	Stakeholder meeting in Phalaborwa on 19 July 2012	Mr Coleman said he will revisit the figures again.	To be confirmed.
317	Were any trends of unacceptability picked up during the study and what can be done to counter this?	Mr Derick du Toit (AWARD)	Stakeholder meeting in Phalaborwa on 19 July 2012	Mr Coleman replied that three hot spots were identified regarding the ecological water quality requirements needed to meet the Reserve requirements. Stakeholders such as the mining sector can work together to improve the water quality.	No action required

318	Will AMD become a problem in Phalaborwa?	Mr Richard Nkwinika (Phalaborwa)	Stakeholder meeting in Phalaborwa on 19 July 2012	Mr Coleman said it is currently a problem in Gauteng and there are some problems cropping up in the Witbank and Middelburg areas, but nothing in Phalaborwa as yet.	No action required
319	IUAs 10 and 11 are not complying with standards according to a Water Research Commission (WRC) study.	Dr Sharon Pollard (AWARD)	Stakeholder meeting in Phalaborwa on 19 July 2012	Mr Coleman agreed and said the two IUAs have a Present Ecological State (PES) E which is a major concern and not sustainable. It has been indicated in Classification report as unacceptable.  Ms Naidoo asked Dr Pollard to send her the WRC study. Dr Pollard said she will do so.	Waiting Dr Pollard WRC report
320	The study should not only mention unlawful irrigation use but also unlawful water use by the mining sector.	Mr Dries Enslin (Agri Letaba)	Stakeholder meeting in Phalaborwa on 19 July 2012	Ms Mohapi said many directives have recently been sent to mines that are using water unlawfully.	No action required
321	Agriculture fully supports Scenario 2 (ESB + Scenario) with MCs of I and II. A MC III is unacceptable to the agricultural sector.	Mr Dries Enslin (Agri Letaba)	Stakeholder meeting in Phalaborwa on 19 July 2012	Comment and no further action required.	No action required
322	Where can I get hold of the Reconciliation Strategy and find out about other DWA studies currently being done in the Olifants WMA?	Mr Dries Enslin (Agri Letaba)	Stakeholder meeting in Phalaborwa on 19 July 2012	Mr Coleman indicated that all this information is available on the DWA website.	No action required
323	Do communities have a say in the allocation of water use licenses?	Mr Richard Nkwinika (Phalaborwa)	Stakeholder meeting in Phalaborwa on 19 July 2012	Ms Mohapi said most of the water in the Olifants WMA has already been allocated. Nobody owns the water. The Minister of Water Affairs is the custodian of all water resources. This helps in providing water to previously disadvantaged communities. We must, however, be more efficient in	No action required

				our water use and use the latest technology to reduce water use.	
324	Mr Nkwini commented that there has been an increase in water use in the Olifants WMA.	Mr Richard Nkwini (Phalaborwa)	Stakeholder meeting in Phalaborwa on 19 July 2012	Ms Mohapi said good rains have fallen in the past decade which cannot go on forever. We must be prepared for the next drought.	No action required
325	Did the study also modelled what will happen when the water in the system is over used or under used?	Mr Andre Venter (Letaba Water Users Association)	Stakeholder meeting in Phalaborwa on 19 July 2012	Mr Coleman replied that this is similar to Scenario 3 (Maximum water use scenario). The scenarios are based on actual use and it is not based on the reduction of any water to any sector.	No action required
326	One scenario should be developed to test the vision of the study.	Mr Derick du Toit (AWARD)	Stakeholder meeting in Phalaborwa on 19 July 2012	Mr Coleman replied that a broad vision was developed to support development as well as a sustainable environment.	No action required
327	All the unlawful discharges by all sectors as well as municipalities into the system must also be included into the study. The "Polluter Pays Principle" must be applied to all polluters.	Mr Derick du Toit (AWARD)	Stakeholder meeting in Phalaborwa on 19 July 2012	Shane has indicated that the status quo of the area has been investigated and detailed report is available on the departmental website.	No action required
328	The Olifants Catchment Management Strategy must have a unified view for the area. There must be sufficient water in the system for the environment as well as for development or else the system will die.	Mr Derick du Toit (AWARD)	Stakeholder meeting in Phalaborwa on 19 July 2012	Comment and no further action required	No action required
329	The GDP for mining includes profits by excludes costs for water treatment. However in providing additional water in the scenario evaluation, the cost of treating mine water is quantified and included as an option. Is the treatment costs not counted twice?  Dr Pretorius said that mines will simply pay the WDCCS and continue to pollute. It will all depend on which cost will be higher – cleaning up your own pollution or paying the	Dr Koos Pretorius (Federation for a Sustainable Environment)	Stakeholder meeting in Phalaborwa on 19 July 2012	Mr Crafford confirmed that it is counted twice. It was hoped that the implementation of the Waste Discharge Charge System (WDCCS) would address this problem.	No action required

	charges				
330	Where is the additional water that is decanting into the system coming from?	Stakeholder	Stakeholder meeting in Phalaborwa on 19 July 2012	Mr Crafford said that some of the old mines are decanting, new mines are developed adding more water to the system.	No action required
331	Where will the water supply come from for meeting the deficits shown for the Olifants WMA?	Stakeholder	Stakeholder meeting in Phalaborwa on 19 July 2012	Mr Coleman said the Reconciliation Strategy has recommended a hierarchy of intervention options to make up the water deficit.	No action required
332	How can municipalities be forced to comply with the law and not dump sewage in the rivers?	Stakeholder	Stakeholder meeting in Phalaborwa on 19 July 2012	Ms Mohapi replied that the municipalities have to report within certain structures about their treatment of wastewater. The DWA has also improved its regulatory arm. Directives to municipalities have increased in the past few years and there is also better cooperation between the various government departments. This all has caused a few municipalities to improve their water management and the rest should follow soon. Many municipalities have dilapidated infrastructures that are being upgraded.	No action required
333	The DWA will be doing a number of public awareness exercises specifically with marginalised communities.	Mr Matume Mahasha (DWA)	Stakeholder meeting in Phalaborwa on 19 July 2012	Shane also indicated that extended stakeholder consultation will be undertaken.	Extended stakeholder consultation to be undertaken by the DWA.
334	Inadequate Stakeholder Consultation that does not adhere to the National Water Act.	Federation for a Sustainable Environment (FSE)	Legal Resource Centre on the letter sent to the Department on the 3 July 2012	There is a Project Steering Committee in which the FSE does take actively part in. However, many invited organisations do not attend these meetings as is the case with other DWA projects and the Minister	To have one-on-one, community and sector meetings

				instructed the officials to draw up a comprehensive Stakeholder Engagement Plan to engage meaningfully with organisations representing previously disadvantaged communities.	
335	Inadequate stakeholder consultation regarding the socio-economic report and no previously disadvantaged communities have been consulted in this process	Federation for a Sustainable Environment (FSE)	Legal Resource Centre on the letter sent to the Department on 3 July 2012	There is a Project Steering Committee in which the FSE does take actively part in. However, many invited organisations do not attend these meetings as is the case with other DWA projects and the Department has developed a comprehensive Stakeholder Engagement Plan to engage meaningfully with organisations representing previously disadvantaged communities.	To have one-on-one, community and sector meetings
336	Mozambican communities on the Olifants have been excluded from this process.	Federation for a Sustainable Environment (FSE)	Legal Resource Centre on the letter sent to the Department on the 3 July	The international obligations to Mozambique have been addressed in the Reconciliation Strategy.	No action required
337	Comments by the Public have not been considered	Federation for a Sustainable Environment (FSE)	Legal Resource Centre on the letter sent to the Department on the 3 July	There is a Project Steering Committee in which the FSE does take actively part in. However, many invited organisations do not attend these meetings as is the case with other DWA projects and the Minister instructed the officials to draw up a comprehensive Stakeholder Engagement Plan to engage meaningfully with organisations representing previously disadvantaged communities.	Send comment and responses to PSC members
338	The methods, assumptions and results of the consultant	Federation for a	Legal Resource	The WRCS project has generated a large number of technical and other	No action required

	study were unclear and there was a fear that the public would not be able to make informed decisions based on a clear understanding of the implications of different classification scenarios	Sustainable Environment (FSE)	Centre on the letter sent to the Department on 16 July 2012	documents over the past 17 months, most of which containing information on the economic component of this work. Economic analysis methods, assumptions and results were presented and discussed in detail, not only in reports but also in technical meetings, in collaboration meetings and in PSC meetings. Moreover, Excel spreadsheets containing all data used and all assumptions made were circulated to the PSC. Results have similarly been reported.  It is also important to point out that all other PSC members were satisfied with the methods, assumptions, results and information shared. The study team went to great lengths to communicate with industry organisations and government departments on these matters.	
339	Scenarios are poorly named	Federation for a Sustainable Environment (FSE)	Legal Resource Centre on the letter sent to the Department on 16 July 2012	The renaming of the scenarios were done and included in the revised report	No action required
340	The scenarios were developed directly will some stakeholders. No justification has been done for this deviation in the process	Federation for a Sustainable Environment (FSE)	Legal Resource Centre on the letter sent to the Department on 16 July 2012	The FSE had been part of this process, through their role in the PSC. They had also received all relevant documentation relating to this process, and all their comments had been responded to.	No action required
341	Intermediate scenarios should be considered	Federation for a Sustainable Environment (FSE)	Legal Resource Centre on the letter sent to the Department on	If the FSE would like to propose additional Scenarios, they are welcome to do so as the stakeholder engagement process allows for that.	To develop additional scenario

			16 July 2012		
342	No integrated model used in the economics assessment was provided. This limits the economists ability to comment on the detailed assumptions that drove the outputs of the model	Dr Jane Turpie	Legal Resource Centre on the letter sent to the Department on 16 July 2012	The DBSA model was used to assess the economics of this catchment. As is the case in hydrological and aquatic ecological modelling (e.g. SPATSIM), the running of an economic model requires a programme that is set up for every Scenario run, which was what was done. The concern raised would require of the study team to develop an automated economic modelling programme for review by the FSE. This would be a highly complex task and falls outside scope of work of the study.	No action required
343	Tradeoffs between costs of extracting and polluting activities and the benefits from water quality and quantity are not presented. Understanding these trade-offs is important information to include to improve decision making	Dr Jane Turpie	Legal Resource Centre on the letter sent to the Department on 16 July 2012	The team had to develop a specific water quality abatement economic model through which to internalise the costs of poor water quality into the economy. This model, its data and its methodology was agreed upon first with DWA RQS staff (Dr N Slabbert and Dr S Jooste) and thereafter presented to the Project Steering Committee (PSC) for approval (in July 2011). The results of the modelling were presented to the PSC in January 2012 and May 2012 and the full model with all assumptions and methods included was sent to the PSC, by email, on a number of occasions.	To recheck the water quality model
344	The impact of degraded water quality on human health, livestock and wildlife have not been explained or included in the analysis. This would help stakeholders understand the impacts of polluting activities and allow a fuller computation of potential benefits of restoration of river	Dr Jane Turpie	Legal Resource Centre on the letter sent to the Department on 16 July 2012	The team had to develop a specific water quality abatement economic model through which to internalise the costs of poor water quality into the economy. This model, its data and its methodology was agreed	To be included in the analysis

	conditions. Further, the cost of addressing water quality issues are not provided or explained.			upon first with DWA RQS staff (Dr N Slabbert and Dr S Jooste) and thereafter presented to the Project Steering Committee (PSC) for approval (in July 2011). The results of the modelling were presented to the PSC in January 2012 and May 2012 and the full model with all assumptions and methods included was sent to the PSC, by email, on a number of occasions.	
345	There is inconsistency in reporting as to whether inter-basin transfers are only required for Scenario 2 and 5	Dr Jane Turpie	Legal Resource Centre on the letter sent to the Department on 16 July 2012	The team reviewed the reports and cannot find any inconsistency	To recheck the report
346	Although many assumptions would have been made, there is no sensitivity analysis to explore the range of possible outcomes	Dr Jane Turpie	Legal Resource Centre on the letter sent to the Department on 16 July 2012	Sensitivity analysis is normally required in economic analyses where statistical modelling is done and where some input variables that are subject to statistical uncertainty. Examples of such uncertain input variables include for instance future tax rates, interest rates, inflation rates and other variables which may not be known with great precision. Sensitivity analysis would thus be pertinent where we have such input variables and where uncertainty around their values could change the outcome of a scenario. In this case, economic models of the DBSA were used, outputs of Dr Turpie's 2010 study, and outputs from the DWA Olifants Reconciliation Strategy as key inputs. There is insufficient basis in all these outputs to assume statistical uncertainty and	No action required

				<p>statistical variability around the data provided.</p> <p>Dr Turpie was the key author of the document entitled "<i>THE NATURE, DISTRIBUTION AND VALUE OF AQUATIC ECOSYSTEM SERVICES OF THE OLIFANTS, INKOMATI AND USUTU TO MHLATUZE WATER MANAGEMENT AREAS, April 2010</i>" which was done under contract to DWA. This document formed a key input into the work conducted by Prime Africa Consultants and Golder Associates during the course of the Olifants WRCS Project</p> <p>Furthermore, sensitivity analysis would not change the comparative outcomes of the scenario analysis.</p>	
347	There is no detail provided as to how the costs/burdens associated with augmentation actions will be shared among the different stakeholders, which would obviously impact stakeholders point of view on the different scenarios	Dr Jane Turpie	Legal Resource Centre on the letter sent to the Department on 16 July 2012	The question falls outside the scope of this study.	No action required
348	The results of the analysis provide no indication of the relative costs and benefits to poor households, nor do they provide actual estimates of job losses or gains	Dr Jane Turpie	Legal Resource Centre on the letter sent to the Department on 16 July 2012	<p>Dr Turpie's 2010 study (see above) clearly sets out the benefits to poor households of healthy river systems, and these analyses were used in this work.</p> <p>It was also made it clear on numerous occasions, that in none of the scenarios does this Olifants Classification study anticipate reduction in economic outputs or net job losses. An analysis of job gains can be provided, but this would require additional work, for which an</p>	No action required

				extension of the study would be required. However it is not believed that such analysis would add new information which would change the outcome of the Scenario analysis.	
349	The reports and scenarios are full of jargon and acronyms which make it difficult to communicate information in way that stakeholders will be able to understand to make informed decisions. More should be done to make these reports accessible	Dr Jane Turpie	Legal Resource Centre on the letter sent to the Department on 16 July 2012	It must be pointed out that the technical language used had been specified by the WRCS guidelines, of which Dr Turpie was a co-author	No action required
350	The Department has not provided the information necessary to allow those stakeholders who are trying to participate in this process to do so.	Federation for a Sustainable Environment (FSE)	Legal Resource Centre on the letter sent to the Department on 16 July 2012	The FSE was part of all project meetings and received all these documentation.	No action required
351	It is necessary for the stakeholders to see an economic report which explains the methods and assumptions in detail and presents the results of the analysis in way that is clear to stakeholders and decision-makers and sufficiently detailed, including in spatial terms, to make well-informed choices	Federation for a Sustainable Environment (FSE)	Legal Resource Centre on the letter sent to the Department on 16 July 2012	All reports and excel were forwarded to all Project Steering Committee (PSC) members and were also presented during the meetings and approved by the PSC members.	No action required
352	Asking any stakeholders to make an assessment and choose between the few scenarios that are presented without having sufficient information to understand how exactly the scenarios were reached and what the economic costs and benefits associated with each are, would be requiring them to make binding decisions based on a complete lack of information	Federation for a Sustainable Environment (FSE)	Legal Resource Centre on the letter sent to the Department on 16 July 2012	It appears that the FSE and the LRC are under the impression that the stakeholders are to make the final decision on management classes in the Olifants WMA, however, it is in fact the Minister that is mandated to do so, while taking consideration of stakeholder input.	No action required
353	International Law Obligations and trans-boundary impact to Mozambique	Federation for a Sustainable Environment (FSE)	Legal Resource Centre on the letter sent to the Department on 16 July 2012	There are SADC protocols that are adhered to and South Africa and Mozambique are members of LIMCOM where the shared rivers in Southern Africa are discussed on a regular basis. The Olifants River	To discuss on regular basis at LIMCOM

				basin is one such river. If there are serious concerns regarding the contravention of these protocols in terms of the Olifants Classification Process the CTV through the Mozambican Government is welcome to raise the concerns through LIMCOM and other relevant SADC protocols.	
354	SADC protocol and Inco-Maputo Interim Agreement	Federation for a Sustainable Environment (FSE)	Legal Resource Centre on the letter sent to the Department on 16 July 2012	The Classification process will ensure that a healthy ecosystem is maintained in the Olifants River System. In setting the Management Classes the specified flow and quality of water entering into Mozambique will be improved ensuring a sustainable and healthy system. The DWA will meet it's obligations in terms of the relevant SADC protocols and agreements.	The DWA will meet it's obligations in terms of the relevant SADC protocols and agreements.
355	Is there an Ecological category D in Management Class (MC) I?	Mr Marcus Selepe (Inkomati CMA)	Seventh OLLI Water and Environmental Oversight Forum meeting on 3 August 2012	There is a Management Class configuration table indicating percentage of Ecological Categories representation in Integrated Units of Analysis (IUA). For MC I more representation of A/B, B, C and less D is expected of biophysical nodes which constitute an IUA.	No action required
356	Policies drafted by your own Department emphasise the importance of stakeholder participation in the classification process. These policies include the General Public Participation Guidelines, 2001; the National Water Resource Strategy, 2004; and the Guidelines for Catchment Management Strategy, 2007.	Centro Terra Viva – Environmental Studies and Advocacy (CTV) from Mozambique and on behalf of the Federation for a Sustainable Environment (FSE),	Legal Resource Centre on the letter sent to the Department on 15 August 2012	While stakeholder participation is central to the National Water Act (Act No. 36 of 1998) (NWA) and is supported by subsequent policies and guidelines, the Water Resource Classification System (WRCS) was developed in September 2010, in terms of Regulation 810; after mandatory public participation	To arrange one-on-one, community and sector meetings

		<p>the Association for Water and Rural Development (AWARD) and the Youth Development and Environmental Advocacy (YDEA)</p>	<p>processes. The policies referred to do not make specific mention of the Classification Process as no system was in place at the time of their development. In fact the National Water Resource Strategy, 2004, specifically states that “<i>Resource Directed Measures (including Classification of water resources) will not be established via the National Water Resource Strategy (NWRS) (Section 3.1.2)</i>”. The Generic Public Participation guidelines and Catchment Management Strategy Guidelines both refer to representative stakeholder engagement and participation, and acknowledges that it is impossible that every individual residing in a catchment area/geographic area can be consulted. Rather representatives of the groups, communities, sectors, organizations, etc are identified and included in consultation process. This approach was followed in terms of the Olifants Classification Process. The WRCS requires stakeholder engagement during step 6 of the process. It does not require broad based public participation processes to be undertaken. In addition, In terms of Section 13, sub-section (4) of the NWA the only consultation requirement is the Notice published in the Government Gazette for public comment. However the WRCS does go beyond this and prescribes that there must be targeted stakeholder consultation, which was undertaken as part of the Olifants Classification</p>	
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				process. Protection of water resources is not a delegated function and is thus not decentralized. In terms of the Classification process stakeholders were engaged, consulted, informed and made aware of the process and were given the opportunity to contribute.	
357	International Law Obligations	Centro Terra Viva – Environmental Studies and Advocacy (CTV) from Mozambique and on behalf of the Federation for a Sustainable Environment (FSE), the Association for Water and Rural Development (AWARD) and the Youth Development and Environmental Advocacy (YDEA)	Legal Resource Centre on the letter sent to the Department on 15 August 2012	There are SADC protocols that are adhered to and South Africa and Mozambique are members of LIMCOM where the shared rivers in Southern Africa are discussed on a regular basis. The Olifants River basin is one such river. If there are serious concerns regarding the contravention of these protocols in terms of the Olifants Classification Process the CTV through the Mozambican Government is welcome to raise the concerns through LIMCOM and other relevant SADC protocols.	The DWA will meet it's obligations in terms of the relevant SADC protocols and agreements.
358	Appropriate public consultation process in Mozambique	Centro Terra Viva – Environmental Studies and Advocacy (CTV) from Mozambique and on behalf of the Federation for a Sustainable Environment (FSE), the Association for Water and Rural Development (AWARD) and the Youth Development	Legal Resource Centre on the letter sent to the Department on 15 August 2012	This is an internal South African study and the DWA does not have the mandate to include other countries in this study. There are protocols in place where South Africa and Mozambique discuss issues of mutual interest. The DWA is, however, aware of its obligations to downstream nations and that obligation will always be fulfilled. The result of this study will in fact ensure that the Ecological Flow Requirements (EFRs) into	To discuss on regular basis at LIMCOM

		and Environmental Advocacy (YDEA)		Mozambique will be met, and indeed be of benefit to the communities living downstream as well as to the ecosystem. No social or economic implications will be borne by the communities living in Mozambique so it is unclear of what specific 'impacts' are of concern.	
359	You respond to the content of our letters dated 3 July and 16 July 2012	Centro Terra Viva – Environmental Studies and Advocacy (CTV) from Mozambique and on behalf of the Federation for a Sustainable Environment (FSE), the Association for Water and Rural Development (AWARD) and the Youth Development and Environmental Advocacy (YDEA)	Legal Resource Centre on the letter sent to the Department on 15 August 2012	Please refer to responses 334 to 354	To respond to the letter
360	Address the concerns raised in the review conducted by the independent experts commissioned	Centro Terra Viva – Environmental Studies and Advocacy (CTV) from Mozambique and on behalf of the Federation for a Sustainable Environment (FSE), the Association for Water and Rural Development (AWARD) and the Youth Development	Legal Resource Centre on the letter sent to the Department on 15 August 2012	Please refer to responses 302 to 322	To respond to the letter

		and Environmental Advocacy (YDEA)			
361	Take into consideration the applicable policies, local and international law and ensure that an appropriate consultation process is facilitated and negotiations with impact communities are conducted before further steps are taken in the classification process	Centro Terra Viva – Environmental Studies and Advocacy (CTV) from Mozambique and on behalf of the Federation for a Sustainable Environment (FSE), the Association for Water and Rural Development (AWARD) and the Youth Development and Environmental Advocacy (YDEA)	Legal Resource Centre on the letter sent to the Department on 15 August 2012	Please refer to responses 356 to 361	To respond to the letter
362	A request was made to the DWA at the stakeholder meetings in July 2012 that an additional scenario be considered and evaluated. A meeting was held to understand the specific details of the scenario.	Dr Koos Pretorius (Federation for Sustainable Development)	One-on-One meeting to FSE in Hatfield, Pretoria on 31 August 2012.	After discussions with Dr Koos Pretorius the additional scenario was formulated:  'After water demands are met, any excess mine water being treated and released to the river where it can contribute to EWR flows and contribute to water quality'.	Scenario to be evaluated and results to be presented at next study PSC meeting.
363	Dr Pretorius raised his concerns regarding the water quality limits used at the EWR sites for the different ecological categories.	Dr Koos Pretorius (Federation for Sustainable	One-on-One meeting to FSE in Hatfield, Pretoria on 31	Mr Coleman explained the context of the guideline limits used in the water quality assessment. The focus was on the ecological water quality, and	No action required

		Development)	August 2012.	these values were used. He indicated that the resource water quality objective process would establish the final site specific water quality limits for the variables. This will be a consultative process that stakeholders will participate in.	
364	Dr Pretorius questioned whether the closure and pollution treatment costs were included in the contribution to the GDP of the mines or the costs taken of the catchment GDP.	Dr Koos Pretorius (Federation for Sustainable Development)	One-on-One meeting to FSE in Hatfield, Pretoria on 31 August 2012.	Mr Coleman explained that currently the treatment costs are taken off the catchment GDP. This does not affect the total GDP of the catchment.	No action required
365	The Olifants Classification Process, Resource Quality Objectives and Reserve Determination were part of his presentation at this conference.	Mr Pieter Viljoen, DWA	Olifants River Conference, Skukuza, KNP on 28 September 2012	Comment and no further action required.	No action required
366	My understanding of catchment management is that a catchment management strategy should have first been written with a vision for the catchment. This then forms the basis for all other management tools such as classification and resource quality objectives (RQOs). A concern was raised that this classification study with its vision has just been 'parachuted' into the catchment.	Dr Koos Pretorius (Federation for Sustainable Development)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Ms Naidoo agreed that ideally a catchment management strategy should have been drafted first, but this is not yet in place. The Inkomati Catchment Agency is the only catchment currently with a catchment management strategy in place. However, the DWA cannot wait for a catchment management agency to first be created for the Olifants before the classification study can be done. There are serious issues at hand such as protecting water resources and regulating water use which cannot wait. The RQOs will be done after the classification study. Ideally the two would have been developed together. Should the RQOs come up with different results then the relevant information of the classification study	No action required

				will need to be adjusted.	
367	<p>A catchment vision must be developed by stakeholders in that catchment. This can only be done if all socio-economic factors, which differ from catchment to catchment, have been taken into consideration. Care should also be taken that the vision on all groups and sectors are taken into consideration. Is mining, for example, important to all groups to make the Olifants a workhorse catchment? Whose vision are we basing this on? If people say this must be a hardworking catchment, then all should say it and not just a small portion. What about, for example, the vision of the emerging farmers. Not all stakeholders understand the bigger picture and it should be explained to them.</p> <p>Dr Pollard added that the Inkomati is not working that well, because the catchment management strategy has not been fully implemented.</p>	Dr Sharon Pollard (AWARD)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Ms Naidoo explained that this study is one of the first classification studies done by the DWA and a lot has been learnt during this study. Should anybody have any comments such as from the emerging farmers, then it must please be passed on to the DWA.	No action required
368	<p>The commercial farming sector will approach the DWA to set up a meeting in November 2012 to discuss classification.</p>	Ms Sanet de Klerk, (Obaro and Irrigation Sector)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Ms Naidoo added that this meeting is welcomed and should rather take place sooner than later, because she is uncomfortable to have come thus far in the process and still have outstanding issues from stakeholders.	To arrange the meeting
369	<p>Classification is a difficult process to understand and it took him a lot of time and effort to understand it. What is vital is that stakeholders understand the implications of setting the management class (MC) at a specific level.</p> <p>The various authorities must also work and plan together, because the proposed MC for integrated unit of analysis (IUA) 1, for example, does not correlate with the Mpumalanga Tourism and Parks Agency (MTPA) conservation map of Mpumalanga. This map shows many areas that must be conserved, which cannot take place in an MC III. If the MC does not support the environment, then we could lose those areas to developments and we</p>	Dr Koos Pretorius (Federation for Sustainable Development)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Ms Naidoo explained that water use authorisation is currently being done based on the preliminary Reserve determination. Setting MCs will assist the DWA to do this on a better footing. She added that Dr Pretorius has greatly assisted this study thus far and many of his concerns have been incorporated into the study and an additional scenario was added to the study based on his suggestions. Ms Naidoo re-iterated that if a member of this PSC feels that their	No further action required

	are not fulfilling our obligation to the environment. There is a divorce between reality and what this study is doing. We must turn this study from a paper exercise into reality.			input was not adequately addressed, then they should please contact the DWA.  Many interactions have taken place with the MTPA and with the South African National Parks Board to ensure that all authorities and stakeholders move in the same direction.	
370	Dr Pollard commented that she is still not certain on how to move from the scenarios to a MC.	Dr Sharon Pollard (AWARD)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Ms Naidoo replied that the technical presentation will help in understanding this.	To arrange a meeting with Dr Pollard
371	Does the water requirement for the whole WMA of 1016 million m <sup>3</sup> /a includes the allocation for the power stations and why will there be a deficit by 2017.	Mr Duane MacPherson (Anglo Coal)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Mr Coleman replied that the power stations allocations have been included and the deficit is the result of the absence of the ecological Reserve that has not yet been implemented.	No action required
372	Was the Olifants River Reconciliation Strategy Study based on the present ecological state (PES) or recommended ecological category REC).	Mr Bertus Bierman (Anglo Platinum and Olifants River Joint Water Forum)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Ms Retha Stassen (Study Team) explained that PES was used for some of the main EWR sites in the study area while REC was used only in the Kruger National Park. The Classification Study included all the EWR sites for the current study.	No action required
373	Mr Bierman commented that the newly added scenario, Scenario 6 is very good news. The mining sector has been advocating this for some time but up to now the DWA did not agree on the volume of water involved. When the platinum sector had high level discussions with the coal sector, water quality was a major issue. The aim should be to clean acid mine drainage (AMD) up to potable level before it is released into the river system, but this is very expensive. Should the river be polluted, then it will be diluted and water quality will improve. The	Mr Bertus Bierman (Anglo Platinum and Olifants River Joint Water Forum)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Mr Coleman replied that modelling exercises can be run to see to what level the AMD must treated before being released into the system. For the sake of the scenarios, the AMD was cleaned up to 200 mg/l of sulphate.  Mr Coleman stated that it was the DWA's decision on how the financial	DWA to investigate

	<p>acceptable quality of the water to be discharged into the Olifants System should first be determined (standards), because it will have a huge impact on cost. We need to look at a business case for the treatment of water to make it sustainable. We cannot pay R6 per cubic metre for treatment and discharge it into the river for free.</p> <p>PSC members agreed that there was no agreed upon funding model for these water reclamation projects. It is unclear who pays for the cost of pollution.</p>			side of treatment of the AMD will work.	
374	<p>We must look at the river in total. The DWA would like the mines to come up with a sustainable business case.</p>	<p>Mr Stanford Macavele (DWA, Mpumalanga)</p>	<p>Meeting 4 of PSC at Loskop Dam on 24 October 2012</p>	<p>Ms Nyamande has indicated that the classification process look at the enter river (system) from its source to the confluence with the Letaba River and flows to the Mozambique</p>	<p>No action required</p>
375	<p>Mr MacPherson asked what will happen until 2035 with the AMD and what is the 150 ML/d mentioned in the presentation.</p>	<p>Mr Duane MacPherson (Anglo Coal)</p>	<p>Meeting 4 of PSC at Loskop Dam on 24 October 2012</p>	<p>Mr Coleman explained that treatment plants must be built to clean up the AMD and the 150 ML/d will be the excess water available in the system from cleaning up AMD.</p>	<p>No action required</p>
376	<p>The ecological Reserve must be looked after and the system must be replenished. Are there systems in place to achieve this and will all sectors know what to do?</p>	<p>Mr Duane MacPherson (Anglo Coal)</p>	<p>Meeting 4 of PSC at Loskop Dam on 24 October 2012</p>	<p>Mr Coleman replied that the Reconciliation Strategy lists intervention options to conserve water and this will be communicated to all sectors in the near future.</p>	<p>To inform stakeholders all management options the DWA is undertaking in the area.</p>
377	<p>Dr Pretorius commented that additional water will be needed if Scenario 6 is the chosen way forward. Water gets diverted outside the Olifants WMA to places such as Mokopane. Why cannot water be imported to make up for this loss of water within the WMA?</p> <p>He added that if we look at it nationally, then the Olifants must get more water from the Vaal River System, but the DWA said it is not possible. Mr Nditwani replied that it is not impossible, but currently every user in the Olifants can be sustained when certain measures are implemented.</p>	<p>Dr Koos Pretorius (Federation for Sustainable Development)</p>	<p>Meeting 4 of PSC at Loskop Dam on 24 October 2012</p>	<p>Mr Tendani Nditwani (DWA) explained that the Olifants already 'imports' 230 million m<sup>3</sup>/a water from outside. It is important that one looks at your neighbours from a national perspective and provide these transfers to help out areas with limited water supply.</p> <p>Dr Nadene Slabbert (DWA) added water resources will be stretched by</p>	<p>No further action required</p>

	However this may change in future at which time such transfers may be evaluated.			applying the intervention options of the Reconciliation Strategy.	
378	According to the National Water Act (NWA) water must be managed on a catchment basis and now suddenly we look at it from a national perspective, which goes against the spirit of the NWA.	Dr Sharon Pollard (AWARD)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Shane indicated that the classification process still follow the same spirit of the NWA	No action required
379	Why if all the AMD in the Upper Olifants is treated does it still stay at a MC III?	Dr Koos Pretorius (Federation for Sustainable Development)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Mr Coleman explained that it depends on where the mine with the AMD is situated and where the AMD will be released into the System. Various other factors also influence the MC of a water resource.	No action required
380	This study should look at the Olifants System after 2035 when most of coal resources will be gone and the mining ceases. This area will lose 40% of its GDP and unemployment will be a massive problem. What are the options available and what can be done. Plans must be made to replace mining as an employer and these developments will need water.	Dr Koos Pretorius (Federation for Sustainable Development)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Ms Naidoo agreed and said this is one of the gaps in this study. Mr Pieter Viljoen (DWA) added that we will not be caught unawares in 2035. Most water-related legislation and strategies are reviewed every five years. Mines will also close gradually. It will be picked up and strategies will be revised to take these closures into consideration.	To be investigated and included in the scenario report
381	The study should report on what the possible changes will be in the WMA after 2035.	Dr Koos Pretorius (Federation for Sustainable Development)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Mr Coleman will add this to report.	To be added to the report
382	How will stakeholder engagement be taken further? The technical side of the study is not a problem, but stakeholder engagement is. Many stakeholders said they do not understand the process. When will stakeholders chose a MC and when will the final decisions be taken.	Dr Sharon Pollard (AWARD)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Ms Nyamande explained that the Stakeholder Engagement Plan of the DWA will continue even after this study has been completed and the RQO process has been finalised. The DWA will visit catchment forums and river forums to engage with communities in the study area.	To arrange a meeting with each organisations or sectors

				Ms Naidoo added that the Minister will take the decision on the MCs. This PSC can make recommendations to the Minister which will be taken into consideration by the Minister.	
383	When will the DWA's Stakeholder Engagement Plan start?	Dr Koos Pretorius (Federation for Sustainable Development)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Ms Naidoo explained that her officials are already liaising with forums in the study area and the RQOs process will also have a stakeholder engagement component. The DWA realises it is difficult to explain technical studies such as this to communities but this was not the brief of the study team and the DWA will be taking it further.	To continue with the implementation of the stakeholder engagement plan
384	No discussions at community level were held to explain the meaning of the MCs and what it could entail.	Mr Derick du Toit (AWARD)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Shane also indicated that extended stakeholder consultation will be undertaken.	To arrange the meeting with communities
385	When will gazetting take place and when stakeholder engagement will be finalised?	Dr Koos Pretorius (Federation for Sustainable Development)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Ms Naidoo said gazetting will take place in August / September 2013 after the RQO process has been finalised and the stakeholder process will run until then.	To continue with the implementation of the stakeholder engagement plan
386	This PSC has come very far in this process. Sometimes we have to agree to disagree. We support the process and we want to gazette the MCs to protect the environment in a sustainable manner.	Dr Thomas Gyedu-Ababio (Kruger National Park)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Shane thanks Dr Gyedu-Ababio comment and indicated that the MCs will be gazetted to protect the environment.	To gazette the class together with Resource Quality Objectives
387	Any organisation that would like one-on-one meetings to discuss this study, must please contact Ms Nyamande as soon as possible.	Ms Shane Naidoo (DWA)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Shane indicated that organisation must liaise with Tovho regarding one-on-one meeting.	To arrange a meeting with each organisation

388	Shane offered to have documents translated and Ms de Klerk asked if documents could be translated into Afrikaans for the irrigation sector. Ms Naidoo said this will be done.	Ms Shane Naidoo (DWA)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Dr Koos Pretorius supported the idea of supporting documents such as newsletter to be translated to Afrikaans.	Newsletters to be translated to other languages such as Afrikaans
389	Thank you to all PSC members for their time and effort in assisting this study during the past two years. It is a very complicated process and it has been a learning experience for the DWA and it is hoped that future classification studies will have more improved stakeholder processes that will run much smoother.	Ms Shane Naidoo (DWA)	Meeting 4 of PSC at Loskop Dam on 24 October 2012	Shane thanks all PSC members for supporting this project since its inception in 2010.	No action required
390	In terms of Scenario 6 (excess water from treated acid mine water), do you have the list of mines who are prepared to take part in the treatment, and what is the volume of the water to be treated?	Ms Lebo Sebola, Lepelle Water	Olifants River Forum meeting (7 December 2012)	The scenario is the option envisaged, just like the proposed management options to solve the problem. Those scenarios are not yet implemented to enable us to have the list of the mines treating acid mine water.  Mr Tendani Nditwani indicated that according to the Olifants Reconciliation strategy, 12 Million m <sup>3</sup> /a was indicated, and no guarantee of that volume currently.	No action required
391	Do you lower the Water Quality target, in order to meet the proposed Management Classes (MCs)?	Prof. Anamarie, Stellenbosch University	Olifants River Forum meeting (7 December 2012)	The RQOs project will set the target (descriptive and numerical) for water quality and quantity in the water resources to be complied with, to give effect to the set MCs. There will not be relaxation of the water quality targets.  Mr Stanford Macevele added on the importance of Waste Discharge Charge System and the Green and the Blue drop DWA other initiatives to improve on water quality.	No action required
392	Between Scenario 5 and 6, Why is the water price in Scenario 5 more than in Scenario 6, and not vice versa?	Ms Kgole Mpetjane, ESKOM	Olifants River Forum meeting (7 December 2012)	The costs of treating acid mine water in Scenario 6 will be incurred by the mining houses, and not by the tax	No action required

			2012)	payers.	
393	Why scenario 6 is regarded as “excess water”? Mine water should not be seen as excess water because is water from the other part of the WMA.	Mr Pieter Viljoen, DWA	OLLLI Forum Meeting – at Kruger National Park (Letaba Rest Camp)  (28 November 2012)	It is referred as “excess water” because is the treated mine water that will be left when the current water supply deficit in the WMA is met or corrected.	No action required
394	What is the relationship between Management Classes (MC) and Reconciliation scenario?	Mr Andre Venter	OLLLI Forum Meeting – at Kruger National Park (Letaba Rest Camp)  (28 November 2012)	The MCs are derived from the water resource classification scenarios, which incorporated the Reconciliation scenarios as basis for their configuration and development.	No action required
395	<p>I am concerned about the classification status of the Steelpoort catchment; at present the entire area is classified as a Class III if I am correct. Although this is understandable for perhaps the larger portion of the catchment my concern lies in the upper catchment areas, especially along the Steenkampsberg watershed. These upper catchment areas are NFEPA’s and possibly should fall in a much higher category than Class III. As an example, Lakenvlei and surrounds, which falls within this upper area, is a proposed Protected Environment (NEM:PAA).</p> <p>I would therefore like to ask whether there is any way to potentially sub-divide the Steelpoort catchment to accommodate a higher level for these areas within the larger Steelpoort catchment?</p> <p>Please could you include MTPA in any discussions around this point as they apparently have similar concerns?</p>	Ms Ursula Franke, Endangered Wildlife Trust	Email on 10 December 2012	<p>The catchment is divided into sub-nodes to make sure that the pristine tributaries are protected. The RQOs will come up with the prioritization of the Resource Units when setting the objectives, which will further enhance protection of the sub-area within an IUA.</p> <p>The MTPA has been involved with the process from the beginning. A one-on-one meeting with the MPTA was held on “Delineation of the Integrated Units of Analysis” on the 27 June 2011.</p>	No action required

396	How has the Olifants Classification project incorporated informal settlements who are using water directly from the river?	Ms Elize Swart,	Chamber of Mines Sector meeting, Marshalltown, Johannesburg, 7 February 2013.	The Reserve determination study which was used as one of the data sources for the study includes water for ecology and Basic Human Needs and the water quality requirements.	No action required
397	How sustainable is scenario 6, releasing treated mine water into the river system without gaining or recovering the cost of treating?	Mr Kevin Kruger, AngloGold Ashanti	Chamber of Mines Sector meeting, Marshalltown, Johannesburg, 7 February 2013.	The scenario was a request from stakeholders, and the thinking was that the cost associated with treating of mine water will be spread throughout the mining sector.	No action required
398	<u>Comment:</u> The COM has previously disputed the Olifants Reconciliation study management option of the amount of water to be treated by mines. Their concern was why only the mines were supposed to treat contaminated water and not the industries.	Ms Stephina Mudau, Chamber of Mines	Chamber of Mines Sector meeting, Marshalltown, Johannesburg, 7 February 2013.	Comments and no further action required	No action required
399	The way scenario 6 was presented, it creates tension. What financial models were put in place to assess the feasibility of scenario 6?	Mr Jozua Ellis, AngloGold Ashanti	Chamber of Mines Sector meeting, Marshalltown, Johannesburg, 7 February 2013.	To check the feasibility of payments by mines is out of the scope of the classification process. Currently, it is still an option which is yet to be fully evaluated.	No action required
400	Pollution- Astrata Allois industry producing, chrome 6, the impact of chrome 6 on the river water and the people?	Martin Hhlongwa, CDW1	Thaba chweu MUN sector meeting (12/2/2013)	Chrome 6 will fall under Chemical pollution, which negatively impacts on the water resource (river), and which has a negative impact and even fatal to the people. DWA has sampling points on different sites within river systems, to check any	No action required

				possibility of any development impacting on rivers, even groundwater.	
401	What role are we going to play because we stay far from the main stem?	Patric Mokgethwa-Ward 8	Thaba chweu MUN sector meeting (12/2/2013)	All tributaries feeding into the main stem are considered	No action required
402	Who's responsibility is it to educate our community through campaigns, information sharing – schools, clinics, hospitals?	Martin Hhlongwa, CDW1	Thaba chweu MUN sector meeting (12/2/2013)	Today's expectation is for you as CDW s representative to communicate the meeting's engagement on classification with the ward you are representing. DWA is already engaging with communities on different platforms like "water saving, sanitation (hygiene), and water week campaigns.	No action required
403	Matibili- Blyde river canyon – Gum trees in their area they are using boreholes – the Kadishi river is now dry. How is ward 8 affected? A research was done in the area before, which indicated that the river is number 2 in the country in terms of the conservation status.	Susan Molobela, Ward 8	Thaba chweu MUN sector meeting (12/2/2013)	WFW project is involved with cutting invasive alien trees like Gum trees, in order to save water consumed by the trees.	No action required
404	Documentation to the community level need to suite the illiterate people who are not educated.	Patrick Mokgethwa-Ward 8	Thaba chweu MUN sector meeting (12/2/2013)	We have already translated the brochure to native languages (Venda, sotho, Tsonga, Tswana and Xhosa), in order to mitigate the problem. A lot still need to be done still, putting the presentation in the format, which will be suitable for each target group.	No action required
405	Need programme to coordinate issues of lack of water at Matibidi (water table dropped because of lack of water) – we cannot rely on borehole because winter time we have a problem of water shortage. We need Matibidi river because it is a good river, which need a buffer to protect it from people and animals. How do we report the incident?	Chris Nkuna (office of the speaker)	Thaba chweu MUN sector meeting (12/2/2013)	Olifants RQOs project is underway to operationalise the set MCs, that will put a descriptive or numbers (like buffers) as target to water resources.  We have our DWA Mpumalanga regional office to report pollution	No action required

				incidents.	
406	Patrick indicated that they report incidents through CDWs to Cogta.	Patrick Mokgethwa-Ward 8	Thaba chweu MUN sector meeting (12/2/2013)	Comment and no further action required	No action required
407	Which area is covered by Olifants WMA? Please include the Map.	Rodger Baloyi (Bushbuckridge Local Municipality)	Bushbuckridge Municipality Sector meeting (12/2/2013)	Rufus Nengovhela: Map will be included in the presentation	Map will be provided in the next meeting
408	Is Sabie Sand area included within the Olifants WMA	Rodger Baloyi (Bushbuckridge Local Municipality)	Bushbuckridge Municipality Sector meeting (12/2/2013)	Rufus Nengovhela: is not part of the Olifants WMA. It will be included in the Inkomati WMA project.	To be included in the Inkomati WMA project
409	How are you going to deal with illegal water users	Rodger Baloyi (Bushbuckridge Local Municipality)	Bushbuckridge Municipality Sector meeting (12/2/2013)	Rufus Nengovhela: the Department has a plan on how to address issue of Illegal water users.	No action required
410	The role of stakeholders in this project	Cornelius Mabuza (Ward Committee: Ward No 2)	Bushbuckridge Municipality Sector meeting (12/2/2013)	Rufus Nengovhela: the role of the stakeholders is to guide the project.	No action required
411	Assist as in getting water.	T.M. Makaringe (Ward Counsellor: Ward 29)	Bushbuckridge Municipality Sector meeting (12/2/2013)	Mbali Dlamini: She indicates that this project will help in protecting and securing that in future we will have water to supply the communities.	No action required

412	How are we going to benefits in this project?	T.M. Makaringe (Ward Counsellor: Ward 29)	Bushbuckridge Municipality Sector meeting (12/2/2013)	Mbali Dlamini: She indicates that this project will help in protecting and securing that in future we will have water to supply the communities.	No action required
413	Where are we in the project	T.M. Makaringe (Ward Counsellor: Ward 29)	Bushbuckridge Municipality Sector meeting (12/2/2013)	Rufus Nengovhela: Rufus indicate that this project is in the stage of consulting with stakeholders regarding water resource options	No action required
414	How are you doing to address to issue of alien plants	Piet Mashego (COGTA)	Bushbuckridge Municipality Sector meeting (12/2/2013)	Mbali Dlamini: the Government through the Department of Environmental Affairs has plan on how to address the Alien Plants	No action required
415	The Working for Water (WFW) Programme be open and transparency	Piet Mashego (COGTA)	Bushbuckridge Municipality Sector meeting (12/2/2013)	Rufus Nengovhela indicated that WFW is no longer the responsibility of DWA.	No action required
416	To involve local communities in the WFW programme	Piet Mashego (COGTA)	Bushbuckridge Municipality Sector meeting (12/2/2013)	Rufus Nengovhela indicated that WFW is no longer the responsibility of DWA.	No action required
417	To community with stakeholders regularly	Piet Mashego (COGTA)	Bushbuckridge Municipality Sector meeting (12/2/2013)	Rufus Nengovhela indicated that the department will community regularly in the future project.	To community regularly with stakeholders

418	The Department must make procedure for getting water use license easily accessible to Local communities to avoid illegal water use	Piet Mashego (COGTA)	Bushbuckridge Municipality Sector meeting (12/2/2013)	Rufus Nengovhela has indicated that the department has the process in place.	No action required
419	Boreholes are not working for more than six months	Amos Nkuna (CDW Ward No 2)	Bushbuckridge Municipality Sector meeting (12/2/2013)	Rufus Nengovhela has indicated that faulty borehole must be reported to the regional office as soon as possible.	No action required
420	How do the mine manage the water reuse	Obedient Malinga (Councillor Ward 05)	Steve Tshwete Municipality Sector Meeting (13/02/2013): Middelburg	Rufus Nengovhela: Most of the mines have a water usage plan in place and approved by the Department as part of the licensing condition.	No action required
421	What are stakeholders contribution in terms of water conservation	J Skosana (Councillor Ward 09)	Steve Tshwete Municipality Sector Meeting (13/02/2013): Middelburg	Rufus Nengovhela: Stakeholder must make sure that their tap are properly closed and report any link to the municipalities or to the Department.	No action required
422	How is the Department protecting the small stream	Sam Mohlala (COGTA CDW Ward 08)	Steve Tshwete Municipality Sector Meeting (13/02/2013): Middelburg	Rufus Nengovhela indicated that all streams are included in this project and will be given the protection its required	No action required
423	The presentation should also be done using other languages.	Mroetse Selala (Councillor Ward 17)	Steve Tshwete Municipality	Rufus Nengovhela indicated that in future presentations will be done	To use local languages

			Sector Meeting (13/02/2013): Middelburg	using the local languages	
424	The sewage infrastructure needs to be properly maintained.	Thembi Mnguni (COGTA Ward 07)	Steve Tshwete Municipality Sector Meeting (13/02/2013): Middelburg	Rufus Nengovhela has indicated that the maintenances of the sewage infrastructure are the responsibility of the municipality.	No action required
425	What types of alien plants should the stakeholders note	Thembi Mnguni (COGTA Ward 07)	Steve Tshwete Municipality Sector Meeting (13/02/2013): Middelburg	The list of the plants is available on the Department of Environmental Affairs	No action required
426	Has the Validation and Verification study been done for the Olifants and if not what are the time frames.	Farmer 1	Agricultural Sector Meeting, at Loskop Dam, 27 February 2013	Ms Shane Naidoo: The need for a validation and verification study was identified in the reconciliation strategy as a reconciliation option. Estimates were made of the unlawful water use in the reconciliation strategy A study will be undertaken to confirm estimates.	No action required
427	Are the RQOs and the Classes being gazetted together?	Dr K Pretorius	Agricultural Sector Meeting, at Loskop Dam, 27 February 2013	Ms Shane Naidoo confirmed that they will be gazetted at the same time.	To gazette the RQOs and MCs together.
428	Where is the water quality component in the Classification process? That is what is important to the agricultural	Farmer 2	Agricultural Sector Meeting, at Loskop Dam,	Mr Trevor Coleman responded that WQ is taken into consideration throughout the Classification process	No action required

	sector.		27 February 2013	and forms the basis of the setting of the Resource Quality Objectives (RQOs). The RQO study is currently underway and the agricultural sector is encouraged to partake in the process.	
429	Is there an update when the CMAs will be implemented?	Ms Sanet de Klerk, (Obaro and Irrigation Sector)	Agricultural Sector Meeting, at Loskop Dam, 27 February 2013	Ms Shane Naidoo: The Minister has made the implementation of the CMAs a priority.	No action required
430	With regards to the use of REC categories in the scenarios: Agriculture cannot support a D category associated with a Class 3	Mr Dries Enslin, Chairperson, Agri-Letaba.	Agricultural Sector Meeting, at Loskop Dam, 27 February 2013	Ms Shane Naidoo: These categories relate to the ecological condition of the resource. A D category is still acceptable for ecological functioning.	No action required
431	Waste Water Treatments Works below Groblersdal and Marble Hall are not fully functional and raw sewerage is entering the River. There is also concern about the state of the Moses River.	Ms Sanet de Klerk, (Obaro and Irrigation Sector)	Agricultural Sector Meeting, at Loskop Dam, 27 February 2013	Mr Trevor Coleman indicated that the state of Moses River has been investigated and included in the status quo investigation reports and is available on DWA Website.	No action required
432	The access to WQ data on the DWA website is incomplete and difficult to access.	All	Agricultural Sector Meeting, at Loskop Dam, 27 February 2013	Ms Shane Naidoo indicated that this issue must be discussed with the relevant DWA regional office.	No action required
433	Infrastructure is insufficient for formal as well as informal housing resulting in sewerage polluting water resources.	Gerhard Smith	Agricultural Sector Meeting, at Loskop Dam, 27 February 2013	Mr Trevor Coleman indicated that the issue of the infrastructure will need to be addressed with relevant municipality or department.	No action required

434	There is concern about the impact of Kusile Power Station and associated coal mining on the Wilge River. How will this impact be managed?	Farmer 1	Agricultural Sector Meeting, at Loskop Dam, 27 February 2013	Mr Trevor Coleman: The Wilge River is currently in a better condition than most water resources in the Upper Olifants and is currently classed in a MC II. Once the Olifants has been Classified and the RQOs set, the activities of the Wilge River and the developmental pressures it faces will have to be managed according to the RQOs. The licencing and management level requirements for the developments will be formulated to give affect to the RQOs	No action required
435	<p>The Classification Process makes the following assumptions:</p> <ol style="list-style-type: none"> <li>1. There will be no transfer into the Olifants WMA from neighbouring WMAs, but there are plans to transfer water from the Olifants WMA to neighbouring WMAs.</li> <li>2. The scenarios make no mention of who will be responsible for the increased water tariffs. The agricultural sector believes that the sector who pollutes the resource must be responsible for the clean-up costs i.e. the polluter pays principle</li> <li>3. There is concern that the additional water to be provided through the various scenarios has been earmarked for future platinum production in the Steelpoort area and the Agricultural sector is not party to these discussions.</li> </ol>	Dr Koos Pretorius, (Federation for a Sustainable Environment)	Agricultural Sector Meeting, at Loskop Dam, 27 February 2013	<p>Mr Trevor Coleman responded at follows:</p> <ol style="list-style-type: none"> <li>1. Correct.</li> <li>2. The setting of the RQOs and the subsequent implementation of the Waste Discharge Charge System (WDCS) will provide a mechanism for the identification of polluters and a framework for appropriate charges to be levied against those who pollute. The detailed mechanism for the charges still has to be decided upon.</li> <li>3. DWA will decide how the excess mine water is used. The agricultural sector should ensure that they are represented on the PSC for the reconciliation strategy.</li> </ol>	No action required
436	When does the implementation of the Classification system and RQOs occur and when will there be an improvement in the quality of the resource?	Ms Sanet de Klerk, (Obaro and Irrigation Sector)	Agricultural Sector Meeting, at Loskop Dam, 27 February	Ms Shane Naidoo responded that the Olifants Classification and RQOs will be gazetted by the end of August 2013 and an improvement in the quality of the resource will be seen in	No action required

			2013	5 – 10 years after implementation of strategies to meet the RQOs.	
437	The agricultural sector can be more productive, but requests for additional water have been denied in the past. Water pollution has a major impact on productivity. The policing of pollution infringements is poor and progress in improving the water quality is not evident.	J. Van Der Heever	Agricultural Sector Meeting, at Loskop Dam, 27 February 2013	Ms Shane Naidoo indicated that the MCs will assist in addressing some of these issues raised.	No action required
438	The following points were made: <ol style="list-style-type: none"> <li>1. There is a decrease in WQ across the system.</li> <li>2. Allocation of water is a major issue and mines are often given water without water being available in the system.</li> <li>3. Agricultural sector is an important provider of produce to the commercial sector, but also to the man in the street.</li> <li>4. The <i>E.coli</i> levels in the resource are way beyond what is acceptable. This has major implications on the GlobalGAP certification process that the sector relies on for exports.</li> <li>5. The NWA is a good document, but there are issues with implementation.</li> </ol>	Ms Sanet de Klerk, (Obaro and Irrigation Sector)		Ms Shane Naidoo indicated that the MCs will assist in addressing some of these issues raised.	No action required
439	Mr Van Den Heever stated that agriculture has been happening in the Olifants Catchment for at least 70 years and will continue to do so when mining is gone.	J. Van Der Heever	Agricultural Sector Meeting, at Loskop Dam, 27 February 2013	Ms Naidoo reiterated the fact that the Agricultural Sector is extremely important and that generally the sector is responsible and have been self-regulating for a number of years now. She stated further that the implementation of the NWA is overdue, but the implementation of the Classification System as well as the RQOs will result in an improved water resource for all users in the WMA. Further consultation with the Agricultural Sector is required.	Further consultation with the Agricultural Sector is required.

<b>'AD-HOC' COMMUNICATION/LIAISON UNDERTAKEN BY STUDY TEAM OVER COURSE OF STUDY</b>		
<b>Name</b>	<b>Organisation</b>	<b>Liaison/Linkage</b>
Jan Potgieter	Department of Agriculture, Forestry and Fisheries	Telephone conversation/e-mails: CD with Agricultural data obtained (Economic modelling)
Riaan Grobler/Robert Parry	Stats SA	Meeting: Census data (Economic modelling)
Bertus Bierman	Anglo Platinum/ Olifants River Joint Water Forum	Meeting: Water treatment costs
Henk Lodjewiks	Anglo American	Meeting
Vaal Classification Team	WRP/Coningarth	Classification teams: Meeting on Economic modelling
Martin van Veelen/ Johan van Rooyen/Fanie Vogel/ Tendani Nditwani	Olifants Reconciliation Strategy team	Meeting: Olifants Reconciliation Strategy
Stephen Mallory	Olifants Reconciliation Strategy team member	Meeting: Yield Model workings
Neels Kleynhans/Christa Thirion	DWA: Directorate Resource Quality Services	Workshops/E-mail correspondence/telephonic correspondences: Ecological review, guidance, assessment and review of ecological consequences, review of extrapolation methodology
Pieter Viljoen <sup>§</sup> , Sebastian Jooste* and Nadene Slabbert*	DWA: Directorate Resource Quality Services* and Directorate Water Resource Planning Systems <sup>§</sup>	Meetings: Water quality status/ information/analysis/WDCS/neural networks/treatment

