



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

**Determination of Ecological Water Requirements
for Surface Water (Rivers, Estuaries and
Wetlands) and Groundwater in the Lower Orange
WMA: WP10974**

23 June 2016

**STUDY INTRODUCTION: PROJECT PLAN AND
TECHNICAL TASKS**

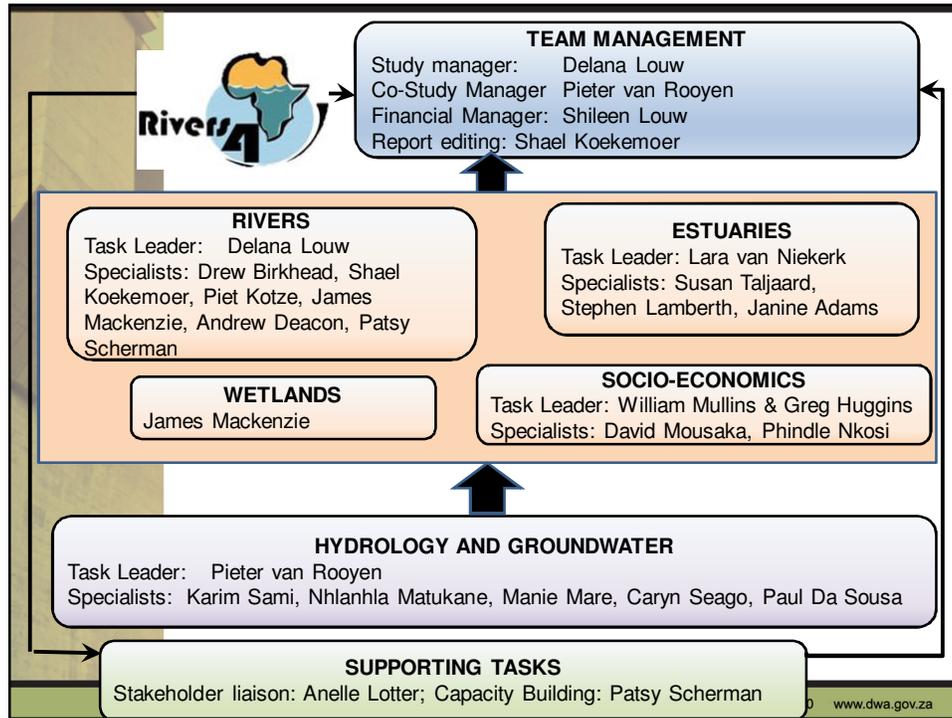
Delana Louw: Rivers for Africa

WATER IS LIFE, SANITATION IS DIGNITY

STUDY TEAM AND THEIR ROLES

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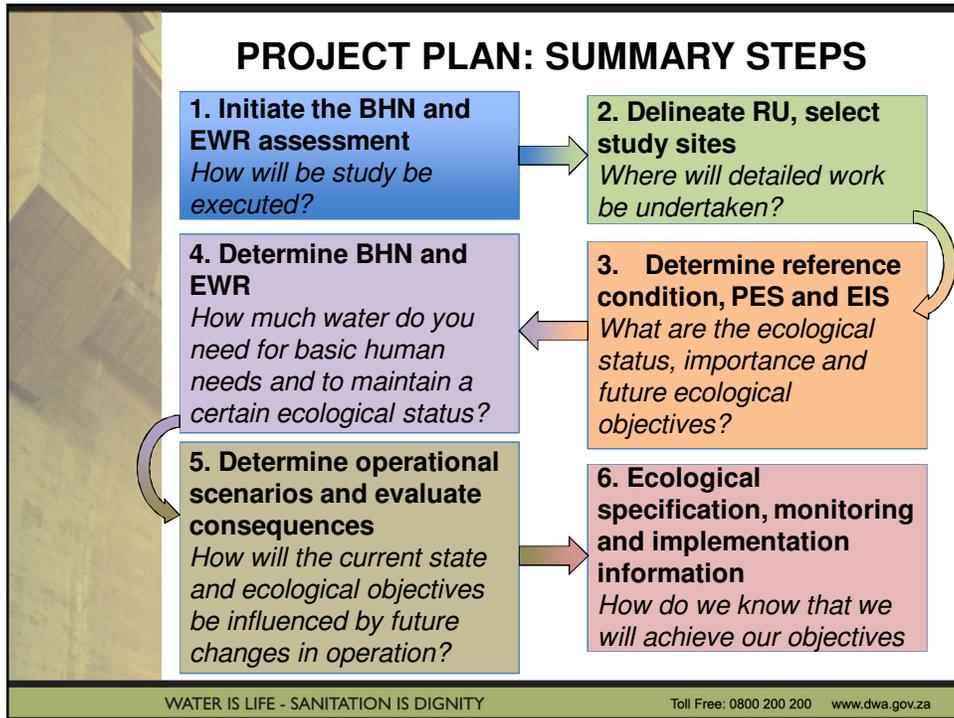


**PROJECT PLAN AND APPROACH
 AS DOCUMENTED IN THE
 INCEPTION REPORT**

FOCUS: TECHNICAL ASPECTS

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PROJECT PLAN: OUTPUTS

1. Initiate the BHN and EWR assessment

Inception phase – identify gaps and design project plan.

Output: Inception report

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PROJECT PLAN: OUTPUTS

1. Initiate the BHN and EWR assessment (2)

Key gaps:

- **Rivers:** EWR estimates for tributary rivers. Application of REMP at EWR sites in main Orange River.
- **Wetlands:** Some work has been undertaken. Focus now is addressing Reserve steps not previously dealt with.
- **Estuaries:** Other (than the Orange River) estuaries in the study area have not been assessed.

PROJECT PLAN: OUTPUTS

1. Initiate the BHN and EWR assessment (3)

Key gaps:

- **Groundwater:** Groundwater component of the Reserve has not been dealt with in previous EFR work
- **BHNR:** Has not been determined
- **Scenario evaluation:** Coherent and current operational scenarios must be defined and evaluated

PROJECT PLAN: OUTPUTS

2. Delineate RU, select study sites

- **Rivers:** Management RUs (detailed process) have been selected during the 2010 and 2013. Five EWR sites selected. Rest of study area (arid) – will use the main river in each quat for desktop assessments.
- **Estuaries:** Delineate the additional 5 estuaries. (Each estuary represents a RU)
- **Wetlands:** Prioritise and rank wetlands (verify work done as part of 2010 EWR study)
- **Groundwater:** Compile a map of significant GRUs

Output: RU report summarising existing information and documenting new information.

PROJECT PLAN: OUTPUTS

3. Determine reference condition, PES and EIS

- **Rivers:** Level IV EcoClassification and SCI at EWR sites. Hotspot assessment of 2010 updated where relevant with PESEIS assessment for tributaries (Desktop Level EcoClassification)
- **Estuaries:** Once off field visit to 5 small estuaries to determine EcoClassification
- **Wetlands:** Refinement of 2010 work to determine PES and REC

Output: River, wetland and estuary EcoClassification results.

PROJECT PLAN: OUTPUTS

4. Determine BHN and EWR

- **Rivers:** EWR sites: Results available. Nodes in tributaries: Estimate using EWR models
- **BHNR:** Integrate surface and groundwater
- **Estuaries:** Orange estuary: Results available. Additional 5 estuaries – scenario based approach to determine EWRs
- **Groundwater:** Recharge, baseflow simulation, alluvial aquifers, groundwater use, allocatable groundwater, quality, fracking, inflows to estuaries and wetlands

Output: River, Estuary, Groundwater component of EWR available and BHNR

PROJECT PLAN: OUTPUTS

5. Determine operational scenarios and evaluate consequences

- **Rivers:** EWR sites: Results available. Nodes in tributaries: Estimate using EWR models
- **BHNR:** Integrate surface and groundwater
- **Estuaries:** Orange estuary: Results available. Additional 5 estuaries – scenario based approach to determine EWRs

Output: River, Estuary, Groundwater component of EWR available and BHNR

PROJECT PLAN: OUTPUTS

6. Ecological specification, monitoring and implementation information

- **Rivers:** Supply monitoring information to slot into DWS REMP
- **Estuary:** Supply monitoring information to slot in existing monitoring initiatives
- **Groundwater:** Supply monitoring information
- **Wetlands:** Supply monitoring information where required and available
- Reserve implementation information

Output: EcoSpecs and TPCs, Monitoring programme for estuaries and groundwater, information for operating rules.

QUESTIONS FOR CLARIFICATION