



## WATER RESOURCES RESEARCH GRANT PROPOSAL

**Project ID:** 2004ID38B

**Title:** Improved Short-term Operational Streamflow Forecasting for Snow-melt Dominated Basins (Request for Year 2 funding)

**Project Type:** Research

**Focus Categories:** Surface Water, Models, Water Quantity

**Keywords:** Streamflow Forecasting, Snowmelt, Runoff, Remote Sensing

**Start Date:** 03/01/2004

**End Date:** 02/28/2005

**Federal Funds Requested:** \$15,000

**Non-Federal Matching Funds Requested:** \$33,524

**Congressional District:** 1

**Principal Investigators:**

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**Abstract**

The overall goal of this project is to identify methodologies which can be utilized by operational agencies to improve short-term and seasonal forecasts of streamflow in snowmelt-dominated basins. The project was conceived after discussions with representatives of state and local agencies with the responsibility for streamflow forecasting. The focus of this work is relatively small but includes several critical sub-basins of large river systems. It includes key applied research objectives in both hydrology and meteorology: 1) the evaluation of an existing hydrologic model (the Snowmelt-Runoff Model) and the identification of optimal operational methods for disaggregating basins, preparing spatially-interpolated fields of input data, and assigning values to key parameters; and 2) identification of the most appropriate methods for using output from operational meteorologic models to drive the hydrologic model in forecast mode. We have fulfilled the major objectives of the Year 1 funding, which was to become familiar with the hydrologic model and apply it to several critical sub-basins in

the Upper Snake system, and have made substantial progress in identifying appropriate meteorological products. We have also been successful in leveraging the Year 1 funds to obtain more substantial funding from another sponsor to expand and continue work specifically on basins in the Upper Snake. However, there are key hydrologic processes (such as significant rain on snow events) not represented in those basins. Therefore, the focus of this proposal in Year 2 is on basin outside of the Upper Snake systems. Evaluating model performance in key sub-basins in other parts of the state will assure the development of operational tools applicable to a broader set of critical sub-basins than those modeled in Year 1.