

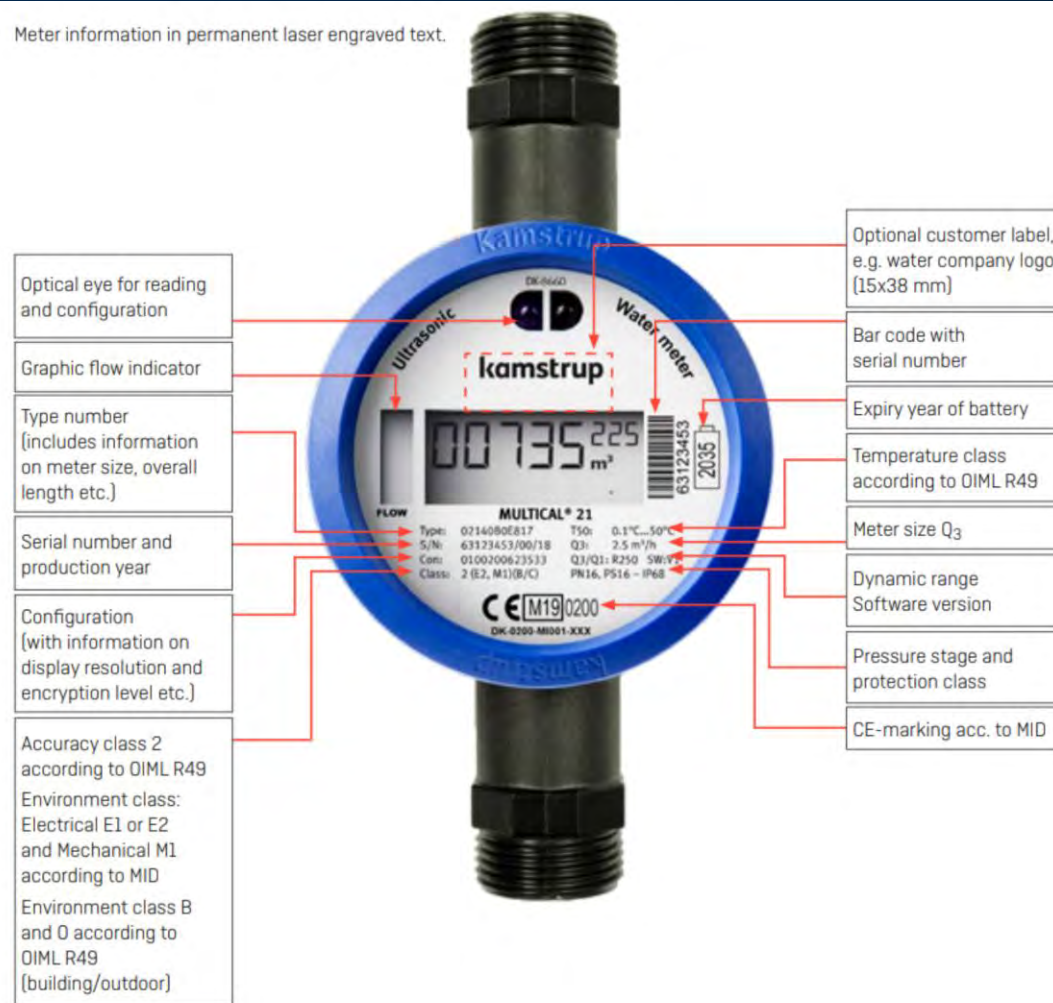
# Smart Water Meter Installations

André Cloete (on behalf of George Municipality)



*SOUTHERN AFRICA ESRI USER CONFERENCE 2025*

Meter information in permanent laser engraved text.



## What is a Smart Water Meter?

- A smart water meter is an advanced digital device that automatically measures and wirelessly transmits real-time water consumption data to utilities, enabling accurate billing, leak detection, and usage monitoring



# Process of Installation

- The contractor will request and arrange property access for installation of the new stop valve and removal of old meter if installed inside the property.
- The excavation team will locate, excavate and expose the old pipes. Property access might be required from the resident.
- The property water will be closed off (Maximum 2 hours) and the old meter is removed once it's meter reading has been recorded.
- The new SMART Water Meter is installed, and the serial number is written on the meter box. Property access is required for the stop valve installation.
- Water is restored to the property, and the pipework is left exposed for 1-2 days for inspection and approval by Engineer.
- Once the inspection is completed, the reinstatement team will backfill around the meter, pipework and restore the property to original condition within one (1) week of approval.
- The contractor leaves a pamphlet for the resident containing the serial number of the new SMART Water Meter at the premises.





## QUICK FACTS: Smart Water Meters in George Issued George Municipality

George Municipality has introduced Smart Water Meters and have already successfully installed them in selected areas. These meters have some important features that you should know about:

- **Not Prepaid Meters:**  
These new Smart Water meters are not prepaid meters. This means you don't need to pay for your water in advance. Instead, you'll receive a bill for the water you use after you've used it – same as current system of billing.
- **No Disconnections:**  
The Smart Water Meters won't disconnect your water supply. So, you don't need to worry about your water being turned off by these meters.
- **Saves Money:**  
The Smart Water Meter can actually help you save money. It works by reading how much water your household using remote internet-based technology. This means that someone doesn't have to come to your house to read the meter manually. This saves time and resources.
- **Faster Leak Detection:**  
The Smart Water Meter is clever enough to detect leaks quickly. If there's a leak in your water system, the meter will notice it early. This helps you catch and fix leaks before they become big problems.

So, the new Smart Water Meters are designed to make things easier for you. They save you money by accurately measuring your water use and help you catch leaks faster. You will be notified at your home when a Smart Water Meter is due to be installed. George Municipality envisions a city that operates intelligently, ensuring water resource preservation and an enhanced quality of life for all its



# Paper Based Form (Before Survey123)

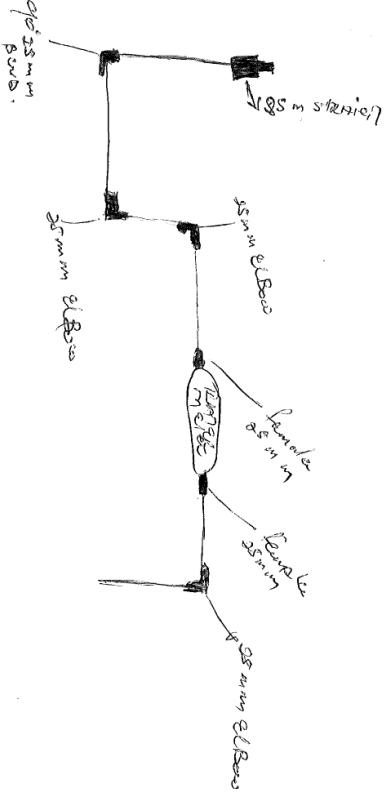
- Paper-based
- Manual process
- Challenges:
  - Time-consuming
  - Errors in handwriting/data capture
  - Lost or incomplete forms
  - Manual re-entry into systems



SMART METER REPLACEMENT FORM

REF No: 02123

Sketch of installation



Gpslatitude	S 83° 57' 47, 2168"
Gpslongitude	E 23° 26' 58, 8478"

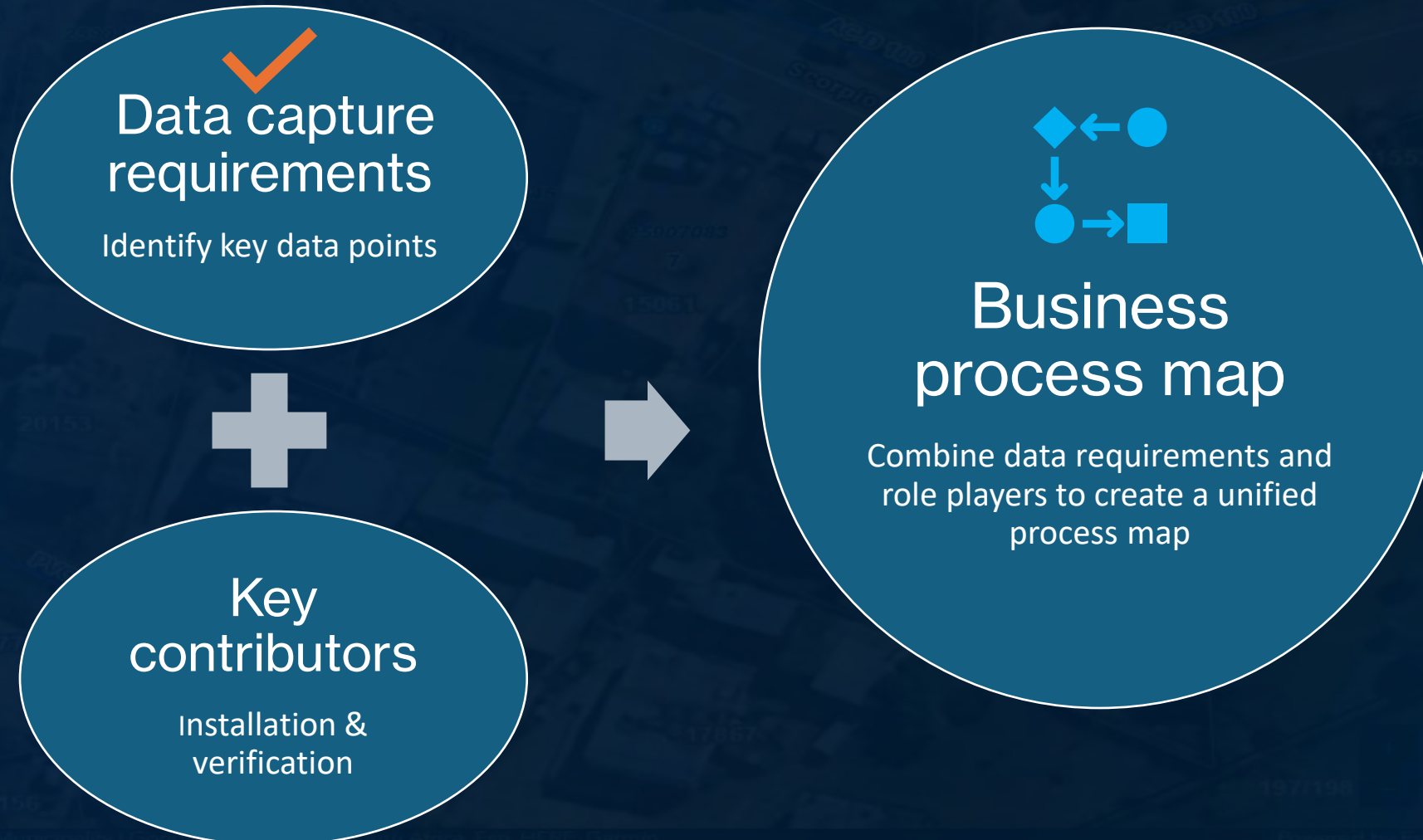
01 CREATION STR.  
ERF: 02123



- 1. Data Capturer
- 2. Construction Manager
- 3. EAR
- 4. Data Capturer Reinstatement
- 5. Construction Manager Reinstatement
- 6. EAR Reinstatement
- 7. Ontec

# Approach

Defining the business process and requirements

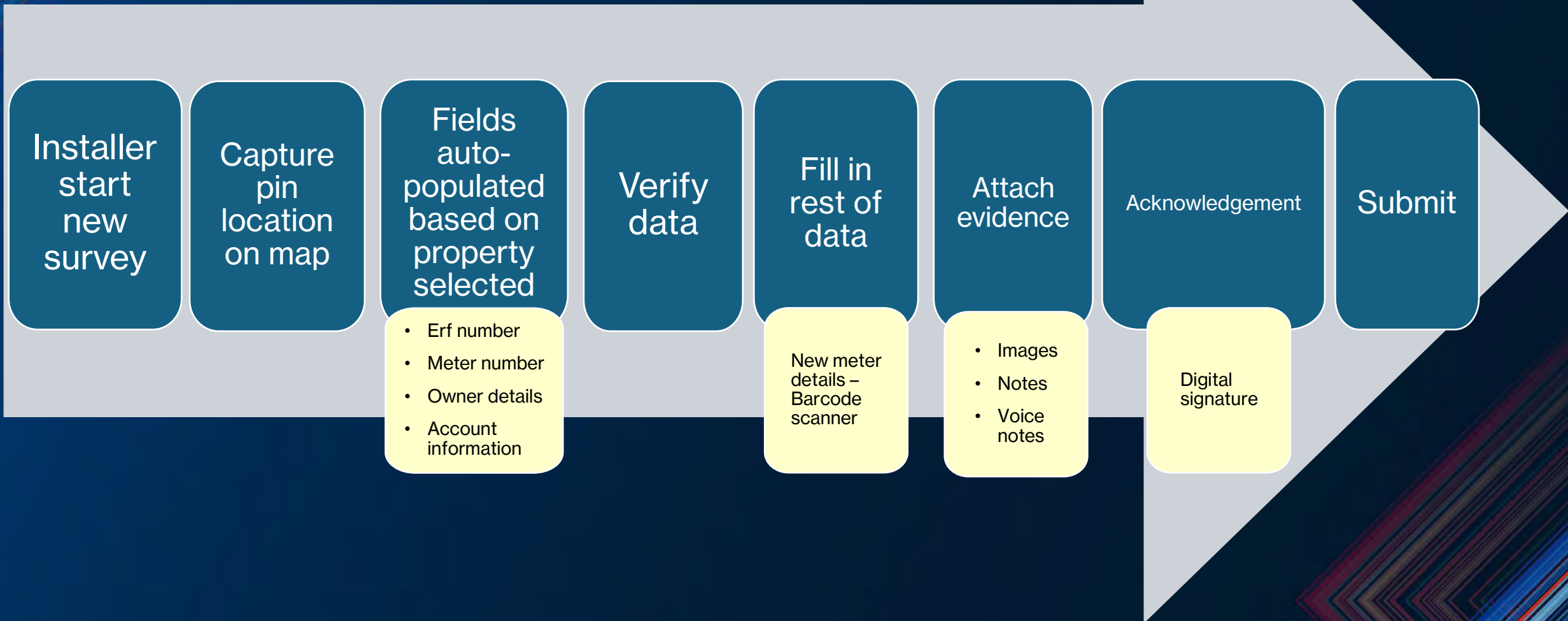




[illegible][illegible]



# Data capture process flow



# Fieldwork Form

- Survey123

- Digital form design (mobile-friendly)
- Mandatory fields ensure completeness

Smart Water Meter Installations

Form Type \*

☒ New Installation ☐ Maintenance

Installer Name

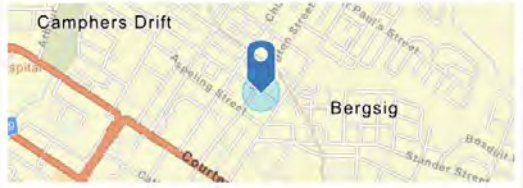
Company Name \*

▼ Erf Information

Property to be billed for New Water Meter \*

Please add point inside property that water meter relates to (this is to ensure correct billing)

33°57'S 22°28'E ± 114,0 m



Street Address (No. and Name)

45 Stockenstrom Street, George, Garden Route, Western Cape, 6529, ZAF

Suburb

GEORGE

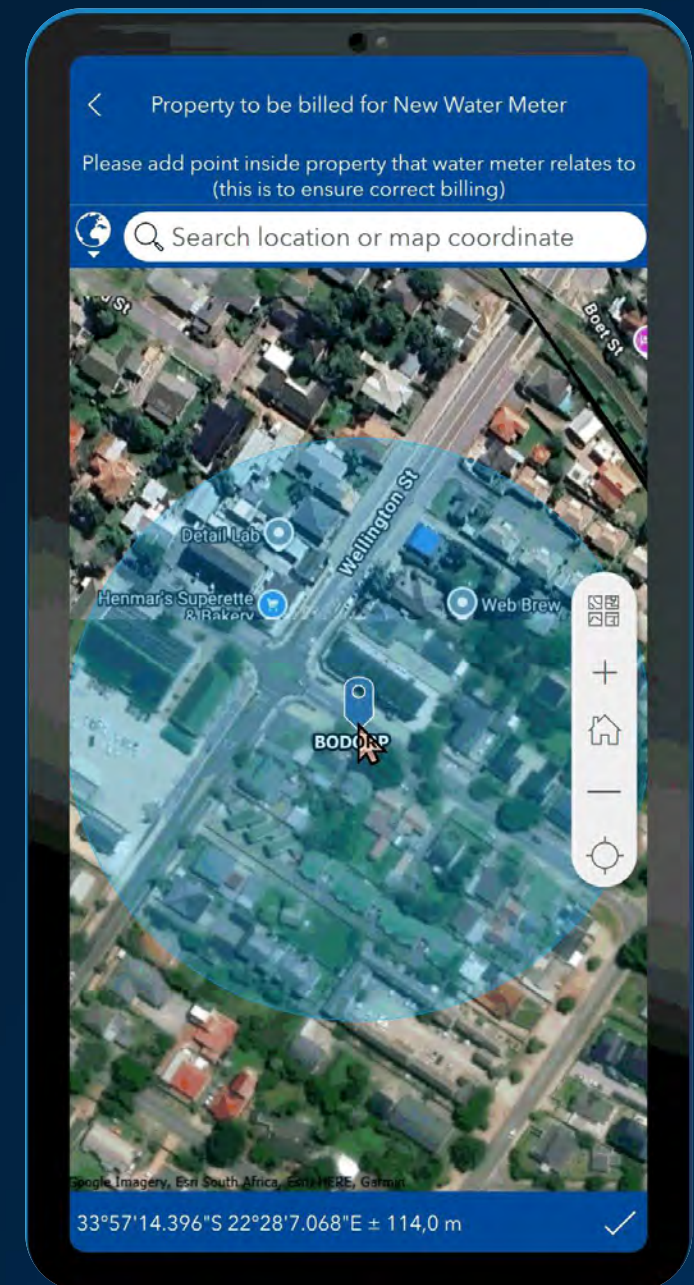
1 of 5



# Fieldwork Form

- Survey123

- **Two Locations Captured in a Single Form**
- **Property Centroid**
  - Used for Finance and Billing accuracy
- **Water Meter Location**
  - Captures the exact physical position of the meter
  - Enables Civil Engineering Services to inspect and verify installations



# Fieldwork Form

• Survey123

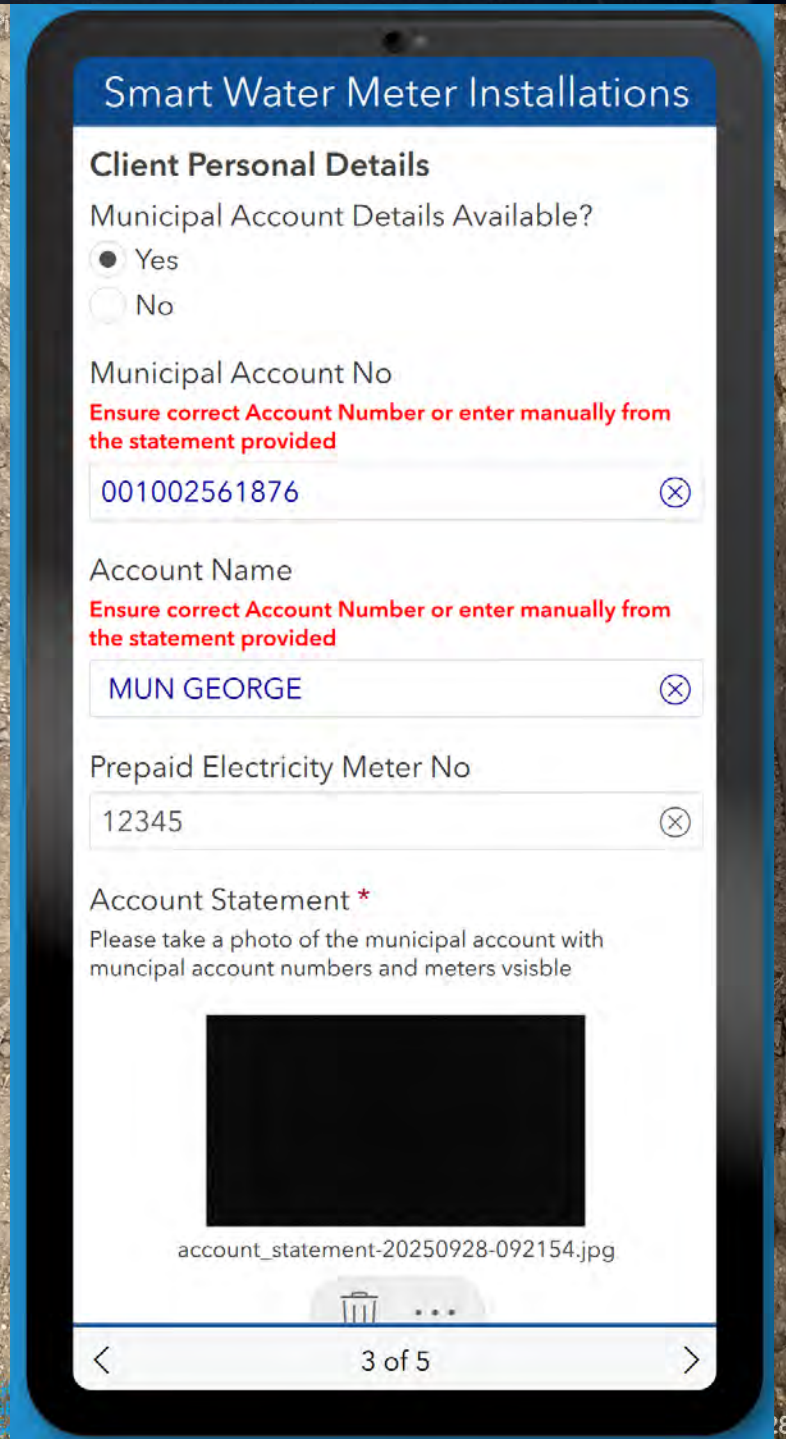
- **Data Validation**

- **Image Watermarks**

- Date/Time Stamp on images
- Erf Information
- Meter Information

- **Pull Data Functionality**

- Account Details (Owner Name and Account No)
- Ensures correct billing without needing to verify



Smart Water Meter Installations

**Client Personal Details**

Municipal Account Details Available?

☒ Yes  
☐ No

Municipal Account No

Ensure correct Account Number or enter manually from the statement provided

001002561876

Account Name

Ensure correct Account Number or enter manually from the statement provided


MUN GEORGE

Prepaid Electricity Meter No

12345

Account Statement \*

Please take a photo of the municipal account with municipal account numbers and meters visible



account\_statement-20250928-092154.jpg

3 of 5



# Smart M

Power Automate

Back 3. SWMI - EAR Approval/Rejection

Approve Email Data Capturer reinstatement

Parameters Settings Code view Testing At

Subject \*

ERF attributes.b3\_pr... attributes.new...

Approval

Body \*

Normal Arial 15px B

Good day,

A new meter has been installed

Installation Details:

Address: attributes.b1\_str...

Erf No: attributes.b3\_pr...

Meter Type: attributes.e1\_m...

New Meter No: attributes.new...

Data Capturer Reinstatement

Kind regards

▼ All results



CMuller@ontec.co.za; elmare.koekemoer@ontec.co.za; fhaasbroek@...  
ERF 15061 (25907083) - SWMI Resident Engineer Reinsta... 2025/05/21  
Good day, A new meter has been installed Installation ... Sent Items



parkdenesmartmeters@lukhozi.co.za  
ERF 15061 (25907083) - SWMI Construction Manager Rei... 2025/05/21  
Good day, A new meter has been installed Installation ... Sent Items



williet@henra.co.za; ruaan@henra.co.za; ngombane@gmail.com  
ERF 15061 (25907083) - SWMI Data Reinstatement Captu... 2025/05/20  
Good day, A new meter has been installed Installation ... Sent Items



danie@benver.co.za  
ERF 15061 (25907083) - SWMI Resident Engineer Approval 2025/05/20  
Good day, A new meter has been installed Installation ... Sent Items



parkdenesmartmeters@lukhozi.co.za  
ERF 15061 (25907083) - SWMI Construction Manager Ap... 2025/05/19  
Good day, A new meter has been installed Installation ... Sent Items



williet@henra.co.za; ruaan@henra.co.za; ngombane@gmail.com  
ERF 15061 (25907083) - Smart Water Meter Installations 2025/05/19  
Good day, A new meter has been installed at 79 Scorpi... Sent Items



d at 79 Scorpio Street, George, Garden Route, Western Cape, 6529, ZAF

mestic

080111

nowledgement



# Track Installation Progress



GEORGE

GEORGE MUNICIPALITY

Dashboard

Details

Data

Smart Water Meter Installations

Installation Date  
No date selected

Company Name  
No category selected

User Type (Status)  
No category selected

Meter No  
None

Last Edited Date  
No date selected

Action required By  
No category selected

Total Meters Installed  
1,857

25907083

May 19, 2025

79 Scorpio Street, George, Garden Route, Western Cape, 6529, ZAF

ERF 15061 - Ontec

INSTALLATION

Construction Manager

Resident Engineer

REINSTATEMENT

Construction Manager

Resident Engineer

Ontec

Completion Percentage: 100%

View

Edited: May 22, 2025

25907083 - ERF 15061

Data Capturer

A.1 Installation date & time  
May 19, 2025

A.2 Forman Name  
GM\_Henra\_Data

A.3 Reference No.  
afb082d-4af5-48f5-a0a4-0549999def89

Installer Name  
Bartho Zaayman

Erf Information

Street Address (No. and Name)  
79 Scorpio Street, George, Garden Route, Western Cape, 6529, ZAF

Suburb  
GEORGE

Ward Number  
8

Town  
BALLOTSVIEW

Erf Number  
15061

Client Details

Municipal Account Details Available?  
Yes

Municipal Account No  
060081080111

Account Name  
W LEEN

Old Water Meter Details

Scan Current Meter No  
Unreadable(rusted)

Pipe Size  
20

Meter Reading  
9,511.00

25907083

May 19, 2025

79 Scorpio Street, George, Garden Route, Western Cape, 6529, ZAF

ERF 15061 - Ontec

INSTALLATION

Construction Manager

Resident Engineer

REINSTATEMENT

Construction Manager

Resident Engineer

Ontec

Completion Percentage: 100%

View

Edited: May 22, 2025

25907083 - ERF 15061

Data Capturer

A.1 Installation date & time  
May 19, 2025

A.2 Forman Name  
GM\_Henra\_Data

A.3 Reference No.  
afb082d-4af5-48f5-a0a4-0549999def89

Installer Name  
Bartho Zaayman

Erf Information

Street Address (No. and Name)  
79 Scorpio Street, George, Garden Route, Western Cape, 6529, ZAF

Suburb  
GEORGE

Ward Number  
8

Town  
BALLOTSVIEW

Erf Number  
15061

Client Details

Municipal Account Details Available?  
Yes

Municipal Account No  
060081080111

Account Name  
W LEEN

Old Water Meter Details

Scan Current Meter No  
Unreadable(rusted)

Pipe Size  
20

Meter Reading  
9,511.00

Map

Meters per Day

George Municipality | Google Imagery | Esri South Africa, Esri, HERE, Garmin

Powered by Esri

The number on the map indicates the current step of the process the meter is in.

Smart Water Meter Installations

1. Data Capturer

2. Construction Manager

3. EAR

4. Data Capturer Reinstatement

5. Construction Manager Reinstatement

6. EAR Reinstatement

7. Ontec

Streets

25907083

May 19, 2025

79 Scorpio Street, George, Garden Route, Western Cape, 6529, ZAF

ERF 15061 - Ontec

INSTALLATION

Construction Manager

Resident Engineer

REINSTATEMENT

Construction Manager

Resident Engineer

Ontec

Completion Percentage: 100%

View

Edited: May 22, 2025



## Smart Water Meter Installations

Installation Date  
No date selectedCompany Name  
No category selectedUser Type (Status)  
No category selectedMeter No  
NoneLast Edited Date  
No date selectedAction required By  
No category selected

Total Meters Installed

2,008

Search...

25906607 | October 17, 2025

20 Plantation Street, Pacaltsdorp, Garden Route, Western Cape, 6529, ZAF

ERF 2589 - Urhwebo\_Pacaltsdorp

INSTALLATION

- Construction Manager
- Resident Engineer
- REINSTATEMENT
- Construction Manager
- Resident Engineer
- Ontec

Completion Percentage: 0%

View

Edited: October 17, 2025

25908191 | October 17, 2025

19 Plantation Street, Pacaltsdorp, Garden Route, Western Cape, 6529, ZAF

ERF 2657 - Urhwebo\_Pacaltsdorp

INSTALLATION

- Construction Manager
- Resident Engineer
- REINSTATEMENT
- Construction Manager
- Resident Engineer
- Ontec

Completion Percentage: 20%

View

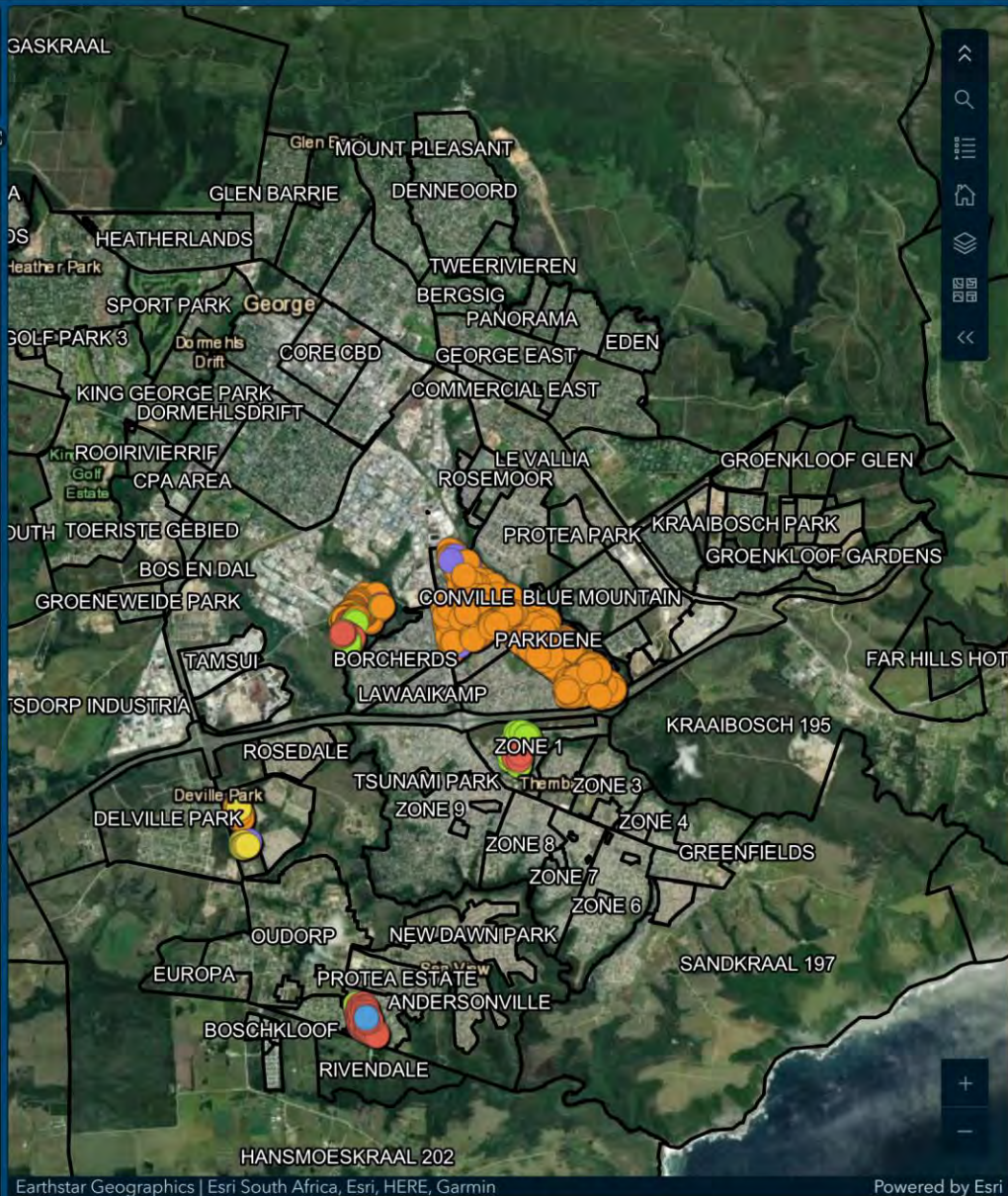
Edited: October 17, 2025

25908145 | October 17, 2025

23 Plantation Street, Pacaltsdorp, Garden Route, Western Cape, 6529, ZAF

ERF 2659 - Urhwebo\_Pacaltsdorp

INSTALLATION



Earthstar Geographics | Esri South Africa, Esri, HERE, Garmin

Powered by Esri

Map

Meters per Day

The number on the map indicates the current step of the process the meter is in.

## Smart Water Meter Installations

- 1. Data Capturer
- 2. Construction Manager
- 3. EAR
- 4. Data Capturer Reinstatement
- 5. Construction Manager Reinstatement
- 6. EAR Reinstatement
- 7. Ontec

## 25904472 - ERF 27010

## Data Capturer

A.1 Installation date & time	June 6, 2025
A.2 Forman Name	GM_Ruwacon_Data
A.3 Reference No.	4865bd1f-0a47-41e6-9747-09226ce9ba2f
Installer Name	Divas

## Erf Information

Street Address (No. and Name)	George Industria, George, Garden Route, Western Cape, ZAF
Suburb	GEORGE
Ward Number	20
Town	HEIDEVELD (METRO GROUNDS)
Erf Number	27010

## Client Details

Municipal Account Details Available?	No
Municipal Account No	001002560349
Account Name	MUN GEORGE

## Old Water Meter Details

Scan Current Meter No	
Pipe Size	20
Meter Reading	0.00

## Installation Details

Meter Type	MK3
Meter Reading	0.00
Scan New Meter No	25904472



# Finance Report

Form Type	SG 21 Code	Street Address	Erf Num	Suburb	Town	Ward Number	Pipe Size	X	Y	Old Meter No	Old Meter R
new	C02700020001888400000	82 Tiptol Street, George, Garden Route, Western Cape, 6529, ZAF	18884	GEORGE	CONVILLE	17	25	22.47643763	-33.9813438	C-JLD7997	
new	C02700020001888600000	63-69 Tiptol Street, George, Garden Route, Western Cape, 6529, ZAF	18886	GEORGE	CONVILLE	17	25	22.47686259	-33.9815391	24001050	
new	C02700020001888900000	61 Tiptol Street, George, Garden Route, Western Cape, 6529, ZAF	18889	GEORGE	CONVILLE	17	25	22.476955	-33.981968	C-BRL0299	2
new	C02700020001888700000	65 Tiptol Street, George, Garden Route, Western Cape, 6529, ZAF	18887	GEORGE	CONVILLE	17	25	22.47689034	-33.9816401	FKA7119	3
new	C02700020001888800000	63 Tiptol Street, George, Garden Route, Western Cape, 6529, ZAF	18888	GEORGE	CONVILLE	17	25	22.47693552	-33.9818024	C-VKS2972	
new	C02700020001889700000	63-69 Tiptol Street, George, Garden Route, Western Cape, 6529, ZAF	18897	GEORGE	CONVILLE	17	25	22.47648181	-33.9814892	C-JKW1879	
new	C02700020001896200000	1000 Makou Street, George, Garden Route, Western Cape, 6529, ZAF	18962	GEORGE	CONVILLE	17	25	22.48039238	-33.984125	C-CLB9749	
new	C02700020001896600000	1000 Makou Street, George, Garden Route, Western Cape, 6529, ZAF	18966	GEORGE	CONVILLE	17	25	22.47997404	-33.9836789		1
new	C02700020001896500000	1000 Makou Street, George, Garden Route, Western Cape, 6529, ZAF	18965	GEORGE	CONVILLE	17	25	22.48022131	-33.9838494	FKJ4305	2
new	C02700020001896300000	1000 Makou Street, George, Garden Route, Western Cape, 6529, ZAF	18963	GEORGE	CONVILLE	17	25	22.48025945	-33.9838965	C-AKK2532	1
new	C02700020001896400000	1000 Makou Street, George, Garden Route, Western Cape, 6529, ZAF	18964	GEORGE	CONVILLE	17	25	22.48037579	-33.9840741	DKC851	1
new	C02700020001891100000	18911 Sparrow Street, George, Garden Route, Western Cape, 6529, ZAF	18911	GEORGE	CONVILLE	17	25	22.47788695	-33.982404	2255663	
new	C02700020001897500000	17030 Tiptol Street, George, Garden Route, Western Cape, 6529, ZAF	18975	GEORGE	CONVILLE	17	25	22.47914817	-33.9831949	C-AKE8952	
new	C02700020001897600000	Makou Street, George, Garden Route, Western Cape, 6529, ZAF	18976	GEORGE	CONVILLE	17	25	22.4791905	-33.9832058	C-BKC4120	1
new	C02700020001892500000	Makou Street, George, Garden Route, Western Cape, 6529, ZAF	18925	GEORGE	CONVILLE	17	25	22.47964	-33.9831179	C-AKP6688	1
new	C02700020001892600000	Makou Street, George, Garden Route, Western Cape, 6529, ZAF	18926	GEORGE	CONVILLE	17	25	22.47943299	-33.9831607	C-AKP7012	
new	C02700020001892400000	Makou Street, George, Garden Route, Western Cape, 6529, ZAF	18924	GEORGE	CONVILLE	17	25	22.47944791	-33.9830059	HRM5247	
new	C02700020001896800000	1000 Makou Street, George, Garden Route, Western Cape, 6529, ZAF	18968	GEORGE	CONVILLE	17	25	22.47992911	-33.9836473	C-BRL0288	2
new	C02700020001892700000	Makou Street, George, Garden Route, Western Cape, 6529, ZAF	18927	GEORGE	CONVILLE	17	25	22.479636	-33.9832745	C-VRM0777	
new	C02700020001263600000	12639 Mason Street, George, Garden Route, Western Cape, 6529, ZAF	12636	GEORGE	CONVILLE	17	20	22.47476854	-33.9799239	C-BRL0286	1
new	C02700020001895900000	438-854 Makou Street, George, Garden Route, Western Cape, 6529, ZAF	18959	GEORGE	CONVILLE	17	25	22.48041392	-33.9844083	2126451	



# Key Outcomes

- Old Paper-Based Process
  - **Unreliable:** Papers went missing
  - **Inaccurate:** Errors in manual data capture
  - **Slow:** Took a minimum of 90+ days to reach Finance for billing
  - **Incomplete:** Some records still never made it through
- New Survey123 Process
  - **Fast & Efficient:** Digital data capture in the field
  - **Traceable:** Progress can be tracked in real-time
  - **Accurate & Reliable:** Mandatory fields, photos, and GPS verification
  - **Integrated:** Billing built into Finance system within 2–7 days

# Project Status

To Date

- In the past 12 months
  - **2008** installations captured
  - **1970** verified and approved
  - **1966** built in financial system and ready for billing
  - **4** rejected due to installation errors





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