Experts, others discuss ways to balance resource among private, environmental, economic interests

Second of two parts

A mixed bag of information and policies and unique challenges point to an uncertain future for water and its users in Nebraska.

That message became clear during the Platte Institute for Economic Research’s water management summit Sept. 23 at the Monsanto Water Utilization and Learning Center.

A host of water experts, state senators and others discussed ways to better balance the state’s resource among private, environmental and economic interests. About 150 people attended the summit.

Raymond Supalla, an agricultural economist who has researched water issues at the University of Nebraska-Lincoln for 35 years, listed four of the greatest challenges:

how to cost-effectively and equitably meet the state’s obligations to Kansas under the terms of the Republican Basin Compact and in the cooperative agreement with Colorado, Wyoming and the U.S. Department of Interior.

how to balance the needs of current and future generations during the development of integrated water management plans under LB 962.

The legislation, which overhauled water policy in the state, is also intended to resolve conflicts between groundwater and surface water appropriators.

Within these challenges, Supalla said, is the need to either reduce consumptive uses of water (when water is removed without direct return to the resource system) or to find cost-effective ways of increasing water supplies to substitute for decreasing returns, Supalla said.

Supalla said the economic cost of reducing irrigation depends on the policies used to achieve it and on the profitability of irrigation at the time.

Two policy options, he suggested, are regulating the amount of water applied (allocation) or reducing the number of irrigated acres through regulation or leasing or buying irrigation rights.

He noted that the effect of irrigation reduction policies on gross state product and state employment will depend on how economic development is used to offset the decrease.

Supalla’s report, commissioned by the Platte Institute, can be viewed at platteinstitute.org.

Water law expert and attorney Mary Kelly, featured in the Sept. 29 issue of The Times, also wrote a report that is available on the website.

Derrel Martin, a UNL biological systems engineer specializing in irrigation and resource management, said that in some areas of the state, drops in aquifer water levels in the 1980s and early 1990s have rebounded during the last decade and some stream flows have recovered after declines.

But in other areas of the state, groundwater levels continue to decline.

Martin discussed the accuracy of techniques used to measure river flow in relation to changes which are considered in stream management.

“We may be stretching the accuracy of our measurement ability in some cases, yet instream flows drive water policy in much of the state today,” he said. “Downstream demands may trump local water use in some settings,” he said.

He noted that many rivers are connected to groundwater levels while in some watersheds, stream flow is mostly dependent on runoff from storms and weakly connected to groundwater.

“We have a lot to learn in predicting how irrigation pumping and land use practices—such as conservation tillage—affect stream flow and groundwater recharge” Martin said.

Groundwater models are being used to explain some interactions but he said they don’t simulate the impact of all practices.

“We’re missing some of the picture,” Martin said, adding that much water is unaccounted for in groundwater models and that better models are needed for consumptive use and recharge from irrigated and rainfed fields. “Water policy shouldn’t be legislated or litigated based on dead-end models.”

Martin said models need to be reviewed about every five years to

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