

water affairs

Department: Water Affairs REPUBLIC OF SOUTH AFRICA

Continuation of the Reconciliation Strategy of the KZN Coastal Metropolitan Areas: Phase 2

Department Water Affairs 8.1 Mooi-Mgeni Transfer 8.2 Hazelmere Dam raising

July 2014 Presented by: Kobus Bester and Salona Moodley

8.1.1 Mooi-Mgeni Transfer

MMTS-1 REFURBISHMENT

– Pipeline Refurbishment

- The bulk works were completed under the Spring Grove Dam construction contract.
- Further and final work to be undertaken which includes outlet valves and leak detection repairs and cathodic protection

– Pump Station Refurbishment

- Refurbishment and replacement of low lift pumps, high lift pumps, motors, panels and valves is on-going
- The refurbishment activities do not interrupt water delivery from the Spring Grove Dam and Mearns Weir as it is carried out whenever there is a window of opportunity of not transferring water

Pumping Station



8.1.1 Mooi-Mgeni Transfer (cont.)

• MMTS-2A Spring Grove Dam

- Dam was handed-over to DWA for Operation and Maintenance on <u>3 March 2014</u>
- About 109.2 million m³ (78%) of stored water is now available for release (if required) using the MMTS-1 system as at 30 June 2014
- Resource Management and Biodiversity Offsets Plans are currently being drafted
- MMTS-2B Water Transfer System
 - 3,7 km (of 14,7 km) of pipeline has been laid
 - WBHO to open another working front to prevent delays
 - WUL talks held and re-application submitted
 - Eskom poses challenge to provide electricity on time.

Fish Barrier



8.1.2 Hazelmere Dam Raising

- The Infrastructure Branch is currently evaluating construction tenders and hope to award it by September 2014
- Construction will take place over a 24 month period



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uMkhomazi Water Project (uMWP)

July 2014 Presented by: Hermien Pieterse

PROJECT BACKGROUND & MOTIVATION

Project background



Project components & study modules



uMkhomazi Catchment :

Natural runoff, water use and EWRs



RAW WATER COMPONENTS

Smithfield Dam Yield results⁽¹⁾



(1) All with EWRs based on Pre-feasibility (IWR, 1998)

Proposed Smithfield Dam



Characteristics of Smithfield Dam

Parameter	Main dam	Saddle dam	
Type of dam	Zoned earth core rockfill dam	Zoned earthfill embankment dam	
DWA classification	Category III		
Full supply level – FSL	930 masl		
Minimum operating level – MOL	887.2 masl		
Gross storage capacity at FSL	251 million m ³		
Live storage capacity at FSL	226 million m ³		
Surface area at FSL	9.53 km²		
Catchment area	2 058 km ²		
Maximum wall height	81 m		26 m
Crest length of wall	1 200 m		1 090 m
Spillway type	Main side channel		Fuse plug
Spillway shape	Ogee		Broad-crested
Spillway length (m)	150		100

Smithfield Dam: Draft artist impression



Proposed flow gauging weirs



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Characteristics of the tunnel





POTABLE WATER COMPONENTS



Potable water conveyance infrastructure and WTW



PROJECT SUMMARY

Project implementation



Total capital cost: R 12 354 million (2013 Rands excl VAT) Total operating cost: R24.7 million/annum

Thank you

"...Once completely developed, phase 1 and 2 of the uMWP will be the largest water transfer scheme in South Africa, comparable to the Lesotho Highlands Water Project in terms of volume and tunnel lengths and diameters..."

http://www.dwa.gov.za/Projects/uMkhomazi/default.aspx

WATER SUPPLY AROUND SMITHFIELD DAM



Bulwer Donnybrook regional WSS

