Naas
Flood Relief Scheme

Public Engagement
Day No.1

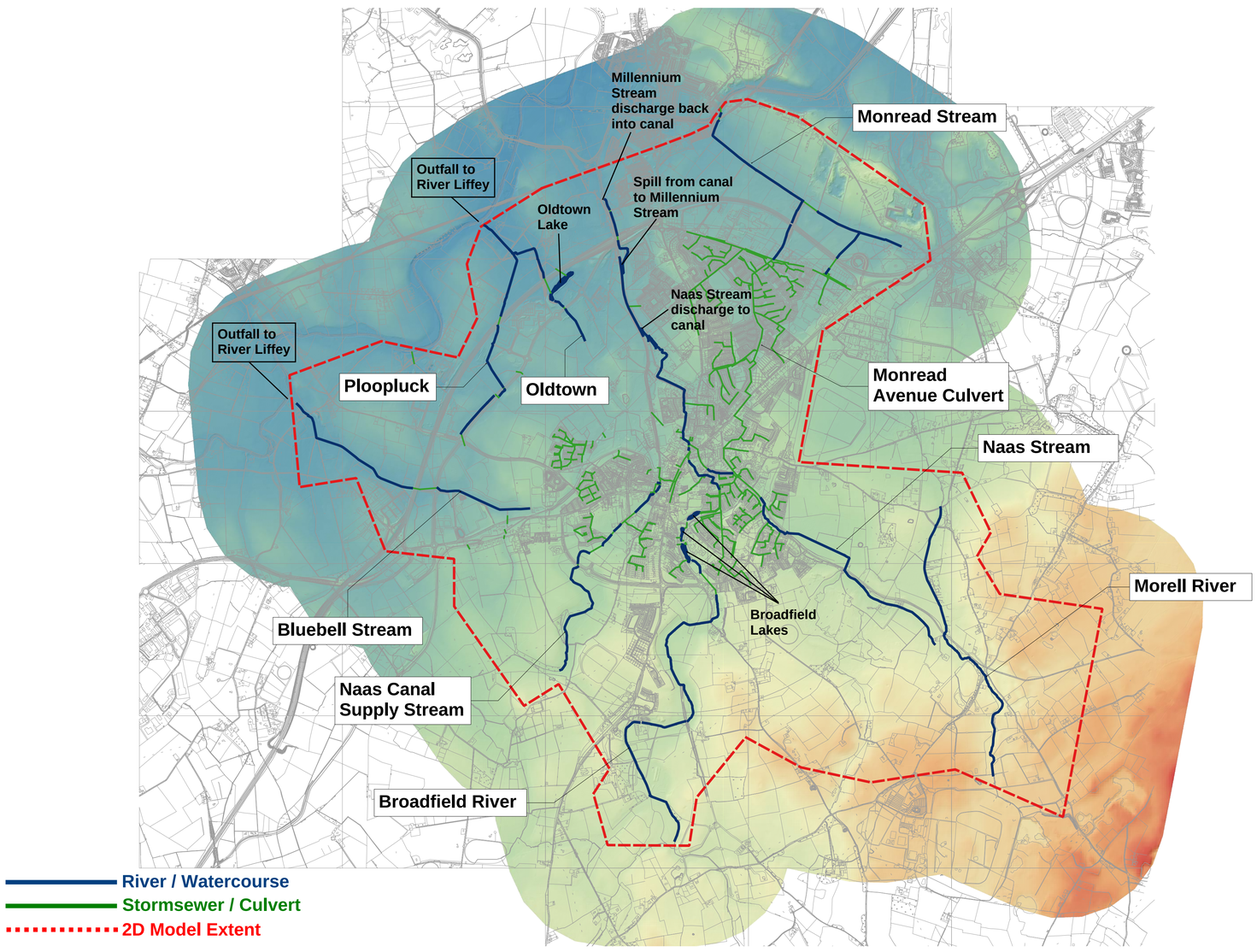
Board
04

Hydrology and Hydraulic Modelling Flood Extents

What is hydraulic modelling?

Hydraulic modelling is the use of mathematical equations and engineering principles to give a representation of hydraulic systems, such as a river catchment or sewer network. They are used to understand the behaviour of the system in different conditions, such as large storms and future climate change scenarios. Models estimate a range of parameters including the flow, water level, and velocity in river channels and piped networks.

Figure: Catchment Overview



Why we do it?

We use hydraulic models to understand the flood risk within a catchment. We use them to indicate potential flood pathways and flood extents, and to highlight parts of the catchment that are at risk of flooding. We also use models to assess how flood risk may change in the future, for example as a result of climate change.

Models are also used to design and analyse engineering works to mitigate flooding. Being able to assess a range of potential schemes in the model, for a range of conditions, gives engineers and local planners more confidence in the feasibility of a scheme before it is constructed.

We can also use the outputs of hydraulic models to estimate the economic impacts of flooding and assess the cost-benefit of proposed flood relief schemes.

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