

## Where we are at

The channel and structure cross sectional survey is still in progress and should be completed by the middle of June. The survey of the Lower Lee (downstream of Inishcarra Dam) and its tributaries is now complete. The rivers being surveyed in the next few weeks include the Upper Lee and Sullane, Glashaboy, Owenacurra and Bride (north of Cork city). We appreciate your ongoing cooperation with the surveyors as they continue their work in the catchment.

In June, an additional survey of defence assets will be carried out in Middleton, Aghada, Whitegate and Crosshaven. The 6km of survey will be done both on foot and using boats and will last approximately one week.

The main focus of the study in the next few months will be the computer modelling of the rivers in the catchment, highlighted in our Focus On section this month. The hydrological assessment of the rainfall and runoff from the catchment (see the Focus On section in the February newsletter) is progressing and the results from the assessment will be used with the computer models to estimate the water levels in the rivers.

## Next issue

In the next issue of the newsletter we will provide a quarterly review of our progress. We will also be focussing on the potential future climate change and land use change in the catchment and how they may impact on the flood risk.

The next issue of the newsletter will be available at the end of June.



River Lee from Dromcarra Bridge near The Gearagh

## Contact details

If you have any questions or require any further information relating to this study or if you would like to be included on a distribution list for future issues of this newsletter please email [LeeCFRAMStudy@opw.ie](mailto:LeeCFRAMStudy@opw.ie)

Further information is also available on our project website at [www.leecframs.ie](http://www.leecframs.ie)

Tivoli Docks in Cork City



# LEE CATCHMENT FLOOD RISK ASSESSMENT AND MANAGEMENT STUDY

Newsletter - 09  
May 2007

**Halcrow**



## Introduction

Welcome to the ninth edition of the Lee CFRAM Study Newsletter. The flood risk assessment phase of the project is ongoing with the hydrological assessment nearing completion and the computer modelling of the rivers in the catchment now under way. Our Focus On section provides information on the computer modelling of the rivers in the catchment.

Our Environmental Scoping Report is now available on our website. Your comments on the report are invited until 8 June 2007.

Don't forget you can keep up to date on the progress of the project by visiting our project website at [www.leecframes.ie](http://www.leecframes.ie).

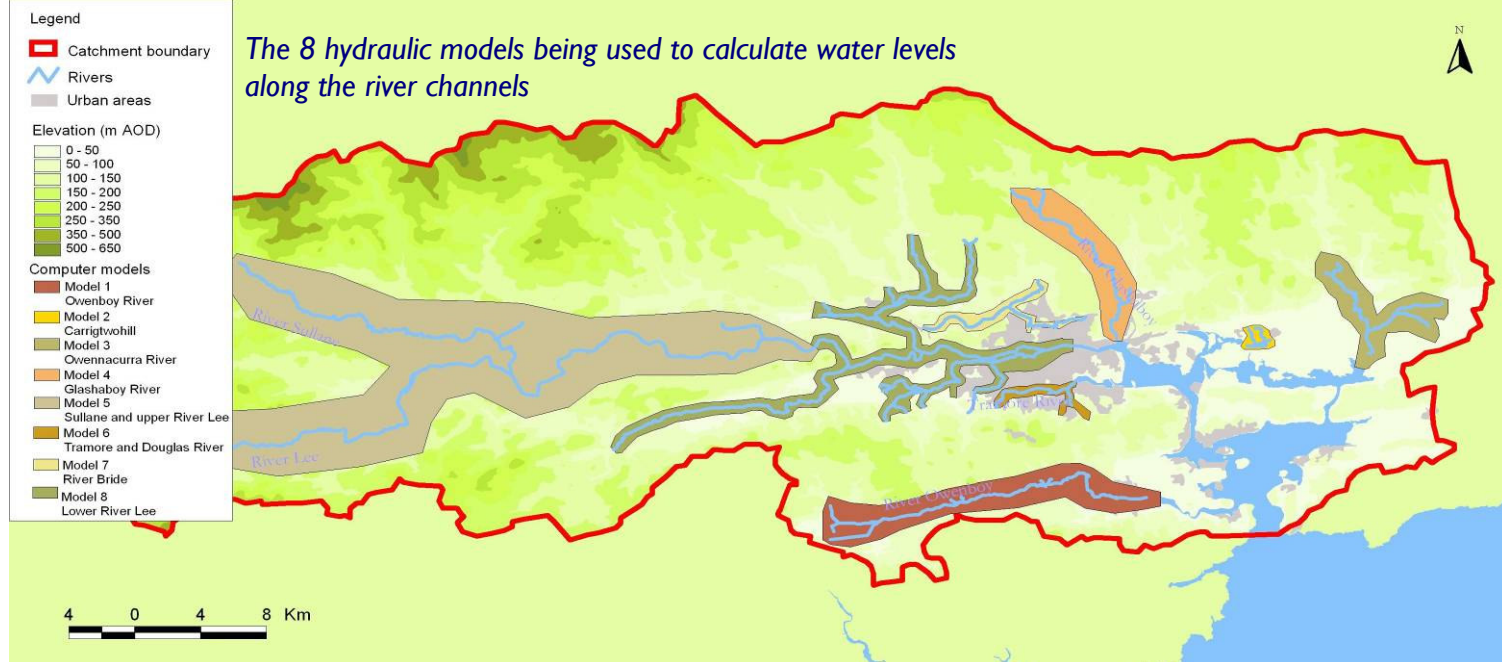
## Focus On

### Computer modelling of rivers

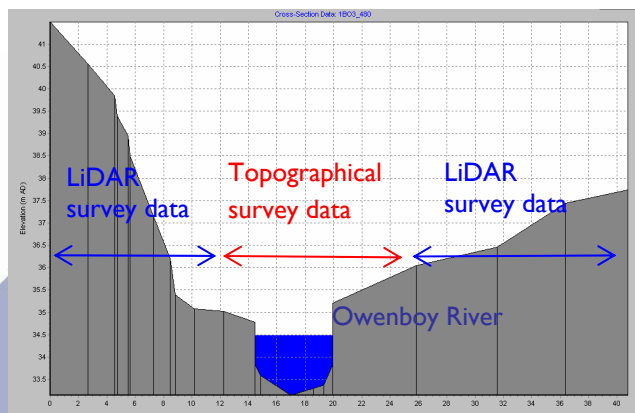
This description of the hydraulic modelling of the rivers (including lakes and reservoirs) carries on from our focus on the hydraulic modelling of Cork Harbour in the March edition of the newsletter.

The hydraulic modelling of the rivers involves using 1 dimensional (1D) flow and 2 dimensional (2D) flow computer models to solve advanced mathematical equations to calculate water levels along the river channel and floodplain for various flow events. The water levels calculated by the model will be used to map the extent of flooding along the watercourses for flood events of various magnitudes. Information on this flood mapping will be available in a future edition of the newsletter.

The 1D and 2D models of the river channel and floodplain are being developed using the channel and structure cross section data being surveyed by Maltby Land Surveys together with a digital



terrain model (DTM) of the floodplains. The DTM was created from a LiDAR (Light Detection and Ranging) survey along the river channels and floodplains. The LiDAR survey was carried out by an aeroplane using a special measuring device to provide detailed information on the shape and height of the ground around the catchment. An example of a cross-section from the Owenboy hydraulic model is shown below. The cross-section contains both topographical survey and LiDAR survey data.



The extent of the river models is shown on the map above. Eight separate hydraulic models of the rivers in the catchment are being developed. The 2D flow modelling will be used in complex urban areas, such as Cork City, which would be difficult to represent in a one dimensional manner.

In order to ensure the models are working correctly, they will be checked against known flood events and levels. We will use the information collected about these flood events, including descriptions of the flooding together with recorded rainfall, river flow and tidal data to reproduce the flooding which occurred using the hydraulic models.

The impact of climate change on river flows will also be assessed and details of this will be available in next month's edition of the newsletter.

Further information on the results of the modelling will be provided in later editions of the newsletter.