



# Breaking Data Silos For Effective Decision Making

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**Stormwater 2024**  
15–17 May | Takina Wellington Te Whanganui-a-Tara

# Introduction



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Te Roopu Wai Āwhātanga  
23–25 May | Cordis, Tāmaki Makaurau Auckland

# Introduction

- **Our mission:**  
Managing increased runoff, preventing flooding, and ensuring water quality in urban areas.
- **Our challenges:**  
Urbanisation, pollution, and climate change.
- **Technology:**
  - Increasing amount of data collected
  - Rapid evolution
  - Enabler



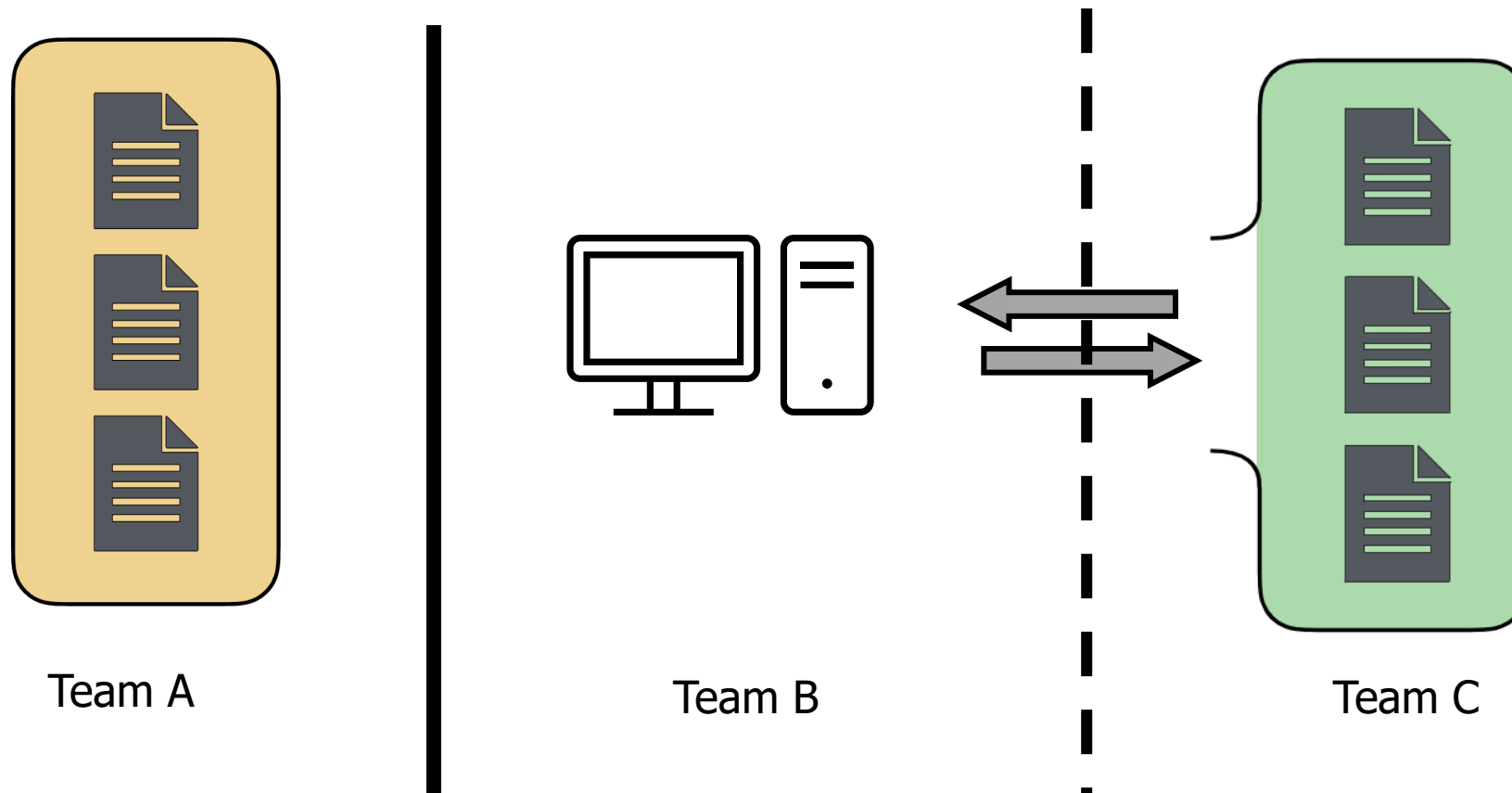
# Breaking Data Silos



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# What are data silos?

Information repository existing within an organisation that is cut off from other systems within the same organisation.

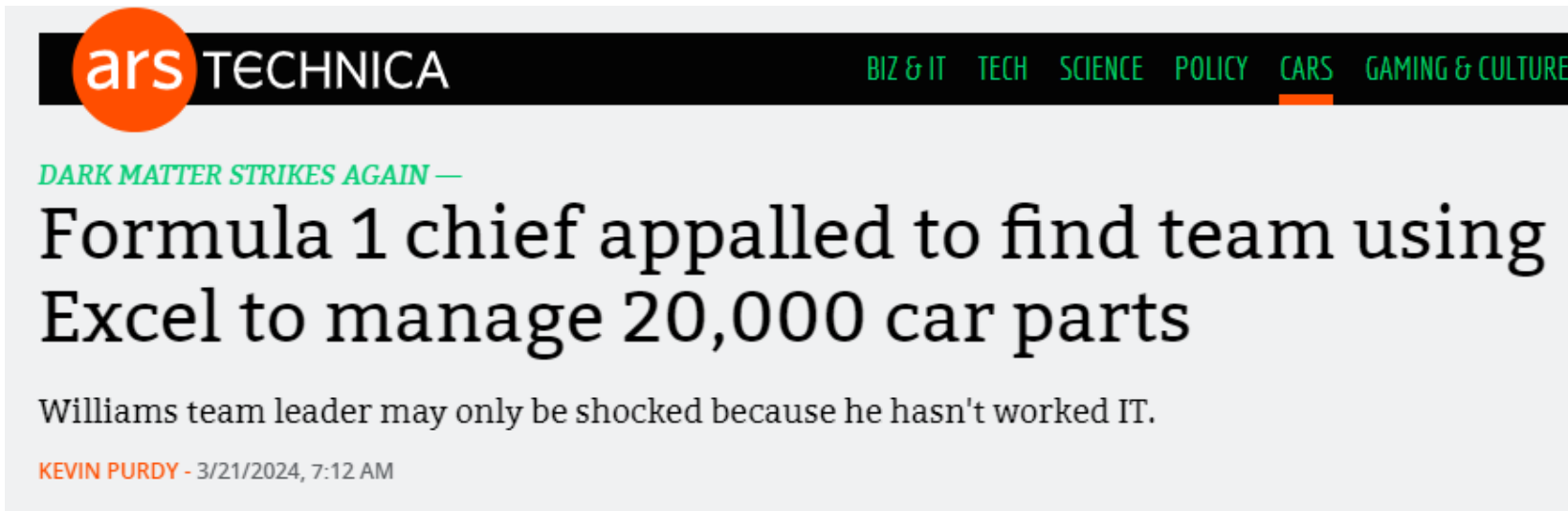


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# What are data silos?



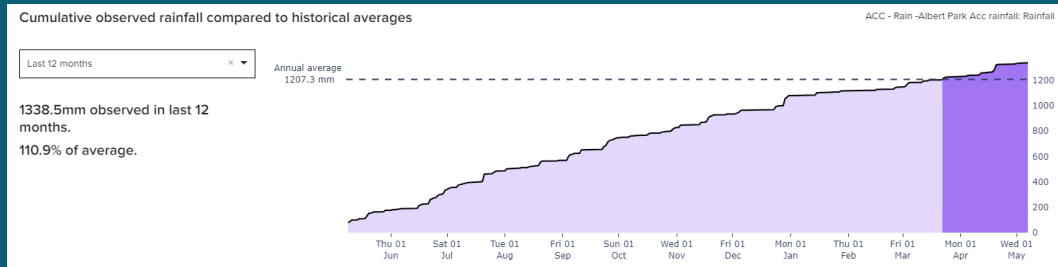
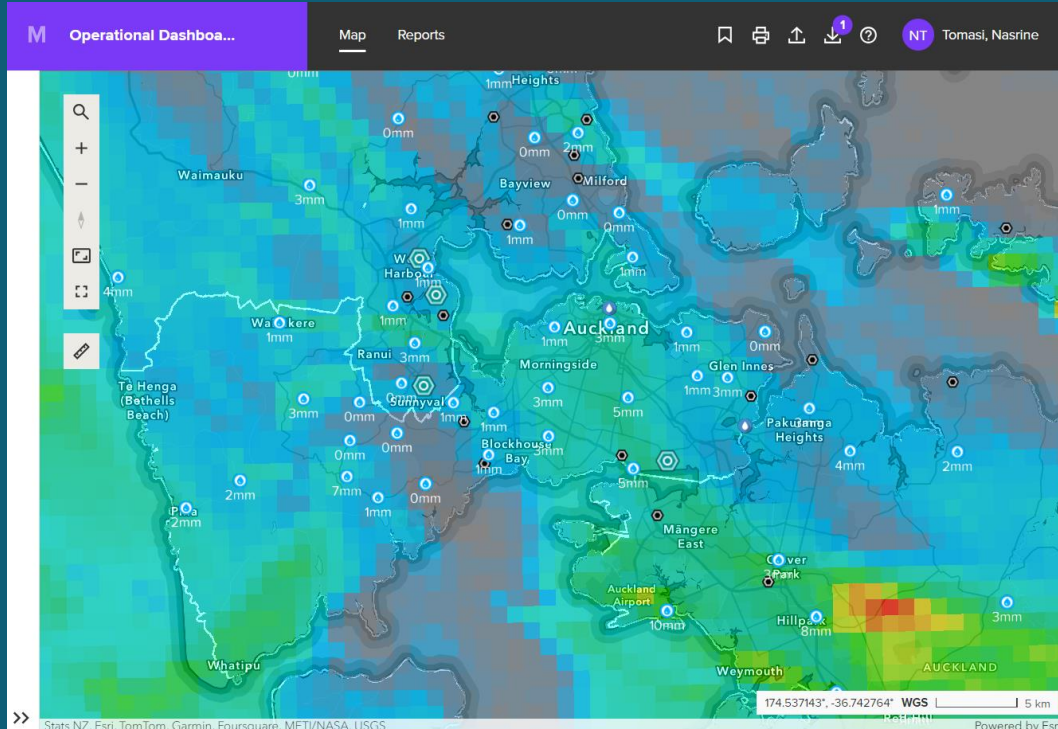
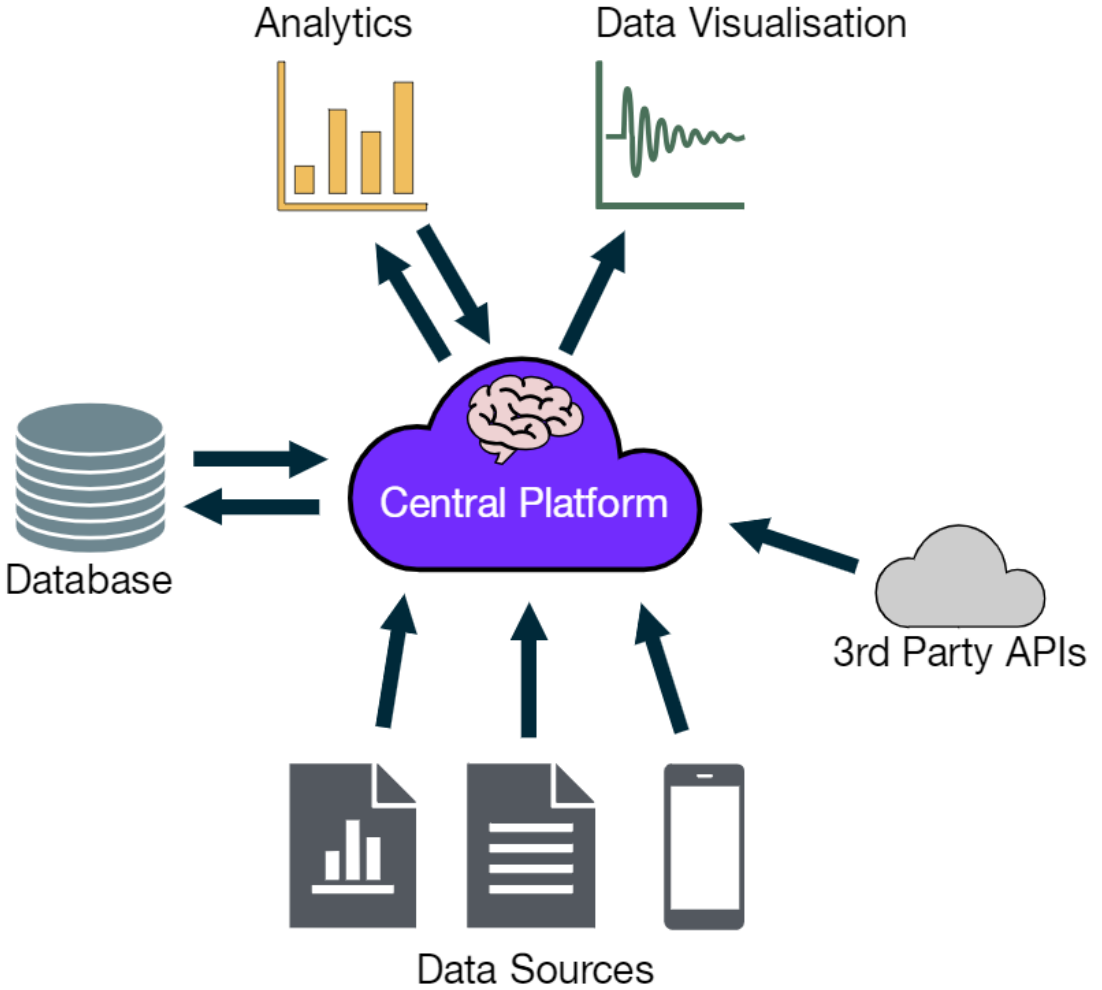
The screenshot shows the top portion of a web article. At the top left is the 'ars TECHNICA' logo, with 'ars' in a blue circle and 'TECHNICA' in white on a black background. To the right is a navigation menu with categories: 'BIZ & IT', 'TECH', 'SCIENCE', 'POLICY', 'CARS', and 'GAMING & CULTURE'. The 'CARS' category is highlighted with a blue underline. Below the navigation is a sub-headline in green: 'DARK MATTER STRIKES AGAIN —'. The main headline is in large black font: 'Formula 1 chief appalled to find team using Excel to manage 20,000 car parts'. Below the headline is a short paragraph: 'Williams team leader may only be shocked because he hasn't worked IT.' At the bottom left of the article preview is the author and date: 'KEVIN PURDY - 3/21/2024, 7:12 AM'.

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# Moata Smart Water



# Outcome



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# Hydrometric data

## Data Source:

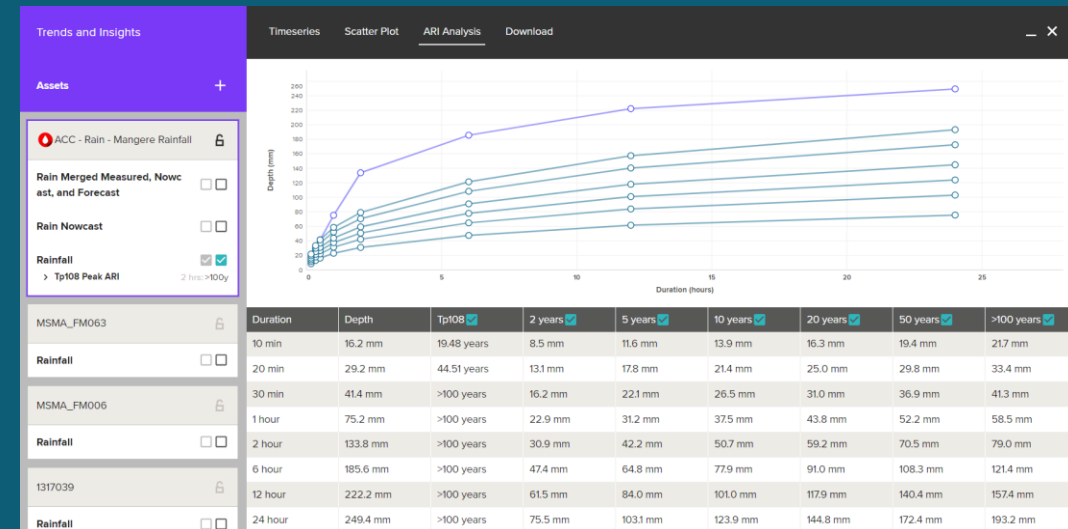
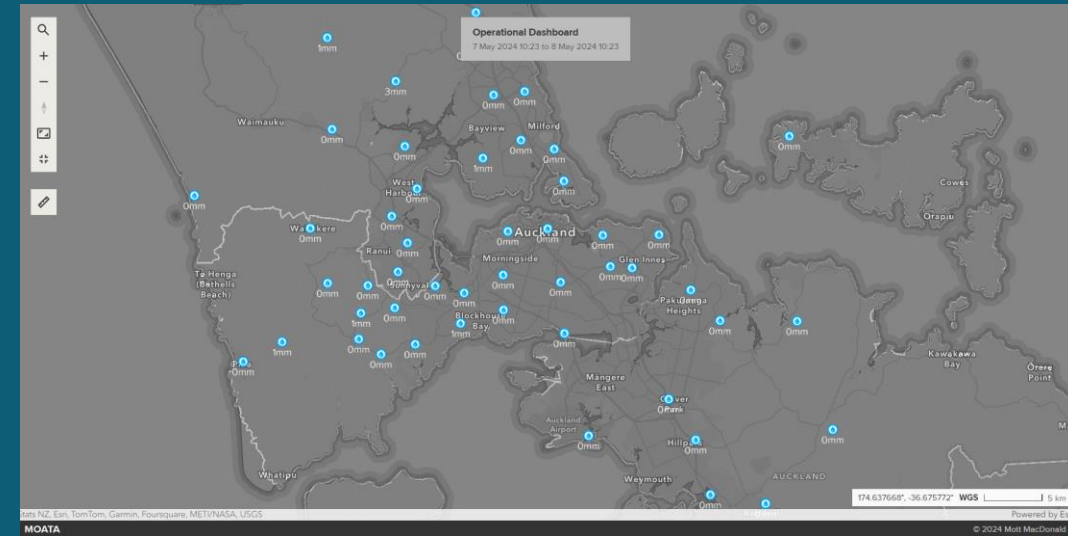
- Rainfall data from gauges across the Auckland region.

## Data Analysis:

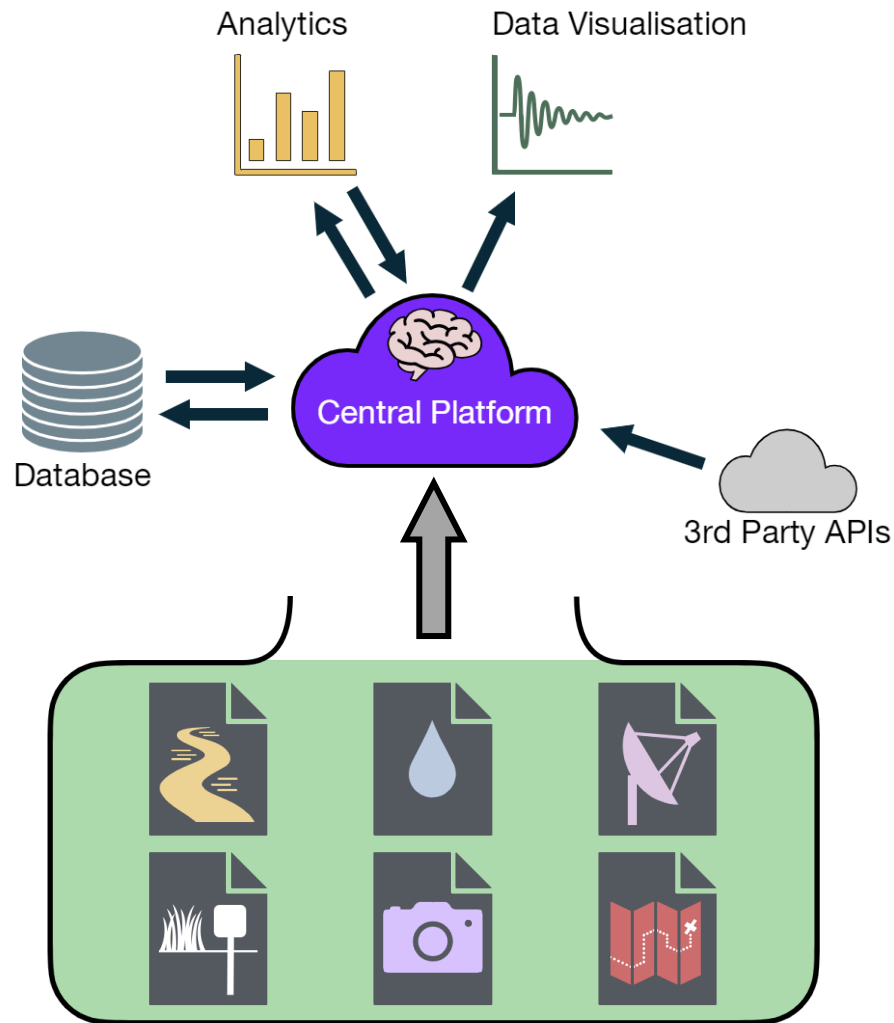
- Reports on Annual Recurrence Interval (ARI) statistics for stakeholders took large amount of manual labour.

## Challenge:

- Historically stored in a corporate repository.
- Required specialised skills and knowledge to access, analyse and interpret data from the corporate repository.



# Hydrometric data



## Outcome

- Reports went from 3 days to 30 minutes to produce.
- Auckland Council Data: River flow/level monitors, soil moisture probes, remote camera images, GIS layers, rain radar data.
- 3<sup>rd</sup> party data: MetService warnings, tide predictions.

By breaking these datasets out of their silos, suddenly, a much greater understanding of the situation was possible.

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# Event Dashboard

## Data Source:

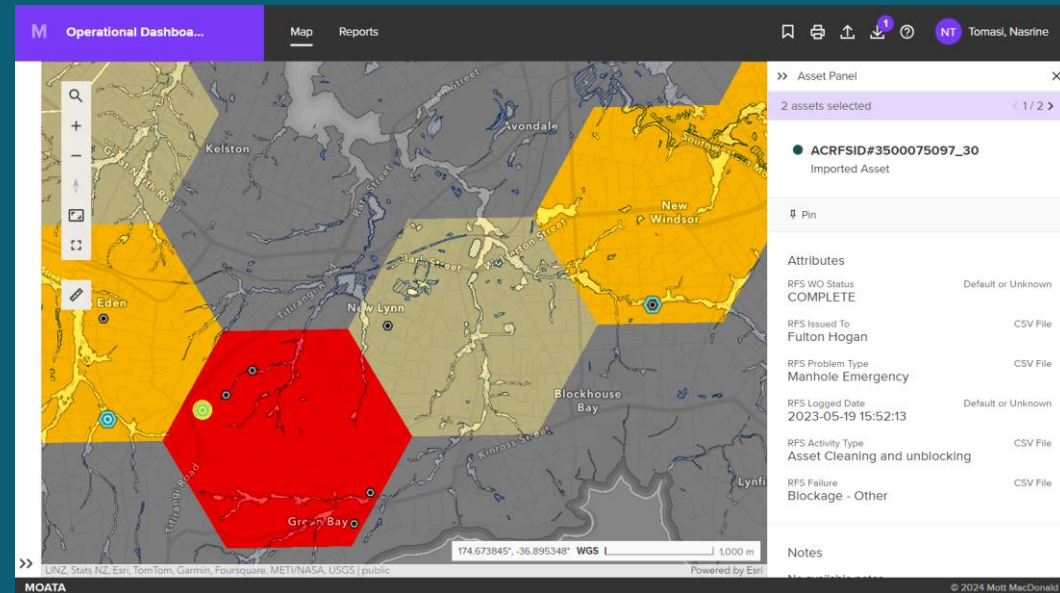
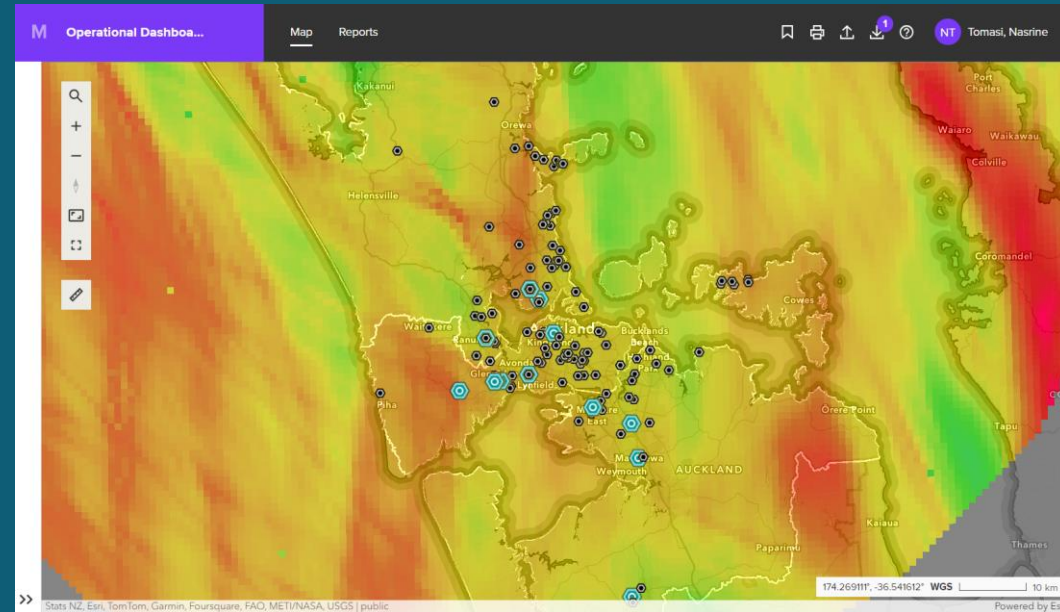
- Stormport request for services (RFS)

## Data analysis

- Real-time mapping and aggregation of RFS data in a custom report.
- Consolidation of hydrometric data.

## Outcome

- Single data source.
- RFS data correlated with a wide range of information to support decision making.



# Pipe Inspections

## Data Source:

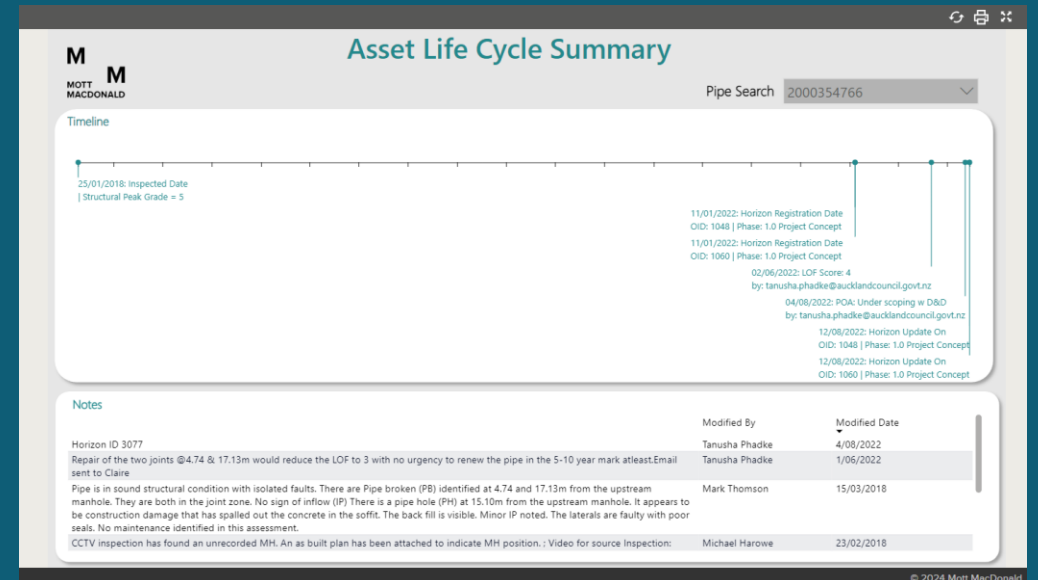
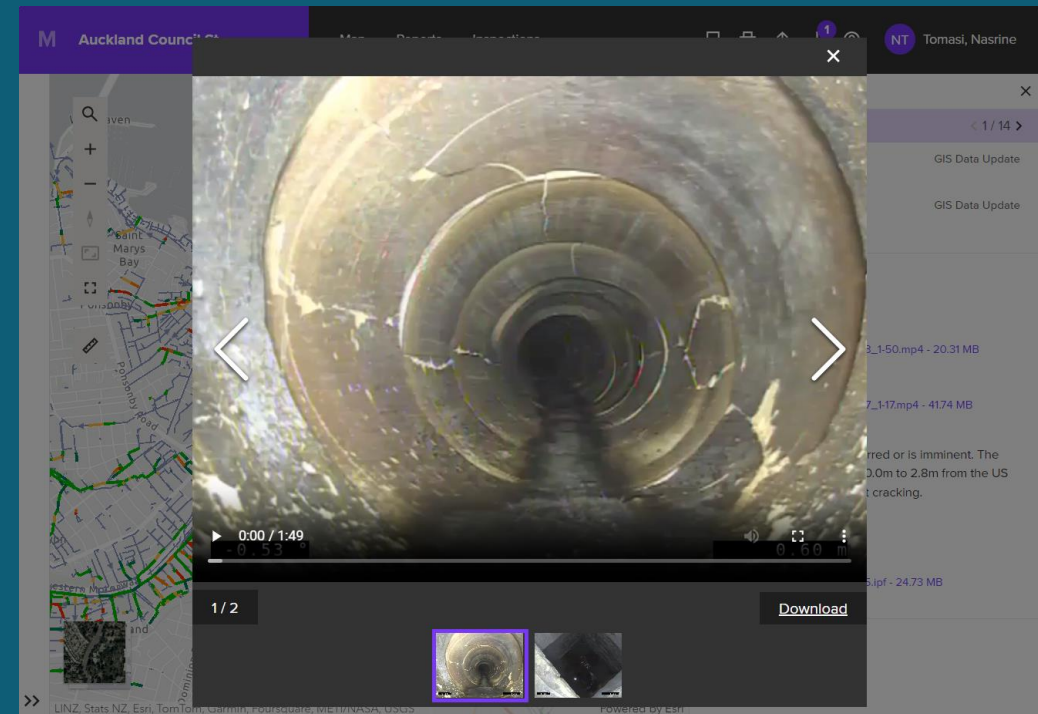
- CCTV inspections from multiple contractors
- RFS data
- Renewal database

## Data Analysis:

- Automated inspection upload
- Pipe grade scoring
- Data consolidation and reporting

## Outcome:

- Standardisation of inspection data
- Surfacing of pipe inspection and related RFS
- Supporting AC asset management strategy



# Safeswim

## Data Source:

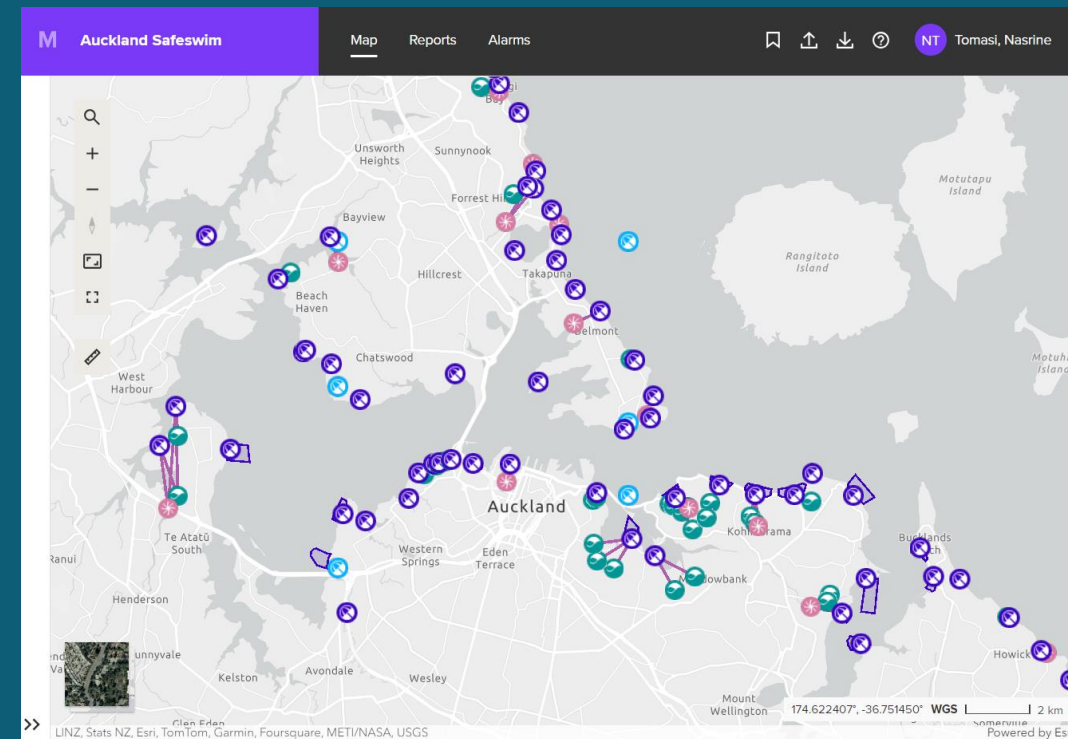
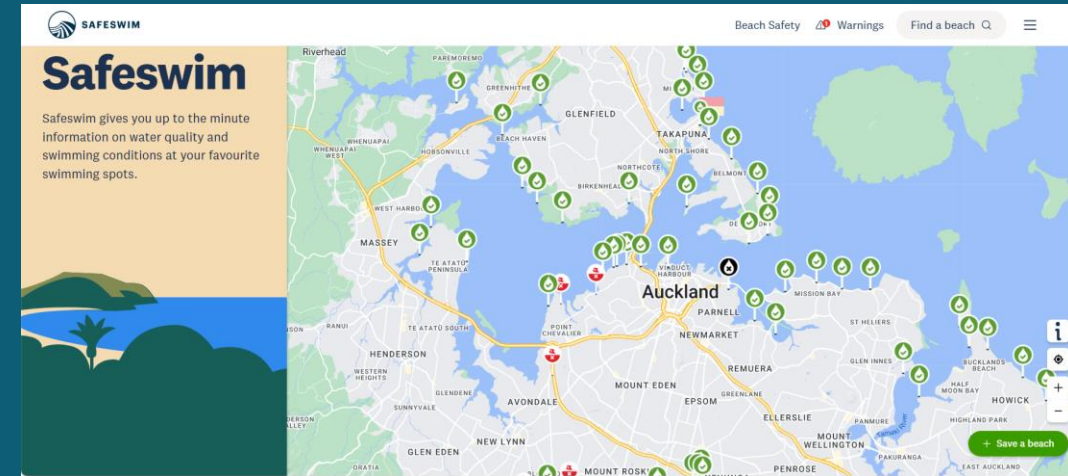
- Sampling, tide, wastewater gauges, water temperature, solar radiation, rainfall, weather prediction, SLSNZ updates.

## Data Analysis:

- Water quality forecasting from hydrodynamic modelling
- Data recency alarming

## Outcome:

- Maximising value of existing datasets and analysis
- Improved public health



# Conclusions

# Takeaway message

- Every organisation will have data silos and everyone is looking for solutions
- Important to have a data strategy from the outset
  - How will you store your data?
  - How will you manage data from external sources e.g. contractors?
  - What is the long-term plan to manage/share the data?
- Auckland Councils early investment into breaking hydrometric dataset out of silos brings benefits to a wide range of programmes:
  - Faster and more comprehensive understanding of storm events, more targeted resource allocation, improved public health
- **Systems may be adequate today but not suitable for tomorrow**
- Accessible datasets can unlock opportunities previously not feasible such as integration of AI models

**Thank you!**  
**Questions? Patai?**



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