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**COUPLING HYDROLOGIC FORECAST MODELS AND  
THE UPPER RIO GRANDE WATER OPERATIONS MODEL**

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**ABSTRACT:** The Upper Rio Grande Water Operations Model is being developed through an interagency effort to route river flows, simulate reservoir operations, and perform water accounting in the Upper Rio Grande Basin from the New Mexico-Colorado state line to El Paso, Texas. The U.S. Army Corps of Engineers, the Bureau of Reclamation, and the New Mexico Interstate Stream Commission are working together to enhance the model by using forecast daily streamflows from the National Weather Service to complete annual reservoir operating plans, among other objectives. The NWS West Gulf River Forecast Center currently produces regression-based seasonal volumetric water supply forecasts in addition to short-term flood forecasts. The River Forecast Center is also responsible for providing Advanced Hydrologic Prediction Services by implementing ensemble streamflow prediction from hydrologic models to enhance water supply volume forecasts and deterministic daily streamflow forecasts. Hydrologic models were recently implemented to simulate natural flows for basins in Colorado. The Corps of Engineers has funded Riverside Technology, inc. to continue implementation of hydrologic models for 55 tributary and local inflow points in the Upper Rio Grande Basin in New Mexico. Hydrologic model development entails preparing model inputs (e.g., areal precipitation and temperature, potential evapotranspiration, and unit hydrographs) and calibrating the hydrologic models to simulate historical unregulated flows. This work has been completed for headwater watersheds, and will be completed for watersheds in the middle Rio Grande valley in August 2011. The River Forecast Center will begin implementation of the hydrologic models into their operational system after delivery of the model calibrations. The hydrologic models will enhance the River Forecast Center's forecast services available to the Corps of Engineers and the Bureau of Reclamation by providing additional seasonal and annual probabilistic forecast products, as well as more frequent daily streamflow forecasts, to better support water resource planning and management. The hydrologic models also provide a framework for enhanced river flood forecasting. This presentation will include a review of the hydrologic model development and implementation, as well as a discussion of plans for operational modeling and forecast products.

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