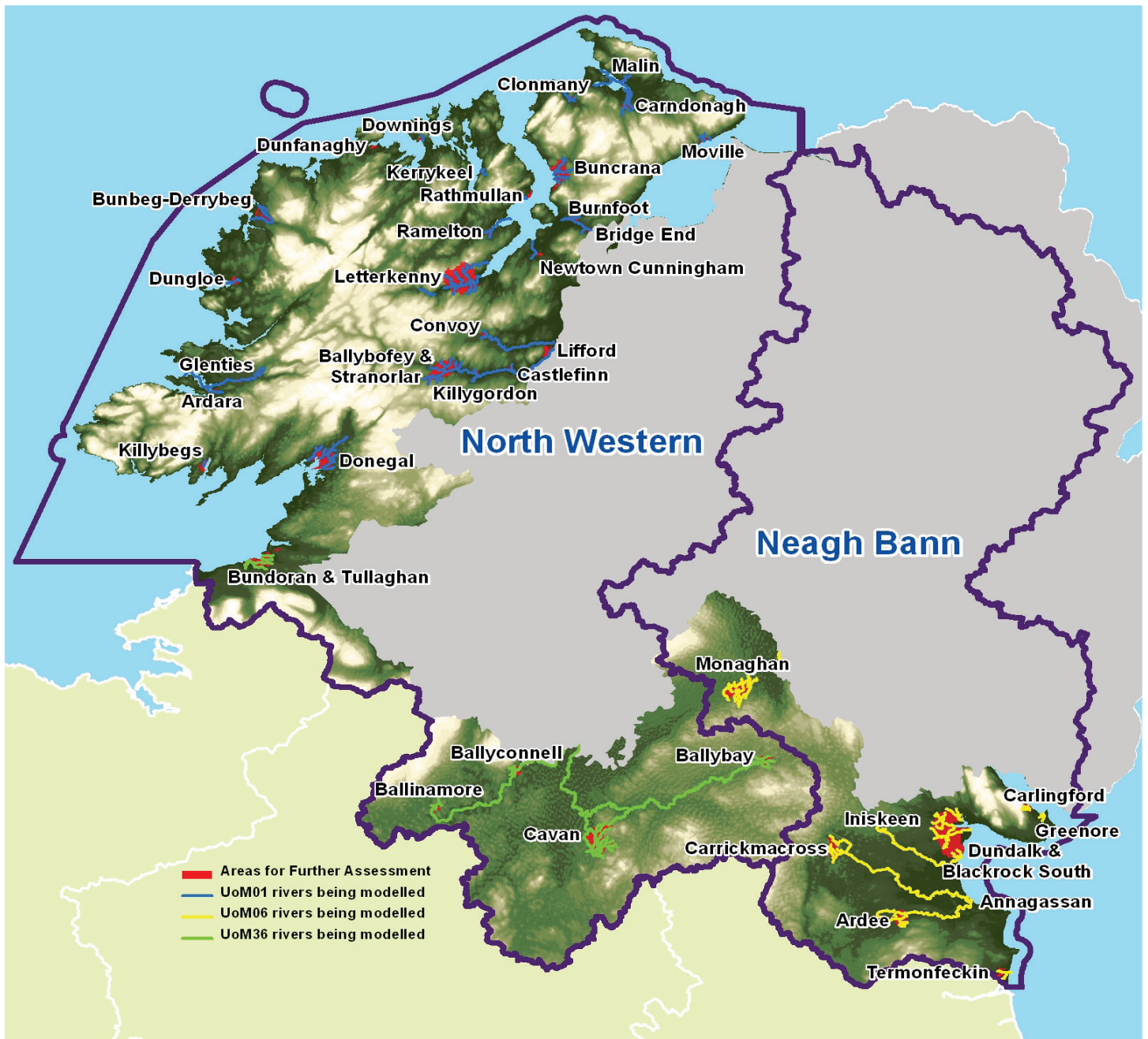


Newsletter No. 3

March 2014

INSIDE | BACKGROUND | HYDROLOGY & HYDRAULICS | FLOOD MAPPING | CONSULTATION | SUMMARY OF PROGRESS



Flood risk assessment in river and coastal AFAs within the North Western and Neagh Bann districts is well underway. Survey information and the outputs of hydrological studies are being fed into detailed computer models to estimate flows and water levels in rivers and coastal areas under a range of different conditions.

FLOOD RISK ASSESSMENT & MANAGEMENT

Flood risk assessment is the process of assessing and understanding flood risk. It involves predicting the extent of flooding in an area and assessing the risk to receptors (people, property, the environment, the economy and cultural heritage) in the predicted flood area.

Flood risk management is about managing the risks to receptors that were identified during flood risk assessment.

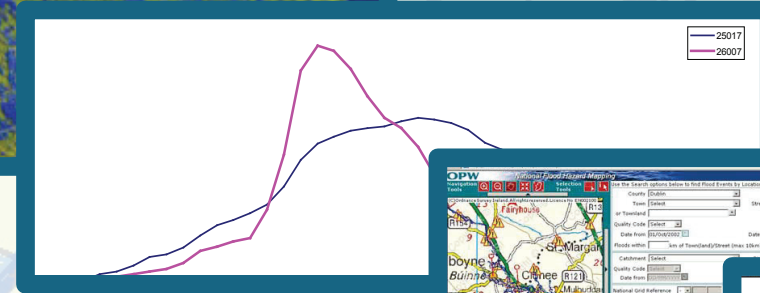
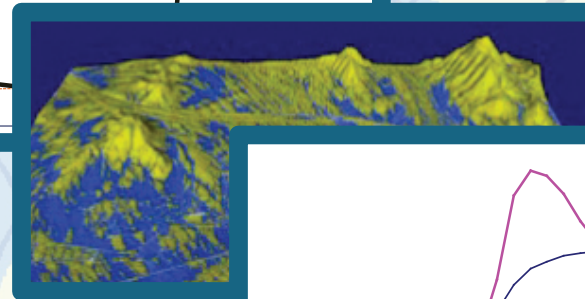
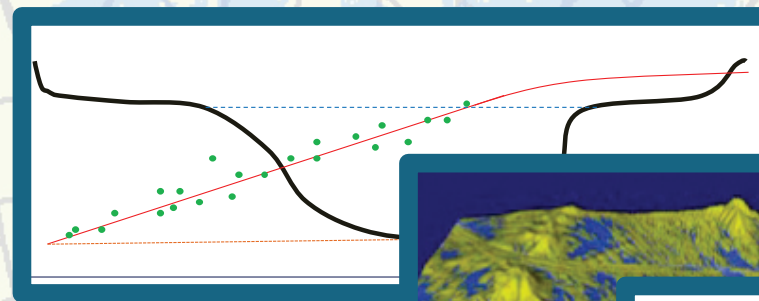
The first step in the process of flood risk assessment and management is to predict the quantities of water moving through river systems or coastal areas under different conditions, for example, during periods of heavy rainfall or during extreme tidal levels. This is achieved by carrying out hydrological studies. These studies take all of the recorded data available, both meteorological (the amount of rain that has fallen) and hydrometric (measurements of the shape of the river channel and the level of water within it), and use a variety of scientific methods to estimate flows and water levels in rivers and coastal areas for a range of different conditions.

The next step uses computer models to predict how and where flooding is likely to occur. Physical characteristics of rivers, floodplains and coastal areas (such as elevation and shape) generated from land-based and airborne surveys are fed into the computer models. Data from the hydrological studies on the quantity of water moving through the river systems or coastal areas under different conditions is also fed into the models. The models can then be used to predict flooding and produce maps of where flooding is likely to occur and what receptors are likely to be affected by the flooding. Data on real flood events is used to verify that the flooding predicted by the models is accurate. This is achieved by feeding all of the information related to a flood event into the model and comparing the predicted flooding with the flooding that actually occurred.

Once the flood risk is understood, work can begin to develop flood risk management measures to deal with the identified flood risk. These measures can include 'structural' measures that block or restrict the pathways of floodwaters (for example building walls and embankments alongside river channels or erecting rock armour in coastal areas) or non-structural measures aimed at reducing the vulnerability of people and communities to flooding (for example flood warning systems, effective flood emergency response procedures, or flood resilience measures).

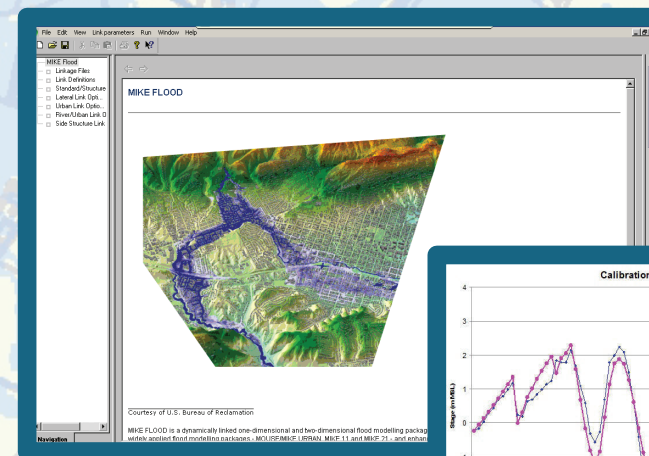
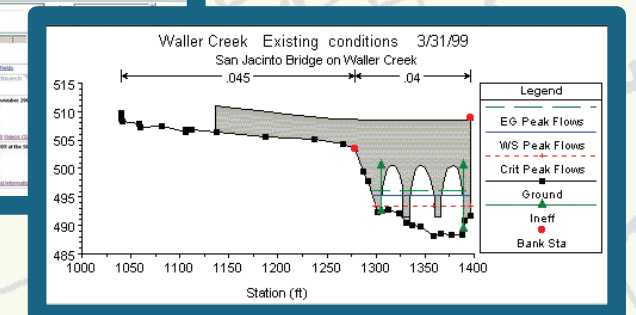
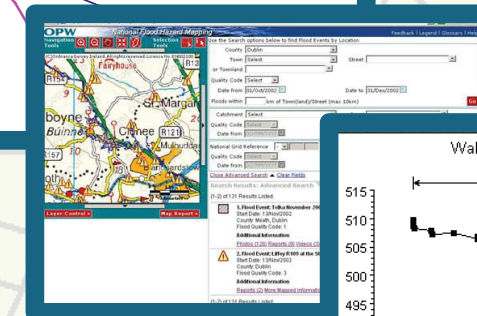
The models can then be used to predict the effectiveness of the flood risk managements measures. For example, the details of proposed walls or embankments can be fed into the models to predict whether or not they would be effective at preventing or reducing flooding.

This process described above contributes to the choice of preferred flood risk management options which will be included in Flood Risk Management Plans which will be published in 2016.



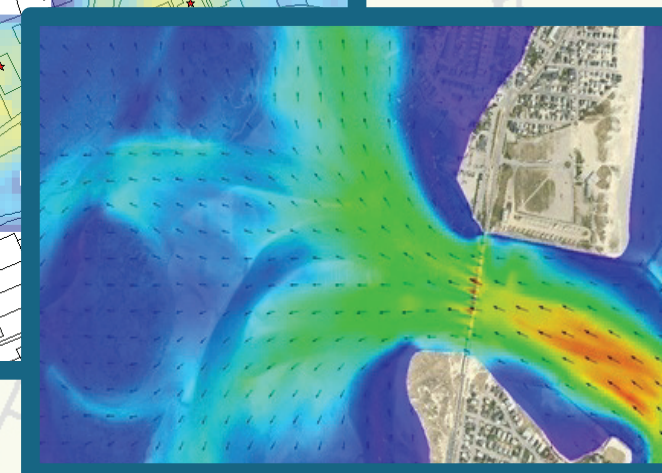
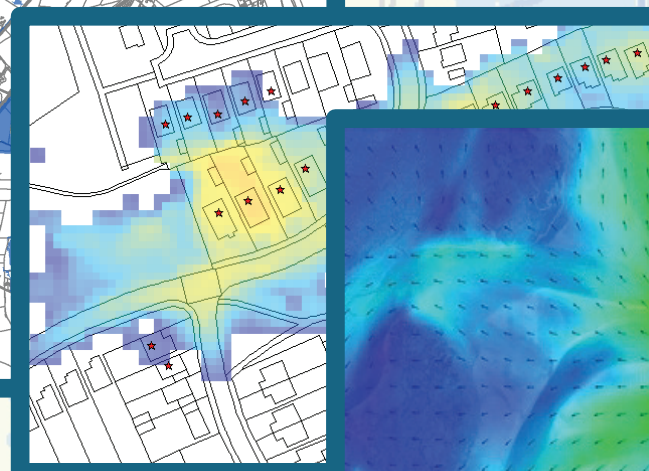
BUILDING A RIVER MODEL

Details of the physical characteristics of a river channel and its surrounding floodplain (such as channel shape and roughness, floodplain topography, and details of structures such as weirs, bridges and walls) and the hydrological characteristics of the river (such as the relationship between water level and flow in the river channel) are fed into specialised modelling software to produce a computer model of the river system and its catchment.



FLOOD PREDICTION

The computer model of the river system and its catchment is used to predict whether or not flooding will occur under a range of different weather and catchment conditions. Recorded data on real flood events is used to ensure that the model is accurately predicting what would happen under various conditions.



FLOOD MAPPING

Flood maps are produced to illustrate the model predictions. Maps can be produced to illustrate a variety of different aspects of flooding including the extent, depth and velocity of the flooding and the level of hazard associated with it. The maps can also illustrate the receptors within the floodplain including social (homes and hospitals), environmental (nature conservation sites), cultural heritage (archaeological and architectural sites) and economic (residential and commercial properties, agricultural land and transport and utility infrastructure) receptors.

CONSULTATION ON THE FLOOD MAPS

Draft flood maps for each of the Areas for Further Assessment (AFAs) in the North Western - Neagh Bann CFRAM Study area will be completed by July 2014.

A period of stakeholder engagement and public participation will be undertaken between July and December 2014. Public consultation days will be held in key locations throughout the districts and all interested parties will be invited to attend to discuss the mapping with members of the study team, the Local Authorities and the OPW.

The public consultation days will be announced in the media and will be promoted locally. If you would like to be notified directly, please contact the study at the address provided below and let us know what AFA(s) you are interested in.

Stakeholder comments in relation to the draft flood maps will be used in the finalisation of the maps.

STUDY CONTACT DETAILS

Queries or submissions can be made at any time by email, in writing, or via the national and project websites. Contact details are as follows:

Katie Smart
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Enterprise Business Fund Centre
Letterkenny
Donegal
Email. nwnb@cfram.com
Web. www.northwestcframstudy.ie
www.neaghbanncframstudy.ie

STUDY PROGRESS

- Survey work within the district to collect detailed information on the physical characteristics of the rivers and floodplain in the North Western and Neagh Bann districts to be fed into the computer models is complete.
- The development of hydraulic models is underway in the AFAs. All of the AFA modelling and flood mapping will be completed by mid 2014 in all AFAs.
- Discussion is ongoing between Irish and Northern Irish authorities with respect to coordination of flood risk management planning activities and sharing of information.

