



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2002CO2B

Title: Enhancements to the South Platte Mapping and Analysis Program (SPMAP)

Project Type: Research

Focus Categories: Agriculture, Groundwater, Water Use

Keywords: Agricultural consumptive use, Geographic information system, Augmentation, Conjunctive use of groundwater/surface water

Start Date: 03/01/2003

End Date: 02/28/2004

Federal Funds: \$ 8317.00

Matching Funds: \$ 16634.00

Congressional District: 4th

Principal Investigators: Garcia, Luis

Abstract: Begun in 1995, the South Platte Mapping and Analysis Program (SPMAP) is a set of computer tools constructed to enhance water management by carefully matching data acquisition system design, modeling, and user interfaces to meet the needs of decision makers in the Lower South Platte River Basin. This area has an extensive and complex surface and groundwater irrigated agriculture supply system, which requires the augmentation of groundwater withdrawals for irrigated agriculture. In order to estimate the augmentation required for areas served by groundwater wells, the amount of groundwater used to meet consumptive use (CU) needs to be calculated (using the CU model), and then the impacts of the pumping on the South Platte need to be estimated using the Stream Depletion Factor model (SDF View). This process requires the assembly of spatial and other data from participating organizations, and the process is being enhanced by the development of Graphical User Interfaces (GUIs) to improve the access to available data and formulate and evaluate different scenarios. The first phase of this project produced valuable tools that are currently being used on a daily basis by local water managers. Subsequently, enhancements have been identified to improve the program and to accommodate new data. An advisory committee made up of members from the six local water organizations will meet every four to six weeks to evaluate existing software, identify enhancements

needed for software and data, and train on current systems. The Integrated Decision Support Group (IDS) will develop software and assemble data according to the input from water organizations. Software and data will be documented through hard-copy and online user manuals which will be distributed through an Internet site (www.ids.colostate.edu/projects/spmap) except in certain situations where data are proprietary. The SPMAP software currently contains three components including Geographic Information System data and analysis tools (SPGIS Component), the South Platte Consumptive Use Model (SPCU), and a Stream Depletion Factor Model (SDF View). These components will continue to be improved through testing and application by local water organizations, enhancements to functionality, and updating and addition of data needed for modeling and analysis of irrigated agricultural water use in the Lower South Platte River Basin.

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