

UPDATE

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SEVIER RIVER WATER MANAGEMENT STUDY

"REAL-TIME" HYDROLOGIC SYSTEM IS OPERATIONAL

To give the Sevier River Commissioners and others a more timely and complete picture of what is happening up and down the Sevier River, a "real-time" hydrologic data collection system has been installed in the basin. This system provides up-to-date information on riverflows, reservoir elevations, and salinity at 23 sites stretching from high in the Upper Basin to Gunnison Bend Reservoir in the Lower Basin.

UPLINK TO SATELLITE

To provide the river commissioners with timely information, gauging stations were upgraded to "real-time". This was accomplished by adding a microprocessor and communication equipment (or a data collection platform) at 23 sites. The upgraded gauging stations hourly send a signal to a satellite that relays the hydrologic information to earth.

A gauging station which has been upgraded to provide satellite communications is easily identified. It has a solar panel (to power the electronic equipment) and antenna (to direct the signal to the satellite) on the roof.

Nick Panas of Reclamation's Provo Office installed the 23 "real-time" stations over the last 5 years. He continues to service the data collection platforms. Nick has over 30 years of experience in the area of hydrologic data collection.

DOWNLINK TO SATELLITE

In March of this year, the Office of the State Climatologist, assisted by Reclamation, installed downlink facilities at the homes of the Sevier River Commissioners. A satellite dish and a receiver were installed to capture the "real-time" data and a computer was added to make the appropriate computations and store the data. The intent is to supply Ray Owens and Jim Walker with data which is never more than 1-hour old.

During 1991, the "real-time" hydrologic system was field tested. Arlen Hilton and Greg McCurdy are providing support to both river commissioners regarding the operation of the satellite downlink facility. Arlen has a degree in Electrical Engineering Technology.

Any questions concerning the "real-time" hydrologic system should be made to Don Jensen, State Climatologist, (801) 750-2190, or Roger Hansen, Bureau of Reclamation, (801) 379-1000.

SOFTWARE BEING DEVELOPED

To assist the river commissioners with their paperwork and to help with management of the river, sophisticated software is being developed.

WATER RIGHTS ALLOCATION MODEL

One of the objectives of the Sevier River Water Management Study is to update and computerize the water rights allocation procedures for the Sevier River. This task is being

accomplished by Dr. Wynn Walker, with a major assist from Roger Walker, former Lower Sevier River Commissioner. Dr. Walker is head of the Agricultural and Irrigation Engineering Department at Utah State University.

A preliminary computer model and user manual have been written. The computer model duplicates the computational and record analysis function of the two river commissioners.

The Sevier River Allocation Model reduces the analysis and computation burdens of the river commissioners. This will allow the river commissioners more time for maintenance of their gauging stations and for regulating individual diversions. This should not only improve the basic data involved in defining rights but also ensure a more equitable division of water.

WATER QUALITY MODEL

Reclamation water quality specialists have started on a

computer model to assist with salinity management in the Lower Sevier River Basin. The river at the head of Leamington Canyon is characterized by a salt content of 1,200 mg/l. Below Gunnison Bend Reservoir, the salinity is routinely over 3,000 mg/l.

To deal with high concentrations of salinity, the Lower Basin water users have several options including: (1) draining the lower reservoirs (DMAD and Gunnison Bend); (2) pumping from a series of ground water wells located along the river near Lynndyl; (3) sweetening the Sevier Bridge Reservoir with import water (once the Central Utah Project is complete); (4) land and water use management in the Lynndyl and Leamington areas; (5) alternative operating procedures for Fools Creek Reservoir, etc. Since each of these options has costs and liabilities, the computer model will help monitor the situation and evaluate hydrosalinity options.

