



## WATER RESOURCES RESEARCH GRANT PROPOSAL

**Project ID:** 2003GU24B

**Title:** Improving Weno Water Distribution System Using Geographic Information System and Hydraulic Modeling Techniques

**Project Type:** Research

**Focus Categories:** Water Supply, Models, Management and Planning

**Keywords:** Water Distribution System, Geographic Information Systems, Water System Modeling

**Start Date:** 03/01/2003

**End Date:** 02/29/2004

**Federal Funds:** \$23458.00

**Matching Funds:** \$0.00

**Congressional District:** NA

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**Abstract:** Water hours, lack of information about the water distribution system, and lack of effective management are common problems throughout the Federated States of Micronesia. This is especially true for Chuuk State. After the drought of 1997-98, the Chuuk State Public Utility Corporation (CPUC) added several wells to the system, but still cannot provide adequate water to customers. Presently, CPUC does not have information on the water distribution system, components. This is making it difficult for water managers to run the system effectively. The first objective of this project is to develop a Geographic Information System (GIS) based inventory of system resources. This GIS system will describe the water sources available, the well systems in place, transmission lines, and major lines in the distribution system. This system will consist of maps showing the location of the various components of the water transmission system and ancillary equipment, and a complete database of all equipment and spare parts resources available. The second objective is to develop a computerized hydraulic model of the CPUC water distribution system. This model will be developed using information gathered during the development of the GIS management system. The third component of this project will be training the CPUC personnel on the use of the GIS based resource management system and implementing various management scenarios of the water system using the computer model of the system. The methodology

that will be used includes 1) Gathering complete physical and hydraulic description of the Weno water distribution system. This will include global positioning system (GPS) mapping and use of as-built drawings of piping, storage tanks and wells. 2) Development of GIS based utility management system by using the information from above. 3) Development of a hydraulic network model of the CPUC water transmission system and, 4) Training of CPUC personnel on the use of these models.

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*Last Modified: Wed May 28, 2003 4:26 PM*

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