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West Yorkshire Flood Innovation Programme Accelerator Project

Work Package 1 – Flood Early Warning Systems

Start date: 1st April 2023 | End Date: 1st March 2025 | Location: Focus on West Yorkshire but exploring national and international case studies.

1. Background and rationale

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. Examples include flooding in Leeds in December 2015 that damaged over 3300 private properties and businesses and the six major floods between 2015 and 2020 in the Calder Valley, where many properties were repeatedly flooded.

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 focuses 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). 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 will use these networks to generate knowledge ideas for regional Flood Early Warning Systems (FEWS) provision and influence national provision.

2. Aim

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

3. Activities

We will undertake the following activities within this Work Package:

A. Document the state-of-the-art and best practise in FEWS capability and communication methods internationally, nationally and locally within West Yorkshire.
This will be achieved through: conducting a literature review; engagement with stakeholders to understand different projects being implemented across the UK and internationally (including EA, private sector and local community led initiatives); select and explore 10 case studies including site visits and interviews,

B. Through consultation, determine the key needs and appropriate communication routes for FEWSs for at risk communities and businesses in West Yorkshire and local organisations such as the Local Lead Flood Authorities (LLFAs) and other West Yorkshire FLIP members.

C. Feed into on-going projects with the Met Office, Flood Forecasting Centre and Environment Agency that are working to improve national flood forecast provision and warning communication.

D. Make recommendations for improvements to existing national and local FEWS capability and how to ensure national and local information remains consistent and integrated.

4. Progress to January 2024 / Next steps

We are currently conducting a literature review and engaging with stakeholders to understand different projects being implemented across the UK and internationally.

We will then select and explore 10 case studies in more detail including through site visits and interviews. These case studies could include Calder Valley in West Yorkshire, Fishlake in South Yorkshire, and Terrassa in Catalonia, Spain.

Contact information and useful links:

If you have questions about this project, iCASP or the WYFLIP, please contact us.

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West Yorkshire Combined Authority | Tracy Brabin Mayor of West Yorkshire

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