

## **IRISH NATIONAL HYDROLOGY CONFERENCE 2012**

**Tuesday, 13<sup>th</sup> November 2012**

### **INTRODUCTION**

The joint National Committees of the International Hydrological Programme and the International Commission on Irrigation and Drainage have the pleasure of inviting you to participate in the 13<sup>th</sup> annual Irish National Hydrology Conference to be held on Tuesday 13<sup>th</sup> November 2012 in the Tullamore Court Hotel. The conference provides a unique forum for attendees to share policy developments, research results, and practical solutions to engineering hydrology issues. This year's conference encompasses a wide range of developments in the fields of surface water and groundwater hydrology.

### **MAIN TOPICS**

The conference will address a wide range of issues relating to hydrology and will draw on novel approaches in all aspects of hydrology, including:

- River Catchment Flood Risk Management
- Water Resource Management
- Groundwater Hydrology
- Forecasting Methods
- Eco-hydrology and Environmental Issues
- Case Studies

The papers to be presented will demonstrate how the outcomes of recent hydrological research are being implemented by practitioners

### **ORGANISERS**

#### **International Hydrological Programme (IHP)**

The UNESCO international scientific co-operative programme in hydrology and water resources, the IHP, was established to act as a catalyst to promote co-operation and research in the management of water resources, an issue which had been identified as a significant limiting factor for harmonious development in many regions and countries of the world.

#### **International Commission on Irrigation and Drainage (ICID)**

The mission of the ICID is to stimulate and promote the development of the management of water and land resources for irrigation, drainage, flood control and river training applications, including research and development and capacity building.

## CONTENTS

### SESSION 1: HYDROLOGICAL DATA AND MODELLING

- 01 – New long-term rainfall averages for Ireland**  
Séamus Walsh (*Met Éireann*).....3
- 02 – Identification and management of flood risk to the national roads network.**  
Barry Hankin, Ross Bryant (*JBA Consulting*) and Vincent O’Malley (*National Roads Authority*).....13

### SESSION 2: FORECASTING AND COMMUNICATION OF RISK

- 03 – Post-construction monitoring of culvert crossings of watercourses in SACs**  
Patrick Purcell, Letizia Cocchiglia and Mary Kelly-Quinn (*University College Dublin*).....23
- 04 – Fish and Flow – Maintaining the balance between hydrometric uncertainty and aids to fish passage at flow gauging structures**  
Martin Dibley, Stewart Child (*HydroLogic Services Ltd.*), and Richard Iredale (*Environment Agency*),.....35
- 05 – Flows, sediments and hydraulic habitats: Interaction in a dynamic riverine environment**  
George Heritage and Sebastian Bentley (*JBA Consulting*).....47

### SESSION 3: IMPACTS OF LAND USE CHANGE

- 06 – Proposed reservoir safety legislation for Northern Ireland**  
David Porter (*Rivers Agency, NI*), .....58
- 07 – New standards and methods for validating coastal flood forecasting systems.**  
Mark Lawless and Clive Powis (*JBA Consulting*) .....67

### SESSION 4: WATER RESOURCES MANAGEMENT

- 08 - The Dodder catchment flood risk assessment and management study (CFRAMS)**  
Gerry O’Connell (*Dublin City Council*).....77
- 09 – Flood estimation in small and urbanised catchments in Ireland**  
Fasil Gebre and Oliver Nicholson (*Office of Public Works*) .....88