

Model – Yazor Brook/Widemarsh Brook Hydraulic Model**Location – Hereford****Watercourses – Yazor Brook, Widemarsh Brook, Eign Brook and Ayles Brook**

The Yazor Brook/Widemarsh Brook hydraulic model is a 1D 2D FMP-TUFLOW model , extending from Kenchester (approximately 1km upstream of Credenhill) to its confluence with the River Wye within Hereford (upstream of Greyfriars Bridge). A bifurcation at Moor Park creates the Widemarsh Brook (also known as Eign Brook downstream of Commercial Road) which passes through Hereford city centre before joining the River Wye near Bartonsham. The Widemarsh Eign Brook, as well as the downstream extent of its tributary the Ayles Brook, are included in the model.

The schematisation of the hydraulic model reflects the catchment flooding mechanisms and key areas of interest. The model consists of two domains with the boundary between the two located along Three Elms Road, to the western side of Hereford. The upstream domain is predominantly rural and has been modelled using a 10m grid size. The downstream domain covers the urban area of Hereford, which is the focus of interest, and therefore has been modelled in more detail using a grid cell size of 5m.

The downstream boundary for the Widemarsh Eign Brook is the River Wye. This has been modelled using a fixed water level taken from the Wye Lugg Confluence model. A 2 year return period peak water level of 49.21mAOD for the River Wye is applied.

The Yazor Brook outfalls into the River Wye upstream of Grey Friars Bridge. Upstream of the Yazor Brook syphons the flow bifurcates into two separate culverts. The western culvert runs almost directly south to the River Wye. The eastern culvert passes through the syphons on the Yazor Brook, through a section of open channel and back into culvert underneath Eign Street. This culvert section eventually outfalls to the River Wye. The downstream extent of each of the Yazor Brook culverts has been set with a 2 year return period peak water level from the River Wye (50.96mAOD on the eastern culvert and 50.98mAOD on the western culvert).

The model was originally developed for the purpose of Environment Agency flood mapping of the ordinary watercourses (Yazor Brook and Widemarsh Eign Brook) through Hereford but has since been extended and used to develop a flood mitigation strategy for the Edgar Street Grid (ESG) area in Hereford and updated for use in the Hereford Integrated Catchment Study (ICS).

It is the recipient's responsibility to verify the suitability of the model data to support the assessment.

Of particular note:

- The model includes the diversion of the Widemarsh Brook between the City Link Road and Canal Road which has not yet been constructed. It is recommended the recipient confirm the status and consider any potential implications for the model results in the area of interest.
- Future developments within the Edgar Street Grid area are likely to involve significant changes to current ground levels which will alter flood extents and flow routes. It is recommended the recipient confirm the status and consider any potential implications for the model results in the area of interest. Hydraulic modelling is expected to be required for assessments in this area, reflecting the best information at the time.

Herefordshire Council can provide Modelled Flood extents for a £400 fee (inclusive of VAT). The Model Files can also be used for this fee.

Further information about the model can be obtained by contacting Balfour Beatty Living Places. Please contact the Senior Drainage Engineer Joel Hockenull on 07966 868595 or at joel.hockenull@balfourbeatty.com