



The 12th Annual Water Assembly  
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## Subprime Water Crisis

### What Can We Learn From Others In Arid Environments?

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*Elaine Hebard:* Susan says she's going to "fly" through her presentation, but that the full comments will be included on the website when we do the transcriptions.

*Susan Kelly:* We're running behind, so I'm going to be brief, but the other reason I am going to "fly" through my presentation is because everything I was going to talk about has already been discussed today. You guys have all done a wonderful job. I really compliment the Water Assembly: I think this has been one of the best Assemblies I've attended in terms of the content of the different talks.

I was originally asked to talk about the over-allocation of water resources in the Middle Rio Grande and how to best manage our water resources. To paraphrase the thoughts of one of the organizers, "We have outstanding promises for water that we will at best have difficulty fulfilling. Such promises include paper water rights claims far in excess of wet water; unquantified prior and paramount claims for water; promises to acquire water rights in the future when previous pumping hits the river; and obligations to deliver water to Texas and EBID." I would add that all of this is compounded by the prospect of long-term drought and climate change.

In working through the agenda and how to approach the day, Ed asked me to address "best practices" in other areas of the arid southwest—what we can learn and implement in the MRG? I thought this approach, viewed against the backdrop of over-appropriation of our water supply, provided a chance to think about some ideas that may be worth while to explore.

Let me preface this by making it clear that I know that we can't simply transplant experiences of one area to another. The hydrology, the culture and land development patterns in relation to jurisdictional boundaries, are unique in every area. Also, I realize the actions I'm describing are hard. Many people in the water community, in the MRG Planning Region and at the State

Engineers have thought about these ideas and many more. There are huge constraints: technical, political and legal. But when you look at the big advancements that have been made in many of the areas identified in the MRG Plan, and what the stakes are if we don't come into balance, I think my message is that we should just keep pushing forward no matter how hard.

There's a whole gamut of things that are being done [elsewhere] as you all know. I chose four to talk about that I see as an opportunity, or things that we should be thinking about.

### **(1) Domestic well policy**

As of 2000, the State Engineer estimated the total depletions from domestic wells in the MRG to be 12,117 **acre feet** (in Bernalillo, Sandoval and Valencia Counties). These wells are unmetered and unmeasured. In fy 2007, the District 1 office issued 2,300 new domestic well permits. In previous years, it's been as high as 4,000 per year. This is not a *diminimus* use, and it's outside of any water rights that are accounted for under the Rio Grande Compact. Approval of the permits is on-going, with no limit in sight.

Here I think the City of Santa Fe provides a good example of efforts to rein in the proliferation of domestic wells with its requirement to hook up to the City water system if a proposed domestic well is within 300 feet of a water line. The policy isn't perfect and it doesn't really address sprawl. We should take a hard look at this mechanism or other tough measures to address the domestic well situation here in the Bernalillo, Valencia and Sandoval Counties.

The legislature in 2001 explicitly gave municipalities the authority to prohibit new domestic wells in certain situations, so that's one avenue. I'm not sure how that statute is working. The State Engineer has made significant strides in this area. Under the Tom Turney administration, "MRG Administrative Area Guidelines for Review of Water Right Applications" were adopted in 2000. The Guidelines largely affected non-domestic well applications, for the first time requiring that offsetting water rights be obtained *before* the diversion of water. Prior to this time, the rights had to be in place before the pumping effects hit the river, which could be many years later than when the pumping occurred. The guidelines also defined a Critical Management Area as an area with excessive water level decline rates, which includes much of the east side of Albuquerque and North Albuquerque Acres. New domestic wells in this area are required to be metered. According to the guidelines, the CMA can be modified.

The new Domestic Well Regulations adopted in August of 2006 by State Engineer John D'Antonio, could provide the opportunity for an improved policy in the MRG. After those regulations, maximum allowable diversions from domestic wells were reduced from three acre-feet to one acre-foot, except for multiple households which can go up to one acre-foot per household or three total. This is a step forward, but since the typical household only uses .25 acre-foot, it still seems pretty high. The regulations also permit the State Engineer to declare all or part of a stream-connected aquifer as a domestic well management area to prevent impairment to valid, existing surface water rights. Maybe this is worth looking at in the MRG. Or, since the CMA guidelines already exist, maybe they could be amended to more strongly address domestic wells.

In a DWMA, diversion can be limited to .25 acre-foot per year, or an amount may be established which is less than that. I know this is a contentious issue and this action would be hard. The policies would need to be clear and supportable from a technical standpoint. A strong public relations effort would be needed to explain why policies are needed—to both elected officials and others affected. If we want to pursue this effort, we should investigate actions taken by the County of Santa Fe, where per-household diversion is limited to .25 acre-foot per year.

There are many jurisdictional issues and overlapping permit and development approval requirements—there are public and private water providers, county planning regulations, and the State Environment Department is involved. But I believe that these issues can be worked out, and with strong political leadership and cooperation among leaders representing the various parts of the region (to support action by the State Engineer), we could manage the domestic well situation much more effectively.

## **(2) Urban water pricing**

The next area I'd like to address is urban water pricing. The issue of water prices has really struck a chord with me because I can see the effect higher gas prices are having on transportation decisions across the country. And I can see that our urban water prices are not having much effect on the average person's water use decisions.

To think about "best practices" in this area, I looked at what Tucson is doing. My information is taken from a 2006 report by Western Resource Advocates, and although a few things have changed, I believe it's largely current and relevant. Some of you may have read this report and maybe you've even discussed it at a previous Water Assembly. But given the projected future shortages of water in the Southwest, and the need to create more incentives to conserve, I think it's worth discussing. The report speaks highly of the ABCWUA conservation program. It states: "Their numerous rebate programs offer incentives for residents to replace inefficient appliances and fixtures with new, more efficient technologies. They have also adopted landscape requirements for new development that limit the amount of high-water turf that can be installed. Water development in the service area is focused on reducing reliance upon groundwater with the delivery of San Juan-Chama water in 2008." The report then goes into the issue of rates and states: "Despite strong incentive-based programs and ordinances, the ABCWUA has a water rate structure that does not send a strong conservation price signal to consumers. Altering its water rate structure could not only reduce demand, but also provide a financial incentive for those willing to use water more efficiently."

The Utility has many conservation incentives that surpass Tucson's, including, as far as I can tell, better incentive-based conservation programs, time of day restrictions and enforcement against water waste by the water cops, which is lacking in Tucson. But while Tucson lacks many of our incentives and enforcement strengths, it has a rate structure that, according to this report, has a very effective pricing mechanism for water use. "Tucson Water was one of the first communities to have an inclining block-rate structure, adopted in 1974. Today the city continues to use the inclining block-rate structure and has made many adjustments over the years. The result is a rate structure that adequately sends a price signal to consumers that reflects the scarcity of water in this region. The key to Tucson's increasing block rates are the large steps

between each tier, nearly doubling the cost per unit of water from one tier to the next. This provides a reward of lower water bills for those who conserve water and requires those high-volume users, who place the most stress on the system, to contribute more. Compared to other communities' prices, Tucson's consumption charges rise quickly and on average cost more per thousand gallons. Without rebate programs, rates seem to be Tucson's primary mechanism for achieving its conservation goals."

I looked at the MRG Alternatives review for the discussion that occurred around this alternative. When urban pricing was reviewed as an alternative in the MRG Regional plan, many issues came up. The analysis said that the value of groundwater is not reflected in water rates. Rates are based upon the cost to drill, pump, treat and deliver mined groundwater. The services groundwater provides that aren't included in the rates include: 1) supporting the water table in the riparian zone, 2) preventing the subsidence of the land surface, 3) providing reserves in case of drought, and 4) reducing treatment costs. The analysis in the Plan stated that dramatically increased prices would be required to achieve a reduction in demand. And as always, there are many implications of taking action. There are impacts on revenue if demand drops too much. Utilities are enterprise based, and revenues should be spent on the water system. But by reinvesting in water projects and programs, the utility can implement a price change while complying with existing regulations.

In the current economy, it's hard to talk about raising prices. But there's never a good time, and we could at least begin the discussion. And if customers have a choice—to reduce use and avoid the higher cost of water—then the economic objections can be largely avoided, with transition periods and subsidies provided for lower income people.

It should be noted that the Utility pays its way for water and infrastructure vs. many smaller systems that go to the legislature for funding. But given what we're seeing of the impacts of increased gas prices on reducing or changing transportation behavior, and if we're serious about getting our water budget in shape, we should take a hard look at our rate structure.

### **(3) Underground Storage**

Another "best practice" that is being used effectively in parts of the Southwest is to store water underground. I heard Mr. Turner and Bob Simon discuss their ideas. I would prefer that a permit for such storage be publicly held, but I think the idea of underground storage is an option that should be further investigated. We have a million acre-feet of vacant aquifer space underneath Albuquerque. The [San Juan-Chama] Drinking Water Project will halt [pumping] and improve the level of the aquifer for 20-40 years, depending upon the rate of growth and the success of conservation strategies. But after that time, the municipal wells will again be drawing down the aquifer. If we could find a way to infiltrate or inject water when available into the aquifer, we would improve the health of the aquifer, reduce the risk of subsidence, and eliminate evaporation losses. The ABCWUA is testing infiltration at a small pilot project on the Bear Canyon Arroyo.

There are many issues in an expanded aquifer storage project. In big runoff years, the best opportunity to take excess water out of the river comes all at once and makes it hard to do. One idea that I've heard discussed in concept is to reach an agreement with Texas to skim a portion

off the top of water deliveries over a series of many years, and store the compact water underground. As spring runoff or monsoon events occur and create water in excess of downstream water rights or delivery obligations, we could pay back the water. Over time, if a large portion of compact water is stored underground, the question would become how to deliver it if EBID or Texas calls for the water? What if there is a spill under the Rio Grande Compact? Does New Mexico then keep the water that is stored underground? All of this would be very complex to figure out and reach agreement. But we have very sophisticated modeling tools and given the high stakes, we should be using those tools to look at and consider all the options.

#### **(4) Active Water Management**

Finally, I'd like to discuss active water management—not exactly the same thing as Active Water Resource Management regulations, but related. The AWRM regulations were—and are—highly controversial. The most controversial aspect is that district specific regulations are to be developed—which look at the hydrological conditions in each district and come up with priorities as determined by the State Engineer, based on a sequence of documentation—and this is used for administration during times of shortage.

Leading up to the regulations, 2002 was a particularly dry year in New Mexico. Every county in the state was declared a drought disaster area by the USDA, and irrigators received a fraction of their normal allotment. Many stakeholders from a variety of perspectives, and the staff of the State Engineer, bemoaned the fact that the lack of a final adjudication of water rights was hindering the negotiation and implementation of solutions to water shortage problems.

It is indisputable that no matter how successful the state may be in efforts towards adjudication reform, adjudication will take years and years and years. In the AWRM regulations, the State Engineer is trying to get tools—short of adjudication—to administer by priority to protect senior water rights holders from impacts by junior appropriators during low water years. There is significant debate about this approach, but everyone seems to agree that metering and measuring is required for administration. The issue is how can the State Engineer stop or mitigate the impacts of junior groundwater pumpers, (often who are creating impacts that are not felt in the same year the diversion occurs,) on senior water rights holders? There were and still remain many criticisms of the regulations. Many people view the regulations as allowing expedited transfer of senior water rights to juniors with little consideration of the threats to agriculture and rural communities. Pre-1907 [water right holders], acequias, and others who have vested water rights but no final “license” from the State Engineer were and are understandably threatened by the regulations.

The issue for Judge Reynolds in holding many parts of the regulations unconstitutional was the types of information that the state plans to use in administering water rights. It appeared to the Judge to usurp the Court's authority. Yet the Court in the end decided the State Engineer could administer by a license—a license is an administrative, not a judicial process. And a license doesn't set relative priorities among other license holders or water right owners. Assuming this portion of the opinion holds up, the Judge was then concerned about how due process is followed in hearing objections to the State Engineer's determination to administer based on licenses, or court approved subfile orders, or a final adjudication. The Judge felt that the administrative

hearing unit process was not sufficient because of time delays, and that a water right holder could be impacted without an opportunity to be heard.

If the due process issues can be addressed, there may be a role for some version of an AWRM-like tool. This might require provisions such as notice that a license is being issued, ability to challenge the determination of administration priorities in a timely manner, and an appeal process.

In thinking about “best practices,” I wonder if the Montana Reserved Water Rights Commission provides some type of a model. It’s a different situation, because the commission negotiates the settlement of Indian and other federal reserved water rights claims. But the process may be of note. The Commission is a separate agency from [Montana’s] Dept of Water Resources. All negotiations are held in a public setting. Although the final approval of settlements is left to the sovereigns (state, federal and tribes), the public is allowed to comment at the meetings. This has made it sometimes hard, but the director, Susan Cottingham, feels it has resulted in better settlements.

So, what do we do? We can’t stop growth or control long term climate events. We can aggressively conserve water, use poor quality water for appropriate uses, and try to create incentives for conservation. When you compare our water use and supply to drought-stricken countries where people have to survive on a fraction of our per capita water use, it seems that with good planning and implementation we can have a sustainable water supply far into the future and continue to protect the river. Without aggressive measures, the San Juan-Chama water will give us some relief. But in 40 or so years we will begin again to mine the aquifer and will be struggling to maintain a healthy river and agricultural community. Without aggressive steps, even if we achieve a balance between supply and demand, the aquifer won’t be available as a savings account in the event of an emergency. I just returned from El Paso. It is nice to hear people there say how nice Albuquerque is because we still have a river. Same thing with Tucson—people say, “We used to have a river, but we pumped it dry.” If we make a healthy river the centerpiece, and get aggressive in our management activities, I believe that we can achieve sustainable water use in the Middle Rio Grande.