

12/13/06
AB

SECTION II - RRCC WATER ADMINISTRATION (Dec. 2006)

A. BACKGROUND

Ongoing drought conditions in the Republican River basin have created a situation that requires rethinking all aspects of the state's efforts to comply with the Republican River Compact. The initial Integrated Management Plans (IMPs) jointly developed by the Department of Natural Resources and the basin Natural Resources Districts in 2004 and 2005 were developed using a historical water supply that was larger than what has subsequently been available. In addition, significant increases in groundwater pumping and irrigated acres occurring during and after the settlement years resulted in an increased charge on the available water supply.

These conditions have led to a disconnect between the current individual groundwater allocations within each NRD and the available water supply for use in Nebraska. The regulatory effort of the NRDs and the efforts of groundwater irrigators who have used less than their full allocation in each of the first two years of the current IMP have shown some ability to lessen the impact of pre-IMP pumping increases and have initiated a downward trend in streamflow depletion resulting from groundwater use. Unfortunately, these efforts are not enough to achieve the necessary balance between allocations and consumptive use.

We are now entering the final year of the three year allocations in the Upper, Middle and Lower Republican NRDs contained in their respective rules and regulations. Although there has been active pursuit of several options that we hoped would mitigate the need for increased regulation to decrease our water use, we are unfortunately well behind where we should be in developing the next set of allocations and other necessary controls. With that in mind, we have put together this initial proposal to begin the development of the next set of IMP controls.

B. OBJECTIVES

1. Long-term

- a. Determine optimal level of irrigated acres and other beneficial consumptive uses to maximize our use of Nebraska's allocation while maintaining the required balance between allocations and consumptive use
- b. Continue to implement options to reduce the non-beneficial consumptive of use of water by phreatophytes

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- c. Maximize the economic and environmental benefits to the basin derived from using Nebraska's allocated supply.
- d. Develop IMPs with the flexibility to address fluctuations in state allocations resulting from climatic change
- e. Optimize use of surface water infrastructure to conjunctively manage available water supplies for maximum economic, social and environmental benefits.
- f. Increase our understanding and use of water saving techniques
- g. Provide equity among water users in the basin
- h. Promote long term stability and certainty.

2. Immediate

- a. Explore ways to reduce consumptive use in 2007
- b. Continue to aggressively pursue the potential water savings that might be achieved by eliminating high water use invasive species along the river bottoms
- c. Reduce pumping allocations and the number of certified aces in the next IMP cycle to meet reductions in the state's anticipated Compact allocations resulting from current drought and development conditions
- d. Minimize the adverse economic and social impacts on the basin that will result from the necessary reductions in water use

C. MANAGEMENT OPTIONS

The management options described herein are based on the fundamental premise that water management for Compact purposes can only be significantly impacted in the short term (3 year management cycles) by changes in management of quick response wells, surface water diversions and utilization of storage projects. The upland groundwater well allocation is initially set at a level to protect and enhance the water savings produced by the management of quick response wells and surface water and to offset the growing lag effect of existing well development. As the system achieves a more acceptable balance between allocations and consumptive use, both upland and

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quick response wells and surface water diversions will be adjusted toward a long-term maintenance program. The long-term goal is to establish the same average level of water use in by the upland wells, the quick-response wells and surface water users and throughout the basin that will enable an appropriate average balance between allocations and consumptive use. Variable water uses by the quick response wells and surface water users will continue to be used to respond to the variability of the water supply and make the necessary short-term adjustments in water use necessary to achieve the maximum use of our allocated supply without violating the Compact. To provide equity to those surface water users and well owners in the quick response areas that may be subject to greater regulations than upland wells in water-short years, we will need to establish a fund to fairly compensate those subject to increased restrictions on water use.

While we must establish stringent regulations to ensure Compact compliance, we will also continue to aggressively pursue all options that have potential to either augment our water supply and Compact allocation or imported water supply credit or reduce the non-beneficial consumptive use of water. The most promising options for reducing non-beneficial consumptive use of water is through the conjunctive management of our surface water infrastructure and vegetation control. The DNR and the U. S. Bureau of Reclamation are currently studying the potential of re-operating the Enders Dam and associated canal systems to optimize both the use of water in the region and our ability to comply with the Compact. The RR NRDs, the DNR and the RC&D are aggressively exploring and studying the potential of controlling invasive weeds to reduce the non-beneficial consumptive use of water. To the extent we can successfully implement these options we will be able increase allocations. The DNR is also working with the University of Nebraska and the State's center-pivot manufacturers to increase the use of water use practices that can increase production and save water.

1. Groundwater Controls

There are two basic methods that can be used to reduce the consumptive use of water from irrigated agriculture: reduce allocations or reduce the number of certified acres. To date the Republican River NRDs have chosen to regulate water use with allocations. As allocations are reduced, the number of acres irrigated will also be reduced. This plan is based on a continuation of that policy, but the NRDs could still opt to establish regulations that reduce irrigated acres, either instead of or in combination with reductions in allocations.

a. Allocations for Upland Wells

Allocation for upland wells will be based on two objectives:

- i. allocations that address the impact to streamflow from the lag effect from upland well pumping; and

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- ii. allocations set at a level to achieve a long term balance between supply and use so that on average the use of our allocated water supply is maximized but consumptive use is at a level that will not exceed our allocation.
- iii. Given the current drought conditions and need to reduce the number of acres being irrigated, allocations for upland wells will initially be reduced to achieve a 15% reduction in pumping. This reduction will be achieved by setting allocations across the basin based on allowing each area to pump an equal percentage of their crop irrigation requirements. Today we estimate that this will allow an allocation of ?? inches per acre in the URNRD, ?? in the MRNRD and ?? and ?? in the LRNRD.

b. Allocations for Quick Response Groundwater Wells

- i. Allocations for quick response wells will be set every three years depending on the expected State allocations for the near future.
- ii. If the current drought conditions continue and if we are to achieve a balance between our allocation and consumptive use over the next four years, we would need a ~~15%~~ reduction of pumping in the quick response area.

50%

- c. As the system becomes more balanced, the allocations in the quick response well area will be increased and the allocations in the upland areas will be reduced to achieve greater parity between the two areas. The long term goal will be to have essentially the same allocations in both the upland and quick response well areas but the latter allocations will vary to adjust the system to the variability of weather conditions found in the basin.

2. Surface Water Administration - DNR

a. Long term

- i. Manage surface water to maximize the conjunctive use of the basin's water supplies and achieve some level of parity between surface water users and ground water users. (The DNR and the Bureau of Reclamation are involved in a joint study to determine the best use (or nonuse) of Enders Reservoir. Among the options being explored in use of Enders for the conjunctive management of surface water to maintain ground water.

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- ii. If necessary because of increased streamflow from reductions in ground water well use, reduce surface water diversions to meet Compact obligations and maintain parity between surface water and ground water users. (*Hindeliter v. LaPlata River*, 304 U.S. 92 (1938)).
3. Provide a source of funds to compensate well owners in the quick response well area and surface water users that will be subject to more severe restrictions than well owners in the upland areas.
4. Continue to Use Federal Funds to Temporarily or Permanently Retire Irrigated Acres. There is no longer the ability to sign up for the current EQIP programs, but we would like to enroll another 30,000 acres in the CREP program. The existing CREP and EQIP programs will result in a water savings of 77 acre feet. If we enrolled another 30,000 acres we could achieve an additional savings of 77 acre feet, but given current corn prices, additional enrollment will be difficult unless we can increase the current CREP offering prices. Another concern is that the initial the four-year EQIP program that enrolled 10,000 acres will soon terminate.
5. Phreatophyte Control - The Republican River NRDs in cooperation with the DNR and the RC&D have obtained a grant to study different methods of controlling invasive species and in the process reduce the consumptive use of phreatophytes along the river. If 10% of the phreatophytes could be eliminated without regrowth of another water using crop, we could provide approximately 77 acre feet of streamflow.
6. Explore potential options to lease existing surface water supplies. Currently the only expected available surface water supplies are in the Red Willow and Medicine Creek watersheds. Work with the Bureau of Reclamation and the irrigation districts to determine how much water savings can be achieved by a water lease and to comply with federal rules and regulations for establishing such a water lease. Should water again become available in Harlan County Lake or elsewhere in the basin consider other water leases similar to that done in 2006. Funding for these measures would have to be obtained.
7. Other Measures Identified in Compact Settlement Agreement Potentially Available in the Long Term

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- a. Supplementing water for Nebraska Bostwick Irrigation District by providing alternate supplies from below Guide Rock or from outside the Basin
- b. Reducing use of storage by Nebraska Bostwick Irrigation District above Guide Rock
- c. Dry year leasing of surface water rights that divert at or above Guide Rock

3. Streamflow Augmentation -

- a. Surface water re-timing projects

Off-stream/off-season surface water storage projects which could provide water to downstream state during irrigation season and which could also be used to store imported water for future re-timing

- b. Groundwater streamflow augmentation - This option is currently being investigated by a grant from the Nebraska Environmental Trust. However, if this option relies on new wells it may be limited by Section IIIB1k of the settlement, which states that there will be an exception for new wells for augmentation as long as the new well won't create any new net depletion to streamflow either annually or in the long term. This will mean that we cannot allow any loss of water to evaporation while conveying the pumped water to the stream.
- c. Stream flow augmentation Platte River -

Demonstration project from voluntary participants to obtain additional mound credits or increase virgin water supply at time when credit would not otherwise be given. This option will depend on the willingness of the Platte River NRDs to allow their water to be transferred into the Republican Basin. Currently the Platte River NRDs have indicated a reluctance to consider such proposals.