



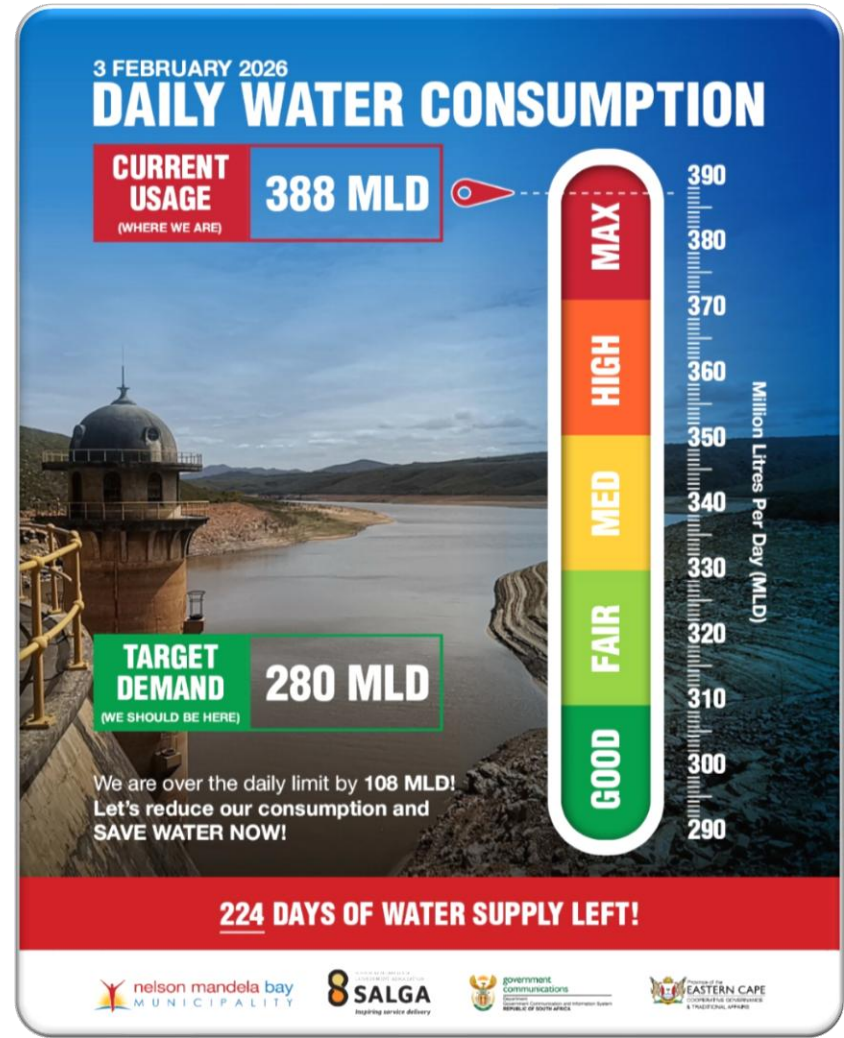
NELSON MANDELA BAY MUNICIPALITY & STRATEGIC WATER PARTNERS NETWORK PUBLIC PRIVATE PARTNERSHIP

Lyle Francis Pr Tech Eng
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Water Demand
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Infrastructure & Engineering

INTRODUCTION

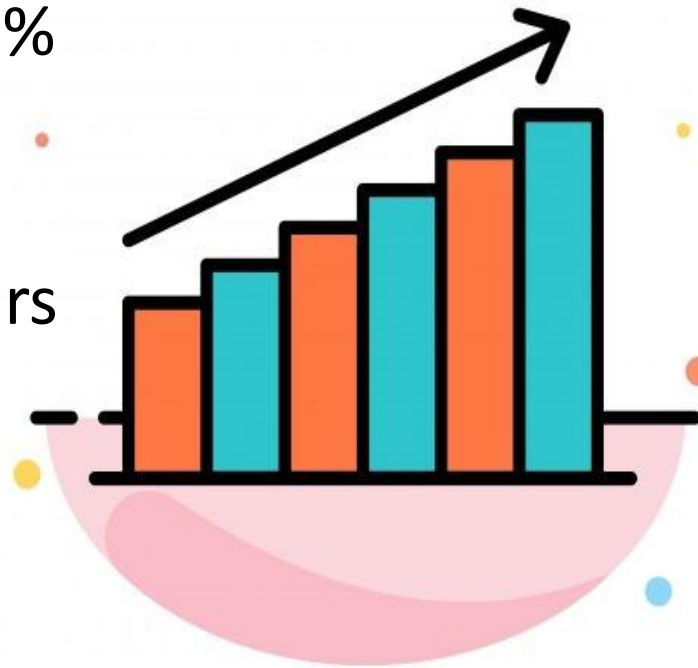


INTRODUCTION



INTRODUCTION

- Combined Dam Capacity: 281,571 ML
- Average Daily Demand: 350 ML/Day
- Non-Revenue Water: 63%
- Infrastructure Leakage Index: 15%
- Real Losses: 42%
- Average Water Supply: < 24 Hours
- Tariff Collection Rate: 40%



INTRODUCTION

- Strategic Water Partners Network (SWPN)
- Hosted by the NEPAD Business Foundation (NBF)
- Successful Track Record (Polokwane)
- Approached NMBM During Severe Drought in 2022
- R2.5m Funding Sourced via SAB (AB-InBev)



Strategic Water Partners Network
SOUTH AFRICA



OBJECTIVES

- Assist NMBM with Water NRW Challenges
 - Highlight Benefits of Investing in Water Infrastructure & Management
 - Implementation of a NRW Programme
- MoU signed with NMBM - July 2022



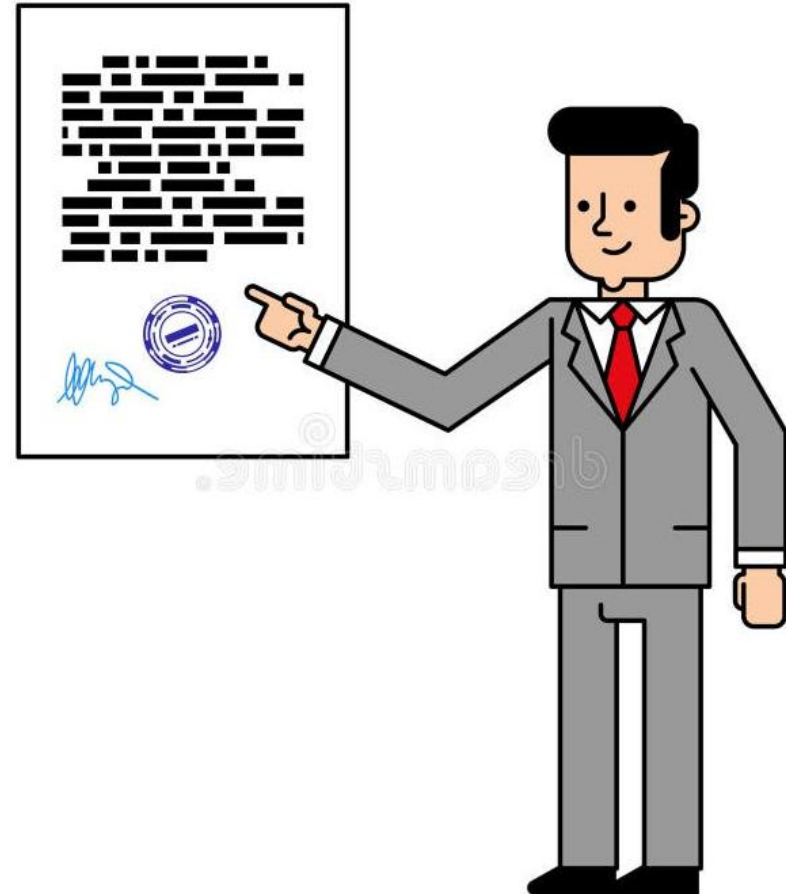
PROPOSAL - SWPN

- Water Conservation & Water Demand Management
- Water Infrastructure Improvement
- Communications Campaign
- Water Investments



PROPOSAL - NMBM

- Installation & Replacement of 5 DMA's
 - Lee Samuels Drive
 - Rowallan Park Extension
 - Rosedale Reservoir
 - McNaughton Township
 - Bloemendal Reservoir



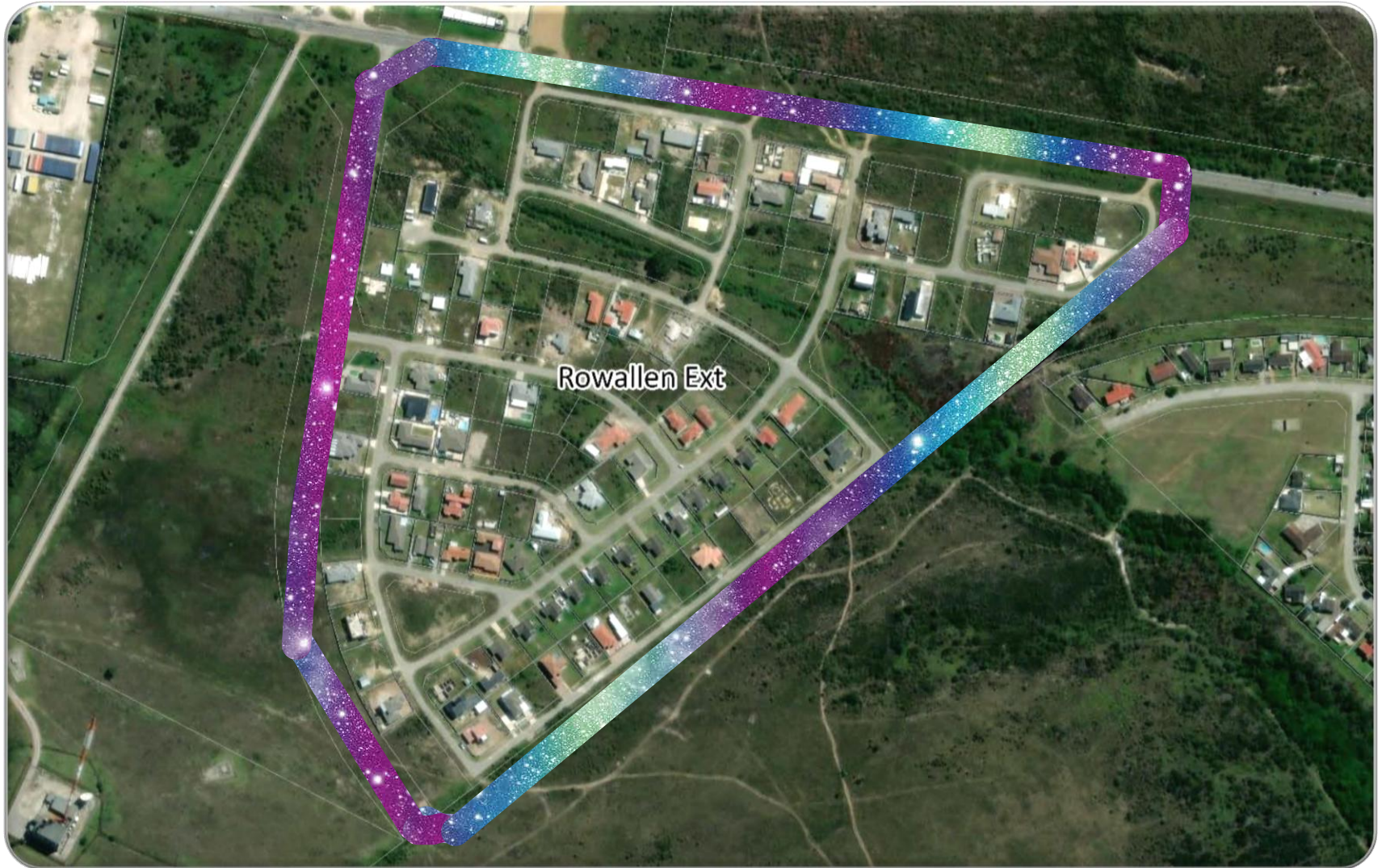
LAUNCH



PROJECT PROFILE

- Appointment of a Professional Service Provider
 - Engineering Advice & Services
 - May - September 2023
 - Support NMBM with Design & Construction Monitoring
- Appointment of a Civil Contractor
 - Alex Maintenance & Electrical Services
 - March - December 2023

CONSTRUCTION



CONSTRUCTION



CONSTRUCTION



REPORTING



IMPLEMENTATION OF WATER CONSERVATION AND WATER DEMAND MANAGEMENT INTERVENTIONS IN NELSON MANDELA BAY BASELINE WATER USE REPORT

DECEMBER 2023

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FINAL



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4.3 Rowallan Park Extension

4.3.1 Potential Interventions and costs

Based on a potential savings of approximately **0.3 kℓ/hour** based on MNF for 4 hours /day, the interventions and estimated costing as presented in the table below are recommended. Based on previous experience, pressure management can result in an approximate 20% reduction in demand. Based on the high-water table and constant water in the vicinity of Rowallan Park Extension DMA supply zone it is also proposed that an active Leak Repair Programme be implemented to locate and fix leaks in the area as visible water might easily be construed as groundwater, and not leakage.

Table 4-5: Rowallan Park Recommended Interventions and Estimated Cost

Recommended Intervention	Estimated Cost (Excl. VAT)
Pressure Management Infrastructure (Including Pressure Reducing Valve, Pressure Relief Valve and Blow off) ± 20% Reduction in Flow	R 200 000.00
Leak Repair Programme	R 150 000.00
Total Estimated Cost	R 350 000.00

4.3.2 Payback Period

Table 4-6: Lee Samuels Drive Recommended Interventions and Estimated Cost

Recommended Intervention	Estimated Cost (Excl. VAT)
Pressure Management Infrastructure (Including Pressure Reducing Valve, Pressure Relief Valve and Blow off) ± 20% Reduction in Flow	R 200 000.00
Leak Repair Programme	R 150 000.00
Sub-Total A: Estimated Intervention Cost	R 350 000.00
Total Construction Cost – 2023NBF001	R 205 171.40
Sub-Total B: Incl. Construction Cost	R 555 171.40
Sub-Total C: Potential Savings / Year	R 16 096.50
Potential Payback Period	34 Years

Due to the low demand volumes and low minimum night flow, it is not recommended to further implement any interventions as the payback period is not feasible. However, should the NMBM wish to implement the pressure management intervention for the purposes of protecting the pipeline infrastructure, this would be supported.

PROJECT COMPLETION

- Successful Implementation
- Project Completed Within Budget & Time
- Clear NRW & Real Losses Reduction - 3ML/Day
- Recommendations & Findings for Additional Phases

Name	Theoretical Flow Rate (kℓ/hr)	Average Actual Flowrate (kℓ/hr)	Actual MNF (kℓ/hr)	MNF/AVG	Average Pressure (Bar)	Max Potential Savings (kℓ/hr)	Potential Payback Period	Comment
Bloemendal Reservoir	599.1	97.11	70	72%	N/A	70	11 months	
Rosedale Reservoir	194.14	215	0	0%	N/A	82	9 months	See content of report
Lee Samuels Drive	10.84	15.8	8.44	53%	3.89	4.96	12 months	
Rowallan Park	1.79	1.38	0.12	9%	6.01	0.3	34 years	Not feasible
McNaughton Township South	14.26	1.85	1.47	79%	1.04	1.47	5 years	Not feasible

WAY FORWARD

- Phase 2 Launched - July 2024
 - Additional Water Loss Reduction - 2.2ML/Day
- Phase 3 Launched - February 2025
 - Leak Repairs
- Phase 4 Launched - July 2025
 - Motherwell Reservoir Rehabilitation
- Phase 5 Launched - February 2026
 - UK FCDO Funding for ICI Meter Replacement

CONCLUSION

- Public Private Partnerships Work
 - All Role Players Involved in Agreement
- MoU is Critically Important
 - Parties Understand their Roles
- Reputable Service Providers Utilised
 - Ensures Service Delivery is Attained



A black and white photograph of the Nelson Mandela Bay Municipality building, a grand neoclassical structure with a prominent central dome and multiple arched windows. The building is set against a cloudy sky. A yellow banner is overlaid on the left side of the image, containing contact information.

THANK YOU!

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