

### Coastal & Fluvial Breach Modelling

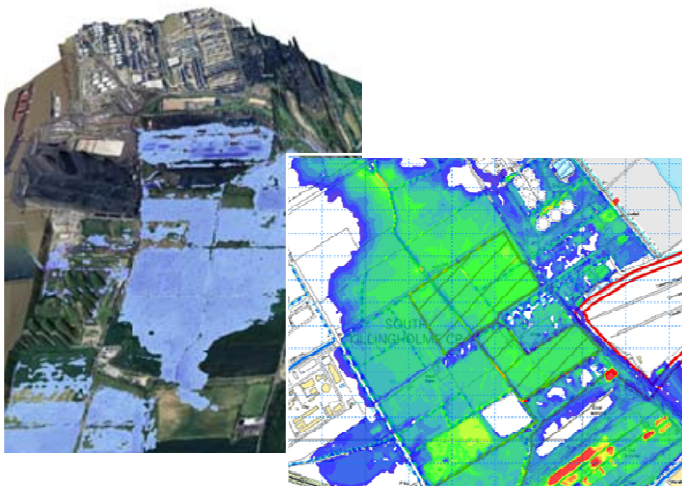
Increasingly the Environment Agency (EA) requires breaches of coastal and river defences to be investigated as part of the flood risk assessment process.

Waterco is one of the UK's leading flood risk consultancies and has established an excellent track record of producing site specific breach assessments aimed at evaluating the flood risks to new developments from breaches in existing defences.

Our technical expertise and in depth knowledge of our flood modelling software allow us to produce accurate flood models efficiently and at a competitive rate.

We pride ourselves on our level of service and could offer you the following benefits:

- Quick response
- Fixed price quote
- Good track record and experience
- Cost effective solutions



Following detailed discussions with the EA to agree the specific model parameters, a Digital Elevation Model (DEM) of the subject area and existing flood defences is developed from a combination of high resolution LiDAR data and site specific level data.

Using predicted peak water level data, usually supplied by the EA, a series of overland flow simulations are run to evaluate the flood risk associated with potential failure of vulnerable flood defences in close proximity to the development. The effects of climate change are also taken into account as appropriate.

The results of these simulations are used to predict the extent and depth of the flooding at the site in addition to detailed information on the rate of rise and speed of onset. Using these results Flood Hazard Rating maps are generated, allowing the specific flood risk to people and properties to be fully appraised.

Our comprehensive modelling reports provide you with a detailed description of the methodology and parameters used, analysis of results and discussion as to the impact such breaches could have on the proposed developments and potential risk to future residents.

Powerful visualisation tools are used to turn the simulation results into impressive 3D animations allowing you to effectively communicate the flood risks and hazards to the rest of your team, your clients and stakeholders.

All our models are constructed using industry standard hydraulic modelling software (MIKE, ISIS, TUFLOW) which are used and accepted by the EA.

For more information please contact us or visit our website:

[www.waterco.co.uk](http://www.waterco.co.uk)

### Recent Breach Assessment Projects

#### *Garden City, Flintshire*

Breach assessment in support of flood consequences assessment for proposed development in close proximity to potentially vulnerable flood defences. Simulation results and subsequent recommendations demonstrated that, given adequate mitigation measures, the flood risks at the site are acceptable.

#### *Immingham Docks, North East Lincolnshire*

Assessment of flood risk at site from 20m breach in existing defences. Range of breach locations simulated to identify critical scenario. Detailed hazard mapping study in accordance with latest EA/DEFRA guidelines 'Flood risks to People'.

#### *Canvey Island, Thames Estuary*

Breach Assessment in support of Planning Application as requested by EA. Assessment of potential flood risk at the site resulting from 20m breach in existing flood defences during an extreme tidal event (5% aep + CC). MIKE21 software used in conjunction with EA LiDAR data.

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