QUICK TOUR OF FLUIDIT WATER

Aalto University – 2019-02-25

OVERVIEW

Model settings

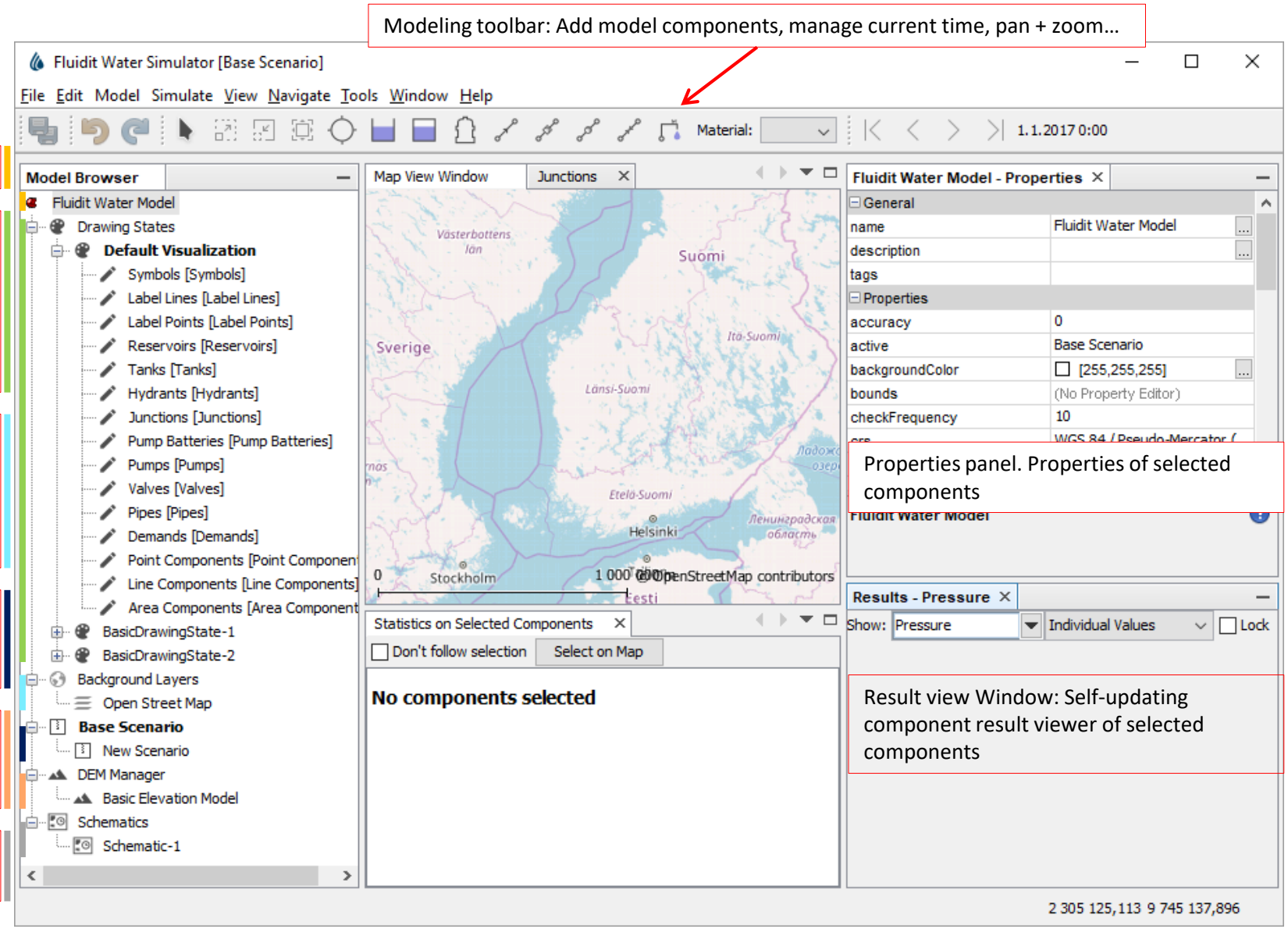
Model component styling
- Drawing order
- Manage colors and sizes
- Manage colors and sizes based on results
- Manage component filtering
- Edit legend

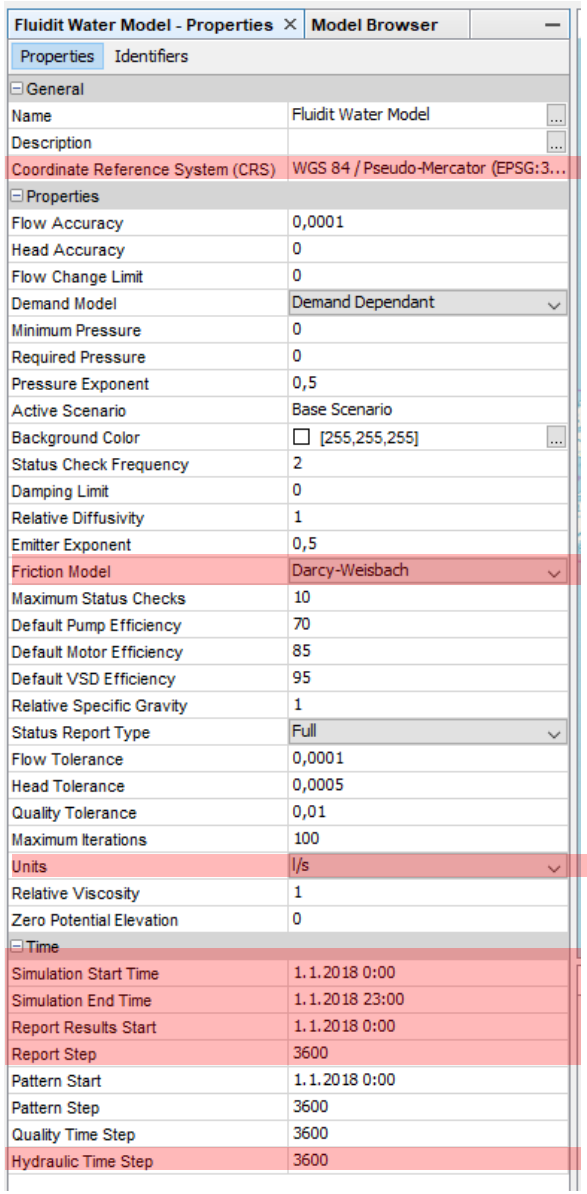
Background layers:
- Insert background maps
- Add external files for reference
- Add calculated raster layers from nodes
- Manage background layer order

Scenario tree: Create a child scenario that inherits all features from mother scenario. Edits made in child scenario does not affect to mother scenario. Scenario settings.

DEM Manager: Elevation layers can be used for example to define node elevations, critical pressure levels or rim elevations of manholes

Schematics: add fixed figures and maps that are stored in schematics for later use.

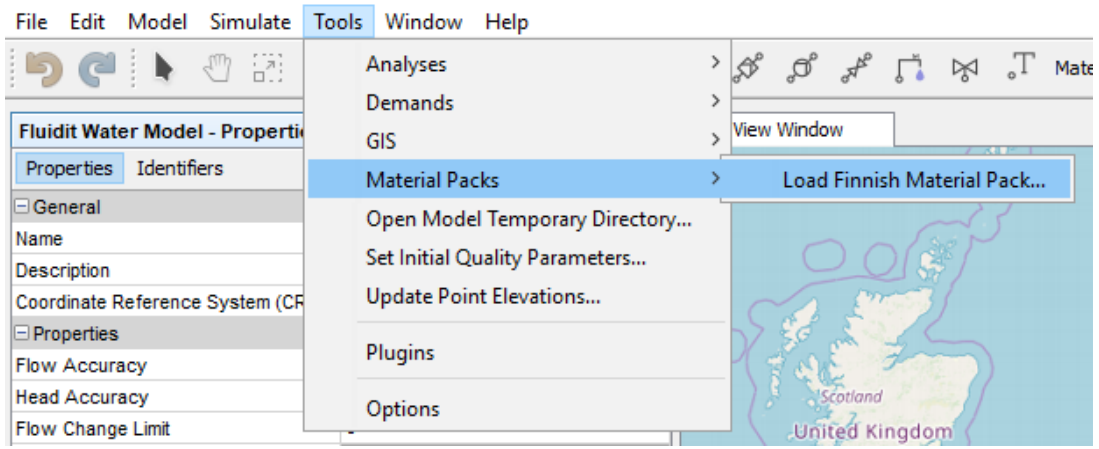




MODEL PROPERTIES

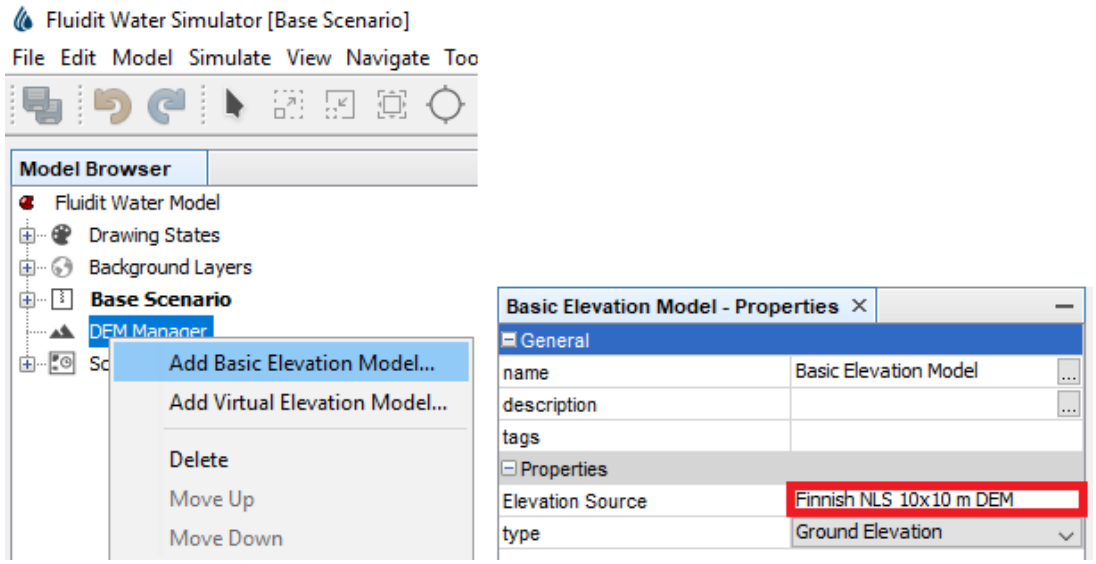
- Things to set up
  - **Units**: the most common approach is to use **l/s** everywhere – flows and demands in l/s, pressures in meters of water column [m], diameters in mm, roughness in mm
  - **Friction model**: Darcy-Weisbach (general friction loss equation)
  - **Coordinate reference system**: the default, global Pseudo-Mercator system is not really metric – use ETRS89-GKxxFIN coordinate systems in Finland
  - **Simulation time settings**: Start time, end time, report start, report step (in seconds) and hydraulic time step (in seconds)

LOAD FINNISH MATERIAL PACK



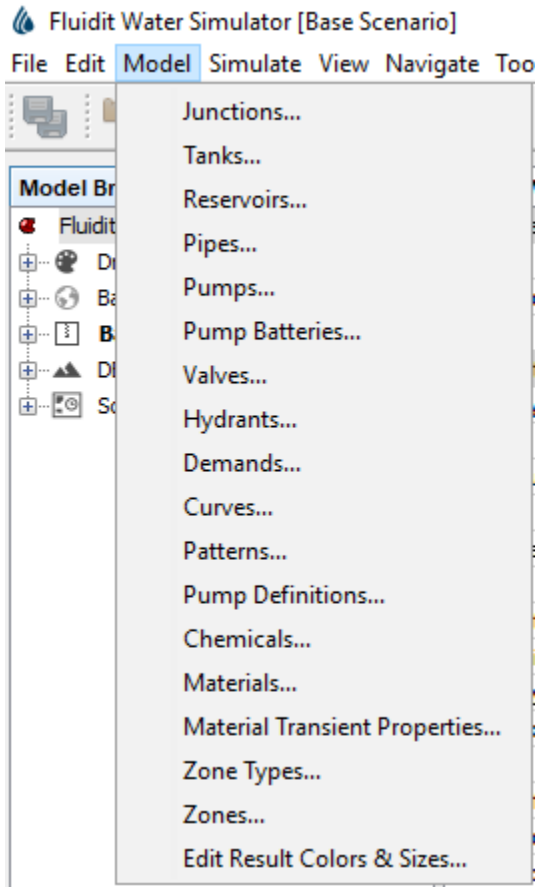
- The Finnish Material Pack includes the common pipe sizes and materials in use in Finland
- Most of materials include rough construction costs
- Materials can be inspected and modified via Model -> Materials… menu

ADD AN ELEVATION MODEL



- Newly created nodes will automatically get elevation (z) from the DEM
- Elevations can be updated later from Tools->Update Point Elevations… (updates selected / all nodes and other points)
- Finnish NLS 10x10 m and 2x2 m grids are available – neither covers the whole country

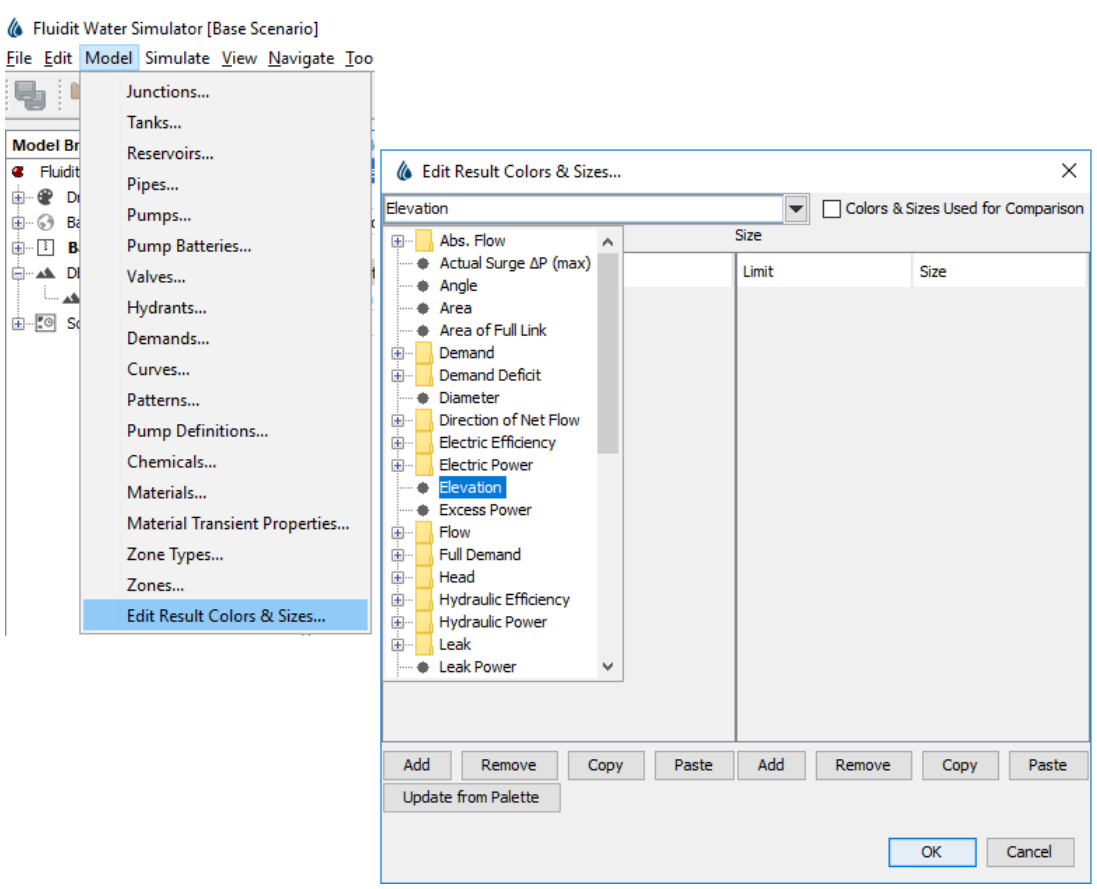
OPEN LIST OF COMPONENTS IN TABLE

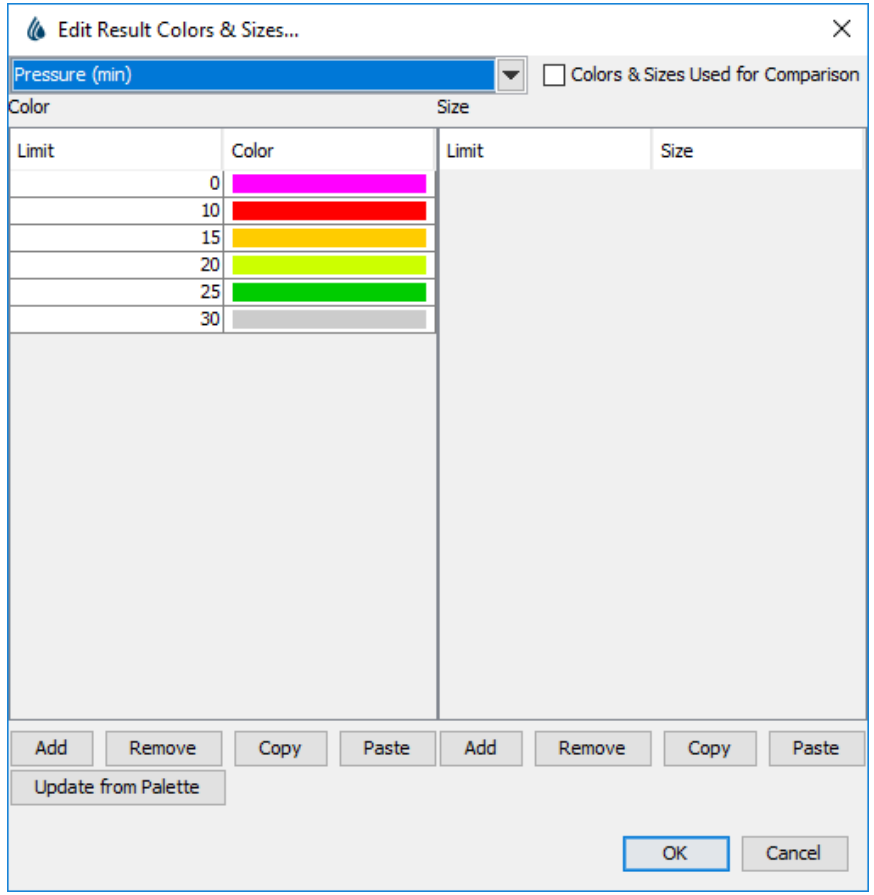


Map View Window | Junctions

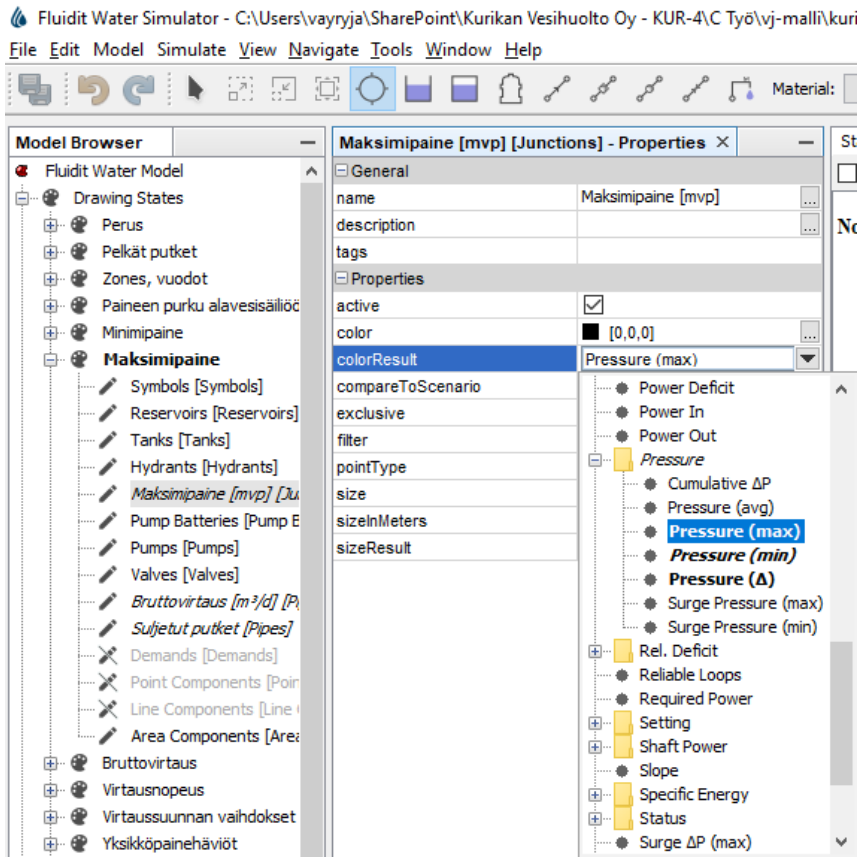
Nodes	averageDe...	boundary	dailyDemand	demands	description	emitter	ignoreForG...	minimumHead
Junc-3873	0,029	☐	2,501	3		0	☐	
Junc-15466	0,006	☐	0,479	2		0	☐	
Junc-19854	0,008	☐	0,734	4		0	☐	
Junc-21324	0	☐	0	0		0	☐	
Junction-71	0,021	☐	1,786	5		0	☐	
Junc-10875	0,002	☐	0,175	2		0	☐	
Junc-22755	0,017	☐	1,458	6		0	☐	
Junc-5739	0,01	☐	0,894	3		0	☐	
Junction-70	0	☐	0	0		0	☐	
Junc-6828	0	☐	0	0		0	☐	
Junc-20769	0,016	☐	1,422	4		0	☐	
Junc-13403	0,015	☐	1,279	5		0	☐	
Junc-18032	0,032	☐	2,781	2		0	☐	
Junc-19875	0,009	☐	0,781	2		0	☐	
Junc-14934	0	☐	0	0		0	☐	
Junc-20253	0,021	☐	1,855	2		0	☐	
Junc-4294	0,002	☐	0,198	1		0	☐	

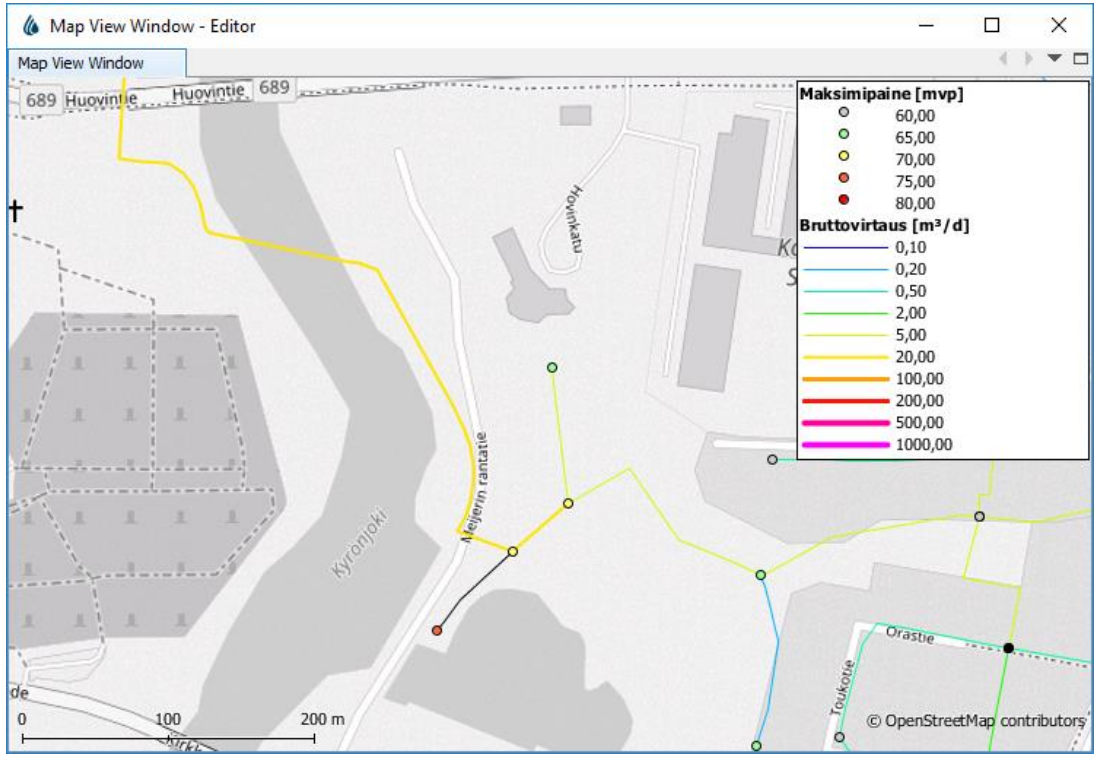
EDIT RESULT COLORS





DISPLAY RESULT COLORS





MAIN TOOLBARS

SELECT | PAN, ZOOM | COMPONENTS: JUNCTION, RESERVOIR, TANK, HYDRANT, PIPE, PUMP BATTERY, PUMP, VALVE, GEOCODED DEMAND | PIPE SIZE & MATERIAL | CHANGE TIME STEP BACK OR FORWARD

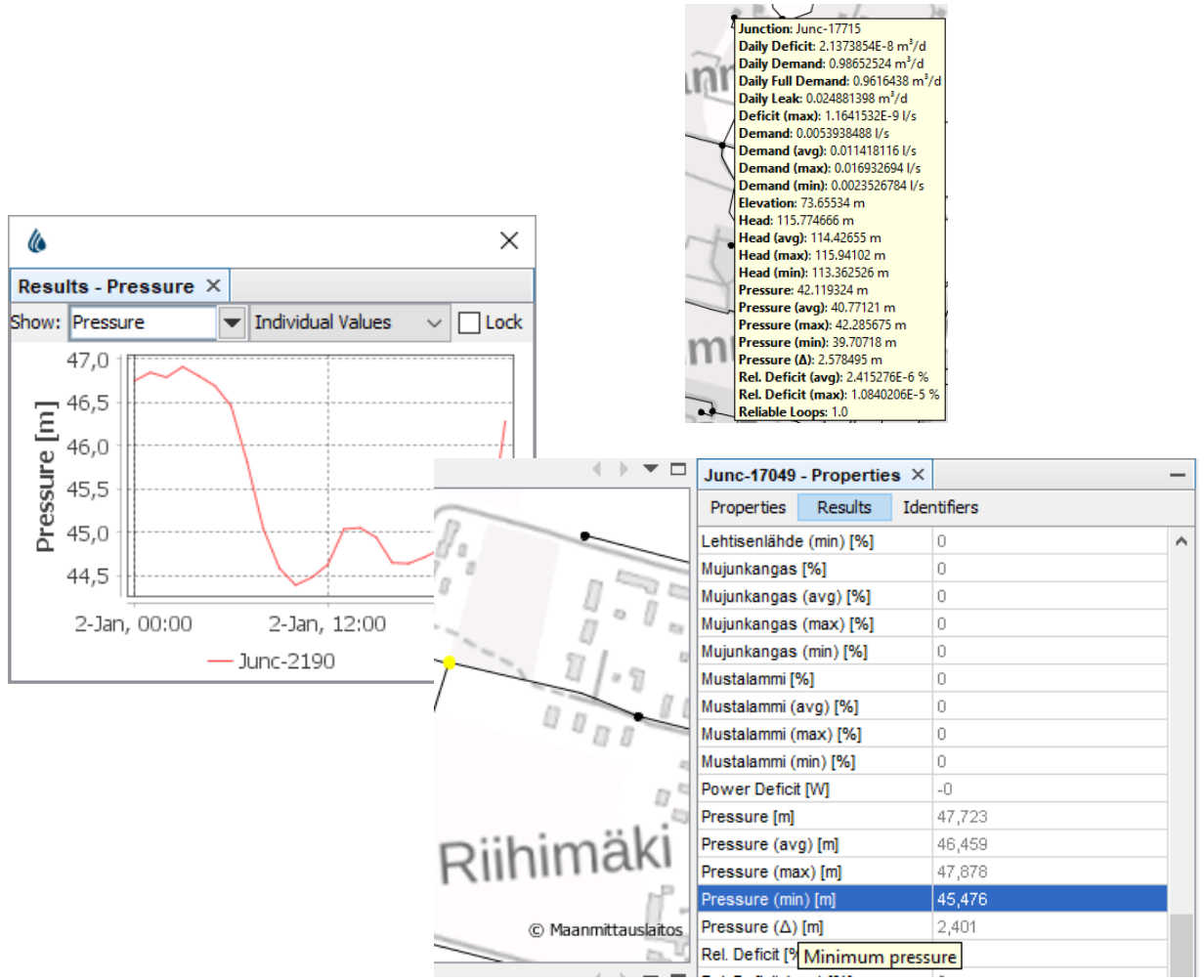
CONTROLLING THE MAP VIEW & DRAWING COMPONENTS

- Pan with middle mouse button or arrow keys
- Zoom using mouse scroll or + and -
- Double-ESC always activates the selection tool
  - Select by clicking or dragging
  - Holding CTRL adds to current selection
  - SHIFT+CTRL removes from current selection
  - Selection is reflected in component tables
- Component properties from selection are displayed dynamically in properties window. Double clicking on component opens properties in a new window
- Right clicking opens context menu

- First draw nodes: choose desired tool and click on map
- Choose pipe size and material (also activates the pipe drawing tool)
  - Start from a node by clicking or CTRL click to create a junction automatically
  - Clicking adds vertices
  - Backspace removes last vertex
  - Esc cancels
  - End by clicking on another node or CTRL click to create a new junction or split existing link
  - It's possible to zoom and pan while drawing

VIEWING SIMULATION RESULTS

- On map using controls in Drawing states / Visualizers + Model->Edit Colors and Sizes…
- Most important results in tool tips
- Graphically using *Result View Window* or component context menu: *Show Result*
- Tabularly using:
  - Statistics from *Window->Selected Components* (F2)
  - Results from component property window *Results-tab*
- More complex analysis possible using *Schematics*



CREATING A HYDRAULIC PROFILE (GRADE LINE)

- Open Profile View Window
- Select start node by clicking it
- Select end node by CTRL clicking it
- Now that you have two nodes selected, right clicking the map view shows *Find Best* and *Find Shortest Route* between nodes – select either
- Selects all links between the nodes
- Left click on the profile and choose properties to change what is shown