

Further information:

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Project Description number:

EVY0412

Project Type

Flood Risk/Consequence Assessment

Flood Forecasting

Detailed Design

Calibration & Optimisation

Flood Map Challenges

Scour & Geomorphology

Water Framework Directive

Environmental Impact Assessment

Training

Key Words:

Hydraulic modelling – ISIS TUFLOW

SFRA

Client and stakeholders:

Phoenix Design Partnership

Dursley – Long Street, Flood Map Challenges

Edenvale Young Associates were commissioned to carry out a hydraulic modelling work to support a re-analysis of the Strategic Flood Risk Assessment (SFRA) model results in Dursley, to a proposed development site located on Long Street.

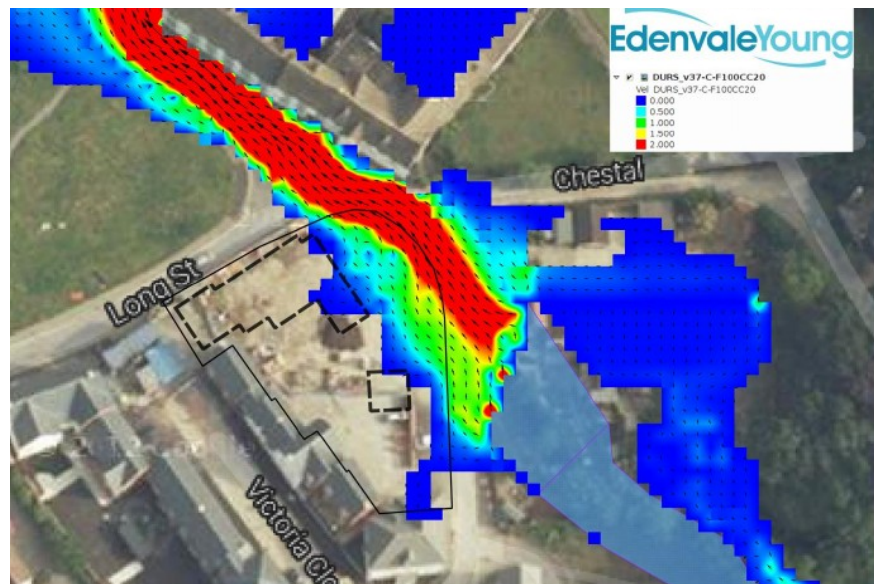


Illustration 1: Model results, max velocity for 100 years plus 20% climate change event

Project Details

The proposed development site is located at the northern most point of Long Street, referred as site 314. The involved watercourses are the River Ewelme and Water Street Brook. Based on the most recent SFRA, site 314 is partially located within Flood Zone 3, i.e. at risk of flooding during a 1-in-100 year event or greater. However further hydraulic modelling work has been requested due to the perceived uncertainty associated with the existing outlines.

The channel presents key features hence flood risk is drastically increased:

- blockage on Water Street;
- Lister street culvert.

The existing Environment Agency's 2D model has been converted to a

1D-2D ISIS TUFLOW model. It was also observed that the terrain data used in the SFRA model was not of the best quality and therefore a new terrain data set has been used. Moreover, the applied inflows in the SFRA model were found significantly higher compared to FEH and REFH calculation methods. The Flood Hazard has been developed. It take into account the depth of the flooding as well as the velocity of the flooding.

The model results shows the site is completely outside of Flood Zone 3B but at risk of flooding during a 1000 year event. It appears that the hazard risk at site 314 indicated by the SFRA has been overestimated.