

Coordinated Water Resources Database & GIS Project for Watershed Management



Objective

Coordination and compilation of regional water resource data to provide timely, web-based access to information for scientists, water management organizations, and stakeholders within the Paso del Norte region of the Rio Grande.

Background

The Rio Grande is the only major source of renewable water in the Paso del Norte region, which stretches from Elephant Butte Dam, NM to the confluence of the Rio Conchos in Presidio County, TX. Several agencies and institutes are involved with river management and water resources research; the Coordinated Database Program (CDP) project focuses on the ability to coordinate access to water resources data among these stakeholders. There exists a long-term need for accessible, consistent water resource data; this need drove the development of the CDP. Independent water resource data measurements are collected by agencies according to each research or management goal. Prior to the CDP's effort, there had been little or no compilation, coordination, or convenient method to access data from these individual sources. The absence of collaborative access and sharing of historical and real-time data may lead to unnecessary duplication of efforts. This demonstrates the need to coordinate water resource data in order to efficiently manage resources.



What does the Coordinated Database provide?

The CDP, which covers water resource monitoring and measurements on the river, canals, and drains as well as regional aquifers, provides data such as surface water flows, water reservoir storage, groundwater levels and well data, and water quality parameters collected by organizations like USBR, USGS, IBWC, EBID, CLCU, EPCWID#1, EPWU, NMSU, TAMU-TAES, NMWRRI, UTEP, and UACJ. The data collection networks contain instrumentation such as stream gages and groundwater monitoring wells. Further, a range of physical resource data like land use and riparian cover is included in the database that can provide users with a geographical perspective of their region of interest. GIS layers within the project include irrigation networks, measurement stations, archival water resource data, and regional water and natural resource maps. The coordinated water and natural resource databases can provide an enhanced, comprehensive watershed-based representation of the Paso del Norte region.

Contributing Organizations

CLCU	City of Las Cruces Water Utilities
Council	Paso del Norte Watershed Council
EPCWID#1	El Paso County Water Improvement District #1
EPWU	El Paso Water Utility
EBID	Elephant Butte Irrigation District
IBWC	International Boundary and Water Commission
NMSU	New Mexico State University
NMWRRI	New Mexico Water Resources Research Institute
TAMU	Texas A&M University
TAES	Texas Agricultural Experiment Station
TTU	Texas Tech University
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USGS	U.S. Geological Service
UACJ	Universidad Autonomas Ciudad Juarez
UTEP	University of Texas at El Paso

Technical Committee

Dr. Christopher Brown, NMSU, Co-Chair
Dr. Zhuping Sheng, TAES-TAMU, Chair
Gilbert Anaya, IBWC
Bert Cortez, USBR
Mike Fahy, EPWU
Dr. Alfredo Granados, UACJ
Jose Granillo, EPWU
Dr. Conrad Keyes, Jr., Consultant to the USACE
Dr. Philip J. King, NMSU
Dr. Ari Michelsen, TAES-TAMU
R. Srinivasan, TAES-TAMU
Sue Tillery, NMSU
Sue Watts, TTU

Who is involved?

The Coordinated Water Resources Database & GIS is being developed by the Paso del Norte Watershed Council through a collaboration of university scientists, and the cooperation of federal and state agencies, irrigation districts and water management and user organizations. The Spatial Applications Research Center within the Department of Geography at New Mexico State University serves as the Internet host for this project through their Internet map server.

Recent Accomplishments of the CDP include:

- Development of a water resource database with GIS interface components
- Compilation and inclusion of new data sources
- Filling in of data gaps with installation and calibration of new monitoring stations
- Enhancement of sharing and access to real-time data
- Providing web-based help and query functions
- Implementation of feedback from web-based user survey responses
- Expansion of a library of technical reports

Ongoing work of the CDP includes:

- Creating digital records of historical data
- Expanding technical components to database and GIS components
- Linking to USACE's Upper Rio Grande Water Operations Model (URGWOM – see <http://www.spa.usace.army.mil/urgwom/default.asp> for more information)
- Developing a user tutorial
- Continuing to fill existing and emerging data gaps
- Collaboration with Elephant Butte Irrigation District on linking new gauge data
- Providing stormwater runoff, land use, and best management practices data

What can the Coordinated Database project do for me?

- Streamline the process of accessing and analyzing real-time water resource data within the Paso del Norte region
- Increase the knowledge base for water resource managers and researchers
- Enhance regional watershed management efforts

Online Access

- An operational web site for the Coordinated Water Resources Database with GIS interface may be accessed at <http://www.pdnwc.org>
- Related reports on data sources, measurement parameters and monitoring locations have been prepared and are available through the WRII webpage at <http://wrii.nmsu.edu/>

