

American Water Resources Association
2010 SUMMER SPECIALTY CONFERENCE
GIS & Water Resources VI
March 29 – 31, 2010
Orlando, FL

Monday, March 29
1:30 PM – 3:00 PM
SESSION 1: Florida Arc Hydro I

ArcHydro Implementation at SJRWMD - Evolving Toward Simplicity - Christine Mundy, St. Johns River Water Mgmt District, Palatka, FL (co-authors: Ellen Dean, Doug Campbell)

Several years ago, the St. Johns River Water Management District in Florida adopted the ArcHydro data model for storing its core water resources GIS layers. However, from the beginning, the implementation was simpler than the full suite of layers and relationships available in the published data model, and over time, this trend toward simplification has continued. SJRWMD also deviated from the standard ArcHydro construct in that in that we did not build the geodatabase from the "ground" up - from a digital elevation model - but rather by importing NHD data, and then assembling the database and relationships. Geodatabase construction is now complete and we are in the maintenance phase. The author will present how the geodatabase was populated and the resources required for that effort, how it has changed over time, the current status of the geodatabase and maintenance requirements, the benefits of applying the data model, and the lessons we learned along the way. For example, when applying a data model to something as naturally complex as surface water features, the implications of the design are not fully apparent until you are constructing the geodatabase. We did not anticipate many of the issues that we encountered, even though we completed a pilot phase. However, the relative flexibility and simplicity of the implementation have been major advantages for the SJRWMD.

Constructing a Production-Ready Arc Hydro Enhanced Database (Ahed) as the Enterprise Database for Hydrologic Feature Locations - Maryam Mashayekhi, South Florida Water Management District, West Palm Beach, FL (co-authors: Lakin Flowers, Alan Foley)

The South Florida Water Management District (District) requires access to current and accurate sources of hydrologic data in order to fulfill the District's mission to manage and protect water resources of the region. Historically, District GIS data had been developed and maintained by various departments, leading to divergent datasets created at different scales and resolutions. The Arc Hydro Enhanced Database (AHED) data model provides a means of integrating these District hydrographic layers into a common database framework providing a central source of GIS data to support a variety of water management business functions. Once in production the AHED database will be the enterprise source for GIS hydrography layers and will provide increased availability of quality data. Leveraging the AHED data model as a hydrologic system framework will enable connectivity to other corporate databases in order to facilitate spatial analysis of attribute and time series data. This will reduce data redundancy and ensure that multiple business groups are utilizing a common source of information. The AHED Enterprise Implementation Project was started in 2005 for the purpose of providing a District-wide geographically comprehensive database of hydrologic feature locations. The first two phases of the AHED development project produced a prototype database, a data dictionary and entity relationship diagram, example custom applications, detailed data construction processes and procedures, and a fully populated production-ready database. The third phase focused on integrating the AHED database into the enterprise and transitioning it into the operational phase of its life cycle. This presentation will cover the first two phases of the AHED development project covering the process of customizing the Arc Hydro Data Model to meet the District's requirements and constructing a production-ready database. A companion presentation will describe the process of moving AHED into production.

Enterprise Integration and Early Operational Phase Support of the Arc Hydro Enhanced Database – Lakin FLOWERS, South Florida Water Management District, West Palm Beach, FL (co-author: Tim Minter)

The South Florida Water Management District has created the Arc Hydro Enhanced Database (AHED) to manage the geospatial characteristics of hydrographic and hydrologic data. Managing the AHED data serves the purposes of providing a District-wide geographically comprehensive database for all business processes to

provide geospatial access to existing time series databases; to reduce data redundancy and improve data quality; to provide a framework for project level data and custom application development; and to enable extension of the framework to meet changing business needs and to take advantage of enhanced technologies. The first two phases of the AHED development project produced a prototype database, a data dictionary and entity relationship diagram, example custom applications, detailed data construction processes and procedures, and a fully populated production-ready database. The District is providing details in a prior presentation. This presentation provides details for the third phase, which focused on integrating the AHED database into the enterprise and transitioning it into the operational phase of its life cycle. Activities included developing governance and data stewardship processes; developing stakeholder outreach and training materials and classes; updating data content that has changed since database population activities were completed; retiring legacy data collections that were replaced by AHED data; and updating custom applications that support AHED maintenance and that use AHED data sources.

SWFWMD Watershed Management Program – GIS Data Schema and Tools for Watershed Management – Gordon McClung, Southwest Florida Water Management District, Brooksville, FL

Five major elements make up the District's Watershed Management Program (WMP): Topographic Information, Watershed Evaluation, Watershed Management Plan, Implementation of Best Management Practices, and Maintenance of Watershed Parameters and Models. WMP elements are performed to manage water resources within the District's areas of responsibility, water quality, water supply natural systems and flood protection. Guidelines and Specifications for the establishment of standardized procedures for the WMP and GIS were developed, which established standards for data acquisition, spatial identification and storage of data. These guidelines were used in the development of an Enhanced Arc Hydro based data schema for the District, the GWIS (Geographical Watershed Information System). This presentation will discuss the GWIS and tools developed to assist the District in the management and maintenance of a watershed's Geodatabase.