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## Purpose of the presentation

- To provide a synoptic brief of the Zeerust and Groot Marico wwtw, and Seweding (Bray Road) sewer crisis to the NCOP
- To present challenges per plant and the intended interventions to mitigate disasters



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NGAKA MODIRI MOLEMA DISTRICT MUNICIPALITY



# ABBREVIATIONS

- **NMMDM** : Ngaka Modiri Molema District Municipality
- **WSA** : Water Services Act 108 of 1998
- **ML** : Megalitres
- **WwTW** : Wastewater Treatment Works
- **WTW** : Water Treatment Works
- **WSA** : Water Services Authority
- **BOQ** : Bill of quantities



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# Institutional Configuration



NMMDM is established in line with the MSA with five local municipalities under its jurisdiction (MLM, RMLM, DLM, RLM, & TLM)

- NMMDM is a WSA according to the Water Services Act
- NMMDM area of jurisdiction is mainly rural, farmland with a smaller proportion of urban areas.
- Major challenge of the NMMDM is aged and ageing water services infrastructure
- This infrastructure has reached its design life against increased demand.
- Sewer spillages, burst water pipes and leakages malfunctioning pumpstations, WTWs and WwTWs, contaminated natural water sources, potholes have become the order of the day



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# Zeerust WWTW Synoptic Background



- Initial budget of R165 million with an additional allocation of R104m applied for as at end August 2023
- Originally designed for 3,5 mega litres
- Old type oxidation-orbit ditch reactor coupled with aerator blowers
- Blowers blocked due to the depositing of foreign objects (debris) and needed constant maintenance
- Redesigned to 7 megalitres to cater for future development
- Retrofitted with latest technologies for better management, efficiency and effectiveness
- **Civil works completed and outstanding is the electro-mechanical work**



# Zeerust WWTW Synoptic Background



- Final design was agreed on and discharging into the natural water courses effluents with addition wetlands and reeds filtration being incorporated
- Civil works is completed and still under retention.
- The contractor (CMS) for the Mechanical and Electrical was terminated due to shoddy performance
- CMS has been liquidated recently
- An additional funding application has been submitted to DWS for approval (R104m)
- Once approved, the NMMDM shall advertise an open bid for completion, with an estimated period of 6 months.



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## Zeerust WWTW *Current Challenges*



Aged plant with on-going operations and maintenance on the existing equipment

- Repairs and installation of the anaerobic mixers and aerobic mixers
- Cleaning of the orbit channels and ponds
- Replacement of motors



Manhole upgrades

- Challenge in respect of competent human capital



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## Zeerust WWTW *Interventions*



Execution of phase 2 refurbishment of the old oxidation ditch project (6 months estimated)

- Supply and installation of the brush aerators to replace the existing type as per design on the new upgrades (6 months estimated)
- Supply and installation of the sodium hypochlorite disinfection system (3 months estimates)
- Commissioning of chorine contact channels tank (1 month estimated)



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# Zeerust WWTW Electro-Mechanical Interventions



Bid revised and costed with BOQ

- Electro-mechanical work commissioned
- Project dry and wet trials completion
- Project hand-over to NMMDM operations and maintenance unit



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## Groot Marico WWTW *Synoptic Background*



Initial project budget was R69m which was fully spent  
Initiated against the background of a town growing exponentially

- Initially designed to be a zero-based effluent discharge



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## Groot Marico WWTW *Current Challenges*



Need to source competent personnel in line with regulations and policy prescripts

- The municipality is finalizing the restructuring of the organogram and once finalized a process of filling shall be commenced
- The envisaged recruitment shall talk to the need for staff shortages and person powering the function with relevant skills
- These challenges are presented against the background that diesel generators have been secured, rotating aerator disc repaired, flood lights have been installed and aerators are functional
- We should note however, that the reality on the ground demands of us to consider powering other than diesel.
- Diesel is the necessary evil given ESKOM's power shedding challenges



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# Planned Activities

Activity	Estimated Time Frame
Sludge transfer pumps	3 months
Chemical dosing pumps	1 month
Sodium Hypochlorite Dosing System	2 months
Recruitment of competent personnel	3 months



## Sewering Sewer Crisis *Synoptic Background*



The pipeline is made of asbestos, and it is 56 years old  
In the last 2 months, it has collapsed at 4 different points

- Point 1 and 2 have been fixed in collaboration with MLM, however point 3 and 4 are undergoing necessary processes to fix
- The municipality has appointed an Engineer to assess the pipeline and it indicates that 45km of the pipeline is totally aged and delapidated



Current challenge is in respect of 5,5km which requires immediate intervention

- A technical report for DWS has been prepared, and the municipality intends replacing the 5,5km through MIG
- The project is due to be advertised in the next 14 days. This will be phase 1, phase 2 will be subject to funding availability to replace the entire bulk outfall sewer extending 45km.

NMMDM is exploring alternative funding including but not limited to DWS, DBSA, NW COHGSTA, and others



# Lomanyaneng Magogwe Water Synoptic Background

<p>Lomanyaneng –Setlopo Water Augmentation Ward 17/18</p>	<p>MLM</p>	<p>Restoration of a pump station, drilling and equipping of 03 new boreholes, construction of bulk pipeline to existing storage tanks. To provide bulk water in the broader Mahikeng area by drilling and equipping 05 additional boreholes, constructing 2ML ground steel tank, a pump station with pressure control valves and connect to the existing main bulk line. Drill and equip 02 boreholes, construction of a 500kl storage tank and connect to the reticulation system in ward 17, next to Motimalenyora.</p>	<p>In-progress</p>	<p>All 3 boreholes have been drilled, 2 new high lift pumps have been installed, equipment in the electric control panel installed. Equipping of boreholes completed. (100%).</p> <p>04 boreholes have been drilled and equipped.</p> <p>Material is onsite for the ground reservoir</p> <p>The 2 pump stations have been completed</p> <p>Bulk line to the Mahikeng main line has been completed.</p> <p>There was delay in construction due to community demands, however the matter has been resolved and contractor went back to site</p> <p>80%.</p> <p>All the two boreholes have been drilled and equipped, yielding 3L/s each. Waiting for steel tank (70%).</p>
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## Lomanyaneng Magogwe Water *Synoptic Background*

<p>Augmentation of water supply at Dithakong and Lomanyaneng (ward 27/31/35 and 5)</p>	<p>MLM</p>	<p>Construct 1ML intermediate steel storage tank, connect the already equipped 03 boreholes which were developed through Drought Relief, construct 300kl storage tank at ward 35 and construct 6km pipe line to the other existing storage tank situated between ward 5 and 35 and Dithakong storage tank with a pump station. Drill and equip 06 additional boreholes at Dithakong and connect them to storage tanks. Develop 3 boreholes in Lomanyaneng.</p>	<p>In-progress</p>	<p>6 boreholes have been drilled and equipped at Dithakong wellfield. 3 boreholes also drilled and equipped at Lomanyaneng. The pipe line is in progress. Site clearance for The steel tank is complete, base for the 500KL steel tank is complete, preparation for 1 ML ground reservoir is in progress.</p>
<p>Reduction of water tankering in Ward 02</p> <p>Masutlhe west, Masutlhe 2 &amp; Moletsamongwe Ward 2.</p>	<p>MLM</p>	<p>Masutlhe west: pump test and develop 03 existing boreholes and connect them to existing 6 x 10kl jojo tanks and installation communal 10 standpipes at RDP standard. Construction of Electrical power connection</p> <p>Masutlhe 2: drill and equip 03 boreholes and connect them to existing storage tanks. Construction Electrical connection</p>	<p>In-progress</p>	<p>All the boreholes have been completed. pipeline connections is complete we awaiting Eskom electrical connections.</p> <p>02 boreholes at Moletsamongwe are 100% complete and currently operational</p>

## Conclusion



Council has an appreciation of challenges in the district

Council shall never shy away from these challenges and I have the full support of my fellow councillors

- We shall never cease to combat these challenges no matter how difficult they may seem
- However, the NCOP may note that these challenges are all over the district and once addressed, it would be a question on refocusing on another part of the district
- Allow me to rest assure you, we are in charge and victory is certain
- I thank you



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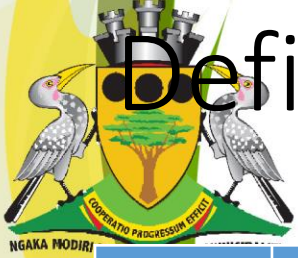
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END

THANK YOU



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# Definition of Terms

Item	Definition	Function/Functionality
1.	Anaerobic mixers	
2.	Aerobic mixers	
3.	Orbit channels	
4.	Orbit ponds	
5.	Manholes	
6.	Oxidation-orbit reactor	
7.	Aerator blowers	
8.	Electro-mechanical	
9.	Oxidation ditch	
10.	Brush aerators	
11.	Sodium hypochlorite	
12.	Clorine contact channel tanks	

