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Colorado Stream Lines

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COLORADO DIVISION OF WATER RESOURCES

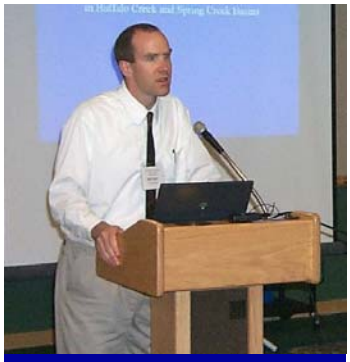
Colorado Streamgaging Symposium

Inside this issue:

On May 3, the first Colorado Streamgaging Symposium was held at the Village at Breckenridge. Modeled after a similar effort in Maryland, the meeting was an attempt to bring together the various people and organizations that use and depend upon accurate stream flow data. A total of 80 people, representing many but not all such organizations, were in attendance.

The brainchild of Assistant State Engineer, Jack Byers, the meeting provided education to the attendees on the past and present streamgaging programs in the state. The symposium was co-sponsored by the Colorado Water Resources Research Institute, the U.S. Geological Survey, the Colorado Water Conservation Board and the State Engineer's Office. In addition, speakers represented organizations such as: Urban Drainage and Flood Control District, Colorado Division of Wildlife, Colorado Water Quality Control Division, Denver Water Board, Colorado River Water Conservation District, Northern Colorado Water Conservation District and others.

Jack Byers
Assistant State Engineer



Robert Steger
Denver Water Department

Topics discussed included: the history of stream flow data collection in Colorado, the evolving uses and importance of stream flow information, current and future access to stream flow data, and the opportunities for improvement in the gage network coverage and dissemination of information. This last topic was very important to the co-sponsors for planning how to improve the system into the future. Hopefully, the dialogue between data providers and users started at this symposium will allow for the development of streamgaging network into the future. An additional meeting is planned for May of 2003 to continue the progress in stream flow data collection and dissemination to meet the needs of the people of the state.

Hal Simpson, State Engineer (left) and Scott Tucker, Urban Drainage and Flood Control

Streamgaging Coordination in Colorado

Information on the flow of rivers is a vital national asset that safeguards lives and property and ensures adequate water resources for a healthy economy. Beginning with the first streamflow gage operated by the State Engineer's Office, now the Division of Water Resources (DWR), in 1881, the number of streamflow gages in Colorado has grown to more than 600 today. Statewide streamgaging programs now are administered by the DWR and the United State Geological Survey (USGS), and have support from more than 60 cooperating organizations. Those programs are closely coordinated between the DWR, the Colorado Water Conservation Board (CWCB) and the USGS to help ensure the data are comparable and easily accessible to every-one, including the provision of real-time data on the World Wide Web. Other organizations, including the U.S. Bureau of Reclamation and Forest Service, Northern Colorado Water Conservancy District, and the Urban Drainage and Flood Control District, also collect streamflow information to support their project needs and make those data available to water users and managers.

The State Engineer, the CWCB Director, and the USGS Colorado District Chief meet twice a year to discuss major work issues that concern all entities. Topics include current projects, litigation involving water-quantification issues, and ongoing evaluations of the adequacy of the gage-network operations and coverage. Coordination of equipment purchases to upgrade streamgages also is discussed at these meetings.

Coordination meetings also occur between the DWR Lead Hydrographers, the CWCB Gaging Coordinator, and the USGS Data Chiefs not less than three times a year. These meetings enable our agencies to work cohesively and to effectively coordinate our work efforts. Mutual objectives, opportunities, and conflicts are discussed and coordinated to facilitate better operations for all three agencies. Streamflow data coordination is one of the ongoing agenda items at these coordination meetings. Day-to-day coordination occurs between the staff of all three agencies. Contact is made as needed, and mutual support routinely is offered among the agencies. Help includes equipment repair and maintenance and streamflow data troubleshooting. For example, if a hydrographer discovers a problem with another agency's gage while on site, a temporary repair will be made so data are not lost.

To properly administer water rights, the State of Colorado utilizes the data collected by the statewide streamgaging network.

To properly administer water rights, the State of Colorado utilizes the data collected by the statewide streamgaging network. The installation of new sites is closely coordinated between the USGS and the DWR to avoid duplication of efforts. At some USGS locations, the State may require more frequent data verification, and therefore, makes additional streamflow measurements that are incorporated into the station record, thus improving the accuracy of the data. The USGS publishes that data and both agencies benefit from the improved quality of the record. The three agencies are also in the process of developing joint flood criteria for stream gages. This criteria would enable the public to receive better and earlier warnings in the event of floods.

The CWCB's programs dealing with compacts, decision support systems, flood warning, and monitoring of low flows for the protection of instream flow water rights are dependent on accurate historic and real-time data from gaging stations operated by the USGS, the DWR, and other stakeholders. As a result, the CWCB works closely with the other agencies to provide input regarding its data needs and also to provide funding and equipment as appropriate. Each year, the CWCB provides funding through its construction fund program to support, upgrade, and refurbish the State's Satellite-linked Monitoring System. In addition, the CWCB coordinates with the USGS purchasing of telemetry and other gaging equipment to upgrade existing stations that are already operated by the USGS. These upgrades are intended to provide the CWCB and the public with accurate real-time data during all seasons when possible. In addition, the CWCB will coordinate with both agencies to install new gages that are directly linked to CWCB programs and issues.

The Federal-State Cooperative Water Program provides for cost sharing of streamgaging activities with state and local governments including the DWR and the CWCB. Other Federal agencies also support streamgaging in Colorado, including sites important to the administration of compact decision support systems, flood warning, and instream flows.

Please visit the following websites for more information: *http://dwr.state.co.us/Hydrology/flow_search.asp; http://nwis-colo.cr.usgs.gov; http://www.cwcb.state.co.us.*

Elkhead Reservoir Enlargement Study Begins

Studies are underway to support the enlargement of Elkhead Reservoir near Craig Colorado. Elkhead Reservoir is located on Elk Head Creek, a tributary of the Yampa River. It is located approximately 10 miles northeast of Craig. The reservoir currently holds approximately 13,500 acre-feet of water. The proposed enlargement is part of the implementation plan for the Yampa River basin under the Upper Colorado River Endangered Fish Recovery program.

The implementation plan identifies an enlarged Elkhead Reservoir as the source for 3,700 acre-feet of water to supplement low flow conditions in the Yampa River for the endangered fish species. In addition, about 4,300 acre-feet of storage for future human needs is being evaluated for inclusion in the enlargement. Fish releases will be made in concert with releases from Steamboat Lake and other sources to provide late season flow augmentation below Maybell.

The construction of the enlargement will resolve dam safety issues that have been associated with Elkhead reservoir for many years. It is anticipated that a new outlet structure will be installed, eliminating the current leakage and operator problems. Also, the new spillway will alleviate the problem of leakage on the face of the spillway.

The Colorado River Water Conservation District is sponsoring the current environmental studies and feasibility level design work with funding from their water projects enterprise and $500,000 in funding from the construction fund of the Colorado Water Conservation Board. The results of the studies will be used to support a 404 permit application that will be filed with the U.S. Army Corps of Engineers later this summer. It is anticipated that the design of the enlargement could be initiated sometime in the year 2003, with an estimated completion date of approximately 2007.

Grand Valley Water Management Study

During each irrigation season, demands for water from the 55-mile-long Highline Canal change daily based on crop needs, irrigators' schedules, and weather. Water in the canal that is not delivered to customers is "administratively spilled" into numerous natural washes in the valley, which carry the water back to the Colorado River. Near the end of the irrigation season overall demands drop, yet many laterals are located on the main canal at elevations that need a near full canal to divert out of the canal. Studies show spills in August, September, and October average 31,400 acre-feet of water. The goal of the project is to significantly reduce these spills, while maintaining the ability to deliver a reliable supply of irrigation water.

The project, when constructed, will conserve Grand Valley Project water by improving efficiency of Government High Line Canal operations without interfering with the delivery of irrigation water. Structural improvements to save water in the canal include piping laterals and lining the main canal as a result of the salinity control project, the construction of seven check dams in the main canal, and a bypass pipeline. These dams raise the water level in the canal, maintaining a constant operating level in the canal under varying flows. This allows deliveries to all laterals without a fully charged canal. In late summer, the Palisade Pipeline — an administrative spill point — will deliver some savings to the Colorado River above the Palisade gage, approximately nine miles down-ditch. The savings is intended to help recover endangered fish by increasing flows in this critical reach of river, or by increasing surplus water in Green Mountain Reservoir.

The Grand Valley Water Management Study (GVWMS) achieved a milestone by completing the design and specifications for the seven check structures for the Government Highline Canal and the Palisade Pipeline. The USBR in Grand Junction awarded the contract for the check structures in November 2000 and the pipeline contract was awarded in December 2000. The check structures were completed this spring. When all facilities are in place, the Bureau calculated a savings of approximately 28,000 acre-feet of water annually. During the first year of operation in 2001, they anticipate saving half of the 28,000 acre-feet of water.

CALENDAR OF EVENTS

September 24-25	Colorado Water Conservation Board Meeting, Cortez, CO; for more information, contact Susan Maul at 303-866-3441
October 2	Colorado Board of Examiners of Water Well Construction and Pump Installation Contractors Meeting, Denver, CO; for more information, contact Gina Antonio at 303-866-3581
November 16	Colorado Ground Water Commission Meeting, Denver, CO; for more information, contact Marta Ahrens at 303-866-3581
November 19-20	Colorado Water Conservation Board Meeting, Denver, CO; for more information, contact Susan Maul at 303-866-3441

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