



WATER RESOURCES RESEARCH GRANT PROPOSAL

Title: Developing an Enhanced Framework for Visualization and Distribution of Digital Spatial Water Resources Data in Wyoming

Applicant: Spatial Data and Visualization Center Funding Source: USGS Water Resources Research Grant Program

Duration: March 1999 - February 2000

Federal Funds Requested: \$ 37,448

Non-Federal (matching) Funds Pledged: \$ 49,830

PURPOSE

The overall objective of the project will be to further develop, integrate, display, and distribute selected spatial digital data layers in three major water resource sub-theme categories: surface water; ground water; and climate. The proposed scope of work calls for development and/or integration of three exemplary data layers representing information needs identified from cooperating state resource management agencies. Upon completion, digital products will be incorporated into the Wyoming Internet Map Server, a World Wide Web-based geographic information system query and display tool developed and maintained by the Spatial Data and Visualization Center at the University of Wyoming. Customized graphical spatial query tools will provide end-user access to these and other spatial water resource data in accordance with guidelines established under the National Spatial Data Infrastructure.

BACKGROUND

The integration of geographic information system-based spatial data technologies in water resources management has grown dramatically over the last ten years through hydrologic modeling and watershed analysis applications and development of spatially-referenced water resource data products such as the USFWS National Wetlands Inventory and the EPA Reach File 3 initiatives.

In Wyoming, development of statewide digital spatial water resources data was begun with establishment of the Wyoming Water Resources Center (WWRC) Geographic Information Systems Lab at the University of Wyoming in 1992. In 1996, the Spatial Data and Visualization Center (SDVC) was established at UW with a goal of coordinating dissemination of many types of spatial data (including water resources) through the Wyoming Natural Resources Data Clearinghouse. Since 1998, the SDVC has assumed many of the functions of the now-defunct WWRC GIS Lab, continuing to conduct applied research and technology transfer activities relative to spatial water resource data development and use. Paralleling its data clearinghouse, the SDVC has also

developed a World Wide Web-based interactive GIS query and display application called the Wyoming Internet Map Server, designed to extend the use of spatial digital data beyond the GIS professional to a non-technical end-user audience for decision support and educational purposes. While a strong foundation of 'base' data layers have been developed for Wyoming's water resources, a need exists to both address critical data 'gaps' and integrate spatial water resource data in the Wyoming Internet Map Server.

SCOPE OF WORK

The proposed project will match three major spatial data activities (data development, data integration, and data visualization) with three thematic sub-categories of water resource data (ground water, surface water, and climate).