



2.2 Approach to integrate WQM: 3x Vaal WMAs

COMPLETED:

- Status Assessment;
- Salinity Balance;
- L1 & L2 RWQOs (low confidence);
- WQ Economic Impact Modeling;
- Evaluation of Management Options;
- Monitoring Program;
- IWQM Strategy.

OUTSTANDING PRIORITIES:

- Nutrient Modeling;
- Flow Manipulation;
- Nutrient Management Strategy;
- Salinity Management (Coal Mining) Strategy for the Upper Vaal WMA;
- Confirmation of L1 & L2 RWQOs and determination of L3 RWQOs

2.3 Approach to integrate WQM: 2x Orange WMAs

COMPLETED:

- Desktop Catchment Assessment Study;
- WQ Monitoring and Status Quo;
- Catchment Visioning;
- L1 & L2 RWQOs (low confidence);
- Towards a Monitoring Program;

OUTSTANDING PRIORITIES:

- Status Assessment
- Salinity Balance;
- WQ Economic Impact Modeling;
- Evaluation of Management Options;
- IWQM Strategy.

2.4 Integrating WQM within the Orange River Basin

OUTSTANDING:

- Integrated WQM Strategy;
- Integrated L1 and L2 RWQOs

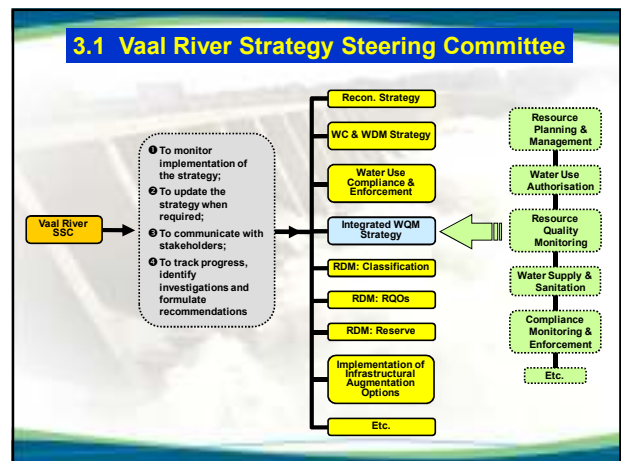
3. VWQIC

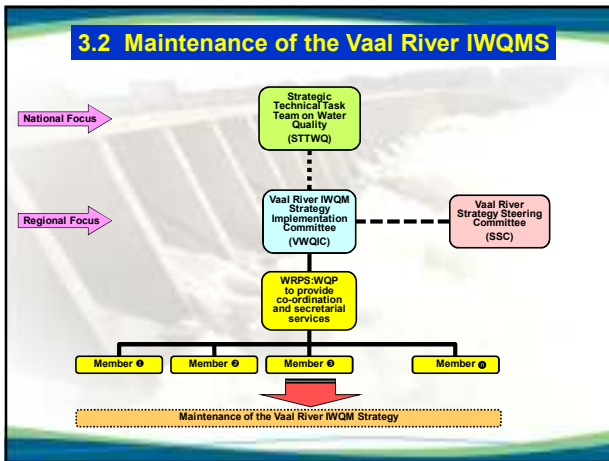
3.1 Vaal River Strategy Steering Committee

3.2 Maintenance of the Vaal River IWQM Strategy

3.3 Purpose

3.4 Membership



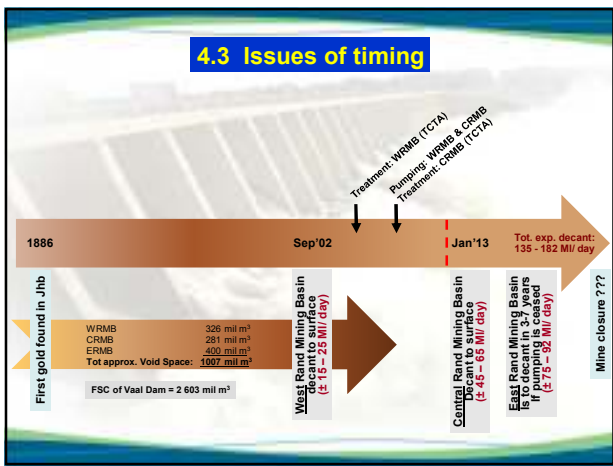


- ### 3.3 Purpose
- ➔ To highlight water quality matters in relation to the mandate and responsibility of each of the committee members identified;
 - ➔ To ensure the identification and implementation of actions to assist with integrated water quality management in the Vaal River Basin;
 - ➔ To track progress and implement corrective steps when necessary;
 - ➔ To ensure coordination between the various components within DWA, whether at Head Office and Regional Office level;
 - ➔ To ensure coordination of actions throughout the catchments and sub catchments of the Vaal River Basin in terms of water quality management; and
 - ➔ To promote integration with other water resource management efforts in respect of the Vaal River Basin;

- ### 3.4 Membership
- Internal to DWA
 - Extra-departmental representation

- ## 4. MINE WATER RETURN-FLOWS
- 4.1 History
 - 4.2 Expected decant points
 - 4.3 Issues of timing
 - 4.4 Recommendations
 - 4.5 Study Goal





4.4 Recommendations

In a nutshell they advocate for the three priority basins (Western, Central and East Rand Underground Mining Basins) to have implementation plans that include:

- > pumping and neutralisation of AMD;
- > enforcing compliance;
- > regular inspection; and
- > prevention of ingress as a short term measure

to maintain water levels at least below the relevant environmental critical level.

The IMC feels that the current proposals are founded on scientific research and engineering instead of simplistic and quick solutions.

Some areas they felt needed revisiting include the liability of polluters and costing of implementation.

- ### 4.5 Study Goal
- Consider the short-term operational measures implemented up to study inception in the study area;
 - Do a gap analysis and address short-term priority needs in respect of water resource planning and management interventions as per the recommendations of the Team of Experts for the study area;
 - Investigate and recommend a feasible long-term solution to the AMD problems emerging in the study area, in order to ensure long term water supply security and continuous fitness for use of Vaal River water below Vaal Barrage.

5. PROGRESS STATUS

5.1 More detail on selected actions

5.2 Strategy Matrix

- ### 5.1 PROGRESS ON SELECTED ACTIONS
- Waste Discharge Charge System
 - Waste Discharge Standards
 - Mine Water Management
 - General Authorizations
 - Agriculture
 - Waste Water Treatment

5.2 STRATEGY MATRIX (1)

MANAGEMENT ACTION	RESPONSIBILITY	STATUS
1. STRATEGY FOCUS AREA: SALINITY		
1.1.1 Planning Study: Coal Mining in the Upper Vaal WMA	WRPS:WQP	Busy
1.1.2 Implementation of to-be-established "coal mining strategy"	Gauteng RO	No Strategy
1.2.1 Implement the 600 mg/l dilution-rule	Gauteng RO	Ongoing
1.2.2 Piloting of the WDCS	RPW	Busy
1.2.3 WDSCS roll-out	Regions	Awaiting WDSCS
1.3.1 Reconnaissance investigation to determine best use of return-flows	NWRP	Completed
1.3.2 Treatment of AMD	WRPS:WQP	Busy
1.4.1 Catchment Forums to accept RWQOs	Regions	Ongoing
1.4.2 SDC to continue	Regions	Ongoing
1.5 Implementation of monitoring programs	Regions & RQS	Ongoing
1.6 Finalization and implementation of next augmentation options	OA	Busy

5.2 STRATEGY MATRIX (2)

MANAGEMENT ACTION	RESPONSIBILITY	STATUS
1.7.1 Calibration of WQT and integration with the WRPM for the Orange River	WRPS:WQP	Busy
1.7.2 Construction and commissioning of AMD desalination facilities	OA	Not yet initiated
2. STRATEGY FOCUS AREA: NUTRIENTS		
2.1 Implementation of Waterval CMS	Gauteng RO	Busy
2.2 Flow manipulation Study to control algal blooms	WRPS:WQP	ToR was not approved (2010-02-10)
2.3 SDC to continue	Regions	Ongoing
2.4.1 Id of WWTWs that don't comply to licence conditions	Regions	Ongoing
2.4.2 Retrofitting & upgrading of WWTWs	Local Government	Ongoing
2.5.1 Nutrient modeling and the establishment of a Thematic Strategy	WRPS:WQP	Funding not approval
2.5.2 Study to assess the feasibility of installing further phosphorus removal treatment steps at selected works	WRPS:WQP	Not yet initiated

5.2 STRATEGY MATRIX (3)

MANAGEMENT ACTION	RESPONSIBILITY	STATUS
2.6 A perspective is needed on the extent and costs of the measures needed (such as banning phosphorus containing detergents) to reduce the phosphorus loads received at the wastewater treatment works.	WRPS:WQP	Not yet initiated
3. STRATEGY FOCUS AREA: MICROBIOLOGY		
3.1 The actions are similar to the nutrient strategy	Regions	Ongoing
4. STRATEGY FOCUS AREA: INSTITUTIONAL		
4.1 Institutional alignment	Regions	Ongoing
4.2 Consideration of the role of catchment committees/ organizations and the extent to which they can take responsibility and accountability for specifications.	Regions	Ongoing
4.3 The role of local government is critical to the success of this strategy. This relates primarily to the management of the discharges of wastewater treatment works. A specific agreement or institutional arrangement has to be entered into between the Department and local government regarding this issue.	Local Government	Ongoing
4.4 Strategy Steering Committee	NWRP	Ongoing

5.2 STRATEGY MATRIX (4)

MANAGEMENT ACTION	RESPONSIBILITY	STATUS
5. STRATEGY FOCUS AREA: CROSS-CUTTING		
5.1 Further Catchment Studies: Sub-catchments need to be prioritized for catchment studies to determine Level 3 RWQOs in support of the Level 1 and 2 RWQOs.	Regions	Ongoing
5.2 Management integration: Sub-catchments need to be prioritized and modeled to integrate end-of-pipe requirements with the determined RWQOs.	WRPS:WQP	Not yet initiated
5.3 Compliance Monitoring and Enforcement strategy	CME	Not yet initiated

6. CONCLUSION

- Reasonable progress had been made with some studies that had been initiated to address facets of the Vaal River IWQM Strategy;
- However, limited capacity hampers swift progress;
- Maintenance and improvement of resource quality remains the ultimate goal;
- The establishment of the VWQIC should assist, and provide more impetus and momentum to WQM efforts in the Vaal River Basin.

