

20th AfWA International Congress and Exhibition 2020 Breaking new grounds to accelerate access to water and sanitation for all in Africa

Transitioning to continuous supply in a peri-urban area of Lusaka: Implementing a demonstration project in George Compound

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BACKGROUND

- AB InBEV, WSUP & LWSC partnered to demonstrate improved water supply service in George compound of Lusaka, Zambia
 - George is home to over 200,000 people
 - It is a low-income community, characterised by low affordability
- Zones 17 & 18 of the 26 zones in George compound were targeted as they had the worst service level
- Demonstration project has been running since April 2018, amid several challenges including limited funding, delays in connection of newly drilled borehole to the zones funded by AB InBEV on separate project



Project timelines

Part 1

- Lusaka scoping study
 - Jan – Mar 2017

Part 2

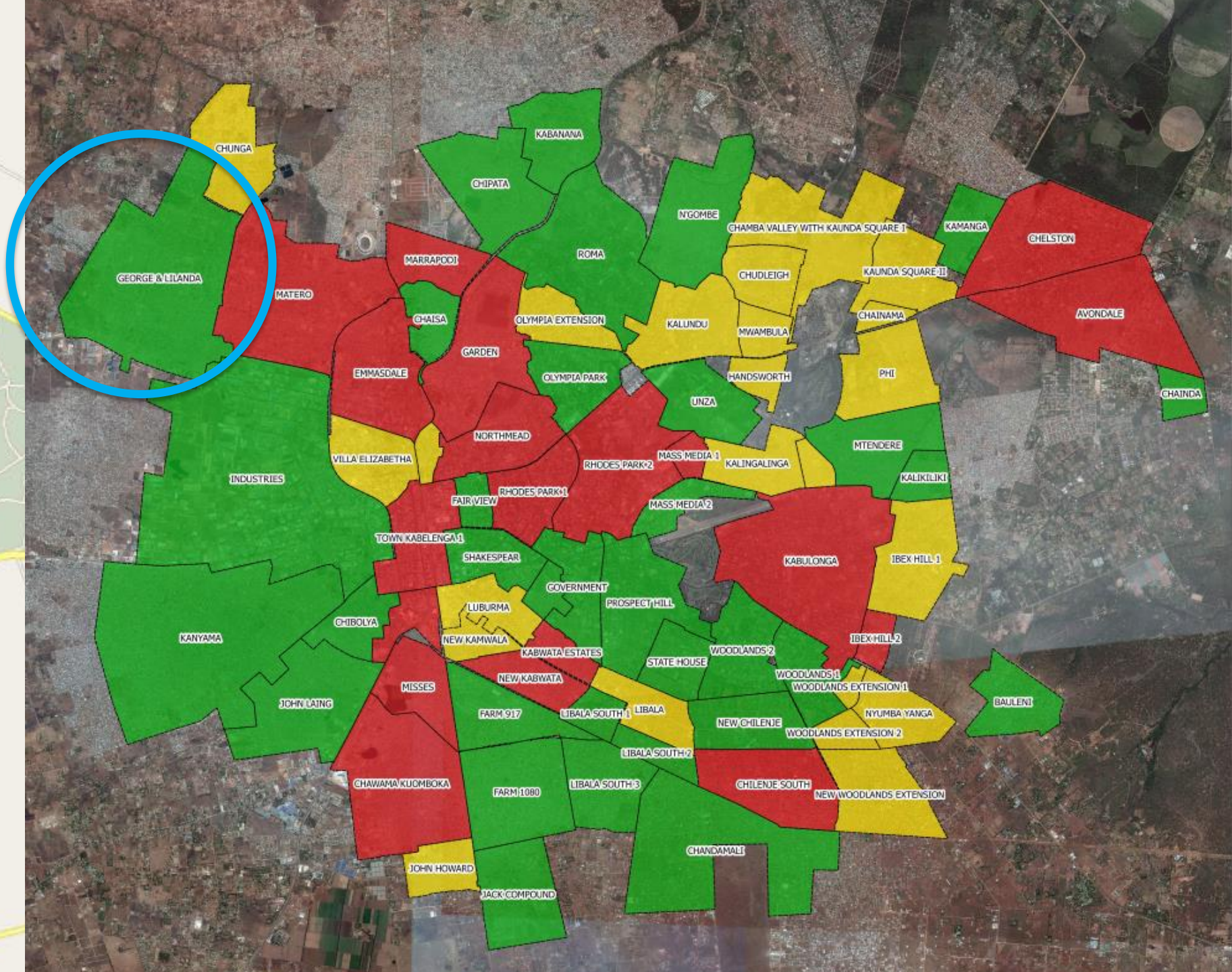
- Concept development for Pilot project in George
 - April 2017 – Mar 2018

Part 3

- Demonstration project
 - April 2018 – May 2019

Discussions

- June 2019 – to-date



EXISTING WATER SUPPLY TO GEORGE



PROJECT ACTIVITIES



1. Baseline household survey
2. Hydrogeological survey of existing boreholes
3. Assessment of water loss
4. Demonstration or restoration of Continuous water supply
5. Capacity building to LWSC

WATER SUPPLY STATUS OF DEMONSTRATION AREA AT PROJECT START



Level of water supply service low

JMP Classification	Population of HHs					
	Zone 17		Zone 18		Overall	
	No.	%	No.	%	No.	%
Possibly safely managed	180	3%	201	5%	381	3.9%
Basic	5,028	93%	3,615	82%	8643	87.9%
Limited	179	3%	587	13%	766	7.8%
Unimproved	6	0%	0	0%	6	0.1%
Surface Water	34	1%	0	0%	34	0.3%
	5,427		4,403		9830	

Challenges faced by residents

Households with yard connection

- Only 4% of residents have access to water when they require it
- Only 33% of the 311 households with a household connection are metered
- 15% of residents on fixed charge receive water for less than 12 hours

Households using communal water points

- 65% of residents access water from kiosks requiring ~ 30 minutes round trip
- 7% of residents require more than 30 minutes roundtrip to access water from kiosk

WATER NETWORK CHALLENGES



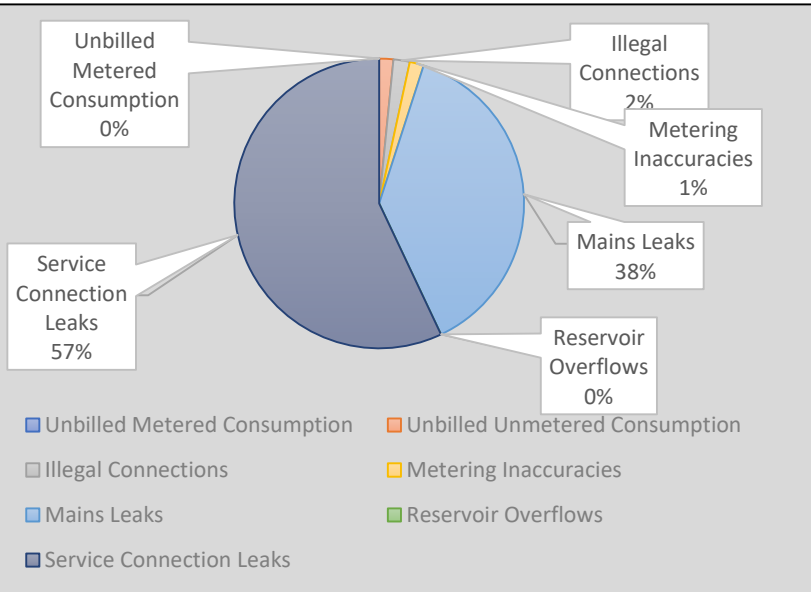
- 1. Limiting factors for water availability**
 - 40% borehole yield decline
 - Now a shared source with 2 adjacent zones 19 & 20
- 2. Sources of Leakages**
 - Mains pipes; 38% in Z17 & 40% in Z18
 - Service connections; 57% in Z17 & 60% in Z18
 - Non-functional meters
- 3. Sources of revenue loss**
 - Leakages
 - Unbilled unmetered consumption
 - Fixed water allocated per customer using kiosk
 - Fixed charge for customers using kiosks



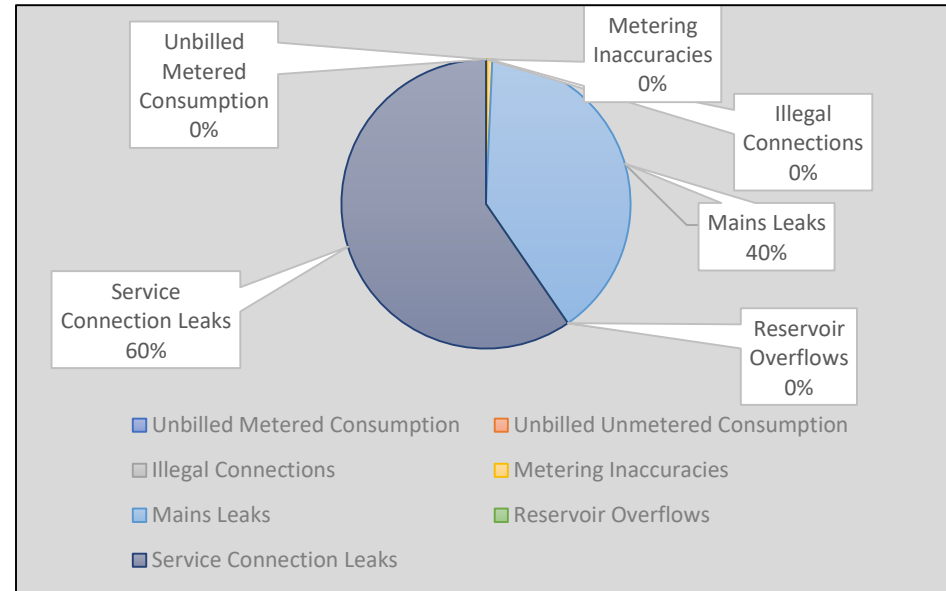
WATER LOSS IN DEMONSTRATION AREA AT PROJECT START



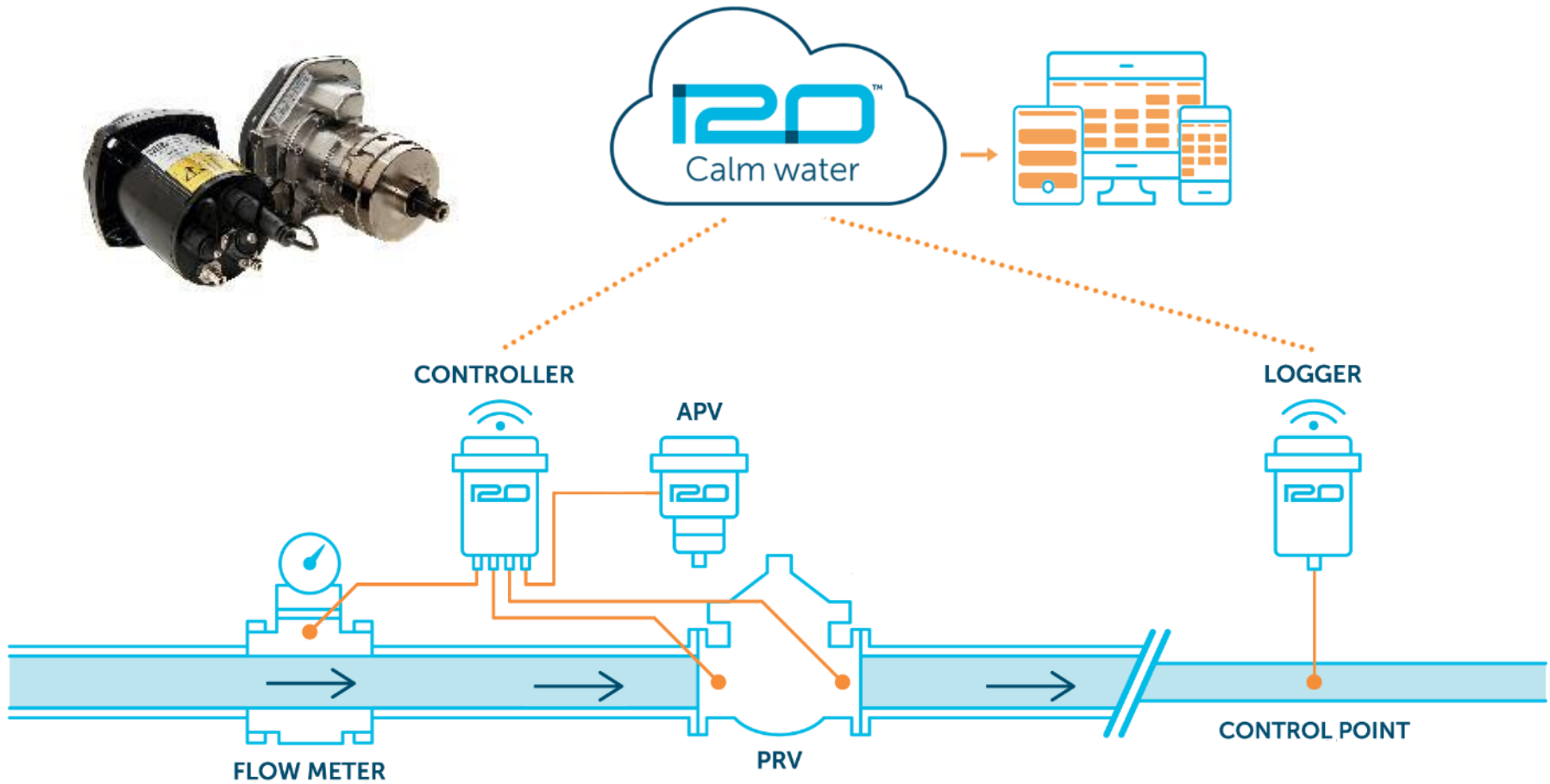
Zone 17 – water loss; NRW @59%



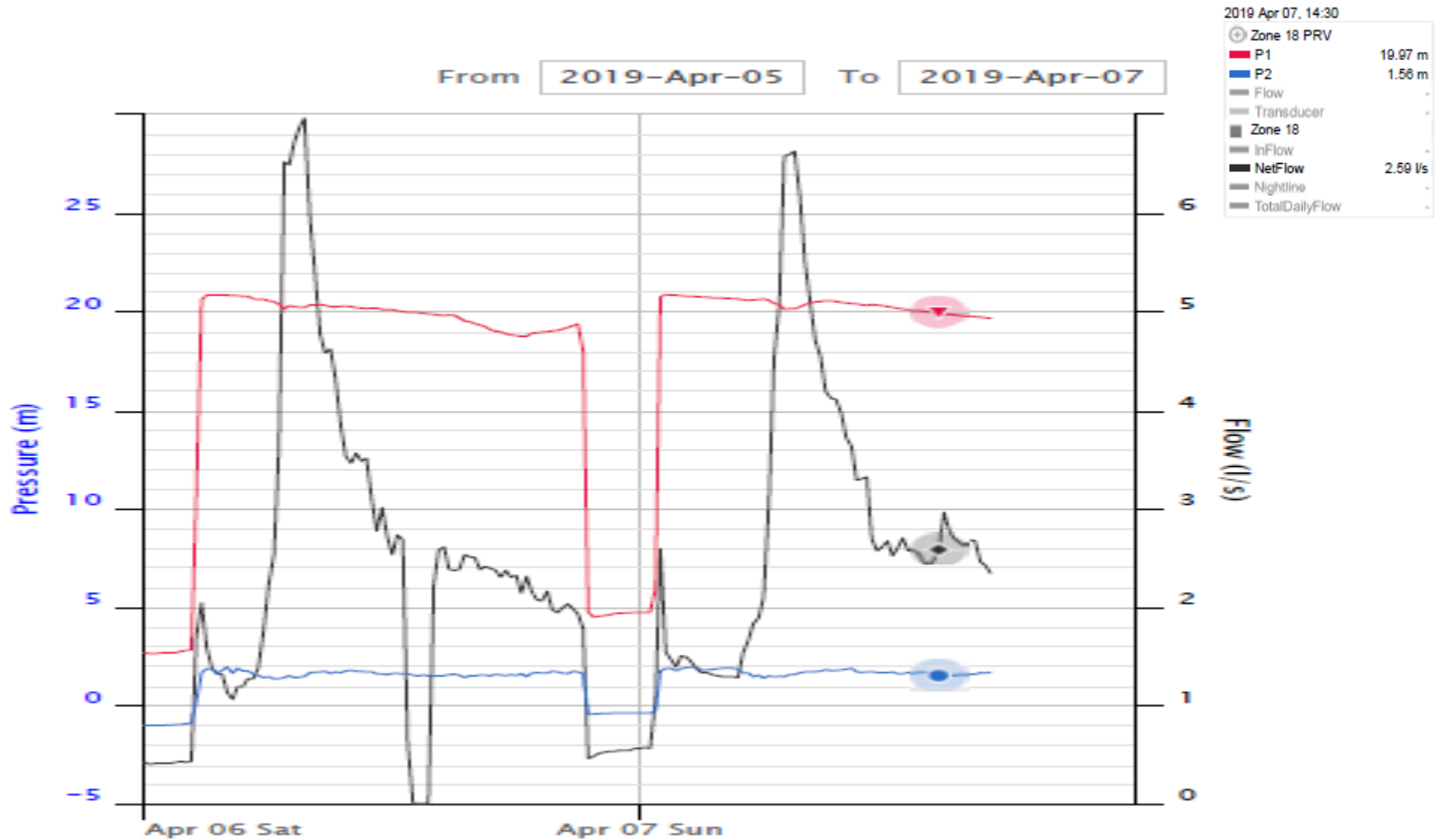
Zone 18 – water loss; NRW @77%

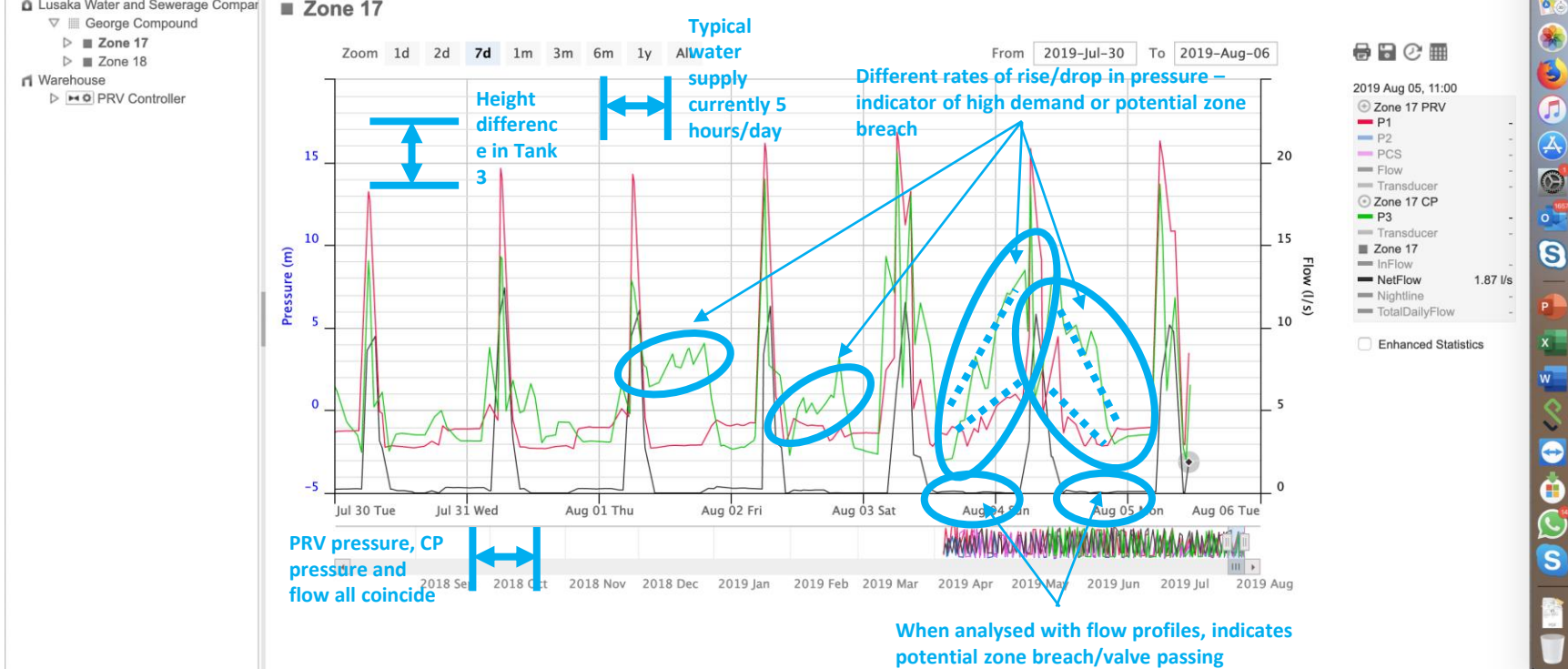


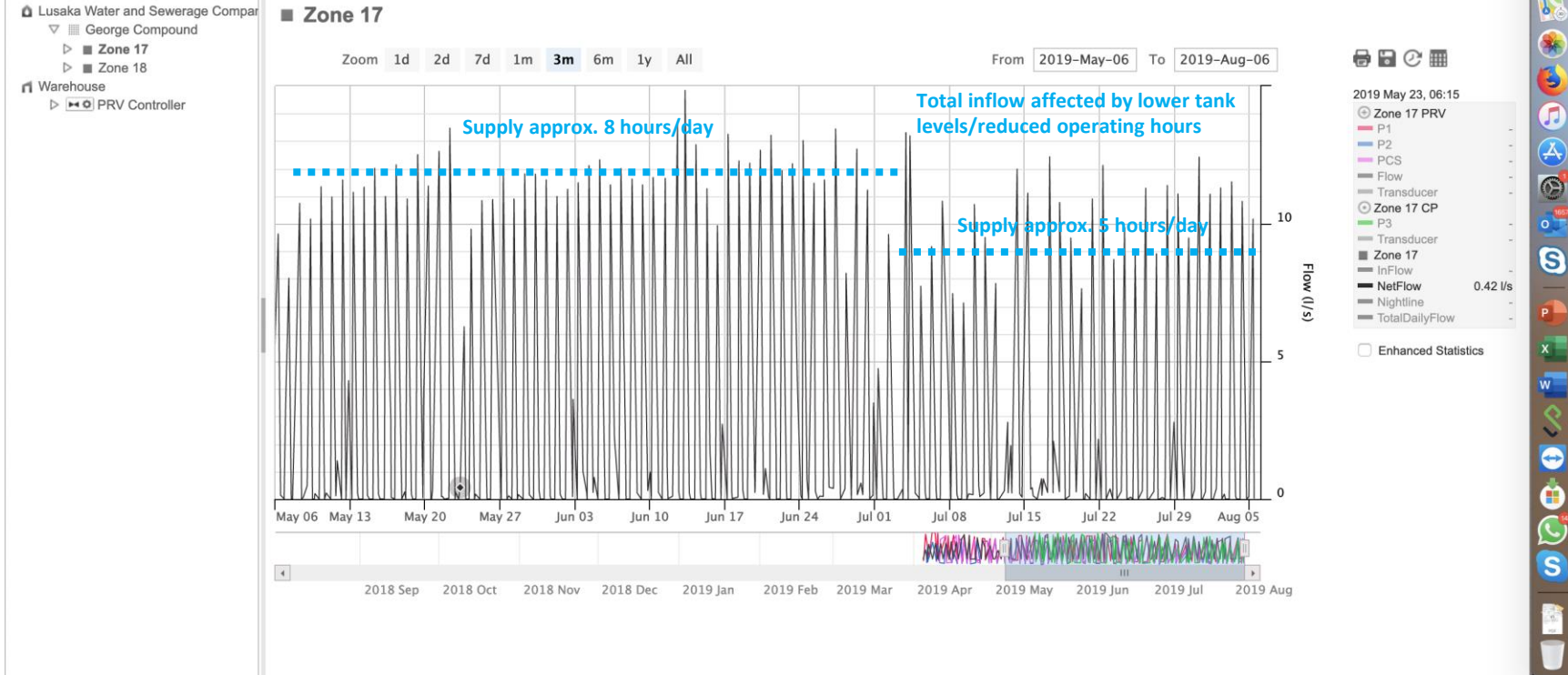
ADVANCED PRESSURE MANAGEMENT

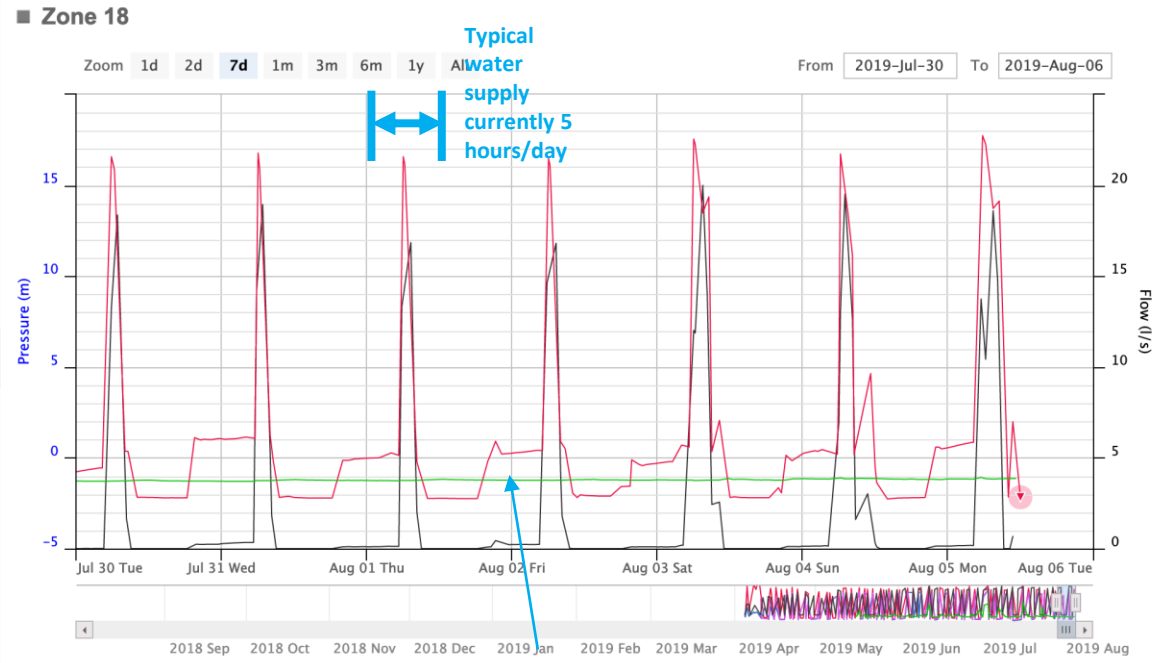


RESULTS: ZONE 18 – AFTER





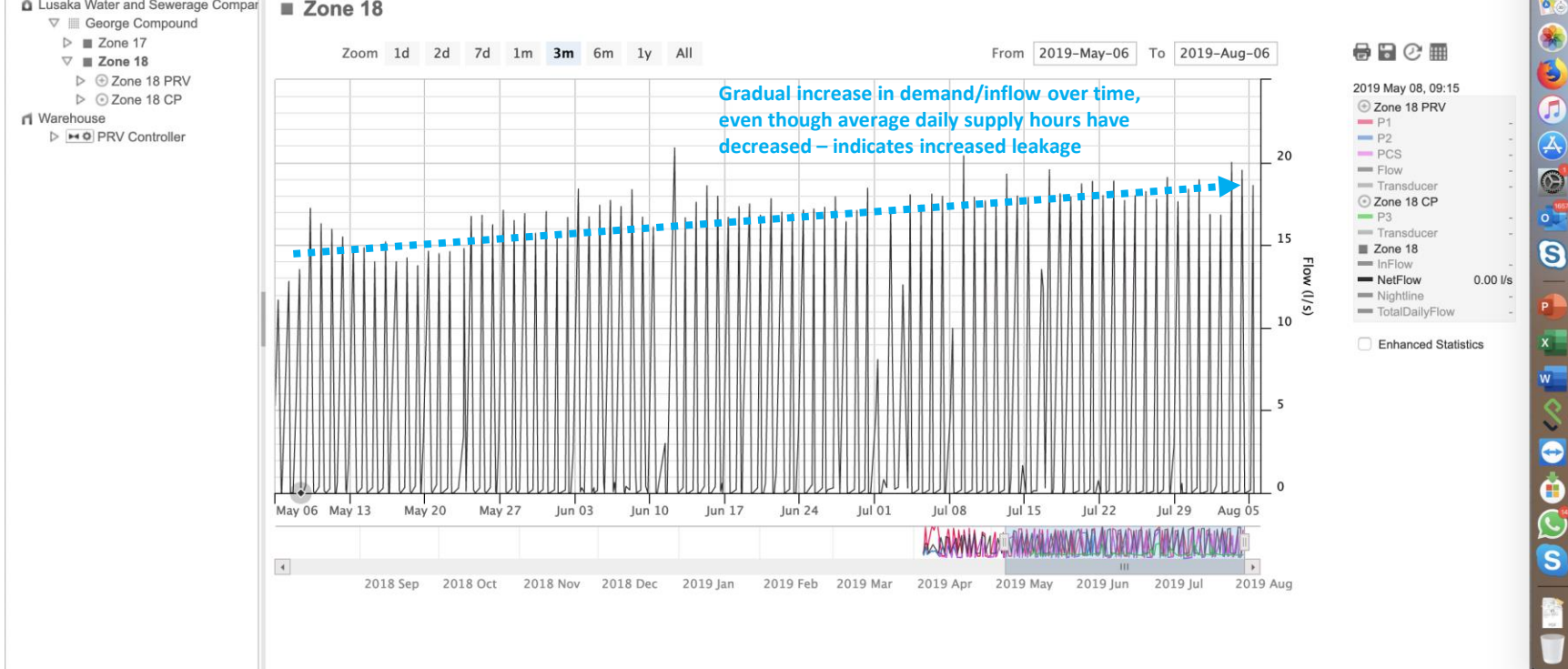




2019 Aug 05, 12:00

- Zone 18 PRV -2.17 m
- P1
- P2
- PCS
- Flow
- Transducer
- Zone 18 CP
- P3
- Transducer
- Zone 18
- InFlow
- NetFlow
- Nightline
- TotalDailyFlow

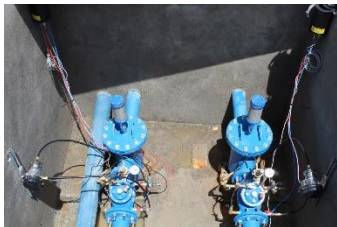
Enhanced Statistics



CONTINUOUS SUPPLY

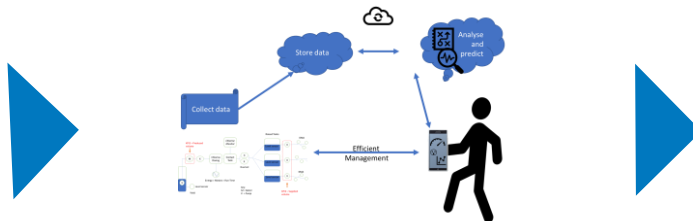
1. Installation of Intelligent Network Management

- Replacement of meters at borehole and tanks
- Installation & configuration of smart network solution
- Network repairs



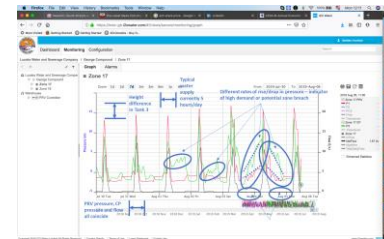
2. Monitoring & Feedback

- Remote data capture
- Data analysis and visualization
- Data use for network management



3. Troubleshooting

- Pressure fluctuations
- Unbalanced supply and demand
- Inconsistent availability of water
- Changes in water loss



5. Improved access for users

- Predictable hours of supply
- Improved water quality
- Increased lifespan of infrastructure

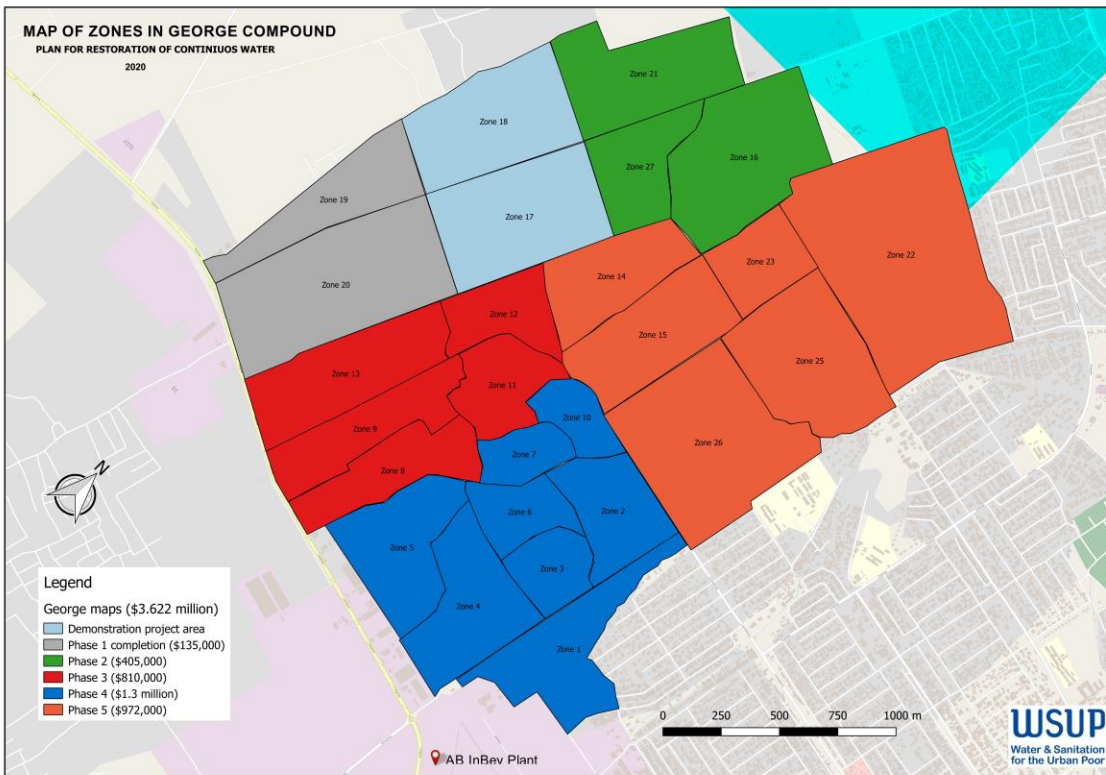


4. Capacity building & knowledge sharing

- Training of LWSC operatives
- On-job mentorship
- Sharing of impact
- Increasing buy-in and scale up opportunity



PHASED PROGRAMME



Progress To-date

- Zones 17 & 18 partially done
- Recovery model developed
- NRW is high at 59% & 77% for zones 17 and 18 respectively
- Repairs of network required

Completion of first phase (blue and grey)

- Inclusion of zones 19 and 20
- Network repairs in 4 zones to reduce NRW by 30%
- Connection of newly drilled borehole

Other phased approaches

- Phase 2; green
- Phase 3; red
- Phase 4; dark blue
- Phase 5; orange

WSUP

Water & Sanitation for the Urban Poor



Thank you

Rosemary Campbell
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QUESTIONS?



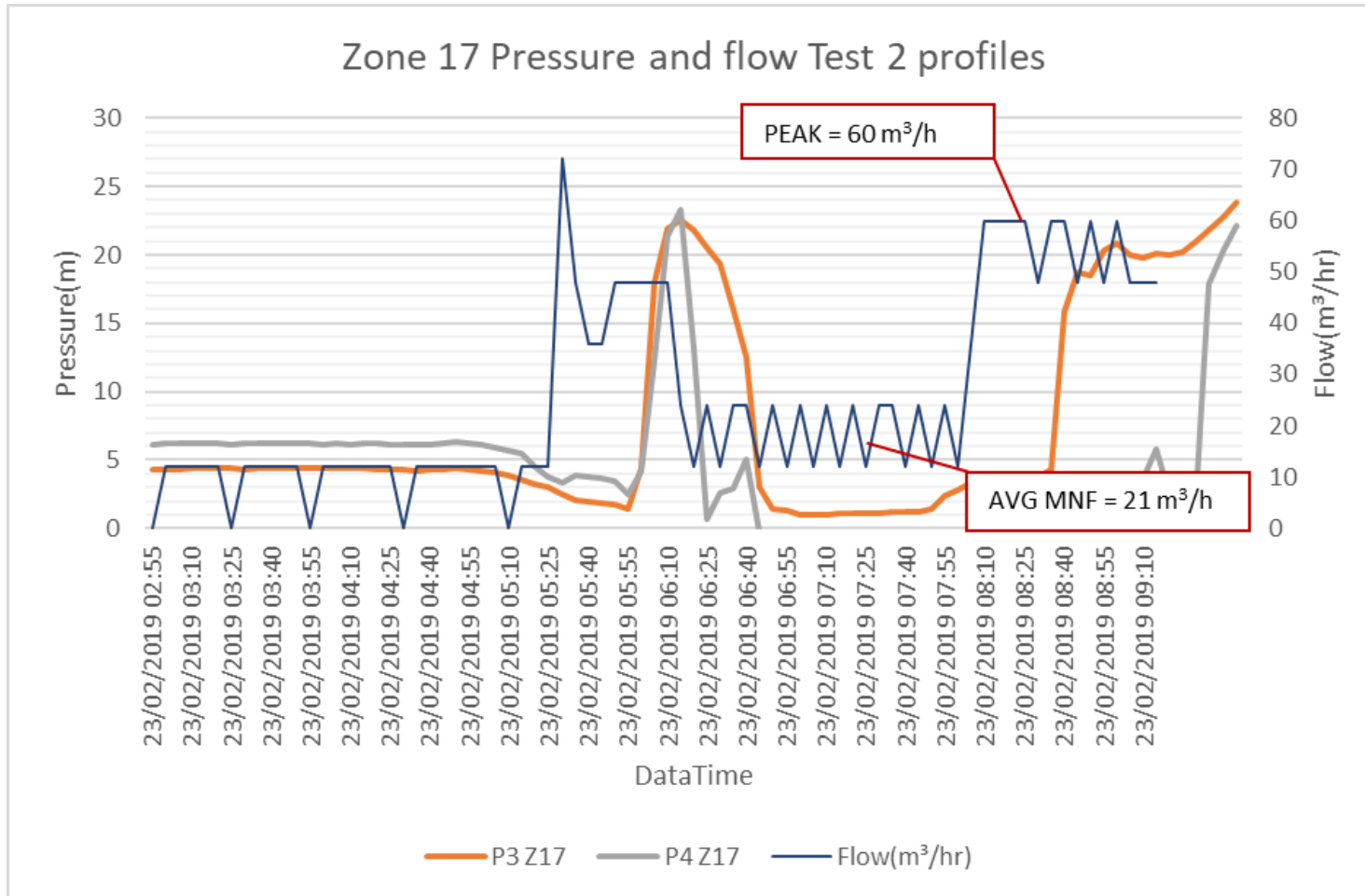
inspiring change



20th AfWA CONGRESS

— YOU ARE WELCOME —

RESULTS: ZONE 17 - BEFORE

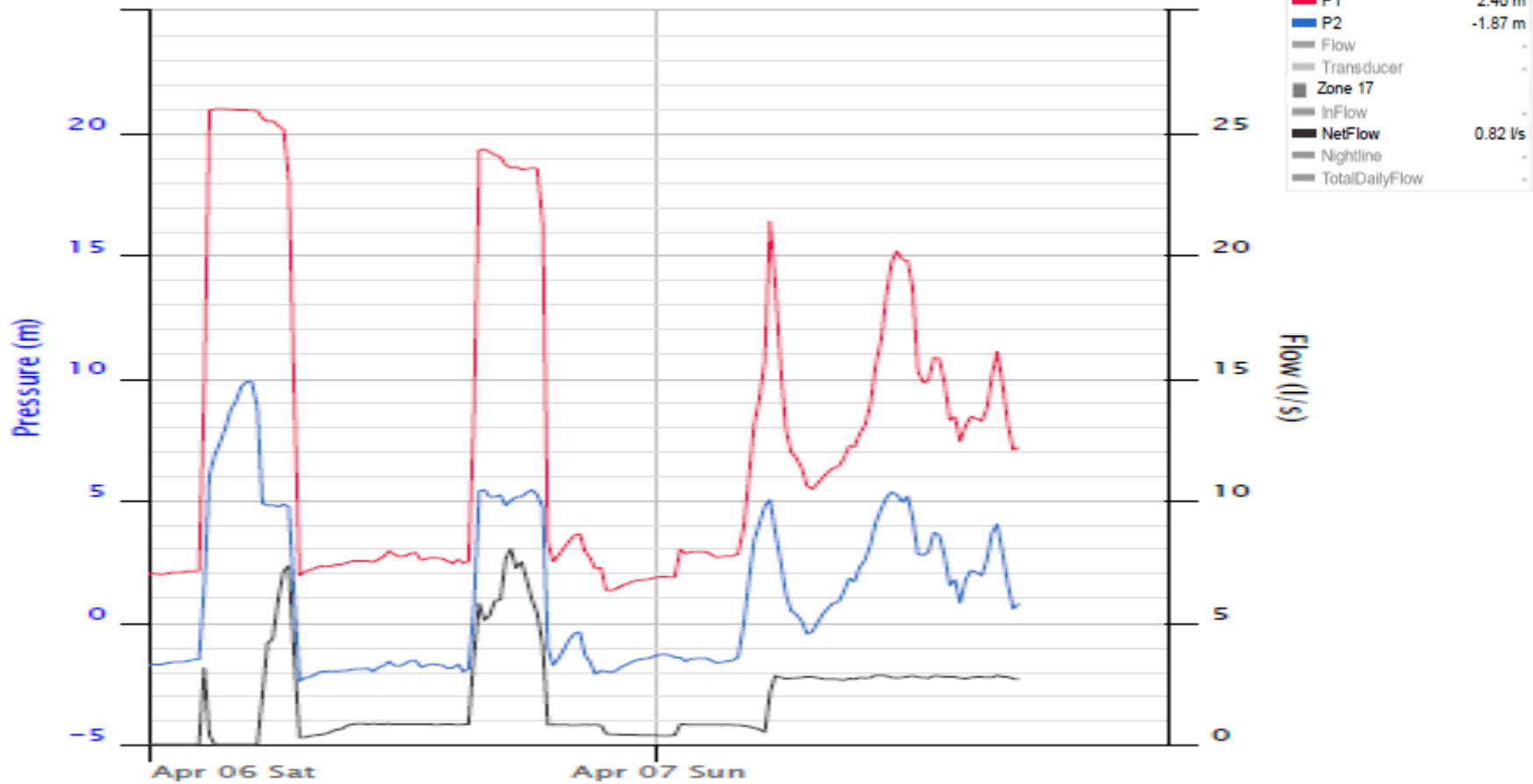


RESULTS: ZONE 17 – AFTER



From **2019-Apr-05** To **2019-Apr-07**

2019 Apr 06, 14:15



RESULTS: ZONE 18 – BEFORE

