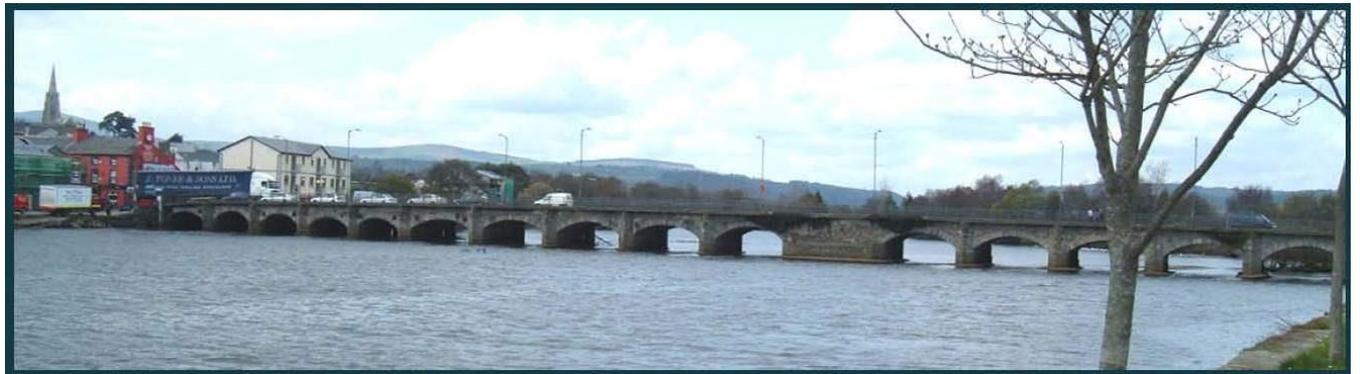


**Arklow flood Relief Scheme**

<b>Area of Work</b>	Hydrological Analysis, Hydraulic Modelling and Flood Mapping
<b>Name of Client</b>	OPW and Wicklow Co. Council
<b>Role of Service Provider</b>	Key Hydrology and Hydraulics consultant for all stages of this scheme Sub-Contracted by Byrne Looby Consultants
<b>Project Delivery Date</b>	2010 to 2018

**Project Overview:**

As a consequence of on-going flooding in the town from a combination of fluvial flooding from the River Avoca and tidal flooding a Flood Relief Scheme for the town was commissioned by the OPW and Wicklow Co. Council.



**Key Details:**

Detailed Hydrology Assessment of the flooding from the Avoca Catchment was performed to determine the magnitudes of the return period Flood Events and flood hydrographs for input to the Hydraulic Modelling. Tidal flood analysis and combined tidal-fluvial analysis was performed to estimate the different return period combinations for input to the design.

Two-dimensional hydraulic modelling using TELEMAC2D of the Arklow River Reach was carried out to assess the afflux generated by the existing 18 arch Arklow bridge and to assess its stability in respect to hydraulic load and scour effects during design flood events. The TELEMAC model was also used to examine a range of flood relief options, predict hydrological impacts and prepare flood inundation mapping. The flood inundation maps were prepared for each return period using the topographical, lidar and doorstep survey data of the Arklow town area. The hydraulic modelling was also used to support the proposed Arklow Sewerage Scheme which involved some encroachment into the river channel by a proposed sewage pipeline for Wicklow County Council.

As part of the study a series of flood relief options were developed by firstly considering the full range of flood relief Measures from do-nothing scenario, do-minimum scenario to a range of structural and non-structural measures including the flood warning, catchment management, river diversions, flow reduction, improvements in channel conveyance, flood defences, etc. All of these measures were assessed in relation to hydraulics and hydrology, environmental constraints, preliminary cost benefit and health and safety. Climate change adaptation was also considered in the modelling both sea level rise and increased flood severities.

The project has been approved by An Bord Pleanála in 2022 and is proceeding to detailed design and construction.