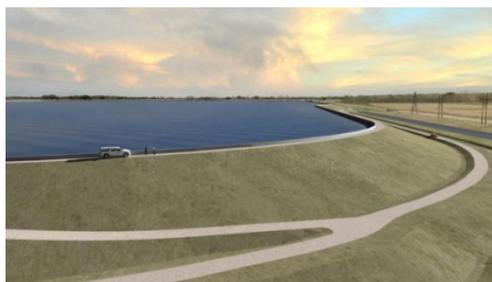


Flood Modeller 2D TVD Solver

Accurate, stable and smoother two-dimensional flood modelling

The Flood Modeller 2D TVD (Total Variation Diminishing) solver has been developed to provide accurate representation of two-dimensional 'shocks'. It allows complex hydraulics to be calculated more accurately and provides increased stability compared to other solvers.



The TVD solver was used as part of the Lower Colorado River Authority Lane City Reservoir dam breach model in Texas, USA.



The TVD solver was used as part of a breach analysis of Cobbinshaw Reservoir for British Waterways in Scotland.

Flood Modeller features three 2D solvers for a range of applications – the TVD solver is primarily applied where super critical flows are likely to occur. However, it's also capable of modeling sub-critical flow.

Our software's user-friendly interface provides an intuitive environment for building, running, and analysing 2D models. It is regularly used throughout the world for modeling dam breach, very steep catchments, or flow down spillways.

The TVD solver enables flood risk and flood hazards to be confidently understood and the impacts on people, property and the environment to be assessed, and mitigation options to be tested.

For rapidly varying flow, where hydraulic jumps may occur, the TVD solver generates more stable and smoother solutions as it's particularly suited to modelling steep changes in velocity and water level.

The solver uses predictor and corrector steps to compute depth and flow at the new timestep. A TVD term is then added to the corrector step to remove numerical oscillations near sharp gradients – providing accurate, stable results.

Key features

- Available free – up to 100,000 2D cells!
- Allows complex hydraulics to be calculated more accurately – particularly useful with dam breaks and breaches in defenses
- increased stability within model simulations
- Provides quick, accurate and robust model simulations
- Incorporates a modern user interface that delivers an even more intuitive environment for building, running and analysing flood models
- Dynamic linking to the Flood Modeller 1D solver and third-party software, including US EPA's SWMM model
- The multiple domains module allows any number of 2D domains of different cell size and orientation to be built into a model
- Provides a range of analysis and visualization tools for spatial data
- Seamlessly loads flood extents as well as other shapefiles and images to Flood Viewer to easily share model results with others

Contact us

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