

## Quarterly Review

Since our last quarterly review (Newsletter 07 – March 2007) the project teams have been making good progress on a number of different aspects of the project.

The majority of the channel and structure cross sectional survey has been completed. The project team would like to thank you for your co-operation with the survey teams over the last 4 months. We would also like to thank the Gresham Metropole Hotel, Cork and Cork Airport & Flying School for the provision of secure facilities for technical equipment to Maltby Land Surveys.

The defence asset survey has been completed with an additional 6km of defence assets surveyed around Cork Harbour. The data gathered during the survey is being uploaded to a newly developed defence asset database. A detailed topographical survey of the defence assets is required to complete the database. This survey will be carried out by Maltby Land Surveys over the next three months.

The hydraulic modelling phase of the project is well under way (please see the March and May newsletters) with the computer model of Cork Harbour almost complete.

Our Environmental Scoping Report has been published and is available to download on our website. Comments are invited on this report until the 20 July.

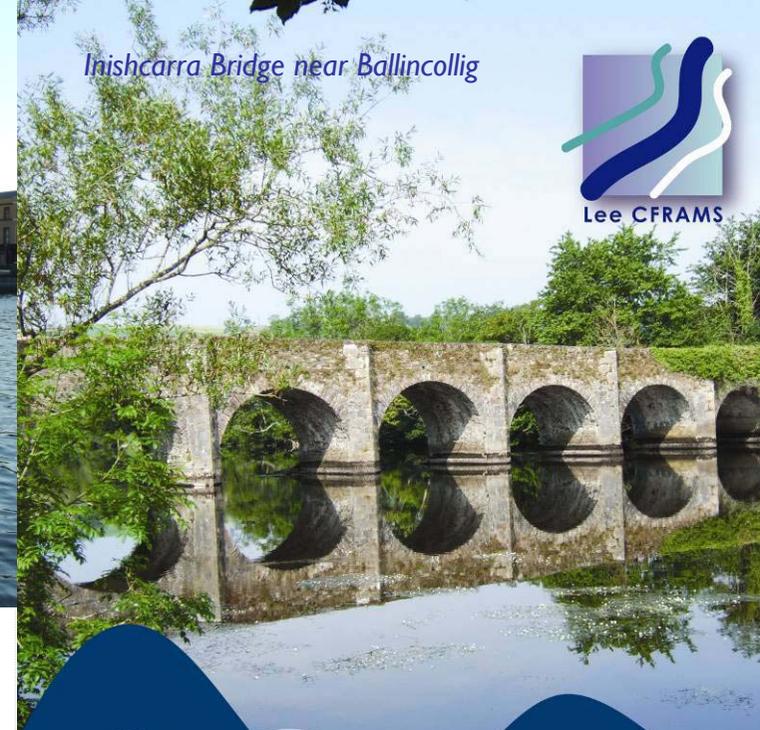
### Next issue

In the next issue of the newsletter we will be focussing on the EU Floods Directive. This will have a significant impact on the way flood risks are managed in Ireland in the future. The next issue of the newsletter will be available at the end of July.

City Hall in Cork City



Inishcarra Bridge near Ballincollig



### 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)

## LEE CATCHMENT FLOOD RISK ASSESSMENT AND MANAGEMENT STUDY

Newsletter - 10  
June 2007

**Halcrow**



## Introduction

Welcome to the tenth edition of the Lee CFRAM Study Newsletter. In this month's newsletter we focus on the impacts of climate change and land use changes on flood risk in the Lee Catchment.

We also provide a quarterly review giving a brief summary of the project work that has been undertaken over the last three months.

The deadline for comments on our Environmental Scoping Report has been extended to 20 July. The report is available to download from our website [www.leecframs.ie](http://www.leecframs.ie). Comments can be sent via the feedback form on our website or by email to our project email address at [leecframstudy@opw.ie](mailto:leecframstudy@opw.ie).

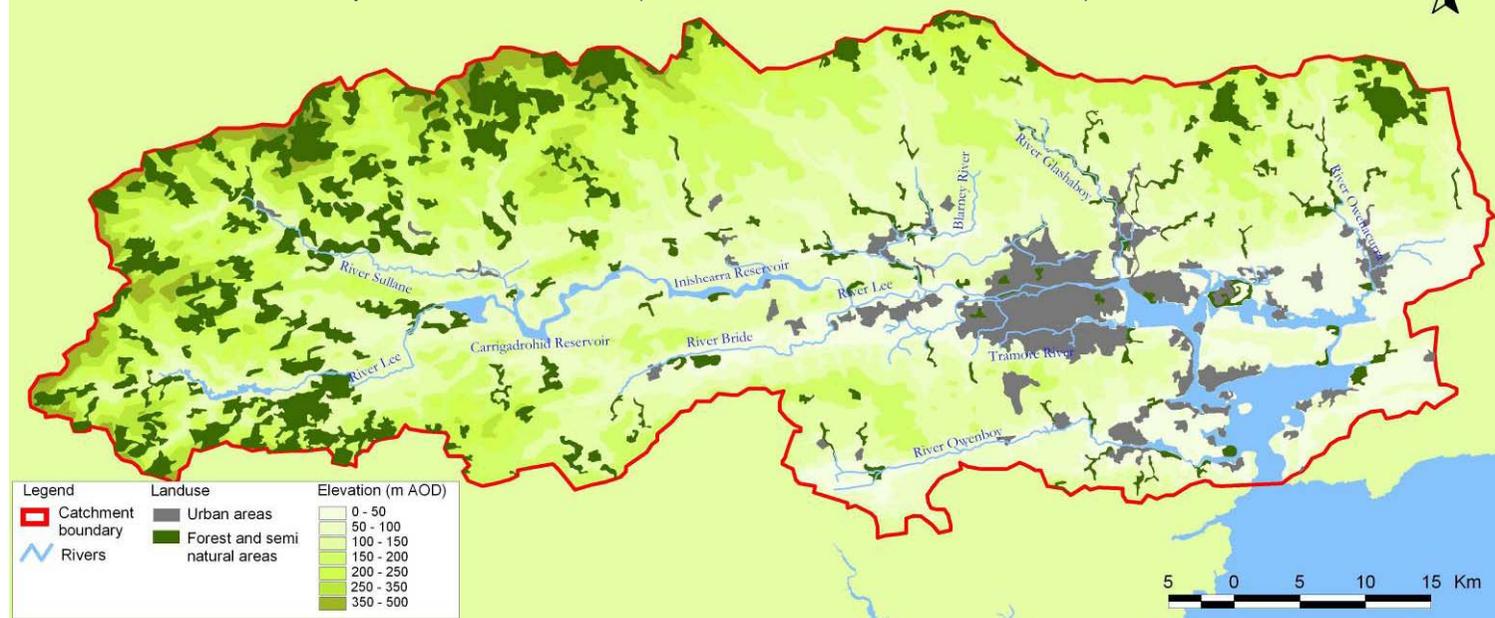
## Focus On

### Climate change and land use changes

There are a number of drivers that are likely to influence future flood risk in the Lee catchment, including changes in climate and land use, and urban growth. As these drivers are likely to change over time it is important to appreciate how they could affect flood risk in the Lee catchment. The probable changes to these drivers up to 2100 have been assessed and included in a 'most likely future scenario' for the catchment. This scenario will be used to identify the future flood risk in the catchment.

Climate change refers to the change in the earth's global climate or in regional climates over time. An extensive quantity of research exists both internationally and in Ireland. Recent publications include the Intergovernmental Panel on Climate Change (IPCC) 4<sup>th</sup> Assessment Report (February 2007) and the Irish Committee on Climate Change Report by the Royal Irish Academy (RIA) (February 2007).

Urban areas and forestry in the Lee catchment (Source: EPA Corine land cover, 2000)



Uncertainty remains with respect to future climate conditions, however current research indicates that climate change will cause an increase in rainfall depth and intensity and a rise in sea levels. An increase in rainfall depth and intensity will lead to bigger flows and higher water levels in the catchment rivers and lakes. A rise in sea level will result in higher water levels in Cork harbour and the lower River Lee (downstream of the waterworks weir).

The amount of rain which makes its way into watercourses is directly related to the use of the land around the catchment. Land use changes can result in an increase in the flows and river levels in the catchment watercourses. Flood risk will also be increased by isostatic subsidence which is causing ground levels in the south of Ireland to gradually fall as they recover from the ice age.

The map above shows the distribution of forestry and urban areas in the Lee catchment. Urban development increases runoff rates and volumes, as impermeable surfaces causes the transfer of

water to watercourses more quickly than rural and undeveloped lands. In the future the extents of urban areas are expected to increase as population rises. The impact of this urbanisation on flood generation in the catchment will depend on the spatial distribution of this urban growth.

Forestry cover is expected to rise over the next century. By 2035 it is expected that 17% of the Lee catchment will have forest cover (Forest Service, 2006). The impact of afforestation on flood generation varies over time. Once the forest has reached maturity, which takes approximately 20 years, it will help to reduce the peak flow and flood response in the catchment watercourses.

The impact of both climate change and land use changes is being assessed through our hydrological analysis and hydraulic modelling. Flood risk management measures will be assessed for future adaptability to ensure that future flood risk can be effectively managed.