



Avoca, Co. Wicklow Flood Risk Assessment & Flood Zone Determination

AWN Consulting were commissioned to undertake a Flood Risk Assessment (FRA) on an existing residential development in Avoca Co. Wicklow. The site is located adjacent to the Avoca River.

This assessment was undertaken in accordance with the guidelines produced by the Department of the Environment, Heritage and Local Government (DoEHLG) - *The Planning System and Flood Risk Management Guidelines for Planning Authorities*, November 2009.

A full flood risk assessment was undertaken incorporating Stage 1 – Stage 3 as presented in the Guidelines. The initial Stage 1 assessment highlighted the need for a hydrological flood model to be developed for the site.

This was based on the historical flood maps, history of alluvium deposits, the location of the site within the flood plain and the photographic evidence which showed flooding of the site in January 2010.

The flood risk assessment involved Topographical Surveys, Hydrological Analysis and Hydraulic Analysis (Flood Model Exercise). Following this, hydraulic simulations were undertaken for the following scenarios:

- 1% AEP Flood Event (Extent of Flood Zone A)
- 0.1% AEP Flood Event (Extent of Flood Zone B)

DHI MIKE 11 1D computer modelling software was used for the hydraulic analysis. 1D models simulate the flow of water in one dimension only; along the direction of the river flow.

Following the hydraulic analysis the relevant flood zones were identified at the development site plus upstream and downstream of the site.