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WATER MANAGEMENT STRATEGY FOR THE MIDDLE RIO GRANDE VALLEY

prepared by

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PRELIMINARY

Note: This paper was prepared by the signatories in an *ad hoc* work group environment. The paper is being reviewed by the leadership of the organizations represented. It has not yet been endorsed by all of the organizations, therefore cannot at this point in time be considered final. This is an internal working document and should be so considered until further notice.

R. Leutheuser, December 6, 1996.

INTRODUCTION

The listing in 1994 of the Rio Grande silvery minnow as endangered under the Endangered Species Act and the drought conditions experienced in the middle Rio Grande valley during the first half of 1996 combined to underscore the need to address long-term water management options to meet water needs in the valley. The purpose of this paper is to outline alternative courses of action to satisfy these water needs that merit further investigation by agencies and entities which have a stake in water management for the valley.

The middle Rio Grande valley is hydrologically very complex and is home to substantial agricultural activity, urban development and the silvery minnow. Uncertainties exist in our understanding of the hydrologic connections between surface-water and ground-water systems in

Still, during the 1996 irrigation season, agencies and entities directly involved in water operations for the middle valley largely succeeded in satisfying the water needs of the silvery minnow and water users, including Middle Rio Grande Conservancy District (District) irrigators. This success was due to the District operating its system to allow native Rio Grande water to remain in the river undiverted for the minnow and the city of Albuquerque (City) and other entities making some of their San Juan-Chama Project water available to the District for use by irrigators at no cost to the water users in the valley. It is expected, however, that San Juan-Chama Project water owned by the City and these other entities may not be available in future years to augment surface-water supplies in the valley.

Without proactive water planning and related commitments to action, water management decisions may be made through litigation. Environmental organizations have sent Notices of Intent to Sue, and others have contemplated legal action, regarding operation of the river system through the middle valley and related impacts to the silvery minnow. Government agencies with a stake in water management in the middle valley are now in the process of developing a plan for 1997 river operations for the silvery minnow and the District. Agencies and entities directly involved in water operations for the middle valley also share responsibilities in equitably meeting future water needs with the goal to satisfy water uses and the needs of the silvery minnow beyond 1997.

ACTIONS

To meet the needs of the silvery minnow, it is most desirable to take actions which will secure long-term, dependable amounts of water for the middle Rio Grande. In doing so, water users need to be accommodated. No single action will by itself accomplish these goals.

However, the preparers of this paper believe that some combination of the following actions will be instrumental in meeting these goals. These alternative actions require further investigation and refinement to ensure that actions ultimately taken are responsive to these goals and to changing needs. Actions to be taken must be legal, economically feasible, politically acceptable, and implementable in a timely manner. Successful implementation of any of these actions will require improved water measurement, monitoring and accountability. The following alternative actions are non-exclusive and no order of priority has been assigned to them.

1. Acquisition of Water: Acquisition of water from willing sellers to facilitate water supply management in the middle Rio Grande is an action that could be taken within existing laws. Modifications to existing laws and contracts might further facilitate various ways of implementing a water acquisition program which may involve elements of water-use forbearance agreements or water banking. While water could be acquired from water users, the District may need to be a party to agreements to allow such a program to be effective in satisfying needs of the water users and the silvery minnow. A water acquisition program may require sustained funding from federal and other sources, and it would require development of institutional and physical criteria for obtaining water in a timely manner.

2. Conjunctive Ground-Water and Surface-Water Use: The use of ground-water and surface-water supplies could be co-managed to contribute to meeting the needs of water users and the silvery minnow. During wet years, ground-water users such as the City might use a higher proportion of surface water for direct use or artificial ground-water recharge. During dry years, more ground water might be pumped in lieu of using surface

water so that additional surface water may augment the total surface-water supply available for the silvery minnow and surface-water users such as the District.

Another option is to strategically place shallow ground-water wells in the middle Rio Grande valley for use in times of severe surface-water shortages, thereby providing a supplemental source to the total water supply in years of low streamflow. This option could be expensive, but would provide a means to respond to emergency low-flow situations. These options would provide for a more comprehensive water use; however, institutional and water rights constraints need to be addressed to implement them.

3. Upstream Water Management: Changes to Rio Grande system water operations could increase the capability of storing native Rio Grande water upstream from the middle valley. Some reservoir and river operation options could require new authorizations, while other options could be accomplished under current authorities through changes to federal water control manuals. Possible options for consideration, in no order of priority, are: (1) storing Rio Grande water in vacant storage space in Heron Reservoir when space is available, as well as utilizing San Juan-Chama Project water; (2) transferring water from El Vado Reservoir to Abiquiu Reservoir; (3) increasing the storage capability in Abiquiu and Jemez Canyon Reservoirs; and (4) using Cochiti Lake for a re-regulation reservoir during the irrigation season. Aspects related to these options which would need to be addressed include: water supply, Native American water rights, effects on water management outside the middle valley, recreation, compliance with laws related to the environment, the Rio Grande Compact, and specific agency and project authorizations. There is also a need to annually prepare an operating plan for reservoirs and diversions of

the Middle Rio Grande Project in consultation with stakeholders to specifically evaluate water management needs and opportunities for the middle valley.

4. **Water-Use Efficiency Increases:** Increased water-use efficiencies in the middle Rio Grande valley should contribute to an increase in the flexibility to manage the water supply. Options for action by which water-use efficiencies could be increased include improving off-stream water-delivery systems by such means as lining canals, improving on-farm irrigation practices, or improving water delivery scheduling. Prior to taking action to increase efficiencies, the impacts of various options on the hydrology and the environment of the middle valley need to be assessed. Further, the disposition of water "saved" by these measures would need to be resolved in accordance with state and Federal water law and possibly by agreement with the District to allow water saving measures to effectively aid water managers in meeting the needs of the water users and the silvery minnow.

5. **Water Rights Administration:** Water rights in the middle Rio Grande valley are not adjudicated and much of the water uses in the valley are not metered. Metering surface-water and ground-water irrigation deliveries and drain flows would help clarify existing water uses and needs, quantify the available water supply, and identify water management options. Adjudicating water rights in the middle valley would, in conjunction with a metering program, allow for improved administration of water rights and improved water management. However, an adjudication may not be completed for the middle valley in the foreseeable future unless alternative dispute resolution procedures can be adopted by the state, water users and the court to carry the adjudication

forward. Still, sustained funding from federal and other sources to meter and monitor flows throughout the valley is needed.

RECOMMENDATIONS

Agencies and entities directly involved in water operations for the middle Rio Grande valley should diligently and cooperatively investigate with the broader community of interests, the feasibility of implementing the actions described herein and develop a plan of action to serve as the basis for future river and reservoir operations to meet the needs of water users and the silvery minnow in the middle valley. Such a plan of action might include any combination of the alternative actions described herein which would lead to maximum improvements in water management for water users and the silvery minnow as a whole.

Attention should first be directed towards more immediately attainable actions such as upstream water management options which can be accomplished within existing authorities and the acquisition of water. Concurrently, existing institutional constraints to implementing potential actions should be examined and efforts should be initiated to make institutional changes as may be deemed appropriate to help accommodate both water users and the silvery minnow in the long term. Where additional studies are deemed required to fully evaluate a potential action, the agencies and entities represented in the preparation of this paper should cooperate in securing the necessary resources to complete such studies promptly. These agencies and entities should also continue to dedicate staff to working on issues related to development and implementation of a plan of action to address future needs of both water users and the silvery minnow in the middle valley. To this end, the preparers of this paper seek confirmation from the leadership of their respective agencies or entities that the actions described herein should be pursued.