

River Wharfe Modelling Study 2014

Technical Briefing Note

February 2015

Why have we done this work?

We regularly update our mapping so we can make better decisions to manage flood risk and to help inform future planning and development. We use this information to provide advice and guidance to members of the public, emergency services, and Local Authorities. This helps communities take appropriate action and be more resilient to flooding.

In 2004 we used broad-scale modelling to understand where the risk of flooding is most likely. We used this information to produce the first version of our Flood Map on the internet and define areas where we could provide flood warnings.

In 2009 we completed the River Wharfe Flood Risk Mapping Study as there had been significant improvements in the data and technology available for mapping and modelling flood risk since the first version of our Flood Map was produced.

Since then, we have updated the modelling from the 2009 flood risk mapping study using updated hydrology and modelling to produce new data. We will use this new data to improve our information.

This briefing note gives a summary of this work, the main results and what we are going to do with the new information.

What area does this cover?

Our work covers the River Wharfe from Bolton Bridge to Wharfe Bridge .

What did the study do?

The study used the latest information to produce a computer model to simulate what would happen

during a flood. We used the following information to produce this model:

- Analysis of how the river behaves during floods
- Records of past river flows and levels
- Aerial survey data (LiDAR) and cross section surveys of the river channels to represent the landscape

The model estimates the extent and levels of flooding with the following chance of happening in any one year; 50%, 20%, 10%, 4%, 2%, 1.33%, 1%, 1% plus climate change, 0.5% and 0.1%; - we call this the Annual Exceedance Probability or AEP. We use the 1% AEP flood outline map to update Flood Zone 3 and the 0.1% AEP flood outline map to update Flood Zone 2.

The flood extents were created using a digital terrain model of the landscape. This terrain model used aerial survey data to represent the floodplain and cross-sections to represent the river channel. It is much more accurate than the one used to produce the original Flood Map, which gives us greater confidence about which areas are at risk of flooding.

What are the limitations of this study?

Mapped flood extents show areas of land that may flood but are not designed to be accurate to individual property level, as properties can have raised floor levels.

What are we doing now?

Our Flood Map has been updated with the new information and the community-based Flood Warning Areas are currently being updated to incorporate the updated Flood Map information.

Contacts

To request a copy of the full hydraulic modelling report, please call our Customer Service Line on 08708 506 506 or email Customer Contacts neyorkshire@environment-agency.gov.uk.