Prevent blocked sewers using AI

Aquasuite SEWR

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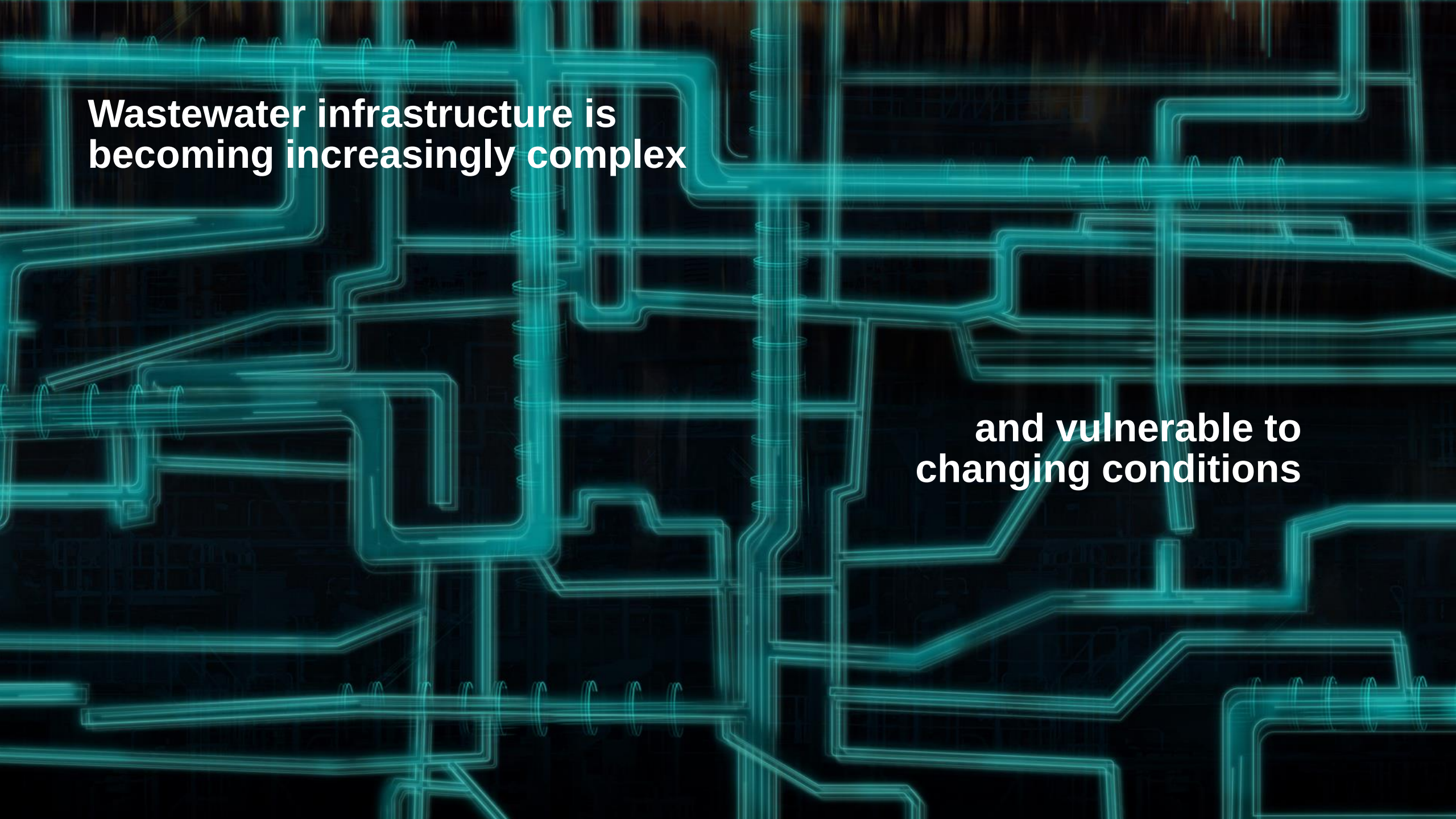
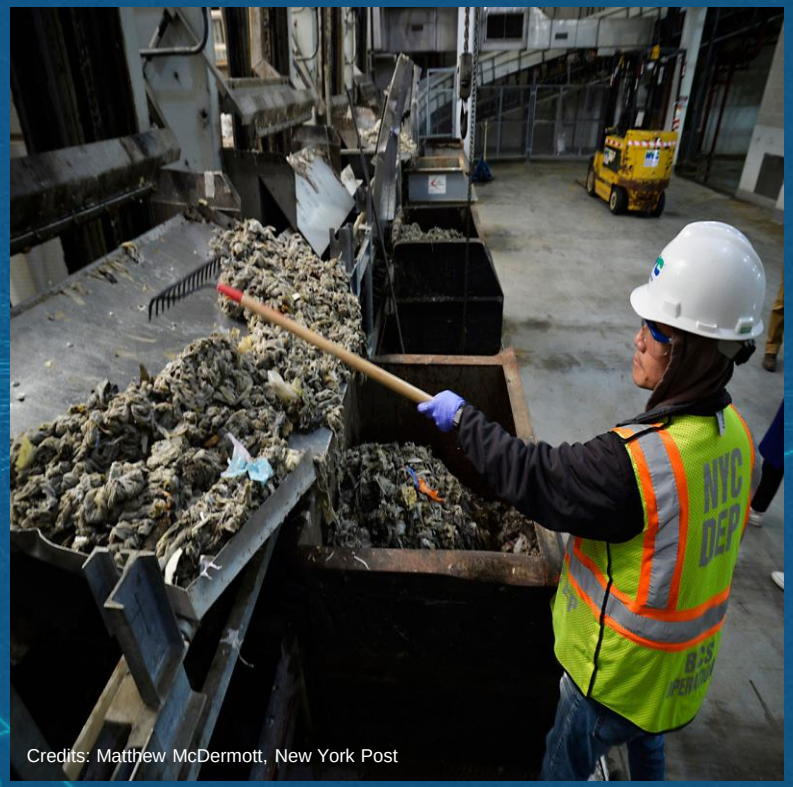
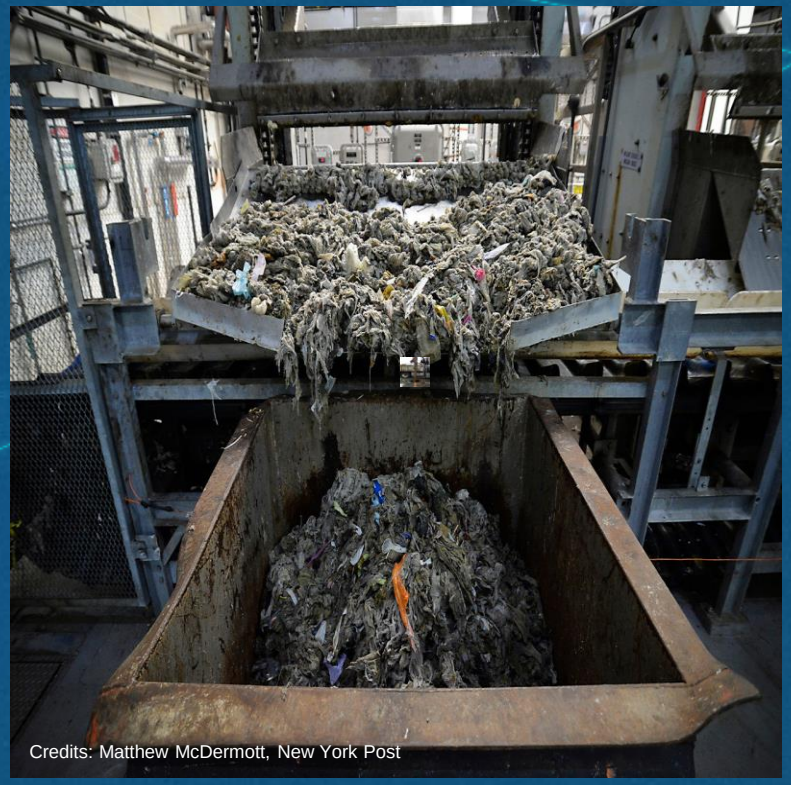

Wastewater infrastructure is becoming increasingly complex
and vulnerable to changing conditions

Skilled operators are harder to find to meet future demand

Sewer blockages lead to big problems…



Credits: Matthew McDermott, New York Post


Credits: Matthew McDermott, New York Post


Credits: AP: Thames Water

And even bigger complaints and expenditure

Raw Sewage Flooded Their Homes. They Finally Know Why.

Severn Trent in plea as firm attends 3,000 reports of sewer flooding or blockages in last fortnight

Fatbergs can cost millions to remove each year.

'Horrendous' - Villagers unable to take bath after sewer floods road

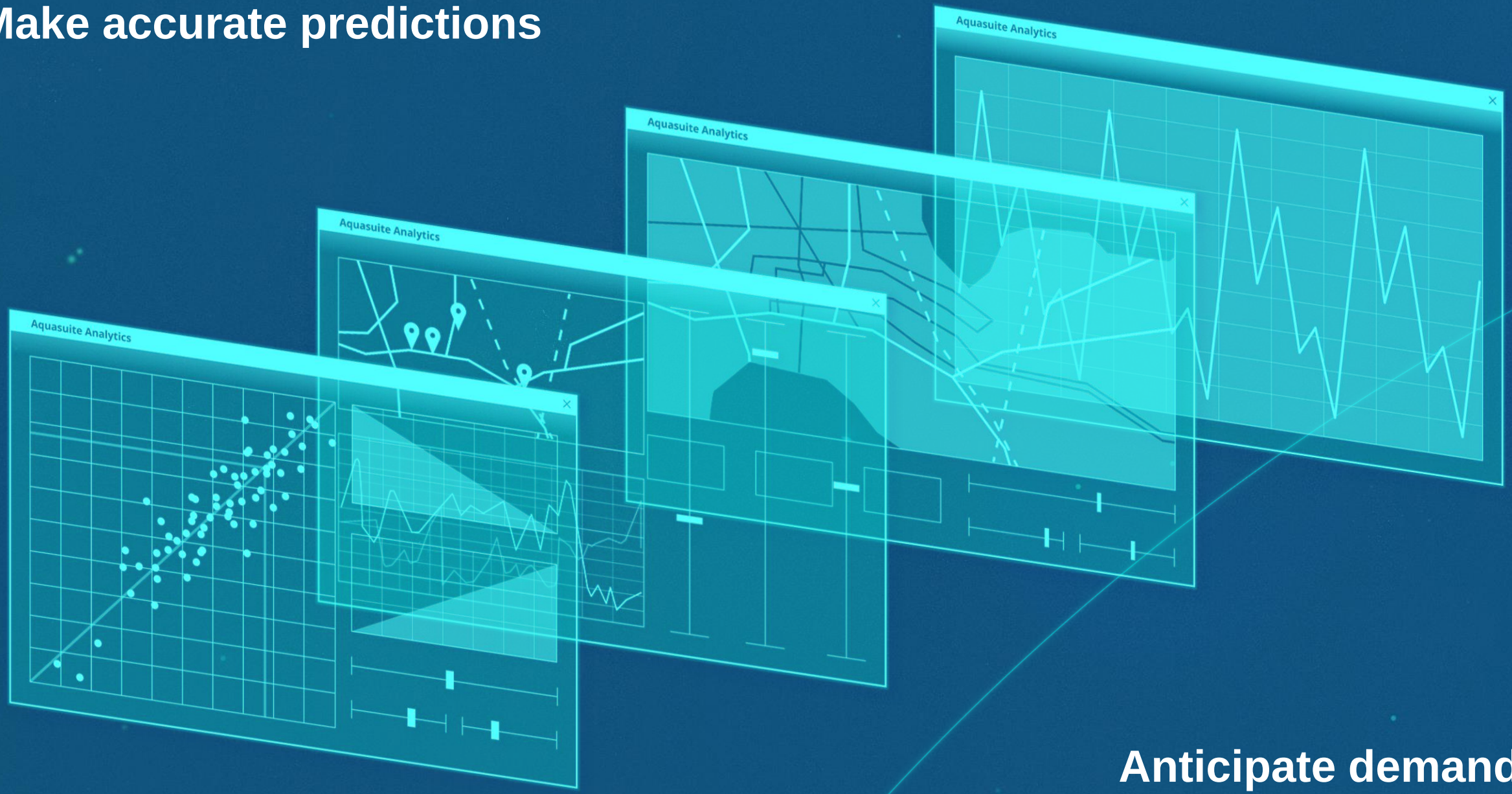
PUBLISHED: 16:13 06 December 2019 | **UPDATED:** 14:49 10 December 2019 | Daniel Hickey

However…

IoT and ever-growing data flow brings great opportunities for better management of your wastewater infrastructure

So, what if you could continuously foresee critical situations and make desired outcomes happen?

Make accurate predictions



Anticipate demand and changing conditions

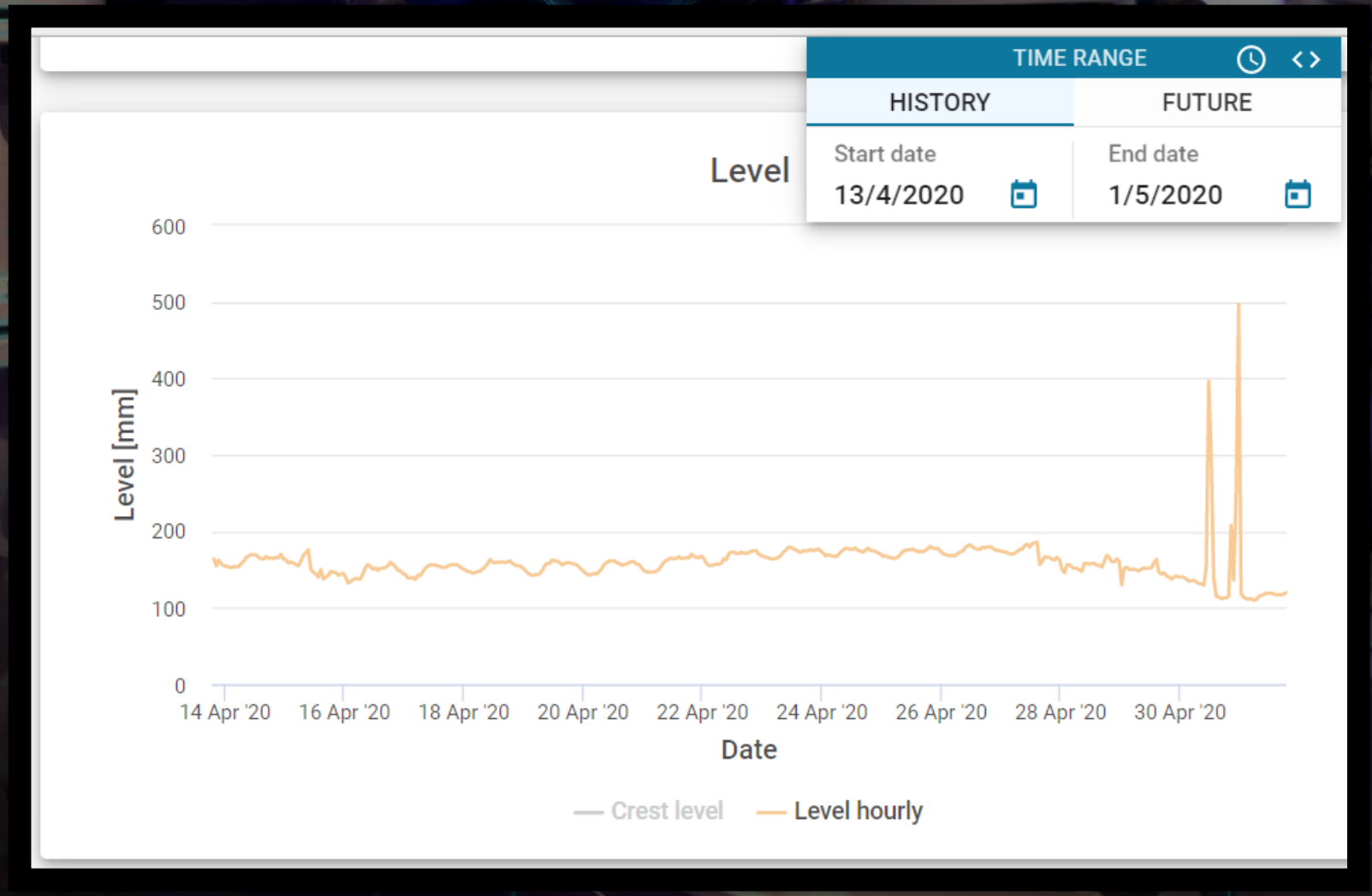
Bring together good data & AI to get ahead of events..

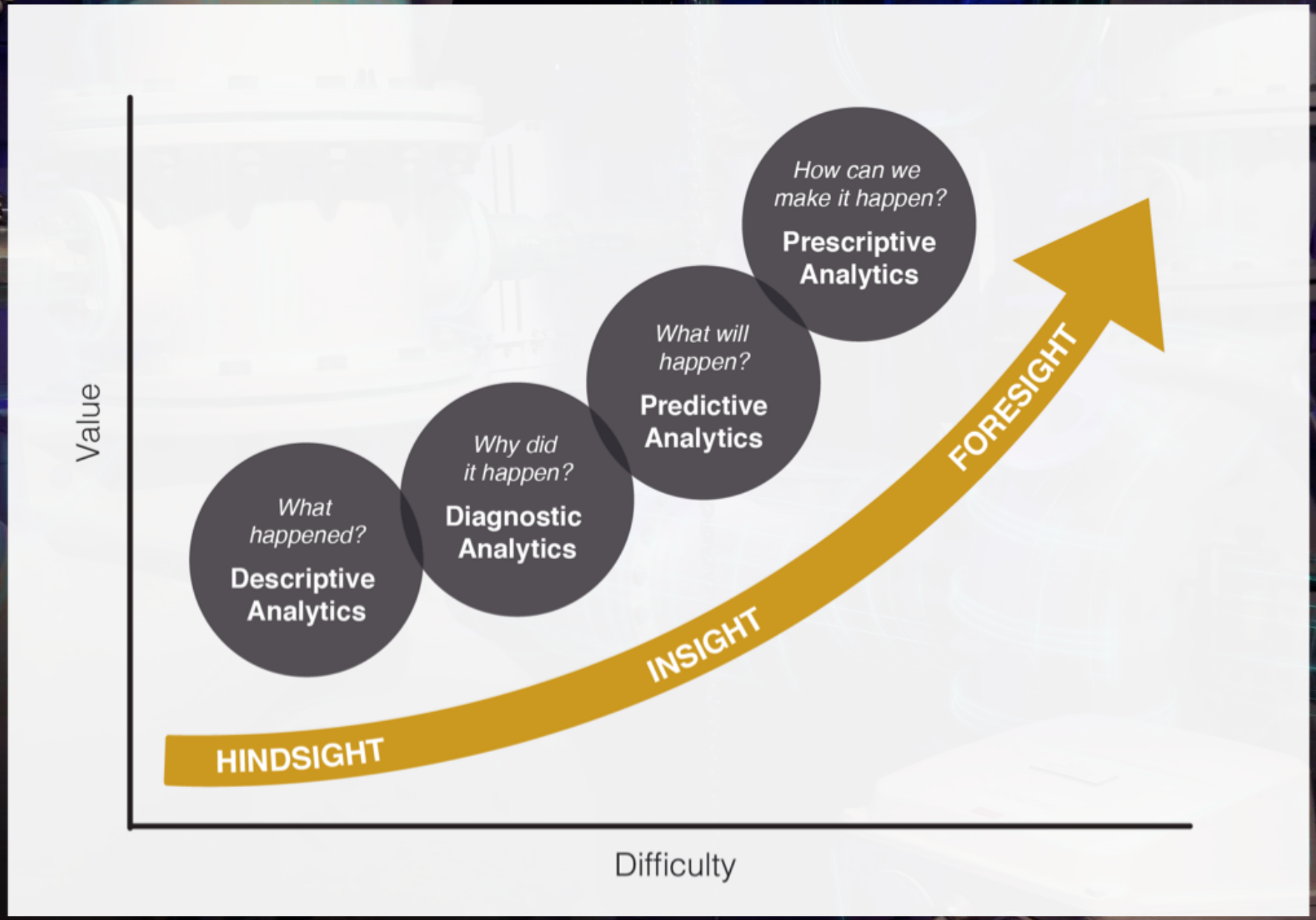
..tackle changes before they become problems

Good data & inputs

Good level data can be used as inputs to AI models

- Accurate data
- Patterns become evident in the data



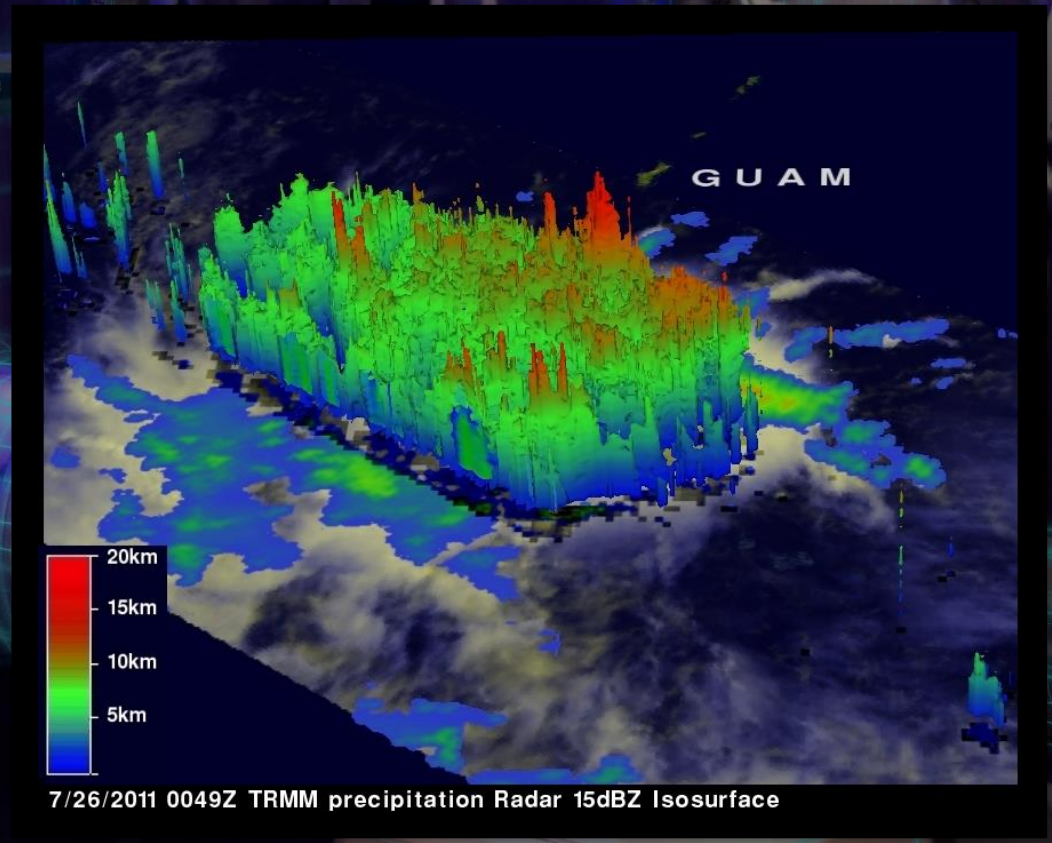

Value
Difficulty
What happened?
Descriptive Analytics
Why did it happen?
Diagnostic Analytics
What will happen?
Predictive Analytics
How can we make it happen?
Prescriptive Analytics
HINDSIGHT
INSIGHT
FORESIGHT

Using AI in sewers is a challenge..

The majority of sewers are combined systems.

Level is based on:

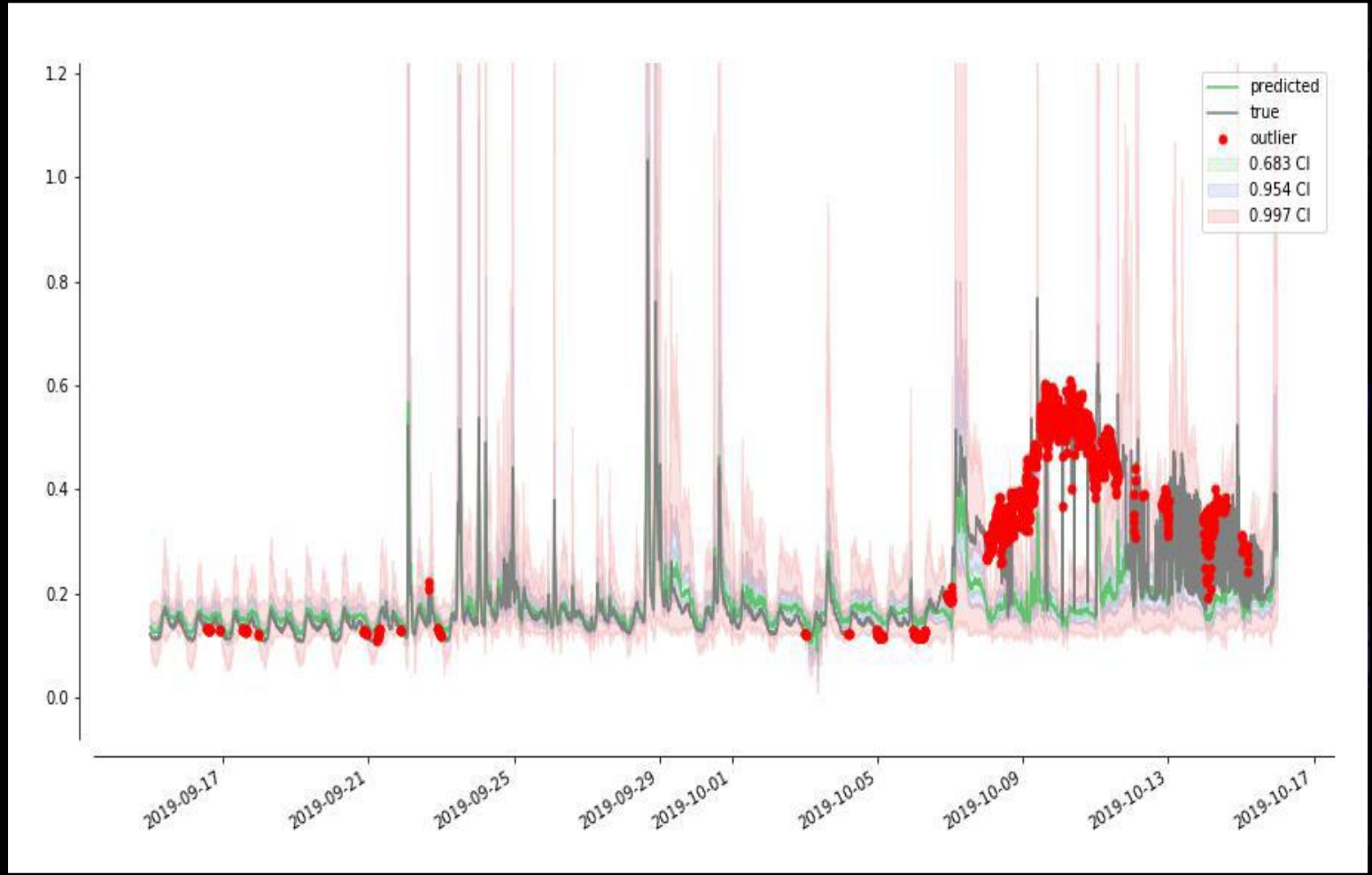
- Human input
- Rainfall



Neural networks..

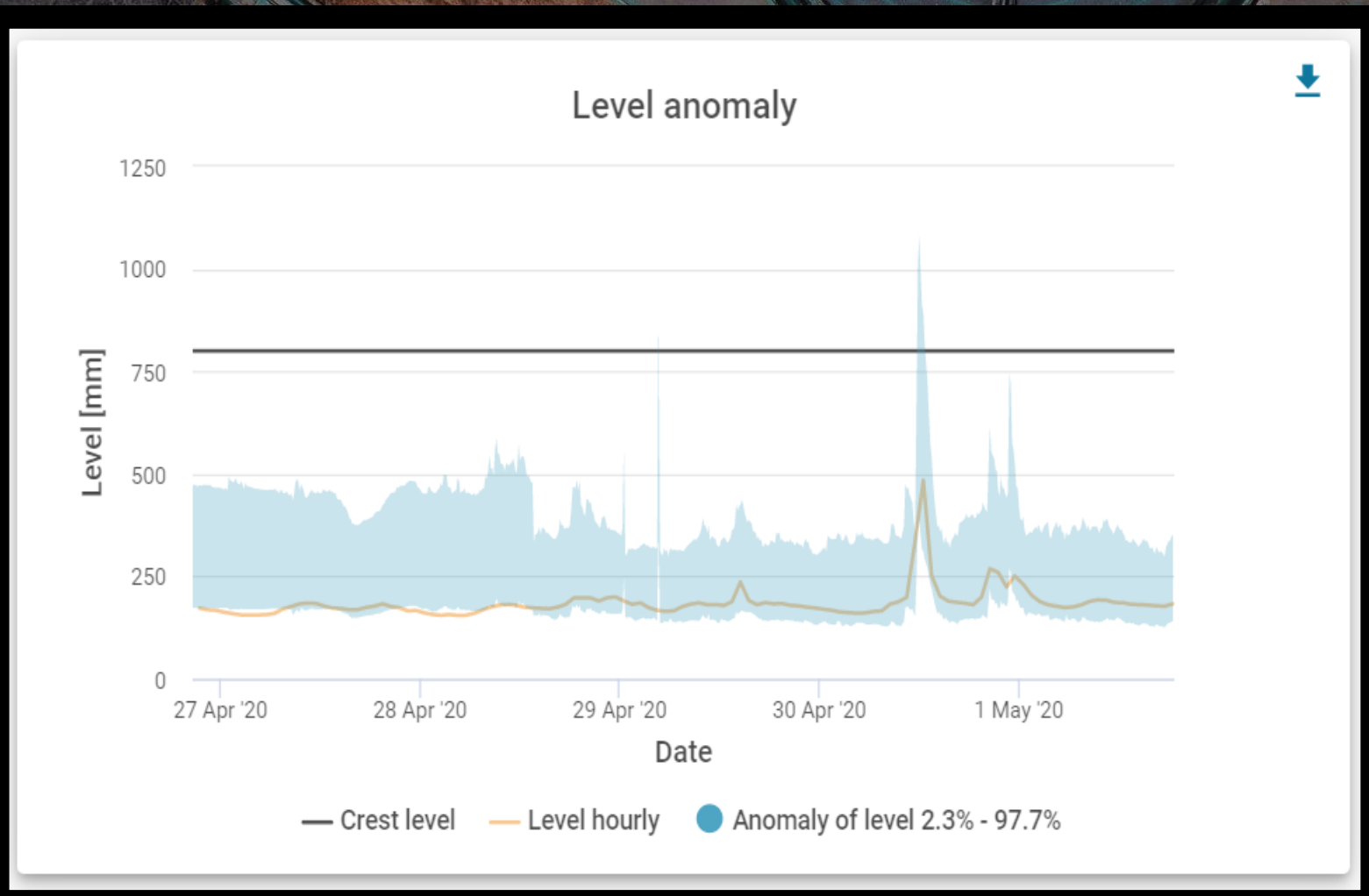
Neural networks are able to combine the historical data, catchment wide data & rainfall to produce predictions

- Predictions drive insights




AI deployed on good data…
…enables actions to be taken to prevent sewer flooding

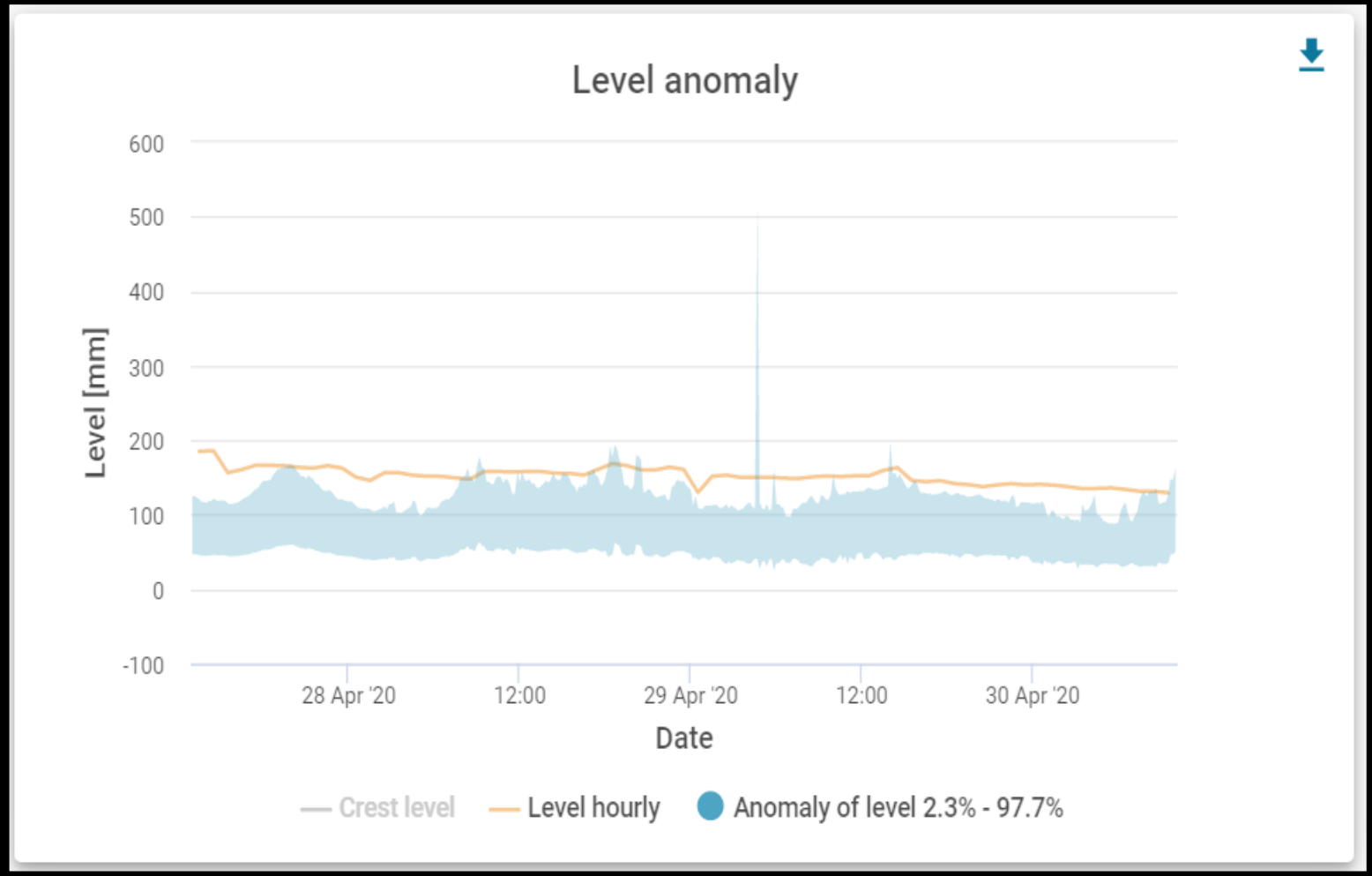
Anomaly Detection



We have developed an algorithm to state in real time if sewer level is abnormal. This detects

- Up/downstream blockages
- Sensor failure

Anomaly Detection

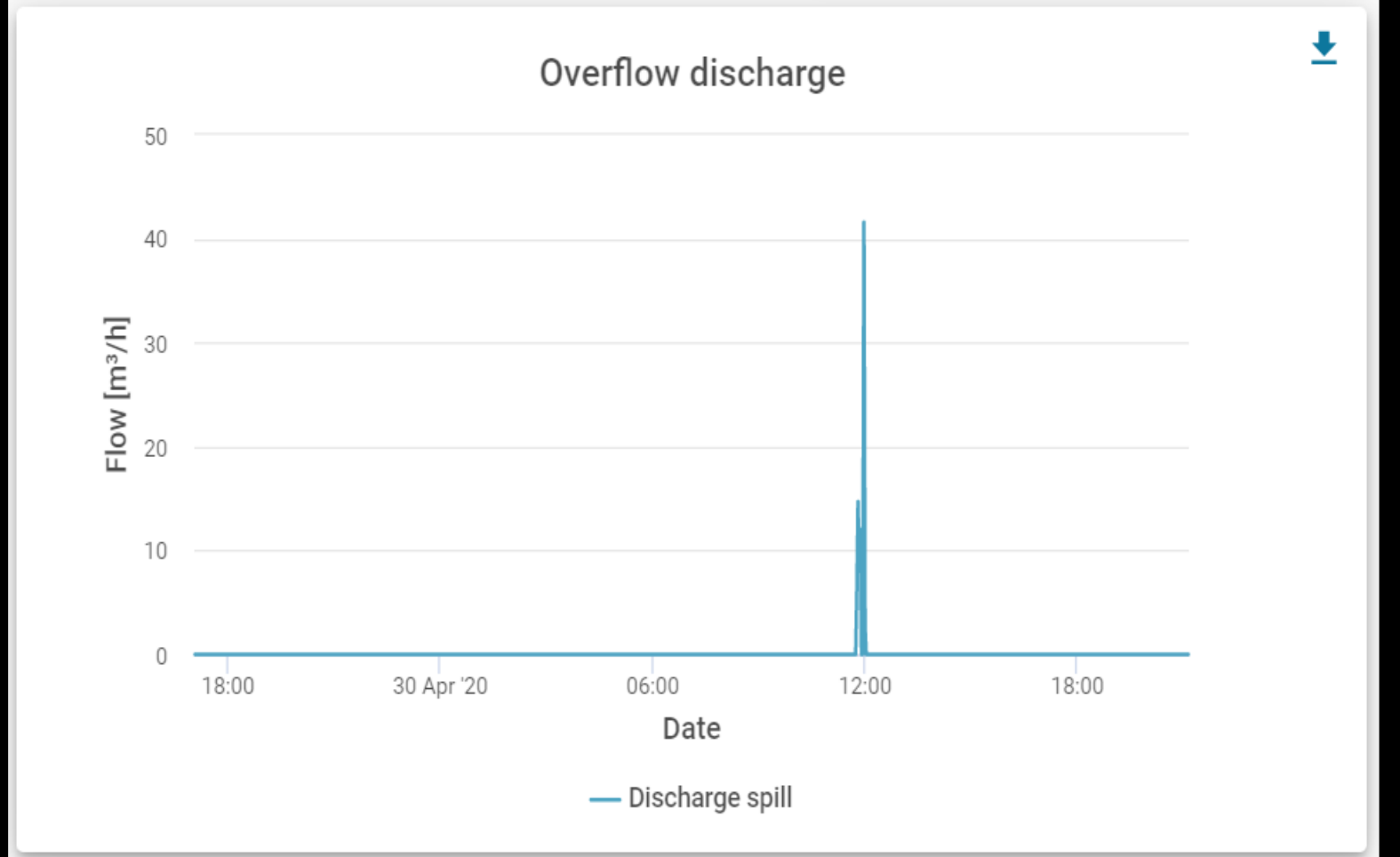


We have developed an algorithm to state in real time if sewer level is abnormal. This detects

- Up/downstream blockages
- Silt build-up
- Sensor failure

Anomaly Detection

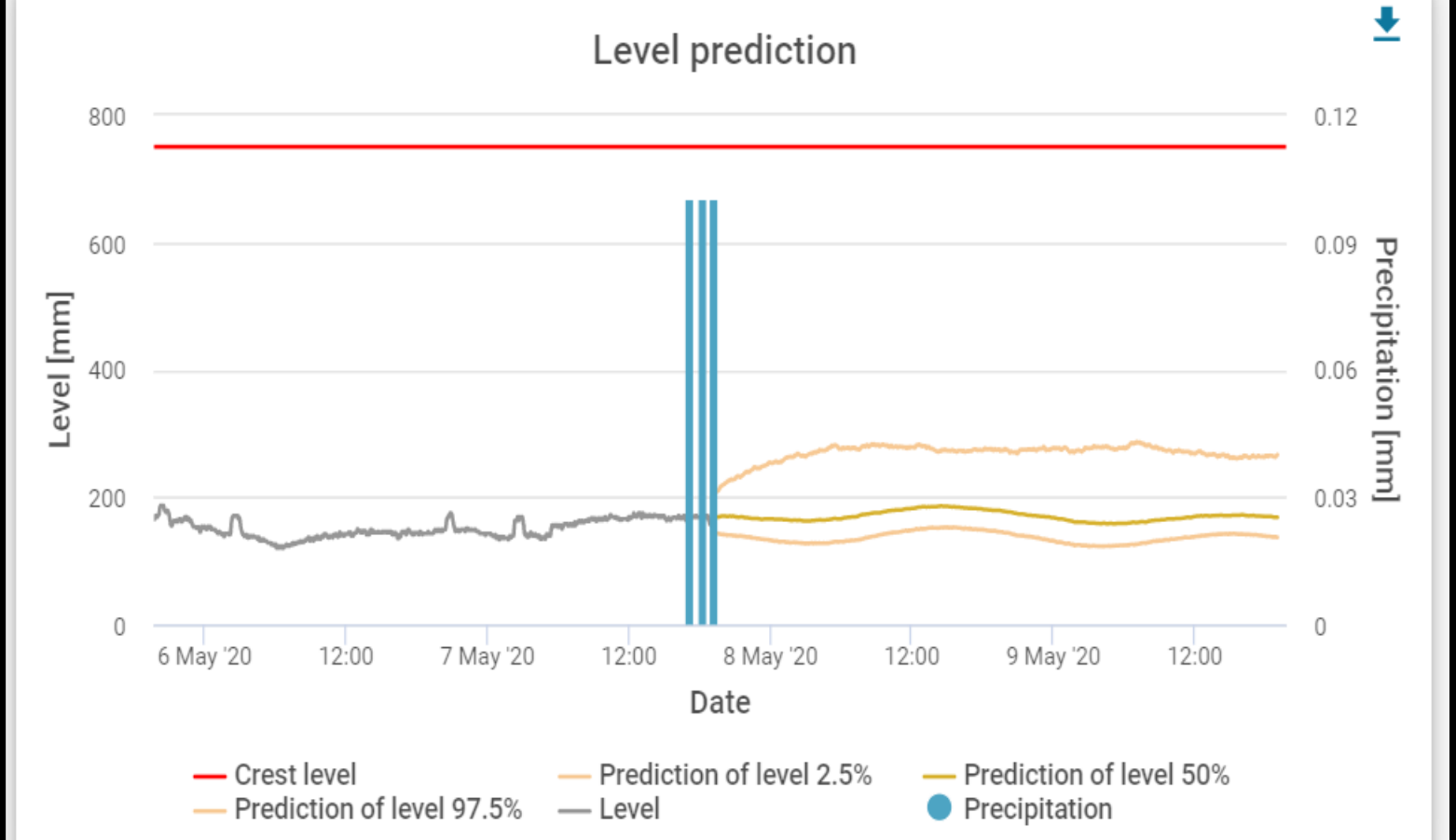
Take action **before** there is a problem



Spill prediction

A further algorithm is able to predict the level in sewers for the next 48 hours.

- Early warning of pollution events



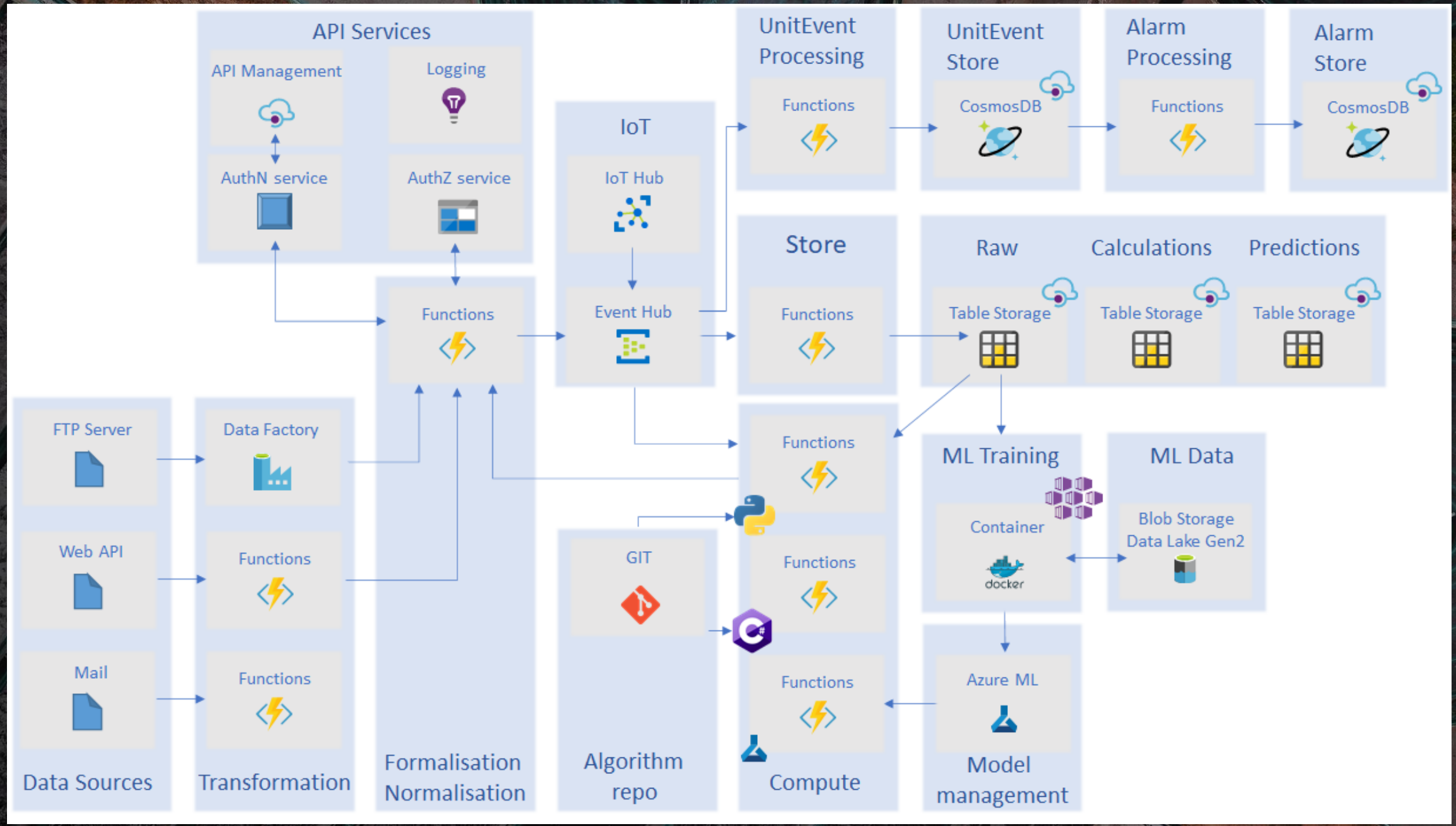
What does this mean for you?

- Better understanding of wastewater network, with reduced spills / flooding
- Ability to pro-actively warn stakeholders & take preventative actions
- Catchment wide thinking, planning & actions

“By partnering with Royal HaskoningDHV and utilising their revolutionary Aquasuite software, we take our data analysis and reporting to a whole new level with DetecAnalytics.”

Neil Butler, Sales Director, Detectronic

Aquasuite Azure Architecture



How to contact us

Aquasuite®
a product of Royal HaskoningDHV

Tom Woolley
Business Development Director

tom.woolley@rhdhv.com

Christof Lubbers
Product Manager Wastewater

Christof.lubbers@rhdhv.com

General contact info

aquasuite@rhdhv.com
www.aquasuite.ai