A wide variety of stakeholders, researchers and water management decision-makers need better access to water-related data. In a broad needs assessment conducted by the Arizona Water Institute, surveying 85 individuals and organizations across the state, the need for more information and better access to information was by far the most frequently cited request for assistance from the universities. This project initiates the development of the statewide information infrastructure, or “information backbone” of the Arizona Water Institute – connecting government agencies, the three state universities and databases developed and maintained by the private sector.

**PROJECT TEAM**

**Investigators**
- Corinna Gries (ASU) - Co-lead
- Dieter Otte (NAU) - Co-lead
- Ramon Vazquez, Kyle Carpenter (UA) - Co-leads
- Huan Liu (ASU)
- Hasan Davalcu (ASU)

**Staff**
- Raul Aguilar (ASU)
- James McGill (UA)

**External Partners**
- Arizona Department of Environmental Quality
- Arizona Department of Water Resources
- Salt River Project
- Technology and Research Initiative Fund (TRIF), University of Arizona
- NSF Center for Sustainability of Semi-Arid Hydrology and Riparian Areas (SAHRA)

**PROJECT FUNDING CYCLE**
2007

**PROJECT GOALS**

The objectives of this project were to complete three components of the Arizona Hydrologic Information System (AHIS) that:

1. make available on-line the Arizona Department of Water Resources (ADWR) Flood Warning System data (currently archived by the Salt River Project (SRP)) and selected water data hosted by the Arizona Department of Water Quality (ADEQ);
2. improve the AHIS search interface so that information is more easily retrieved in a “Google-like” system and
3. develop web user interfaces to search, select, visualize and obtain the data in a variety of formats using the latest web application technologies.

A separate but complementary goal was to design and implement a database connectivity component, the Metadata Catalogue Manager, to manage the catalog of data within AHIS.

**BACKGROUND/RESEARCH METHODS**

In Arizona diverse agencies, researchers and institutions gather, archive and present water-related information independently. The United States Geological Survey and the Arizona Department of Water Resources (ADWR) produce the greatest amount of water-related data but many other organizations generate, store and manipulate data about precipitation, wells, water resources, water quality, rivers and habitats. SRP, the Central Arizona Project, the Bureau of Reclamation, counties, cities, universities, federal land management agencies and non-governmental en-
tities such as The Nature Conservancy and some individual citizens all produce facts, figures and numbers that they store in databases located in many different places and often on individual computers. Data are not easily shared.

When water-related data become more easily accessible, decision-makers and citizens can use and combine the information sets available to produce new methods for solving ever more complex problems. The most accessible place to build this resource is on the internet using web services, which are used to locate data and transform them into formats required by a particular user. These formats can be tailor-made for specific categories of users. Examples are the ArizonaWater expertise directory and ArizonaWells AWI created with UA Center for Sustainability of semi-Arid Hydrology and Riparian Areas (SAHRA).

KEY STAKEHOLDER ENGAGEMENT and OUTCOMES

AWI initiated meetings with stakeholders to discuss data related needs and opportunities and availability of data sets. These conversations allowed prioritization of information to be included in the system and how best to access it. During the project, the team worked with ADEQ, ADWR and SRP to develop web services that can be used to access data and sort information to be used in both basic data retrieval and data analysis and visualization applications.

CONCLUSIONS and RECOMMENDATIONS

The project team was able to develop prototype custom client applications. Complementary to this project was the development of the report, Developing, Deploying, and Building the Arizona Hydrologic Information System: Strategic guidance for short- and long-term success. This report analyzed the current project and recommends the next steps in development of the overall system.

ADEQ, ADWR, SRP, SAHRA and TRIF provided matching funds for this AWI project.

FIND OUT MORE

Project Final Reports and other information available at

www.azwaterinstitute.org

ARIZONA WATER INSTITUTE
845 N. PARK AVENUE SUITE 532
TUCSON, AZ 85719
520-626-5627

Projects: AWI-07-15 Gries/Vazquez and AWI-07-63 Otte