

THEMBISILE HANI BULK WATER SUPPLY OPTIONS

Name of Client: Thembisile Hani Local Municipality

Country: South Africa - Mpumalanga

Duration: 16 months

Start Date: January 2014

Completion Date: May 2015

Project Value: R3 750 000 (VAT incl)

Number of team members: 1 Water Resources Engineer, 1 Geohydrologist, 2 Water Engineer; 5 Technical Staff

Problem Statement

The Thembisile Hani Local Municipality is dependent on surrounding municipalities for its bulk water supply. Therefore, it only receives water only after these municipalities have supplied their own areas of jurisdiction before supplying Thembisile. The municipality experiences water shortages and uneven distribution of water supply.

Project Objective

The objective of the project was to investigate bulk water supply options for the Thembisile Hani Local Municipality to address the current and future water requirements of the Municipality.

Description of services provided by Tlou Consulting

The Company's involvement on the project was to determine the most technically feasible, financially viable and environmentally sustainable bulk water supply option for Thembisile Hani Local Municipality. Consideration was given to increasing or decreasing the bulk water supply purchase options from the City of Tshwane as well as the Rand Water; development of additional bulk water supply options to augment the existing bulk supply purchases as well as configuration of the existing bulk infrastructure to improve equitable distribution of the existing supplies as well as reducing system losses and consumer demand.

Bulk supply options investigated included:

- Implementing water conservation and demand management measures;
- Refurbishment of Mtombo Balancing Dam Emergency Scheme;
- Development of Rust de Winter Bulk Scheme;
- Additional Bulk Water Supply Purchase from Rand Water.

A feasibility assessment of potential bulk water supply options was undertaken, by conducting a technical and financial evaluation of the options:

- The technical feasibility of implementing the bulk water supply intervention. A preliminary design was undertaken of each of the identified bulk water supply options. This included the sizing of the bulk water supply infrastructure identification of pipeline route alignment.
- Undertaking the costing of the identified bulk water supply infrastructure making up the scheme. The detailed costing was based on a unit cost model developed for determining the capital replacement costs

- A financial analysis to determine the average incremental cost (AIC) of each of the bulk water supply intervention. This was used to determine the least cost intervention and together with the benefit cost analysis used to prioritise the timing of the implementation of the bulk water supply interventions
- The social and environmental impacts assessment were conducted at a very high level and factored in the costs and benefits of each of the intervention.

The impact of the proposed bulk supply options in addressing water requirements in Thembisile Local Municipality are provided in Figure 1 below.

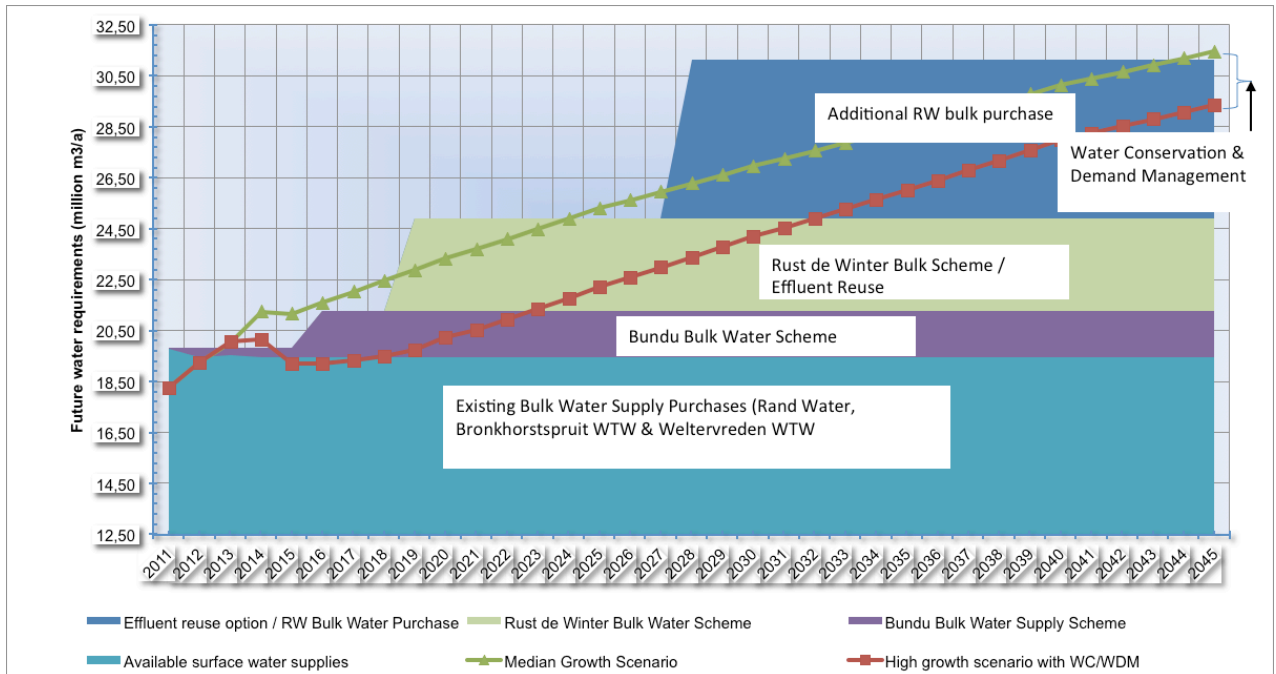


Figure 1. Impact of bulk water supply options

Knowledge area applied

- Infrastructure planning, design, development and management
- Water Conservation and Water Demand Management
- Financial Economic Analysis
- Project Management
- Water Resource Protection and Environmental Assessment
- Integrated Water Resources Management
- Strategic Management

Benefits to the Client

- Identification of technically feasible, financially viable and environmentally sustainable bulk water supply options
- Secure and reliable water supply to the schemes in the Municipality.