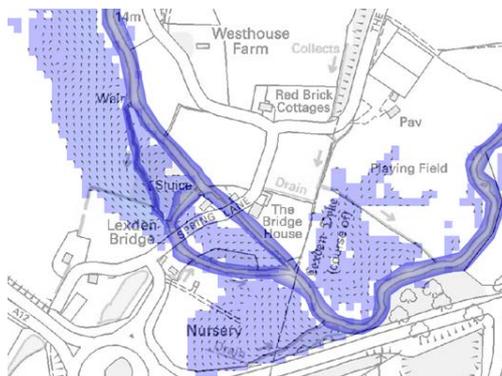


# Flood Modeller Pro

## Options appraisal: an efficient and flexible way to remove structures

Flood Modeller Pro was recently used to determine the impact on flood levels from numerous structures across eight different fluvial catchments within the English counties of Norfolk, Suffolk and Essex.

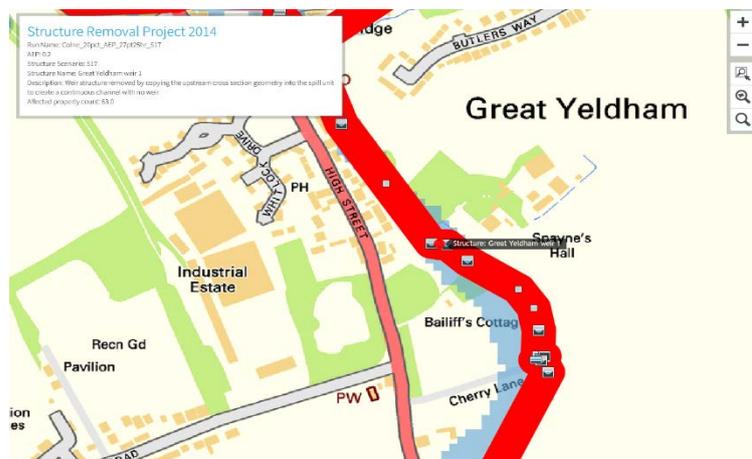
Many in-channel structures such as weirs and sluice gates, built historically for agriculture or power generation at mills, are no longer required for their original function. Removal of such structures can help deliver key objectives of the European Union's Water Framework Directive by re-establishing the natural geomorphology and habitat diversity of the channel, including reducing barriers to fish migration.



Structure removal can also induce either positive or negative impacts regarding flood risk management and it is important to establish these impacts before deciding to remove a structure of interest.

Over 100 structures were analysed for a range of flood events using Flood Modeller Pro. These structures were individually removed from the 1D model using Event Files (IED file) rather than modifying the actual baseline model. The geometry and settings outlined for each structure within the specific IED file overwrote the corresponding settings in the baseline model, when referenced in the simulation control.

This approach minimised complexity by making the large number of simulations required more manageable. It also reduced any bias that could have occurred had separate models been used. By using multiple event files to assess the removal of each structure, it streamlined the overall modelling process, making it far more efficient.



Direct comparisons of peak water levels, flood maps and receptor counts allowed structures that had an influence on flood risk management to be easily identified and analysed.

The results from the project were also delivered to the client in Flood Viewer, a free flood visualisation tool that is provided as part of Flood Modeller Suite and allows flood maps to be easily viewed without the need for specialist GIS software.

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**JACOBS**

With a legacy stretching back 40 years, Flood Modeller allows users to model rivers, floodplains and urban areas, using our powerful 1D and 2D solvers.