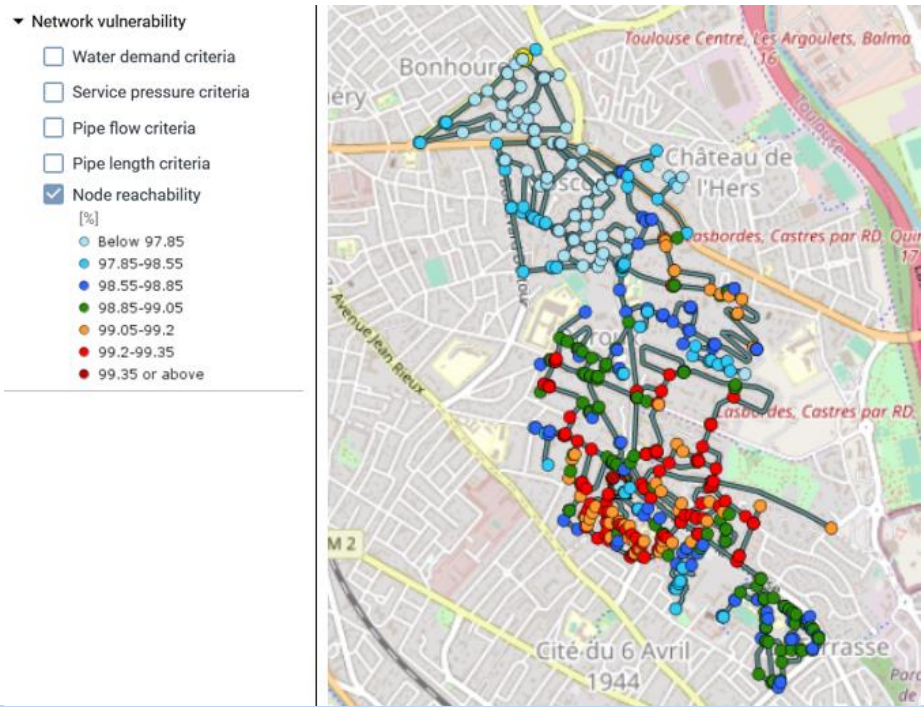
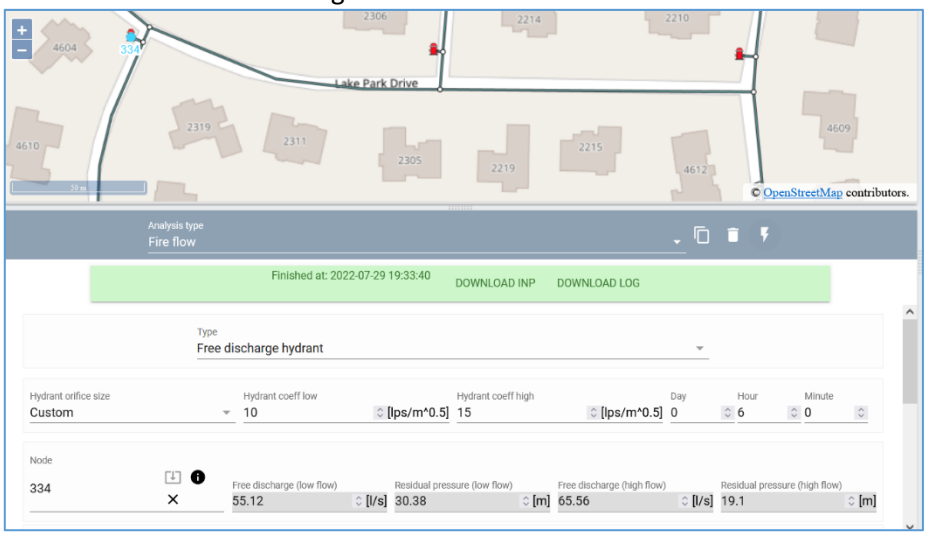
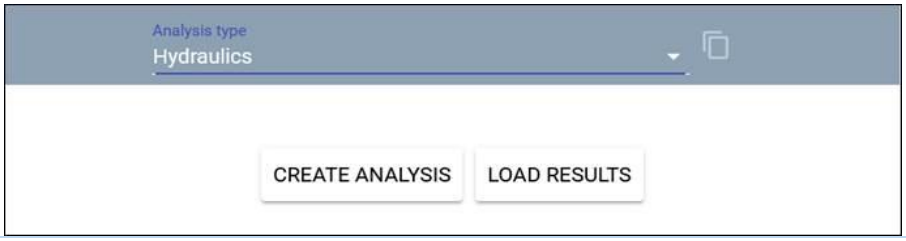
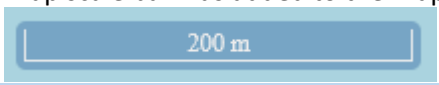
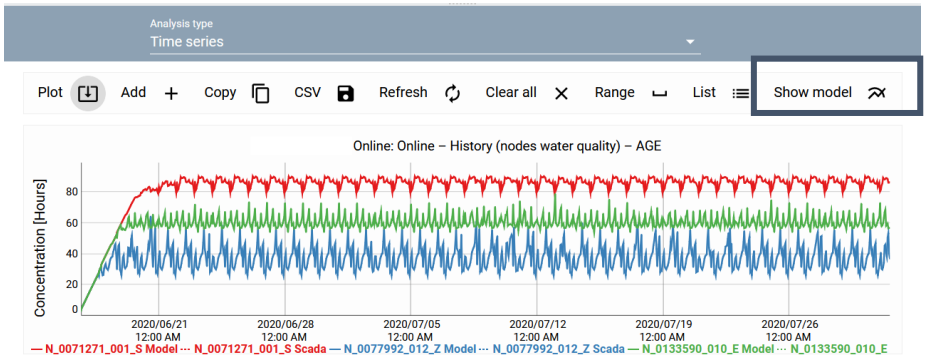
Below it is listed the new features, improvements and fixed errors for WaterNet Advisor by DHI.

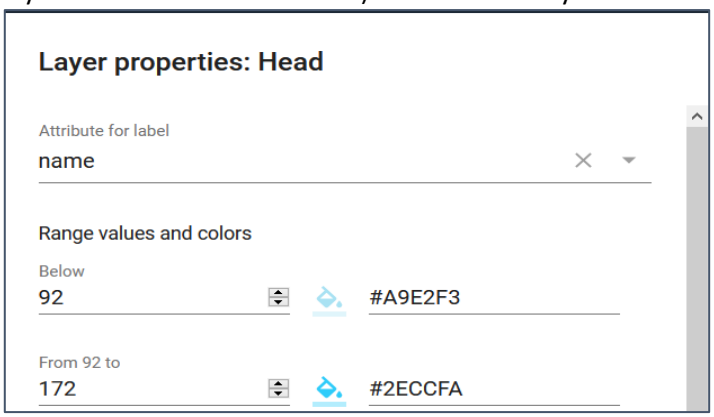
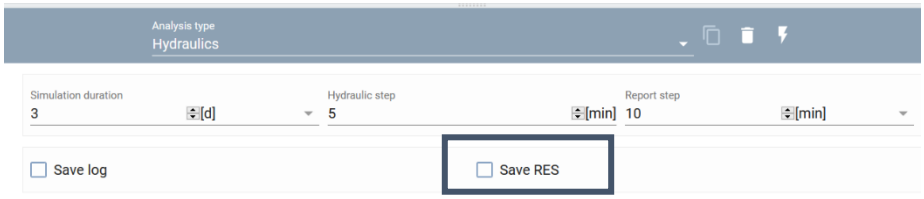
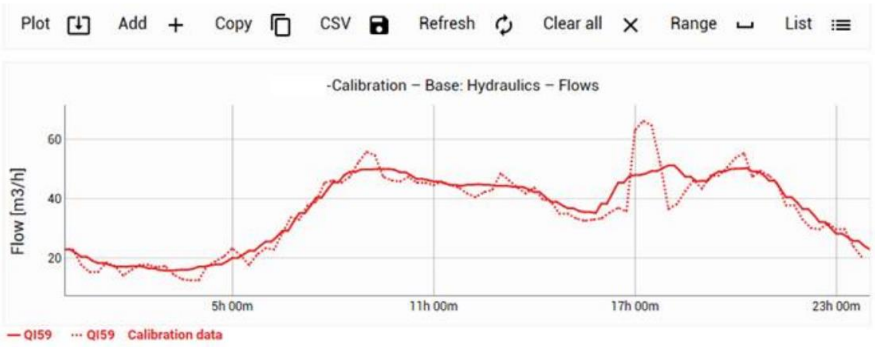
If you want further information, please contact Petr Ingeduld: pi@dhigroup.com

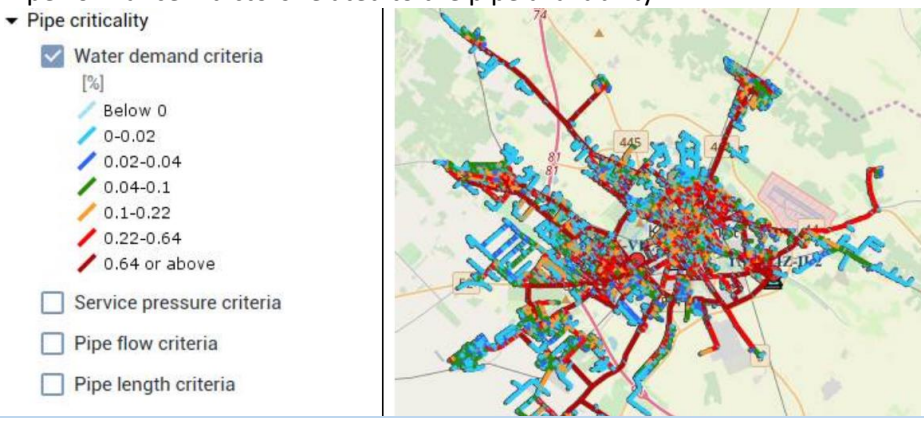
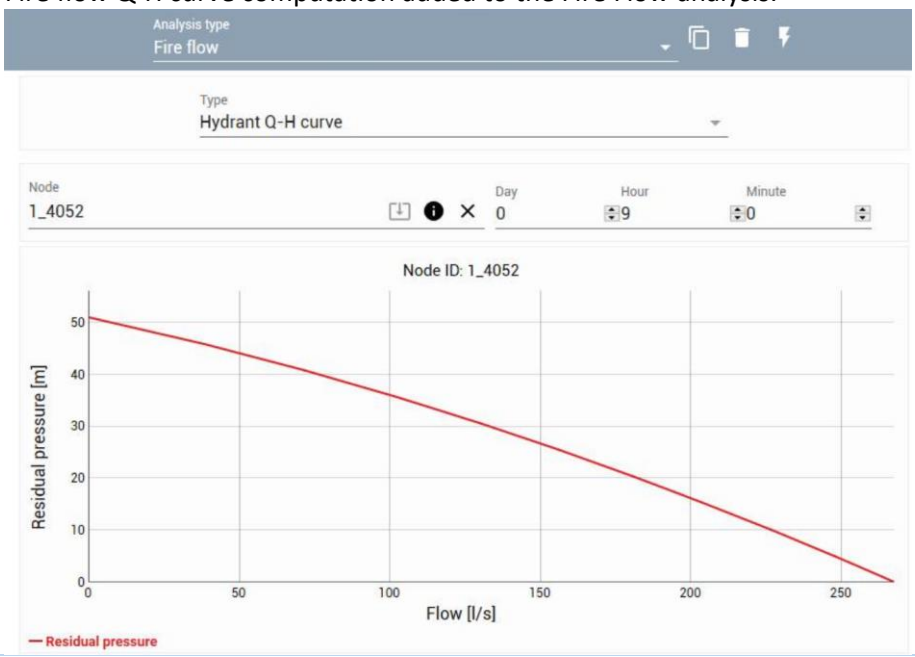
Date	Type	Description
2022.11.11	New feature	Network vulnerability analysis was extended by "Node reachability", which is the probability that a given node in the system is connected to at least one source. 
2022.11.11	New feature	WD (Water Distribution) On-line modeling was extended by System and energy reporting that provides additional performance indictors including: • Average system pressure • Natural energy • Pump energy • Energy delivered to users • Energy lost due to friction • Energy lost on valves • Dissipated energy • Energy lost due to leakage • Standard compliance • Network energy efficiency • and other
2022.11.11	New feature	MIKE+ and MIKE WaterNet Advisor for Online integration provides user interface for defining all entries required for the online model build such as sensor mapping, definition of comparisons and histories, demand zones, pump and valve controls, and demand prediction.

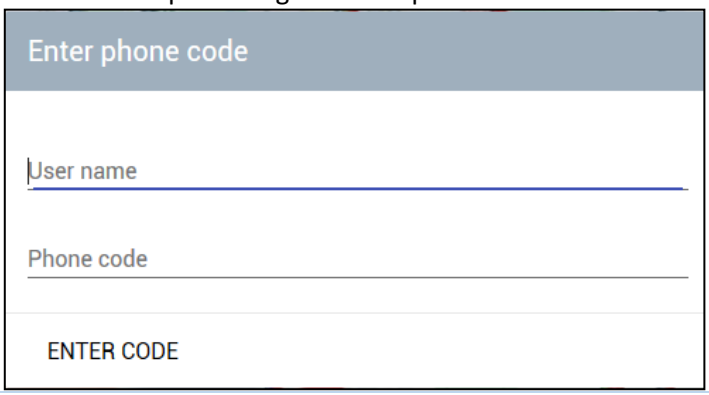
Date	Type	Description
2022.08.01	New feature	Demand prediction module was added to the WaterNet Advisor for On-line models that can predict future demands based on a choice of statistic methods or machine learning. 
2022.08.01	New feature	The Fire flow modeling was extended by the user defined “orifice coefficient” for free-discharge fire flow. 
2022.08.01	New feature	Automatic and periodic update of the on-line model – a new check box was added into the Online model analysis that allows the user to activate the automatic model update based on the latest real-time model on the server.
2022.02.04	New feature	Advanced edits in Collection Systems mode allows for inserting and deleting records.
2022.02.04	New feature	Water distribution on-line model layers include a “Life sign” layer with the progress and status of each on-line simulation.
2022.02.04	New feature	Compatibility with the version of MIKE+ 2022 regarding the model registration and simulations for all modes (water, wastewater, stormwater).
2022.02.04	New feature	Model selection dialog box contains a filter field for quick finding of a model.
2022.02.04	New feature	“Raw results” check box added to the Water Distribution hydraulics simulation that will report results “as-is” even though pressures large negative. Without this check box, results are rendered by post-processing and negative pressures displayed as zero and no flow in adjacent pipes.
2022.02.04	New feature	Water Distribution Fire flow error codes extended.

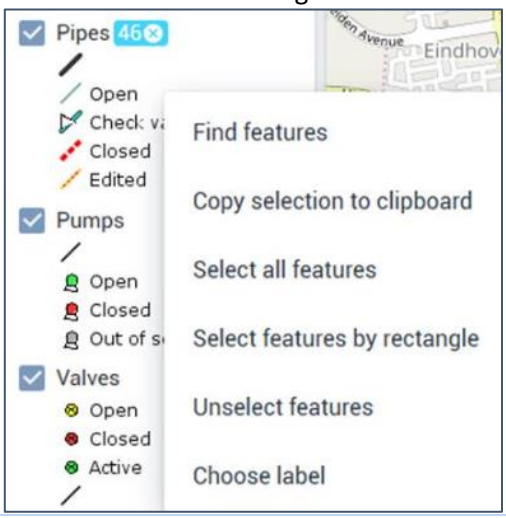
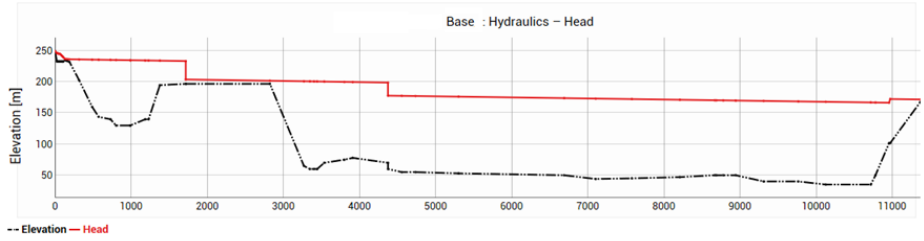
Date	Type	Description
2022.02.04	New feature	Miscellaneous updates to layer styles in all modes.
2021.06.30	New feature	WNA for Stormwater Systems based on EPA SWMM hydraulic and hydrological engine was added into the application.
2021.06.30	New feature	WNA for Collection Systems was improved in numerous places.
2021.06.30	New feature	Loading simulation results (without running the model) in Hydraulics was simplified and works in one step.
2021.06.30	New feature	Profile plot labelling and display of special link (pumps, valves, weirs, etc.) improvements.
2021.06.30	New feature	MIKE+ models can be registered based on the SQLite database file with the model.
2021.06.30	New feature	Calibration data (plots) can be displayed either separately (without model results, i.e., model results not available yet) or with model results (for comparison purposes).
2021.06.30	New feature	Valve diameter was added to the Common Edits.
2021.06.30	New feature	Flow tracing extended by “both” situation when there is a circulation of water in a loop. 
2020.12.14	New feature	WaterNet Advisor for Collection Systems: WaterNet Advisor was extended to support collection (wastewater) systems. When you login into the application and select registering a new model there is choice between: ▪ WD standard: Water distribution model ▪ WD online: Water distribution model (online mode) ▪ CS DHI: Collection system model The work with the program in the CS mode is similar to WD mode. The program supports the model registration, editing, scenarios, and results viewing.
2020.12.14	Improvement	Register MIKE+ SQLite models It is possible to register a SQLite file with the MIKE+ (or MIKE URBAN+) database. This extends the model registration with the previous options of registering MIKE URBAN MDB file or any EPANET based INP file. As before, the actual file can either be a SQLite file or a ZIP file containing the SQLite file.

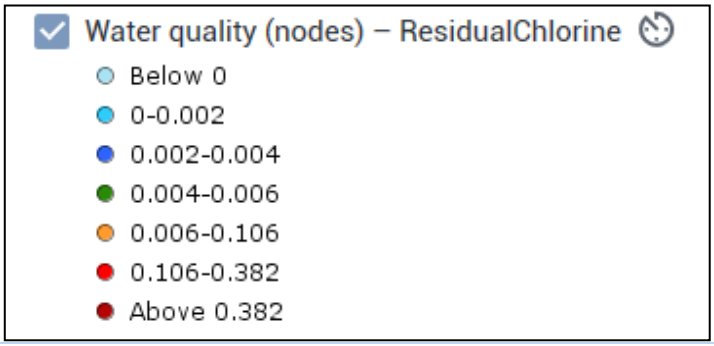
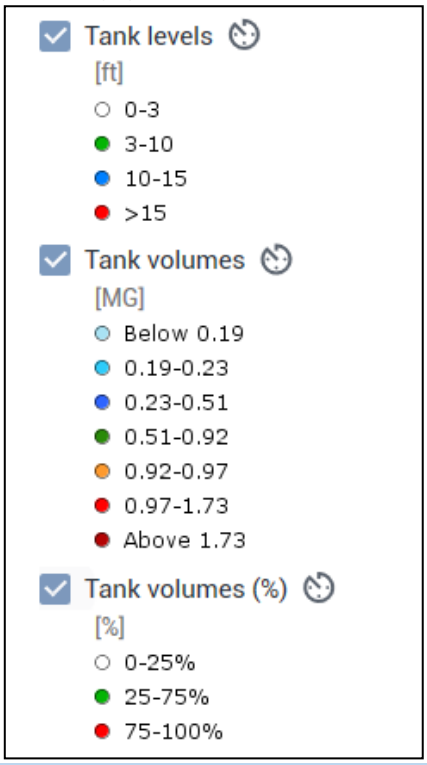
Date	Type	Description
2020.12.14	New feature	Results reading mode allows the user to “add” results to the registered model without running the actual simulation. The “Hydraulics” analysis dialog provides a choice of “Running the simulation” or “Reading the results from a file. 
2020.12.14	New feature	Map scale bar was added to the Map for estimating distances. 
2020.12.14	Improvement	Flow tracing analysis was modified by adding a selection of a scenario where the hydraulic simulation was completed. In other words, flow tracing does not require its own simulation and it is therefore much easier to develop various flow trace scenarios by reusing the same hydraulics.
2020.12.14	Improvement	Sign in dialog was extended by a company name; this is an optional setup.
2020.07.10	Improvement	Improvements into the password recovery and user registrations.
2020.07.10	New feature	A switch was added to the Time Series plots that allows for showing/hiding model or SCADA time series. 

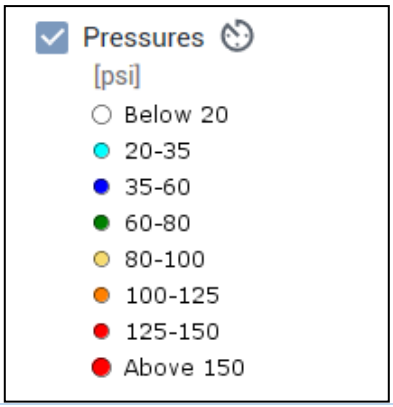
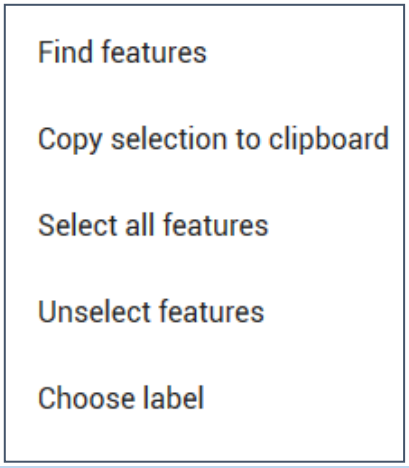
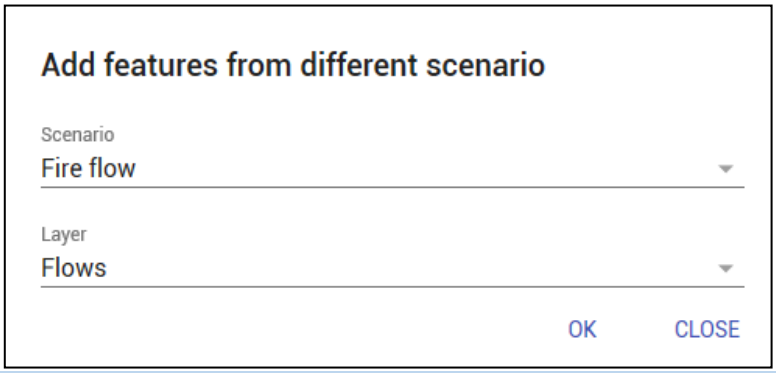
Date	Type	Description
2020.07.10	New feature	Layer properties of automatically generated layers (layers that do not have a style defined in the Geoserver) can be edited by the user:  This allows the user to adjust intervals used e.g. for hydraulic grade line or water quality layers.
2020.07.10	New feature	The results file (RES) can be downloaded at the end of the hydraulic simulation. The RES file can be loaded into MIKE URBAN/MIKE URBAN+ software. 
2020.02.05	New feature	Calibration plots data were added to the model registration (in EPANET .DAT format) and calibration plots added to Analyses. Calibration plots are used to plot both simulated and observed (calibration) data into the same plots. 
2020.02.05	New feature	Results RES file can be downloaded from simulations and used from within DHI's MIKE URBAN/MIKE URBAN+ software. 
2020.02.05	New feature	Common edits can be displayed in the Map by click on "i" icon; the program will select all network elements from Common edits and it will highlight them in the Map. 

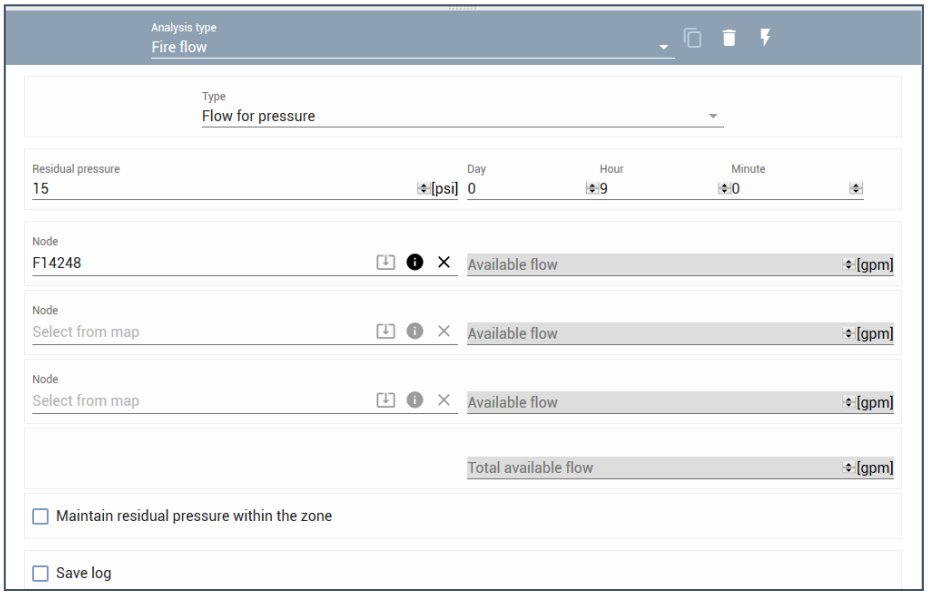
Date	Type	Description
2020.02.05	New feature	Pipe friction coefficient was added to Common edits.
2020.02.05	New feature	Pipe criticality simulation was added to Analyses and it allows for computing 4 performance indictors related to the pipe availability. 
2020.02.05	New feature	Fire flow Q-H curve computation added to the Fire Flow analysis. 
2019.09.25	New feature	Profile plot can be defined by not only selecting nodes or tanks from the model network but also by selecting the nodes in the “HGL” and “Pressure” results layer. Also, it is possible to label nodes in the Profile plot by the model ID.
2019.09.25	New feature	When updating the On-line model, the program provides a list of all files (model runs) as stored in the archive and so it is e.g. possible to update the model not only to the latest run (current conditions) but to e.g. “2019-09-20 09:00” and cetera.
2019.09.25	New feature	Reload data control was added to the On-line plots that show SCADA data.
2019.09.10	New feature	Tank minimum and maximum water levels were added into Common Edits.

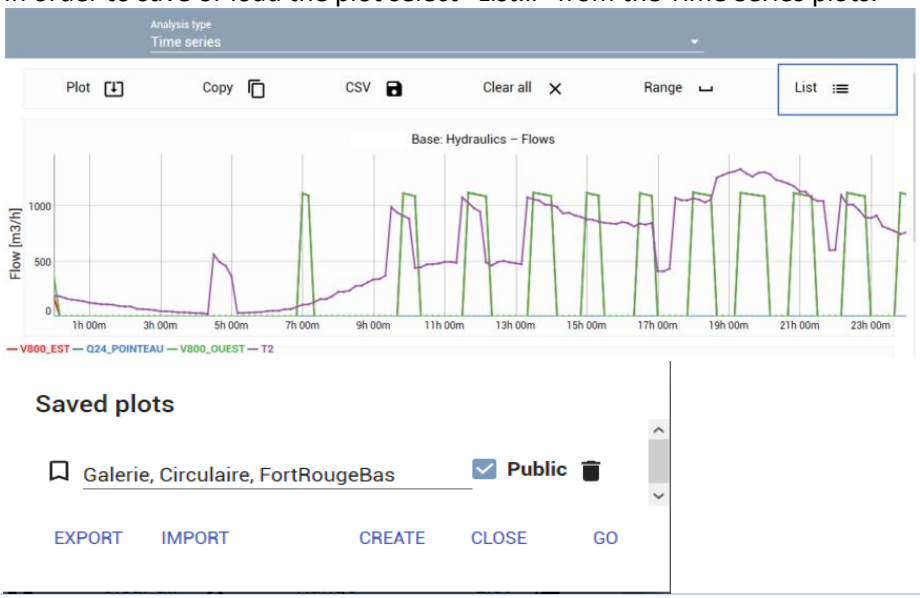
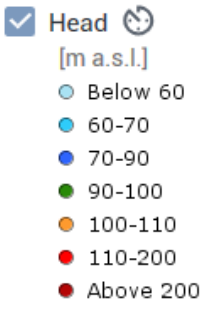
Date	Type	Description
2019.08.01	New feature	A “user defined” Web Map Service (WMS) can be defined in the WaterNet Advisor configuration so that other than Open Street Map are used in the Map window.
2019.08.01	New feature	The same SRID as used to register the model is used as default when GIS layers are added to the model
2019.05.01	New feature	**Download a model** that was registered was added to the application, in addition to existing “download INP file” feature in all simulations. 
2019.05.01	New feature	A new “icon” was added to the Table of Content in order to support the “**right-click menu**” properly on mobile devices. In case that the mobile device (a smart phone, tablet) does not support the right-mouse-click properly use the new ★ tool.
2019.05.01	New feature	**2-level authentication** was added into the application in order to increase the login security. The secondary password is a code that is sent to the user’s mobile phone registered as part of the user control. 
2019.05.01	New feature	**Fields** displayed in the “Information” window can be filtered and translated as shown below. There is a simple configuration JSON file where the list of fields to be displayed and their aliases is included. This is supported by all model layers.
2019.05.01	New feature	The **profile plot** supports various node results items including animated (head, pressure, water quality) and statistical (minimum and maximum pressures).

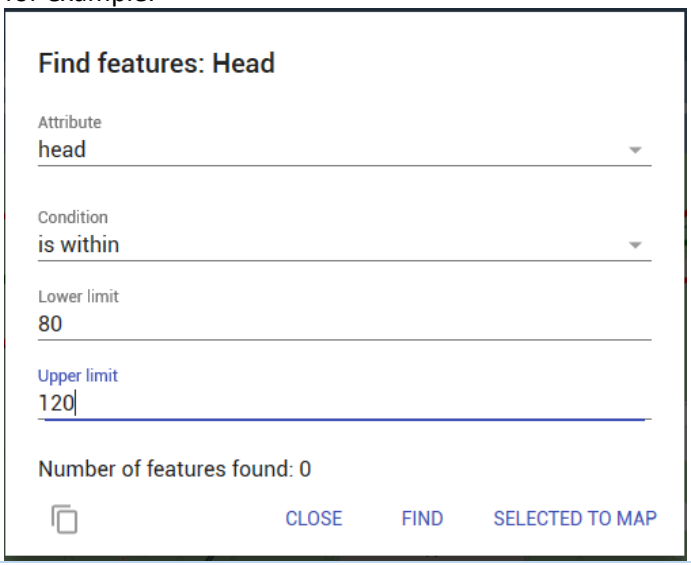
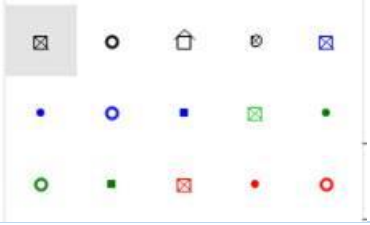
Date	Type	Description
2019.05.0	New feature	**Select by rectangle** was added to the application in order to allow the user to select features not only by clicking or by using a filter “Find features” but also by drawing a rectangle. In order for the feature to work properly not only on personal computers but also in smart phones and tablets, this new tool was added into a “right click” menu as shown below. 
2019.01.29	New feature	**Valve status** was changed to 3 different states: Open (as in locked open), Close (as in locked close), Regulating. The default valve mode is Regulating.
2019.01.28	New feature	**Profile plot** was added into Analysis menu. In order to activate the profile plot, select Profile Plot from the Analysis type. The profile plots are typically used to show the node elevation and node hydraulic grade line but it can be used for any animated results layer. In order to create a profile plot, select first nodes defining the profile plot path by selecting them in the desired order from the Map. The program will connect the selected nodes (tanks, reservoirs, junctions) by the shortest path, it will highlight the profile plot nodes in the Map and then it will display the profile plot graph. In order to add the hydraulic grade line (HGL) to the plot, click-select the HGL from the table of contents. 

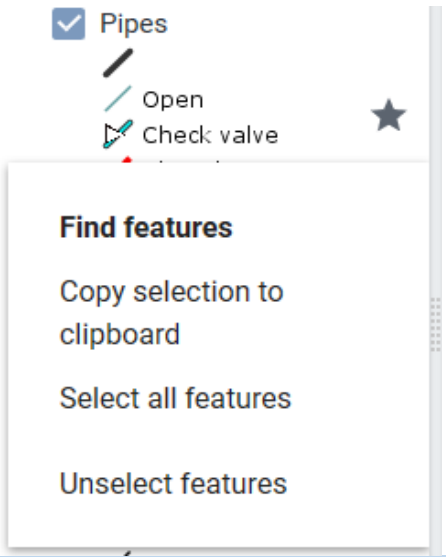
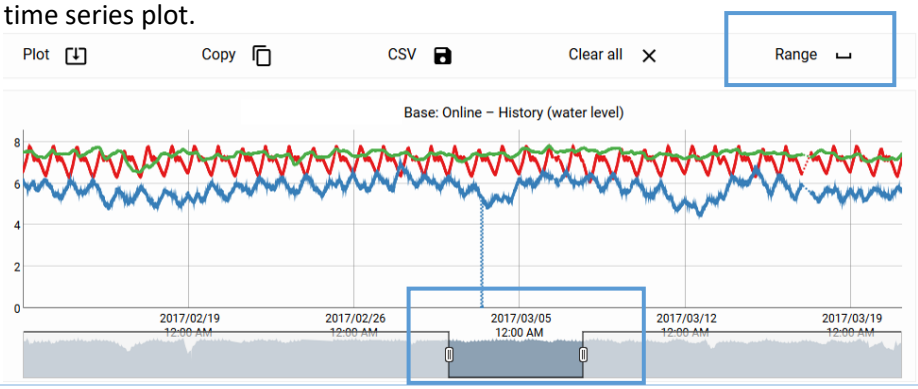
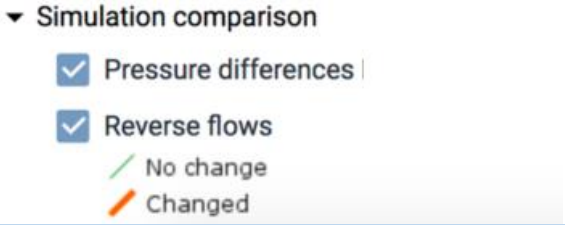
Date	Type	Description
2018.09.25	New feature	**Dynamic legend** for water quality (under hydraulics) will display the ranges based on the actual values (minimum and maximum and their statistical distribution) in order to color properly water quality results where the values depend on the actual water quality setup; e.g. residual chlorine or THM. 
2018.09.25	New feature	**New storage tank results items** were added to Hydraulics results and these include tank level (ft or m), tank volume (mega gallons or m3), and tank volume (%). 

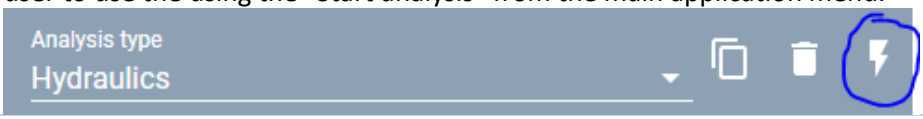
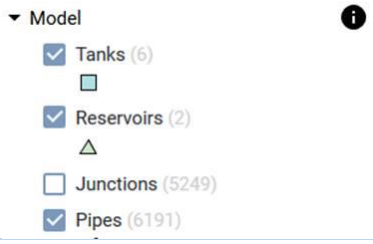
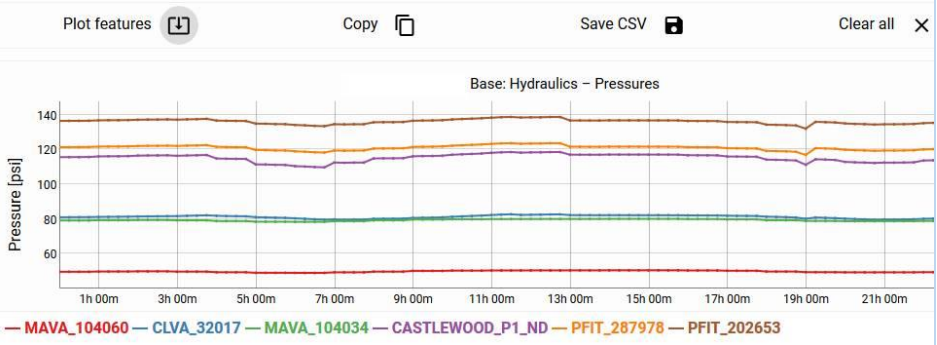
Date	Type	Description
2018.09.25	New feature	**Pressures ranges** were adjusted in case of English units to better fit American Water standards. 
2018.09.25	New feature	**Logout** of a selected user was added to the main application menu .This feature requires administrative user access to WaterNet Advisor.
2018.09.25	New feature	**Choose label** was added to the table of contents layers so that it is possible to label nodes and link based on any selected field such as ID, description, diameter, or results value, or any user defined field in case of GIS layers. 
2018.09.25	New feature	**Time series** were extended by the option of adding a time series from another scenario(s) in order to plot compare results and for better control over the simulated results. 

Date	Type	Description
2018.09.25	New feature	**Fire flow** simulation where the available flow is computed based on the residual pressure was extended by a check box where the user can request to maintain pressure at nodes within the same zone as the flowing hydrant at the pressure of e.g. 10m or 15psi. The hydraulic simulation results will be iterated and the maximum fire flow available at the hydrant will be reduced in case that critical nodes exist.  This requires additional input to be provided as part of the model registration; the node zone data are entered in the new section [ZONES] of the INP file as follows: [ZONES] F14673 ZONE-Bridge F14674 ZONE-Bridge F14681 ZONE-Bridge F1726 ZONE-Bridge F1730 ZONE-Bridge F1731 ZONE-Bridge F1739 ZONE-Bridge Etc.

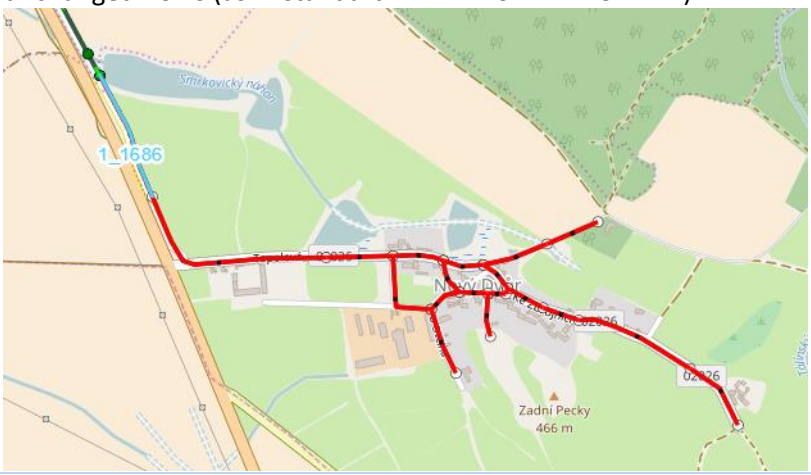
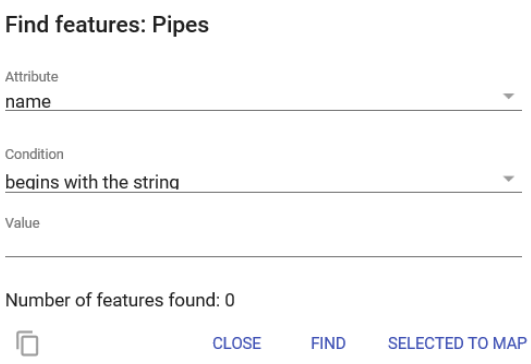
Date	Type	Description
2018.09.25	New feature	**Save/Load plots** it is possible to save plots (graphs) load them next time you want to see them. This greatly reduces the time spent on selecting and defining plots when you work with different scenarios of your model and want to display plots repeatedly. In order to save or load the plot select “List…” from the Time Series plots. 
2018.09.25	New feature	**Head** added to the list of results items, head is “hydraulic grade line”; the color legend is automatically adjusted based on the actual results. 

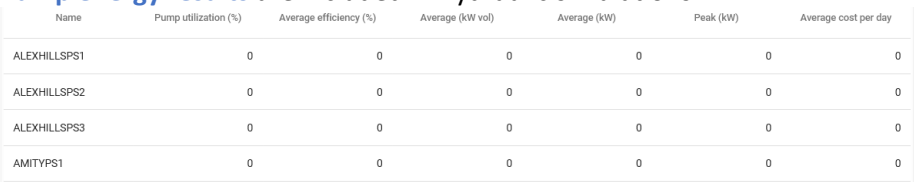
Date	Type	Description
2018.09.25	New feature	**Find feature** extended by "search within" option for numerical entries, e.g. find nodes with HGL > 80 and < 120m, or find pressures > 25m and < 65m, for example. 
2018.05.30	Improvement	**Bookmarks** are saved as part of the project and are not user-dependent; that makes it easier to share bookmarks when multiple users work on the same model in parallel.
2018.05.30	Improvement	**Find** searching for string values is not case sensitive so that you can search for pipes starting with "Q-" as well as "q-", for example, or you can find a link with a name "HighPass" while it is actually stored as "Highpass" or "HIGHPASS".
2018.03.01	Improvement	**Additional styles** were added into "Other layers" 
2018.02.01	New feature	**Shortcut** Alt + A to show and hide analysis window.

Date	Type	Description
2018.02.01	New feature	**Select All** feature added to all layers in the Table of Contents to allow for quick selection of all elements, e.g. pumps or valves or GIS elements such as monitoring locations, calibration points. **Unselect** feature allows you to unselect features from the active layer by drawing a rectangle. 
2018.02.01	New feature	**Shortcut** Alt + A to show and hide Analysis window.
2018.01.01	New feature	**Range selection** added to time series plots that allows you to set the time interval (zoom, range) to e.g. 1 day and then move with this range along the time series plot. 
2017.11.11	New feature	**Reverse flows** added to the simulation comparison in order to show pipes where the flow direction changed anytime during the simulation compared to the original scenario. 

Date	Type	Description
2017.11.11	New feature	**Run analysis** shortcut is available now right next to the analysis type on the big button. This makes it very convenient and perhaps more natural for the user to use the using the "Start analysis" from the main application menu. 
2017.10.04	New feature	**Remove analysis** option was added to every simulation. It allows you to delete a simulation in case that you either accidentally created it or you want to remove it from the final scenario. 
2017.10.04	New feature	Information on **number of pumps, tanks, valves** is available when you activate (click) the "Info" tool next to the Model layer in the table of contents. 
2017.10.04	New feature	**Original SRID number**. Name of the coordinate system is stored along with the registered model and is displayed when you select Models and display the list of models.
2017.10.04	Improvement	**Better placement of time series legend**. The legend is displayed below the graph instead of inside the graph area and that makes the time series graph easier to read. 
2017.09.08	New feature	**3 simultaneous fire nodes** added to every fire flow option i.e. not only "Residual pressure for design flow" but also "Fire flow for residual pressure" and "free discharge hydrant".
2017.09.08	New feature	**Selection of nodes** for simultaneous fire flow has been streamlined and so when you have select a node and add it to the fire flow dialog such node will not be used any longer and then you select another 2 nodes, for example, and decide to add them to the fire flow nodes, the program will fetch them there from the "stack" starting from the last selected node.

Date	Type	Description
2017.09.08	New feature	**Free discharge hydrant option** was added into the Fire Flow simulation. The free discharge hydrant assumes that there is no pumping out of the hydrant by the fire truck and it gives you the maximum discharge that the system can provide under current hydraulic conditions in the network and the size of the hydrant. Note, that you only specify the hydrant orifice size and the program computes both discharge and residual pressure. In addition to the fire flow simulation, this will come handy for flushing purposes or for fire hydrant tests (calibration tests). 
2017.09.08	New feature	**User roles** are added to the interface and they are used by the program administrators to define the category of users. Administrators can access the user roles by clicking the left upper application corner. 
2017.07.30	New feature	**Copy any selection into a clipboard**, which makes it really easy to copy anything that is selected in the Map into a clipboard “as data”. We are busy adding additional Online layers that will allow you to display SCADA data from within Advisor including time histories of measured and simulated for the last 30 days, alarming for unusual SCADA or simulate data and similar.
2017.07.30	New feature	**Offline mode**. Advisor is also available in offline mode where the Open Street Map tiles can be stored on the local drive and where both server and client parts of the program are installed on the same machine. This will allow the customer to use Advisor as a desktop application in places with no internet connection and yet benefit from the super friendly interface to hydraulic and water quality modeling.

Date	Type	Description
2017.07.30	Improvement	**Shutdown planning** improved to make the disconnected parts of the network (nodes and pipes) more transparent to the user and where we modified the hydraulic engine (EPANET) to improve reporting and display of pipes and nodes where hydraulic pressures are insufficient and where node demands (pipe flows) are not possible. The results will be displayed as “zero pressures” and “zero flows” rather than large negative pressures and unchanged flows (as in standard EPANET or MIKE URBAN). 
2017.06.02	New feature	**French version** was developed and added to the User Interface.
2017.06.02	Improvement	Most **language** translations were updated; we have English, Czech, Japanese, German, polish, Portuguese, Spanish, and Hungarian
2017.06.02	Improvement	**Units** were added to all results layers in the Table of Contents
2017.06.02	Improvement	**Copy to clipboard** added to more places throughout the interface so that the results can be more easily reported, e.g. emailed when the application runs on mobile devices.
2017.04.29	New feature	**Find features´ function** when you right click on the layer allows you to find a specific model or GIS element. It also works also with results layers where you can e.g. find pressure bigger than <value>. 
2017.04.29	New feature	**Cloud version** was successfully created

Date	Type	Description
2017.04.12	Improvement	**Automatic labelling** of selected features makes it easy to e.g. compare the list of selected valves in the Map with the list of valves in shutdown planning Editor.
2017.04.12	Improvement	**Remembering time series plots** so that you can define what you want to see and it stays as part of your scenario
2017.04.01	New feature	**Flow trace works now in both forward and backward** mode at the same time and the results of the flow trace can be animated in time (orange = backward, green = forward) 
2017.04.01	Fixed	**Model registration for some SRID** projections resulted in a shift in coordinates and the model was not properly aligned with the Map.
2017.04.01	New feature	**Pump energy results** are included in hydraulic simulations 
2017.04.01	New feature	**Copy and paste and save to CSV file** implemented for time series and also for edits, fire flow, network capacity, pump energy and various place of the interface.
2017.04.01	New feature	**Identical X, Y coordinates** for valves are automatically handled by the model registration. This was added because we have seen several EPANET model produced by GIS companies that included valves with the same X, Y coordinates of the start and end nodes.
2017.04.01	New feature	**Water quality** can be computed and displayed **as part of "hydraulics"** in case that the base model was set for water quality, e.g. residual chlorine simulation.
2017.04.01	New feature	**On-line "analysis"** allows for automatic update of the registered model based on the new source model. This is going to be used in cases where EASYNET will work as a front-end interface to the WD On-Line system.

Name	Pump utilization (%)	Average efficiency (%)	Average (kW vol)	Average (kW)	Peak (kW)	Average cost per day
ALEXHILLSPS1	0	0	0	0	0	0
ALEXHILLSPS2	0	0	0	0	0	0
ALEXHILLSPS3	0	0	0	0	0	0
AMITYPS1	0	0	0	0	0	0

Date	Type	Description
2017.04.01	New feature	**Locate (current position)** that displays your current position would be useful for people using our program out in field on their mobile devices.
2017.04.01	New feature	**Shutdown planning includes also closing of TCV valves** in addition to closing model pipes; this feature was added to provide proper functionality in cases where the hydraulic model contains isolation valves as TCV valves, see the example of the hydraulic model below:
2017.03.10	New feature	**Copy and paste of time series data into a clipboard**. We are adding this functionality to other parts of the user interface too.
2017.03.10	New feature	**Contours for contaminant and water quality in Hydraulics**; heat-map rendering was added other water quality layers that are animated in time.
2017.03.10	Improvement	**Flow tracking was re-designed** and added as an animated layer so that you can see how the forward or backward tracing changes in time.
2017.03.10	Improvement	Improved the **model registration based in INP file**
2017.02.25	New feature	**Parallel simulations**. You can essentially start as many simulations on as many scenarios or models as you want; logout or work within the application on something else and all will get done in the meantime and be ready when you get back.
2017.02.25	New feature	**Scenario comparison**
2017.02.13	New feature	**Unit support**. Editors and layers based on the unit environment of the registered model.
2017.02.13	New feature	**Registration of GIS layers** (hydrants, valves, parcels) including all attributes
2017.02.13	New feature	**Model sharing/public/private**; all models are private by default

Date	Type	Description
2017.02.13	New feature	**Base water quality analysis** as part of the registered model (under Hydraulics). This feature was added in order to simulate e.g. residual chlorine or water quality runs other than those supported by the user interface.

Type: New feature, fixed error or improvement