

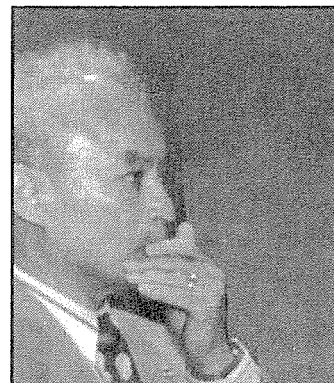
Risher Smith Gilbert is an attorney with Mounce & Galatzan, P.C., whose practice includes water and environmental law. She has represented the water and wastewater utility of the City of El Paso since 1990. Her interest in water law began with her appointment to the El Paso Public Service Board, where she served as Vice-Chair. She currently is representing the Public Service Board in connection with its participation in the New Mexico/Texas Water Commission, and its participation on the Water Council, an organization consisting of the public and private water districts in El Paso County.



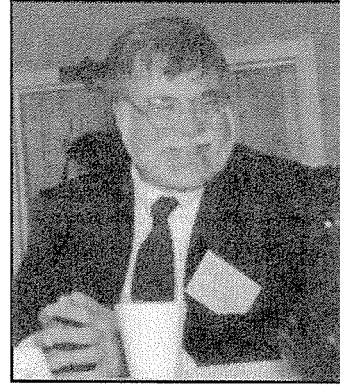
Ed Archuleta, since 1989, has been the General Manager of the El Paso Water Utilities Public Service Board and is responsible for all aspects of water and wastewater services to a population of 592,000. For 15 years previously, Ed worked for the City of Albuquerque in various positions with the City's water and wastewater department. He has B.S. and M.S. degrees in civil engineering from NMSU, and a Master of Management degree from UNM. He is a registered professional engineer in Texas, New Mexico and Iowa.



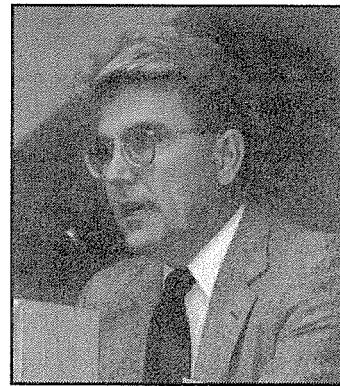
Cruz Ito serves as the U.S. Section Principal Engineer for the Resource Management Department of the International Boundary and Water Commission which includes the activities of planning, project development, operation and maintenance, water resources, and the environmental management divisions. Jointly with the counterpart principal engineers from the Mexican Section, he implements provisions of the 1944 Water Treaty and other existing agreements between the United States and Mexico regarding operations of joint projects between the two countries along the international boundary. Cruz has been working for the United States Section since 1959. He has a B.A. degree in Chemistry and a B.S. degree in chemical engineering from the University of Texas at Austin.



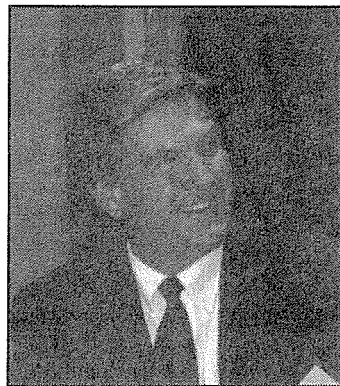
Tom Brown joined the Texas Water Development Board in January 1992 and currently is Deputy Executive Administrator for Water Resources Development. He is a registered tax assessor/collector and holds a grade "A" water works license. Tom received a bachelor's degree in political science from the State University of New York at Plattsburgh in 1972 and a master's in urban planning from Texas A&M in 1976 and spent ten years as Executive Director of the South Texas Water Authority, a regional water supplier in the Coastal Bend Region of Texas.



Gary Esslinger is the Treasurer-Manager of the Elephant Butte Irrigation District. Gary is a third-generation member of a pioneer farming family living in the Mesilla Valley. After receiving a B.S. in business administration from Northern Arizona University in 1973, Gary worked six years in Los Angeles for a large flour milling corporation as office manager. After becoming tired of city life, Gary returned to the Mesilla Valley and began working for EBID in 1978 where he has been for the past 17 years. For the past 8 years, Gary has been the District's Manager. He also holds the title of Treasurer with the District's Board of Directors.



Edd Fifer attended high school in El Paso and went on to UTEP where he received a bachelor's of business administration in 1967 and in 1974, a master's of education. Since 1978, he has been with the El Paso County Water Improvement District #1. Edd served in the Army during the Vietnam War and received the Bronze Star. He was appointed by Governor Clements in 1982 to the Texas Indian Commission, organized the self insurance program through the Texas Water Conservation Association Risk Management Fund in 1985 and organized the Texas Irrigation Council in 1989.



Jack Hammond has served as the Texas Commissioner to the Rio Grande Compact Commission since January 1990. As Commissioner, he is responsible for representing the state of Texas in all matters relating to the flow of the Rio Grande above Ft. Quitman, Texas, in accordance with the provisions of the Rio Grande Compact. The Rio Grande Compact is a three-state compact between the states of Texas, New Mexico and Colorado. Prior to this appointment, Jack worked in the banking industry in the lending and public relations area for several El Paso banks. He also serves on the boards of various nonprofit organizations in the El Paso area.



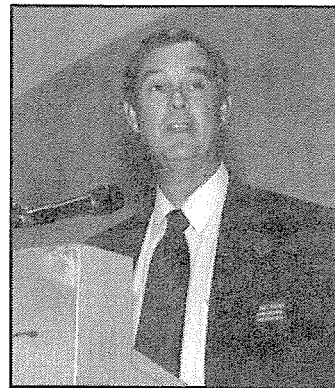
Ken Needham has been with the City of Las Cruces since 1975. Since 1980, Ken has been the Director of Utilities and responsible for the departments of Utilities and Engineering, Gas, Solid Waste, Technical Services, and Water Resources as well as the Rio Grande Natural Gas Association. Ken is a registered professional engineer in New Mexico, and earned a B.S. in civil engineering and an M.S. in civil engineering with sanitary engineering option, both from NMSU.



Garry Rowe has been Area Manager for the Albuquerque Area Office of the Upper Colorado Region of the Bureau of Reclamation since 1992. Among his responsibilities, he oversees engineering design, construction management and contract administration, maintenance of nearly 300 miles of river channel, four dams and a power plant on the Rio Grande, and the operation and maintenance of three dams and storage reservoirs on the Pecos River. Garry has worked for the Bureau for over 20 years. He was heavily involved in the development and implementation of criteria for the operation of the San Juan/Chama Project. He received a B.S. in civil engineering from NMSU and an M.S. in civil engineering from Colorado State University.



Tom Turney has been a professional engineer for 25 years. Tom is licensed in the fields of civil, electrical, sanitary and architectural engineering and is registered in New Mexico, Colorado and Arizona. Before becoming state engineer, he worked for many cities in northwest, central and northeast New Mexico as well as with the Mescalero and Apache tribes. Tom earned bachelor's and master's degrees in civil engineering from NMSU.



REGIONAL WATER ISSUES FOR THE LOWER RIO GRANDE: WATER MANAGERS PANEL

Note: Panelists were asked to consider the following questions when preparing their comments for the panel discussion:

- From your perspective, what is the most important water resources issue?
- In terms of that issue, are there conflicts among different stakeholders and what are those conflicts? Who are the stakeholders?
- In your opinion, is resolution of the conflicts possible? If so, what are the best approaches to resolving the conflicts? Are new institutional arrangements necessary to foster conflict resolution? Will this require policy changes, new laws or legislation?

The moderator for this panel was Risher Smith Gilbert.

RISHER SMITH GILBERT
Mounce & Galatzan, P.C.
P.O. Drawer 1977
El Paso, TX 79950-1977

Good morning. Thanks, Tom, for inviting me to participate in this well-known and well-respected institute forum, and I also want to thank each of the speakers who have spoken so far; I have been very impressed with the level of preparation and the insight into some very complicated issues. Let me say that it takes a lot of courage to come here and speak as a lawyer since we had all of the "lawyer-bashing"

yesterday, and it especially takes courage to come here as a Texas lawyer. One of the most courageous things I did as a young lawyer was during the New Mexico/Texas lawsuit when I drove to Las Cruces to meet with John Salopek and the Elephant Butte Irrigation District Board in an attempt to settle the lawsuit. When we walked in all the farmers were sitting around the table, and the first thing that John Salopek said was, "Can I get you a glass of water?" I really did not know if he was serious or if it was a joke.

When I served on the Public Service Board I very quickly started learning about the pending, very complicated, long, drawn out New Mexico/Texas litigation. I realized as I saw the monthly payment of legal fees that the loss of the \$10 million that it is estimated Texas and New Mexico each spent in the lawsuit was not the real cost to our communities. The real cost to our communities was the broken relationships and the wasted time and energy that was spent on further isolation and defending stated positions instead of on creative water planning. We cannot afford as a region to lose ten more years of planning time.

More than an agreement to dismiss respective claims and counterclaims in a settlement, the City of El Paso wanted a commitment by the New Mexico parties to sit down with El Paso and work together on the regional water planning issues. Out of that came our settlement document, which was explained in more detail to you yesterday by Tom Bahr and Ed Archuleta. It sets forth how and on what issues we

will work together. The last two years have been a lot of hard work, and it has not been particularly easy. Progress has been slow, and everyone has had moments where they wanted to get up and leave the table in frustration. We do not have a lot of tangible results, but we are still working together, and our communication is much better than when we started.

I have found in my law practice that it is very easy to create strife and dissension. It is very easy when a client comes into my office to get the client more indignant than he/she already is about the injustice that the client has suffered. It is very easy to make statements like "we will teach them a lesson," "let's beat them to the courthouse," "we'll show them who is in control." That is the easy part. The difficult challenge as an attorney is to get the client to consider that his/her perspective may not be the only perspective on the issue, to get them to consider compromise, and to consider what pressures the other side is having to deal with.

There are some good rules to follow if we want to work together as a region in the future. The first is we must keep our sense of humor and try to be open-minded. Anyone who takes themselves too seriously or their issue too seriously to ever admit they might be wrong or might have made a mistake or there might be a different way to look at something, is going to have a very difficult time resolving water issues. I am the first to admit there is no subject more serious than water, but we need to not take ourselves or our positions so seriously that we are not open to considering other positions.

We need to work hard at understanding the other person's perspective. For example, the farmers need to learn a little more about pressures on the municipalities. They must realize that Ed Archuleta and Ken Needham, who are on the panel today, spend a lot of sleepless nights worrying about how they are going to provide water for their growing communities, over which they have very little or no control. The farmers need to understand how absurd some of the Environmental Protection Agency (EPA) unfunded mandates are because the EPA does not treat differently the desert southwest from the east coast. On the other hand, the municipalities need to work harder in understanding the farmers' perspective. Water quality to farmers means something different than water quality to cities. Quantities of total dissolved solids are

critically important to the productivity of farmers, but the EPA and the municipalities have a much greater tolerance level of them. The municipalities must understand the importance of preserving the integrity of the drain system in order to leach the soils. These are critical concepts the cities have to understand and respect. The farmers and the municipalities are both going to have to work a little harder in understanding the environmentalists and recreationalists, and vice versa.

Gary Esslinger did an excellent job yesterday of pointing out how important it is to remember our history, with his fascinating slide show on the history of the Elephant Butte Irrigation District. It is important to remember historical events for many reasons. One reason is that we cannot afford to repeat our past mistakes. Let's not face the future with a repeat of our past mistakes. We cannot come to the negotiating table preoccupied with all of the reasons why things will not work, thinking only about legal barriers or institutional barriers that make our goals impossible to meet or achieve. Laws should not drive the issues, people should drive the issues. If people can reach a consensus, they can change the laws. Let's focus on reaching consensus and then work together on changing the laws.

I want to give you one small example of how we cannot expect from others what we are not willing to give ourselves. Yesterday Governor Johnson made a comment that he did not feel comfortable with, nor would he support, selling New Mexico water to Texas. Later an astute lawyer from Colorado questioned Governor Johnson on whether New Mexico would expect to be able to purchase water from another state [Colorado]. Governor Johnson responded that New Mexico would. We cannot expect from others what we do not expect of ourselves, especially with our water resources.

I will quickly introduce the members of the panel, and I hope you will listen very carefully to what they are going to say. We have formulated three different areas of questions about water issues: 1) what are the most important water issues to each of these gentlemen; 2) who are the stakeholders; and 3) what are some of the barriers to resolving the issues. I hope you will listen with new ears today, not presuming that you know everything they are going to say. As Harry Truman said, "It is what you learn after you

know it all that counts.” Let’s not all presume that we know all the answers today, but let’s try to learn something new.

I appreciate your patience in listening to some questionable advice from a Texas attorney. Thank you.

GARRY ROWE
U.S. Bureau of Reclamation
Albuquerque Projects Office
505 Marquette NW, Suite 1313
Albuquerque, NM 87102-2162

Thank you for letting me have a chance to jump out first. I want to take just a minute before I start answering the questions and give you a bit of my background. That may seem a little selfish, but it does have to do with the views I hold about what the most important water issues are.

Being here in Las Cruces is like coming home. I want to congratulate—and I am sure all of you feel much the same way—Tom Bahr and staff for the kind of excellent quality of New Mexico water conferences that have been going on for many years, and this is just another one of those great conferences that helps us come out better prepared to deal with water issues in the future.

Let me begin with my college background. I graduated from New Mexico State University and I had the pleasure of studying under such people as John Clark, John Hernandez, Conrad Keyes and Narendra Gunaji. They threw at us a lot of equations, calculus, engineering and things I do not remember much about. But there were some lessons and concepts that also were passed on, as we came to know those professors. They gave to us attitudes and some philosophy regarding resolving complex water problems. It was there that I began to understand the world of water resource management, and they shared with us what kind of emerging complex water resource problems we would be facing and having to deal with. The things they shared ring true today. The things that still ring true to me and stick in my mind are those skills they told us would be critical to success. They said that our ability to solve problems in the future did not rest in the calculus and the formulas we learned, but in our ability to listen and understand

others’ needs and values, in our integrity, in our success in developing reliable information and data, and in our ability to articulate with bone honesty our views and from where we are coming. I think we just heard from Ms. Gilbert much the very same thing. As I moved from working with the technical aspects of water engineering into management, a few things became very clear. One of them is that any time you are dealing with and have actions and decisions involving water in the Rio Grande, at best they are very volatile and these obstacles must be overcome by working together.

What is the most important water resource issue from our perspective, the Bureau of Reclamation, the federal perspective? As we look at our agency, we have a very broad-based responsibility as Reclamation talks about its new mission which involves the consideration of today’s values. The environment is just as much in the picture of water management as is drinking water. I see the future challenge of achieving a balance in meeting the often conflicting needs of people with a finite amount of a limited resource. We have heard all about this from previous speakers expressed in various ways. Ed Archuleta spoke about these needs along this very theme, and I think it is one of the more important themes. As I look over the question—how will we go about managing a finite water supply to meet existing and future needs—I know there are some tools, such as reliable modeling, that will be needed to meet the challenge of balance in the use of our water resources.

What are the tools and processes? We heard about open forums for all stakeholders to provide input on formulating solutions to water problems. Today, we are much more skilled at holding open forums and we have a more positive attitude toward them, but we still have a ways to go. We are at the tables talking together, but we need to do more. We need to keep our discussions open to all stakeholders. That is a process we are learning more about. What reliable data do we have? Ed Archuleta expressed clearly yesterday why we use “the hydrologic model.” These are tools. We must have candid, dependable information, and if we do not, we cannot make reliable recommendations as managers to decision makers. We recognize that our elected officials deal with our budgets, make decisions and set directions—they are the decision makers. We, as managers, need to support the

development of tools that provide officials with the information they need to do their jobs. We hear a lot about partnerships, and I think we should be looking at developing partnerships that include competing interests, and understand that each member of that partnership has a true need to be part of that partnership. Partners who clearly understand each other's expectations and their respective contributions and needs will succeed. I look at the New Mexico/Texas Water Commission as exactly that type of partnership. We must look at regional planning in much the same way. Those are the challenges I see.

Let me add to what Jack Hammond stated earlier. Conflicts, real and perceived, exist and the reality is there for both of them. I think we just heard about some real conflicts. Many of our perceived conflicts seem real at this point, but can be handled with better information followed by decision making. We do need to know who owns the water and who controls the water. Otherwise, how can the market place operate very well? We need to know the quantity of water available.

Perceived conflicts start to diminish as we gain a better understanding of the rules. When we know the rules, people can play by the rules. However, people cannot get together when the rules are unknown and thus, perceived conflicts may abound.

Part of the solution lies in some of the things that have been laid out here: to look for tools, for understanding, and for dialogue. But competition is a reality, the finiteness of water is a reality, the need for planning is a reality.

The last conflict I'll mention is the conflict of time. We cannot study things forever before making decisions. I like what Ed Archuleta said on this topic yesterday. Let me tell you a bit about Ed Archuleta. Ed and I went to school together, competed in classes, and even burned some midnight oil trying to study for tests, although we probably only got a small bit of information from one another because we both wanted to be at the top of the class. Ed and I shared that top place in a few of our classes and today it is a pleasure to do business with him. We do not always agree on things, but on this we do agree. He mentioned yesterday that we must move forward to solution implementation. We cannot wait forever. We have to act to resolve some of our problems. We cannot wait for the universal fix. Yes, we must strive for regional plan-

ning, recognizing, however, that there are conflicts that require a response today to meet tomorrow's needs. Tomorrow's problems must be solved and some of them in short order. You cannot put the world on hold until we have it all figured out. Thank you.

JACK HAMMOND
Rio Grande Compact Commission
P.O. Box 1917
El Paso, TX 79950-1917

I think I'm in a unique position among panelists here as I am a Texas resident. My area of expertise and responsibility with the Rio Grande Compact Commission goes to Elephant Butte Reservoir and includes Doña Ana and Sierra counties. When discussing Texas water, we should keep in mind that the largest percentage of water—57 percent—from Colorado and New Mexico that must be delivered to Elephant Butte Reservoir as part of the Rio Grande Compact is sent to Doña Ana and Sierra counties. It is very difficult to deal with multistate interests when you pit Texas and New Mexico against each other. This morning, I listened to some strife as related by one of your state representatives. Though I welcome the idea of a pipeline from Elephant Butte to Las Cruces or El Paso, it is easier to talk about the water you will save through such a pipeline, than to discuss where you're going to store all the water you save. There are many unanswered related issues.

I think the single most important issue in this entire water discussion, whether you are referring to municipal, environmental, recreational, agricultural, or any other needs, hinges on regional planning. The problem is defining the region. If it does not snow in the San Juans of Colorado, we have a surface-water problem. For years, Albuquerque believed it had tremendous groundwater resources, but it does not believe that any more. El Paso does not have tremendous fresh, groundwater resources and has decided to utilize surface water treatment plants. I think in the future, Las Cruces may do the same. We also have a responsibility to the Mexican people to deliver 60,000 acre-feet of water each year.

Our region should consist of Colorado, New Mexico and Texas. We have had ample water for about 20

years. In many respects, we have had more water than we've known what to do with. We have rushed water downstream past Fort Quitman into the fields of Candelario where it was wasted by either seeping into the ground or evaporating.

Regional planning that involves managing all our water resources begins with Colorado, New Mexico and Texas and the various water organizations within them. Is that a difficult concept, is that daunting? Of course it is. It is going to require a marriage of federal agencies having responsibilities along the river for flood control and preventing loss of life and damage to property; having storage and maintenance responsibilities along the dams; and for every municipality and irrigation district. Over time we must develop a regional water plan that informs everybody of what they are getting. That is why we are paid big bucks to work with folks like you in developing a plan.

The little nitpicky issues that affect us individually pale in comparison to the real problem. The real problem is that Colorado does their planning in a vacuum, New Mexico does their planning in a vacuum, and Texas does their planning in a vacuum. As long as that continues, we are going to have lawsuits and we are going to have strife-ridden statements that insight riot among people who may have been slighted. We must realize that when we go into our next drought cycle—and God forbid that it happen tomorrow, but it will happen—we must have a regional water plan so that we don't end up with irrigation districts and the municipalities in each state fighting against each other.

Everybody knows water runs downhill and that fact we cannot change. We must find a way to manage the way it runs down that hill so that everybody is given ample opportunity to make their claim for that water. We must manage the water efficiently so that we are able to deliver a sufficient enough volume and of clean enough quality that we do not regress to lawsuits, strife, and Supreme Court decisions that have marked our history for the past eight years.

I would characterize the situation as perceived conflicts rather than actual conflicts, although I am sure that you can find examples of both. I started in this job in December 1989 and my first briefing outlined how all the folks in Colorado and New Mexico have stolen water from southern New Mexico and Texas. I heard a litany of complaints. And maybe

in a literal sense, years ago that was probably the case.

I think each state views itself as a threat to the other state's water source under different conditions. Planning is difficult because nobody trusts anybody. In my opinion, the water districts do not trust the cities, the cities do not trust the water districts, and most of the environmental groups with which I have dealt do not trust anybody. I do not mean that in a difficult sense, I am just coming from a unique perspective. When you sit anyone down to negotiate, it is very difficult for them not to want to protect their parochial interest. Naturally they feel that everybody else is after their water. I think there are difficulties in perceptions and that is why a planning vehicle is needed where all shareholders are involved.

Something that is interesting to me is that over time this has not happened, and I guess it results from the pattern of growth on the river. I do not think that when the Rio Grande Compact was written anybody envisioned the cities of Albuquerque and El Paso being the sizes they are, and the Middle Rio Grande valley having the population it does. Maybe the tools were not in place at the time, but I think we can change that given the multitude of talents we have and certainly the multitude of interests we have. I think it is incumbent on us to realize that at the front end we have built-in risks, and there are built-in perceptions about Texas and New Mexico sharing water resources, much like the governor spoke of yesterday.

I have heard people in this part of the world worry about selling water to another state. In my world, whether it is New Mexico buying water from Colorado or Texas buying water from New Mexico, to me, that could be integrated into a water resource plan, where you use the money from selling the water to improve, for example, the infrastructure in your state. Obviously, you would not be selling the water if you could use it. Now I know that is a farfetched idea for some people. I think tradeoffs can be worked out where possibly Colorado could acquire storage facilities within New Mexico—dam facilities for the right tradeoff—and thus both states benefit. I think Texas could buy water from New Mexico and vice versa, for the right tradeoff. Can this be done tomorrow? No, I do not think so. But I think if you put everybody in a room with a broad framework, over time these issues would be developed and solutions found. But right

now, you would start a pretty good argument about how to get even that done. Thank you.

TOM BROWN
Water Resources Development
Texas Water Development Board
P.O. Box 13231
Austin, TX 78711-3231

One of the roles I play at the Texas Water Development Board is working with communities in mediation and with regional difficulties and arguments between cities about who is going to be supplying what, where, and determining their surface areas. One of the first things I started doing—because some of the meetings got rather contentious—was to take a sign out that said, “Please check your guns and knives at the door.” I thought that worked out pretty well, but then I got nervous because I kept seeing people stop and think about it.

I think the water issues that are being raised here at this forum are not isolated to El Paso and New Mexico because I see the same issues all across Texas. The biggest challenge I see coming is that we are at a point in our history where we are changing very rapidly. One hundred years ago the federal government made a commitment to bring agriculture and water to the West. That commitment is fulfilled and now the federal government wants to get out of the business. We are seeing a major shift in the responsibility for the operations and maintenance and liability for those projects. I am not saying that is bad or it is good, it is just the reality. We, as communities and on a regional and statewide basis, need to understand that reality, because unless we do, we are going to be faced with attorneys making lots of money and the rest of us going broke and going out of business because we cannot get the water we need to continue our business.

Another issue that is always linked with water concerns the economics of an area. It is kind of a standard joke that since the oil bust in Texas in the early 1980s, if the Dallas/Fort Worth/Houston metroplex sneezes, the rest of the state gets a cold. I think that is a pretty good analogy because we are no longer simply small regions where our economies are solely dependent upon what we do in that region. We

can never go back to the isolated farm community or the isolated industry—that this is the backbone of the local or regional economy. It is not the reality. The reality is that we have maquiladoras in Juarez which help support businesses in El Paso, which help support businesses in Las Cruces, which help support businesses in Albuquerque, Dallas, Midland, Odessa and all across the country. We are interdependent and when one community suffers, the rest of us are going to suffer as well. I think that is one of the major issues that we are going to face in the next several years.

A couple of other issues I would like to raise. We have been talking about conflicts between communities and between competing interests. I would encourage that in that process we look for commonalities. Many times when you focus totally on the conflicts, you miss the opportunities that present themselves and you don't take advantage of the situation.

Secondly, along the lines of what Ed Archuleta was talking about on the Safe Drinking Water Act and looking at planning issues, it comes down to a situation of financing. The federal government has, as many of you have already heard the term, “unfunded mandates.” As the mandates increase someone has to pay for them and that funding will come from either state or local governments.

Finally, I think we were talking about rules and knowing what the rules are. Those rules also have to be developed to balance competing interests for water. How do you balance that and how is that decided? Otherwise you end up with constant conflict because people say, “My use is better than their use and therefore I should get priority.” Thank you.

ED ARCHULETA
El Paso Water Utilities
Public Service Board
P.O. Box 511
El Paso, TX 79961

One of the historical issues in this area has concerned water quantity. I think most will acknowledge that the conflicts and litigation have centered on water quantity. The emerging issue is on water quality, and it is now beyond emerging. If you read the *El Paso Times* this morning, you may have noted an

article on what is going on in Congress with the reauthorization of the Safe Drinking Water Act. The article dealt with arsenic, radon and trihalomethanes. We do not have arsenic or radon problems in El Paso and are within current safe drinking water standards. However, if the current arsenic standards are lowered significantly, we will have a problem. Albuquerque would have a major problem if the standards are lowered to where it is being suggested. Those of us in the public sector obviously want to make sure that we deliver water that meets safe drinking water standards, but we are opposed to regulation after regulation being imposed on us without science to support the change. We support research conducted by the American Water Works Association on regulations. I realize that there is a conflict with the trihalomethanes. Basically, when you combine chlorine with organics you can form trihalomethanes, which are suspected carcinogens. We are in compliance with current standards, but if standards are lowered significantly we will have a problem.

Let me talk about river water quality because it is an emerging concern. I voiced a complaint last year and again recently to a group—many of whom are here this morning—who manage surface water because last year El Paso had to spend over \$1 million on treating the worst water quality problem that we have ever had in the river. A lot of that, I think, is due to how Elephant Butte and Caballo reservoirs are managed relative to the turnover and the organics that are released, how fast the water is released, and everything that goes with it. There is nothing I can do about it because I cannot send anybody a bill. It is not within a management criteria; it's just whatever comes down the ditch—what you see is what you get. Edd Fifer and I are at the point where we feel the water quality is getting worse in many respects, and from a municipal standpoint, I'm concerned about source water quality.

Another issue concerns a conflict I have, along with some El Paso area contractors, with dewatering projects and their effects on the river. We are communicating and trying to resolve the problem. We have to install large diameter sewer pipes in the upper valley, and have recently found—and no one really knew about the water quality beforehand—that the water quality there contains 10,000-13,000 ppm total dissolved solids, about half of what seawater

contains. The District does not want that water in the system even with the large dilution because not only does it contain large amounts of total dissolved solids, but it also contains sodium and chloride. We have a situation that is an important emerging issue and we are trying to resolve it. We are trying to develop a plan so that those kinds of projects can go forward. We have turned on our shallow Cañutillo wells in order to dilute the water and that has allowed us to carry out these projects.

I can assure you that these issues are not going to go away. That is why I support what Ken Needham said, that we must have the institutional arrangements and then we must have the rules that go with them so that people like Ken and I can go to our boards and commissions and indicate that we have a plan, we understand the rules, and it's time to build the system and get consumers to support and pay for it. If we do not know the rules, how can you plan for the future? Thank you.

KEN NEEDHAM
Utilities Department
City of Las Cruces
P.O. Drawer CLC
Las Cruces, NM 88004

The City of Las Cruces is fairly new and inexperienced in the area of trying to manage its water resources. For years, until about 1980 when the lawsuit was filed, water resources management was very simple. We felt we had abundant groundwater. We hardly ever needed to talk to the irrigation district. We did not even know who the state engineer was—he did not have any jurisdiction in the Lower Rio Grande. So we are relatively inexperienced. We have not faced the problems that El Paso has faced. Our projections indicate we are running out of our water supply and we have our backs to the wall regarding our future supply.

During the past few years, we have gained some experience. Currently Las Cruces is facing the very critical issue of where its water will come from in the future. One frustration we have is determining what are the rules. What rules apply to us as we try to obtain additional water supplies? What are the state engineer rules and which of his rules apply with re-

spect to the irrigation district? What irrigation district rules, regulations and laws apply? We have a lot of work to do in communicating with the state engineer, the irrigation district, and our policy makers.

We are virtually in a crisis. I guess it takes a crisis to make things happen. In addition to comments made at this meeting about the need for regional planning, we need to become clear on what rules apply so that we can begin long-range planning, a necessity if we are to sustain the growth that State Engineer Turney discussed this morning. It will be a great challenge to face this frightening growth in the future.

Sure there are conflicts, all we have to do is look at what has happened over the past few years. There was conflict involved in the El Paso lawsuit against New Mexico. The conflict comes from all of us competing for a resource. Growth is driving that competition. Conflicts exist between the cities and the irrigation districts. I think the key is how we go about resolving conflicts and recognizing that conflicts exist. The real challenge is conflict resolution.

GARY ESSLINGER
Elephant Butte Irrigation District
P.O. Drawer A
Las Cruces, NM 88004

Yesterday we saw several slide presentations, one of which showed what our reservoir looked like in the 1960s when there was less than 700,000 acre-feet of water in Elephant Butte Reservoir. Then we saw a similar slide in 1987 where water was spilling over the dam. In the afternoon we looked at a slide depicting a bathtub of groundwater. In this slide we saw that there was a drain at the bottom of the bathtub representing Mexico and also there were straws representing cities going into the bathtub drawing water out.

I think that we need to recognize that we live in the arid West and there is a natural limit to our water resources. I believe that in order to plan for our future, it is important to know what we have in inventory—what we have underground and above ground to use for our future is the most important water resources issue.

I participate in an agricultural awareness program in the elementary schools every year and I put on a

puppet skit. I pass cups of water out to the children during the presentation from which they can drink. I pass out a thermos that is colored so they cannot tell how much water is in it, and then I pass out straws. I tell them, "As long as you have this cup in front of you and it is full of water you can manage it. You can gulp it, you can sip it, but you can see where your water is all the time." That is what I tell them my job as an irrigation manager is: to go up to the dam and manage what I can see and then try to use it to the best of my ability and for the farmers' needs. As they hold the black thermos, I have the kids take straws and individually suck out of the thermos. Then I ask them how much is left. Is it full? Is it half-full? Is it empty? Where will our next drop of water come from when you open up your showerhead or your faucet in the morning? If we cannot see what is underground, how do we know when we are at our last drop?

So I believe that the most important thing that we need to do right now is take an inventory of our groundwater and our surface water supply, and make sure that everybody knows what they have, and when they come to the table to plan, we can share that information with everyone at the table.

The World Series is on right now and I think both teams know the rules, but the game will not be played until someone throws out the ball. In our case, the ball is our finite resource which is our water supply, ground and surface. I believe one of our largest conflicts that we are addressing right now, as you have heard this morning, is the need to inventory our supplies but there are no resources or money currently available to conduct an inventory. I believe we need to come up with innovative ways to help promote a means of doing hydrographic surveys. There is new technology out there. There are ways we could share data to bring this adjudication issue to conclusion.

The problem that I find right now is that some of the conflicts we have encountered in the past would have been resolved had we known what each and every one of the entities had to begin with. The Pecos issue, for instance, centers around how much groundwater should be pumped and how much river water should go to Texas. Had we known those things we may have avoided that conflict. So, again, we need to have an inventory of this finite resource. Thank you.

EDD FIFER

**El Paso Water Improvement District #1
294 Candelaria
El Paso, TX 79907-5599**

Everything that has been said here this morning is, of course, critical and very important. We do need planning, we do need better management, we do need to exercise more conservation, and we do need improved water quality because the water quality currently is horrendous, but I am not going to bore you with that.

You know the thing that really concerns me, and I am glad that Gary Esslinger said something about it—I used to be on the school board in El Paso, the seventh-largest school district in Texas, and the superintendent would have school board members teach a class so that we would know what our 5,000 teachers were up against. I would do the same thing Gary did but about water. The one thing I would ask the kids, and you might want to answer this yourself, is what can you buy today for a penny. Just stop and think about that for a few seconds. What can you buy today for a penny? When you ask the kids this they really do not know what pennies are. When we were kids there was such a thing as pennies, and you could put them into a machine and get some gum. You cannot buy anything today for a penny.

You want to know something you can buy for a penny? You can buy seven gallons of treated water from the El Paso Water Utilities, enough water to cook for a family of four and to wash dishes. That is unbelievable. What happens if we do not take care of that resource? What happens if that water becomes one penny a gallon? Not seven gallons for a penny, but one penny a gallon? Pretty soon your water rates look similar to the rate structure of other utilities like the electric company. So suddenly instead of paying a nice little \$30 per month for your water, you are suddenly paying \$210 per month.

Education, I think, is really crucial in anything that you do. Those of you sitting in this room today are saying, "Boy, we need to conserve this water and we need to do this and we need to do that," and yet I am sure you are going to go home and take a shower tonight not shorter than any other night. Think about it. My wife turns the shower on—and I love her to death—but on a cold winter morning she turns the

shower on and then she jumps back into bed. I asked her, "What are you doing?" She says, "I'm warming up the house." I say, "Ed Archuleta is going to look at my bill and he is going to tell the newspaper how much water we use, and you are going to embarrass both of us, so turn that water off! Turn on the heater like you're supposed to."

It's easy to get into these habits. I can remember back in the 1960s when I was hot rodding around and gas was 19¢ per gallon. I was hot rodding up and down the road in mom and dad's old Pontiac as a policeman stopped me one day and said, "Son, do you realize that some day gas is going to cost you \$1 per gallon."

That is what is going to happen to us with water. That is what is going to happen to you if you do not get out there and help us manage this resource. We need education. We need for you to come to these kinds of meetings. The whole idea is to manage your water systems. It really worries me when I see people complaining about their water bill while they are watering their yard, or they have sprinklers that turn on at 4:00 in the morning and a head comes off the sprinkler and water shoots straight up until they get up at about 6:30 or 7:00 A.M.

There are a lot of things that we can do as individuals to change things. I have been programmed—and I do not know about the rest of these guys—but I have been programmed by my board of directors that the most important thing in the world is the water that belongs to El Paso County Water Improvement District #1 under the law, and I agree. That is where my paycheck comes from so I march to that tune. I can assure you that as time goes on, the younger kids are going to come up and ask us if we are going to saddle them with water bills of \$250-\$300 per month. We have already saddled them with tax bills that are more than a house payment. We must be careful about what we do. Start thinking about what you are doing when you brush your teeth and leave the water running.

In agriculture, we have a lot of problems too. We flood irrigate where we should not be flood irrigating, we do a lot of things that we should not be doing. That has got to change just like the municipal water use has to turn around as well as industrial water use.

I guess my biggest concern is water quality because I live at the end of the ditch. I hate to call the

Rio Grande a ditch, but that is what it has become since all the appropriated water has to go someplace, and the Rio Grande has thus become basically a large canal or ditch. That is sad because we all want our rivers to flow but increasing populations have taken the use of the water away from us.

My wife was complaining the other day in the store. She was surveying the avocados and said, "Boy, these are expensive. I cannot imagine that people are buying these things." When we left we had 20 avocados. I said to her, "Were they really expensive?" She said, "Oh, yes." I said, "Well, why did you buy them?" She said, "I don't know. We need them."

Changing attitudes is really tough but I think it is something we must do. Thank you.

THOMAS C. TURNEY
New Mexico State Engineer Office
P.O. Box 25102
Santa Fe, NM 87504-5102

I would like to see "integrated water resources management"—a new term that has not been used much and involves looking at various types of outside stimulants. In the last 6-8 months, the term has started to appear in the water resources literature. Integrated water resources management includes environmental, agricultural, municipal and industrial, and game and fish concerns. All these concerns are trying to develop or deliver a product at the lowest economic cost. You must look at all sides of an issue, but I believe in today's world, "integrated water resources management" is the perspective we must take.

I might add that the New Mexico legislature has formed an interim committee, the Integrated Water Resource Committee that is meeting actively and is very interested in pursuing what integrated water resource management is all about. I am very hopeful that as the years go by, this committee and in turn, integrated water resource management, will become very active throughout the entire state.

CRUZ ITO
United States Section
International Boundary and Water Commission
4171 N. Mesa, Suite C-310
El Paso, TX 79902

First, I would like to take this opportunity to remind panel members that one of the major responsibilities of the United States Section, International Boundary and Water Commission, United States and Mexico, is to ensure that both countries are abiding by the terms of the various boundary and water treaties. For our purposes here, the applicable treaty is the 1906 Convention. Of course, we also are interested in the issues being discussed here. One of these issues regarding the Rio Grande Project is the allocation of waters between the two irrigation districts and Mexico. We have been working on this issue with the districts and the U.S. Bureau of Reclamation for about ten years. So far, we have not reached agreement on the procedures for allocating the water. Specifically, one clause of the 1906 Convention, the one relative to extraordinary drought, has not been adequately defined, and it remains a pending issue.

On another matter, Mexico wants to reopen the Convention with the idea of obtaining more water than the stipulated 60,000 acre-feet. In talking with Edd Fifer and Gary Esslinger, I do not think that it will be possible for Mexico to obtain more water.

In connection with domestic and municipal uses of water, as they relate to the conjunctive uses of surface and groundwater, Mexico's position is that since Mexico is only entitled to 60,000 acre-feet of surface water per year, how can we expect them to use more surface water than groundwater? This is an issue that is becoming more and more important before the Boundary Commission. Very soon we will be asked to undertake the proper exchange of data between the two countries in preparing for an agreement on controlling the use of border groundwater. This definitely is one of the most important issues we face.

Regarding local issues, we are surely aware of other problems, like the problem of dewatering Doniphan Drive in El Paso. You can understand that when this water is discarded into one of the drains, it eventually ends up in the Rio Grande. When this happens, we would have to consult with Mexico. We are will-

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ing to cooperate with the City of El Paso on this matter.

Finally, I think proper coordination can help us accomplish a lot, not only with the interstate aspects, but also with the international aspects of our problems. Thank you.