

#### water affairs

Department: Water Affairs REPUBLIC OF SOUTH AFRICA

#### Annual Operating Analysis Drought Restriction Methodology

#### **STUDY STEERING COMMITTEE MEETING NO 5**

Date: 20.06.2014 Venue: Tzaneen Country Lodge Time: 09:00 – 13:30

WATER IS LIFE - RESPECT IT, CONSERVE IT, ENJOY IT.

To provide the necessary information to stakeholders on the need to use the operating rules to manage water resources (dam/groundwater scheme/both systems) •Water is a critical resource for life, development, etc.

•Irregular hydrology, settlement & developments necessitated water regulating systems

•Storage and conveyance systems like dams & pipelines required for water redistribution over time and space

### SA Water is limited & temporally distributed in time



## Water Resources Systems Operation

- •Systems operation is the regulation of gates/ pumps to control water storage & movement
- •An operating rule is an instruction for controlling the pumps, gates, etc.
- •The rule may be a statement, formulae, tabula or graphical
- •To professionally share, communicate, defend or achieve the operation procedures, operators need written operating rules

**Purpose of Operating Rules** 

•The purposes may be grouped roughly into two categories:

-for supplying water requirements

-for controlling water flow/storage to mitigate against risk

#### Water resources operating factors

1. Hydrology (rainfall, river flows, reservoir levels, etc.)

2. Water requirements (e.g. irrigation, municipal, reserve, etc)

3. Infrastructure (maintenance schedules, configuration, etc)

4. Water resource quality



#### MANDATE

# Mandated mainly by the National Water Act of 1998, e.g.

a, Water Boards, WUAs, etc, may temporarily control, limit or prohibit use of water ...., but in so doing must provide information on extent of disruption, etc. (Schedule, 3 Sec. 6, NWA)

b, The public need to be informed of risks posed due to anticipated droughts, floods, pollution incidents, etc. (Sec 145, NWA)

c, .... Ensure sustainable and equitable supply of water

. . .

•Water is an annually renewable resource

- •Annual decisions for water scheduling management
- Annual water availability & demand determined & allocated in both volume & risk
- •Resource managed in order to supply water while maintaining tolerable risk for each user
- In drought, restriction implemented to sustain priority (high assurance) supplies for longer period of time

Water users can be restricted based on allowable risk of non-supply

- Objective to avoid failure (zero storage volume in reservoirs)
- Water users prioritised into classes Balanced allocation within a single class Restrictions in low priority class first, to protect higher classes
- Restrictions are an operating rule and should always be tested and checked

#### **PROPOSED PROJECTS**

ANNUAL OPERATING RULES/	ANNUAL OPERATING RULES/	ANNUAL OPERATING RULES/
LUVUVHU RIVER SYSTEM	LETABA RIVER SYSTEM	OLIFANTS RIVER SYSTEM
TOR APPROVED-	TOR APPROVED-	TOR- AWAITING APPROVAL BY
PROCUREMENT PHASE	PROCUREMENT PHASE	TOP MANAGEMENT
Comments: Validation complete, updated Hydrology, water balances and WRPM,	Comments: Validation complete, updated Hydrology, water balances and WRPM,	Comments: Updated water balances and WRPM

# THANK YOU

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