

Flooding Impacts from Hurricane Harvey

August 2017

The flooding which has resulted from Hurricane Harvey is likely to be the worst on record in many of the affected rivers such as those flowing through the city of Houston. The existing FEMA flood maps have estimated the areas inundated from a 1 in 500 year event. These estimates will have been based on the analysis of observed flows which would not have captured anything similar to the current conditions. In this way the event is comparable with what Central Europe experienced in 2002 when the measured flow of the Vltava River in Prague at 5,300 cumecs was some 40% higher than the predicted 1 in 100 year flow of 3,700 cumecs.

The current flooding from Hurricane Harvey could end up covering a much wider extent than even the most extreme flood extent shown on the FEMA maps. The probable maximum flood, an index commonly used for the design of dams, would be a more suitable estimate of the flooding extent. The map below shows how this may affect the Houston area, which is on a low lying coastal plain with the potential for widespread inundation. The potential flood extent is shown in light blue, main rivers in darker blue and the drainage basin outlined in purple.

