

ISIS Mapper

Flood analysis and visualisation software



Cost-effective integrated modelling solutions.

ISIS Mapper is an analysis and visualisation tool for spatial data. It is designed to be compatible with ISIS and TUFLOW model data, enabling these to be viewed interactively alongside other GIS data.

Users are able to produce flood maps and animated flood sequences. Modellers can extract information from spatial datasets to use in model building.

ISIS Mapper is compatible with many commonly used GIS data types and provides both two and three-dimensional viewing options to enable the most appropriate level of interaction for your needs.

Flexible colour legends and hill shading assist with visualisation of fine detail in complex datasets such as LiDAR ground models.

Images, such as digital maps and aerial photographs, can be viewed in two dimensions or draped over surface grids to create a three-dimensional view.

ISIS Mapper supports the generation of water surfaces from both ISIS and TUFLOW model results. Assigning one-dimension model results to an ISIS Mapper native triangular network and interpolating enables points to be mapped onto a three-dimensional surface. Displaying this data in conjunction with other GIS data allows the creation of flood maps. These can then be used to show property

locations and how they interact with floodwater as levels vary over time.

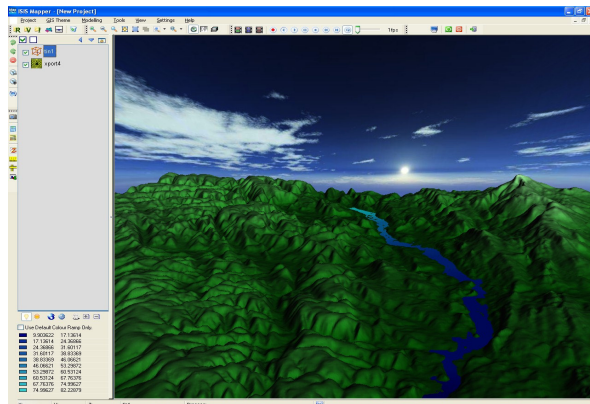
ISIS Mapper is included as a free visualisation tool within ISIS Professional and ISIS 2D at no extra cost. It is also included within ISIS Free, so it can be used to help build new models and view or process model outputs in parallel with simulations run on other computers.

Key features

- no additional software required to build a model in ISIS Professional and or ISIS 2D
- enables 2D model building from spatial data
- ability to view ISIS and TUFLOW model results, including ISIS binary results (ZZN), ISIS TabularCSV, ISIS 2D and TUFLOW output scalar data, such as flood depth grids and ISIS 2D and TUFLOW output vector data, such as velocities
- create river cross sections and extend surveyed cross sections onto the floodplain
- create 'reservoir' and 'spill' units
- create animations from ISIS or TUFLOW model output data overlaid on GIS map layers
- the ability to view various GIS data, including grids (FLT, ASCII grids and ESRI), images (TIFF, GeoTIFF and JPEG) and vectors (ESRI Shapefiles, CSV point data and ISIS Mapper native triangular network)

Links to Google Earth

ISIS Mapper can export flood mapping outputs directly into Google Earth format. This provides further options for visualising and sharing results.



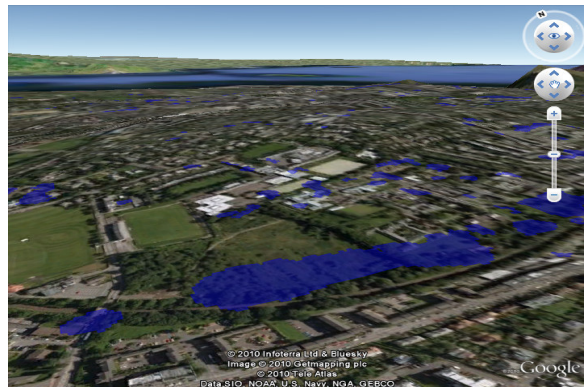
Delivering value – case study

■ River Forth flood mapping, Stirling, Scotland

ISIS Mapper was used to develop flood extent maps for Stirling Council in Scotland.

The study was carried out using models of the River Forth, River Teith and the LiDAR survey data, to give an indication of flood extent and depth.

The study was carried out to aid individual property owners to deal with the risk to their property from flooding and to take measures to protect their homes. These maps will also benefit the Planning Authority in determining areas for future development.



During the project, river flow rates, water levels and tidal levels were analysed. Ground-elevation data was also improved using topographic and LiDAR surveys.

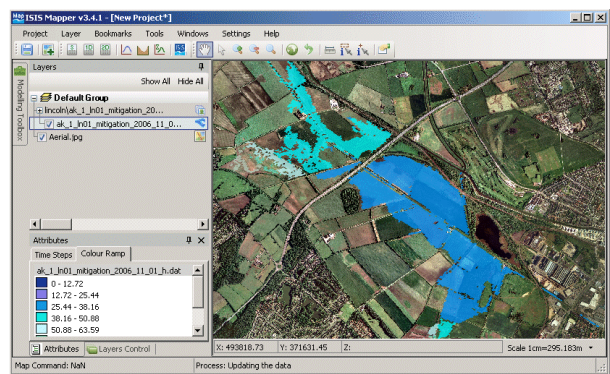
Extensive hydrological analyses were carried out to evaluate river flow rates under flood conditions.

Statistical methods and rainfall-runoff methodologies from the *Flood Estimation Handbook* were used to establish extreme flow rates using up-to-date data from the Scottish Environment Protection Agency.

A one-dimensional ISIS Professional model was developed and adapted to calculate water levels along the various river reaches. ISIS Mapper then used the flood levels to construct detailed, accurate flood-extent maps.

ISIS Free

Use ISIS Free on your projects at no cost. It's free to download and offers an integrated 1D and 2D modelling software tool, incorporating the full features of ISIS Professional and ISIS 2D. This enables you to model smaller projects of up to 250 1D nodes and 2,500 2D cells.



The ISIS graphical user interface and ISIS Mapper are also included in ISIS Free and can be used to build hydraulic models, analyse results and visualise model outputs.

ISIS Free can be downloaded from www.halcrow.com/isis.

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