



Getting Started with Arc Hydro

Water resource managers use GIS technology to visualize and analyze topographic, hydrographic, and hydrologic data for tasks such as assessing water quality, estimating water availability, planning flood prevention, understanding the natural environment, and managing water resources.

Esri's Arc Hydro consists of a data model, toolset, and workflows developed over the years to support specific GIS implementations in water resources. It offers the latest in innovation in GIS to help you create a deeper understanding of your hydro data. Arc Hydro helps you build a foundational dataset that can be used in water resource analyses and for integration with water resource models. It standardizes water data structures so that data can be used consistently and efficiently to solve a wider range of water resource problems at any scale—regional, national, or international.

This document provides information on how to get started using Arc Hydro. The starting point for each individual will depend on individual interests and how Arc Hydro will be used in their practice. This document will present technical and conceptual guidelines that focus on first steps with Arc Hydro.

Arc Hydro builds on general ArcGIS implementation fundamentals and practices. This document is not intended to teach ArcGIS— it is focused on getting you started with Arc Hydro, assuming that you have basic ArcGIS skills in place.

Arc Hydro Resources

Arc Hydro has been in continuous development since its initial release in 2002. There are many supporting resources that will be referenced in this document. Links to all references can be found in the document: [Learning about Arc Hydro: Resources and Documentation](#)

Arc Hydro Overview

Arc Hydro is intended to provide practical GIS framework for development of integrated analytical systems for water resources professionals and consists of a data model, tools, workflows, and community sharing experiences and ideas. Arc Hydro has many tools and workflows supporting many areas of water resources.

An overview of Arc Hydro and a discussion of its implementation have been presented and discussed in the 4-part webinar series: [Arc Hydro in Action](#) (2021). The first webinar, Arc Hydro in ArcGIS Pro, presents general Arc Hydro concepts and is a good starting point to understand what Arc Hydro is and is not.

Getting Started

Once you have determined that Arc Hydro is something to invest time in, the best way to proceed is to learn by doing. Here are key steps for getting started:

1. Download and install the Arc Hydro tools. Follow instructions in [Downloading and Installing Arc Hydro Tools](#) document.
2. Read [Arc Hydro: Project Development Best Practices](#) – this technical paper captures what works well when implementing Arc Hydro projects both in ArcMap and ArcGIS Pro. This is required reading – follow the recommendations closely, especially as you are getting into Arc Hydro. Once you are comfortable you can begin to move past the recommendations (but be ready for surprises).
 - ArcGIS Pro has a default way in which it organizes data and project folders. This structure can be leveraged to support Arc Hydro best practices for data and folder organization (section 4.2 in the Arc Hydro: Project Development Best Practices document).
3. Define spatial area of interest and collect data to use in Arc Hydro processing and analysis. Start with something small in extent and with low data requirements. In many cases, a DEM is enough. Keep the initial area of interest small and increase it as you gain confidence with the tools.
4. Define the initial Arc Hydro implementation domain that you want to use first. Start simple and with something that is already well documented (review [Learning about Arc Hydro: Resources and Documentation](#) for a list of existing documents).
5. Review any existing documentation pertinent to your domain of interest.
6. Start using Arc Hydro tools in the context of your selected area of interest and implementation domain. Complete your first simple Arc Hydro project and then start working on additional capabilities.
7. Engage with Arc Hydro users and the Arc Hydro development team via Esri's [Water Resources Community](#).
8. Participate in Esri events and activities (webinars, office hours, conferences) and connect with industry professionals at water resources conferences.

Arc Hydro has been used extensively on many projects. We do not keep a list of projects and publications, but many can be found using simple web searches.