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FUTURE OUTLOOK FOR WATER USE IN THE PECOS STREAM SYSTEM

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We have heard today from Peter White, attorney for the State Engineer Office, on adjudication procedures. We have also heard from representatives of the Fort Sumner Irrigation District, the Carlsbad Irrigation District, and the Pecos Valley Artesian Conservancy District. We have heard what they have done to improve their districts and serve their water users. There is no doubt they have done a lot. It is my opinion that it is not enough. Other things need to be done, and I think the main thing we need is for people to start working together as a group up and down the river system, whether it be an overall conservancy district, or just the individual water users. Many of these problems and shortages can be solved by methods other than a priority call.

One scenario, as outlined by the state engineer attorney, requires adjudication of individual water rights throughout the Pecos stream system, from headwaters to the state line and all tributaries. This may be completed in eight to ten years. Individual hearings would be held for contested issues. After that time period, inter se adjudication would take place, allowing challenges between and among parties.

This would take three to five additional years, including appeals. Upstream users would challenge downstream users as to earlier priorities, relationships of earlier priorities to upstream storage, equities of storage, quantities of water required, entitlement of flow rates, and other matters.

After that period, we would still have shortages of water persisting throughout the stream system and demands from downstream users for priority administration. Ill will and continuing divisions will persist among major water-using areas regarding priority administration, water supply requirements, and benefits of conservation measures. Additional demands would be placed upon the Pecos River stream system by developers and recreational users demanding water for instream flows for fish and wildlife habitat, for wetland areas, and other purposes. Legislation would likely be introduced and enacted to permit additional water for such uses.

And after that, in an effort to follow the prior appropriation dictates of the New Mexico Constitution and Statutes, the state engineer would initiate action to shut down junior water rights in the Ros-

well ground-water basin to satisfy senior rights of the Carlsbad Irrigation District and/or to meet the requirements of the Pecos River Compact deliveries to Texas.

In response to this action, the water users in the Roswell basin would file to enjoin such action by the state engineer on the basis that:

1. There are more junior rights upstream.
2. The shutting down of junior rights in the Roswell basin would not be responsive to immediate needs.
3. The equities do not warrant strict priority administration.
4. There are unauthorized uses of water for wetlands and other purposes that exacerbate shortages.
5. The assumptions as to quantities of water that would reach the downstream users require further review and adjustments.

Other water users in the entire stream system would join in with similar claims. This process would involve another three to four years of litigation and appeals.

Strict priority administration in my view would result in gross inequities. Also, due to the delayed effects of ground-water pumping on the river, there would be excess surface water in the stream system during some years in order to insure water availability for senior river appropriators in all years.

I think a lot of other steps could be taken. The second scenario I'll discuss represents the "best case." In this scenario, individual adjudications are completed within a period of six to eight years. Inter se portion of the adjudication proceedings are completed within two to three years including appeals. Persistent shortages of water throughout the basin could be alleviated by various means. Short-term shortages of water for existing water rights might be met by innovative methods.

Some of the demands for recreational instream uses would be met by reassignment of existing rights. In all cases, however, reassignments would be utilized in conjunction with existing water law. Animosity between different water-user groups would be replaced by consideration of the needs of all water users.

Under this scenario, strict priority administration would not be required as water shortages are met by other means. Greater latitude would be allowed in the transfer of water rights to meet specific needs within larger areas of the Pecos stream system. Such transfers could be justified under the public welfare and conservation of water criteria. Further, enhanced reserves of water and

storage both underground and on the surface would be made available to meet contingencies.

To go from the first to the second scenario, cooperation and joint efforts involving all water users up and down the basin and with the relevant state and federal agencies would be needed. This might result in the creation of an overall conservancy district including the whole watershed, with an ad valorem taxing ability to implement necessary projects. Also needed would be the cooperation of all local entities for lobbying purposes and developing legislation. Federal agencies and congressmen would be needed to assist with plans and projects.

Some of the possible improvement measures that might be undertaken include the development of an overall plan to permit maximum utilization of the river system's water resources. The plan could include management of the resource with a financing base.

Surface water storage could be improved by investigating recent developments in evaporation suppression from surface reservoirs. Timing of releases between reservoirs to maximize depth and reduce surface area to minimize evaporation should be examined.

Maximizing underground storage would result in reduced surface evaporation. Now that all water rights in the Roswell basin are adjudicated and metered, it might be feasible to divert all flood flows on the Penasco, below the Hope diversion, to Antelope Sink, for natural seepage to underground storage. This would result in lower pumping lifts for well users and uniformly released surface flow for surface users.

A second option would divert excess flood flows on the Hondo into the old Hondo Reservoir for diversion to underground storage. The consequence would be lower pumping lifts for well users and uniformly released surface flow for downstream surface users on the Pecos and below.

A third diversion could involve excess flood flows on the Pecos into the Cacklebur Lakes area 15 miles north of Roswell for ground-water storage, if water quality and other considerations warrant. Again, lower pumping lifts for well users and uniformly released surface flows for downstream surface users would result.

The Rio Felix and other tributaries with similar sites for diversion to underground storage, without detriment to surface users, should be explored.

The regulation of water use should involve metering all individual surface diversions and wells throughout the basin. This would impose conservation measures by all users. Surface and ground-

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water diversions could be limited to actual requirements. Reasonable limitations could be placed on diversion rates, quantities of use, and canal losses.

We need additional salt cedar eradication including the clearing of McMillan Delta, which will save an estimated 18,000 acre-feet. We also need to replace salt cedars in wildlife habitat areas with low water-consuming plants. The continuation of salt cedar control programs in various reaches of the river and tributaries is important.

A water rights clearinghouse should be maintained. The river and basinwide clearinghouse would keep a list of water rights which could be purchased, retired, or leased on a long or short-term basis for the express purpose of retiring such rights. The list would also help in exchanging leased or purchased water rights to prevent priority shut-down and mitigate effects on stream flow. A computer model to determine effects on stream flow and river carriage losses of all water rights should be maintained. The clearinghouse would also be utilized to permit individual water users, located upstream or at some distance from the river, to continue pumping by allowing them to retire, by lease, a smaller quantity of right close to, and with greater impact on the river.

The drainage of high water table areas would also improve the system. We should reactivate old drain lines at Fort Sumner, Roswell-E.G.P., Dexter, Hagerman, Lake Arthur, and Carlsbad in response to higher water tables adjacent to the river caused by ground-water storage and conservation measures. New drains should be installed in high water table areas such as the McMillan Delta, the Penasco Delta, east of the Pecos River near Roswell, and other areas. Legislation to prevent new uses from reclaimed drainage water should be encouraged. Additional legislation should be promoted that would require water rights to compensate for evaporation from maintained or dedicated wetland or swamp areas.

A combination of methods could be used to meet long and short-term shortages of surface water. For example, retrieval of bank storage on the perimeter of Brantley Reservoir and in McMillan Delta by pumping of shallow wells with relatively low pumping costs could be done. This would also create underground storage for surplus years. Pumping wells within the Carlsbad project through the canal system would help meet adjudicated entitlements.

There is also a possibility of pumping wells adjacent to the Pecos River with compensation to the well owners for costs incurred. The five-year

accounting period could be used where the owner could pump water into the river as needed and retire the water use the following year.

The lease of existing water rights and diversion of water into the stream system is another option. Importation of water into the Pecos system through existing pipelines, and exchanges of water and existing water rights should be explored. The purchase of water rights for permanent retirement is yet another option.

And finally, conservation is vital. Low cost loans throughout the basin for conservation measures including canal lining, sprinklers, leveling, and planning assistance should be made. Water conservation education for all water users is a necessity.

These are the sorts of things at which we need to look. My personal view is that we need overall planning with a local core group to start the process and to work with the state engineer and others. The plan could then be implemented through cooperation of all water users and public agencies.