DIALOGUE
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To promote the wise stewardship and ensure the availability of water resources for future generations of New Mexicans through support of community-based planning and creation of inclusive forums for education, communication, and development of common ground.

20th Annual Dialogue Statewide Meeting

Implementing Change: Where's the Political Will

Summary by Lisa Robert

Despite all we know about living in arid country, unity eludes us when it comes to water scarcity. We're caught up in justification: the reason we can't agree on how to stretch the resource in lean times is (take your pick) bad economy, bad science, bad politics, bad blood among the grassroots… Until *inevitability* is on everybody's list, no one wants to change. Perhaps the missing strategy is truth.

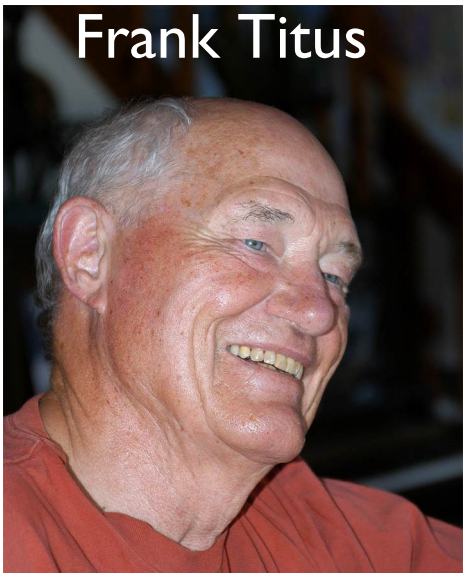
Keynote: "Is There Political Will to Avoid Train Wrecks?"

John Leeper, former manager of the Navajo Nation's Water Management Branch and currently a consultant engineer with AMEC, says he's heard it called the Katrina Hypothesis, the philosophy that "we're not going to fix the levee until something bad happens." A majority of water managers around the West believe they're capable of meeting whatever challenges the future holds, he says, and an equally sure minority foresees crisis like we've never faced before. "Both sides," Leeper notes, "just continue to grind away at their issues."

John Leeper sings the NM drought blues

It was a conference on what qualifies as a "transformational" event that got Leeper thinking. He remembers the shortage-sharing agreement he and others hammered out for the San Juan Basin back in 2003. "When there are lawsuits being filed and opponents yammering, everybody pays attention, but when people just sit down together and solve a problem, you don't hear about that." Whether the hard-won San Juan agreement was 'transformational' or not, Leeper says he learned that "an old dog *can* learn new tricks; that Reclamation *can* change the

WHERE'S THE WILL?—CONT. ON PAGE 5



New Mexico recently lost a shining example of cooperative integrity. Hydrogeologist Frank Titus was, quite simply, a fixture at all consequential water gatherings—a hearty, genuine, explicit champion of reality regarding our shared liquid resource. It's probable that Frank delivered a germane public comment—or several—at every one of the Dialogue's 19 previous statewide meetings, and likewise, he stood often before legislators, litigators, agitators, and negotiators, always serving as a sort of Trickster conscience, keeping the rhetoric on point.

Three of his most fond admirers recalled the dynamo that was Frank at Dialogue's annual meeting in January. Bruce Thomson, Director of the Water Resources Program at the University of New Mexico, says Frank arrived in New Mexico in 1956, armed with degrees in geology from Redlands University in California, and the University of Illinois. He worked for the U.S. Geological Survey, housed at that time in the Earth and Planetary Sciences Building at UNM, and his dissertation on the hydrogeology of the Estancia Basin is "still cited today." In 1965, he joined the faculty at New Mexico Tech, where he did more groundbreaking work, this time on the hydrogeology of the San Augustin Plains. He left Tech in 1973 to do

FRANK TITUS—CONT. ON PAGE 15

DIALOGUE

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Send comments and letters to:
Consuelo Bokum, Editor
New Mexico Water Dialogue
1300 Canyon Rd.
Santa Fe, New Mexico 87501
Email: *consuelobokum@gmail.com*

Update from the President

by Jason John, President, Board of Directors

Dialogue Board President Jason John opening the 20th Annual Dialogue meeting, January 2014.

Thank you for your continued interest in New Mexico's water future. Currently, most of New Mexico is in a severe or extreme drought stage. Spring runoffs from winter snows will almost be absent due to the ongoing drought and most will be waiting for the monsoon season to arrive in July. Currently, statewide average reservoir storage is only at 23 percent of capacity.

Over the next couple of months we all need to take another hard look at the State's current water situation and begin to decide what to do in various places throughout the State. The ongoing drought will affect many sectors of New Mexico. There seem to be many tools to work with to help address the ongoing drought such as the Drought Task Force recommendations, Active Water Resource Management, Shortage Sharing Agreements, Water Banking, Conservation and Priority Administration. But how can we mitigate the effects of drought in each region more effectively?

This and many of the issues that need attention are described or noted in the 2003 State Water Plan. Reviews of the State Water Plan were completed in 2008 and 2013. New Mexico plans to update the 2003 State Water Plan by 2015.

As part of this process, the State will continue to work on regional water plans. Those interested in updating their regional water plan are encouraged to contact the local regional planning entity and find out when and what data is being provided to update the regional water plans. All planning regions should also review data being provided to update the regional plans to make sure all aspects of water supplies and demands are technically sound and meet the needs of particular regions.

The challenges of providing a reliable water supply for many New Mexico communities will take coordination between local residents, water system operators, local governments, the state, federal agencies and others. I see the State Water Plan as a work in progress which will require the insight, expertise and willingness to communicate to make it worthwhile.

What we know—and don't know—about the ISC's Regional Water Planning "Update" process

By John R. Brown

A sustainable water resource "contributes to objectives of society now and in the future while maintaining ecological, environmental, and hydrological integrity." (ASCE 1998)

After a number of false starts, the New Mexico Interstate Stream Commission has embarked on a project to update all 16 Regional Water Plans (RWPs) by the end of 2015 – if funding is available. The ISC has reportedly cobbled together around $500,000 for the current year for both the State Water Plan and RWP "Phase 1" efforts. The current funds are being used "in-house" by the ISC and its contractors. Resources for the second year of the project are subject to legislative appropriation. Despite the uncertainty, ISC staff and consultants are taking a "roadshow" to the regions to inform them of the process they plan to use, and to begin to identify possible members of a steering committee for each region. The playbook for these presentations is the ISC's Updated Regional Water Planning Handbook. They brought the show to the Middle Rio Grande region at a meeting of the Mid Region Council of Governments' (MRCOG) Water Resources Board (WRB) on April 2, where it raised more questions than it answered.

[Note: What follows is not a full account of that meeting, but a discussion of some of the issues raised for the author by both the Handbook and the presentations and questions explored there.]

Because none of the funding will be flowing to the regions during this first year, it is important to understand that most of the data gathering and analysis for the regional plan updates is to be done within the OSE/ISC or by its consultants. They will prepare descriptions of each planning region, identify legal issues, provide water supply and demand data, and identify gaps between supply and demand. The role of the regions, in turn, will be to establish "representative" steering committees of stakeholders who will develop a "public involvement process," and then, "… once the state provides the region-specific supply, demand, and legal constraints report," to "engage with" the ISC to review and respond to it, and disseminate it "to the general public and any interest groups in a public input meeting."

The steering committees' role is supposed to become more active at that point, including "further analysis and assessment of the available information before beginning to identify and develop strategies (projects, programs, and policies) to address any gap between supply and projected demand." The Handbook suggests that strategy development should include public meetings, a decision-making process for selecting recommendations, and an implementation plan.

A key innovation of this process is the ISC's decision to apply a "common technical platform" (CTP) to all regional plans. This is intended to promote consistency among the plans, enable them to be updated simultaneously, and facilitate their integration into a State Water Plan. Though many planners find the underlying rationale conceptually sound, in practice it poses a number of problems.

Is this exercise really an "update" of existing plans or something different? Although the Handbook promises to "integrate updated technical data and information including any relevant information provided by the steering committee," it remained unclear after the ISC's MRG presentation to what extent the State will enable regions to incorporate their own data into their analysis of supply and demand or allow them to use it in their planning.

In the MRG region, the ISC-accepted 2004 Plan is based on a scientifically sound "regional water budget" developed by a technical team of local experts brought together by the MRG Water Assembly. That budget served as the basis for developing and evaluating alternatives and recommending strategies to achieve the goal of "balancing all uses with renewable supply." Of course, the water budget is now 15 years old, and it is currently being reviewed to account for changes in the biophysical situation facing the region. An "update" should presumably consider what has changed politically and physically since the original Plan, what was not covered properly, and how to react to those issues.

For the updates, the ISC will employ the 2010 OSE "Water Use by Categories" report as the starting point for understanding regional supply and demand. The ISC intends to use these data, aggregated by region, as the basis for determining each region's "administrative water supply." (This is another innovation in this planning cycle, and a term whose definition lacks clarity despite attempts to define it in the Handbook.) Intended to create a "consistent, statewide methodology," the Handbook explains that it is based on "recent diversions for beneficial use, thereby taking into account legal obligations that have limited those diversions."

The issue, raised by participants in the April 2 WRB meeting, is not only whether 2010 data on water use can be used (however massaged) as a proxy for supply, but also whether a definition of use that ignores the difference between withdrawals and depletions, as well as open water evaporation and riparian evapotranspiration, can be at all helpful in planning (at least in the MRG region, where the OSE has permitted pumping by junior water providers well in excess of what could be considered sustainable).

This approach to providing water supply data is particularly troubling given the impacts of climate change on the availability of water to the regions. The Handbook says that the State will prepare a "general summary" of climate data for each region.

But that is all. Nowhere in the Handbook is there even a suggestion that key ecosystems may be nearing a "tipping point," that warming and increasing numbers of disruptive events have already generated new uncertainties, and that regions may need to develop adaptive strategies to increase their resilience. Instead, the ISC proposes to project current demographic and economic trends to 2060, as though the status quo is the only likely one. (As with "administrative water supply," data based on averages may fail to reflect the dynamics of an increasingly unpredictable world.)

RWP Update process—Cont. on pg. 4

RWP Update process—Cont. from pg. 3

Related to this, with respect to the agency of people and communities to shape their future, is the matter of governance of the planning process and how its outputs will be implemented. A handout distributed at the WRB meeting, subtitled "Call for Participation and Local Input," asks the 16 water planning regions to "re-establish and develop steering committees" whose members "represent a broad set of user groups," and recommends that the regions "re-engage available regional water planning council members who participated in… the first round of regional water plans and strengthen the group by ensuring that all water management entities… are represented and that individuals with extensive knowledge… are included." Yet the ISC has decided that in the Middle Rio Grande region the WRB, rather than the Water Assembly, which developed the 2004 RWP, should form the core of the steering committee. ISC staff seemed unable to explain this position to the satisfaction of Water Assembly members, some of whom also sit on the WRB. Though the situation may be unique to the MRG region, it may also reflect an implicit bias to focus steering committee membership in favor of water providers' and managers' interests and concerns without including those of water users.

A final point concerns the ISC's stress, both in the Handbook and in its presentation, of the notion that the regional water plans exist mainly for the purpose of identifying projects, programs, and (recently added) policies that may be funded by the Water Trust Board. The idea that a regional water plan should reflect common goals and shared strategies for sustainably managing a region's water supply in the public interest appears to have gotten lost.
Plans have to be useful. A serious regional planning effort ought to require water management agencies, armed with the best available data, to commit themselves to achieving its goals, to take coordinated actions to do so, and to review their progress in forums like the WRB. But it should also empower in each region a broadly representative water planning and action steering committee with ongoing authority to monitor and report to the public about the implementation of the region's plan by its water managers and providers.

Ed. Note: Many of us are not scientists, so this is not a typical article for the Dialogue newsletter. However as precipitation declines, we are becoming ever more dependent upon groundwater which is usually non-renewable. As regions and the state seek to understand and quantify their groundwater supplies, this article demonstrates the kind of information we need in order to understand the limits of our groundwater supplies.

Water Resource Planning and Reality

By Francis West

In 1935 Dr. C.V. Theis, with the USGS in Albuquerque, borrowed an appropriate equation from heat transport as an approximation of the response of an aquifer to the withdrawal of water over time. For this, Theis became known as the father of modern groundwater.

Since then, various exceptions to the Theis equation have been observed in the field. One of these exceptions is when the drawdowns associated with pumping are less than predicted by the Theis equation. In an attempt to address this, another equation was borrowed and named the "leaky artesian" equation. In the early 1980s, the State Engineer began acquiring field observations in the Mesilla Valley in order to develop a conceptualization of the hydrology of the river and the connected aquifer. A number of pumping tests were available for the area, and they all indicated, surprisingly, that the aquifer was a "leaky-artesian" aquifer. This did not comport at all with what we assumed the geology of that area to be. Dr. John Hawley found that there are a number of clay layers in the aquifer, but the temperature logs did not show the signature "knee" of hydraulic confinement, except at depth in the Canutillo area. This negated the conclusion of leaky-artesian conditions and created a conundrum.

Finally, to address field observations of a deforming aquifer, Dr. Don Helm developed an equation that explains the physical basis for many of the phenomena that the Theis equation is unable to address and provided a new paradigm for the so called leaky-artesian condition. The Helm equation was published in 1984, and a new paradigm of groundwater began. When a well is pumped and water is flowing toward the well, it creates a horizontal force inward toward the well that causes the aquifer to be compressed inward by the reduction of its pore space and its associated permeability. The Theis equation only describes water derived by elastic deformation of the aquifer whereas Helm derives additional water by permanent deformation of the aquifer; i.e., groundwater mining which does not affect the river. As the zone of reduced porosity around the well increases outward, the specific capacity of the well decreases, causing increased pumping depths and ultimately a hydraulic disconnect with the aquifer which may cause the erroneous conclusion that the aquifer has dried up, not that a vase has been formed around the well.

The San Joaquin Valley in California is a classic example of the difference between Theis and Helm. For a number of years, large-scale pumping occurred, causing substantial water level declines, subsidence, and an associated reduction in production capacity of wells. It was assumed that this was due to the reduced aquifer thickness and deteriorating old wells. The problem was solved by the importation of surface water until a drought dried up this source. But not to worry, the water levels were back to their original level. However, when the wells were turned back on, the water levels dropped like a rock! The original storage coefficient was about 0.2 but now was 0.001. The Theis equation did not predict this reduction, but the Helm equation can.

Water planners not only have the history of the San Joaquin aquifer, we now have not only the Helm paradigm but we also have new technology such as GPS and InSAR. Helm indicates that the loss of porosity is a function of the pumping rate of the well. This suggests that one should distribute withdrawals like the oil people do by using a field of small wells versus one large well. Lateral aquifer movement can now be monitored in real-time by GPS while InSAR can map the surface movement of soils caused by pumping. The state of the densification of the aquifer by porosity loss may be assessed by the frequency-response history of the aquifer.

Key Court Victory

In the Fight to Protect the Great Basin from the Unsustainable Export of Groundwater to Las Vegas

By Simeon Herskovits

In December a broad coalition of ranchers, Indian tribes, rural county governments, and environmental and social justice activists won a resounding victory against the Southern Nevada Water Authority's (SNWA's) massive groundwater development and pipeline scheme to pump roughly 200,000 acre feet of scarce groundwater from rural high desert valleys in the Great Basin to Las Vegas. In a Nevada State Court lawsuit brought by this coalition, Senior District Judge Robert Estes issued a decision overturning the Nevada State Engineer's rulings that granted the groundwater rights to supply SNWA's Pipeline Project.

Addressing the fundamental nature of the coalition's objections to SNWA's Pipeline Project, Abby Johnson, of the Great Basin Water Network, has explained that what SNWA is proposing would be "the biggest groundwater pumping project ever built in the United States, and it would have devastating hydrological, biological and socioeconomic impacts across vast areas of eastern Nevada and Western Utah." More particularly, as explained by Simeon Herskovits of Advocates for Community and Environment: "All of the scientific modeling, including SNWA's own groundwater model, shows that the proposed groundwater pumping will have devastating effects on both existing water rights and sensitive environmental resources throughout a broad region encompassing many hydrologically connected valleys."

In his ruling Judge Estes found that SNWA failed to produce adequate evidence to establish either the availability of the groundwater on a sustainable basis or any certainty that the proposed pumping would not cause grave, impermissible impacts to existing water rights and the environment. The judge further ruled that the State Engineer acted "arbitrarily and capriciously" by permitting what would amount to unsustainable groundwater mining that, over the long term, would permanently deplete a vast regional system of interconnected aquifers that sustain wildlife and rural communities throughout ...eastern and central Nevada and western Utah. The court also found that it was arbitrary and capricious for the State Engineer to sidestep actually evaluating the Project's likely future impacts by relying on SNWA's monitoring and management plan as a safeguard against any potential unreasonable impacts, despite the fact that the plan lacked any quantified standards or triggers for mitigation measures.

This key court victory was made possible by a previous historic ruling in which the Nevada Supreme Court voided SNWA's water rights for the Pipeline Project and required the State Engineer to hold new hearings that allowed all concerned parties to participate. And it builds on another earlier victory in State District Court against SNWA's water rights applications in a number of the same valleys.

The fight to protect the environment and rural economies of the Great Basin is not over. Judge Estes' decision has been appealed to the Nevada Supreme Court. Still, the fact that this is the third straight time the opponents of SNWA's Pipeline Project have prevailed in court is causing even erstwhile supporters to doubt the Project's viability. What is more, this new ruling reinforces the claims advanced in a parallel lawsuit that the Pipeline's opponents recently filed in February in Las Vegas federal district court. The federal case alleges that the U.S. Department of Interior's approval of the Pipeline Project violated the National Environmental Policy Act, the Federal Land Policy and Management Act, the National Historic Preservation Act, and the Federal Government's trust responsibilities to a number of Indian tribes.

Offering the tribal perspective on how SNWA's Pipeline Project has been politically greased, Chairwoman Madeline Greymountain of the Confederated Tribes of the Goshute Reservation remarked that: "The federal government has failed in its trust responsibility, therefore the Confederated Tribes of the Goshute Reservation have no recourse but to file against the Department of Interior and the BLM for failure to protect our interests…. We cannot look the other way when the future of our people and homelands are in the hands of those who have their priorities mixed up."

Where's the will?—Cont. from pg. 1

way it does business; that ways *can* be found to share shortages with endangered species; and that water administration *can* be improved."

A similarly galvanizing enterprise is the Navajo-Gallup Water Supply Project, an ambitious and desperately needed pipeline that Leeper sees as more important to New Mexico's rural northwest quadrant than either the railroad or the Interstate. Non-contiguous segments of the line have already been built with funding mustered from various partners. The immense project is happening, bit-by-bit, wherever the 'political will' exists to do it.

As to whether there is "a Katrina heading our way," Leeper flashes a slide of the cover of a 2013 Bureau of Reclamation report on the impacts of climate change on the Upper Rio Grande Basin. The audience emits an audible groan: everyone in the room knows of the chilling document. "The conclusions are very, very sobering," Leeper admits, as are those derived from a comprehensive study of supply and demand on the Colorado River that evaluates the effects of a spate of possible 'solutions' on the coming shortfall. From desalination, ag conservation, reuse, and watershed management, to weather modification and towing icebergs, "there is nothing on that list we haven't talked about at these Dialogue meetings every time I've been to one," Leeper declares. "What that tells me is, *there's no silver bullet*. It does not exist."

"What we *do* have," he offers pragmatically, "is the Dialogue. How many people are there in this room? A hundred and twenty? That's one hundred and twenty silver bullets! We have people who are skilled at watershed conservation…people working on agricultural conservation easements…people that know about legislation. Former State Engineers are here. We have people who build stuff, people who know how tribes deal with water resource management, and people who know about planning. These are the silver bullets. To me, the question isn't whether we have the political will to do 'a' or 'b' or 'c'. What's important is that there is a *dialogue* among all of you sitting here. No one person is going to be the silver bullet. That's why I have a lot of optimism that we aren't going to see a Katrina here; that we aren't going to wait until all the levees give way and something horrendous happens. There are

people doing things right now, every day, *this* week. We are going to keep pushing on our different fronts. They're not all going to move forward easily, logically, rationally, in lockstep, but they *are* going to move forward. We have to be ready for the unexpected, but I don't look at that with fear and trepidation because of all of the silver bullets in this room.

With the scarcity situation expected to intensify, Leeper believes what we really need are 'storytellers'. "We need people who can communicate. We need to teach our State Engineers to sing the blues!" And then, astonishingly, he demonstrates with a grainy, halting, acoustic rendition of "Folsom Prison Blues," complete with reinvented lyrics that endorse group effort in the face of extended drought. Midway through, when the unfamiliar words desert him, suggestions from around the room nudge the song forward. There's doubtfulness, empathy, wavering resurgence, and finally, mutual triumph, mirroring quite admirably the collective process that Leeper advocates. Bravo!

Panel: Water Philosophy—Highest and Best Use?

Frank Chaves, Environmental Director for the Pueblo of Sandia, emphasizes that for a Pueblo nation, 'highest and best use' means "assuring the sustainability of water and tribal homelands." New Mexico's Pueblos lie predominantly along the mainstem and tributaries of the Rio Grande, occupying the same ground they did when the Spanish explorers arrived 500 years ago. Through those lands today run what Chaves calls "corridors of commerce," utility lines, railroads, Interstates and waterways that transport 'goods of value' to towns and cities outside Pueblo boundaries. In Sandia's case, the City of Albuquerque abuts tribal land to the south, with municipal well fields and thousands of domestic wells that underlie or are adjacent to portions of the original Pueblo grant. Sandia residents still take traditional paths down to the river, Chaves says, but now there are "health concerns," and the water isn't used directly, even for ceremonial purposes. Potable water was once hand-pumped from shallow wells located in the village; now, community wells access the deep aquifer, and the water is treated to the Pueblo's own rigorous quality standards. There is a state-of-the-art wastewater facility that can be expanded to meet future needs. Agricultural water is delivered through Middle Rio Grande Conservancy District ditches, but the tribe is considering drilling supplemental drought relief wells to serve the 2,000 or so acres currently farmed on the Pueblo. Given "the experiences of the last few years in regard to surface water shortages, and the experiences of many rural communities in terms of *no* water," Chaves says, "we have to look at options for sustaining our homeland." Legal settlements offer one such opportunity. In 2003, as part of an omnibus settlement, the state legislature created T'uf Shur Bien Preservation Trust Area in the foothills of the Sandia Mountains to protect sacred sites, springs, wildlife, and vegetation historically used by the Pueblo's members. Also originating in the Trust Area is a tributary to the Rio Grande that in good years feeds the Bernalillo Watershed. Upland preservation will help ensure that hydraulic connection. In another legal case, the Pueblo protested a Town of Bernalillo application to pump additional water from the municipal well field; settlement of the suit led to a partnership between Sandia, the Town of Bernalillo, the Bureau of Reclamation, and a "sister Pueblo" upstream, to improve accounting methods and transmission infrastructure for that water. Sandia has, by way of treaty with the state, "primacy" over water quality within its lands. Quality standards established in the 1990s form the "cornerstone of water management" on the Pueblo today. The tribe's current water quality manager has "federal inspection credentials" that enable him to test off-reservation facilities for compliance. Samples from Rio Rancho's wastewater outfall to the river, for instance, are regularly subjected to lab analysis, and what the water contains, Chaves confides, is "pretty frightening sometimes." Albuquerque's North Diversion Channel is another conduit for pollutants, but efforts to improve water quality there are ongoing. Sandia's standards aren't just for people, Chaves points out. "They also help sustain wildlife and habitat." The tribe monitors wetlands along the Pueblo's stretch of the Rio Grande, and assists with silvery minnow salvage and "trash fish" removal at AMAFCA's Embayment Project. 'Providing for the people, protecting the land, and strengthening governance' are three principles that have long guided tribal administration, and Chaves sees them at work even in the type of detention dams being built for a Pueblo drainage project. "The structures are not very intrusive on the land," he says. "The whole project is balanced—no material was brought in or taken off. We want to keep our drainage water on our land to help recharge the shallow aquifer." Other challenges for the Pueblo in terms of protecting water and homelands include the increasing occurrence of wildfire in both forest and bosque, and the difficulty of maintaining green corridors to buffer wildlife from the encroaching city. Even more pressing is the escalating incision of the Rio Grande. Flood facilities at Cochiti Dam are "having a devastating effect on the river," Chaves declares. Degradation has even begun to expose the old Corrales Siphon, an historic wooden structure belonging to the MRGCD that transports irrigation water from east to west beneath the riverbed. Loss of the conduit could have unhappy consequences for the Pueblo as well as for irrigators downstream, just one more reminder that the Pueblo and its neighbors are connected in a thousand 21st century ways.


Frank Chaves, Sandia Pueblo

John D'Antonio, Jr., former New Mexico State Engineer and now Deputy District Engineer for Programs and Project Management (a.k.a. 'Lead Civilian') with the Albuquerque District U.S. Army Corps of Engineers, reminds listeners that New Mexico is a prior appropriation state, and "within that structure, 'highest and best use' does not exist." A senior right consists only of a priority date, a point of diversion, and a place of continuous use. Under

the Active Water Resource Management initiative, the state does have the ability to do short-term leases that effectively allow water to be moved to higher economic uses. A large part of the State Engineer's job, D'Antonio recalls, is trying to "balance competing interests while protecting the resource and allowing for reasonable economic development." But is higher economic use really the highest and best use? "That's where dialogue happens," says D'Antonio. As for political will, he cites the push a few years back for domestic well reform. "It was very, very difficult just trying to change one word in the phrase 'the State Engineer *shall* issue domestic well permits'…There really wasn't a political will for that change at that point, but the benefit of all that work was that boundary conditions were established on *where* to limit domestic well permits, so my office took on the promulgation of


John D'Antonio, former State Engineer

rules and regulations. That's really where the benefit of 'political will' happens… The legislators said, 'Please take this off our plate!' And that's not the end of the story, because even when you promulgate a regulation, it gets litigated. It's a process and we need to understand how to navigate through it." Another instance of political will, ("or lack thereof," D'Antonio quips,) involves speeding up adjudications. With 12 active suits underway, affecting 70,000+ defendants, the state is "constantly being criticized" for the length of time it takes to settle water right claims on a stream system. To address the bottleneck, the legislature set aside 10 percent of New Mexico's severance tax bonding capacity; at the same time, however, OSE funding was slashed, effectively ensuring a budgetary status quo. "Again, the political will really wasn't there to speed up those adjudications." The establishment of a dedicated fund for water infrastructure projects met a similar fate, largely because it was considered another tax on water use. "You have to pick and choose your battles," D'Antonio warns, in order to get "incremental change." What the state really needs is more water. Growth is not going to stop, and the least costly way to extend the resource is through conservation. Albuquerque and Santa Fe have both reduced their per-capita-per-day numbers, but "outdoor use is what kills the urban communities," D'Antonio says, meaning "small yards or no yards" will be the rule in the future. As the value of water goes up, so will the feasibility of desalinating deep brackish water. "The concern I have is sustainability. How big do we grow our cities based on a water supply that's limited? We need dialogue, we need balance, we need the political will to keep things in moderation." Importing what is needed in the way of additional supply is another contentious option. Various permits and pipelines have been proposed to "bring water to the engine of the state" (i.e., the metropolitan mid-Rio Grande), but, D'Antonio declares, "Because of venues like this, we're never going to have an Owens Valley situation, like they did in California decades ago." Water may be brought from elsewhere as part of a supply solution, but "it has to make economic sense; there has to be funding for it; and public welfare issues have to be vetted and discussed." Along similar lines, the Corps of Engineers is beginning to do "watershed-based budgeting" and to encourage public/private partnerships for funding water system infrastructure rather than relying heavily on federal dollars. "For such alternative financing opportunities to work, we need some sort of revenue generation to attract that financing," D'Antonio says. The solution, he thinks, is a "vendible output that is attractive to a private sector vendor," perhaps in the form of additional water for irrigation or endangered species. Other options for securing funding might include working with the Western Governors Council to prioritize states' needs throughout the region, and looking at "other equity partners" such as the State Finance Authority and the Water Trust Board to leverage available funds into greater amounts. Not least, D'Antonio says, New Mexico ought to have a dedicated revenue source for water projects—perhaps a severance tax on goundwater pumping. Given the 1.9 million acre-feet extracted every year, a $10 per acre-foot fee would, in time, generate a considerable endowment.

Trudy Valerio Healy, of the Healy Foundation, grew up in Ranchos de Taos, where her father was a County Commissioner and an acequia mayordomo. "Our kitchen table was always about politics,"


Trudy Valerio Healy, Healy Foundation

she says, and she often accompanied her father on his rounds of the acequia. "Trudy," he told her once, "you won't impress me if you drive up in a Cadillac and a fur coat. You won't even impress me if you're out there 'saving the whales.' Your wealth is right here. This water is all you've got, so save your backyard." In her early adulthood, Trudy recalls doing "all the traditional things you do as ranchers," but then, world famous soil wizard Allan Savory arrived in New Mexico, and Trudy became a local "pioneer" of Savory's unconventional methods. Eventually she met Ed Healy, creator of Washington D.C.'s recreational Capitol Crescent Trail, and the couple realized that "the only way we were going to get anything done in Taos—because that was our backyard—was to start going to precinct meetings, start from the bottom and build our way up." Water was a likely objective for a mayordomo's daughter and "a Hoover Dam guy." (Healy's family had headed the six companies that

built Hoover, and as her water education expanded, Trudy learned that Lake Mead, the nation's largest reservoir and supposed "savior forever," is succumbing to 'white bathtub rings' just like every other reservoir around the West.) In time, Trudy was appointed to New Mexico's nascent Water Trust Board. She didn't consider herself a water expert, but as she read through the mountain of applications for funding she realized "there are no experts. We're making it up as we go along." She took the heap of proposals along as a visual aid when she asked legislators to include the WTB on the team charged with creating a state water plan. "These are the needs of New Mexico," she told them. Likewise, she found a way to make the WTB's mission clear to its board members. She made a simple graphic with blue stickers for sources of water, and red stickers for uses of water. That glimpse of stark reality prompted a cornerstone policy: the WTB vowed to devote a specific percentage of its annual funds to watershed work, "so there'd be something to put in all those pipes." After a decade, $4 billion worth of water projects have been identified around the state, $933 million of which involve drinking water. Since 2004, the WTB has given out over $300 million in grants and loans, and a separate acequia fund has been created to help level the playing field between large-scale projects and more local, rural needs. Healy says the WTB experience has taught her the benefit of establishing policy; of getting significant legislation killed or not heard at all (a tactic she calls 'stealth'); and making sure that good bills "go right upstream, just like migrating salmon". Her position on the Water Trust Board has also helped the Healy Foundation choose which efforts to fund. Among the Foundation's beneficiaries is the New Mexico Bureau of Geology. With Healy money, Tech scientists discovered what they believe to be "the largest spring yet" in the upper Rio Grande. The foundation also funds the equipment Tech uses to map groundwater aquifers from the air. Other Healy Foundation recipients include the Model Interstate Water Compacts Project, which brought people from all over the world to Los Alamos to promote peaceful resolution of international water conflicts. Foundation support also went to "The Water Haulers," a film about the difficulty of obtaining water for household use on the Navajo Nation. "In the end," says Healy, "we're the only ones that can do what needs doing." Political will begins at home, she would tell you, so "bring it back to the kitchen table."

Max Yeh, principal researcher for the Percha/Animas Watershed Association, declares unequivocally, "Our water policy, if there is one, is based on ideas about water that totally ignore what we know." We understand that water is "the medium in which all life-forming cellular activities in plants and animals take place," and that "fresh water is relatively scarce and being used at a depleting rate." Nevertheless, present water policy "looks back to basic laws formulated by people


Max Yeh, Watershed Researcher

ignorant of any of this reality." What Yeh calls the 'Arid Region Doctrine' is a legal mindset that includes prior appropriation, beneficial use, and maximum utilization, all concepts "conceived by people who knew nothing of molecules of water… nothing about aquifers…nothing about how much water was available…nothing about pollution. Hydrology did not exist. Geology was the classification and identification of rocks for mining purposes. Even such a simple thing as the relation of rainfall to stream flow was unknown until hydrographs were invented in the 20th century." What the Arid Region Doctrine most resembles, Yeh maintains, is "the Anglo-American land grab, the traditional way of taking possession of land by squatting," and of all the western states where the doctrine dominates, "New Mexico is the least suitable for this myth, having millennia of indigenous irrigation practices and centuries of Hispanic water laws." Basically, argues Yeh, "ARD is monopolistic, inequitable, wasteful, guarantees depletion, puts water rights into the hands of Money, and produces endless litigation. It does not protect the public interest and gives no venue for real decisions about the comparative values of water use, which have to inform water policy." In New Mexico, a water right is considered usufructuary: "People are conceded the uses and the fruits of that use, but not the property itself. Theoretically the rights can be lost by non-use and so are not entirely fee simple ownership rights." However, Yeh notes, "Water rights have seldom been curtailed." Under civil law, true usufructuary rights are "always accompanied by usufructuary obligations," Yeh reminds, but with ARD operating in the background, "we are so interested in taking we forget the giving back." The obligation not to damage the primary substance of a usufruct such as water "gives a basis for indexing efficient use," Yeh suggests. "Since all water use is essentially a pass-through use relative to the continuous transpiration cycle, we can get rid of the bothersome and vague notion of 'consumption' to choose what kind of water return we want, whether we prefer water to return clean to the ground to be reused here, or evaporated off to be used elsewhere or replenish the oceans. Furthermore, it gives us a space where we can separate what uses ought to be free because they are life-serving, from those that need not be free because they are for profit. We would be obligated to define public from private benefits." The term 'beneficial use' (which under ARD is supposed to limit appropriation and promote maximum use without waste) may actually be a mistranslation of the notion of usufructuary, Yeh believes. "As a measure of a water right, it encourages maximum use, because the more you use the more rights you have. The principle suggests that all available water should be used. As a result, every bit of water saved through conservation, or newly discovered through technological advances, will be used by someone else. Our constitution and statutes express our intent to be always on the brink of disaster." Yeh would instead counsel "a return to civil law principles…a change in wording in Article XVI to the effect that all water, not just the unappropriated

waters, belong to the people and will be administered according to principles of equity…guaranteeing the free access to water to sustain life and life forms." Additionally, Yeh urges those with the necessary knowledge to "venture into the legislative arena" to lead a reform of water laws. "Not just the technical scientists," he insists, "but legal scholars, anthropologists, historians, economists, ecologists, biologists, et al.--people devoted to knowing about human and natural water use in its complex interrelations."

Panel: Lessons From the Drought—Shortage Sharing

Panel moderator **Lucy Moore** (co-founder of the NM Water Dialogue and author of *Common Ground on Hostile Turf*,) says as an environmental mediator, she is always


Lucy Moore, facilitator and author

interested in "how people pull things off, how they come together, how they decide to give certain things up in trade for other things, what the incentives are, and what kinds of personalities make such agreements work." The four narratives that follow attempt to illuminate that very mysterious process.

Beth Bardwell, Director of Freshwater Conservation for Audubon New Mexico, tells of "the decline of a river ecosystem…but also, how some farmers, a district manager and board, and conservationists struck a deal to restore a portion of nature's water for the benefit of an endangered bird--the western willow flycatcher, in exchange for sharing shortages during times of drought." The river in question is the Rio Grande in southern New Mexico, from Percha Diversion Dam below Caballo Reservoir, to the American Diversion Dam in the El Paso Narrows. There, the management practices of two federal water agencies—the Bureau of Reclamation and the International Boundary and Water Commission—have produced a confined and channelized river with a nearly vegetation-free floodplain bordered by farmlands of pecans, alfalfa and cotton. River management in this 105-mile reach has been re-examined by numerous organizations over the years, among them the BOR and IBWC; the Elephant Butte Irrigation District (which in a good year is entitled to about 405,000 acre-feet of Rio Grande water); the US Fish & Wildlife Service, with responsibilities for endangered species and habitat conservation; and a collection of national and state conservation groups once known as the Alliance for the Rio Grande Heritage. "From a wildlife perspective," Bardwell says, "the Lower Rio Grande is a poster child for the Rio Grande in New Mexico. Natural streamflow patterns have been highly altered. During non-irrigation months, there are no dam releases and large sections of the river run dry." Even *during* irrigation season, the hydrograph produces a "trough." Due to the distorted flow regime, river canalization, and floodplain mowing, "the dense riparian habitat and saturated soils that western willow flycatchers depend on for breeding no longer occur in this reach of the Rio Grande." The result, both here and across the West, is a decline in the endangered flycatcher population. The federal Rio Grande Project was created for a sole purpose—irrigation—and the water is fully appropriated. "In an arid region where irrigation is necessary for food production and rivers serve as habitat for wildlife," Bardwell notes, "water management becomes a highly charged issue. Throw on top of that drought and climate change, ESA and compact deliveries to Texas, and all hell breaks loose." But common ground was found along the Lower Rio Grande. "The prescription is pretty much what you would read in any book on negotiations," Bardwell admits. "Basically, it's 'nurture the relationship.' We were able to develop a relationship with the irrigation district, their hydrologist, and their board members, and it made all the difference in the world." The first step was to identify underlying interests. Farmers wanted flexible and efficient delivery schedules, protection of their private property rights, and reliability in the water supply. Conservationists wanted to maximize river health, restore riparian habitat, and increase the number and distribution of flycatchers.


Beth Bardwell, Audubon New Mexico

"There's so much context to why people come to the table, and why people stay at the table," Bardwell emphasizes. Conservationists knew EBID's support was key because the irrigation district has authority over "surface-only water right transfers" in that river reach; EBID's farmers worried that flycatchers breeding in the Elephant Butte delta would have implications for the capture and storage of their irrigation water; and everybody was aware that Fish & Wildlife was considering designating the Lower Rio Grande as critical flycatcher habitat. Since there were still pockets of dense riparian shrubbery along the river, improving existing habitat seemed a likely goal. With political support and funding for the negotiation, the participants "went about identifying options for mutual gain," and eventually agreed to "establish an environmental water transaction program to provide water rights for habitat restoration sites—even habitat that might become occupied by endangered species—in exchange for an agreement to share shortages at those sites with farmers in low water years." It's too soon, Bardwell says, to tell whether the agreement is working. "Both farmers and birds are suffering from a double whammy of drought and groundwater pumping," and as a result, some habitat has been lost. On the other hand,

the area's first two pilot transactions are "in the pipeline." Such negotiations take "a whole lot more time than we ever imagined," and no one yet knows how to build the "uncertainty factor" into a shortage sharing agreement to guarantee resilience. Nonetheless, Bardwell believes the effort on the Lower Rio Grande has "successfully demonstrated that a market-based environmental water transaction program can be part of the solution in New Mexico."

Ryan Christianson, Chief of the Southern Water Management Group at the Bureau of Reclamation's Western Colorado Area Office, considers the shortage sharing agreement in place in the Four Corners' San Juan Basin "pretty complex when you get down into the weeds of it." The original agreement was drawn up in 2002, when Navajo Reservoir—the region's main storage facility—fell to the lowest level in its history. Recreation, agriculture, municipalities, power production, and mining all compete for the water of the San Juan, and with "no built-in referee," Christianson


Ryan Christianson, Bureau of Reclamation

says the shortage sharing agreement was a result of "demand exceeding supply." Not until 2013, after two below-average water years, did it look as though the sharing agreement's criteria would have to be implemented. The rains of last autumn brought some relief and reservoir levels began to recover somewhat, but no one believes "we're out of the woods yet." The shortage sharing agreement requires that the reduced supply be shared equally, and flexibility is built in, allowing options for doing so: large volume users may cut a percentage of their supply, for instance, and agricultural diverters might choose begin irrigating later, terminate their season early, or fallow some land to reduce water use. The Bureau of Reclamation determines what the shortage will be using the 'minimum probable forecast,' an approach that counsels preparing for the worst, and then, as runoff proceeds and conditions improve, "hopefully come out" better than anticipated. The sharing agreement also contains "details crafted for the individual needs of the endorsing parties," acknowledgements of 'unique circumstances' essential to making the agreement work. Both contract and direct diverters, and various non-signatory federal and state entities agreed to these details. Signatories include the Navajo and Jicarilla tribes, four irrigation companies, two power plants and a coal mine, and the City of Farmington. The agreement is considered temporary until there is "full administration" on the San Juan, The Public Laws that authorize the Navajo Unit of the Colorado River Storage Project, the San Juan-Chama Project, and the Navajo-Gallup Project all contain their own language relative to shortage sharing. The shortage sharing agreement must comply with an endangered species recovery program on the San Juan, all other federal environmental laws, and eventually, the results of ongoing water rights adjudication in the basin. Christianson acknowledges there are economic impacts to sharing shortages in the region, and a general mistrust that the federal government will fairly implement the agreement. Still, the results that stand out for him are that the agreement represents a cooperative solution, "fought in a meeting room instead of a courtroom"; that it achieved compliance with all state and federal laws; and that it ensures minimal shortages to individual users. Consensus *can* be reached, he says, about what the problems are, and what the alternative is if there's no action. It's also possible to determine which issues must be addressed immediately, and which can be set aside for later discussion. The biggest lesson of all, Christianson thinks, is to begin with an attitude "not of maximizing your gains, but of minimizing your losses."

Brian Gallegos, Staff Manager for the Office of the State Engineer's Water Rights Division, supervises the agency's Active Water Resource Management initiative in three of seven priority basins (the Lower Rio Grande, the Mimbres, the San Juan, the Lower Pecos, Nambe-Pojoaque-Tesuque, Rio Gallinas, and the Rio Chama). AWRM was instituted in 2004, during the administration of then State Engineer John D'Antonio, as an effort to "get some of the tools in place" to better manage water in the absence of adjudication. The


Brian Gallegos, Office of State Engineer

"tools" include special masters to oversee various basins; funding and installation of water measurement stations for monitoring diversion and use; shortage sharing agreements; water rotation schedules; and the banking, marketing and leasing of water. After years of "being on the shelf" due to a legal challenge, AWRM is now underway, and although the program isn't fully operational until district-specific rules and regulations are promulgated for each basin, the other tools allow the State Engineer to actively manage water. In the Rio Chama Basin, for instance, a number of water masters are in place, measurement is occurring in some areas, and the state is hoping to cultivate voluntary shortage sharing agreements and rotation schedules. The Chama produces about 35 percent of the water flowing into the Rio Grande, as well as carrying native water from the upper Rio Grande Basin and San Juan-Chama Project water. From Abiquiu down to the confluence of the Chama and the Rio Grande, there are 18 ditches with real-time measurement stations. "These are the oldest non-Pueblo rights in the state," Gallegos notes. Several have a priority date of 1600, and others date from 1735, while upstream, as is often the case,

priority dates are very junior, ranging from 1865 to 1935. Agricultural water use has doubled from south to north, with about 5,000 acres farmed in the lower basin, and 11,000 acres to the north. The river also supplies drinking and sanitation water for the Village of Chama and other "very junior" users in the upper part of the basin. There are no storage rights or capabilities for the acequias: they depend completely on native flow, unless they have purchased San Juan-Chama water. There are, nevertheless, three reservoirs in the basin: Heron, a component of the San Juan-Chama Project, holds only water imported from the San Juan Basin; El Vado stores native water for the Middle Rio Grande Conservancy District and San Juan-Chama water for various contractors; and Abiquiu, built as a flood control structure, also stores San Juan-Chana water, primarily for the Albuquerque-Bernalillo County Water Utility Authority. San Juan-Chama water, Gallegos notes, is not subject to Rio Grande Compact regulations for release and storage, and without a contract, it is unavailable to senior users on the lower Chama or junior users in the upper basin. Current San Juan-Chama contractors include the six Middle Rio Grande pueblos, MRGCD, the Fish & Wildlife Service, the ABCWUA, the City and County of Santa Fe, and the Bureau of Reclamation. Since the "really bad year" of 2002, alternative administration involving the Rio Chama Acequia Association and the MRGCD helped sustain flows on the lower Chama, Gallegos says, but by 2013, with most of the state in extreme drought, winter snowpack far below normal, historic low flows occurring on the Chama, and reservoir levels severely depleted, "we had to come up with some way to administer the water" As part of a 1971 federal decree, a small section of the Chama had been assigned a water master to ensure priority delivery to older acequias below Abiquiu. There was no such administrative handle in the upper basin, so the state began bringing relevant parties together to develop their own shortage sharing agreements. The lower section adopted a rotation schedule wherein half the ditches are shut down one day a week, and the other half another day, cutting the maximum allowable flow rate in half. The upper section based its agreement on river flow at La Puente, a USGS gauging station where water from Heron Reservoir enters the Chama; acequia flows are reduced by 20- to 30 percent when the La Puente gauge drops below 50 cfs. Both sharing agreements are voluntary, but they are administered and enforced by the OSE, which monitors real time water usage. The agreements went into effect on July 4, 2013, and after the irrigation season, the state "did a lot of education," Gallegos says, offering tours of the entire system and meeting with locals to correct problems, refine the process, and brainstorm ways to facilitate water banking and storage. "Upper and lower basin folks are working collaboratively. They've gone to the legislature to acquire money to lease or purchase San Juan-Chama water for offsets, and that is in place for this year."

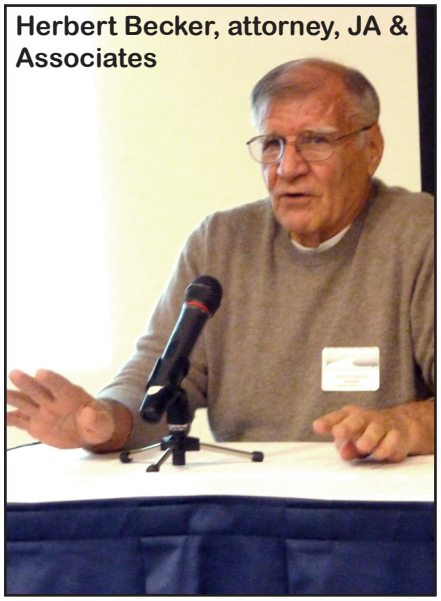
David Gensler, hydrologist with the Middle Rio Grande Conservancy District, admits that when it comes to shortage


David Gensler, MRGCD

sharing, he's both cynic and optimist. "People always do what's in their own best interest," he says, yet they are "fundamentally good and want to help each other if at all possible." The MRGCD has always shared shortages within its boundaries because the basin is unadjudicated. "How do you shut a person off when you don't know whether he's got a senior right or a junior one? If you ask 80 irrigators which ones have a senior right, 80 arms go up." The policy of sharing water is also rooted in the way the conservancy district was formed. "We're an *evolution* of the acequias that existed here for hundreds of years," Gensler recognizes, and along with those historic Hispanic and Native American ditch systems came "a cultural heritage in the middle valley for shortage sharing." The conservancy apportions whatever water is available equitably to all its users. "The exception," he concedes, "is the Six Middle Rio Grande Pueblos, which have a special status called Prior and Paramount water rights conferred upon them by the U.S. government when the conservancy was founded…Those lands do get water when other lands do not. But for everybody else in the conservancy district, and for Pueblo lands that don't have those special status water rights, shortages are shared equally." Generally, for the past few decades, the district has had enough water to get through the season, but in 2012, and again in 2013, shortage sharing had to be implemented. Gensler expects 2014 to be similar. Another kind of shortage sharing is also happening in the Middle Rio Grande. Because of the endangered Rio Grande silvery minnow, certain reaches of the river are required to be kept wet at certain times of the year. In dry 2013, the BOR was unable to obtain enough water to comply, so, in what Gensler calls "a voluntary action," member agencies of the Minnow Action Team "made a harsh, objective, and realistic assessment" of their needs, water supplies, and options "to see if there was some way we could all get through this thing—each give up a little bit and somehow survive it." The endeavor required honesty, tremendous communication among the parties, and trust on all sides, Gensler says. The resultant agreement was not a formal one. Instead, the RGSM Collaborative Program Executive Committee listened to the recommendations of the Minnow Action Team and made similar recommendations to F&W and the BOR, who in turn recognized the earnestness of their non-federal partners and agreed to "trust" them to make the necessary decisions. "We got through that year. There were times when farmers didn't have all they wanted and times of less water in the river than F&W would have liked. But compared to some other years, we actually did better in 2013." The reason, Gensler maintains, is that the players were exceedingly honest about their needs. "We didn't take more than we really needed." For shortage sharing to work, Gensler repeats, cynicism and optimism both have to be present. "Understand that we all tend to do what's in our best interest. Recognize that someone else's needs are legitimate and respect his

position. But be an optimist, too, in order to accept that there *can* be a solution, and that you *can* trust the other guy."

Panel: Political Will—Implementing Change



Herbert Becker, managing attorney for JA & Associates, LLC, has "been involved in Indian water issues for many years," and represents the Jicarilla Apache tribe, one of the signatories of the San Juan River shortage sharing agreement discussed earlier. That agreement, he says, offers "comfort" in times of shortage because basin users know they will get at least "some water." It also demonstrates the political will of the Navajo and Jicarilla Nations to work with communities around them to address water issues. Another effort at sharing water in the region is the San Juan River Basin Recovery Implementation Program underway since 1992 and aimed at improving endangered Colorado pike minnow and razorback sucker populations while allowing for "ongoing water development in the area." It involves the Navajo, Jicarilla, Northern, and Southern Ute Tribes, and the states of Colorado, New Mexico, and tentatively, Utah. A third collaboration is the Navajo-Gallup Water Supply Project. "These agreements for shortage sharing, species recovery, and infrastructure development show the schizophrenia that occurs in New Mexico," Becker notes. "You don't see that level of cooperation on the Rio Grande side." There, he says, "considerable political will" is needed to address the water issues of the Middle Rio Grande Pueblos. "Until that is done, the state, the irrigators, the villages and cities are always going to be groping as to what their rights are, what kind of certainty there can be in planning. Someone at the state level needs to step up and say 'Let's either litigate the Pueblos' water rights, or set up a negotiating team as was done with the Navajo and the Jicarilla.' But the political will to do that does not exist on the Rio Grande side. Whether that's indifference or the communities are so comfortable using tribal water that they think they can use it forever, free, with no accountability, I just don't know." Referencing the Bureau of Reclamation's recent supply and demand study of the Colorado River Basin, Becker says, "The major weakness in that study was the failure to address tribal rights: where they are, who is using them, and who has relied on them to their detriment." Since then, the BOR has entered into a partnership with 10 Colorado basin tribes to conduct an additional study to identify tribal water being used by non-Indian communities. "At some point, the tribes may pull all of those rights back onto the reservation," Becker cautions, and water administrators in all seven Colorado basin states will have to muster the political will to address that possibility.

Bill Hume, former Director of Policy and Issues for Gov. Bill Richardson, notes that although there is no current legal action to determine tribal rights on the mainstem of the Rio Grande, several of its tributaries have undergone adjudication and are in the final stages of settlement: *Aamodt* addresses the Pueblos of Nambe, Tesuque, Pojoaque, and San Ildefonso; *Taos* settles the rights of Taos Pueblo; and in *Abouselman*, negotiated settlements are pending for the Pueblos of Jemez, Zia, and Santa Ana on the Rio Jemez. Hume characterizes the process of determining water rights in New Mexico as "Byzantine," and likens altering water policy to trying to modify the weather. "Water itself is not a policy topic," he explains. "It is the common denominator in a variety of topics." For farmers, municipalities and industries, water is a commodity; it's a "superintending variable" in ecological discussions; and to Native Americans, water is sacred. It factors into interstate relations "in every direction," Hume says, and thus it is "a minefield for a statewide politician…There are very few substantive statewide issues. Taxpayers in northern New Mexico aren't particularly interested in spending a billion dollars on a pipeline to bring Ute Lake water to eastern communities…Significant projects are usually geographically limited in impact, bear a cost of mega millions, and usually take so long to plan and build that the sponsoring politician's successor gets the privilege of presiding at the ribbon cutting." Divergent constituencies—farmers and ranchers, municipal and industrial interests, developers, environmental advocates, tribes—complicate the picture. The objectives of such dissimilar groups aren't easily reconciled, and there is a prevailing belief that the only way to increase one entity's water supply is to reduce another's. Native Americans, in Hume's experience, seem "most willing to seek solutions that look to the needs of all," but the determination of tribal rights is "the unsettled cloud that hangs over all water allocations in New Mexico." Currently there are "subsets of water policy that deal with the environment, water transfers, and allocating financial resources for infrastructure problems. The needs of small communities can't be measured against those of larger entities by pure cost/benefit analysis, and good policy in one area may not translate to the rest of the state, or may come at the expense of another area. Conflicts also arise "between individual rights and broader policy considerations." Recently, water planning regions objected to a "reworking" of the State Water Plan that called for *state* experts to calculate regional supply and demand figures. Uniform accounting is "prerequisite to a meaningful state plan,"

Hume argues, and achieving the political will to formulate better water policy likewise requires divergent constituencies to "work from the same underlying fact set." In the absence of a "long term program of cross-cultural education," Hume sees "no hope for a victory of facts over politics in water policy."

Mimi Stewart, a member of the New Mexico House of Representatives from Bernalillo County, says she's been trying to understand water and all its legal ramifications ever since she became a legislator 20 years ago. 'Political Will and Implementing Change' is a difficult


Rep. Mimi Stewart, NM legislature

topic, Stewart says, not only because water is a complex subject in and of itself, but because experts in the field have failed to muster the political will to recommend good policy changes. "I kind of blame you all, that you have not brought to us well-thought-out proposals to solve the problems. *You* don't have the political will either." Political will arises from the grassroots, Stewart says, and often out of necessity. "When what's going to happen in the Southwest happens," she warns, referring to the probability of a hotter, drier climate, the political will to revise water policy will increase "exponentially." Stewart echoes the belief that individual 'needs' have to be pared down to a more realistic level, allowing the limited resource to be shared. "We're going to have to ask just for what we need and not any more." Stewart specifically challenges the agricultural community, which she says effectively controls water policy at the legislative level. "I think we're on the right track, by working with each other, by sharing shortages, and by settling water right cases like *Aamodt* and *Navajo*." Ultimately, what she hopes we learn is "how to conserve water."

Reflections At Quitting Time

"What helps people come to some fundamental agreement—especially when it's going to take something from them—is that they feel it's *fair*," notes Dialogue moderator Lucy Moore. "If it doesn't feel fair, if it seems as if somebody is holding back, or has too much power, or says, 'I already gave up too much,' then things begin to deteriorate." That observation seems borne out by the day's presentations. Until a threat (or even an advantage) is perceived by all, the collective will to deal with it generally fails to materialize. In the Lower Rio Grande, once rival water users voiced their fears, they were able to identify possible common goals and level the playing field by allowing all parties access to equivalent legal processes, protections and policies. On the Rio Chama, fairness took the form of across-the-board rotation and cutting back, with the state stepping in to guarantee participation. Priority, although acknowledged, was accorded a short-term backseat so that everyone received water. In sharing shortages in the San Juan basin, and also in the effort to provide water for endangered minnows in the Middle Rio Grande, water interests resolved to make do with 'must have' amounts rather than compete for maximum gain. Aside from their provisional nature, what these moderately victorious strategies have in common is forthrightness. Half-truths, loopholes, hedged bets—even the *perception* that one sector may have an edge—all wreck the will-building process. For instance, as noted by one conference participant, 'senior' water users not yet guaranteed their promised legal standing tend to bristle at sharing shortages, especially where traditional surface diversion predates municipal groundwater pumping and no curtailment of the latter is imposed.

Another prerequisite to developing the political will to share is *agreement on relevant data*. No cohesive policy to address water scarcity is possible without concurrence on baseline facts. That's been a salient lesson of regional water planning, and whether the vehicle for updating water policy remains those same workhorse regions, or an entirely new set of representatives/experts is assembled to come up with "a combined-forces way forward for


Conci Bokum, Dialogue mainstay

dealing with shortage," any resulting recommendations have to be data driven, and every sector must have confidence in the authenticity of the numbers.

In addition to candor and undisputed data, regulatory remedies may be required to ensure sane water policy during lean times. *Taxing water as a property right* has been suggested as a way to curb overuse and provide revenue for environmental and infrastructure needs. There are precedents: New Mexico's Safe Drinking Water Fund accrues from modest taxes on public water supply systems, and at the agency level, Elephant Butte Irrigation District levies an assessment on water use to fund various water conservation measures. Like sharing shortages, taxing water use requires equity, as well as a healthy dose of what one audience member referred to as 'We-not-I' thinking. Another policy proposal gathering mounting support is '*area of origin*' protection, which would afford environmental and economic safeguards to move-from regions involved in interbasin water transfers. Transfer decisions are frequently politically driven, and influence-poor, economically disadvantaged regions stand to lose much more than their water.

"In the end," says Dialogue mainstay Conci Bokum, "political will has to come from all of us. We sit here with our agendas and our wishes, and if we don't talk to each other, it isn't going to happen. We are the political will, or, we're not."

Statewide water town hall produces wide-ranging platform of policy reform

By New Mexico First

Recommendations address planning, water rights, stormwater and wastewater reuse, watersheds, brackish water, financing and other changes

New Mexicans want a balanced water policy that plans for future shortages, expands water storage and reuse, addresses legal issues, and protects environmental resources. They want to explore the potential of cleaning up brackish water (non-potable, highly salty water) in our aquifers. They also identified potential improvements to the ways the state finances water projects.

These recommendations and others resulted from a New Mexico First statewide town hall attended by over 300 people and held in Albuquerque April 15-16. The meeting, entitled "A Town Hall on Water Planning, Development and Use," brought together people from 31 New Mexico counties. Participants came from small, medium, and large towns and included business leaders, industrial water users, environmental advocates, researchers, municipal water planners, farmers and ranchers, government professionals, elected officials and students.

"We had a remarkable group of committed citizens at the water town hall," said Heather Balas, president of New Mexico First. "They addressed the topic in an integrated way – tacking environmental, industrial, municipal and research issues all together.

A full report on the town hall will be released in two weeks, but examples of the strategies identified include:

- Implement long term collaborative, comprehensive watershed scale restoration projects to foster healthy ecosystem function and resilience, including wildfire protection plans.
- Improve the state and regional planning process, including dedicated funding, consistent data across regions, and the best available science on current and future water supply.
- Develop emergency plans and sharing agreements to address allocation of water during times of shortage.
- Fund and initiate new water supply and storage projects such as aquifer storage and recovery (ASR), reclaimed wastewater, surface water storage, storm water capture and water delivery enhancement.
- Improve the funding process for water investments, including better coordination among funders and improved leveraging of revolving loan programs, grants, user fees and federal funds.
- Clarify the processes for use of brackish water, as well as use and re-use of produced water (non-potable water used in oil and gas drilling).
- Increase the efficiency, timeliness and fairness of the adjudication process, while also strengthening the water market through clear and fair water right transfer policies.

The town hall recommendations will be advocated to state and local leaders by an implementation team comprised of volunteers from the event and will be led by Former State Engineer John D'Antonio. A full report on the results of the town hall will be released in about two weeks and will be posted at http://nmfirst.org.

The town hall is convened by New Mexico First, a nonprofit, nonpartisan policy organization that engages people in important issues facing the state or a community. Established in 1986, NM First offers unique town halls and forums that create recommendations for policymakers and the public. New Mexico First also produces nonpartisan reports on critical issues facing the state. These reports on topics like water, education, healthcare, economic development, and energy – are available at the website.

This article is a blog post by New Mexico First. You can find it online, along with comments, at http://nmfirst.org/ and click on the "blog" tab. Thanks to NM First president Heather Balas for permission to reprint it here.

Calling all users and contributors!

New Dialogue website is up and running.

By John Brown, Web Editor

You may be reading this issue of Dialogue as hard copy, or maybe you're reading it online. If you are a member-subscriber we sent you a link to it. Or you may have found it when browsing the Dialogue's website, http://nmwaterdialogue.org. One advantage to the online edition is that it contains live links. Another is that the pictures are in color! If you are there now or want to visit the site, please check out its many features, including links to other state and regional water planning sites, back issues of Dialogue, presentations made at our annual meetings, and other resources for water planners.

We are endeavoring to keep our new website current, and to this end we could use some help from our readers and visitors. If you have news regarding your region's water planning activities, know of an article that might be relevant to regional water planning more generally, or wish to comment on anything you may find on the website (or have a suggestion about adding something you feel is missing), we invite you to submit material that we can publish. The easiest way to do that for the moment is to send an email to the web editor, John Brown, at john.r.brown2@gmail.com.

Soon, we hope, we will institute a way to allow you to log in and submit news, upcoming events, and other material directly on the website itself.

Let us know what you think!

Frank Titus--Cont. from Pg.1

consultant work, spending time in New York City, Vancouver, Golden, and Seattle before returning to New Mexico in 1987, to become hydrology manager for the federal government's Uranium Mill Tailings Remedial Action Program. "That's when I met him," Thomson says. "I was a brand new whippersnapper assistant professor, and I think the quote was, 'Thomson, you're full of *caca*,' but he said it with a sparkle in his eye." Never afraid to speak his mind, Frank struck Thomson as "confident and opinionated, but not judgmental: he would have an argument with anybody, listen to their opinions, respect them, and if presented with a strong and persuasive argument, you could change his mind." After "selectively retiring" in the mid-1990s, Frank launched two new careers. One was as an advisor and expert witness for the New Mexico Office of the State Engineer. The other was as a volunteer in the blossoming arena of regional water planning. "That is where he made his most notable contribution," Thomson acknowledges, particularly as head of the Middle Rio Grande Water Assembly's El Grupo Technico, an assortment of scientific experts that developed a landmark water budget for the region in 1999. Last autumn, just months before his death, Frank agreed to lead a second wave of specialists in an update of the original budget, hoping to incorporate reams of data amassed in the intervening 15 years. "Frank was fully aware of the role that politics, economics, and social and cultural perspectives play in the administration of our water resources," Thomson says, "but first and foremost, he was a scientist. He always insisted that the conversation be grounded in science, in the physical quantities and movement of water… He worked on some very large mining and energy projects that had enormous potential to create environmental problems, but his attitude was, 'If we're smart, if we spend enough time, energy, and resources, we can do these large extraction projects responsibly'." That same frame of mind, Thomson suggests, is aptly captured in one of Titus' signature quotes: *"I want New Mexico to grow, but I want it to still look like New Mexico."*

When hydrogeologist John Hawley met Frank Titus in the early 1960s, Frank had already written the first "integrated paper" on the Albuquerque Basin, and done his "classic work" in eastern Valencia County and the East Mountains. Hawley was with USGS at New Mexico Tech when Sterling Colgate, the college's soon-to-be President, brought two 'party finds', Frank and hydrologist Kelly Summers, to Socorro

to join what would prove to be "a really fine water program." In various combinations, members of that august group would eventually formulate much of the current understanding of the all-important aquifer beneath rapidly growing Albuquerque. Fast forward to 1990 and the Albuquerque Public Works Department, where hydro-in-residence Kelly Summers was urging the department's new director Norm Gaume "to fund a world class study" of the city's water resources. To do the groundwork, Gaume turned—where else?—to the Bureau of Mines and Mineral Resources at New Mexico Tech. The results, reported in bulk as *A Hydrogeologic Framework of the Northern Albuquerque Basin*, would change everything, but not without the aid of Frank Titus' daughter, Becky, a cartographer at the Bureau who converted heavy stratigraphic fact into a shocking little 3-D model of the Albuquerque aquifer that Hawley and his cohorts carried with them into Mayor Louis Saavedra's office. Understanding, commitment, and funding followed, but, Hawley says, "We still didn't have a champion," somebody who "knew enough to pull it all together" and take the message of scarcity abroad into the non-technical world. "*That* is what we owe to Frank."

Fancher Gotesky, Frank's partner of the last four years, became "reacquainted" with him at a community meeting regarding a controversial water transfer proposed for the San Augustin basin. "We were both older," she says, and "knew better than to wait around." The plan was to live in Magdalena once Frank finished with his consulting work, but he had "turned into a big city guy," Fancher concedes, and they never moved out of Albuquerque. "What Bruce said about Frank not being judgmental—that's the way he was as a partner, too. It took me a while to realize what a wonderful situation I was in. He never judged. His love was absolutely without reservation, and I began to change in response to that. If I'm better today, it's because of Frank." Completely owning that straightforward emotion, Fancher continues: "One of his daughters reminded me that when Frank was at Tech, the family often drove down to Mexico to camp on the beach. I've always loved that, the picture of a family with their sleeping bags on the beach. But Connie told me about the drive down, the kids and mom kind of dozing in the car, and Frank, the *driver*, looking *everywhere*, just taking it all in."

Uh huh. Q.E.D.

New Mexico Water Dialogue
c/o John Brown
P.O. Box 1387
Corrales, NM 87048

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TheDialogue board of directors thanks all of you who support the New Mexico Water Dialogue and make our work possible. Because of cutbacks from foundations, we no longer have staff; board members and volunteers have taken on all of the work of the Dialogue.

Because our funding sources have shrunk, we must rely more on the generosity of our donors to maintain our work and our voice. The more of you who contribute annually – even in small amounts – the more we maintain the work of the organization.

If you can, please contribute with a tax-deductible donation that will support our annual statewide meeting, the Dialogue newsletter, and other work that supports improving water planning. You can send a check or make an on-line donation with a credit card. You can join as an individual, official representative of an organization, governmental agency, or business.

Visit www.nmwaterdialogue.org and click "Join/Contributions" on the navigation bar for membership rates and to make a credit card payment. Or send a check, payable to NM Water Dialogue, to John Brown, P.O. Box 1387, Corrales, NM 87048.

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For those of you who prefer electronic copies of your mail, the Dialogue newsletter is available in that format. In addition, we encourage others of you to consider electronic delivery. Given the bare bones nature of our budget, we are trying to reduce costs where possible. In addition, the electronic version is in color and the links are active, neither of which is available in the hard copy. You can request electronic delivery only (or even electronic and regular mail copies) by contacting John Brown at john.r.brown2@gmail.com.