

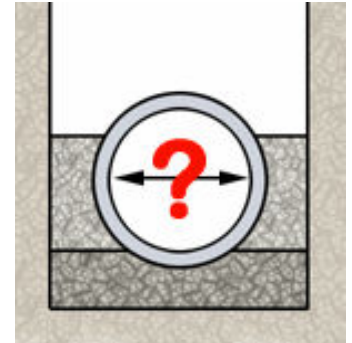
## Version 7 Automatic Design Features

### Next-Generation Software for Storm and Sanitary Sewer Modeling

Ultimately, the whole reason for creating a sewer model in the first place is to serve as a tool for design work. Hydra® software includes powerful automatic design features for new systems and problem solving in existing systems. With these features you can be confident that your design work will stand the test of time.

#### Upgrading Existing Systems

With Hydra, every hydraulic analysis results set includes suggestions for solving system capacity problems. For each overloaded or surcharged pipe, Hydra provides a design solution of replacement pipe, parallel pipe, and how much flow would need to be removed to meet design criteria. You can use these as a starting point for your own design solutions.



#### Design of New Systems

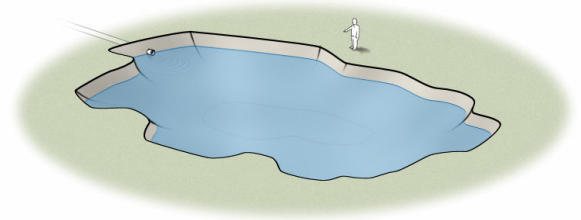
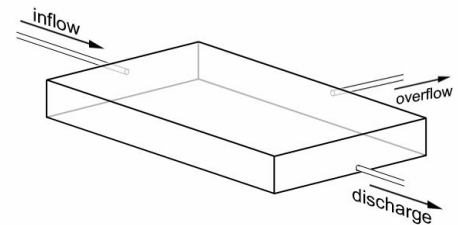
If you need to lay out a new sewer line, Hydra software includes powerful features for design of new pipes or channels for collection systems. You define the criteria for the design of your new pipes, including pipe depth, flow velocity, pipe diameter options, and d/D. Hydra automatically optimizes the design based on your criteria and calculates any needed data, including invert elevations, pipe diameter, slope, match crowns, inverts, and 2/3 points. Hydra selects its final design after trying nearly every possible alternate.

#### Other Design Features

Other automatic design features include reservoir and pump wet well sizing, pressure pipe sizing, and setting invert elevation for odd-shaped transport structures, channels, and manholes.

#### Calibration vs Design Flows

One of the most important yet often overlooked aspects of the design process is the flow upon which the design is based. Ultimately, the whole purpose of a sewer model is to make design decisions. Once you have calibrated a model to flow meter data, the question remains: On what flow do you create your design? Hydra's unmatched flow management features include special functions to adjust the flow for use in design without a loss of accuracy.



- Dynamic design storms dynamically aligns the rain-derived flow with the sanitary hydrograph to make sure you are using the perfect design storm.
- Flow generation layers provide an easy method of increasing population densities as you plan for the future.
- Special safety factor fields allow you to increase flows for design purposes without distorting input data or risk of compounding safety factors.