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West Yorkshire Flood Innovation Programme Accelerator Project

Work Package 1 – Flood Early Warning Systems and Communities
Focus on West Yorkshire, but exploring national case studies

Background

The Environment Agency estimates that over 2.7 million properties in England are at risk of flooding, which is over 10% of all residential properties. The heavy and/or prolonged rainfall that drives flooding is projected to increase in the future due to climate change, which will significantly increase future flood risk. Some regions of West Yorkshire are particularly at risk and have experienced major, costly and disruptive floods in recent years.

The impacts of flood events can be reduced by early warning and preparedness. The challenges associated with achieving this are twofold. Firstly, creating accurate flood forecasts is challenging. Although weather forecasts have improved significantly in the last decade, challenges remain, particularly for surface water flooding, which generally occurs due to intense, highly localised summertime rainfall that is hard to forecast accurately enough to provide useful advanced warning. Secondly, there are challenges around how to communicate flood risk and uncertainty effectively to different community groups and how to ensure any locally disseminated information is consistent and complementary to the severe weather and flood warnings that are issued nationally.

This Work Package focused on the latter challenge and is complementary to the existing iCASP Enhanced Surface Water Flood Forecasting project, which developed a new flood forecasting tool called FOREWARNS, and makes use of expertise and the local network provided by the West Yorkshire Flood Innovation Programme (WYFLIP). **For more information about the project, please see the QR code on the back of this flyer.** The Work Package leaders also work with the Environment Agency, Met Office and Flood Forecasting Centre on the Surface Water Incident Management Strategic Overview Role Scoping Project and the Surface Water Flood Forecasting Improvement Project (SWFFIP). We used these networks to generate knowledge ideas for regional Flood Early Warning Systems provision and influence national provision.

Aim

The overall aim of this Work Package was to develop a set of recommendations for how to improve Flood Early Warning Systems provision in the West Yorkshire area for at-risk communities, Local Authorities and other local organisations.

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Activities

We worked with 10 Flood Groups to understand their use of Flood Early Warning Systems - six used Environment Agency information on river levels and rain gauges, and five used local monitoring information (e.g. river level monitoring), including from private sector providers. We found a range of good practices, including:

1. **Pang Valley Flood Forum:** Dashboard of Flood Early Warning Systems information from EA and private monitoring: river levels, rain gauges, groundwater levels, and EA Flood Warnings and Flood Guidance Statements.
2. **Whalley and Billington:** Working with Previsico and Lancashire County Council, have installed monitoring equipment to view the water levels next to a trash screen. Alerts inform them when debris needs to be cleared, and this has helped prevent flooding a number of times.
3. **Aston Ingham:** A very new group, but they have worked with Andel Ltd to install three monitors on local rivers, streams and tributaries. The group meets regularly to review data and establish trigger points for warnings. This group was supported with funding and research support from the University of Chester.
4. **Fishlake:** This Flood Group analyses a range of monitoring information from the Environment Agency and has around 30 Flood Wardens. It has strong links to the Parish Council, Risk Mangement Authorities and the Internal Drainage Board.
5. **Calderdale:** Strong network of flood groups and wardens covering vulnerable towns through the valley. They respond to a range of complex challenges, including in schools, with tourists, and flooding on the key arterial road, with a range of actions: accessing equipment containers; attending to roads, establishing places of safety, and wider communication with the local community through a very active on-the-ground presence and social media.

Scan the QR codes to read the report by Dr Sam Ramsden, Prof Cathryn Birch, Dr Sarah Jenkins and Ashar Aslam, University of Leeds (left) and the Enhanced Surface Water Flood Forecasting project (right). Contact S.W.Ramsden@leeds.ac.uk for questions.

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