

MINUTES
MEETING OF THE NEW MEXICO/TEXAS WATER COMMISSION
MANAGEMENT ADVISORY COMMITTEE (MAC) AND
THE REGIONAL SUSTAINABLE WATER PROJECT
STEERING COMMITTEE (SC)
NEW MEXICO STATE UNIVERSITY, DEPARTMENT OF AGRICULTURE
3190 SOUTH ESPINA, MAIN CONFERENCE ROOM
LAS CRUCES, NM 88003
June 11, 2002
9:00 am.

Welcome

Karl Wood opened the meeting. A copy of the sign-in sheet is attached as **Exhibit “A”**. Those members attending from the Commission’s MAC/SC were as follows:

Karl Wood - NMSU

Tom Bahr – Retired from NMSU

Anthony Tarquin – UTEP

Doug Echlin – IBWC

Garry Esslinger – EBID

Dr. Ari Michelsen – Texas A&M

Jerry Leyendecker – Dona Ana County

Jorge Garcia – City of Las Cruces

Michael Fahy for Ed Archuleta – EPWU

I. Review and Approval of Minutes from MAC/SC Meeting on May 2, 2002 (MAC/SC)

Mr. Wood asked if there was any discussion about the May 2 MAC/SC Minutes. No one had any comments and the Minutes were accepted as written by unanimous vote.

II. Progress Report by the Paso del Norte Watershed Council (Ed Kosak/Ari Michelsen)

Ed Kosak reviewed some highlights from the May 16, 2002 Paso del Norte Watershed Council (Council meeting) as follows:

- The Watershed Council Executive Committee voted to accept the existing version of the Council’s Strategic Plan in concept.
- The Program Coordinator’s project priorities will be pursued. Top priorities are pursuing grant funding opportunities, tracking financial expenditures, assisting with the development of an educational brochure, and putting together a contact list.
- A Brochure Committee has been formed consisting of Inga Groff, himself, and Sue Watts as chair. They already had their first meeting and have formulated ideas for identifying the target audience and establishing a basic layout for the brochure.
- The Program Coordinator Position is funded by various sources: El Paso Water Utilities (EPWU), River Network, World Wildlife Fund, and the U.S. Bureau of Reclamation.
- The Coordinated Database Committee is drafting an Agreement and Scope of Work for the project which will be forwarded to John Burkstaller and others for final review.
- There is a potential for collaborative efforts between the MAC/SC and the Paso del Norte Water Task Force. The two groups will remain autonomous but will consider opportunities for collaborating on projects, such as linking of websites and on internet mapping and database projects.
- There was a discussion on the EIS Alternatives for IBWC’s Canalization Project. The EIS Alternatives were presented by IBWC to the EPCWID#1 at their May 8th board meeting.
- The next Council meeting is scheduled for July 1st at the NM Water Resources Research Institute offices in Las Cruces.

- The Council is working on a \$1,000,000 grant funding application to the U.S. Fish and Wildlife Service for the Paso del Norte Watershed Council's "Wetlands Project", which consist of four separate wetlands projects that are being combined and submitted as one project. The four projects are the Rio Bosque Park, the Mesilla Valley Bosque Park, three State Park projects combined together as one project and sponsored by the N.M. State Parks Department and U.S. Bureau of Reclamation (USBR), and the Keystone Wetlands Project.

Ari Michelsen commented that the Wetlands Project was being put together by four organizations. The Council approved the Wetlands Project in concept, but there are financial issues to work out because of the need for pass through funds involved with the purchase of land or construction of projects, and the need to work out financial liability issues. Obtaining matching funds is one of the challenges faced by the projects, since not all of the projects can meet the matching funds requirement.

Conrad Keyes stated that Ed Fierro had sent him via e-mail a draft of the Coordinated Database Management Cooperative Agreement and Scope of Work with EPWU, and that he had forwarded a copy to the Corp of Engineers. The Corp is reviewing the documents to see if there is a possibility of funding from the Corp for this project.

III. Anticipated Rio Grande Project Allocation for 2003 Irrigation Season, and Planned Bureau of Reclamation (BOR) Activities for Upcoming Drought (BOR)

Wayne Treers gave a PowerPoint presentation on this topic (copy attached as **Exhibit "B"**). He introduced himself and stated that he would be giving somewhat of a re-hash of the presentation he gave at their Annual Operating Plan meeting last month, updated for June. Following are some highlights from his presentation:

- This past winter's snow pack was the worst in the last 20 to 25 years. The highest snow pack was in the Chama Basin. The snow melted out 6 to 8 weeks earlier than usual.
- The runoff forecast at San Marcial gauge for this year is 10,000 AF, which is 2% of the 30 year average.
- Elephant Butte Reservoir content is projected to be 388,000 AF at the end of this year, with a low point of 270,000 AF at the end of September, which would be the lowest content since February of 1979.
- Assuming 100% average runoff for the remainder of this year and all of next year, USBR projects a 33.8% reduction in full supply by the end of April of 2003, and 0% reduction in full supply by the end of May 2003.
- Assuming a 50% average runoff, the USBR projects a 45.0% reduction in fully supply by end of April 2003, with the percent reduction gradually increasing during the summer until a full supply is declared by the end of August 2003. However, by this time of the year it may be too late for farmers to make use of their full allotment.

After the presentation, Jurgen Schmandt asked Mr. Treers whether the low snow pack numbers were part of a normal pattern, or whether they were an indicator of a longer term climatic temperature change. Mr. Treers answered that he couldn't really answer that question, but he feels that the previous recent wet periods over the last one-hundred years have been more of an aberration, as indicated by the Drought Palmer Index historic values, and that we were now entering a more typical period of what the basin precipitation looks like. He added that tree ring analysis from one of the basins have indicated wet-dry cycles of 50 to 60 year duration, and that indications are that we are now at the start of a dry cycle.

IV. Drought Response Plans of the Commission Members for 2003 Irrigation Season (EPWU/City of Las Cruces/EPCWID/EBID)

EPWU

Dave Brosman, Chief Operations Officer for EPWU, gave an overhead slide presentation about EPWU's existing Drought and Water Emergency Management Response Plan (DMP) (copy attached as **Exhibit "C"**). Mr. Brosman noted that the Utility is in the process of reviewing and revising the current DMP, and that it's possible that the water allotment trigger for the stage one response will be lowered from 3.0 to 2.5 AF/acre. Also, City Council approval is required in order to implement any level of drought response and the associated conservation measures. Many of the stage 2 and stage 3 water conservation measures are very strict and the City Council may have a difficult time approving implementation of these stages unless some revisions are made. Two examples are the stage 3 conservation measures of no turf irrigation, and no new connections.

Mr. Brosman reviewed the three stages of drought response called for in the DMP and the water allotment and water demand levels that will trigger each stage. He also described the water conservation measures that will be called for under each drought response stage. Mr. Brosman made the following additional comments during his presentation:

- The citizens of El Paso have already implemented many water conservation measures. Therefore, he believes that a voluntary reduction in water use of 50% as called for in a stage one response is not likely to occur, although some smaller reduction can be expected.
- The one-day a week watering restriction called for under a stage 2 response may have to be revised to spread watering days across the entire week, and not just on Saturdays and Sundays as currently specified. If implemented, this will require an extensive public information effort.
- Operations will perform a one-day stress test of the well-supply system tomorrow in order to simulate a drought scenario. The test will consist of temporarily decreasing the surface water plant production to 5 mgd per 20 mgd train, and replacing the surface water shortage with well water. The intent is to determine the maximum production rate of the wellfields, both in terms of peak short term production and the sustainable long term production capabilities of the system.

Mr. Brosman discussed a slide labeled "Most Optimistic Scenario – Implementing Drought Stage" showing the City's average day demand and highest peak day demands for each month over the last three years, and stated that peak day demands are of most interest to him. He stated that he can't meet the summer month peak day demands using groundwater alone. Some surface water production and/or lowered peak demand from conservation efforts will be required to balance supply and demand. He has tried to estimate what the peak summer demand might be during stage 3 drought response when no landscape watering is allowed. Peak winter demands run at about 101 mgd. Also, Tony Tarquin did a study concerning evaporative cooler water use which estimated average demand from the use of evaporative coolers of 16 mgd. This average demand was computed based on an assumed average evaporative cooler use of 8 hours per day. Adjusting this demand for a peak evaporative cooler use of 12 to 14 hour per day, he estimates that evaporative coolers might use about 25 mgd. Adding a few mgd for cheating on landscape irrigation, he estimates a base peak day demand of about 130 mgd during a stage 3 drought response. However, actual demand will likely be higher because conservation measures are not likely to be 100% effective. He estimates that he can supply approximately 130 mgd of groundwater on a sustained basis, and up to a maximum of 150 mgd peak production for a few days. However, with no drought response measures implemented, he has to assume a peak day demand of 190 mgd.

Mr. Brosman discussed a slide labeled “Water Use” showing how EPWU would like to operate the surface water plants based on the allotment set by the EPCWID#1. The slide showed the desired average monthly production rates for the months of March through October for various assumed District allotments. He stated that because of operational constraints EPWU cannot cycle the plants “on and off” in response to fluctuating water quality conditions. It takes time to ramp up production in a water plant once it’s shut down, and much water is wasted each time a plant is started up. Therefore, EPWU would like to have a continuous period of sufficiently high flows during the summer irrigation season such that water quality remains acceptable. Mr. Brosman presented two slides showing intermittent time periods when flows in the Rio Grand at Corchense Bridge were over 200 cfs during two past drought years (1975 and 1978) to illustrate the historic pulsing of river flows which can cause EPWU problems.

Edd Fifer stated that it looked like the District would be setting an allotment of 2.3 AF/acre next year assuming lower than average precipitation over the winter. Mr. Brosman answered that if EPWU and the District could work out an acceptable delivery schedule on how the river flows will be managed, he could meet demands with that allotment. Mr. Fifer agreed with Mr. Brosman on this issue, and noted that he thought that an acceptable arrangement could be worked out based on what Mr. Brosman had presented today.

Mr. Antonio Rascon asked if El Paso had implemented or had considered implementing a cloud seeding program. Ed Fierro replied that some of the far west Texas counties were looking into cloud seeding, but that El Paso had not looked at this option. Mr. Rascon stated that the State of Chihuahua had implemented a cloud seeding program and found that it wasn’t very expensive, and so he had wondered if El Paso had implemented a cloud seeding program here. Mr. Brosman added that El Paso had enough hot cloudless days in the summer that even if cloud seeding was implemented, this would likely not change the high peak day demand value for each month, even though increased rain may cut overall usage. Mr. Woods brought out the potential risks and associated liability issues arising from the seeding of clouds over a city.

City of Las Cruces

Jorge Garcia stated that City of Las Cruces staff had presented a few alternatives to the City Council which they are considering right now. These alternatives are:

- Increased enforcement of the City’s water conservation ordinance.
- Rescinding waivers to private water companies which have franchises with the City and which are currently granted waivers
- Reduced watering of parks
- Adding to the list of watering restrictions and schedules
- A proposal for drought pricing alternatives

Mr. Garcia stated that they don’t know yet which of these alternatives will be adopted by the City Council and that they are waiting for direction from City Council on these proposals. Mr. Garcia added that they have completed their feasibility study for their water reclamation plant, for which Dan Santantonio is the project manager. The purpose of this project is to serve the Sonoma Ranch Golf Course, which is the only golf course on their water system. The plant would be located on the East Mesa and use East Mesa wastewater return flows. It will also supply some City and school parks in addition to the golf course. They expect to start with final design and proceed with construction within the next few months.

Tom Bahr asked Mr. Garcia if the City’s scheduling of landscape watering days, which had been in effect for about 5 years, had helped the City. Mr. Garcia replied that the scheduling does help, and

stated that last year's water use had been the lowest of the last three years, so their water use is not increasing, but is instead decreasing. He stated that the biggest impact on water use was the adoption of block pricing on their water rates. The City saw an immediate decrease in water consumption in early 1996 after the adoption of block pricing. The City's water use peaked at 19,000 AF per year in 1995 and water use decreased to 17,000 AF per year in 1996. Even with a 2.0 to 2.5% annual population growth, the City used only 19,500 AF annual usage in 2000, and last year's use was only about 20,000 AF. Mr. Garcia's opinion is that block pricing has had more of an effect on water use than have watering restrictions.

El Paso County Water Improvement District No. 1(District)

Edd Fifer stated that the irrigation districts had been very fortunate the last 24 years for having received a full allotment every year. He started his employment with the District in October of 1979, and the prior year's allotment had been 9 acre-inches. Since that time, the irrigation districts have had full allotments from the USBR, and so his job, although no easy, has been a lot easier than it is going to be next year. Following is a summary of the major points made by Mr. Fifer during his talk:

- It's a shame that water users are not ready to change the way they do things in response to next year's low allotment, but they will forget real fast that they have had 24 years of full allotments.
- As far as the farming community is concerned, the District doesn't get "decent" water quality, as opposed to the Elephant Butte Irrigation District. This makes drip irrigation systems difficult to implement in the District due to salt build-up.
- Pecan orchards require a certain minimum amount water to remain healthy, so pecan farmers will need to rely partially on groundwater during drought years. The District drilled and test pumped two test wells during the past two weeks. One of them produced 3,000 ppm water, but they couldn't produce the desired 3,000 gpm due to excessive draw-down. The second well produced 3,600 ppm water. Groundwater of this quality may be used on pecans for 1 or 2 years, but after that you start having problems with salt buildup and possible damage to the trees.
- Water consumers, including the irrigation district, have gotten complacent with 24 year of full allotments. Even though the District has done an acceptable job of managing the water in the past, they will need to do a better job managing a low water allotment next year. Politics also plays a big role in the management of water, and you have to deal with the politics.
- The District works with an allotment, and when a farmer's allotment runs out, the price for the next increment of water almost quadruples. Mr. Fifer suggested to the PSB some years back to implement a similar allotment system on its customers, and to set the allotments based on customers' prior year's water use. During drought years, the allotments can then be cut as appropriate. The fact that you give people an allotment makes them watch their water use.
- The USBR should allow carry-over storage of water. This creates an incentive for Districts to conserve water.
- His best estimate for next year's District Allotment is 2.3 AF/acre. However, it is still very possible that we may get a good winter snow pack, which could yield a full allotment next year. Mr. Fifer cited the 1978 water year, when they had a 9 acre-inch allotment, as an example. By the end of 1979, there was 944,000 AF of water in Elephant Butte reservoir, which was sufficient for the USBR to declare a full supply.
- A potential District Allotment of 2.3 AF/acre is the good news in terms of water quantity. The bad news is that the water quality is likely to worsen, and the District's Lower Valley farmers will be lucky to get any water with TDS levels of less than 1,100 to 1,200 ppm. The reason for this has to do with how the USBR accounts for the water – during a drought year, the District gets a larger proportion of their diversion from the return flows, which originate from drains and wastewater treatment plant discharges.

Ed Fierro asked Mr. Fifer if the 2.3 AF/acre was based on a specific allotment from the USBR to the District next year. Mr. Fifer answered that the 2.3 AF/acre allotment calculates everything they can possibly come up with as far as water supply, and even includes an assumption of supplying water from 60 new District wells. They are hoping the wells will pump 3,500 gpm, and they plan to start construction on the first 20 wells in the next 3 weeks. The cost of 60 wells is estimated to be about \$5 million.

Elephant Butte Irrigation District (EBID)

Mr. Gary Esslinger opened by stating that EBID doesn't believe in carry-over storage because EBID would come out as the losers in this case. Based on New Mexico water law, "use it or lose it" is the policy in New Mexico. He added that EBID's Board is planning a retreat at Truth or Consequences to finalize their drought plan for what they think may be an extended drought. There are four aspects to their plan:

- 1) Administration – If the allotment drops to 2.0 AF/acre, they will lose about \$1.5 million out of their budget. That would mean that their capital improvement budget would decrease. Also, they may even have to look at freezing wages.
- 2) Human Resources – Human resources would be greatly affected. He stated that the District is currently putting their 104 employees through stress management and anger management courses to enable them to better deal with the farmer's frustration and anger when a farmer's allotment is cut. Duty procedures also change. One may think having less water to deliver will require less personnel, but in fact it increases the need for more personnel due to increased water use monitoring and enforcement activities.
- 3) Water Accounting and Distribution Practices – The District has done a lot during the last 5 years to insure accurate measurement of diversions. Every one of their unit heading is now measured, and now they are focusing on actual turnout measurement. The measurement instrumentation on their canals are being equipped with telemetry so they can be remotely monitored with computers. The intent is to reduce or eliminate the guessing that goes on when you are trying to measure out water in acre-inches instead of acre-feet. Also being considered is the use of block irrigation. For example, EBID is looking at putting water in the Leasburg Canal and seeing how that would work versus putting water the Arrey, Leasburg, and Mesilla Canals all at the same time. The intent is to schedule irrigations on a District-wide basis by delivering large blocks of water in a short time period, versus spreading out the irrigations using smaller flows of longer durations.
- 4) Conservation – Although EBID doesn't believe that there are true losses in the system (water either recharges the Mesilla aquifer or returns via drains), they feel that there are opportunities where EBID can do some things that would enhance their efficiency. An example is "pipelining" some of their laterals, such as through crowded areas or in areas where one ditch provides water to one farm. This allows water left in the pipe to be used during the next irrigation instead of losing it to ditch seepage. They are working with farmers to find areas where they can pipeline their system. Another area is farmer education through the New Mexico Agricultural Extension Service at NMSU. Farmers are becoming more aware of how they can conserve water. For example, some farmers are experimenting this year with the use of 80 inch row crop beds (called cantaloupe beds) for planting cotton. EBID is installing metering equipment at the turnouts which deliver water for some of these experimental fields in order to measure the actual water savings. Another technique being implemented is the use of borders one each side of a row of trees for pecan orchards. Only the areas between the borders are irrigated, thereby conserving water. Laser leveling is already extensively used, and metered high flow turnouts are also starting to be employed.

Mr. Esslinger noted that currently farmers can pump as much groundwater as they want, and EBID has no authority to regulate this pumping as long as the farmer doesn't use EBID's conveyance system. However, now that the stream adjudication process is under way there may be some curtailment in this

pumping. They have a meeting with the State Engineer next week to discuss their drought contingency plan, and they will try to determine exactly what the State Engineer is planning to do next year, and what he will tell the farmers concerning limitations on their groundwater pumping. Alternatively, if a farmer does utilize EBID's canal system, then EBID does have a say on this issue. EBID has patented a metering device that is attached to the end of the pump discharge pipe. It's a very inexpensive device and has telemetry hookups so the farmer and/or EBID can remotely monitor the flow measurements on their computers. The meter can also be equipped with water quality instrumentation so that EBID can monitor the quality of groundwater entering their canals.

Mr. Esslinger stated that one of EBID's goals is for one or more of the water suppliers to construct a surface water treatment plant in New Mexico, because once that happens, farmers will have a choice of whether to use their water for farming or to lease their water to the City. It's getting to the point where water will be marketable and farmers can make a lot of money marketing their water. When that happens farmer will be in better financial shape. Right now, however, a farmer knows that groundwater is his savings account, and he doesn't draw on it unless he really needs to. A message that he is trying to get to the cities is that they should not rely entirely on groundwater, but should plan to develop conjunctive use of surface water and ground water in the future. His opinion is that the farmers can come to the aid of the cities during times of drought, if it is done correctly.

V. Update on the Development of a Strategic Plan for the Paso Del Norte Water Task Force (WTF) (Carlos Rincon)

Carlos Rincon advised that the WTF Strategic Plan Steering Committee is on schedule for drafting the Strategic Plan and Bylaws for the WTF. This work is being done under a grant from the Hewlett Foundation. The goal is to have a draft of the Strategic Plan by the next WTF meeting scheduled for June 28th at the EPWU offices. A discussion of the draft Strategic Plan will be the core of the agenda for this WTF meeting. The Steering Committee is composed of 15 to 17 persons and has well balanced representation.

VI. Briefing on the Tularosa Basin Desalinization Research Facility (NMWRRI)

Bobby Creel gave a brief PowerPoint presentation summarizing the Tularosa Basin Desalinization Research Facility Project (copy of presentation attached as **Exhibit "D"**). Mr. Creel stated that the next meeting of the Executive Committee for this project is scheduled for June, and will involve the review of the 90 percent conceptual design.

After the presentation, Tom Bahr asked if there were any concerns with land subsidence due to future withdrawals of saline water from the aquifers. Mr. Creel answered that Sandia Labs has had discussions on this issue and determined that land subsidence would not be a problem. The desalination membrane technology has improved to the point where very little water is wasted as reject brine, so this lessens the amount of total groundwater withdrawals. Mike Landis also pointed out that the amount of brackish water projected for extraction over the long term is less than 1% of the total groundwater in storage, so subsidence is not expected to be a problem.

Mr. Schmandt asked about the energy demands for the planned desalination facility, and asked whether the feasibility of using solar and wind power to supply these demands had been studied. Mr. Creel replied that the project does not involve the construction of a production facility, but instead involves construction of a research facility with relatively small power requirements. Use of solar and wind power is not cost effective under these circumstances. However, individual pilot projects may use these types of power sources for desalination as part of their research. Mr. Schmandt asked about the typical unit cost for desalinating water. Mr. Creel answered that the actual unit cost depend on a lot of factors, and cited a cost of about \$1.70 per thousand gallons for a coastal facility desalinating

brackish water. Mike Landis added that co-generation of power in conjunction with desalination is a factor in determining unit costs. Actual unit costs vary depending on where the facility is located and the quality of the water being treated, so the cost is very site dependent.

VII. Other Business

Their was no discussion under this topic.

VIII. Schedule Next Meeting/Location:

The next meeting was scheduled for 9:00 am Thursday, July 11th, at the Texas A&M Agricultural Research Center conference room. Agenda topics suggested for this meeting were:

- 1) A presentation by Bobby Creel on the deliverable of the Hewlett Mapping Project.
- 2) An update by Carlos Rincon on the status of the WTF Strategic Plan and Bylaws.
- 3) Jurgen Schmandt suggested a presentation on future climatic trends by a U.S. Weather Service Climatologist. He will arrange for this presentation.
- 4) A presentation by Paul Gorder on the draft Tri-Regional Planning Group Feasibility Study.
- 5) David Allen and Ari Michelsen suggested a presentation on the Rio Grande Irrigation Efficiency Initiative and an update on several water resource projects of TAMU and the Texas and New Mexico Water Research Institutes.