Flood Modeller

Integrated 1D and 2D modelling with a fully functional version available free

With a legacy stretching back 40 years, Flood Modeller's industry-leading 1D and 2D solvers allow users to seamlessly model rivers, floodplains and urban drainage systems, all within a user-friendly, GIS-like interface.

It provides users with a flexible and cost-effective range of tools for proactive decision-making to help manage our environment and the challenges associated with flood risk.

It is suitable for a wide range of engineering and environmental applications, from calculating simple backwater profiles to modelling entire catchments to mapping potential flood risk for entire countries.

With a legacy stretching back 40 years, Flood Modeller enables users to build and run models quicker and more intuitively than ever before. It includes a user-friendly interface, efficient workflows and robust model simulations for everyday use.
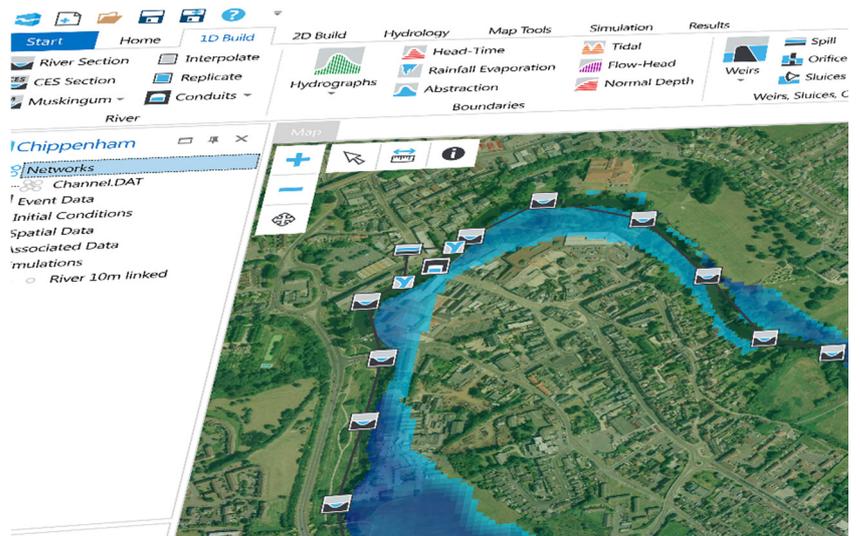
Flood Modeller is available at no cost and provides for 250 1D nodes and 100,000 2D cells. For larger projects, upgrade to Flood Modeller Pro, which is available to rent, with long-term licences also available.

Integrated with third-party software including the US EPA SWMM, Deltares' Delft-FEWS and BMT's TUFLOW, Flood Modeller allows users to incorporate elements of existing flood models and systems.

Our software provides a range of tools and features specifically designed to streamline the flood modelling process and automate repetitive tasks, saving you time and money.

Flood Modeller provides an intuitive environment for building, running and analysing flood models. It offers support for multi-screen working and web mapping services (WMS) – all intended to make your work more enjoyable.

Flood Modeller provides an open data file format and data structure, allowing users to incorporate bespoke tools and customised workflows which have been developed.

Flood Modeller can be used for a range of applications, including:

- Flood modelling
- Flood and hazard mapping
- Flood forecasting
- Hydrological analysis
- Embankment/levee failure
- Flood visualisation
- Dam breach analysis
- Options appraisal
- Economic analysis
- Detailed design
- Structure blockage
- Pipe modelling

Contact us

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JACOBS

Flood Modeller is developed by Jacobs, one of the world's largest and most diverse providers of technical, professional and construction services.

> "Flood Modeller allows users to fully customise their modelling experience, providing integration with third-party tools including the US EPA Storm Water Management Model."

Richard Crowder, Development Director for Flood Modeller at Jacobs
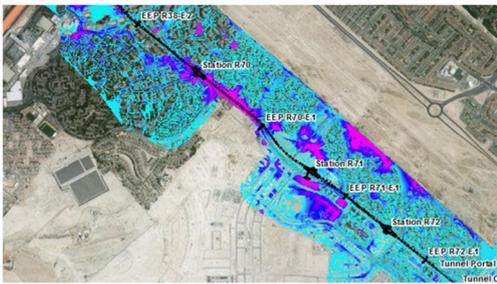
Floodplain mapping in Dubai, UAE
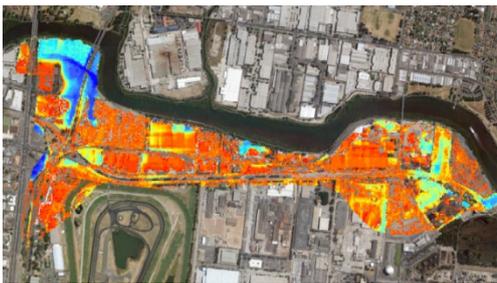
Floodplain mapping in Sydney, Australia

Subsurface drainage modelling using Flood Modeller-SWMM in Colorado, USA

Key features of Flood Modeller

- Available free - install it on as many computers as you like
- Provides a visually stunning user interface that delivers an intuitive environment for building, running and analysing flood models
- Flexible licensing structure, allowing you to upgrade individual modules and/or solvers as and when your project evolves
- Ongoing technical support and software maintenance
- Integrated GIS mapping, including a range of visualisation and analysis tools at no extra cost
- Share results with Flood Viewer to represent flood information in an interactive and user-friendly way
- Harness the power of cloud computing using Flood Cloud
- Provides a range of tools that are specifically designed to improve the user's overall productivity and efficiency
- Integration with third-party tools including the US EPA SWMM model, BMT's TUFLOW model and Deltares' Delft-FEWS system
- Integrated hydraulic structures and hydrological units
- Built on an open file system, Flood Modeller allows you to integrate your own workflows

Industry-leading solvers

At the core of Flood Modeller are its industry-leading 1D solvers that provide a comprehensive range of methods for simulating flows and levels in open channels, floodplains, reservoirs and estuaries.

Its steady and unsteady solvers are suited to subcritical, supercritical and transitional flow regimes which allow it to be confidently applied to applications, ranging from steep river flows to tidally influenced estuaries.

Flood Modeller also incorporates an integrated Muskingum-Cunge flow routing solver and a comprehensive range of hydraulic structures, including gates, abstractions and pumps operated by logical rules.

Flood Modeller also provides three advanced 2D numerical solvers, tried and tested on projects throughout the world for extensive hydraulic and environmental studies:

- First developed in the 1980s, the quick, accurate and robust Alternating Direction Implicit (ADI) solver can be applied to fluvial, overland, estuarine and coastal modelling problems where the flow is not rapidly changing
- Providing accurate and stable results for complex hydraulics, the Total Variation Diminishing (TVD) solver provides accurate representation of two-dimensional 'shocks' (rapid changes in water surface profile)
- The FAST solver enables rapid assessments of flooding, providing results up to 1,000 times quicker than traditional 2D solvers. It produces results in seconds or minutes, as opposed to hours or days

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