

GROUNDWATER RESEARCH SUBCOMMITTEE MEETING RECORD

TIME AND DATE:

9:00 AM, Wednesday, October 12, 2011

LOCATION:

Texas Commission on Environmental Quality Campus Building F, Room 2210, 12100 Park 35 Circle, Austin, TX 78753

PURPOSE OF MEETING:

First quarter regular business meeting

AGENCIES/ENTITIES REPRESENTED:

Bureau of Economic Geology [BEG]
Texas AgriLife Research
Texas Commission on Environmental Quality [TCEQ]
Texas Department of Agriculture [TDA]
Texas Groundwater Protection Committee [TGPC]
Texas State Soil and Water Conservation Board [TSSWCB]
Texas Water Development board [TWDB]
Texas Water Resources Institute [TWRI], a branch of Texas AgriLife Research

ATTENDEES:

Bridget Scanlon	BEG, Co-chair of the GW Research Subcommittee of the TGPC
Kevin Wagner	TWRI (Texas AgriLife Research)
Lauren Bilbe	TCEQ
Mike Chadwick	TCEQ
Alan Cherepon	TCEQ
Richard Egg	TSSWCB
Janie Hopkins	TWDB
Kelly Mills	TCEQ
Joseph L. Peters	TCEQ
Rusty Ray	TSSWCB
David Villarreal	TDA

MEETING SUMMARY:

Call to Order and Introductions

Dr. Scanlon called the meeting to order at about 9:02 AM. Dr. Wagner was present as the other co-chair of the meeting, representing the TWRI and its parent agency, Texas AgriLife Research. The meeting started with introductions. Dr. David Villarreal was

sitting in for Mr. Richard Eyster and announced that he would be Mr. Eyster's alternate in representing TDA at the meetings.

Discussion of Sources of Funding and Current Calls for Proposals

Dr. Scanlon started the discussion, suggesting a number of topics that could be covered during the course of the meeting, that could eventually lead to white papers. The topics she suggested included: the drought, water economics, drought proofing Texas, climate predictability, etc. She suggested that the discussion, for one, could serve as a learning tool that would aid BEG in putting together a large proposal for the National Science Foundation (NSF). The proposal is to investigate the subject of water sustainability and climate. The BEG is partnering with the Lower Colorado River Authority (LCRA) on the proposal. One aspect of the study would be to look at the Australian situation and how they dealt with a major draught.

Dr. Scanlon brought up the news that the LCRA was considering cutting off water to the rice farmers. Mr. Egg elaborated that this decision would be contingent on the lake levels and would not go into effect until the next growing season. The LCRA has indicated that the decision would be made early enough in the season so that the rice farmers would know in advance not to plant rice. Dr. Scanlon asked if the rice farmers would be reimbursed for the water being withheld from their use, as had been done in other places, in Texas, and in Australia. Dr. Wagner mentioned that some new legislation was passed that enables TCEQ to temporarily reapportion water rights during draughts. TCEQ is in the process of writing rules to implement this legislation. Under this legislation those that would be required to temporarily relinquish their water rights would be reimbursed by those receiving the water. Mr. Egg pointed out that the situation with the Texas rice farmers was a little different since they did not own the water rights themselves. The water rights belong to LCRA. Mr. Mills gave a little more detail on the LCRA proposal that would potentially take water from the rice farmers. The LCRA's contingency plan requires that the decision would be made on a specific date of the year, and it would apply to both the spring and fall rice irrigation seasons. LCRA has had some talks with the rice farmers about possibly making the decision twice a year, taking the spring and fall irrigation seasons separately. Dr. Scanlon asked what the economic impacts might be on the rice farmers, whether it might affect their marketing activities. No one had any definite answer. Dr. Scanlon also suggested that some of the rice farmers might switch to groundwater, which, if it is pumped from the Colorado alluvium, could also affect the instream flow. Dr. Scanlon asked about options that would make rice farming more efficient with respect to water use. Mr. Egg responded that most of the rice farmers have adopted the available efficiency practices, but center pivot irrigation is one thing that they are studying for rice. However, one big disadvantage of center pivot would be the loss of weed control that is inherent with flood irrigation. There was some discussion as to what the rice farmers would do if their water was cut off. It was suggested that they would probably go to dryland agriculture and plant something like grain sorghum. However, Dr. Wagner point out that irrigated agriculture is usually more profitable. The capability of irrigation removes much of the variability and uncertainty of agricultural operations.

Dr. Scanlon asked if climate experts are able to provide information, with any degree of certainty, that would be useful to people such as farmers and municipal water suppliers. If not, drought plans must be developed that take into account all contingencies. Mr. Egg gave an overview of information provided by the state climatologist, Dr. John Nielsen-Gammon, on the state climatologist website, <http://atmo.tamu.edu/osc/>. Basically Dr. Nielsen-Gammon states that the draught conditions are such now that breaking the draught of record is very possible. Dr. Scanlon had a question concerning the assurance by the TWDB that we are prepared for a draught of the 1950s severity. She speculated that perhaps we are not really prepared for such a draught. She asked Ms. Hopkins to confirm that the claim of preparedness took into consideration the increased population from the fifties. Ms. Hopkins responded that there were four to five thousand water utility districts in the state, and that they all supposedly have draught contingency plans, but she speculated that even though they all claim to have plans, perhaps many of them do not have effective plans. Mr. Egg interjected that all the water utility districts have TCEQ approved draught contingency plans. He said that probably most of the water utility districts across the state were at some level of draught water conservation at this time. He added that many of the draught plans may not have appropriate triggers and that the water utility districts may now be realizing this. The conclusion is that many of these plans may not be adequate. Enforcement probably is another big weakness of many of these plans. Dr. Scanlon suggested that the biggest users of water were probably the electrical power plants and the irrigators. She mentioned that there were some plans now for building power plants with dry cooling, such as in Australia where most of the power plants are dry cooled. So the question is whether all new power plants in Texas should be dry cooled, or would this be overkill, like buying too much insurance. There is such a long lead time for incorporating many of these water saving technologies. Mr. Mills interjected that there was a TCEQ draught page that is regularly updated (weekly) that lists the number of systems that are implementing their draught contingency plans, and whether they're implementing voluntary measures or mandatory measures. He went on to explain that many of these water systems may be over optimistic on the amount of water they have available in reserve during various stages of a drought. One reason for this is in the great variability between drought contingency plans. For example, a water system may think they have a 180-day supply according to their drought contingency plan, but there is so much variability in drought contingency plans from one water provider to another that a stage 3 for one provider might be equivalent to a stage 2 for another. Another problem is that the contingency plans are such that it is overly difficult to kick in to a less popular more prohibitive higher level of water conservation. And conversely, some of the plans are overly lenient in stepping back from the higher levels of drought contingency adherence, if for instance there has been some rain. Dr. Scanlon explained that there were three ways of contending with a drought: reduce demand (conservation), increasing supply, or increasing storage. In the cities it's mostly conservation by reducing watering, etc. Increasing supplies, for instance by building desalination plants, is expensive and involves a considerable time lag. The same is true with increasing storage. And with the case of increased reservoir size, you would get much more surface evaporation. The hot summers during a drought increase surface water evaporation tremendously. A better

solution would be Aquifer Storage and Recovery (ASR). During periods of higher rainfall the high flows are harvested and stored in aquifers, and then harvested during the dry periods. It has been determined that there is excess water that could be harvested during high flows while yet maintaining in-stream flows. So ASR and other water storage schemes could eventually become very popular. Mr. Mills asked Ms. Hopkins to confirm that this was being reflected in the regional state water plans. She responded that, yes, but the big problem was the money need to implement such schemes and the lag time between a motivating horrific crisis and putting a project into place. Dr. Scanlon commented that we have less per capita storage now than in the seventies, because we haven't been building any new reservoirs. This makes us much more vulnerable now than we were in the seventies. Mr. Egg commented on the more positive side, that many cities have been putting into place effective conservation measures, such as low flush volume toilets, more efficient showers, xeriscaping, etc. These have been very effective conservation measures that have been put into place since the seventies. Another example is that San Antonio has an ordinance that requires developers to put in lawns that can withstand a sixty-day period without water. Things like this have become possible with improved technology. Dr. Scanlon pointed out that, however, there was ultimately a limit to conservation. Ms. Bilbe suggested that it was important to determine the economic impact of a drought, and she didn't think that we really had that for the present drought. Dr. Scanlon mentioned that it was estimated that there would be about a five billion dollar economic loss due to the present drought, but that was only the agricultural component. There will also be costs in the other areas of the economy. Dr. Scanlon speculated that industry could become reluctant to move to Texas, if water problems persist. This tends to outline the importance of having drought contingency plans that truly take into account the possibility of the worst possible conditions. Dr. Scanlon mentioned that we could probably learn from Australia which went through a ten-year drought. Dr. Scanlon asked Ms. Hopkins about the State Water Plan, to confirm that it took into account various alternatives. Ms. Hopkins responded that even though the State Water Plan covered a number of possibilities, actual responses were still up to individual districts or communities. And Dr. Scanlon asked who would be financially responsible for various levels of drought responses. She mentioned that water rates are going up in San Antonio by twenty to thirty dollars a month to pay for the Edwards Aquifer Recovery Implementation Program (EARIP), under heavy protest from the citizens there. Dr. Scanlon mentioned that the cost of the ASR water in San Antonio is about ten times as much as their other water. The question then is whether they want the city to continue to grow if the cost of additional water will be so high. Dr. Scanlon suggested that we should develop plans to drought proof the state, regardless of what the climate predictions are. There needs to be a systems approach linking the social and economic aspects of droughts in order to develop a comprehensive approach to dealing with water shortages. And she suggested that we probably would not be able to deal with a drought of the same severity as the fifties drought. Mr. Cherepon gave an example of what could be considered a misappropriation of water in the Panhandle, where one city actually uses as much water on their municipal golf course as is it does for all other use. Dr. Wagner reminded us that after every past drought in the state the next legislative session always responded with some new ground breaking water policy to try to moderate the effects of future

droughts. For example, the Texas Water Development Board (TWDB) was created after the fifties drought. We should probably expect some type of action to take place during the next legislative session. Dr. Scanlon suggested that we need to have the technical background developed for the Legislature to use in developing drought legislation. Ms. Hopkins asked what was really meant by drought programs. For instance, now we have a drought team which shows a drought update every month at their meetings, but the update just pulls together TCEQ's information and other information. Certain predictions are made, but nothing is really accomplished to minimize the effects of the drought. Furthermore the TWDB requires that the communities that obtain loans from them have approved drought conservation plans, but surprisingly this requirement has only been put in place within the last year. And, most of these plans do not really take into consideration a major horrific drought. Dr. Scanlon asked about the Edwards Program to pay irrigators to not irrigate so as to reserve water for endangered species, whether the money the irrigators get offsets for the lost income from not irrigating. Mr. Egg responded that he wasn't sure about that, but that every irrigation provider was required to have two types of plans. One is a conservation plan and the other a drought contingency plan; these are two separate things. The conservation plan outlines practices that they should encourage upon their customers to conserve water, such as encouraging cities to put into place a program to replace inefficient shower heads or toilets. Conversely a drought plan outlines certain mandatory water restrictions that are put into place at various stages of a drought. A regional water plan is like an aggregate of all the more local conservation plans and goes a little further in that it provides for the development of additional water supplies when the need arises, but it relies very heavily on conservation, which is much less expensive than developing new water sources.

Dr. Wagner asked whether it would be a possibility, at a future meeting, to get someone from TCEQ or the TWDB that works in this area of drought preparedness to give an overview of the process so we can get an idea of what is in place now and perhaps what improvements need to be made. Ms. Hopkins indicated that at the TWDB, especially by Dr. Robert Mace, there was struggle to determine what actions to take. People go to the State Drought Preparedness Council meetings one a month, but Mr. Egg pointed out that it was not really an action committee, but more of a reporting or informational committee. Ms. Hopkins thought that there probably weren't any real action committees, and that everything was being approached piece meal. Mr. Cherepon suggested that perhaps we should get all the water experts in the state together for a water summit. Perhaps the Lyndon B. Johnson School of Public Affairs could organize it. The summit could perhaps come up with some ideas on which the next Legislature could enact. Dr. Scanlon suggested that perhaps the bottom line was the cost of being prepared for a serious drought. Mr. Cherepon mentioned that he remembered when the Comptroller's Office critiqued the Texas State Water Plan back in 1984. They suggested that the best way to conserve water was to charge more for it. Mr. Egg observed that some of the smaller water providers make their money by selling water, so that water conservation programs can considerably reduce their cash flow. Dr. Wagner mentioned that he thought there was an article in the Austin American Statesman that mentioned that the City of Austin was reluctant to move to a higher level of water conservation because they were operating on a budget that was based on a

certain amount of water that they expected to sell, and reducing water use by implementing conservation measures would considerably affect their cash flow. Mr. Mills stated that TCEQ was having weekly drought meetings. The Commission's Office of Water facilitates these meetings. Dr. Mace, TWDB, sits in on the meetings, the Department of Emergency Management attends, the Commission's Homeland Security personnel attend, the Commission's Water Master Program sends representatives to attend, and the Commission's Regional Offices call in. So, the Commission is trying to be very proactive, but only surface water can effectively be regulated by the Commission. The Commission is working very hard to identify water supply systems that are at risk. This is fairly easy to do with the surface water systems, but it's a little more difficult to accomplish with the groundwater systems, especially the over 2000 single well systems. The Department of Emergency Management was set up to deal with emergencies such as hurricanes, fire, or some emergency that would not persist past sixty days. But droughts last much longer than sixty days. Mr. Mills indicated that the Department of Emergency Management would probably be coming out with some guidance on how they think the state should respond to a drought situation. So, the Department of Emergency Management might be a resource for us to give a presentation on drought management. Mr. Mills went on to agree that if the drought continues there probably would be some new drought policies coming from the next legislative session. Dr. Scanlon asked what kind of policies would we like to see from a resource perspective. Mr. Mills responded that the TCEQ probably was working on some, but would be reluctant to reveal them just yet. He went on to state that the TCEQ is required to approve drought contingency plans, but there is no mechanism set in place for the state to insure that the water providers implement their drought contingency plans. Dr. Scanlon suggested that there also was nothing in place to test that contingency plans are adequate. Mr. Mills opined that the upcoming State Water Plan would be very timely, and that it will point out that we have some serious problems, and if funding isn't provided to implement the State Water Plan, we will be in serious trouble. In the last Legislative session Chairman Ritter and the House Natural Resources Committee attempted to carry through legislation that would provide funding for the implementation of the State Water Plan. That legislation will probably be put back on the table again. Mr. Egg suggested that funding of the State Water Plan would in itself be a major policy development. Dr. Scanlon stated that much of the State Water Plan is infrastructure issues. Mr. Mills added that many of the water systems have only one well and no alternative sources of water. Mr. Egg added further that many of these water systems were seeking to interconnect with other systems. Mr. Mills mentioned that the TCEQ's Water Supply Division was actively pursuing and communicating with those systems that are at risk and informing them of all the options that they might have in preparing for any problems that their systems might encounter. Dr. Scanlon mentioned that the watch word most recently banded about has been sustainability, which means that water systems should depend more and more on surface water, but the problem with this is that surface water is more vulnerable than groundwater. Conjunctive use of water is another strategy being suggested as a possible solution to periodic water shortages. Dr. Scanlon also mentioned the great cost of piping water any great distance. She also mentioned that at one point LCRA was open to the possibility of providing water to San Antonio, but more recently has decided that it couldn't. There is

now a law suit concerning this matter. Originally there was an agreement between LCRA and San Antonio to pursue the possibility of LCRA providing water, but after further analysis LCRA decided that they would not have the surplus water to sell to San Antonio. Miss Bilbe suggested that now would be an opportune time to quantify the economic impacts of the drought. AgriLife may be doing some of the quantification for the agricultural community. But it would be useful even from the standpoint of the individual property owner having to replace his lawn, garden, etc. Dr. Scanlon informed us that they had been talking to some economists at A&M and it seems that this type of impact assessment is not the economist's favorite activity, but they have done some impact assessments, mostly on agriculture. The estimate at this time is on the order of five billion dollars.

Dr. Scanlon asked if we could have some discussion from some of the agencies, and maybe we could bring into the discussion some of the people from the Department of Emergency Management. Dr. Scanlon then asked Dr. Wagner about then following up with a bigger meeting with Texas A&M, UT, water providers, and other groups, with their resource people such as economists, and, considering the social components, to try to come up with some options. Dr. Scanlon suggested that we generally plan for a drought of the magnitude of the fifties and forget about any specific forecasts or predictions of climate change. Mr. Egg mentioned that the Texas Water Plan was based on the drought of record, which would be the fifties drought. Dr. Scanlon added that drought preparation would be highly dependent on economics – who's going to pay, what would be the costs of not being prepared, and what would be the costs of being over prepared. She suggested that we have the components and we just need to integrate them. Mr. Egg brought up the question of what the definition of a drought was. When does a dry spell cease to be just a dry spell and become a drought? Dr. Scanlon responded that we had the various indices such as the Standardized Precipitation Index (SPI) (<http://wlf.ncdc.noaa.gov/oa/climate/research/prelim/drought/spi.html>), and the Palmer Index (<http://www.drought.noaa.gov/palmer.html>). Based on these we can say that we are in the various stages of a drought. Mr. Egg brought up the problem of when drought response should begin, since there could be two months of low rainfall followed by an unexpected heavy rain. Dr. Scanlon stated that we should be prepared regardless; we should have water supplies sufficient to meet the fifties drought. Conservation can only take us so far; Our preparedness must go beyond merely the conservation of water. Ms. Bilbe informed us that the TCEQ nonpoint source group was working with cities to help them to modify city codes so that they would be congenial to property owners retaining some of their storm water through the installation of rain gardens, etc. At the same time as helping the property owner have access to the use of the retained water, it also helps moderate large runoff events. It was also mentioned that there needs to be a cultural shift from everyone thinking that they need to continuously be watering their yards. Mr. Mills mentioned that El Paso had gone through this type of cultural shift through the nineties when over a period of time they were successful in getting their citizens normalized to the practice of a variety conservation measures. San Antonio is at the present time implementing a similar program.

Information Exchange

Dr. Scanlon asked if there were any other issues to be discussed. Dr. Villarreal responded by informing us of the major changes that have taken place at the Texas Department of Agriculture. There have been several retirements, cut backs in staff, and changes in staff responsibilities. They are also expecting a large load of telephone calls from people asking about the new general permit required for the application of pesticides on and near waters of the U.S. The work load on existing staff has increased substantially and one thing that they are going through is determining the need to attend various meetings such as the those of the Groundwater Research Subcommittee. Dr. Villarreal specifically asked about the need of TDA to be present for Groundwater Research meetings to have a quorum and whether TDA is legislatively mandated to have someone at the meetings. Dr. Scanlon interjected that agriculture is a primary user of water resources in the state and opined that, therefore, it would be important for TDA to be involved with the subcommittee. Dr. Villarreal went on to state that probably the Agricultural Chemicals Subcommittee would be the more important group with which TDA should be involved, and of course the full Groundwater Protection Committee. He went on to state that there were a number of groups with which it would be good for TDA to be involved, but because of the increased staff restrictions they will have to make some decisions about which groups would be most important for TDA's participation. Dr. Villarreal went on to explain how irrigation issues were becoming more and more a matter of policy rather than science at the TDA; he mentioned the Edwards Aquifer as an example.

Dr. Wagner restated the concerns that were under discussion, namely if a quorum was necessary, if we were required to meet quarterly, and if any particular agency such as the TDA is required to be a member of the subcommittee. Ms. Hopkins stated that her opinion was that only the main committee, the TGPC, was required and had a required membership and meeting frequency, and that all the subcommittees were promoted at certain times when there was more money and to address certain issues of concern at the time. She said that she didn't think that the subcommittees were mandated. Dr. Scanlon added that perhaps the subcommittee should be reevaluated to see if it's worthwhile. Dr. Villarreal went on to say that those that have been involved with the subcommittee can see its importance, but their new management is more concerned about specific benefits to the stakeholders in their agency; and even though their management may recognize that participation is a good thing, they may not see it as necessarily the best use of their staff at this time. Dr. Scanlon volunteered that she had similar thoughts herself in determining if the time she spent with the subcommittee was worth, for instance, what she learned at the meetings about issues that need to be addressed. Dr. Villarreal mentioned a couple of the costs of participation in the meetings: staff time and travel costs. Dr. Wagner suggested that we look into the possibility of changing our meeting schedule to semiannually. Ms. Hopkins mentioned that some of the other subcommittees have a different meeting schedule. Dr. Wagner suggested that we make this a topic for our next meeting, and asked if any changes would need to be approved by the full committee. Ms. Hopkins reminded everyone that the member's participation in the GWPC and its subcommittees was not funded and

attendance was just by the grace of each participating agency.

Public Comment

There was no public comment.

Adjournment

The meeting adjourned at 10:14 AM.

Action Items:

- * There was discussion that at a future meeting we should get someone from TCEQ, the TWDB, or the Department of Emergency Management, that works in this area of drought preparedness, to give an overview of the process; and/or to sponsor a meeting with some people from the Department of Emergency Management, followed up by a bigger meeting with Texas A&M, UT, water providers, and other groups, with their resource people such as economists, and, considering the social components, to try to come up with some options for drought contingencies.

- * It was decided that at the next meeting we should discuss altering the meeting schedule of the Groundwater Research Subcommittee, perhaps to semiannually.

Minutes prepared by Joseph L. Peters, December 9, 2011

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