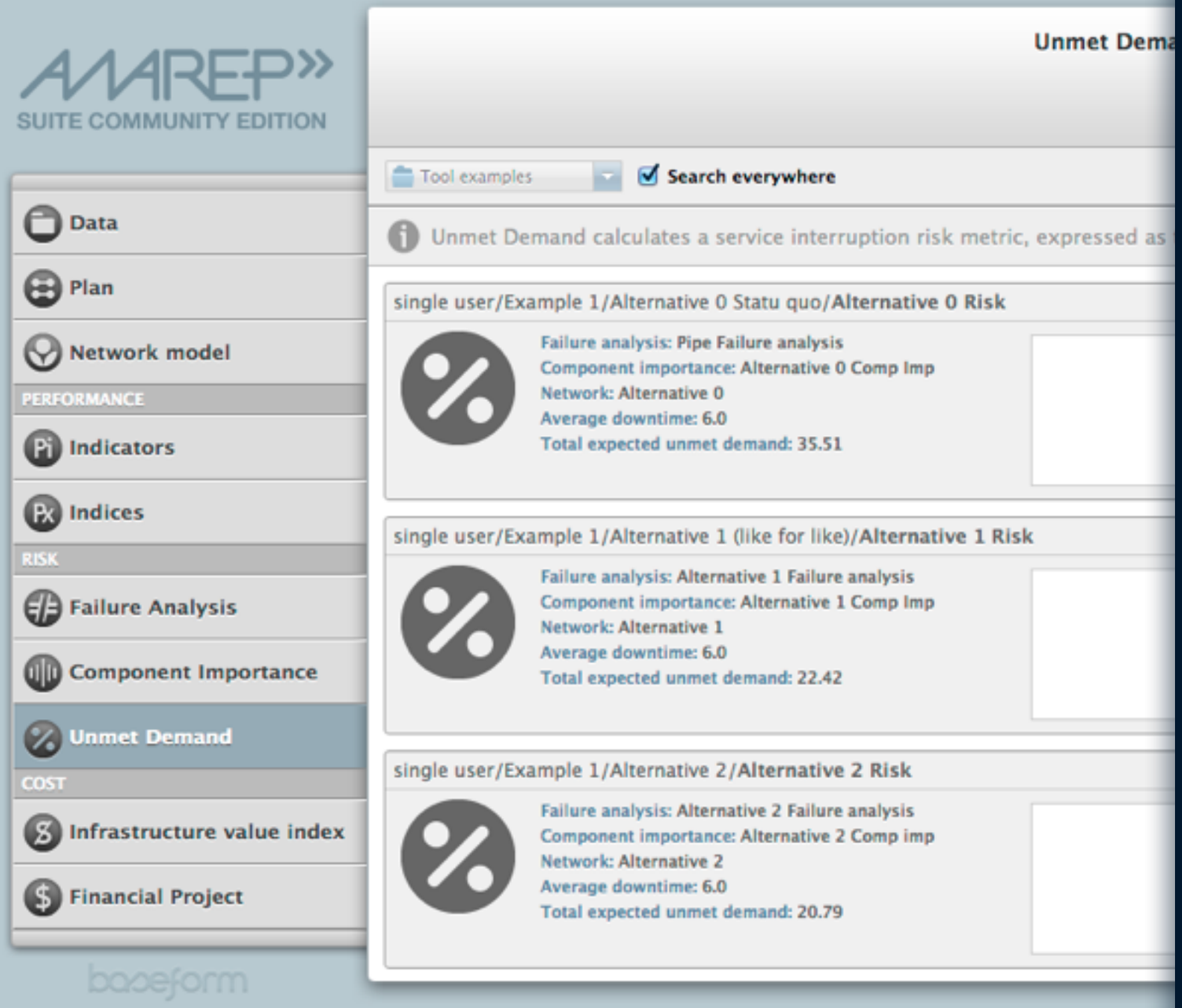
baseform

Unmet demand

Quick start guide

2014/May · AWARE-P Suite Documentation



Unmet demand

Unmet calculates a service interruption risk metric, expressed as the expected volume of demand that the system will be unable to satisfy over one year, caused by the failure of each individual pipe.

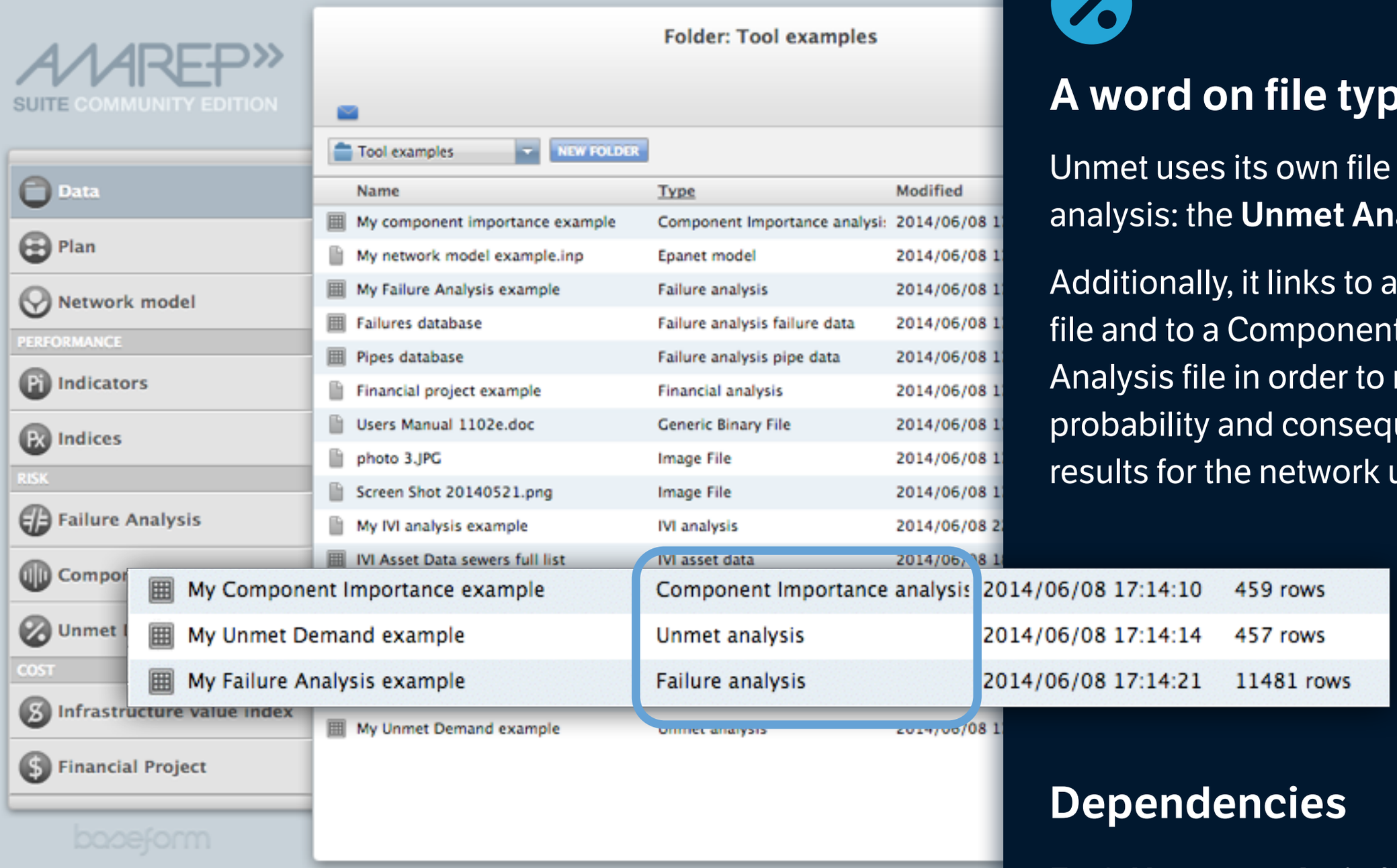
The model combines results from Failure Analysis and Component Importance.

Input files required:

- a Failure Analysis file.
- a Component Importance Analysis file for the same network.

Where to start?

To start an Unmet Demand analysis, click on an existing file from the list, or hit the **Create New** button (top right).



A word on file types

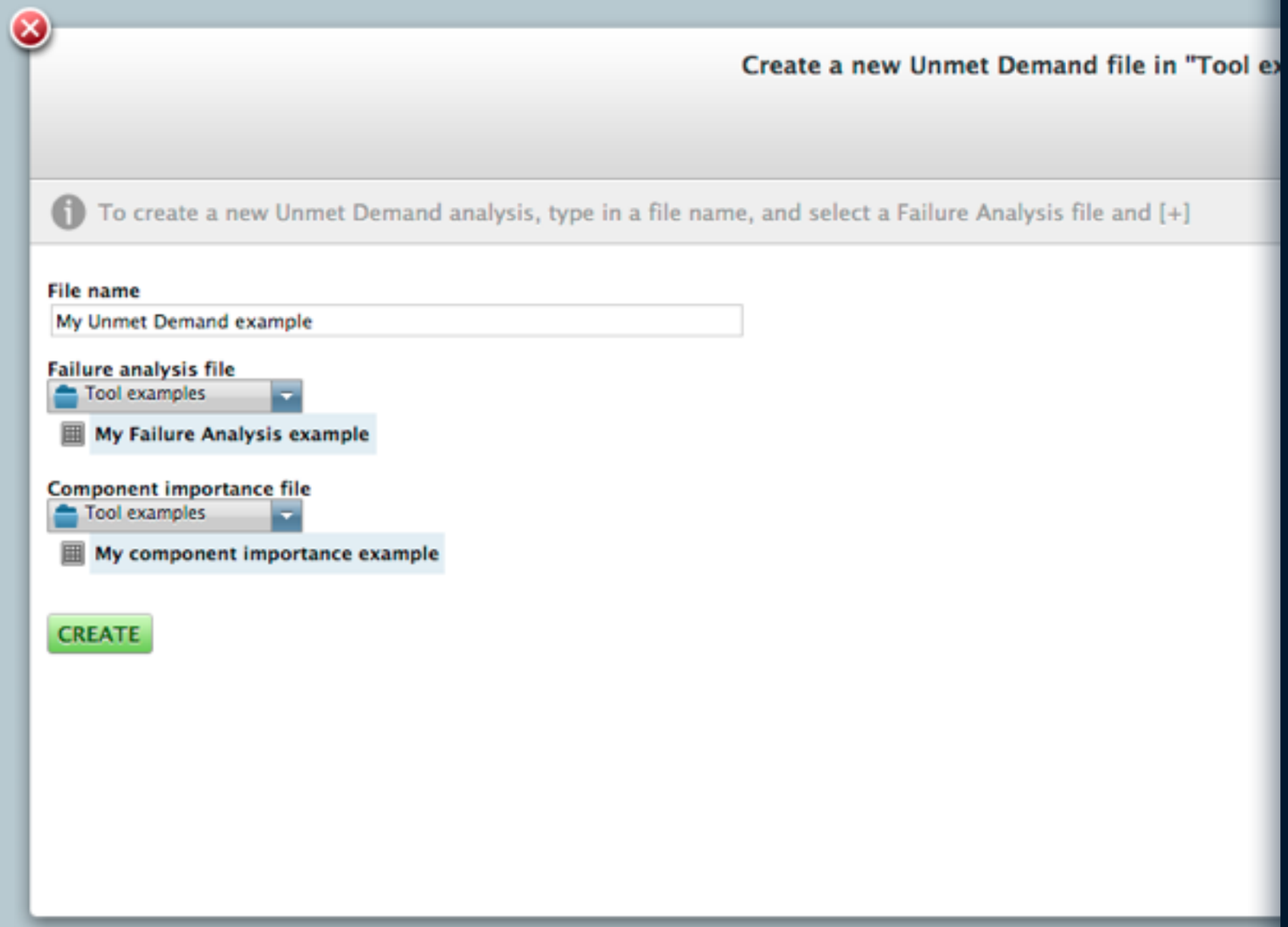
Unmet uses its own file type to store the analysis: the **Unmet Analysis** file.

Additionally, it links to a Failure Analysis file and to a Component Importance Analysis file in order to retrieve probability and consequence of failure results for the network under evaluation.

Dependencies

Each **Unmet analysis** file has a formal **dependency** on the two files mentioned above.

Baseform Core keeps track of file dependencies even when individual files are renamed or moved.



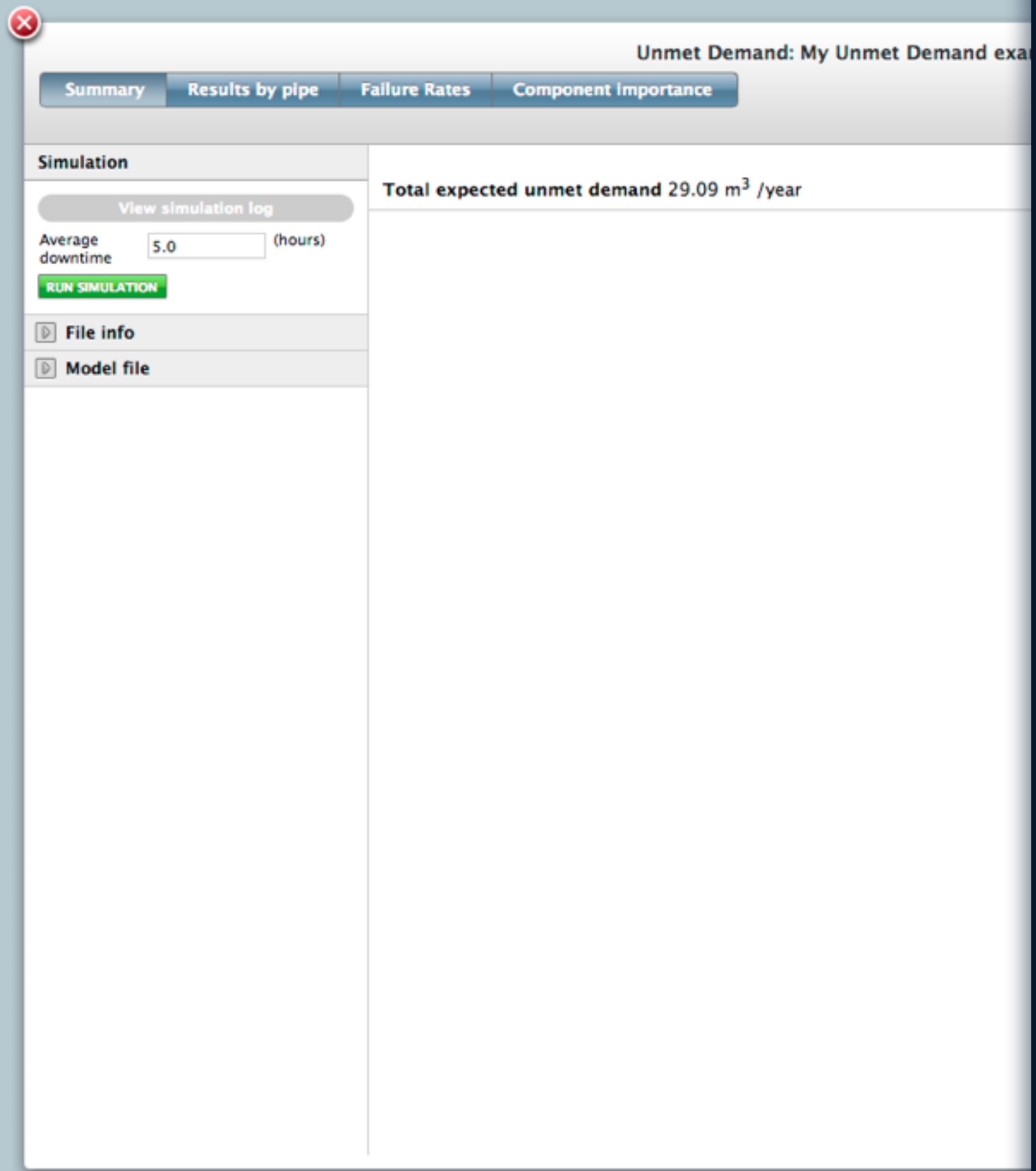
Start a new analysis

Type a name for your new file.

Then, select a Failure Analysis file: navigate to the appropriate folder and make sure to click on the desired file .

Next, do the same for the Component Importance file.

Press the **Create** button when you are ready to proceed.



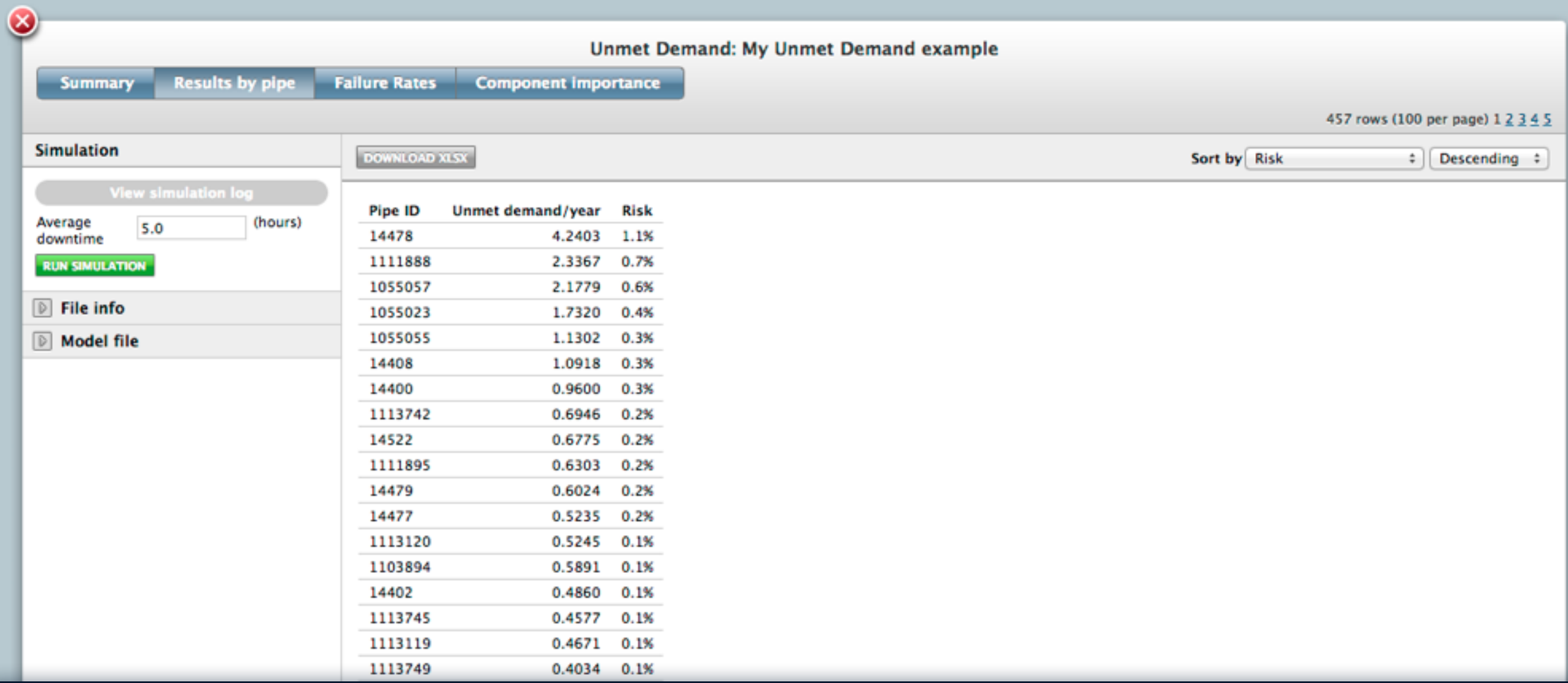
Running an analysis

In order to run an analysis, it is necessary to specify a value for the average downtime caused by an individual pipe outage. The default value is 6 hours.

Next, press **Run Simulation**.

When the analysis completes, the aggregated network result is shown as the total expected unmet demand, in volume per year.

This is a service interruption metric that can be used to quantify the risk of pipe failure.



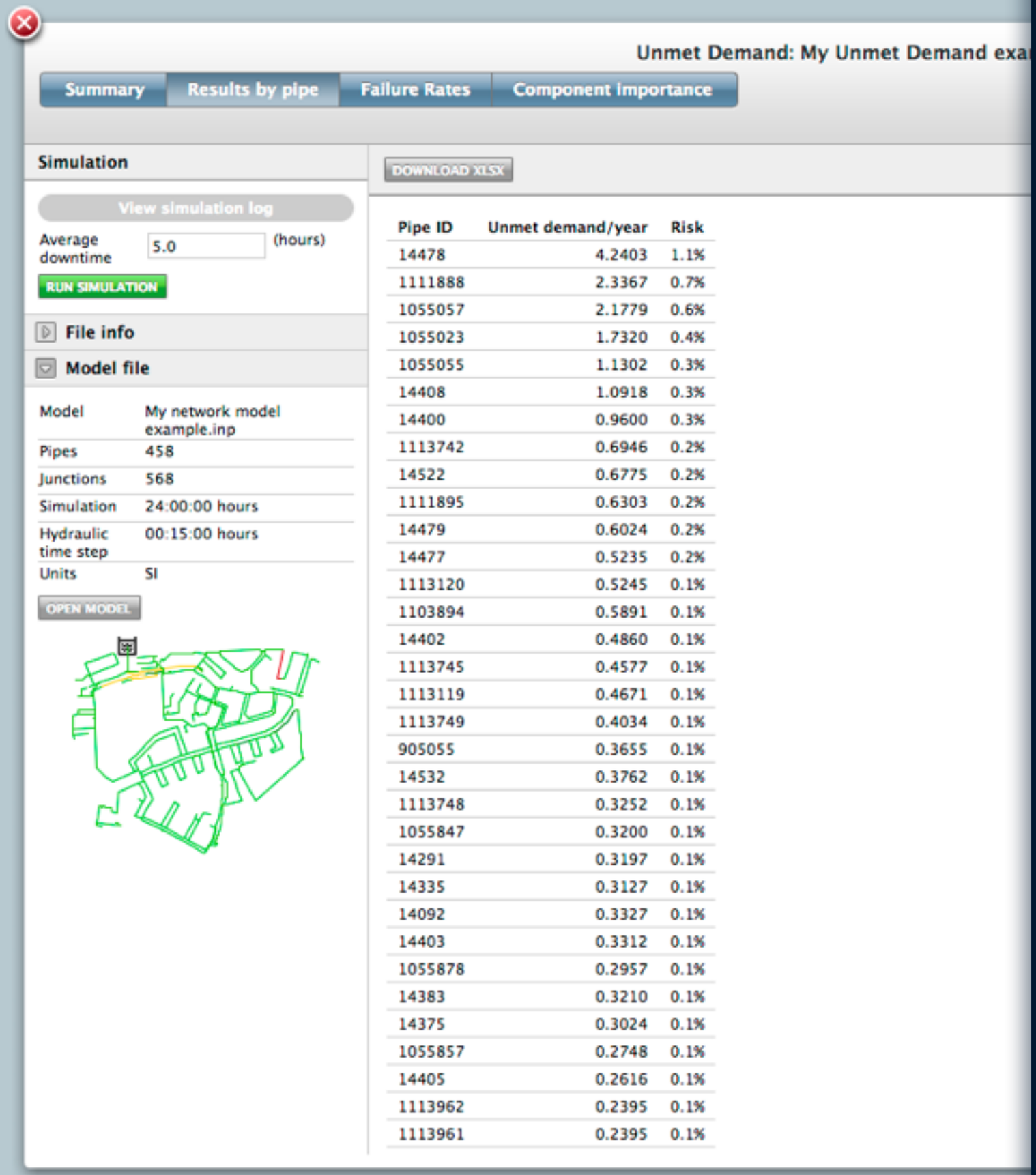
Results by pipe

The **Results by pipe** tab (top) gives access to a full list of pipes and the expected unmet demand associated to each individual pipe's outage, in volume per year.

This is the result of multiplying the pipe's expected number of failures in 1 year, by the average downtime, and by the average reduced service caused by its failure.

The list can be sorted by any of the columns, using the selector on the right.

The table may be downloaded to an MS®Excel® spreadsheet format.

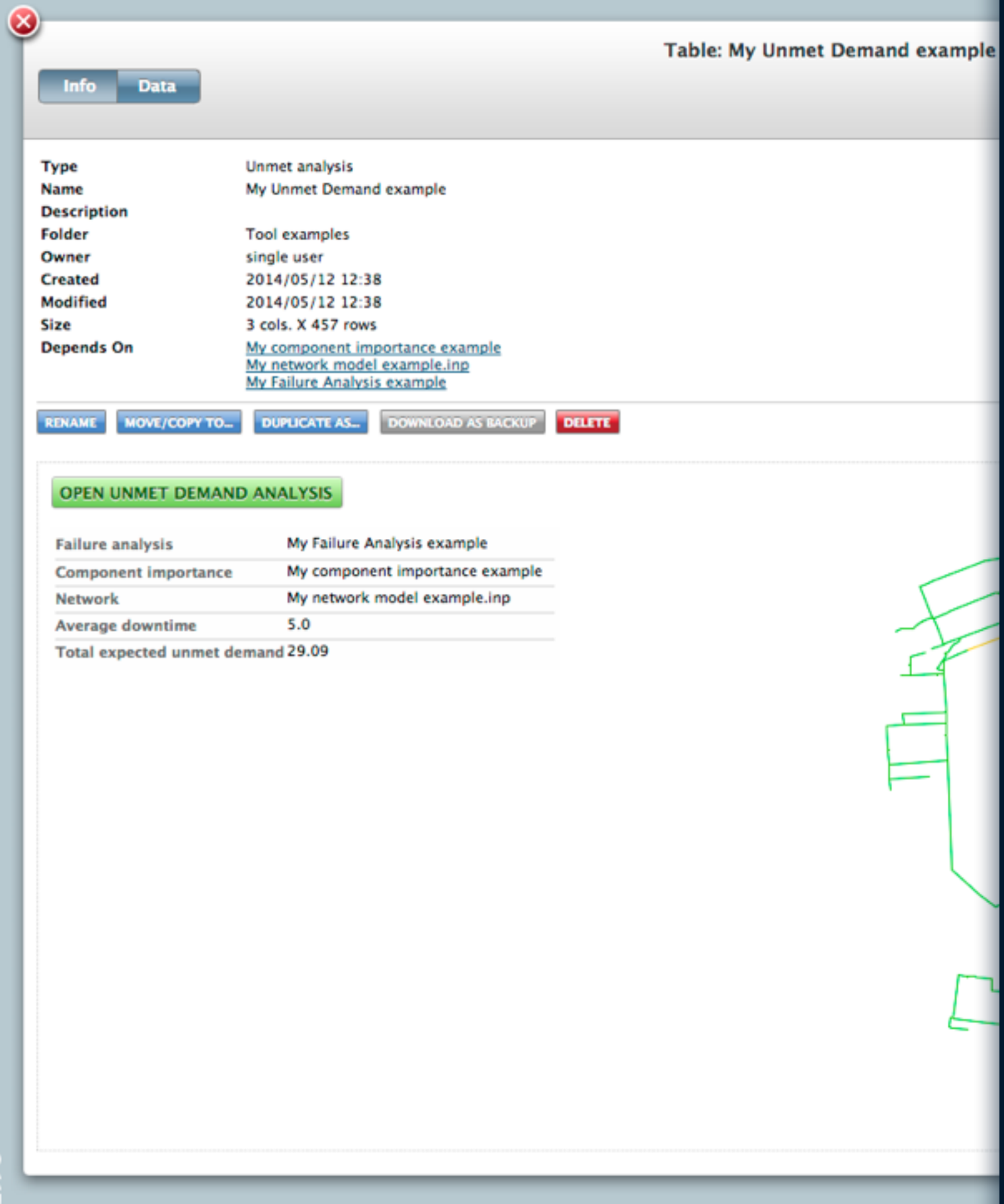


Results on a map

The pipe-by-pipe results are also graphically displayed on the map shown in the **Network info** area on the left.

Click on the **Open Model** button to open the model file in the **Network Model** tool.

This makes available the component importance analysis results in a full 2D and 3D mapping visualization environment, alongside all hydraulic analysis results.



Managing your file

Hitting the **Manage File** button in the **File Info** area of any tool brings up the File Info viewer of the **Data Manager**.

Here, a file may be renamed, moved, copied, duplicated or downloaded in a backup format.

If you wish to save your current analysis file with a different name ('Save As'), use the **Duplicate As** option.

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For more details and technical background on this or any other tool of the AWARE-P Suite, please refer to baseform.org

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