

ALBUQUERQUE AND THE RIO GRANDE

Gary Daves

Policy Planner

Public Works Department

City of Albuquerque

This talk will be broken into two general areas. The first will be a short discussion of Albuquerque's legal and physical relation with the Rio Grande given by the city water and wastewater systems and also Albuquerque's physical and aesthetic relation to the river as it passes through here. The legal relation has created the imperative that Albuquerque acquired San Juan-Chama water which creates the basis for the city's involvement in the river upstream and down, as will be discussed in the second part. The second part will be more directly to the point of this conference; the ongoing management of the river, particularly in this era (characterized by the conference brochure) of "water surplus." I might note that throughout this presentation, the use of the word "river" includes the Rio Grande and its tributaries.

City Water and Wastewater Systems

In a 1980 Albuquerque Tribune article, Steve Reynolds, New Mexico state engineer, wrote in a column regarding the city of Albuquerque's water supply that the "well-known

intimate relationship between the aquifers of the Rio Grande depression and the surface flow of the Rio Grande is at the same time a blessing and a constraint." The blessing is from God the creator. The constraint is from God the water manager, Steve Reynolds. The creation is recorded in Genesis 1:1. The constraint is found in the scripture of City of Albuquerque v. Reynolds, recorded in 71 NM 428, 379 P2d 73 (1962).

The New Mexico Supreme Court's ruling in City v. Reynolds to uphold the state engineer provides the essential legal link between the city and the Rio Grande. Because of water law in New Mexico, as exemplified by this case, and the fact of the hydrologic relation between groundwater pumping and fully appropriated surface flows in the Rio Grande basin, the city's consumption of water (which has historically been exclusively from wells) is strictly controlled and regulated based on the river. The city's water rights, vested before declaration of the Rio Grande Underground Water Basin in 1956, translate into the right to diminish the surface flows in the river by the amount of the rights. This amount was originally determined by measuring the city's total annual pumpage at the time of declaration of the basin less the 50 percent return flow to the river by way of the city wastewater system. The effect on the river from wells some distance from the river lag behind the time

of pumpage. This lag can be many years, depending upon distance of the pumping from the river and the transmissivity of the material containing the groundwater.

The state engineer determined the city's vested rights based upon its consumption (total pumpage minus return flow) but has allowed the city to increase its consumption in excess of its water rights because the consumption lags behind the effects on the river as I also understand it because the city may acquire water rights by eminent domain. He will require the city to have acquired and to retire additional water rights (or augment river flow as with the city's San Juan-Chama water) as the effects of city pumping in the river exceed its rights.

A few numbers might be of interest as they relate to the city water and wastewater systems' historic, present, and projected effects on the surface flows in the Rio Grande. In 1956, when the basin was declared, total city annual pumpage was about 36,000 acre-feet with half of that returning to the river by way of the wastewater system. Thus the city was granted some 18,000 acre-feet of vested rights. However, because of the lag between pumping and the effect on the river, the net effect of the city on the flow in the river was positive at that time (i.e. return flow from the city exceeded the drawdown on the river caused by the pumping) and has been until the last few years. Since

about 1976, the effect of the city's activities have depleted surface flows. In 1979, depletion was 2,900 acre-feet and in 1985 about 11,000 acre-feet. This last number compares to pumpage of 101,692 acre-feet by the city in 1985 and return flow into the river of one-half of that.

Several obvious points can be made from this. First from the 1950s until about 1976, the city has actually been augmenting rather than depleting flows on the river downstream. Augmentation is the result of the city's rapid growth away from the river and placement of wells further from the river and the quick return of half the water pumped by way of wastewater outfall into the river. Second, net effect of the city on the river does not yet equal its right to affect the river and will not until sometime in the 90s. This means there will have been about a 40-year lag between the river having been debited by the amount of the city's vested rights and the maturation of that debit as reflected by actual flows on the river. Third, notwithstanding this ultimate net drawdown on the river, the city by way of return of treated wastewater to the river provides a fairly constant minimum flow to the river downstream from the wastewater plant outfall. For example, the city now treats and returns to the river about 44 mgd, which translates to a 68 cfs flow, or about 50,000 acre-feet per year. This steady flow will increase with increased

pumpage of water by the city. Finally, the city's effects on the river are increasing very rapidly. Projections are that the city's net annual drawdown on the river will be about 30,000 acre-feet in the year 2000. That brings us to the city's San Juan-Chama water.

The city in its wisdom, and in a series of decisions and commitments in the 50s and 60s culminating in a contract with the U.S. Bureau of Reclamation in 1963, has the rights to a share of water diverted from the San Juan Basin to the Rio Grande by way of the Rio Chama. This wisdom was undoubtedly in large part promoted by Steve Reynolds' declaration of the basin and the definitive affirmation by the Supreme Court in 1962 that the city could no longer freely appropriate water for its increasing consumption. Under the contract, the city receives an annual allotment of 48,200 acre-feet of San Juan-Chama water.

The ultimate use of this water by the city will be to offset the city's effects on the river in excess of the city's rights. Thus, sometime in the 90s when effects exceed city rights, the state engineer will require the city to begin running amounts of San Juan-Chama water down the river to offset the deficit. City projections indicate that this deficit will increase at a rate such that by around 2030, the full 48,200 acre-feet will be needed on an annual basis. Following that, the city will have the task of

acquiring and retiring additional water rights at an awesome pace. It's a scary prospect, if it's possible to be scared about something some 40 years in the future. Accordingly, the city, upon the admonition of Mr. Reynolds, actively purchases existing surface and groundwater water rights in the basin. Mr. Reynolds has estimated that non-Indian irrigators in the mid Rio Grande Valley (between Cochiti and Elephant Butte) have consumptive rights of about 128,000 acre-feet, acquisition of which he sees as the way to accommodate increased domestic use and industrial growth in the basin.

A resource management program is being implemented to develop several strategies including conservation, and postponement of water usage, groundwater recharge with San Juan-Chama water, development of new water sources if possible, and ways to acquire existing rights. In the interim, the city has the mixed blessing of 48,200 acre-feet of water it's trying to find some place to put in storage and to beneficial use. During this time, and with this water, the city is a participant in the water in the river.

What is the river's physical and aesthetic relation to the city? We hope it is, on the whole, and will increasingly be, a mutually beneficial co-existence. The river, its valley, and the Sandias are the key geographical determinants of the city. The city exists here because the

railroad was built between the river and the mountains. The river in Albuquerque and its environs is a ribbon of bosque and semi-rural green belt of agriculture and gentlemen farmers. It is more than just a place to argue interminably over where or whether to put in a bridge. Hopefully, its bosque will become less and less a place for clandestine dumping of trash and junk and other destructive activities. Existing facilities in the city made possible by or enhanced by proximity to the river include the beautiful Albuquerque Zoo, the state operated Rio Grande Nature Center, Tingley Beach and numerous other parks and recreation facilities. At the instigation of, and with the support of the city, the 1983 State Legislature authorized creation of the Rio Grande Valley State Park, which consists essentially of Middle Rio Grande Conservancy District (MRGCD) land contiguous to the river in Bernalillo County. The park now legally exists with the city as the operating party. With the development, adoption and implementation of a Park Management Plan, realization and preservation of the aesthetic, wildlife, wetland, and recreational values of this area can be achieved, in a manner consistent with the interests of the MRGCD and the U.S. Army Corps of Engineers and the U.S. Bureau of Reclamation.

To conclude this point, the city tries to be a good neighbor to the river, which over millenia has created the

bountiful aquifer that is the city's lifeline. The river is more than just plumbing. The river, its bosque and its valley define the city and its character; the city in turn must preserve this magnificent resource as well as be sustained by it.

Management of the River: City Role and Perspective

The city is a marginal actor in the river drama and has particularly been so during these years of wet weather and high flows, which are perhaps best characterized by noting the unprecedented spills in Elephant Butte Reservoir that we are experiencing.

That the city is a marginal actor on the river is two-faceted. First the chunk of San Juan-Chama water it receives annually (48,200 acre-feet) is a relatively small amount of the flows on the Rio Grande and its tributaries. This is particularly true in comparison with the high spring and summer runoff from snowpack and the extensive runoff from thunderstorms that we've experienced these last years.

Second, the city must take care of its water under the law of the river -- the Byzantine web of Interstate Stream Compact, U.S. Bureau of Reclamation, U.S. Army Corps of Engineers' rules that govern river management -- and the river sheriffs: Mr. Reynolds, Mr. Gilmer, and Mr. Danielson, and their not totally compliant deputies, Mr. Charlie Calhoun, Mr. David Overvold and Col. Peixotto. In

this far from definable hierarchy of control, the city is not a manager but rather more a client among many on the river.

But as a minor actor, the city and we who manage its San Juan-Chama water, are in a position to observe some of what's going on in river management. And we not infrequently have either placed ourselves (for example, requesting the resumption of the Abiquiu Storage Study), or been placed by others, as a factor of more or less importance in decisions or policies on the river. I think, however, that any perception of a particularly key role for the city on the river is mostly illusory. The back of the city cannot by itself support a decision to authorize increased conservation storage in Abiquiu. If such ought be done, it must make sense from a state and a Rio Grande Basin (including all three Rio Grande States) perspective, as will be discussed. And the city's actions cannot assure that the Adobe Ruins take out point on Abiquiu is high and dry each spring. A little more on this later, also.

Before I go into a few specifics of my impression of the management of the river and some comments regarding beneficial niches the city might fill or assist in its management, let me give you my philosophical perspective for the comments. As the Rio Grande and its tributaries flow from the New Mexico and Colorado mountains south through the

length of New Mexico, and through the Texas/Mexico border to the gulf, it shares and grants its benefits of water and beauty to the land it passes. It passes no islands, and the city of Albuquerque is no island of interests to be placed ahead of and in derogation of others. The city does not view the river as a battleground of interests, but rather a community of interests that should be shared with equity. Thus, we are not interested in adversaries, particularly an adversary chosen for us by others. We are not interested in advantages gained at the expense of others. And we don't make decisions affecting the river just because citizens (and voters) of Albuquerque are narrowly benefitted, but hopefully because the decisions make sense to both us and the river community at large, upstream and down.

With that testament to city sainthood out of the way, let me temper what I've just said with the imperative that what the city does with its customers' San Juan-Chama water must be consistent with their interests. I might note that up through today, the city has paid about \$10 million for the San Juan-Chama project. The city's costs this year are \$1.7 million, which translates to a charge of about \$15 per year per city customer or account for water. Not a drop of this water has been used for the city system.

To my mind, the wet years themselves and the massive amounts of water that the river has had to accommodate have

been the major determinant in the management of the river. To that extent, institutional/jurisdictional prerogatives and niceties have of necessity had to take a back seat. During this time much water has gone downstream. However, it has been controlled such that all but minor flood damage to communities in the river has been prevented and the reservoirs filled as never before. And so far as I am able to determine, this control has been exercised with due regard for the multitude of concerns and constituencies of the river. Certainly the city has no complaints regarding the fate of its San Juan-Chama water through this time. For example, by the stroke of a pen the commissioners moved city water in Elephant Butte upstream to Abiquiu to prevent it being spilled during the paper spill of '85.

There has been excitement, drama, and controversy during this time. Of the controversy, I think it has been on the one hand the natural inclination to blame men and institutions for events forced by nature. On the other hand, those decisions have received more attention than the impacts of those decisions deserved.

There are two major complaints and concerns: 1) Too much flood water was retained in upstream reservoirs (notably Cochiti and Abiquiu) far too long, leading to damage to land and the river upstream, and related to this; 2) the accounting transfer of the 50,000 acre-feet State

Recreational Pool and the city San Juan-Chama pool in Elephant Butte to Abiquiu to prevent their loss by spill. This paper transfer added that increment of impact of flood waters in Abiquiu.

I must tread carefully here, for I have not studied the ins and outs of these actions as much as the managers and the opponents of these actions have. I do believe the essential fact of this situation was that these reservoirs have had to, in this wet era, be used for the reasons they were built, and were raised to unprecedented levels. This resulted in some unfortunate, but not devastating, effects to land or the river.

By specific act, Congress provided for the pool and its maintenance for 10 years. The compact commissioners and the U.S. Army Corps of Engineers creatively sought to maintain what Congress created. I'm not so sure but that it didn't make sense at the time. Creative, but illegal. I would only note that the corps says it was legal, and that I am sure there are many lawyers who could persuasively argue either position. At any rate, I would say that the increment of negative impact of this arguably meritorious action has not deserved the heat and noise and recriminations of the opposition to it. Nature has conspired with this opposition and the recreational pool has been lost. Nature again has been the ultimate determinant.

I alluded earlier to the ongoing study regarding the possibility of allowing increased conservation storage in Abiquiu. The city's position is open and has been disseminated to both opponents and proponents of the proposal, so I will not go into detail here. I will highlight three points. First, those who wish the additional storage, including the city, should be willing to and be able to justify paying the real costs of such storage. It remains to be seen whether the city by itself can meet this criteria. Second, the benefits (economic and aesthetic) of such storage should outweigh the detriments (economic and aesthetic) -- (aesthetic meaning here all tangible and intangible things of value that are not quantifiable in dollars). Neither the corps nor Congress should be asked to make this kind of local decision without direction from those affected. Finally, as I understand it, the largest impediment to the value of increased storage in Abiquiu for holders of Rio Grande water is restrictions under the compact. Surely, those, who by the stroke of a pen, can move water hundreds of miles upstream, should be able to creatively obviate this obstacle and do so without great harm to this bible of the river.

Whatever the city might have done prior to and in the spring of '85, the Adobe Ruins rafting takeout would still have been flooded that year. In subsequent years,

assuming a possibility for city action to realize this goal, we will remain willing to cooperate, even to the extent of enduring some losses by transfer or transport of city water, given the water glut situation. But as a general proposition, we think that any losses of water that would not otherwise be lost immediately or ultimately ought be borne by the state (with the proportionate city contribution by its citizens' taxes to any state money) through direct compensation to the city, and not exclusively by the city water rate payer. If drawing down Abiquiu for this reason is of overriding value, those deriving the value (meaning the state and its citizens) ought to be willing to pay for it.

There is another niche the city with its San Juan-Chama water might fill. I understand that there have been occasions where minimum flows on the Rio Chama have not been maintained for short periods of a few hours or a day or two. Maintaining minimum flows is certainly not a problem during this wet era. Assuming that there would be legal destinations for the water, the city would consider arrangements to allow some of its water to be used for creating minimum flow. Again, to the extent this would create real losses of water, compensation by the entity benefitted (the state) would be appropriate.

What are we doing with our San Juan-Chama water, while

we don't need it directly? I would hope we use it with some common sense and in the spirit of a river we all share. During these years the water is available for more than just offsetting city depletion of the river. This water is a state resource -- a basin resource and should be used as such.

As a matter of policy, the city holds this water available for beneficial use within the state in the basin. Any income derived from this is dedicated to acquiring additional water rights, but income is not our only goal.

One prime example of putting this water to use and from which the city got a hefty chunk of income is the permanent recreational pool. The state agreed to maintain the permanent recreational pool in Elephant Butte Reservoir by making up evaporation losses on the pool through the year 2020. In addition the city agreed to accommodate summer weekend rafting by releasing city water to raise flows in the Rio Chama between El Vado and Abiquiu reservoirs to raftable levels. In return for this agreement the city received some \$2.3 million the state had available for maintaining the recreational pool. As it has turned out, the unprecedented three years of spill of Elephant Butte Reservoir have resulted in the loss of the full State Parks Recreation pool. Consistent with, and in the spirit of the agreement, the city will make all efforts to assist the

state in reconstituting the pool as it becomes needed. The extraordinary wet cycle we are now in has also frustrated the city's ability to make the rafting releases. As we enter a more normal precipitation regime and room appears in Elephant Butte, the city also will have flexibility to accommodate this interest. Several other instances illustrate the city's cooperation with other agencies on the use of San Juan-Chama water. For several years the city has had some of its water in the MRGCD's El Vado Reservoir and has made some of this water available to the district for its use. This cooperation continues.

With a touch of city generosity (and little choice), and a little bit of Steve Reynolds/Phil Mutz hornswoggling, the city agreed to allow its water to be used by the Interstate Stream Commission to fill the sediment retention pool in Jemez Canyon Reservoir. As fair warning to Mr. Reynolds and Mr. Mutz, the city considers this transaction to have been a loss leader financially and hopes to wangle money out of the situation by making up evaporation and seepage losses on this water in the future.

The city has, at no sacrifice, routinely and gladly consented, with other San Juan-Chama contractors, to postpone delivery of its San Juan-Chama water from Heron Reservoir to minimize disruption of spawning on the Rio Chama fishery. City water, as many of you may know, has

allowed the development of vineyards and wineries east of Elephant Butte at Engle. Europa Vintner, one of the wine growers, won the overall wine championship at this year's state fair with a sparkling wine (champagne). Vintner has produced more than 50,000 bottles of this marvelous champagne. In addition, the city has agreements with other water purchasers, (nurseries, mobile home parks, small developments, small industrial operations) who buy water in bits and driblets. These sales allow them to meet their water needs without having to buy expensive water rights.

The wet cycle has limited the city's ability to manage and even take delivery of all its San Juan-Chama water. However, speaking as one who has been a New Mexican for 40 some years, I know that New Mexico is still essentially a desert and that water is valuable. On the other hand, I should note that the city has no policy of taking delivery of its water against all reason, economic and otherwise. I anticipate that the Albuquerque Public Works Department will shortly initiate a marketing study to see if it is feasible to market or otherwise put to use more of the city San Juan-Chama water that is not now needed, given the many limitations on its use. Without some success in this effort, there may be years when we and the state lose this water.

To conclude, I hope and think the city is not totally

self interested, narrow-minded, and that it can and does look past the end of its nose, to the extent city decisions affect the river. The city must look out for its citizens' interests, but with regard to the river, these interests must be shared with the whole community up and down the river, just as the river is shared. We are trying to treat the river as it deserves and as our citizens deserve.