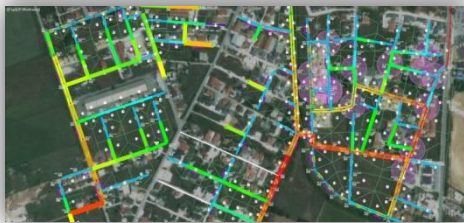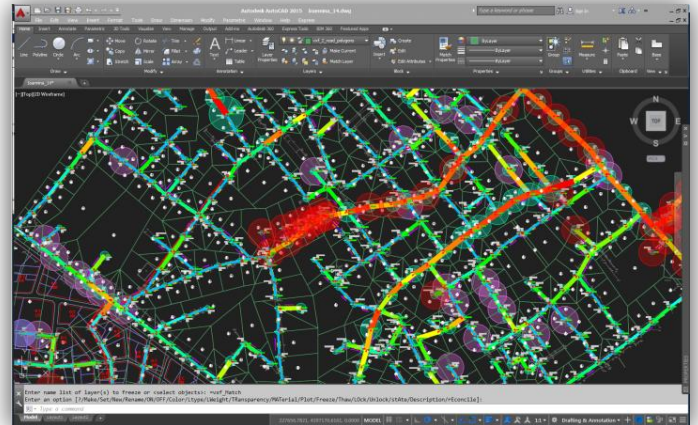# wHYDE

EMVIS
WATER RESOURCES & ENVIRONMENT MANAGEMENT

wHYDE is a tool which supports the design of free surface sewer and storm water networks. wHYDE has been developed as an add-on to the familiar working environments of Autodesk AutoCAD and Microsoft Excel, it is easy to use and boosts productivity.

DESIGN

Horizontal network layout is performed in AutoCAD where user designs the pipe network and the junctions (manholes) along with the contribution areas.

- Existing drawings (roads, buildings, etc.) can be used as base maps to facilitate design
- Supports existing and pressurized pipes
- Closed loop and orphan node warnings
- Automatic pipes and junctions labeling
- Automatic assignment of surface elevation at junctions from DEM surface
- Preliminary depth estimation based on minimum pipe slopes

HYDRAULIC CALCULATIONS

The pipe network is automatically imported from AutoCAD into Excel where hydraulic calculations and pipe dimensioning are performed.

- Steady and uniform free-surface flow is assumed
- Manning formula with steady or variable roughness coefficient
- Easy data input in Excel sheets (population densities, unit water consumption, pumping station capacity, concentrated flows)
- Calculation of peak factor for every pipe
- Automatic calculation of pipe diameters, slopes and invert elevations, etc.
- Constraint check including, min and max velocities, min slopes and depths, max depth of flow ratio
- Estimation of sulfide occurrence based on Pomeroy's Z formula
- Capacity and constraints check for existing pipes
- Library with commercial pipe sizes

DRAWING CREATION & REVISION

The results of the hydraulic calculation (flow rates, velocity, diameter, depths, lengths etc.) are transferred in AutoCAD where the user can have an overview of the network.

- Labels with hydraulic data in horizontal layout
- Longitudinal pipe profiles including hydraulic data, upstream confluences, road names etc.
- Revisions of horizontal and vertical alignments or pipes sizes and depths are easily transferred from AutoCAD to Excel and vice-versa
- Visualization of pipe placement depths and diameters in color coded maps enables spotting of problematic areas
- Ready to print horizontal layouts
- Ready to print longitudinal profiles arranged in plot layout
- Tables with hydraulic data summary for each pipe
- Bill of quantities, including earthworks classified in depth classes