



CityWater Tutorial

CityWater – View Project Details and Map

How to view details for your project and view the project map

Project Details

Summary | Map | Curves | Patterns | Energy | Export | Run Summary

General

Project Name	Colorado
Description	For Testing
Date Created	Nov 7, 2016, 6:44 p.m.

Model Parameters

Flow Units	GPM
Headloss Formula	H-W
Quality Parameter	Trace
Report Timesteps	25
Report Timestep	1:00:00
Report Start Time	0:00:00

Nodes

Number of Junctions	117
Number of Reservoirs	1
Number of Tanks	1
Total Nodes	119

Links

Number of Pipes	120
Number of Pumps	1
Number of Valves	6
Total Links	127

Legend

- Tanks
- Reservoirs
- Junctions
- Pipes
- Pumps
- Valves
- Pressure
 - < 0.0
 - 0.0 - 40.0
 - 40.0 - 80.0
 - 80.0 - 120.0
 - > 120.0
- Velocity
 - < 1.0
 - 1.0 - 1.0
 - 1.0 - 1.0
 - 1.0 - 1.0
 - > 1.0

Objectives

This tutorial shows how to access EPANET model details and visualize model results using the Map page.

Prerequisites

- Login and User Profile

Requirements

- CityWater account
- Internet access

Time

- 10–20 minutes

1	Getting Started	2
2	Viewing the Project Details	2
3	Viewing the Project Map.....	4
3.1	Map Navigation	5
3.2	Layer Selection	5
3.3	Map Elements	5
3.4	Property Lookup.....	6
4	Temporal Visualization	6
4.1	Tracing	6
4.2	Plots	7
4.3	Patterns and Curves	8
5	Annotations	9
6	Conclusion.....	9

1 Getting Started

CityWater™ provides a useful way to view details of your EPANET project, and it can visualize the project using maps. You will need to have a CityWater account and at least one EPANET model uploaded to complete this tutorial.

If you are not already logged in to your CityWater account, access the Aquaveo™ Portal by doing the following:

1. Open a web browser. For the best experience, use Google Chrome, Mozilla Firefox, or Safari.
2. Navigate to Aquaveo Portal using this address:
<https://portal.aquaveo.com>
3. Log in to your CityWater account.
4. Open the CityWater app by selecting its app icon in the Apps Library.

2 Viewing the Project Details

On the Projects page, all of the available EPANET projects are shown for your account. The list shows the project name, description, the date of creation, and who created the project.

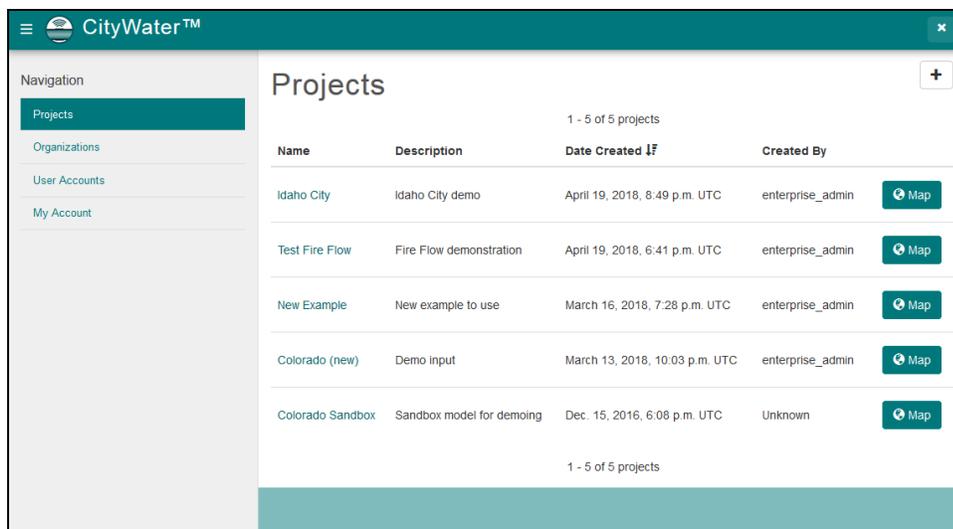


Figure 1: Example of the Projects page

From the Projects page, you can view either the details about the project or the project map. Start by viewing the project details.

1. Click on the project name “Idaho City” to navigate to the Project Details page for the Idaho model. This is the project that was created in the “Create a New Project” tutorial. If you do not have the project, select any of the projects available.

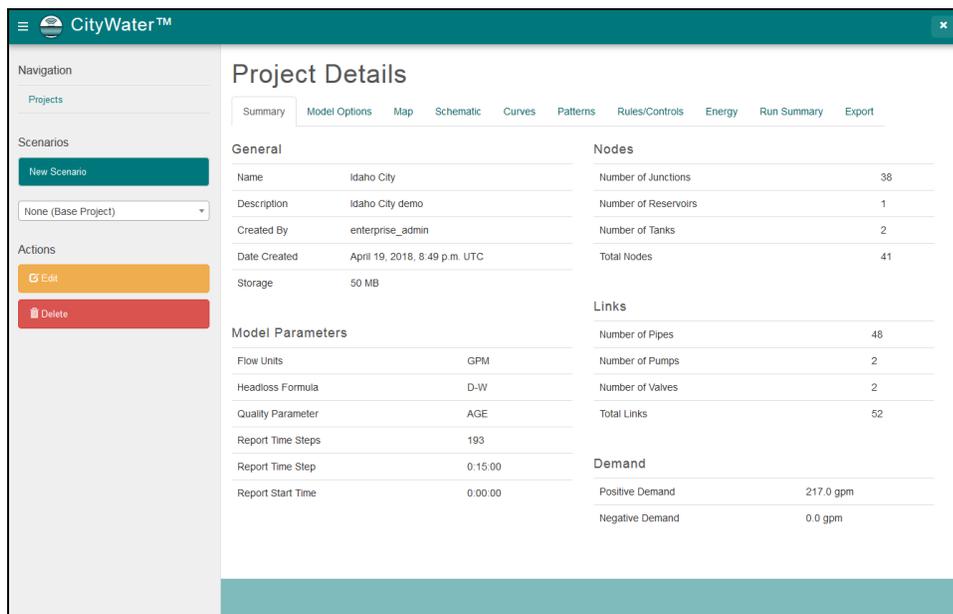


Figure 2: Example of the Project Details page

The Project Details page is organized into several tabs. Here is a brief explanation of each tab:

- **Summary:** Shows a summary of the EPANET model including the name and description, number of links, number of nodes, and some of the global parameters.

- **Model Options:** Shows a summary of Global Options and Time Options.
- **Map:** Provides a link to the Map page and shows map related contents such as the map preview, spatial reference system, and map annotations.
- **Schematic:** Contains a Go To Schematic button. Clicking the button takes you to schematic page where you can view the model in either Pinned or Free Flow mode.
- **Curves and Patterns:** These tabs show plots of the various curves and patterns used in the model, such as the pump curves and demand patterns.
- **Rules/Controls:** Shows a summary Rules and Controls set for the model.
- **Energy:** Shows the standard EPANET energy report.
- **Run Summary:** Displays the standard output from running the model.
- **Export:** Provides a way to export the EPANET model layers as shapefiles.

3 Viewing the Project Map

Viewing the project map is done on the Map page. This page can be reached from either the Projects page or the Project Details page using the Map tab.

1. Select the **Map** tab in the Project Details page.
2. Click on the **Go To Map** button to navigate to the Map Page.

The Map Page displays a map of the water distribution network symbolized based on the layers currently selected.

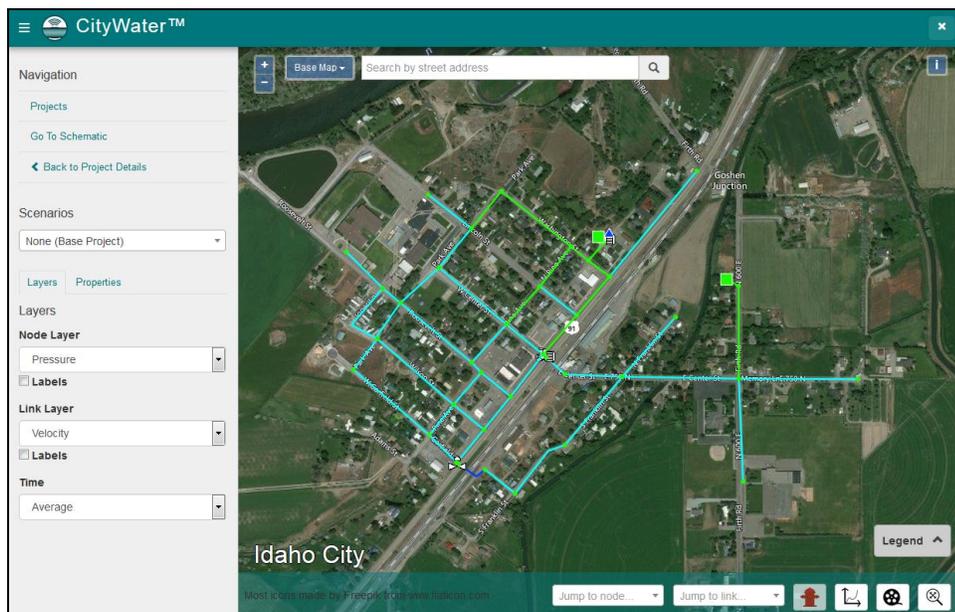


Figure 3: Example of the project Map page

3.1 Map Navigation

Map navigation similar to other mapping applications:

1. To zoom in or out, use the  and  buttons in the top left-hand corner of the map or use the mouse scroll wheel.
2. Hold the Shift key while clicking and dragging the mouse to box zoom.
3. Use the **Zoom to Extents**  button in the bottom right-hand corner of the screen to frame the model extents on the map.
4. Collapse the legend or parts of the legend using the arrow  symbols on the legend.

Specific nodes or links in the map can be zoomed in on using the Jump to Link or Jump to Node drop-downs located at the bottom of the map.

5. Click on the Jump to Link field to bring up a list of all links in the map.
6. Select the first link in the list.

The map will zoom in on the selected link, placing it in the center of the map area. The individual name of either a link or node can also be typed into these fields to zoom in on them. Using these fields can save time in locating the individual elements within the map project.

3.2 Layer Selection

There are several different layers that you can view on the map. You can toggle through the different layers using the Layer controls.

1. Select the **Layers** tab from the left hand panel to access the Layer controls. If the left hand panel is hidden, you can reveal it by using the  menu button, located in the top left hand corner of the page.
2. Select “Nodes” from the Node Layer drop-down menu. This will bring you to the Properties tab where the properties of the layer are displayed.
3. Go back to the **Layers** tab and select “Links” from the Link Layer drop-down menu.

Notice how the symbols on the map and legend change. The Node and Link layers represent the network geometry with no simulation result values symbolized.

3.3 Map Elements

Elements are the lines and shapes drawn over the map. The Legend shows what the different elements represent. The color of the elements may change depending on the layer selections.

Elements can be selected by clicking on them. Using the Legend as reference, do the following:

1. Identify a pipe element and select the pipe by clicking on it.
2. Identify a junction element and select the junction by clicking on it.

3. Identify a tank element and select the tank by clicking on it.

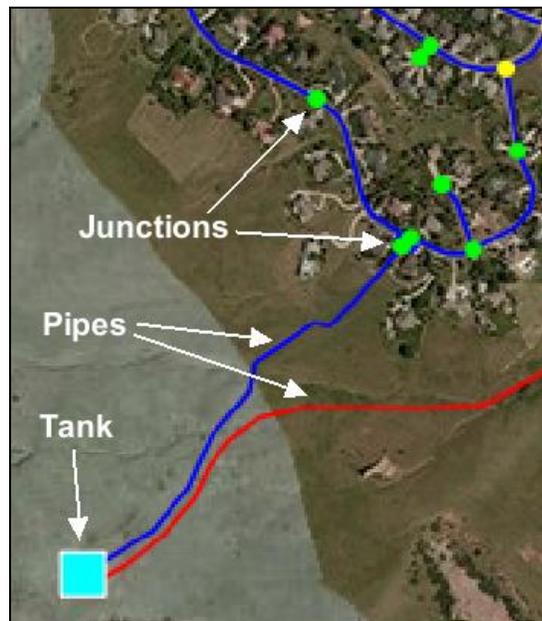


Figure 4 Example of map elements

3.4 Property Lookup

You can look up the properties of any element in the model.

1. Select any junction, represented as circular nodes, by clicking on it.

The active tab on the left hand panel changes to the Properties tab automatically and displays the model properties assigned to that junction. For junctions, these include its label, type, elevation, base demand flow, and junction pattern.

2. Select any other element on the map to view its properties.
3. Hold the Shift button on the keyboard to select multiple elements of the same type.
4. Switch back to the Layers tab.
5. Select “Pressure” from the Node Layer drop-down and “Velocity” from the Link Layer drop-down.
6. Select any junction on the map and note its properties.

In addition to the model parameters, there are additional parameters associated with the result dataset, in this case the pressure and simulation time. The map is symbolized by the value of the selected variable.

4 Temporal Visualization

Several tools are available to see how the model varies over time.

4.1 Tracing

To see how a substance spreads through the system from a given point, do the following:

1. On the Layers tab of the Navigation panel, select “Quality” from both the Node Layer and Link Layer drop-downs.
2. Select “Minimum” from the Time drop-down.
3. Zoom in to the valve at the intersection of Garfield and Highway 91.

The link (pipe) between Garfield and Highway 91 is light blue.

4. Select “Average” from the Time drop-down.
5. Zoom out so the entire subdivision is visible.

Notice how most of the pipes have changed to yellow or green. This indicates the progress of the substance.

6. Select “Maximum” from the Time drop-down.

Notice how the substance has spread significantly to most of the system (one link is still yellow).

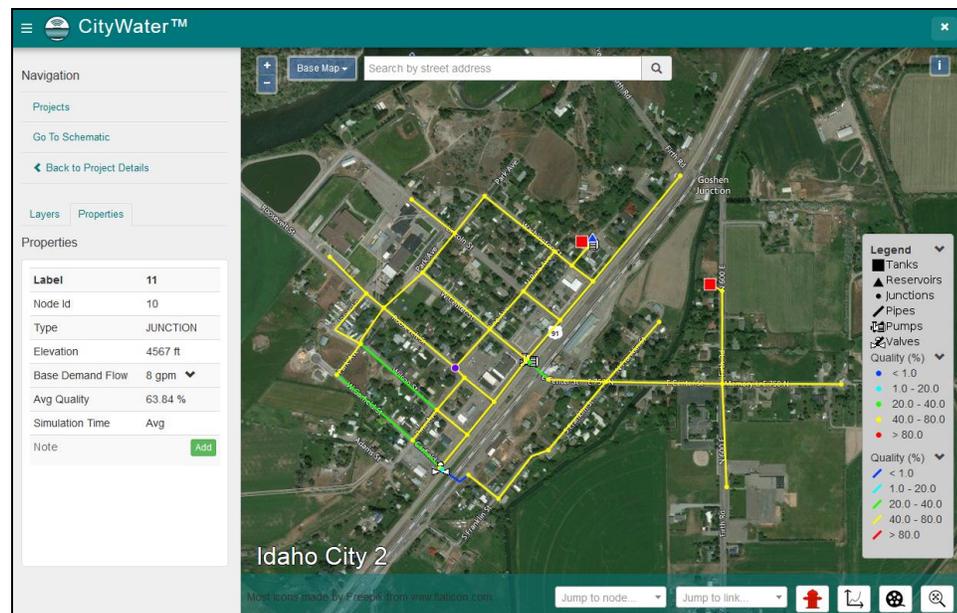


Figure 5: Average spread

4.2 Plots

Another useful way to visualize how the model varies temporally is to plot the value of an element over time.

1. Press the **Plot**  button from the bottom right corner, with no elements selected.

This will display the system flow balance plot for the model. When done viewing the plot, close it by doing the following:

2. Click the **X** in the upper right corner of the plot.

To look at a plot for a specific element, do the following:

3. Select any element on the map.
4. Press the **Plot**  button.

This will display a plot of the variable versus time for the selected element. If you select multiple elements and press the **Plot**  button, a time series for each selected element will be plotted.

You can also print the plot or export it as an image in PNG, JPEG, PDF, or SVG formats.

5. Select the  menu in the top right hand corner of the plot dialog.
6. Select **Download PNG image** to export the plot as a PNG image file.
7. When done viewing the plot, click the **X** in the corner.

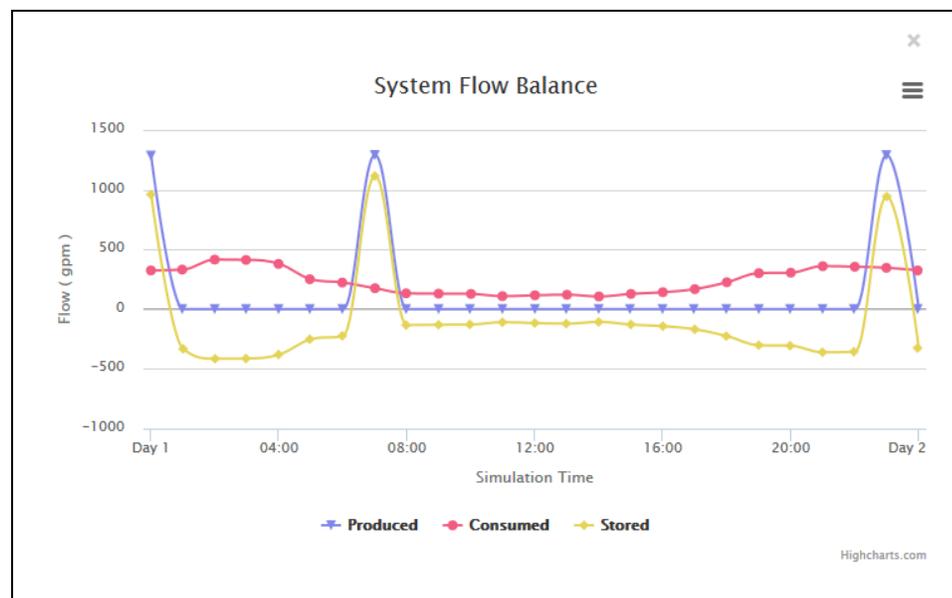


Figure 6: Plot example

4.3 Patterns and Curves

The model's temporal variations can also be visualized using pattern and curve charts.

1. Select any junction.
2. On the Property tab under the Navigation pane, click the  at the right end of the Base Demand Flow row to reveal Demand and Pattern columns.
3. Click the linked word beneath to go to the Patterns tab on the Project Details page. A usage pattern over time will be displayed.

This provides a convenient way to access the patterns and curves assigned to the different elements in your model.

Patterns and curves can be exported using the same steps used in exporting a plot.

5 Annotations

You can add annotations or comments to any element on the map. Add a note to any element by doing the following:

1. Go back to the Map page either by pressing the back button on your browser, or selecting the **Go To Map** button from the Map tab on the Project Details page.
2. Select an element
3. Click the **Add** button to the right of the Note property in the Properties tab on the left.
4. Enter your note in the dialog that appears and press the **Add** button to save it.

You can view all of the annotations on the map by going back to the Project Details page and selecting the Map tab. The annotations are listed based on element type. Use the search boxes to find the annotations you are interested in.

6 Conclusion

This concludes the “View Project Details and Map” tutorial for CityWater. Items discussed in the tutorial included:

- Accessing the Project Details page
- Reviewing the Project Details tabs
- Accessing the Map page
- Navigating the Map page
- Using Map layers
- Viewing Map element properties
- Viewing trace paths and extents
- Viewing temporal plots
- Viewing patterns and curves
- Adding annotations