

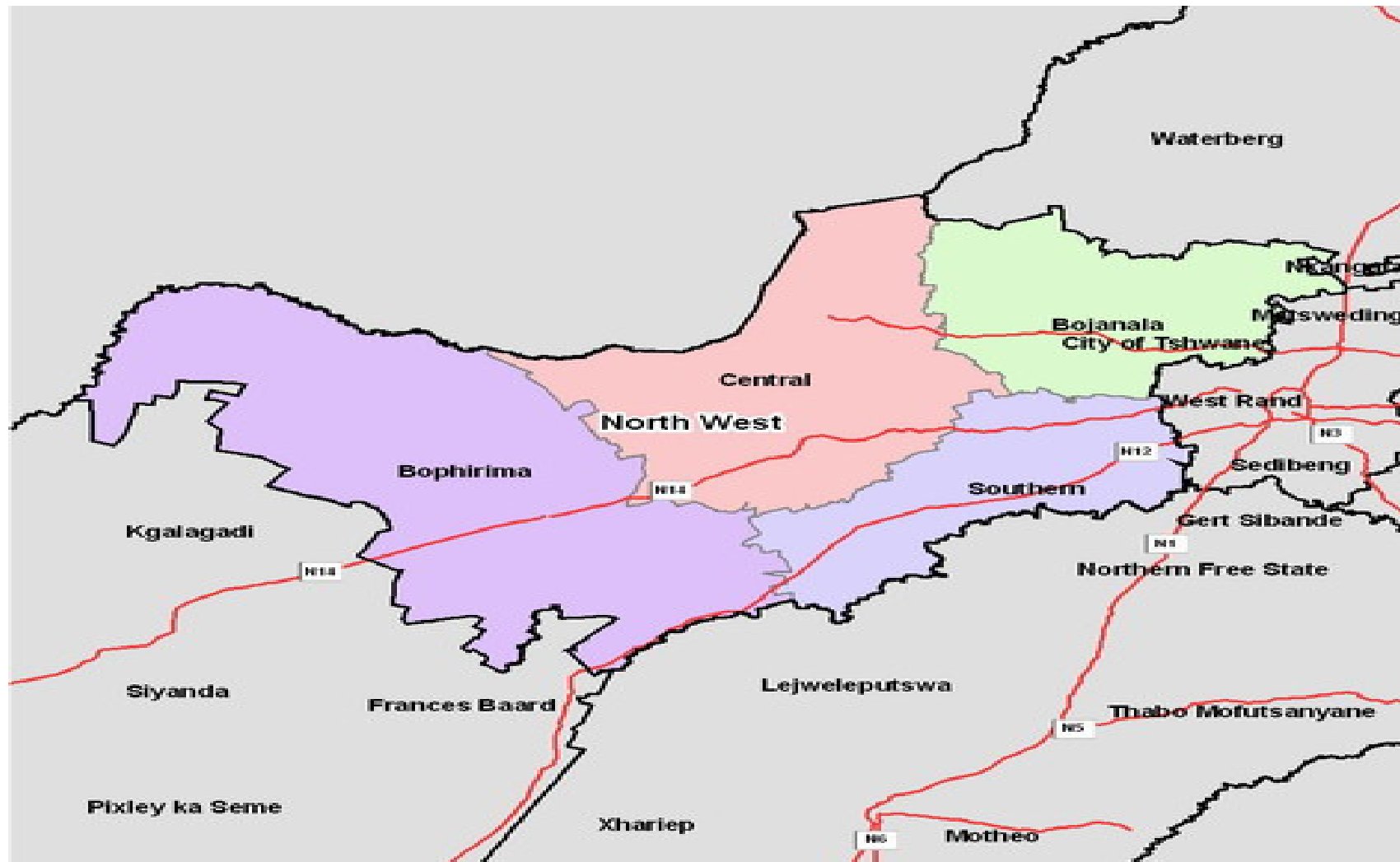
Case Study:
**Augmentation of Bulk Water
Supply to Maquassi Hills Towns**

Presentation by
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Presentation Outline

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Location Map: North West Province



Introduction

■ The Maquassi Hills L.M. (the MHLM) is located 240kms south west of Johannesburg, 36km from Bank of Vaal River, 58kms from Balkfontein pump station of Sedibeng Water.

■ Population (Stats SA 2007) is 88,500 persons. Number of Households is 20,330 H/h

■ Major Towns is Wolmaransstad, Leeudoringstad, Makwassie and Witpoort.

■ Province is classified as water-scarce with large rural pop.

■ Existing bulk water supply in the MHLM installed in 1975

■ The MHLM is a Water Services Authority. Sedibeng Water is a Water Services Provider.

Problem Statement

- The MHLM started having water shortages as far back as 1998 – especially in the summer months.
- Existing installed bulk supply inadequate: Has a max capacity of 60 l/sec. Demand (2007) was in excess of 90l/sec. Projected demand (2026) in excess of 140 l/sec.
- Chasing of National Service delivery targets (e.g. bucket eradication 2007) caused further bulk water supply stresses and strains in the system. Bucket eradication programme targeted >4500 stands. But no water to flush new water-borne systems.
- Lack of funding was a big constraint. The MHLM's MIG allocation averages R10 mill annually. Estimates in 2002 indicated a project solution costing R70 million.

Purpose of Case Study

- To share project-related experience, knowledge ideas and lessons learnt on how the serious water security challenges of the MHLM were addressed
- To highlight how the DBSA as a DFI played a key role in assisting a low capacity (“un-bankable”) municipality in addressing the enormous funding challenges
- It is hoped that the wider audience in the development arena might find something of benefit with regard to application – with or without modification.
- To make some recommendations based on the lessons learnt so as to facilitate future project effectiveness and efficiency

Project Background

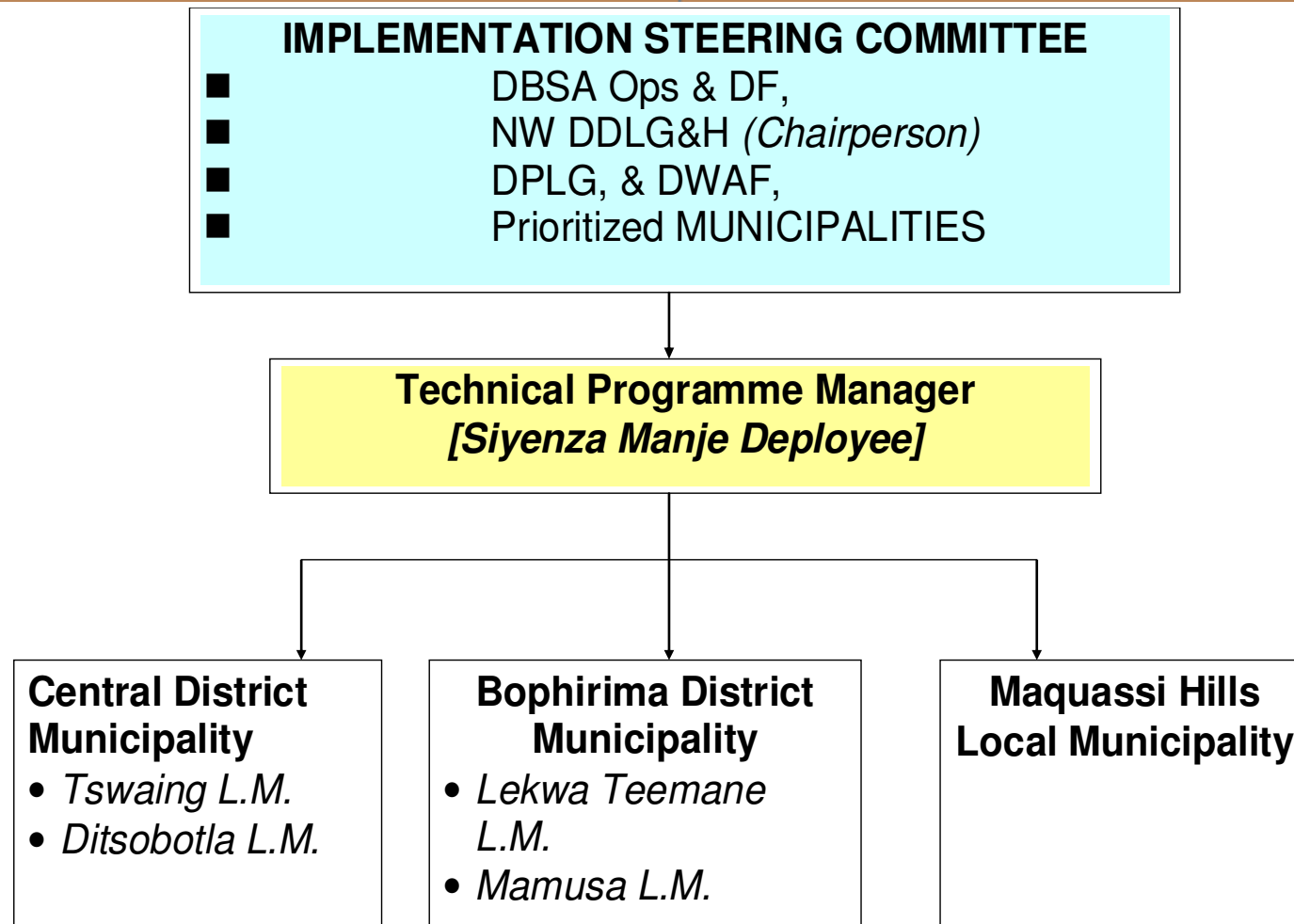
■ Project stakeholders are:

Stakeholder	Role
□ Department of Water Affairs and Forestry [DWAFF]	Water Sector Leader
□ Maquassi Hills Local Municipality	Water Services Authority and Project Implementer.
□ Sedibeng Water (<i>Formerly Goudveld Water</i>)	Water Board and Water Services Provider
□ North West Department of Developmental Local Government and Housing [NWDDL&H]	Project Promoter
□ Development Bank of Southern Africa [DBSA]	Project Financier, Advisor, Partner
□ DBSA Development Fund	Project facilitator under <i>Siyenza Manje</i> Programme
□ NEP Consulting	Principal Engineering Consultant

Project background (Contd)

- Yield of all (6 no.) boreholes in the MHLM have deteriorated over time and are inadequate (20 l/sec or 43% of recommended yield)
- Existing supply scheme as per layout plan no. NW404-1-2
- Current demand AADD (2007) is >90l/sec whilst only 60l/sec is installed capacity. Future demand (2026) is estimated at >140l/sec.
- Sedibeng Water has a permit from DWAF to extract 360 MI/day from the Vaal River System
- Options will have to be explored to ascertain the best possible scheme for augmentation purposes.

Siyenza Manje Proj Mngmt Structure



Role of *Siyenza Manje* Deployee

- 1) Facilitate funding from various sources
- 2) Facilitate, expedite, and coordinate project planning and development
- 3) Assist municipalities in removing administrative blockages related to supply chain management in municipalities
- 4) Provide technical input and implementation support via steering committee and project site meetings
- 5) Provide programme status reporting to stakeholders
- 6) Facilitate continued community buy-in and an enabling project environment
- 7) Mediate in and resolve disputes during project implementation
- 8) Assist municipalities with forward planning for future initiatives and projects

Alternatives and Proposed Solution

- ❑ Various alternatives were examined:
 - Option A: More Boreholes (Not viable. Insufficient yield)
 - Option B: Additional supply sourced from Sedibeng water [Balkfontein to Leeudoringstad – R86 mill est. cost]
 - Option C: Additional supply sourced from Midvaal Water Company [Orkney to Leeudoringstad – R116 mill est cost]
 - Option D: Additional supply from Bloemhof Dam to Wolmaranstad [R201 mill est. cost]

- ❑ Option B selected due to economics and due to existing institutional arrangements with Sedibeng Water.

- ❑ Proposed solution as per layout plan NW404-1-1

Alternatives and Proposed Solution

- Proposed solution consists of:
 - Project#1: Construction of 3 ML concrete water reservoir in Leeudoringstad
 - Project#2: Construction of bulk supply line between Balkfontein and Leeudoringstad (*37 km of steel pipe*)
 - Project#3: Construction of bulk supply line between Leeudoringstad and Buisfontein (*19km of steel pipe*)
 - Project#4: Construction of 700KL elevated steel tank and supply line in Witpoort
 - Project#5: Construction of 1200KL elevated steel tank, pump station and supply line in Wolmaransstad Ext 10 & 13
- Estimated total cost is R143 million in May 2007 but has risen to R156 million due to escalation in steel prices. Exp. To date is R96 mill. Project is $\pm 74\%$ complete overall

Water Control Management

- ❑ High Unaccounted for Water (45%) compounding water shortages in the MHLM area.
 - Decision taken to implement a water demand management and loss –prevention strategy.
 - Water restrictions imposed as from Dec. 2006. Still in force.
 - Dr. Kenneth Kaunda District Municipality very supportive with part of funding.
 - DBSA DF approved grant funding in excess of R1.2 mill as support
 - Information centre to be set up to host campaign on water maintenance and use, alternatives to obtain savings, penalties for use above limits, etc.

- ❑ Water losses reduced to from 45% to 25% since implementation. Figure is still high but on downward trend³

Funding and Progress to Date

- ❑ Funders to date for CAPEX are:
 - DWAF (via MIG and BIG): R95 million
 - NWDDL&H: R10 million
 - Maquassi Hills L.M.: R5 million
 - Sedibeng Water: R10 million
 - DBSA : R46 million loan

- ❑ Estimated total cost is R143 million in May 2007 but has risen to R156 million due to escalation in steel prices. Exp. To date is R96 mill. Project is $\pm 74\%$ complete overall

- ❑ Project expected to be completed by Dec. 2008 and fully operational before March 2009.

Lessons Learnt (1)

❑ South Africa has enough water in the dams, CMAs etc. But the water is sitting in dams and not reaching the people that need it most.

❑ Deal with a problem quickly and early enough before it escalates and gets out of hand. Due to unfortunate delays, the cost of the project escalated from R70 million in 2002 to more than R146 million currently.

❑ Funding (or lack thereof) remains one of the key challenges facing low capacity municipalities in their quest to address service delivery backlogs.

❑ Plan ahead, plan big and bold: Master Planning is necessary around the required budget and not around actual allocations. allocations of the Municipality.

Lessons Learnt (2)

- ❑ Get all key stakeholders involved and committed from the onset and maintain their commitment at all times. This will assist in dealing with problems in an integrated manner.
- ❑ If you want to reach the poor with services, the project champions and promoters must be passionate and totally committed in order to lead and influence decision makers on the project.
- ❑ Be proactive and maintain engagement with all stakeholders especially in times of trouble. Difficulties were encountered with DWAF National Office on the required funding for the project due to cost escalations. A potential problem arose due to the resignation of the Director of Technical Services in the municipality. But all these difficulties were resolved.

Lessons Learnt (3)

- ❑ Innovative funding packages, mechanisms and solutions are still a pre-requisite for assisting low capacity municipalities who are virtually left out of the scheme of things w.r.t funding.
- ❑ Effective decision making at municipal level is a very key factor in project success. The MHLM were very decisive and met all their commitments with regard to supply chain management, payment to service providers, etc.
- ❑ For an infrastructure project, it is critical to appoint the right consultant and contractors with the requisite capacity, experience and skills. This has certainly been a key success factor on the project.

Lessons Learnt (4)

❑ There is an ever increasing need for infrastructure asset management in municipalities in order to reduce the loss and dissipation assets (e.g. water losses) – which in the MHLM has been contained to 25% for now.

❑ Strategic flexibility is required in government funding programmes. Through policy- influencing activities of the DBSA DF and NWDDL&H, DWAF and the DPLG approved the use of an amount of R55 million which was an extra MIG allocation originally ring-fenced and meant for bucket eradication on the project.

❑ Transparency is to be maintained and all corner-cutting are to be avoided at all times. The project stakeholders ensured that there was adherence to all applicable regulations and statutes.

Conclusions and Recommendations (1)

- ❑ The policies around the use of allocations for municipal infrastructure (e.g. MIG) needs to be urgently reviewed in order to make it easier for municipalities to access funding for required infrastructure projects.
- ❑ The DBSA and other development finance institutions (DFIs) are encouraged to further explore other alternative innovative funding solutions to low capacity municipalities who otherwise would never access required funding to address service delivery backlogs.
- ❑ The DBSA should explore ways and means of supporting low capacity municipalities to address infrastructure asset management challenges and issues with a view to reduce asset losses and dissipation.

Conclusions and Recommendations (2)

- ❑ The value of Siyenza Manje programme has been proven by this project. The DBSA DF is encouraged to continue to refine and develop the programme to be more effective.
- ❑ The DBSA DF Board and top management paid a site visit to the Municipality in March 2007. This visit gave invaluable insight to the Board members and facilitated top management commitment to assist. It is recommended that such site visits be continued and broadened.
- ❑ As the project is still on-going, it is recommended that the monitoring and vigilance on the project be continued in order to deal with any emergent problems.



**Thank you for listening and
for your patience!**