

# Integrated Flood Risk Modelling with OpenMI in Havant, UK

At Havant, near Portsmouth, UK prediction of flood risk is complex where two river catchments and their confluence have gradually been urbanised. Because of the many surface outfalls to the river, there was scope for flooding to occur when high river levels coincided with large discharge in the surface drain collectors. Because of local complexities such as underlying chalk geology, a conventional Flood Estimation Handbook approach combined with standard river modelling would not be sufficiently accurate to guide flood risk mapping and management.



By using InfoWorks-CS (Collection Systems) to model the steep culverted urban drainage and by using the local water authority's river records to calibrate InfoWorks-RS (River Systems), the integrated modelling approach was able to link the two with OpenMI to provide instantaneous drain flows into the river and how the river flowed combining the urban effluent component with the upstream run-off component. This linking allowed bi-directional flow between the two systems and obviated complex iterations of running outputs from one model into separate runs of the second model.

The integrated modelling approach improved the accuracy of modelling and significantly decreased run-times. It allowed two separately owned databases, with permission, to supply an interactive model of the complex situation. The linked model composition provided a collaborative tool with which stake-holders could communicate about flood risk planning and management.

## Keywords

Flood, Urban, Integrated, OpenMI, River, Drainage, Havant

## For More Information

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