



OPEN CITIES LAB



FUTURE  
CITIES<sup>SA</sup>



UK Government

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# Big Data and Social Good

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## Open Cities Lab

- People-centered, informed decision making for participatory democracy
- We work to build inclusion and participatory democracy in cities and urban spaces through:
  - Empowering citizens
  - Building trust and accountability in civic space
  - Capacitating government



# The Future Cities South Africa Programme

- A UK Government's ODA funded technical assistance programme delivered through a bilateral partnership between the UK and RSA



**UK Government**



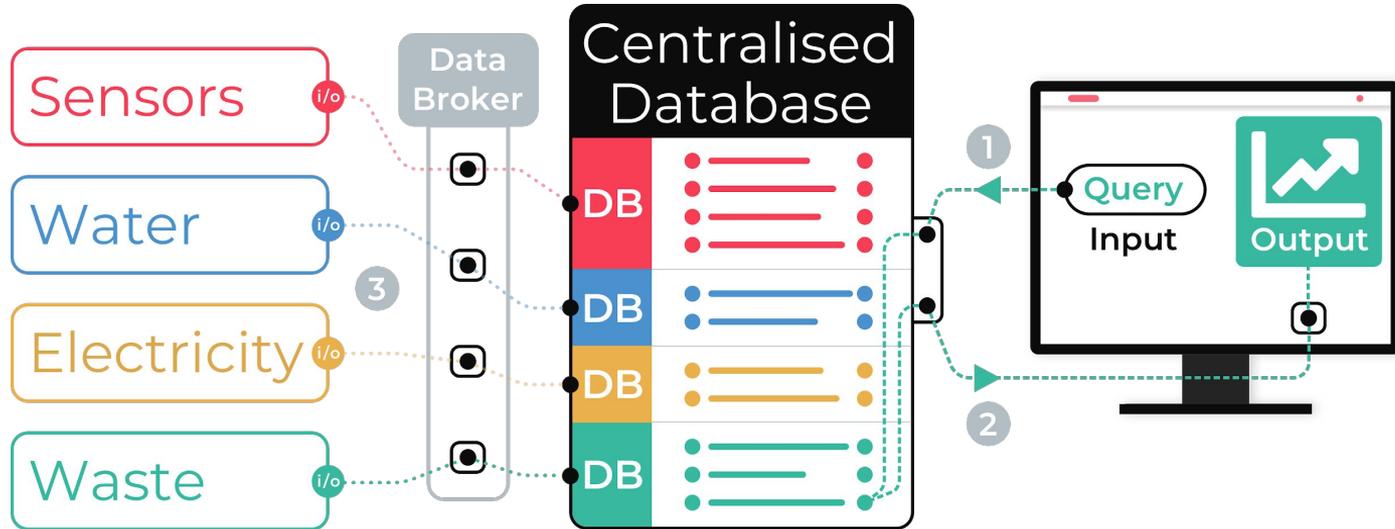
# Key Points of Discussion

1. Information structuring in cities
  - a. Centralised and Distributed approaches for Big Data
  - b. A hybrid approach
2. Supporting stakeholders and decision-makers
  - a. City representatives & communities
  - b. Key components for success
3. Use case examples in two South African cities
  - a. eThekweni Municipality
  - b. City of Cape Town
  - c. Cross-city learnings

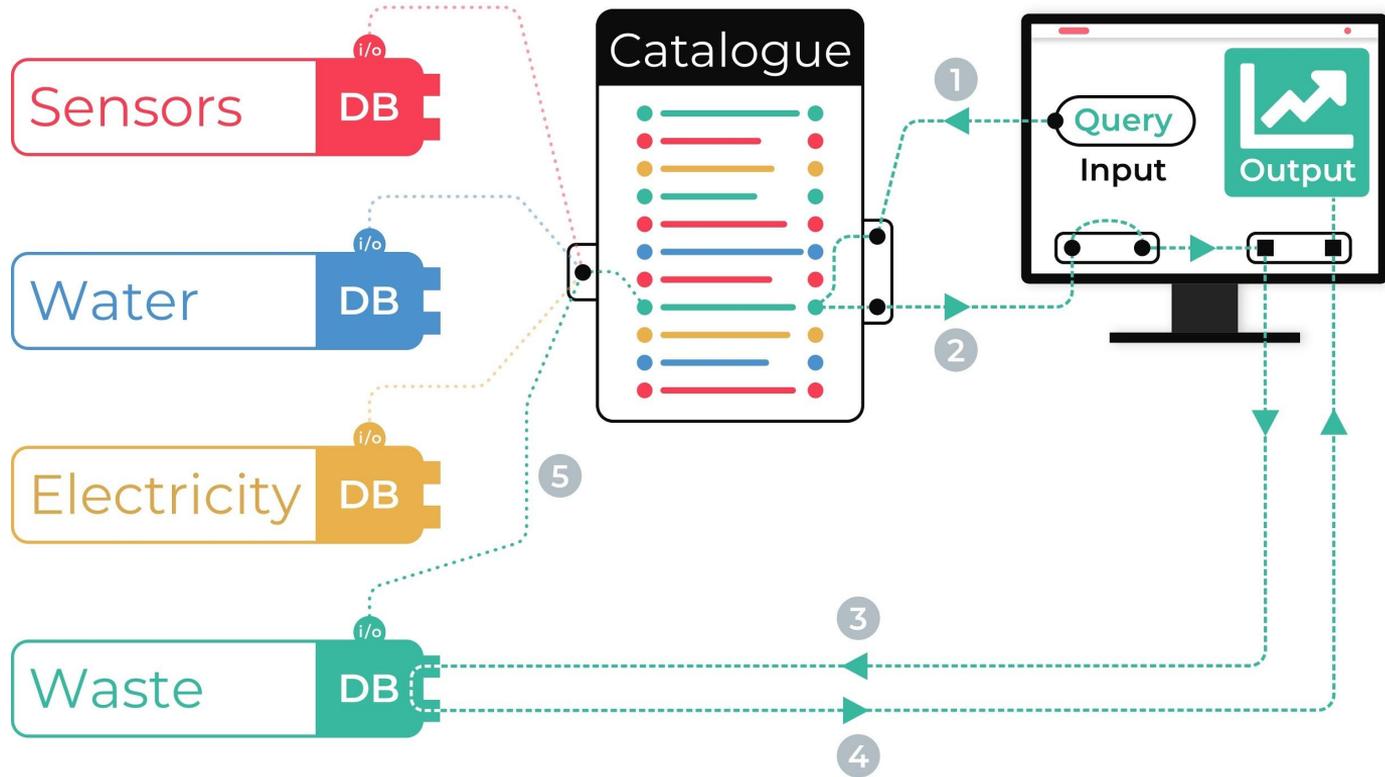
# Data in Cities

1. A significant instance of Big Data
2. Information comes from varied sources, in large volumes, across several formats
3. Data may be linked to multiple core functions simultaneously, e.g.
  - a. Revenue generation
  - b. Service deliver
  - c. Planning
  - d. Understanding context
4. Cities are inherently very human-dependent
  - a. Different levels of digital maturity
  - b. Change management is critical for both personnel and residents

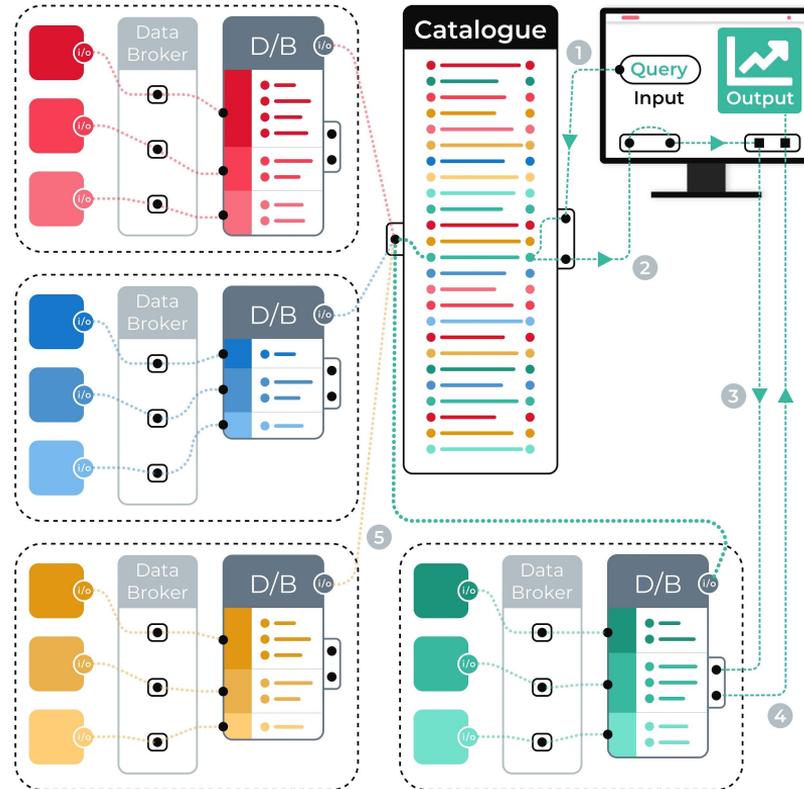
# Information Structuring - Data Centralisation



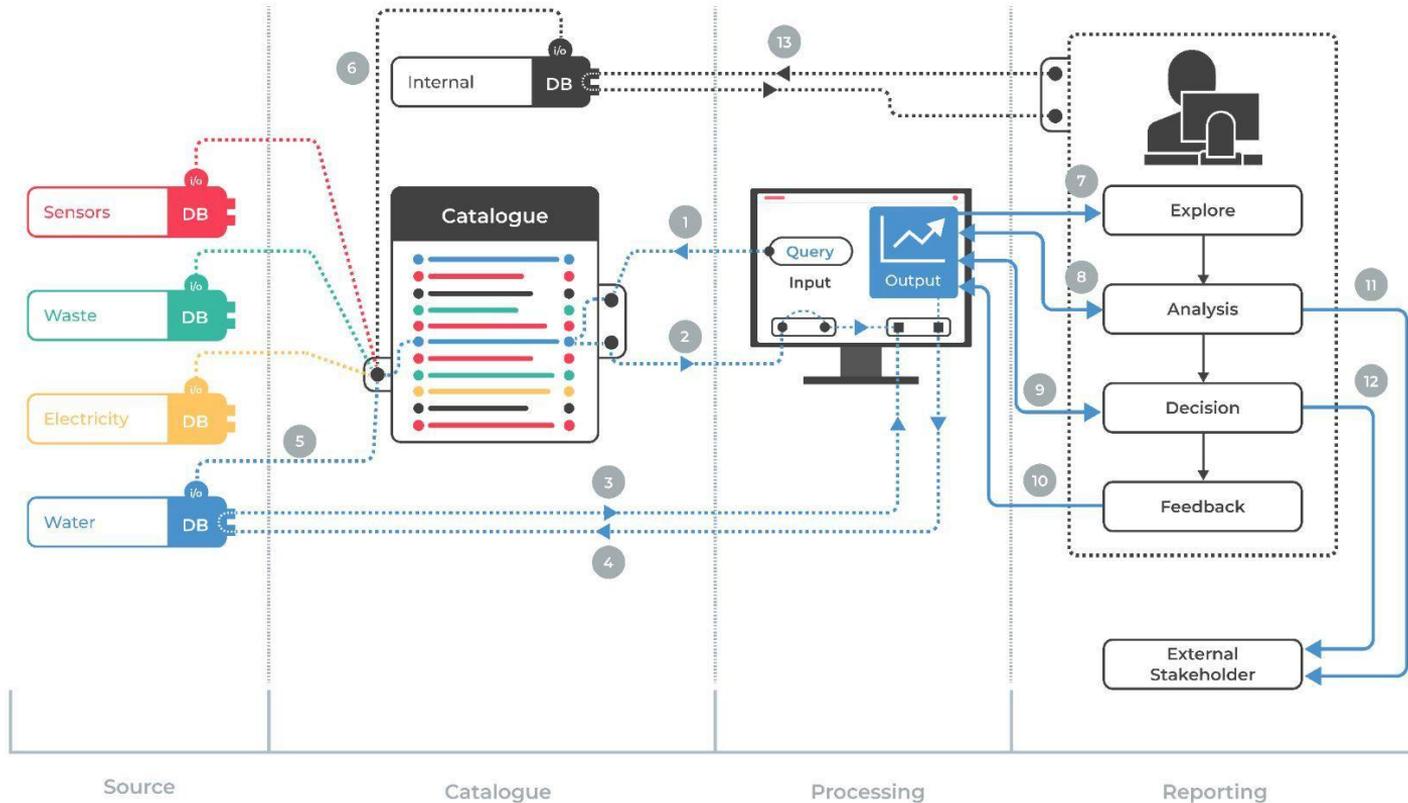
# A Distributed Data Architecture



# A Hybrid Model

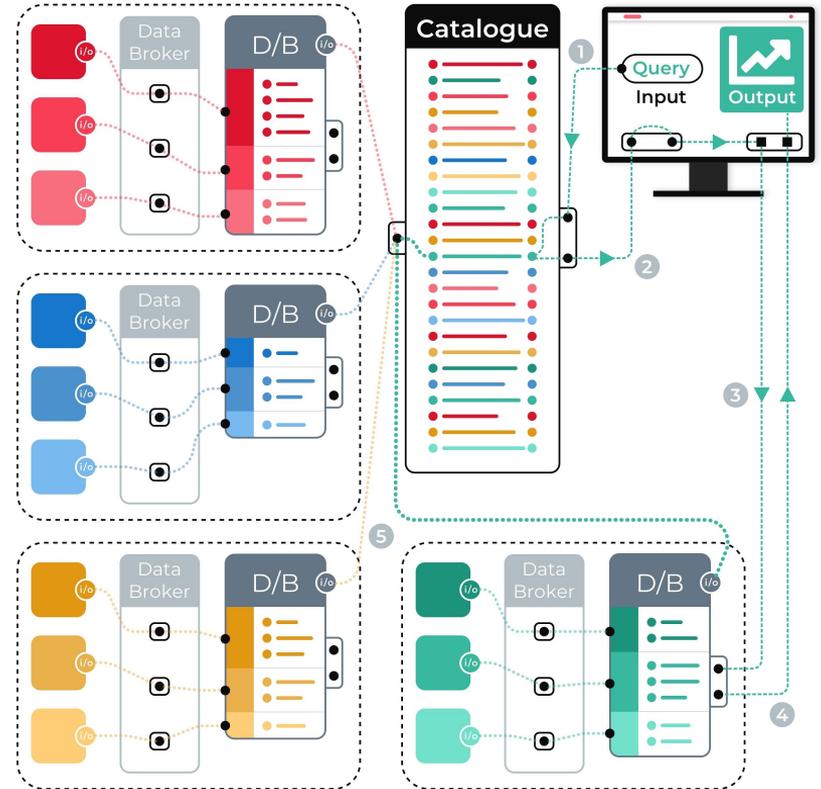


# Supporting Stakeholders and Decision Makers



# Key Components for Success

- Establishment of a common set of data principles
- A Gender & Social inclusion focus
- An understanding of governance and major stakeholders for contributors
- A Taxonomy that supports governance and enables the objectives of the initiative



# Use case examples in two South African cities

1. eThekweni Data Pilot
  - a. Informal Settlements
  - b. Water and Sanitation
  
2. City of Cape Town
  - a. CKAN Initiative
  - b. Community-driven Data Gathering
  
3. Cross-city learnings

# eThekwini Data Pilot - Informal Settlements

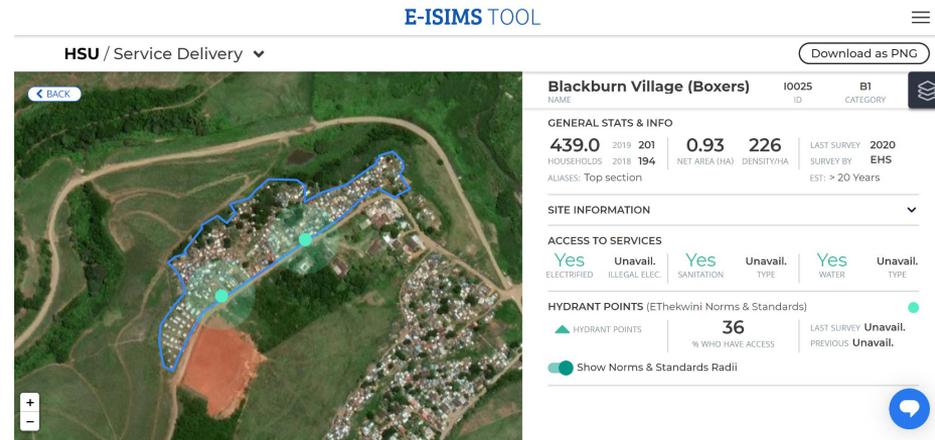
**Goal:** Develop IS-specific data processes

## Key outcomes and learnings:

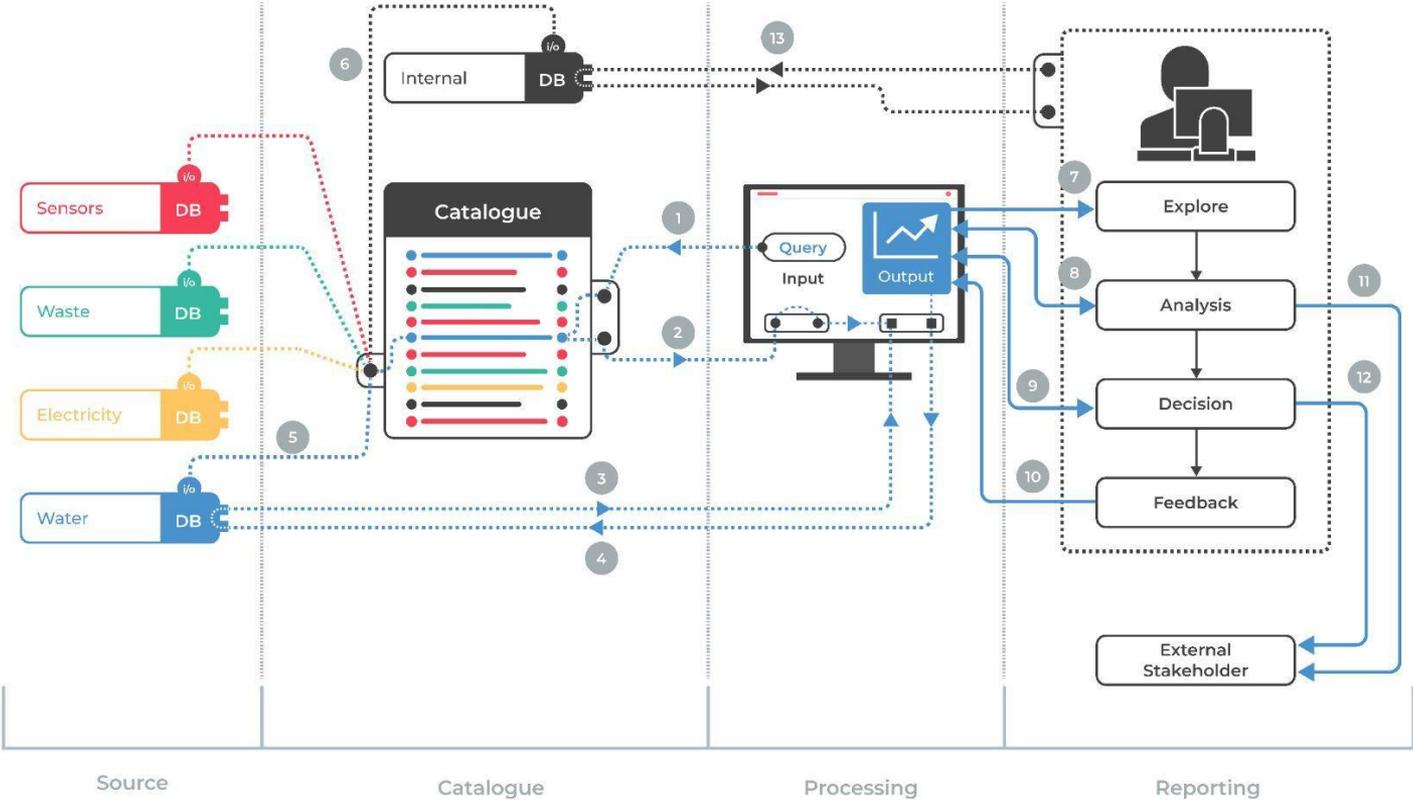
- The value of a common evidence base
- Full UI/UX designs + system build info
- Detailed view of available datasets
- Assistance and training with the automation of analyses
- Learnings around digital community engagement

## Next Steps:

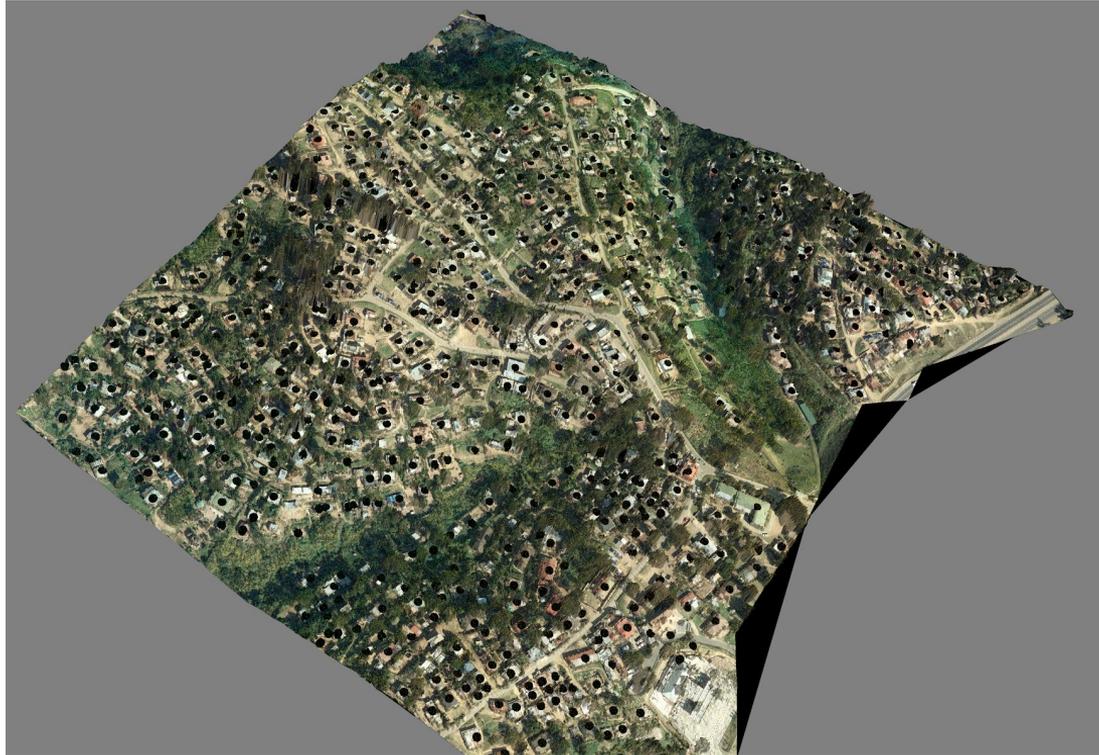
- Currently advancing this work



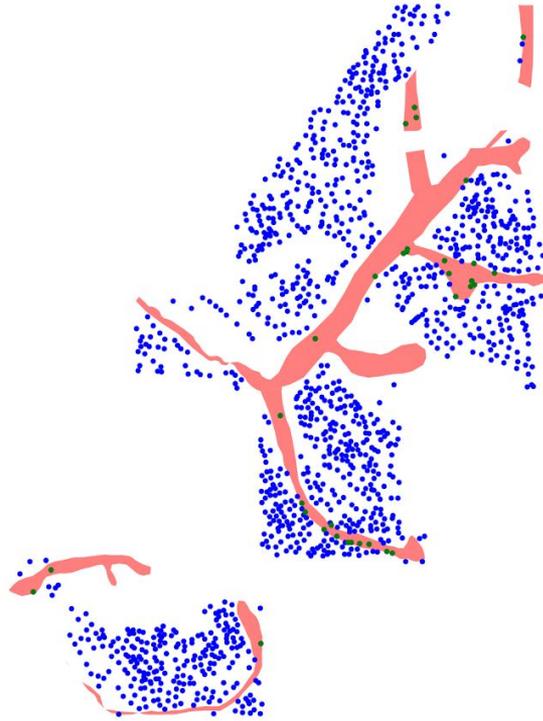
# Key Information Processes



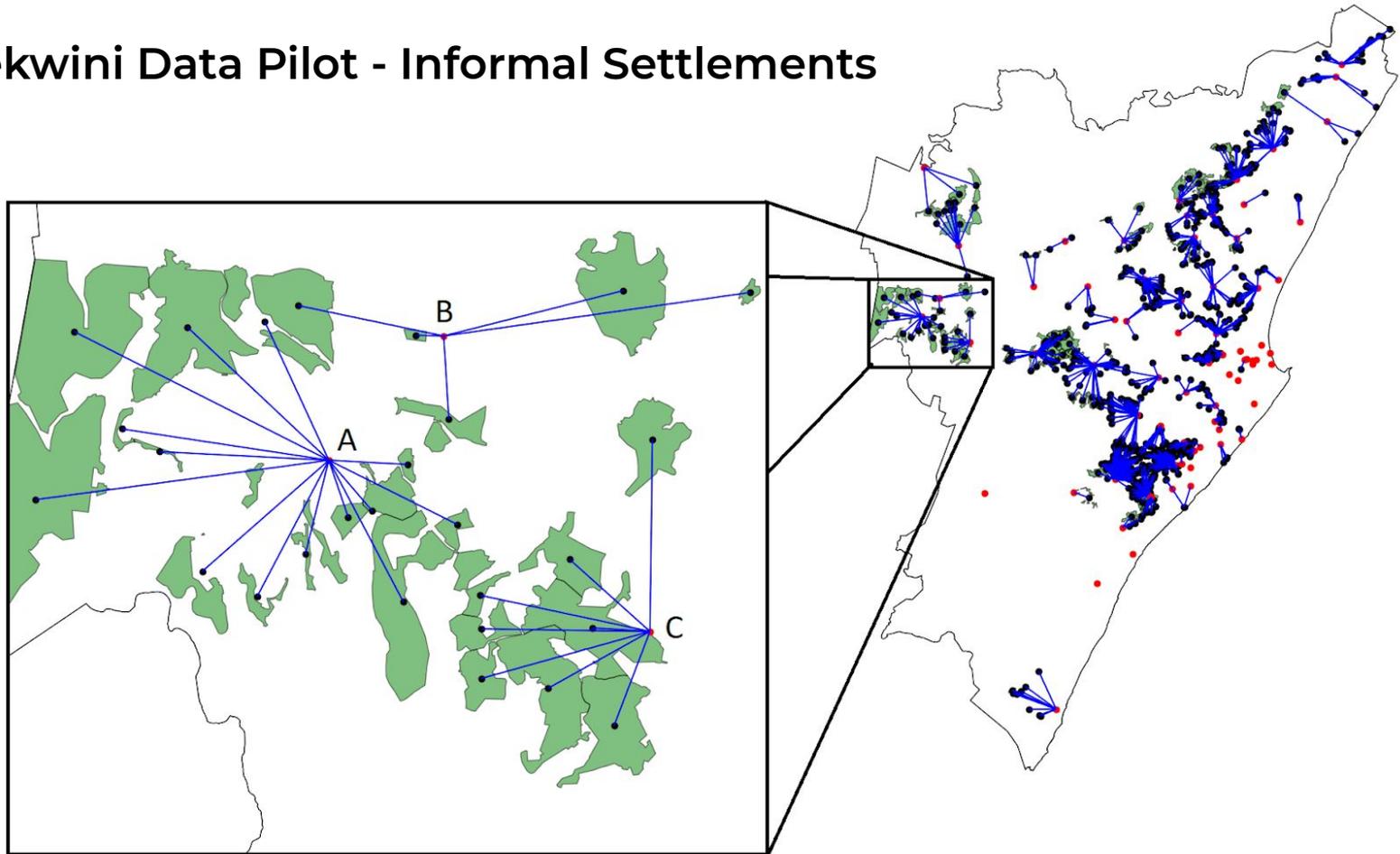
# eThekweni Data Pilot - Informal Settlements



# eThekwini Data Pilot - Informal Settlements



# eThekwini Data Pilot - Informal Settlements



# City of Cape Town - CKAN Initiative

**Goal:** Facilitate data sharing + collaborative analysis via a CKAN portal

## Key outcomes and learnings:

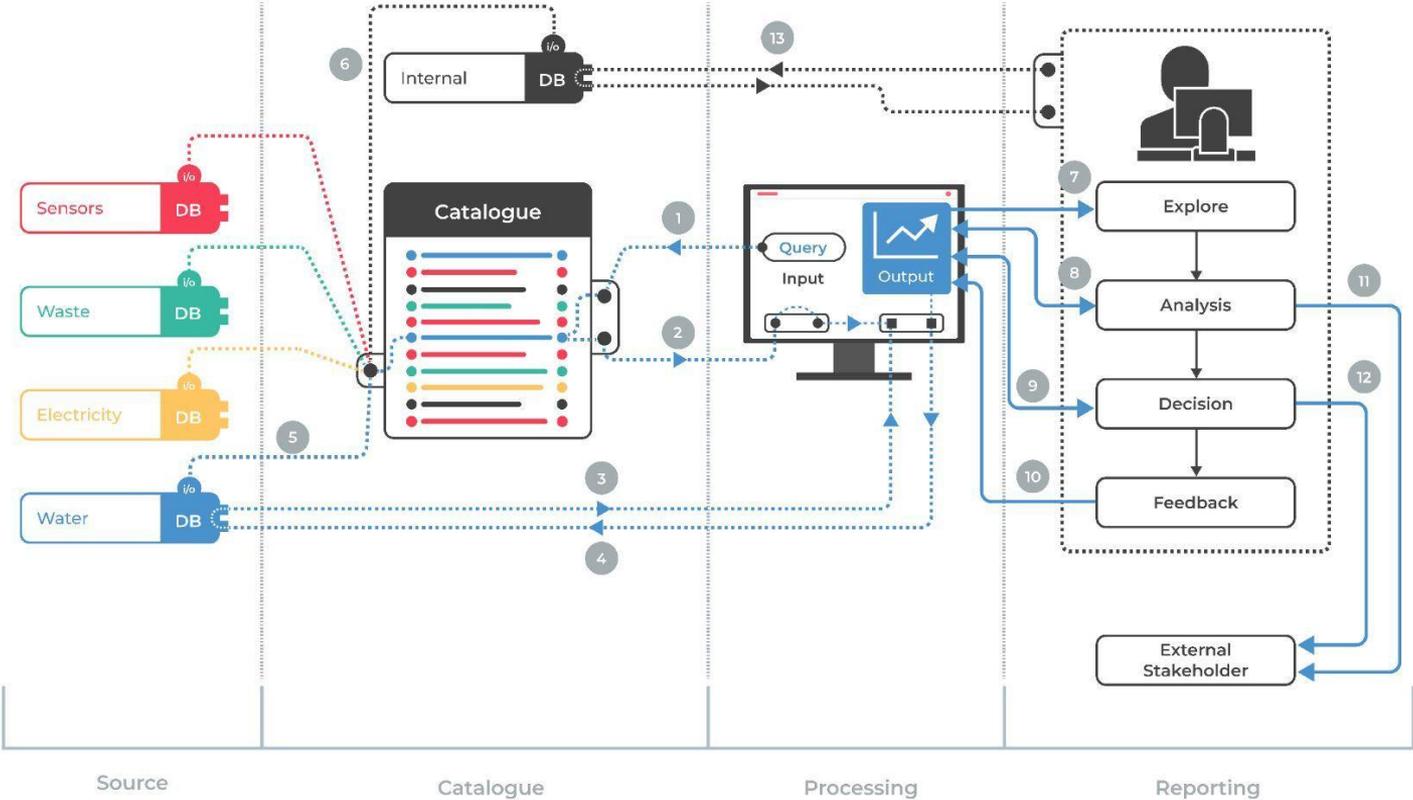
- Enabled the access and sharing of data to and from City COVID workstreams
- Facilitated regular transfer of epidemiological data from Province to model teams
- Supported the data transfer processes for the Informal Settlements pilot
- Has ongoing use in the core project work

## Next Steps:

- CKAN is currently being adopted further

- Covid
  - └ Continued Service Delivery
    - └ Financial Sustainability
    - └ Health Logistics
    - └ Requirements Costing
    - └ Service Requests
    - └ Staff Capacity
    - └ System Response
  - └ Pandemic
    - └ Economic Effects
    - └ Epidemiological
    - └ Fatalities Management
    - └ Surveillance
    - └ Vulnerability
      - └ People at Risk
      - └ Places of Risk
      - └ Vulnerability Indices
      - └ Who Works Where
- Models
  - └ Financial Scenarios

# Key Information Processes



# City of Cape Town - Community-driven Data Gathering



**Goal:** Scale a mobile tap monitoring tool across 24 informal settlements to improve access to water and sanitation for health.

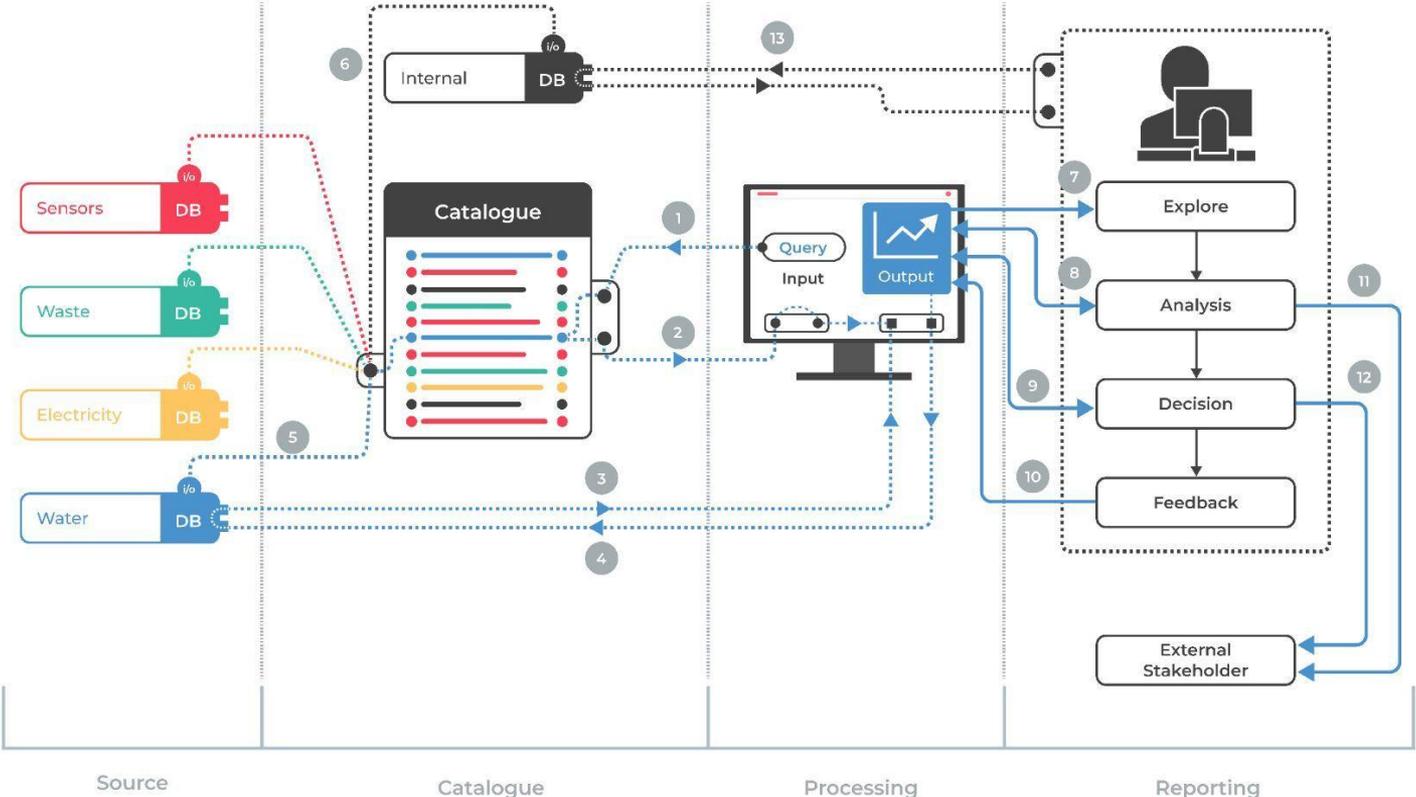
## Key outcomes:

- Data supported immediate service provision during the first Covid-19 peak
- Project provided valuable operational insights shared within task team
- Quantified installed service levels vs. functional service level
- Quality assessed Service Requests submitted to City; with fault description, GPS, photo and reporter contacts

## Learnings + Next Steps:

- There are challenges to the inclusion of external data sources into Cities
- Analysis of each point on the data cycle is required for coherence.

# Key Information Processes



SUMMARY

FORM

DATA

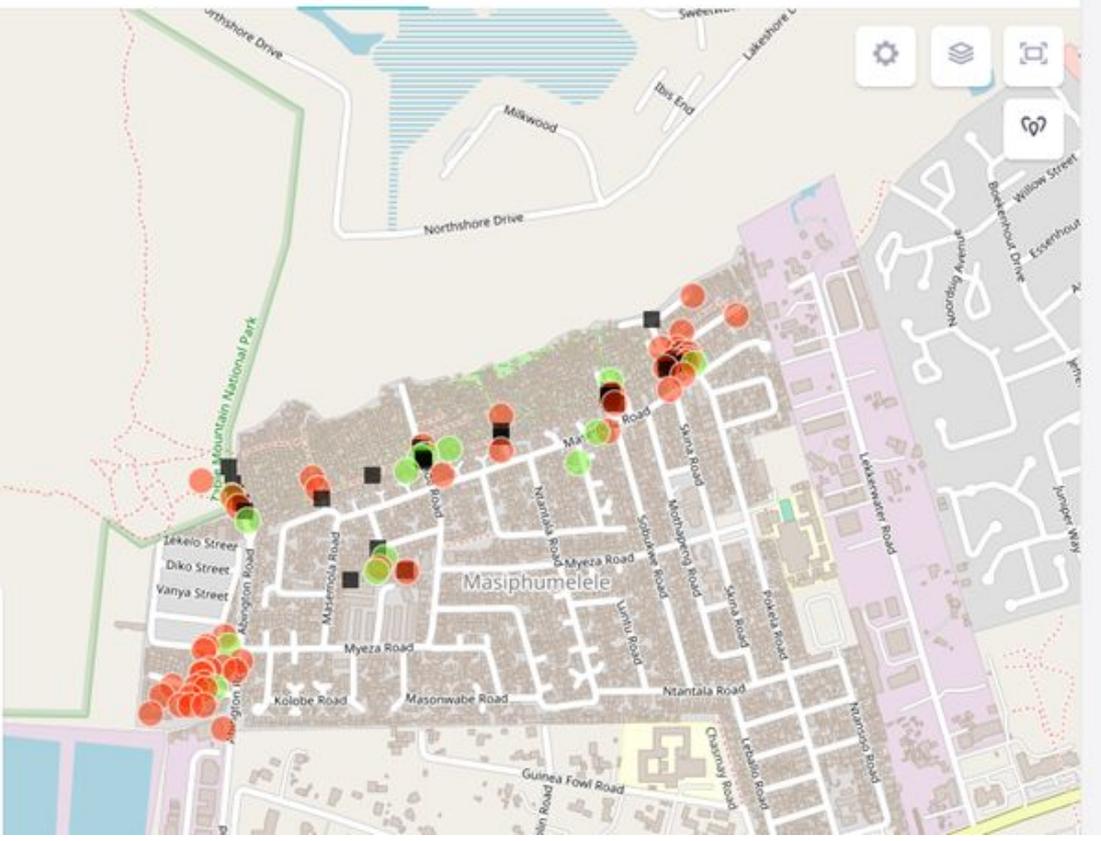
SETTINGS



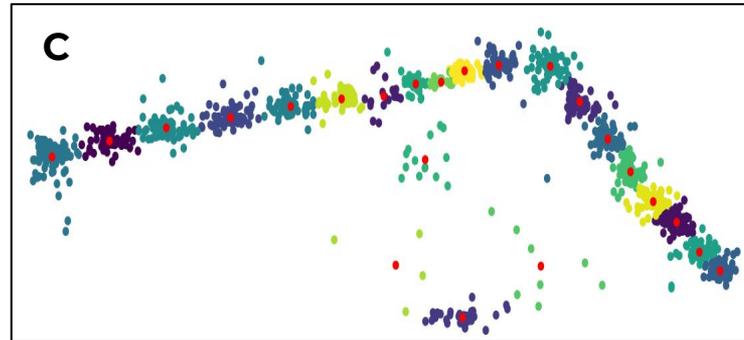
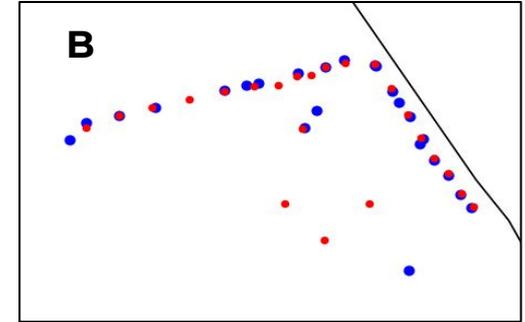
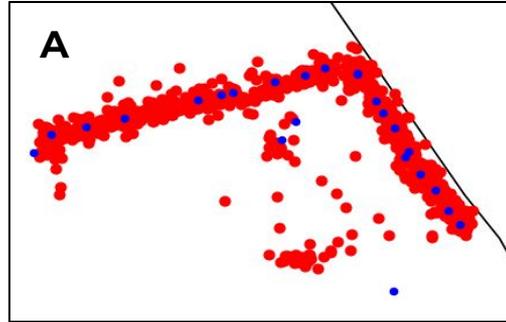
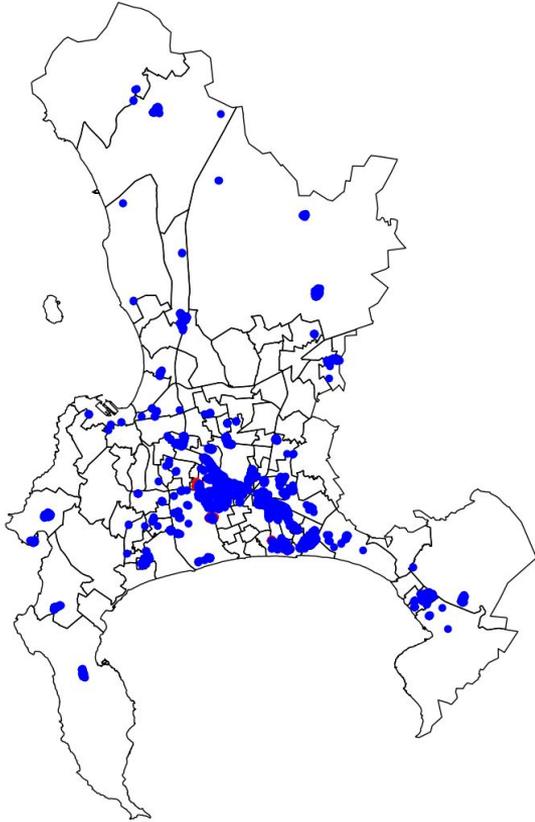
- Reports
- Table
- Gallery
- Downloads
- Map



	360 Working tap
	125 Broken tap
	45 Broken toilet
	6 Broken light
	3 Other issue



# Algorithmic Asset Detection



## Cross-city Learnings

- A **common evidence base** and **access point** is critical (speaks to best practice)
- **Addressing/labeling** and **informality** is a common challenge
- A reinforcement / refinement of the following:
  - Using **data as a communicator** and the challenges of data collection
  - Contextualizing **communities as stakeholders** within data-driven work
  - What **data science** and **machine learning** can bring to the toolkit

# Open Cities Lab

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## Thank You!



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