



water affairs

Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

Directorate: Water Resource Classification

THE CLASSIFICATION OF SIGNIFICANT WATER RESOURCES IN THE UPPER, MIDDLE AND LOWER VAAL WATER MANAGEMENT AREAS (WMAs): PROJECT WP 10386.

PROGRESS REPORT

April 2012

1. Purpose of this document

The purpose of this document is to inform stakeholders about the progress on the classification of the Vaal Water Management Area (WMA).

2. Background to the Project

Following the promulgation of regulations prescribing a Water Resources Classification System (WRCS) in September 2010, the Department of Water Affairs (DWA) initiated a process of classifying significant water resources in the Vaal WMA.

DWA initiated this project in 2010/2011 financial year with the life span of 24 months, starting October 2010 to October 2012. The Department appointed WRP Consulting as a service provider in October 2010 to assist the Department by coordinating the implementation of the 7 steps process of the Water Resource Classification System (WRCS) to classify all significant water resources in the Vaal WMA in order to determine a suitable Management Class (MC) for the relevant water resources. The WRCS lays out a set of procedures known as the 7 steps process that is an approach for determination of a management class (MC) which aims to achieve a balance between protection of a water resource and using it to meet social and economic goals.

The technical tasks of the study as indicated in the Terms of Reference and Inception Report are as follows:

- Project Inception;
- Water Resource information and data gathering;
- Determination of the Management Class;

3. Progress to Date

3.1. Project Inception

The task is completed and the Inception report is in place.

3.2. Water Resource Information and Data gathering

A list of compiled previous and current studies in relation to this project was compiled and available in the Inception report.

3.3. Determination of Management Class

All the draft reports produced under this task has been circulated to the Project Management Committee (PMC) and the Project Steering Committee (PSC), of which the comments received were incorporated into the final version of the report.

4.3.1 Ecological Water Requirements

The results from comprehensive Vaal River Ecological Water Requirements (EWR) study completed 2008-2009 form the basis of the ecological information being used for the classification of water resources of the Vaal WMA. However, this information has been adjusted to meet the set Integrated Unit of Analysis in the WMA. The EWR task has been completed and the report is in place.

4.3.2 Socio-economic Assessment

In addition to the socio-economic data assessment from Chamber of Mines, Department of Agriculture, Statistics South Africa, and Ecological Goods Services and attributes in the Vaal WMA, an Agricultural data technical meeting was held on the 12 March 2012.

4.3.3 Water Resource Analysis

The technical current status of the project is the Water Resource Planning Model (WRPM) scenario analysis, which was conducted in order to come up with the Ecological Sustainable Base Configuration Scenario (ESBC) and the list of scenarios (Table 1 below) to be taken to the stakeholders participation platform. The draft report was compiled and circulated to the PMC members for comments due on the 30 April 2012.

4.3.3.1 Ecological Sustainable Base Configuration (ESBC) Scenario

Ecologically Sustainable Base Configuration (ESBC) is the level of protection afforded to the ecological component, which should not be lower than a (D)

The ESBC starter scenario consists of the Recommended Ecological Category (REC) at all the EWR sites and Desktop Biophysical Nodes except for EWR 4 and 5 (Downstream of Vaal Dam and Vaal Barage). The ESBC for EWR 4 and 5 is recommended as the Present Ecological Status (PES). The recommended EWRs for the sites determined in the Reserve study and the low confidence EWRs at the nodes provide a viable and practical ESBC, against which relative changes can be evaluated. These relative changes, and the planning scenarios were evaluated and measured against the ESBC to produce a list of scenarios (Table 1 below).

4.3.3.2 Scenarios

Scenarios are options available for a particular water resource that satisfies protection and use and further development

Table 1: Vaal WMA list of scenarios

Scenarios (Sc)	Scenario description
Sc 1	Present Day without EWRs
Sc 2	Present Day including EWRs
Sc 3	2020 Development without EWRs
Sc 4	2020 Development including EWRs
Sc 5	Future Development without EWRs
Sc 6	Future Development including EWRs
Sc 7	Present Day including EWRs & Grootdraai compensation releases
Sc 8	Present Day and Optimized Sterkfontein release rule

Present Day = Present Day Scenario (2011 water requirements).

Future Development= Full utilisation prior to next augmentation scheme.

2020 = Include LWHP Phase 2, 2020 water requirements, WC/WDM, Irrigation = ELU.

(1) = Sc7, no releases for EWR from Grootdraai Dam (existing rule).

(2) = Sc8, Optimised release rule from Sterkfontein Dam

Notes:

- No releases to EWR sites 4, 5, 7, 12, 13, 14, 15, 16, 17 and 18 in any scenario.
- EWR 1: Water quality related issues, not flow related.
- EWR 6: Has upstream desktop nodes with issues – see desktop node results.

4.3.3.3 Implication of scenarios

- Revised release rule from Sterkfontein Dam results in a reduction of 44.5 Million³/annum in the Historical Firm Yield supply capability, but stochastic analysis indicated that the assurance of supply to users was not jeopardised by the implementation of the optimised release rule.

5. Next Steps

Step 6: Evaluate the scenarios with stakeholders and gazette Proposed MC s for 60 days for public comments.

Step 7: Gazette the class configuration

PSC meeting: The next PSC meeting is scheduled for 17 May 2012. The purpose of the meeting will be to present the ESBC scenario and the list of the scenarios to be evaluated.

6. Project Information

The following documents are available in the Departmental web site:
<http://www.dwa.gov.za/rdm/WRCs/default.aspx>

- Background Information document
- Presentations
- Inception Report;
- Newsletter
- Status Quo Report

End of the report: 16 April 2012