

AquaTwin Getting Started



ArcPro version - 3.X
AquaTwin version - 3.X

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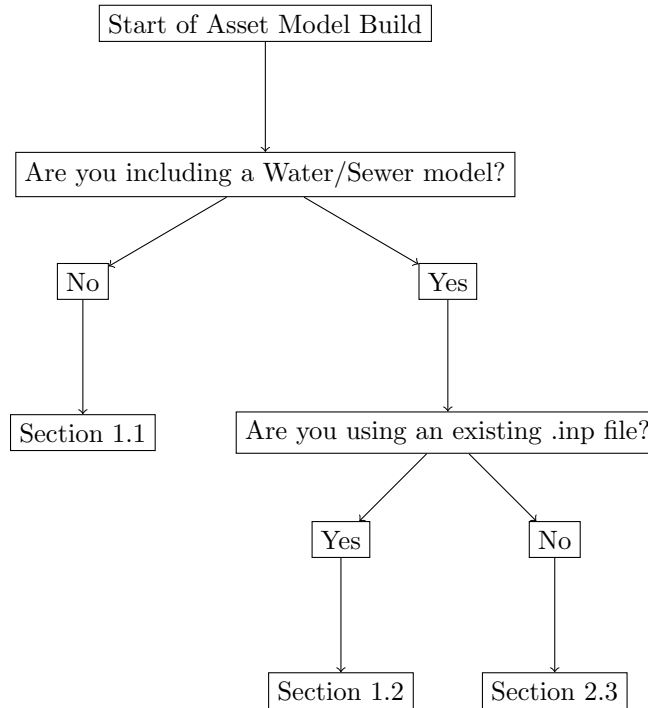
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Welcome to the AquaTwin Model Building Guide! This guide will walk you through the process of building a model using AquaTwin for asset and water/sewer management. Throughout this guide, we will provide step-by-step instructions and best practices to help you build an effective model tailored to your specific needs.

1 Asset

Follow the flowchart to determine which section will be most beneficial in assisting you with constructing an asset model.



1.1 Asset Registration

To initiate the process of creating your asset model, the first step is to register your assets using AquaTwin's *Asset Registration* as highlighted in **Figure 1**. Above the *Asset Registration* button, you also need to specify if the asset model is for water or sewer.

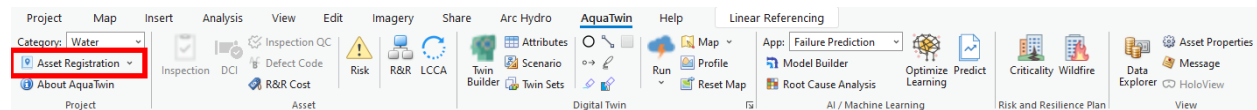


Figure 1: AquaTwin Asset Registration

From this point, you can register your assets by utilizing the asset registration wizard. First specify a reference year and the asset units. Then simply map the assets using unique asset IDs to proceed as seen in **Figure 2**.

After clicking *Next* in **Figure 2**, the wizard will ask for a file path to a hydraulic model .inp file. You can erase this file path to leave it blank, click *Next* and *Finish*.

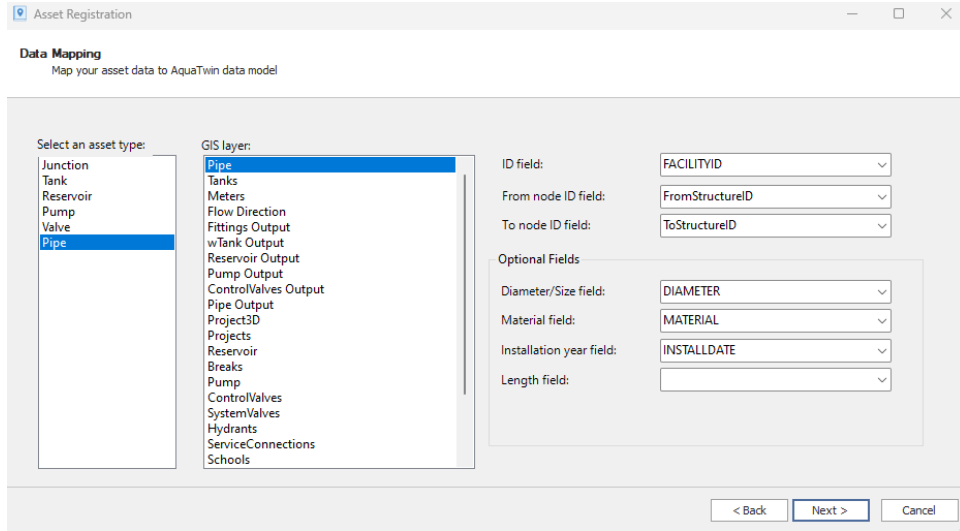


Figure 2: AquaTwin Asset Registration Wizard

1.2 Asset Registration and Hydraulic Model Link

To begin the process of creating your asset model, the initial step is to register your assets using AquaTwin’s *Asset Registration* feature, as shown in **Figure 1**. Additionally, it is necessary to indicate whether the asset model pertains to water or sewer by specifying the category above *Asset Registration* in **Figure 1**.

Once you have reached this stage, you can register your assets by employing the asset registration wizard. Start by specifying the reference year and the units of measurement for the assets. Then, seamlessly proceed by mapping the assets using distinct asset IDs, as demonstrated in **Figure 2**.

Upon selecting *Next* in **Figure 2**, the wizard will prompt you to provide a file path to a hydraulic model .inp file as shown in **Figure 3**. Depending on whether the asset model relates to water or sewer, the wizard will request either an EPANET or EPA SWMM5 .inp file. It is essential to note that the asset and water/sewer models are interconnected through unique asset IDs. Click on *Next* and then *Finish*.

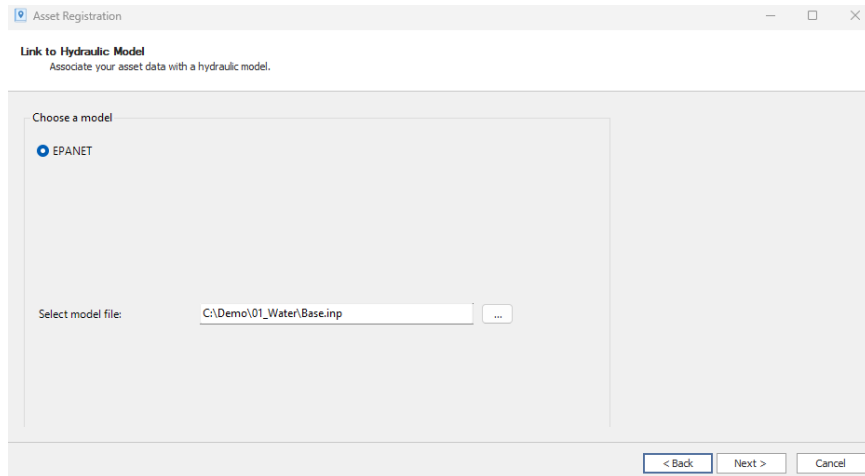
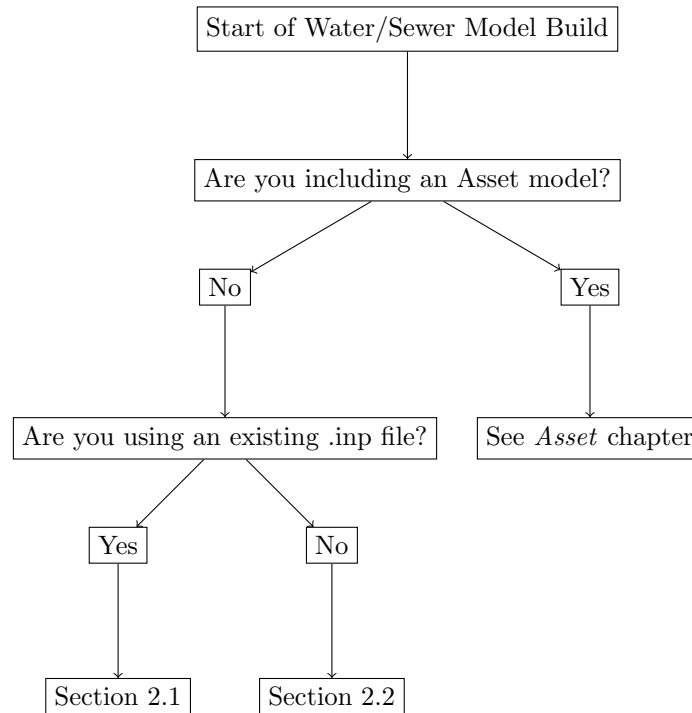


Figure 3: AquaTwin Asset Registration Wizard

2 Water and Sewer

Follow the flowchart to determine which section will be most beneficial in assisting you with constructing a hydraulic model.



2.1 Hydraulic Model Link

To begin building a hydraulic model from an EPANET or EPA SWMM5 .inp file, start by specifying whether the model is a Water or Sewer model in the *Category* section above *Asset Registration* in **Figure 1**. Next, click on *Twin Builder* as highlighted in **Figure 4**.

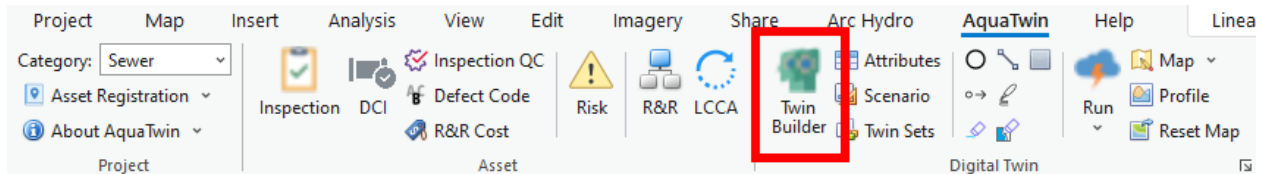


Figure 4: AquaTwin Twin Builder

Once in *Twin Builder*, the user is asked to provide the file path to the EPANET or EPA SWMM5 .inp file as shown in **Figure 5**. Once the file path is specified, click *Next* to select the appropriate spatial reference of the hydraulic model. Click *Next* and *Finish* to import the hydraulic model. A hydraulic model geodatabase will be created with feature classes corresponding to the assets needs for a Water or Sewer model. The hydraulic model should be able to be immediately run if it was already a working model.

2.2 Hydraulic Model Build

To construct a hydraulic model from scratch or using user GIS data, it is necessary to create a hydraulic model geodatabase. This can be achieved by selecting *Create New*, as illustrated in **Figure 6**. Following

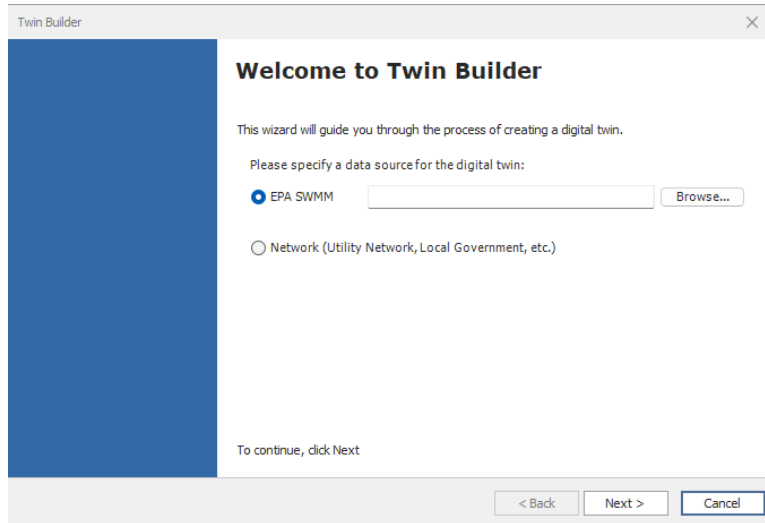


Figure 5: Specify EPANET or EPA SWMM5 .inp File

this action, the asset feature classes will become visible in the *Contents* tab of ArcGIS Pro.

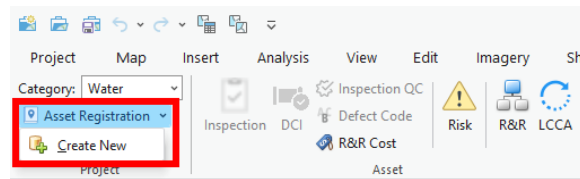


Figure 6: Create New Hydraulic Model Geodatabase

2.2.1 From Scratch

To create a hydraulic model from scratch, users have the ability to manually add nodes, lines, polygons, and make necessary edits to these assets. These options are conveniently accessible through the AquaTwin Ribbon, as indicated in **Figure 7**.

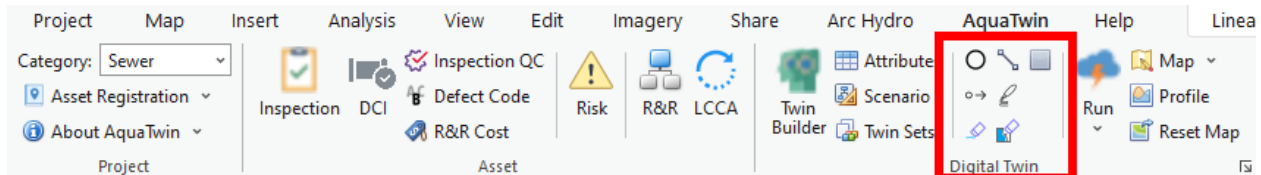


Figure 7: Build Hydraulic model from scratch

2.2.2 From GIS Data

An alternative approach to building a hydraulic model involves utilizing existing GIS data. Once the hydraulic model geodatabase has been established, users can map GIS data to the hydraulic model by employing the *Import Center* tool as shown in **Figure 8**. This tool can be found in the *Tools* tab within the *Data Explorer*. By selecting the desired Asset type to be updated and choosing the appropriate GIS datasource, users can proceed with the mapping process.

On the left-hand side, the fields represent the attributes from the GIS datasource, while on the right-hand side, the fields correspond to the hydraulic model attributes. To map the data, simply select a field from the datasource and match it with the corresponding field in the hydraulic model. Once selected, click on *Add* to complete the mapping process.

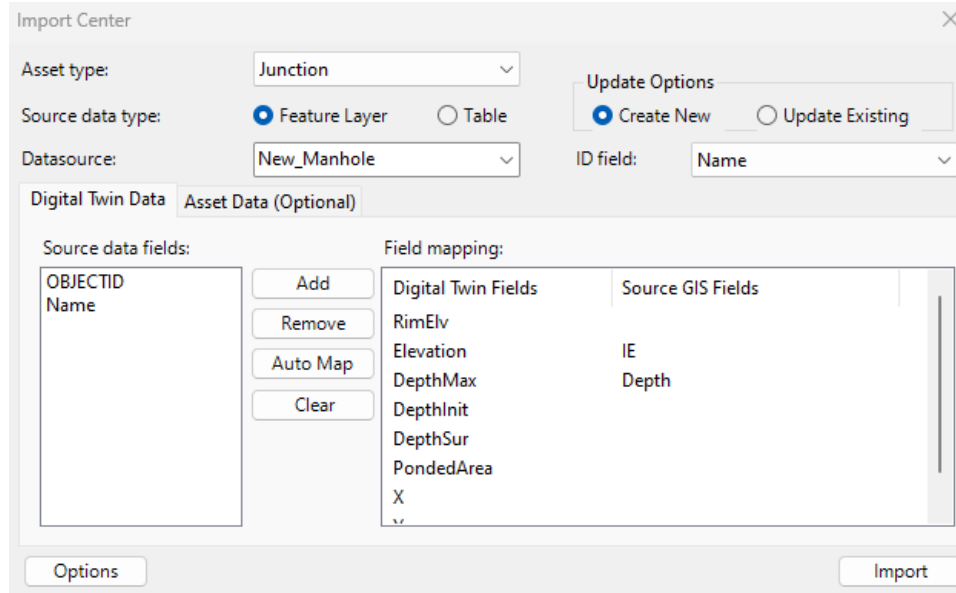


Figure 8: Import Center

2.3 Hydraulic Model Build and Asset Registration

This section is designed to assist users who may initially commence their work with a Water/Sewer model but eventually choose to construct an Asset model using the same dataset.

If you find yourself in this situation, we recommend referring to the beginning of **Chapter 2** where you will find a comprehensive flow chart outlining the steps to construct the hydraulic model. It serves as a helpful guide to navigate through the process smoothly. Once the hydraulic model is successfully created, please proceed to **Section 1.1** for further instructions.

It is essential to ensure that no hydraulic model file path is specified, shown in **Figure 3**. In other words, leave the file path field blank to avoid any potential conflicts or errors. This will ensure a seamless integration of the Asset model with the existing dataset.