

Ethekwini water re-use project

Project Rationale

WATER DEMAND PROJECTIONS IN THE MGENI CATCHMENT

The graph shows demand projections from 2004 to 2031. The y-axis is Demand (million m³/yr) ranging from 250 to 650. The x-axis is Year from 2004 to 2031. Three scenarios are plotted: Worst case scenario (blue line), Realistic case scenario (red line), and Best case scenario (green line). Two horizontal lines represent MMTS2-95% and MMTS1-95%.

- Ethekwini Municipality initiated a study in early 2009 to assess the techno-economic feasibility of treated effluent reclamation and re-use as the basis for water supply augmentation.
- Ultimate future development through 2031 has focused plans on the north of the city.
- The proposed wastewater reclamation scheme therefore involves the collection of treated sewage effluent from the north of Durban at the KwaMashu and Northern Waste Water Treatment Plants (WWTPs).

Broad-scale re-use options

- Indirect re-use to either upstream or downstream of Inanda → Option discontinued at screening level due to financial and environmental concerns associated with pipelines
- Indirect re-use released direct to Hazelmere dam utilizing existing water treatment and distribution infrastructure. → Option discontinued at Scoping level due to inflexibility for future demand growth, financial and environmental concerns associated with pipelines and disposal of brine
- Direct re-use pumped straight into northern reservoirs/distribution system → A number of configurations assessed including:
 - Pumping effluent to a centralised point;
 - Dedicated works at each site
 - Dedicated pipelines
 - Pumping into existing pipelines

Technical feasibility, financial considerations, environmental and social

Conclusion of options analysis

- Treated sewage effluent from the KwaMashu and Northern WWTW's, is reclaimed and treated to potable standard. The potable water from KwaMashu potable water reclamation plant is discharged into the existing trunk main of the northern aquaduct in the vicinity of Duff's Road while the potable water from the Northern WWTW is discharged to the northern aquaduct in the at the nearest point approximately 3.5 km from the works.

