

IMPACT

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Crossing boundaries with teamwork and economics for water management

The Situation

The Big Wood Canal Company (BWCC) began in 1907, following completion of Magic Dam, to serve an area lying primarily in Lincoln County. Water shortages have been a way of life in this area from the beginning, since the development company grossly oversold the land to be irrigated. The droughts of the 70's, 80's, 90's and now the 2000's have continued to make Lincoln County a very difficult place to farm and ranch for a living.

The amount of water available during the irrigation season is not consistent from year to year. Consequently, agricultural producers are left playing a guessing game on when to implement irrigation system upgrades, when to replant alfalfa, and which crops to grow based on water availability for that season. Producers lack adequate information to make long-term decisions on their farming operations. Transitioning to center pivots, or paying for pipe to reduce ditch losses cannot be started without adequate funding. However, banks are reluctant to provide funding for new pivots or other irrigation improvements without consistent crop production potential. This creates a limiting environment for BWCC shareholders to make water conservation or long-term planning decisions, and reduces their potential farm profitability.

Our Response

In an effort to determine ways to improve the water situation, the BWCC Board of Directors appointed a committee to research options. The Water Team was formed, which consists of nine shareholders (farm/livestock producers), the manager, the water master, a ditch rider, a private consultant, UI Lincoln County Extension Educator (Falen), and UI Extension Irrigation Specialist (Neibling). All involved agreed that



Water Management Planning for the BWCC.

solutions required creative, open-minded thinking and must be factually based and supported by data. The Water Team's broad knowledge base, willingness of each member to actively participate in research and synthesis of data, and the use of economics, started us down a successful path. This type of innovative approach with a very strong emphasis on teamwork, was critical to start moving past age-old battles and forward into solutions that work.

The mission created by the Water Team was to discover and present pertinent facts and data to answer the question – "Are there practices and/or improvements the BWCC can do to enhance the profitability and the value of the resources for its grower/owners?" Over 40 hours of team meetings, plus individual research, investigation, and computer modeling, were conducted to address the mission. Five main areas of focus were identified: 1) economic analysis; 2) how much irrigation water is being lost and where; 3) what are other canal companies doing to cope with short water supplies; 4) specific physical improvements, prioritized by cost per unit of water saved; 5) management practices at the farm and company level to increase days of water.

Program Outcomes

The Water Team developed a mission statement, focused on specific categories, and then wrote a complete final report with 17 recommendations to implement. An executive summary was written, and a PowerPoint presentation created, to present the results and recommendations to the BWCC Board of Directors. Minutes of all meetings and all data collected were organized in binders for future reference.

All 17 recommendations were implemented by the BWCC Board. These included water conservation practices, soil moisture monitoring, identification and assessment of water loss within the water delivery area, suggested water saving improvements, plus more flexible and demand-based delivery. Quite a few of the recommendations required a shift in traditional thinking, and the Water Team was excited by the Board's willingness to move forward.

Based on an economic analysis tool developed for this area, the Water Team determined that the best method to increase financial returns to farms and ranches is to increase the number of days of water, even though irrigated acres may have to be reduced. This principle holds true regardless of the crop, size or type of the operation.

It was important to the Water Team to consider all sizes of farms. Economically evaluating the impact of extending the days of water, as recommended by the Water Team, was completed for large to small farms.

Based on 2008 crop prices, changes implemented in 2008 resulted in an estimated increase to shareholders across the whole irrigation system of \$2.56 million. Implemented changes were estimated to increase the irrigation water supply for the whole BWCC by at least 16 days. An economic analysis based on the 2008 cropping mix indicated that each day of irrigation season extension was worth \$160,000.

Crop prices were high in 2008, but even at a more conservative averaged value of \$79,000 per day x 16 days water extension, the increased crop value to shareholders would be calculated at \$1.26 million.

Critical components to achieve forward progress beyond existing boundaries in water supply utilization included: 1) significant initial effort to set aside emotions, 2) encouragement to utilize teamwork and open-honest communication, 3) a commitment to basing decisions on economics and data/facts, and 4) a true willingness to try new ideas. The Water Team successfully combined existing individual knowledge with new analysis into a coordinated package to benefit the whole BWCC system.

The Water Team results and collaborative approach can benefit other areas as well. In 2009, some of the Water Team recommendations have been utilized in other surrounding

areas and in more cropping systems. Reshaping canals to reduce water loss, and designing and implementing flow measurement devices are two examples.

The following bullets are six highlights of the Water Team success.

- Seventeen recommendations from the BWCC Water Team were implemented in 2008.
- Days of water use were extended 16 days in 2008.
- Potential farm profits increased by \$2.56 million in 2008.
- Encouraged water conservation—saving water and only asking for it when it was necessary.
- Cooperation among neighbors increased to keep water in the reservoir.
- Instead of a “use it or lose it” mentality for farm/ranch water management, the thought process is changing to “save water and make money.”

The Future

The Water Team and BWCC is continuing data collection and implementation of recommendations. UI Extension is continuing to collect data on soil moisture and work on irrigation scheduling by region.

FOR MORE INFORMATION

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