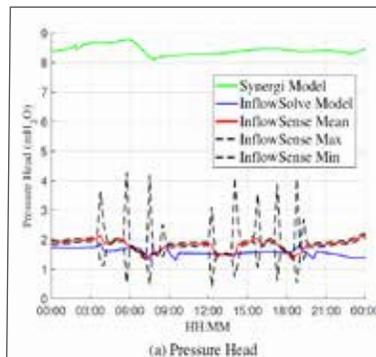


Challenge

Anglian Water (AW) were keen to understand and validate the network model and dynamic network behaviour of two adjacent DMA's. This included simulating the installation and operation of a dynamic boundary valve.

In order to implement and maintain the operation of the adjacent DMAs with dynamic topology, a sufficiently accurate hydraulic network model was required to calculate and evaluate optimal control, particularly as multiple control elements were in operation (e.g. both PRVs and dynamic boundary valves).

As a consequence of our extensive domain knowledge and Imperial College Research and Development, Anglian Water chose to work with Inflowmatix to establish the existing dynamic behaviour with a view to implementing improved DMA topologies for heightened network resilience and improved



Solution

InflowSys™ Data Analytics Platform

Inflowmatix performed as series of due diligence activities in order to maximise the accuracy of the agreed outcomes

Following consultation and mobilisation with AW, Inflowmatix performed a series of due diligence activities in order to maximise the accuracy of the agreed outcomes. This included collating the existing AW data points (Telemetry, GIS, hydraulic models)

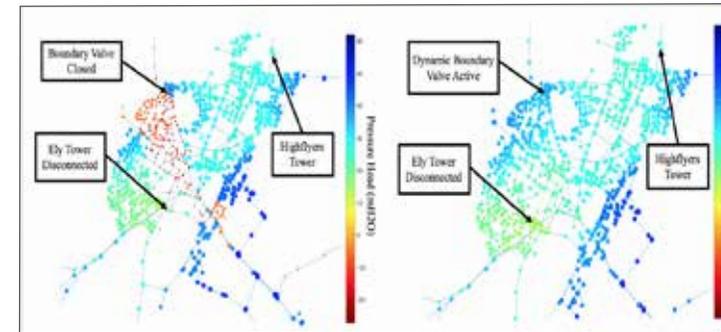
as well as measuring the asset elevation as part of the deployment planning process to enable the building of a clearer and more accurate hydraulic model.

Post due diligence and planning, the InflowSys™ data analytics platform was deployed using 40 high frequency pressure measurement devices sampling at 64 samples/second with 0.1% full scale accuracy to validate the model and steady state assumptions of dynamic pressure variability, actuation and network connectivity.

Following this activity Inflowmatix were able to simulate the implementation and operation of the dynamic boundary valve.

Results

As a consequence of capturing the high frequency data, the InflowSys™ platform was able to match the mean high frequency data within 2mHH20 for 72.5% of the sites versus the current model of only 35%. Inflowmatix recommended the resolution of a number network discrepancies to ensure correct dynamic boundary valve actuation to mitigate further unplanned network effects such as the flushing of the adjacent DMA's to condition the pipes for a new flow regime.



INFLOWSYS™

A next generation data analytics suite consisting of; an array of smart devices (sampling at 128 samples/s, 0-20 Bar pressure with 0.1% full scale accuracy), analytics platform and visualisation developed by Inflowmatix.