

# **Commercial Loss Reduction in Kingston, Jamaica:**

## **Impact of Metering in SIV, BV, NRW and Collection**



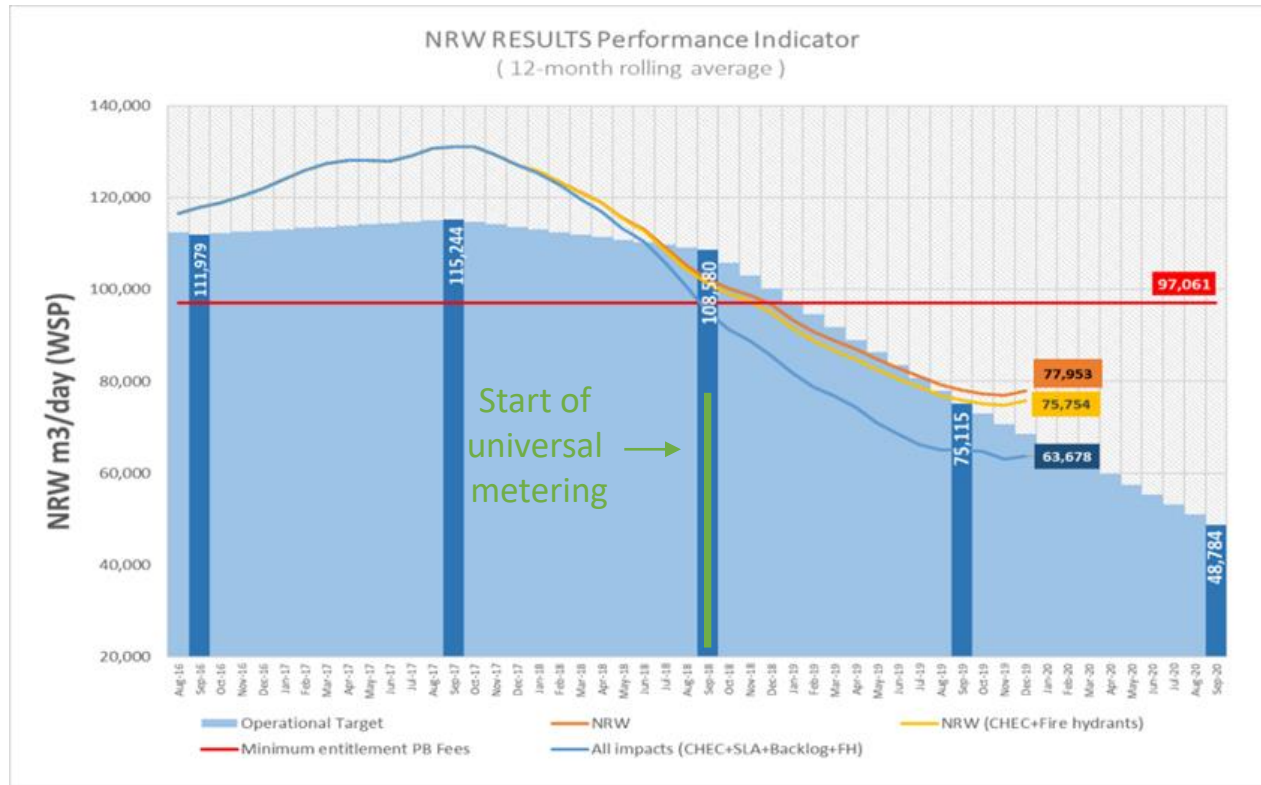
22<sup>nd</sup> March 2023

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Project Introduction





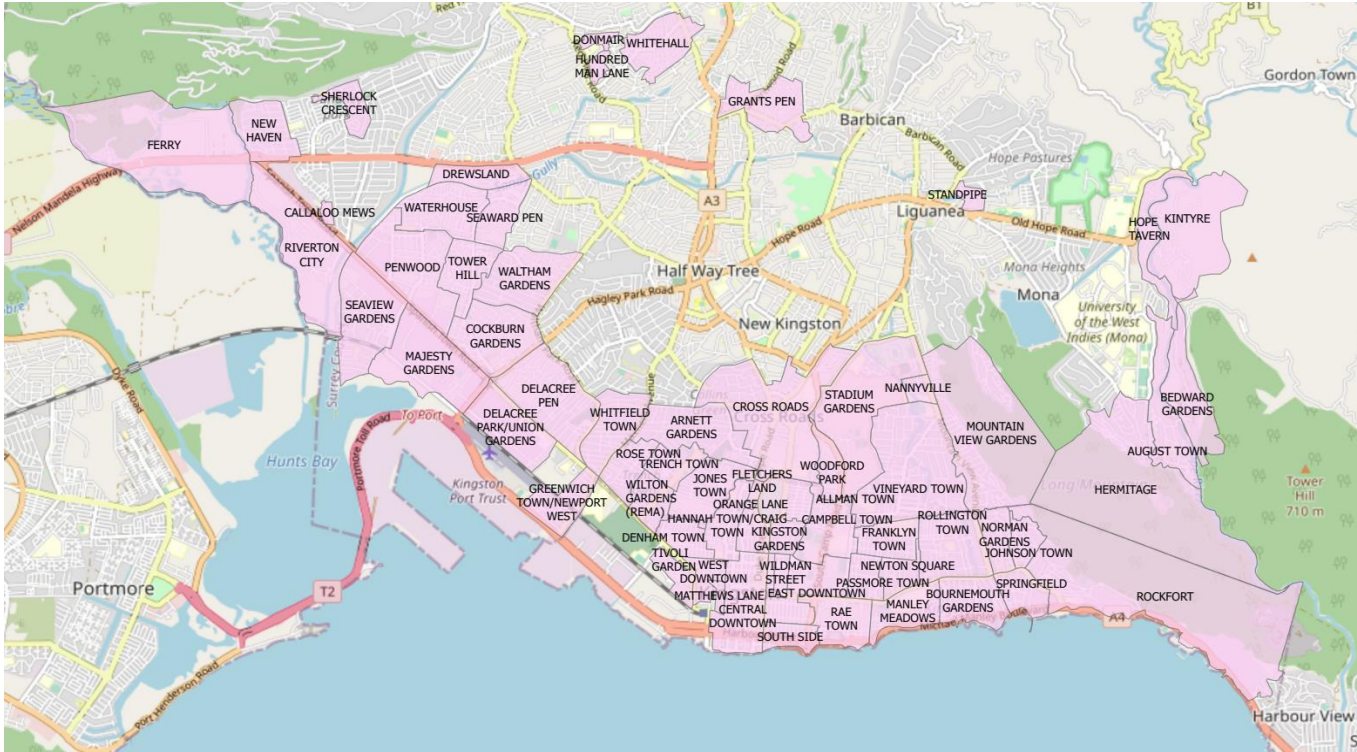
## Project Basics:

- KSA NRW was 130,000 m<sup>3</sup>/day
  - ❑ SIV [220,000 m<sup>3</sup>/day & BV [90,000 m<sup>3</sup>/day ]
  - ❑ 20 hours supply time
- 120,000 customers
- 1,800 km of pipe
  - ❑ Almost 30% are in the SCAs

## Challenges:

- In 2017, intensive Physical Loss Reduction activities carried out after establishment of the PZs/DMA's
- NRW remained extremely high because of enormous number of flat customers and inactive accounts concentrated in Downtown Kingston
- In 2018, metering started in the SCAs





## Challenges:

- Metering in the 61 SCA communities is not straightforward – needed preparation and special intervention
- Highly volatile and inaccessible
- Lack of proper infrastructure and customer meters rooted from inaccessibility
- 24/7 “open tap behavior”
- Will the residence pay?

## Initial steps/Preliminary solution:

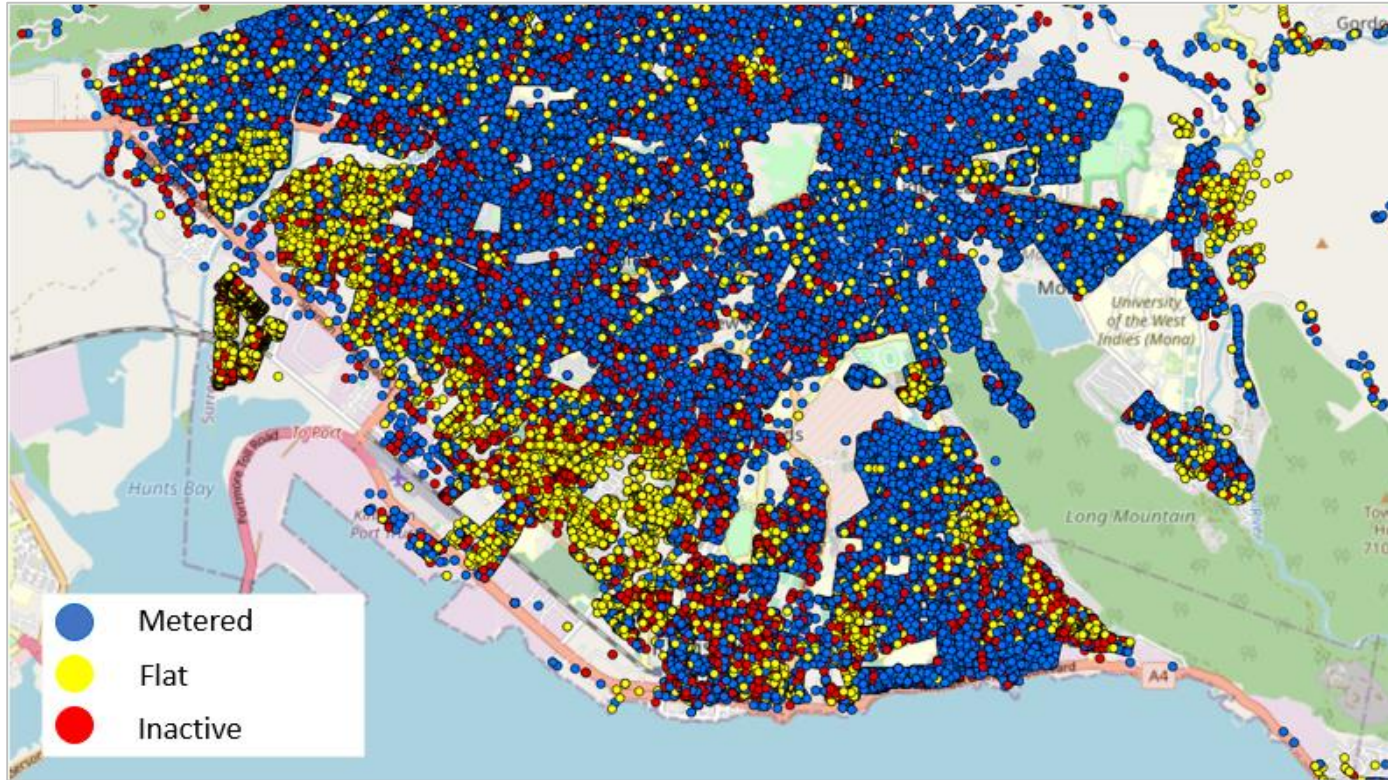
- External consultant was hired to study these SCAs in detail and understand the history and formulate a strategy based on the capacity to pay, access and investments
  - More than 90% pay electricity and internet
- Selected with two pilot areas
- Co-management agreed to do universal metering



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Findings and Methodology



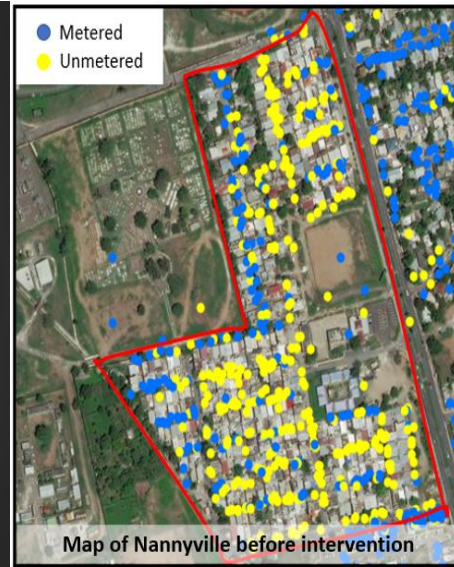
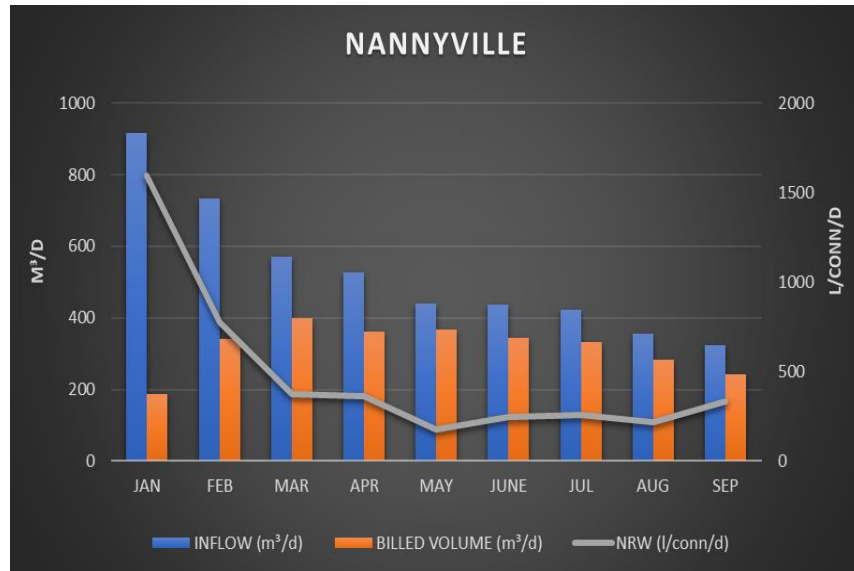


Classification	Sept. 2018	%
<b>Active customers</b>	<b>89,040</b>	<b>84%</b>
Metered	65,568	61.8%
Defective	2,850	2.7%
Flat/Unmetered	17,806	16.8%
Old Meters (>15 years)	2,816	2.7%
<b>Inactive customers</b>	<b>17,033</b>	<b>16%</b>
Metered	8,102	7.6%
Defective	1,900	1.8%
Flat/Unmetered	7,031	6.6%
<b>Total</b>	<b>106,073</b>	<b>100%</b>

### Findings:

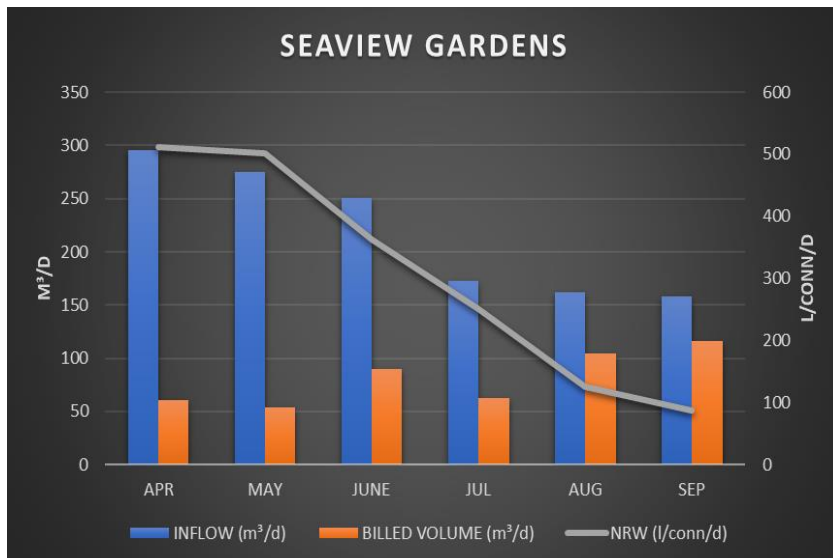
- 3,000 IMP/month [13.6 m<sup>3</sup>/month] billed consumption vs. 8,000 IMP/month [36.3 m<sup>3</sup>/month] “real” consumption [2.5 times higher than actual billed]
- 25,000 [25% of total customers] flat accounts [active+inactive] concentrated in Downtown, Kingston
- 6,000 [6% of total customers] are old and defective meters and 16% inactive accounts
- More than 30,000 meters need to be installed





#### RESULTS:

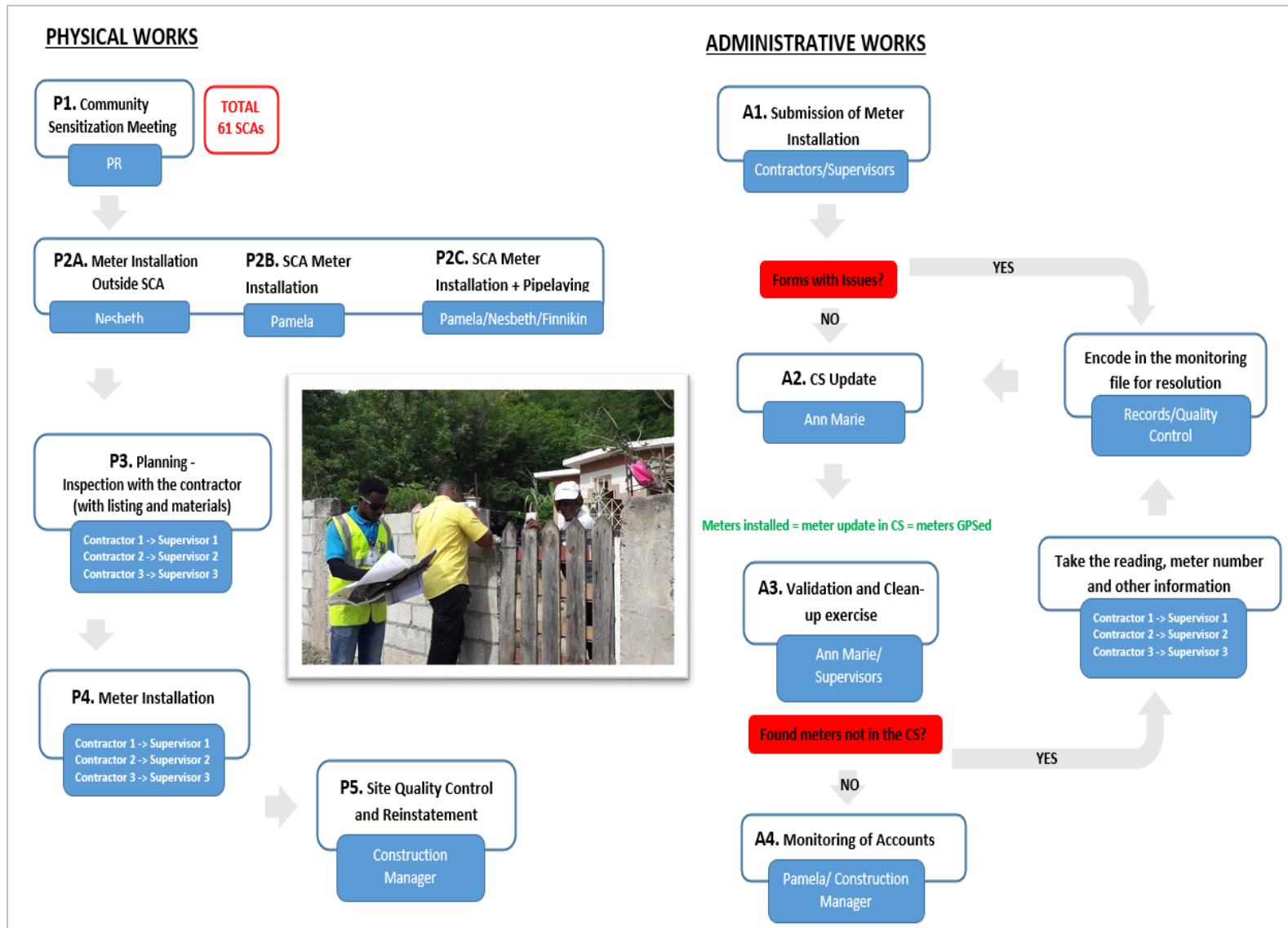
- 500 meters installed
- System input volume decreased by 43%
- Billed Volume Increased by 102%
- NRW decreased from 1600 to 350 l/conn/d (Decrease of 450%)



#### RESULTS

- Installed 200 meters
- System input volume decreased by 24%
- Billed Volume Increased by 50%
- NRW decreased from 500 to 100 l/conn/d (Decrease of 500%)





### Physical Works:

- Communication in each of the MP, Councilors, church, associations and stakeholders took place to inform them and the residents about the activity
- Community meetings, town criers and flyer distribution [metering and regularization]
- Metering subcontractors were hired
- On-site customer information gathering and house to house inspection were carried out
- Quality control and automation
  - ❑ including test for possible leaks after meter installation

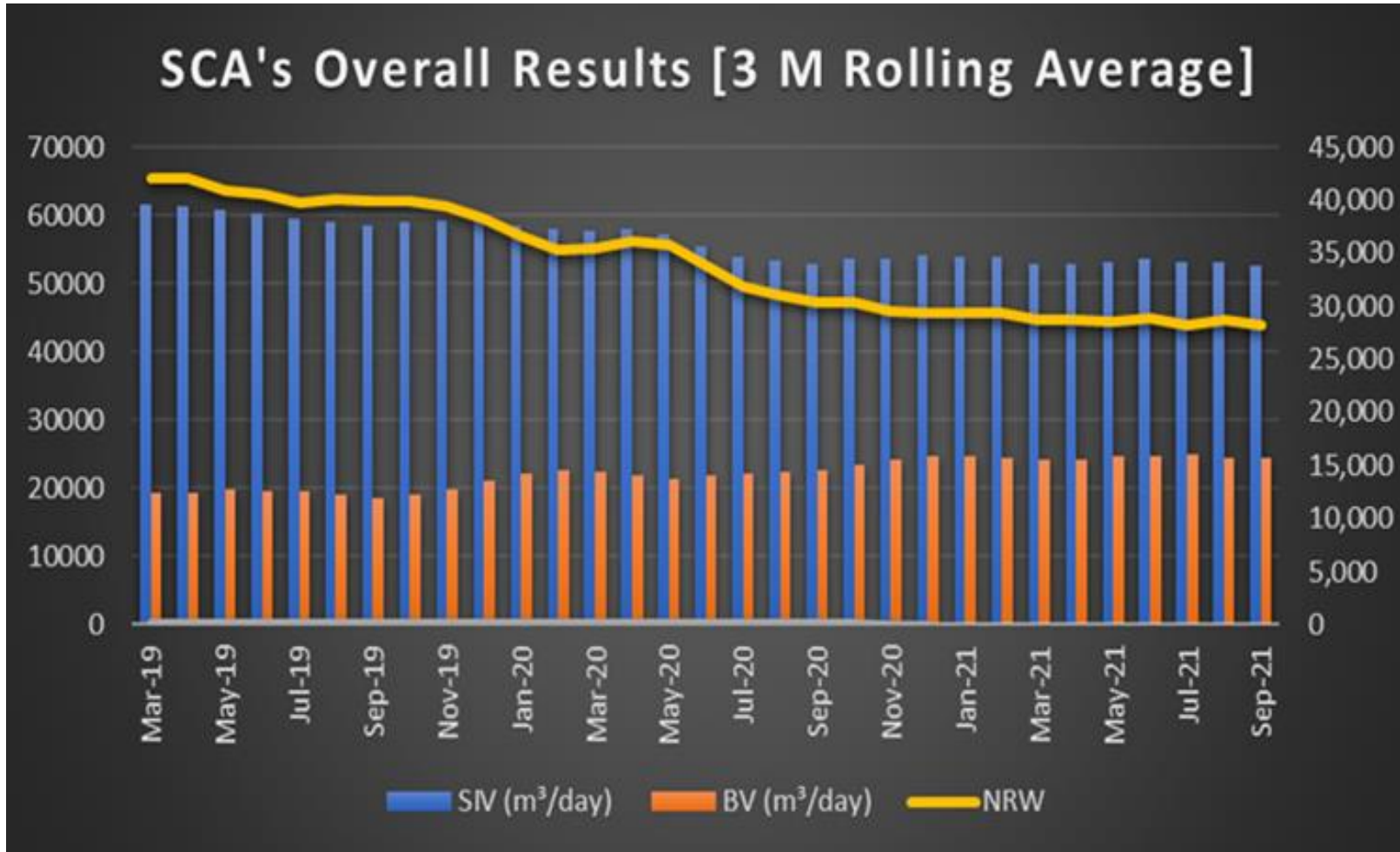
### Administrative works:

- Ensure that every meter in the CS and being read
- Monitoring of accounts for possible tampering
- Analysis of the impact in BV, SIV, NRW and collection

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Results



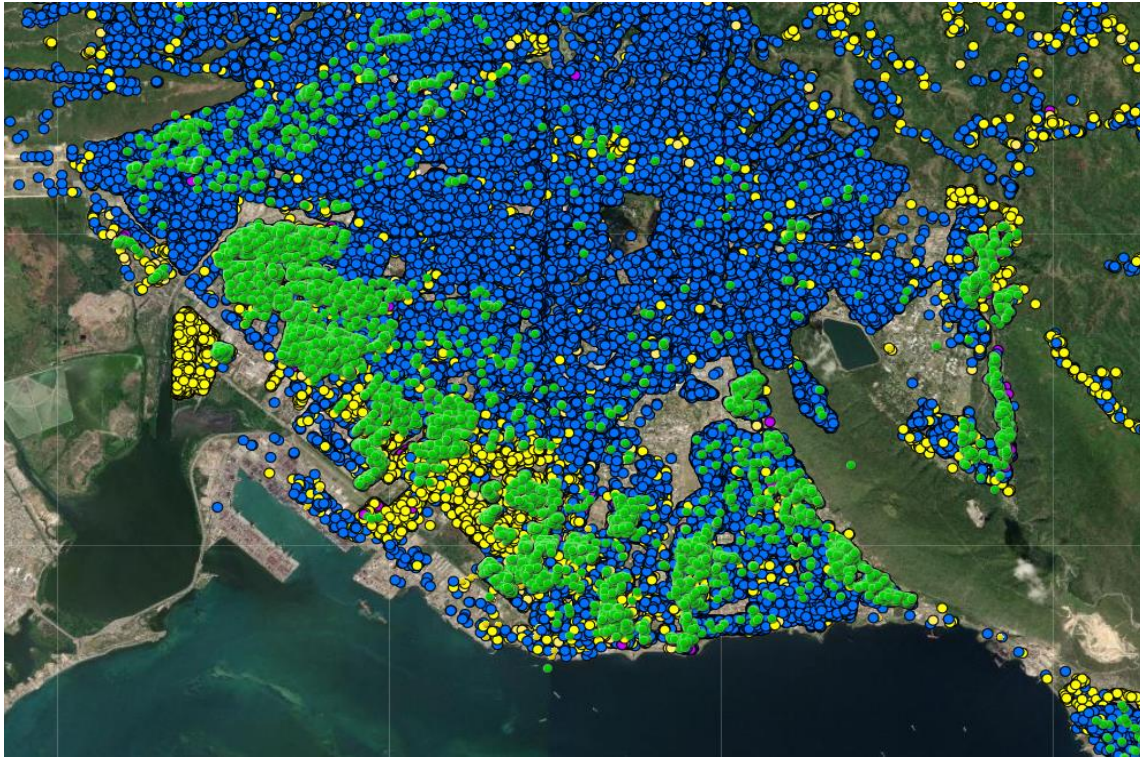


#### Main Remarks:

- More than 14,000 meters were installed in 48 SCAs [out of 61]
  - ❑ Including almost 2,000 regularized customers

#### Results:

- The System Input Volume (SIV) reduced from 61,700 to 51,900 m³/day [16% reduction]
- Billing Volume (BV) increased from 19,300 to 24,800 m³/day [28% increase]
- NRW in the SCAs reduced from 42,400 to 27,100 m³/day [36% reduction]



Classification	Sept. 2018	Sept. 2021	%
Active customers	89,040	92,660	4%
Metered	65,568	76,969	17%
Defective	2,850	2,415	-15%
Flat/Unmetered	17,806	11,939	-33%
Old Meters (>15 years)	2,816	1,337	-53%
Inactive customers	17,033	17,268	1%
Metered	8,102	9,922	22%
Defective	1,900	1,408	-26%
Flat/Unmetered	7,031	5,938	-16%
<b>Total</b>	<b>106,073</b>	<b>109,928</b>	<b>4%</b>

**Findings:**

- Unmetered accounts decreased by 33% [from 17,800 to 12,000]
- Old meters decreased by 53% [from 2,816 to 1,337]
- Defective meters decreased by 15% [from 2,850 to 2,400]
- Metered customers increased by 17% [active] and 22% [inactive]
  - Plus 3,000 new defective meters [during the period of metering]

Period	Count of Customers	Billed Volume (m <sup>3</sup> /month)	Collection (USD/month)	C/B Ratio
Before	10,360	160,000	170,000	94%
After	12,600	310,000	440,000	88%
% Diff	22%	94%	159%	-6%

### Findings:

- Billed Volume increase by 94%
  - Average consumption increased from 15 m<sup>3</sup>/month to 25 m<sup>3</sup>/month
  - 22% increase in customers because of regularized customers [inactive + new accounts]
- Even if the C/B ratio decreased from 94% to 88%, collection is 2.5 times higher
  - 270,000 USD/month increase
  - ❖ Meaning customers don't pay the entire bill but they pay more than they used to
  - ❖ Regularized customers are paying



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**Other activities to ensure  
sustainability**





- NWC/ Miya Jamaica –  
Water Conservation School Program

- NWC/ Miya Jamaica –  
Leak detection Campaign - Pro bono Customer side  
leak detection  
Involvement of Stakeholders – SCA's Visits

