Urban drainage systems are in transition from functioning simply as a transport system to becoming an important element of urban flood protection measures. For this reason, planning of urban drainage networks has to be future proof, taking the entire urban water cycle, demographic processes and climate change effects into account. MIKE URBAN Flood assists in solving these challenges successfully. MIKE URBAN makes you the expert and enables you to create future concepts for urban storm water drainage networks and sewer collection systems - concepts that are cost-effective as well as resilient to change.

OVERLAND FLOW AND SEWER NETWORK AS COMBINED APPROACH
- Combined sewer overflow (CSO) analysis and flood mitigation in urban areas
- Modelling of the entire water cycle
- Estimation and assessment of potential risks and damage
- Planning of scenarios for measures taking overland flow and sewer network into account

MAIN TECHNICAL ASSETS
- Coupling of 1D sewer model with 2D overland flow model
- Spatially distributed rainfall
- Dynamic linkage to rivers, lakes, streams and estuaries

BENEFITS
- Visualises interaction of water on the surface and in the underground
- Supports planning processes in cities
- Result presentation which is easy to understand for both decision makers and highly sophisticated for experts
- Comparison of scenarios

FEATURES
Hydraulic modelling of:
- Sewer networks (1D)
- Water resources (1D, 2D)
- Overland flow (2D)
- Groundwater (2D, 3D)

Hydrodynamic coupling of hydraulic components and feature-rich data processing tools.

MODULES
- Model Manager (main module)
- Add-on modules:
  - Rainfall-runoff
  - Hydrodynamic pipe flow
  - Management of control structures
  - Pollution transport
  - Chemical and biological processes
  - 2D overland flow
- Easy integration with MIKE 21, MIKE 11 and MIKE SHE

METHODS
- Saint-Venant equations
- Implicit Abbott-Ionescu scheme
- 2D shallow water equations
- Single grid or flexible mesh approach
- Alternating direction implicit (ADI) technique
- Inflow and infiltration from groundwater sources

Heavy storm event causing severe flooding in the street. © istockphoto.com/schlol
SUSTAINABLE PLANNING OF URBAN INFRASTRUCTURE

One of the typical application areas of MIKE URBAN is hydraulic modelling in urban environments, particularly modelling of rainfall runoff and its discharge through open or closed pipes as well as on the surface.

MIKE URBAN Flood supports sustainable planning processes in urban areas with:

- Detailed analysis of CSOs, including overland flow
- Estimation of potential risks and damages caused by extreme events
- Planning of measures in sewer systems and on the surface - integration of city planning and hydraulic analysis
- Evaluation of effects of a river flood in the sewers
- Design of mitigation measures for urban flood protection

With its hydraulic modelling capabilities, MIKE URBAN is able to provide answers to all important aspects for city planning purposes, especially when it comes to the design of urban drainage infrastructures. This modelling approach allows you to evaluate the hydraulic performance of the sewer network over its lifespan and identify the scenario that best meets your requirements.

SCENARIO MANAGEMENT

MIKE URBAN helps to model all paths of water - in sewer systems and on the surface - with the greatest possible accuracy. With a calibrated model, you can easily analyse a number of scenarios considering, for example, demography, urbanisation, climate change and many more influencing parameters.

MIKE URBAN supports you in evaluating proposed measures during the planning process and to adjust or update them whenever needed. This allows you to choose from a set of scenarios or a combination hereof to select the most effective one that meets your requirements.

RESULTS PRESENTATION IN AN UNDERSTANDABLE MANNER

The flexible and easy-to-understand presentation of results and derived action plans towards decision makers and stakeholders is as important as the actual simulation itself. MIKE URBAN provides the following presentation tools:

- Rich symbolisation and labelling options due to seamless integration with ArcGIS
- Static or animated result presentation in the form of maps, longitudinal profiles, time series and videos
- Export of results to various GIS data formats and video files
- Visualisation of 3D digital terrain model and flow paths
- Freeware result viewer: MIKE View

DEDICATED TECHNICAL SUPPORT

Like all MIKE Powered by DHI products, MIKE URBAN is more than just software. Our global technical support organisation offers expert support in more than 30 countries and in your local language. Our support programme offers many benefits, including free software updates, hotline support and access to the world’s largest network of water modelling experts - the MIKE user community.

Through THE ACADEMY by DHI, training is available all over the world in terms of standard courses as well as courses tailored to fit your specific requests and based upon your own data.

Contact: mike@dhigroup.com
For more information, visit: www.mikepoweredbydhi.com

Graphic visualisation of flooding events. © DHI