

# Flowroute™ Precision Flood Model

## Proven & flexible 2D+ precision flood model

Flowroute™ is a proven 2D+ flood model which was originally developed 10 years ago in close collaboration with scientists at Cambridge University, UK. Today Flowroute™ is employed throughout the world by major insurers, governments and other commercial organisations all of whom share a common need to better understand flood risk.

### Designed to handle complex urban environments

Designed specifically to simulate river and floodplain dynamics in complex urban and rural areas, as well as in the mountainous regions of Southern Europe, Flowroute™ is an exceptionally flexible, powerful, and easy to work with model. It enables rapid and stable simulation of complex river and coastal flood flows, delivering accurate depth and velocity modelling.

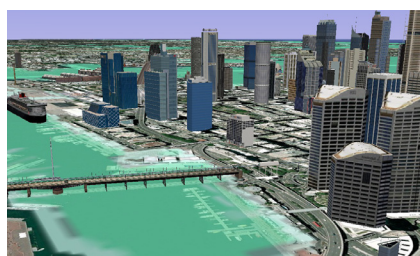
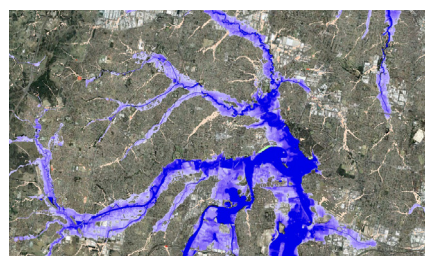
### Model with both outflows and defences - including breaches

Flowroute™ can be used to simulate intense rainfall-driven urban 'pluvial' or surface water flood events, receiving or losing water from point source inflows (e.g. defence breach / overtopping, surcharging sewers, pipe burst) and outflows (e.g. sewers, watershed pour points, pumps) to enhance realism).

Flowroute™ uses numerical discretisation in space and time - the floodplain is treated as a grid of cells, with flow occurring between edge connected cells at each time step. This offers both an excellent dynamic picture of an inundation event as well as highly accurate maximum depths and velocities at all points within the study area.

### Flexible deployment

Flowroute™ has been continually optimised to reduce processing times and leverage modern computing capabilities. Today it can be run in a distributed or cloud computing environment, and is capable of simulating flood flows across hundreds of millions of cell domains in parallel.



Above: Flowroute™ was designed to be able to handle complex urban environments and can output to a variety of visualisation tools / options.

## Flowroute at a glance

- Proven 2D+ flood model
- Designed to handle complex environments
- Model River, Coastal, and Pluvial sources
- Include drainage and flood defences within the model - with breaching
- Model ground roughness & infiltration
- Depth, Velocity & Flow outputs available dynamically
- Ideal for high resolution LiDAR based modelling
- Desktop and web-based options available
- Cost effective for small or large projects
- Works seamlessly with all major GIS platforms

# Flowroute™ Technical Details

## Sources of water which can be modelled

- Riverine (Fluvial)
- Tidal (Sea/Estuary/Coastal)
- Flash (Pluvial/Surface Water)

## Layers Produced

- Depths  
(Dynamic or maximum depth experienced during flood, in metres)
- Velocities  
(Dynamic or maximum velocity experienced during flood, in metres per second)

## Hydraulics Employed

- Full shallow water wave 2D modelling
- Spatially variable land use e.g. roughness
- Spatially variable infiltration / drainage
- Building-level precision

## Output Formats

- GIS Layers - standard floating point ASCII files
- Model stats file for easy model benchmarking and archiving

## Frequently Asked Questions

### Does Flowroute™ model all major flood sources?

Yes.

### Is Flowroute™ already in use, and who by?

Yes, Flowroute™ is in use by major insurers, local governments and other commercial organisations.

### Can I test my current flood model against Flowroute™?

Yes, if you have existing flood data you can select a specific area and we will demonstrate the difference Flowroute™ can make to your information.

### Will Flowroute™ work with my GIS / modelling application?

Flowroute™ works with all major GIS and modelling applications.

### Can Flowroute™ model real-time flooding?

Yes.

### Can I use Flowroute™ in-house?

Yes.

### Will Flowroute™ run in my IT environment?

Flowroute™ can run on desktops or in the cloud so, unless you have a very unusual IT environment, you should have no problem running Flowroute™.

### Is Flowroute™ easy to use?

Yes, the user interface is extremely easy to use.

### Does Ambiantal provide training?

Yes, we have a number of training programmes which help users get the most from Flowroute™.

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