

**MINUTES
of the
WATER RESOURCES COMMITTEE
Hilton Garden Inn
Casper, Wyoming
June 25, 2013**

Table of Contents

Welcome and Introductions	3
Approval of Minutes	4
Proposed and Sunsetting Positions	4
Missouri River Natural Flows	5
Wyoming Weather Modification Pilot Project	10
Border Water Issues	12
Sandia Data Review	16
Water Data Exchange (WaDE) Update	22
GAO Water Report	23
NOAA Briefing Materials	24
CDWR/WSWC/WGA Drought Prediction and Impacts Workshops	24
California Irrigation Management Information System (CIMIS)	25
WSWC Strategic Directions	26
ACWI Shrinking Budget Work Group	26
Federal Legislation Update	28
CEQ Principles and Requirements	28
FY 2013-2014 Water Resources Committee Draft Work Plan.....	28
Other Matters	29

**MINUTES
of the
WATER RESOURCES COMMITTEE
Hilton Garden Inn
Casper, Wyoming
June 25, 2013**

The Water Resources Committee meeting of the Western States Water Council was called to order by Committee Chair Dennis Strong at 8:00 a.m. Those in attendance were as follows:

MEMBERS AND ALTERNATES PRESENT

ALASKA	--
ARIZONA	--
CALIFORNIA	Jeanine Jones Betty Olson
COLORADO	Dick Wolfe John Stulp
IDAHO	Jerry Rigby John Simpson Gary Spackman (via phone)
KANSAS	Tracy Streeter
MONTANA	--
NEBRASKA	Brian Dunnigan
NEVADA	--
NEW MEXICO	Scott Verhines Greg Ridgley
NORTH DAKOTA	Michelle Klose (via phone)
OKLAHOMA	J.D. Strong
OREGON	Phil Ward
SOUTH DAKOTA	Kent Woodmansey
TEXAS	Carlos Rubinstein Herman Settemeyer

UTAH

Dennis Strong
Norm Johnson

WASHINGTON

--

WYOMING

Pat Tyrrell
Sue Lowry
Greg Lanning
Harry LaBonde
Chris Brown

WestFAST MEMBERS

Eric Stevens, WestFAST Liaison, SLC, UT
Jean Thomas, USDA Forest Service, Washington, DC
Becky Fulkerson, Bureau of Reclamation, Washington, DC

GUESTS

Curtis Seaton, Texas Commission on Environmental Quality, Austin, TX
Dave Mitamura, Texas Water Development Board, Austin, TX
Steve Wolff, Wyoming State Engineer's Office, Cheyenne, WY
Matt Hoobler, Wyoming State Engineer's Office, Cheyenne, WY
Jeff Fassett, HED Engineering, Cheyenne, WY
Dan Reed, WY
Barry Lawrence, Wyoming Water Development Commission, Cheyenne, WY
Anne MacKinnon, A. MacKinnon Consulting, Casper, WY
Lisa Vojta, U.S. Government Accountability Office, Washington, DC

STAFF

Tony Willardson, Executive Director
Sara Larsen, Water Data Exchange Program Manager
Nathan Bracken, Legal Counsel
Cheryl Redding, Office Manager

WELCOME AND INTRODUCTIONS

Dennis Strong welcomed members to the meeting. Introductions were made around the room.

APPROVAL OF MINUTES

The minutes of the meeting held April 4, 2013 in Denver, Colorado were moved for approval by Phil Ward as presented. The motion was seconded. There were no corrections or changes and the minutes were unanimously approved.

PROPOSED AND SUNSETTING POSITIONS

A. Extreme Events Legislation S.904 STRONG Act

Dennis Strong commented on the legislation and noted that it is to strengthen the resiliency of our nation. The Council's Executive Committee discussed the proposed position prior to the meeting, and the Water Resources Committee agreed to move this position forward.

Jean Thomas asked what was being suggested for how to accomplish the purposes of the legislation.

Jeanine Jones responded that the Act first came to California's attention sort of "out of the blue." The sponsors are from the East Coast and are particularly interested in the hurricane aspect. They call for formation of a committee to look at the existing situation and make recommendations. It calls for representation of state agencies on the committee. This caught my attention as it provides an opportunity to advance the WSWC position supporting observing and data systems. I suggested the Council may wish to support the legislation. This bill is under the jurisdiction of the committee that is responsible for authorizing funding for many of the data systems.

Phil Ward then noted that this position was worked through the Executive Committee, who agreed that the position should be adopted and the legislation authorized.

J.D. moved approval of the proposed position. The motion was seconded, and passed.

B. H.R. 1460 – Missouri River

This proposed position is in the form of a letter to the Chairman and Ranking Member of the House Water Resources and Environment Subcommittee, and is in Tab C in the briefing book.

Pat Tyrrell provided a brief history. The letter is a response to a move that came out of Missouri to remove "fish and wildlife" from the other uses of the mainstem Missouri reservoirs. It would essentially favor operations for navigation. That is not the dominant economic use of the river. It has been a long battle between the upper and lower Missouri River interests. This seems to be another attempt to take some of the important Endangered Species Act and other related activities and operations of those reservoirs out of the law. That is really the push behind the letter.

Tracy Streeter added that it somewhat stems back to the 2011 flood when the lower basin was hit hard from releases out of the upper basin reservoirs due to the incredible snowmelt. There was a lot of finger pointing going on at that time. Legislation has been introduced ever since trying to take money out of fish and wildlife to put into flood control. All of the governors, perhaps with the exception of

Governor Schweitzer were in lock-step that flood control was the number one priority of the eight authorized purposes. This seems to be a continuation of that. Flood control is still very important in the lower basin, even at the expense of fish and wildlife. That said, Kansas being a lower basin state, we have always been advocates for meeting all eight purposes. In addition, there is the consultation under the Master Manual, which took thirteen years to approve. If this bill were ever to come to fruition, I would suspect that there would be litigation from all directions relative to the Endangered Species Act. This is a good letter.

Tracy moved to adopt the letter as a WSWC position. A second was offered, and the motion was unanimously approved to send the letter.

C. Sunsetting Position

Position #324, urging the Administration and Congress to support water research and development programs at the Department of Energy National Laboratories was moved for readoption with the amendments as shown in Tab C. Tony Willardson pointed out that there were a few changes made to the position, and a couple of whereas clauses were added following the conference call of the Executive Committee.

Pat Tyrrell moved readoption of the position, as amended. Phil Ward seconded the motion. Position #324 was unanimously recommended for readoption as amended.

MISSOURI RIVER NATURAL FLOWS

Michelle Klose explained storage issues are continuing in the Missouri River Basin, where the Corps has changed their understanding of stored water and what they are actually controlling within the river basin. The Corps currently believes that all water flowing into the reservoirs is theirs to control and storage contracts are required for any withdrawals, even though the states have permitting processes. In North Dakota, their state law is a first fill, so that any capture of water needs storage permits. The Corps is working around the State's permitting process to say that all flows into the reservoir boundaries are theirs to allocate and control.

We've had many discussions on this. Most recent at the ABA Western Water Law Conference, where we met with the Corps of Engineers Deputy Counsel from the DC area. We've held discussions with him and others at the ASA level. We're finding that they are trying not to understand how western water law is different from the riparian water rights doctrine.

Tiffany Vanosdall, is the lead for the reallocation study. There are currently three studies going on: (1) a reallocation study; (2) a surplus water report; and (3) rulemaking to reset allocations following the surplus water report. North Dakota is very concerned that this is contrary to the West's water appropriation process and to how any of the western states deal with water supply. Tiffany indicated that the Corps has held some internal meetings within the last month. The Corps managers in the western part of the country indicated that they really do need to treat western states differently than they do the eastern states, and that they cannot have a "one size fits all" policy for the nation.

North Dakota is petitioning the WSWC to bring this issue to a higher level, so that it is not just North Dakota or not just South Dakota, or any of the involved states. The position the Corps is taking needs to be brought to Corps officials' attention. States' rights to control and use waters that are protected under Section 1 of the 1944 Act need to be strengthened. Otherwise, we fear that the Corps is trying to override those protections.

Questions

Brian Dunnigan: Michelle, you might want to mention that the Bureau of Reclamation does not treat stored water or address this the same way the Corps does.

Michelle Klose: Brian, the Bureau of Reclamation (Reclamation) works with the State's water permitting process. For our example, in our view, Reclamation has water permits for the capture of flow. The beneficial use of that captured water is also permitted. Reclamation understands that they are actually passing water through their reservoir for other uses within the State. The Corps does not understand the concept that there is a river flowing through these reservoirs, and that there was a flow available before the dams were constructed that the states still have access to. In our situation, Lake Sakakawea is 190 miles long, and then Lake Owyhee is about 70 miles. The Corps is saying that through those stretches, the State cannot have access to those waters within the state, even if they do not benefit from storage. The Corps is saying that because it is contained within their reservoir that it is stored water. That is a great distinction. The Bureau of Reclamation operates under western water law, and acquire required state water permits. Section 1 of the 1944 Flood Control Act directs the Corps to work with Reclamation on any of the water issues in the states where waters arise west of the 98th Meridian.

Tony Willardson: Michelle, you have been talking with the local Corps folks, but the Governor has also met with headquarters, correct?

Michelle Klose: Yes. We've had many levels of these types of discussions. We're not seeing much progress. The Corps is still under the belief that as long as they require those that are getting storage contracts to have state water permits, they are actually fully recognizing the State's water permitting process. Even so they are ignoring the State's permitting authority. They basically take the stance that they can capture 100% of the flow, require storage contracts for that flow, and they are still following western water law.

J.D. Strong: This is sort of the same issue as the "secret rulemaking" that is going on at the Corps, too, right with regard to surplus water? Is this a separate and distinct issue? Isn't this similar to the mysterious rulemaking out of Darcy's office?

Michelle Klose: The rulemaking that I'm familiar with out of Darcy's office is on surplus water. It is a subcomponent of the stored water, but I'm not sure if it is the same rulemaking that J.D. is discussing. We believe that the Corps should recognize what stored water actually means, and that stored water is different than what flows into the reservoir and what leaves the reservoir. If more is flowing in and less is leaving, then you're actually storing that difference. If more is coming out than is coming in, then that is when you're withdrawing from storage. If the Corps understood it in that sense, then I don't think we would have issues with their rulemaking, surplus water, or any of the other issues. Because of the way that they define storage, as 100% of the whole flow coming into the system, regardless of what flows

preceded construction of the system, then all of the other things that they are working on would be very advantageous to the western states and how we view water rights.

J.D. Strong: If the WSWC is going to do something, and I think we should, we need to educate Darcy's office on the difference between riparian and prior appropriation water law and work our way through the whole surplus and storage issues. Perhaps Reclamation can be an ally in that regard. They certainly are so far continuing to defer to states. Didn't we do something at the Denver meeting along these lines - - touching on this issue?

Tony Willardson: The Council does have a position in support of the Dakotas on the natural flows question. My understanding is that the surplus water rule has been at Assistant Secretary Darcy's office for some time and she has not acted on it.

Michelle Kloze: That's correct. We met in the Pentagon with the Deputy Assistant Secretary and their General Counsel. The General Counsel has flown out to see the reservoirs and see the system, recognizing the large volumes of water that we are dealing with. We've had extensive discussions on western water law and how it is different from the Riparian Doctrine, but they are still trying to push a consistent policy. I agree that having support for that position for the western states would be much stronger than individual states trying to stand on their own.

Dennis Strong: Michelle is requesting assistance from the Council. In October, we could address this specific issue. How do we as a Council want to address this?

Phil Ward: It appears that Michelle is asking that we specifically put this issue on our agenda for the October meetings, and that we try to get senior folks from the Corps to talk about this. I would suggest that we need to have a subcommittee work through some talking points on this so that we have a cohesive message.

Tony Willardson: Michelle, has there been any discussion about addressing the issue in the WRDA reauthorization?

Michelle Kloze: Yes., but it is difficult. It is a concept that we so well understand, but it is so hard to put down on paper so everyone understands it the same way. The terminology has different meanings in different parts of the country. We're working on that. Our Senator put in language on surplus water only, thinking that surplus water would have no charge or fee. The Corps would rather make a profit by charging for water, which we could not understand. Congress requires that if you are going to not allow collection of a fee, you also had to have a reduction in the budget elsewhere to offset that lost revenue. That is why in the legislation there was also an offset for operation and maintenance funding for the Corps. Doing things differently, I wish the Corps had not asserted they were going to have that much revenue coming in. We don't see that as revenue, we believe they are actually taking away the water supply that belongs to the state, and the Corps is trying to sell it. In the end, they end up using the fee in offsetting their budget, which is not the right thing to do, either. This is what they are having to work around.

There is other language in the WRDA bill. We have been involved in some of those WRDA discussions, and are having some internal discussions to understand what we could support for western water law and definitions of storage that would be really helpful. We need to understand how other states view storage

as well. Is it pretty well accepted across the West that there is a difference between what is flowing into the reservoir versus what is leaving the reservoir. We don't understand their claim to 100% of the flow, because even riparian rights have reasonable use requirements. It is not necessarily all of the water supply.

J.D. Strong: I'm concerned since they have shipped the rule off to OMB already. I know that Texas had a conversation with their office about the fact that they don't really intend to discuss this with the States. The response was along the lines that the States can see this when it comes out for public review. I think this is problematic. I think we should try to determine if there is a way to get everyone more plugged in and involved. Texas has already written a letter. Oklahoma Congressman Mullen on the House Transportation and Infrastructure Committee is willing to entertain language we could try to put in WRDA. He is planning to write a letter. Is it possible to write a letter based on the position we have? The position we have just deals mainly with the Dakotas' natural flows issue.

Tony Willardson: There are probably sufficient policies, including the Governors' support for the primacy of state water laws, for us to write a letter. This is not the first time we've had issues with the Corps and their concept that they own the water. This has happened in Idaho and other areas, where they've looked for foregone hydropower revenues for any withdrawals from a Corps reservoir and similar issues. We should likely have a subcommittee look through these issues and come up with suggestions as far as different approaches we could take both with the Assistant Secretary's office and also with Congress.

J.D. Strong: Is that something that this subcommittee would work on and bring back to us in October to consider as a Council?

Tony Willardson: If it is consistent with existing policy, we could write a letter that Phil could sign. If we think it needs further action, Phil could call an emergency session of the Executive Committee to act on the letter via conference call.

Curtis Seaton: Texas is willing to provide our letter as a template to start with to look and see if it has enough common ground for the western states to move forward.

J.D. Strong: It's a good letter.

Phil Ward: We could move forward with a letter in the short term. We could perhaps use Texas' letter as a model. If we invite the Corps for a session in October, we need to make sure we have lined up our ducks and have a solid, clear message. If we need to, we can do work in the interim. That is my thinking. If not, a letter and an invitation would be fine.

Sue Lowry: Do we have any workshops lined up for Deadwood? Does this warrant more time, separate from the Water Resources Committee?

Dennis Strong: I think we'll need this to play out over the next couple of weeks. We should circulate the Texas letter and add comments as appropriate.

Tony Willardson: The Council will prepare a draft letter and circulate it.

Michelle Klose: We appreciate it.

Tony Willardson: Michelle, you had also asked a question about how the States define storage. We've been looking for a summary, and I don't think we've found one yet.

Michelle Klose: It was a short term question. We did not have anything formal put together on it.

Dennis Strong: If we're talking about a universal definition of storage, that could be challenging.

Michelle Klose: We're pushing basically for the Corps to defer to the States to work out those issues. Really it is the States that have their own water appropriation system. Even within the basin and with neighboring states they need to be able to work together. Our push is not necessarily to have a uniform policy across the West, but to recognize the individual states' rights, and then recognize that the states have to work together to address water appropriation issues. It is not a federal issue and it is not something that the Corps of Engineers should try to take over.

Tony Willardson: Would it be helpful for us to compile state definitions?

Michelle Klose: I think it would.

J.D. Strong: If nothing else, it might be helpful to show how impossible it is to have a uniform definition of storage, without trampling all over states' rights.

Dennis Strong: I think that could be handled relatively simply by sending out a request to the Committee and ask for each state's definition.

Tony Willardson: We can do that.

Michelle Klose: I wanted to mention one other thing. I'm also trying to work with the states in the basin to provide them information. We are trying to share information within the basin and see if there could be support within the basin as well. I'll see if we can get support from the Basin in time for the October meeting.

Tony Willardson: Michelle, do you have a sense of the Corps' understanding of the issues in the Southeast, like Lake Lanier?

Michelle Klose: I met with Lewis Jones, with an Atlanta law firm, at the ABA Water Law Conference. I think we are understanding a little bit better the issues that they have. They basically have return flows and when the return flow comes back in, it is a new set of stored water that would need to be recontracted. They believe that once they pay for it from storage, they are trying to work out a way that they can actually keep the return flows for other use. I'm not sure how that works within our appropriation system. We're also hearing a little bit about what they are trying to add into WRDA. What they have been drafting, and I don't know how broadly they have been sharing it, but it is very consistent to the position that the Dakotas have taken. Overall, it recognizes states' rights in water appropriation when the Corps is contracting for stored water.

Nathan Bracken: I spoke with Lewis, and he is trying to base (it) on our natural flows position. He has a tricky job ahead of him.

Dennis Strong: We'll discuss this again in October.

WYOMING WEATHER MODIFICATION PILOT PROJECT

Barry Lawrence of the Wyoming Water Development Commission addressed the Committee with respect to Wyoming's weather modification pilot project. Dan Reed accompanied Mr. Lawrence and he is the former chief scientist on the evaluation for the pilot program.

The Winter Orographic policy is an effort to enhance snowfall. The first necessary condition is storms. There must be airflow with sufficient moisture to develop snow over a mountain area. There are naturally-occurring ice particles that initiate ice in the cloud in time for them to collect and fall out as snow. Cloud seeding creates more numerous ice nuclei that function at warmer temps than natural ice nuclei. The two together form ice at an earlier time, and provide a better chance for precipitation to fall out as snow on a mountainous area. Snowfall is increased incrementally over what would occur naturally. Orographic clouds become more efficient at producing snowfall. This is a simple concept. It has been shown to be quite viable. The right conditions are the challenge and question, as well as how often they occur. All cloud seeding programs need to address these conditions.

The impetus for weather modification in Wyoming is drought. It is however, not a drought busting tool. Cloud seeding or weather modification programs are taking place in many western states and include snow augmentation, precipitation enhancement, and hail damage mitigation.

There have been many advancements in the technologies. In Colorado, there has been a push for modernized equipment and trying to actually mandate some weather modification operations. There is a lot going on across the West with weather modification technology.

In 2003-2004, Wyoming began looking into the viability of conducting winter snowpack augmentation. The results of a six-month feasibility study came back and said there were significant orographic events not being converted to precipitation. These results were consistent with a then recent National Research Council (NRC) report on critical issues in weather modification research: high resolution computer modeling of clouds and airflow; remote controlled ground-based generators to optimize seeding; and independent evaluations.

Wyoming's contractors began weather modification operations in Fargo, North Dakota, and their environmental permitting is done through Heritage Environmental in Denver, Colorado. Research and evaluation is done through the National Center for Atmospheric Research (NCAR) and the Desert Research Institute in Reno, Nevada.

A Technical Advisory Team (TAT) was formed. This has been a real win-win for everyone involved. It consists of research managers from various agencies who meet twice a year to share information.

There were many components that needed to be deployed in the field. Weather balloon launches are still used regularly for a variety of reasons including wind speed and direction, and temperature. Radiometer units have been deployed in three locations. They are passive devices that look for water in the clouds. Weather forecast models are run at NCAR 24/7. Additionally, there are precipitation gauge sites in the network. Thus, there is redundancy in the system with multiple gauges. SNOTEL sites in the study areas assist as well.

Wyoming has targeted the Wind River Range and the Medicine Bow and Sierra Madre ranges. Both are handled in different ways in terms of their operations. It costs about \$1.5 million per year to run the program. Utah, Colorado, and Wyoming are receiving funds from the Lower Basin states to help fund the program and studies.

A Colorado River basin supply and demand study was recently completed. He spoke briefly about the permitting required with the Forest Service. Permits are good through 2015.

There are several aspects to the evaluation process for understanding and quantifying the potential effects from seeding. For the study, they used a cross design. The study found that paired data for seeded and control cases in storm conditions affecting both ranges is the most efficient design.

The criteria for the cases includes: (1) the temperature must be at or colder than -8C; (2) storms must have supercooled liquid water content evident within the clouds; and (3) wind direction supports precipitation development over the target areas.

In summary, the Wyoming program operation uses 26 ground-based generators and a suite of scientific equipment that have been deployed across the three target areas. There is an independent evaluation of the seeding effects.

The final results from the Wyoming Weather Modification Pilot Program are expected in early 2015 and should yield a scientifically-sound approach.

Questions

Pat Tyrrell: Would you talk about your suspension criteria? What happened in 2010-2011 when we had a lot of natural snow?

Barry Lawrence: Right. When we have naturally occurring snowfall, we have suspension criteria. All western states that are using weather modification programs have suspension criteria. The Wyoming program is very conservative. We target to 120% of snow water equivalent. In 2011, we missed five additional storms by suspending operations six weeks early.

With the Forest Service and our special use permits, we're okay as long as we're doing research. If we go operational with this program, we would have to undergo the NEPA process again.

Tracy Streeter: The Kansas program operates using a high altitude aircraft seeding method. Can you make any correlation on a spring-summer program in Kansas that uses aircraft as opposed to ground-based?

Dan Reed: It depends on the model and the types of storms that develop. You could use that to help evaluate or assess or improve the situation. Our evaluation is different in that our program is winter orographic storms. It would not make sense for us.

Beth Ross (Intern): What happens to the trace chemistry of the seeding agent? Is it transferred and dispersed through the terrestrial environment?

Dan: The seeding agent that is used in the process falls out with the precipitation. That is why the BMI is looked at to determine the environmental impact on the ground. In some cases, it can be carried downwind, however with the dispersion it can be very difficult to detect.

Tony: Will you talk about how much you are harvesting, and the layer of atmosphere that you are targeting?

Dan: Compared to the water cycle it is a small amount. We're talking about a tiny amount of this small amount. It still can be a lot in terms of precipitation and snowfall.

Tony Willardson: What kind of lead time do you need in order to do the seeding? Do you have an idea of how many SNOTEL sites there are and how they are used?

Dan: We don't need a lot of lead time, but we typically know about six hours ahead of time. The SNOTEL sites are used more to validate and model the results. There would be about 10 SNOTEL sites, and they cover hundreds of square miles.

Dennis Strong: Does anyone complain about downwind effects, saying you're taking my water?

Barry Lawrence: From time to time.

Dennis Strong: Utah has been seeding for about 40 years. It creates a 5% - 10% increase in the snowpack. You need to have clouds to seed though. The more clouds you have, the better the impact of the cloud seeding will be. If you already have a lot of precipitation, this increases it more. It makes the case for reservoir storage, because otherwise this water might be going somewhere else. There are a lot of balancing factors in this process.

BORDER WATER ISSUES

Carlos Rubinstein briefed members on the 1944 Treaty with Mexico and the water deliveries under the Treaty. Texas is supposed to get a minimum of 350,000 acre-feet (af) per year from Mexico on average from the Rio Grande. In return, the United States gives about five times that amount out of the Colorado River.

Mexico has had a history of not complying with the 1944 Treaty. Texas does not have a delivery requirement to Mexico. The last time we had this problem was from 1992 to 2002. Under the Treaty, the water is accounted for over a five-year period. The target again is 350,000 af per year on average. That means one year they can be a bit lower, while the next year they could try to catch up, and so forth. But by the end of five years, they are supposed to deliver 1.75 million af of water minimum. The only

exception they have under the Treaty for not delivering that amount of water is if there is an extraordinary drought condition.

In 1992, Mexico started defaulting. So, if it was raining, they would call it Treaty compliance. If it was any type of dry, they would call it extraordinary drought conditions and not deliver water to Texas. The fundamental fact is that since 1992, Mexico has not set aside any water in their reservoirs for Treaty compliance. Last year, Mexico failed to deliver water as agreed to the United States. Deliveries were well below the average levels required, but Mexico did provide to their districts 80% of their total allotment. This further goes to the fact that they are not setting any water aside for Treaty compliance.

During 1992-2002, Mexico failed to deliver in excess of 1.5 million af of water. There were substantial losses to agricultural infrastructure in Texas. In some counties, it cost 40% of their ag production. Those are significant impacts. There is an interesting mix of crops in the Valley. Citrus was devastated. Sugar cane was also substantially impacted.

Working through the issues, in 2005, Texas got every drop of water back. We all committed that we would not let these water delivery shortages happen again unless in fact there were drought conditions that prevented Mexico from complying. It seemed to have worked okay until about three years ago.

Three years ago, Texas began to notice that deliveries were well under 350,000 acre feet, with no excuse for that. When we settled in 2005, we agreed to meet every year to determine for the record whether the past year was an extraordinary drought or not. We met for three years. All Texas got basically was "Trust us." Texas is requesting Treaty compliance. The delivery amounts this year are 6% of what the average needed to be. The climatological conditions indicate that Mexico has not been in extraordinary drought conditions since May 2012. Thus, there is no reason why they are not complying. Texas has raised concerns with the State Department and with the International Boundary and Water Commission.

One of the things that makes this action worse than the previous non-compliance is that, the Lower Rio Grande is the only part of Texas that does not operate under the prior appropriation system. Cities rely on the water being there. The Valley developed around 27 water irrigation districts. The cities relied on those districts to convey the municipal water from the river to their treatment plant. Water rides on something -- usually other water. In the Valley, it is usually irrigation water that it rides on, because 90% of the use in the valley is surface water irrigation. The question became how to convey the water from the main channel of the Rio Grande to the treatment plants of various municipalities, or would they have to buy "push" water? As bad as the situation became between 1992 and 2002, not a single community had to purchase push water. This year we have had five cities that have had to buy push water because their respective districts are out of irrigation water. These communities never counted on having to make these expenditures. This may bankrupt one very small community.

Texas A&M University completed an economic impact study of what this deficit is costing. Due to the water shortage, the area has lost in excess of \$220M in crop revenues, causing an estimated \$394M loss in agricultural output for the region and the loss of up to 4,800 jobs.

We had to work through this one time already. We are not ready to go through this again. Many letters have been written seeking treaty compliance. It has been in the press. It has attention in Washington, D.C. A bipartisan approach gets a lot of attention. Mexico is starting to get it.

Last time, it became apparent that we were being traded for something else. Mexico was not going to comply with the treaty unless they got something else. At that time, one of the issues was immigration. We don't know if that's what the trade was for or not. It appears that Mexico is using treaty noncompliance to get something else in return (e.g., immigration in 2005). The water became such a bilateral irritant in 2005 that it prevented any other discussions between Texas and Mexico on goods, without discussing water. Texas does not know what the water is being "traded" for this time in response to treaty compliance.

We know that Mexico is not in extraordinary drought conditions. They need to set aside water for treaty compliance, and deliver it to the mainstem. We have not yet received their plan for treaty compliance. We are hoping to get to a point where we can have a meaningful discussion.

The impacts are far worse than what Texas saw between 1992 and 2002. If Mexico continues this next year to treat their obligation in a similar way as they have the first three years of this current cycle, none of the 27 districts will be complete on their irrigation water. The core issue is how to convey the water from the mainstem to the cities, and that is adding the sense of urgency to this situation.

Questions

Betty Olson: What is the difference in conditions between this noncompliance period and the prior time? And why is it more critical this go round?

Carlos Rubinstein: In discussions we've had with Mexico, in 1992 – 1994, the Mexican government determined they had five different ways of allocating water. They took the five various ways of allocating water and harmonized them into one. This caused them to over appropriate their basins. That began the problem from 1992 – 2002. That has not been corrected, and they have continued to issue water rights, even though they recognize there was a failure in the way they did their appropriations. This time the shortage, the degree of compliance, is much more marked, coupled with the lack of deliveries from Mexico. The valley also was in a period of extraordinary drought conditions, so there was super high demand.

This time, we've had more demand, due to urban growth and turning farm land into subdivisions, Texas' growing population, drives up the demand, etc. All of these things contribute to the problem.

Obviously, since this is the second time this has occurred, folks start to say, we need a new treaty. My position is this is not a problem with the treaty. This is a problem with the willingness to comply with the treaty. Mexico needs to comply with the treaty. It's also important to note that Mexico does not recognize dates of water rights.

Pat Tyrrell: One of the solutions we've seen ricochet out of Washington, D.C. is a linkage between the Rio Grande and the Colorado. We've successfully worked with Mexico with shortage sharing in the Lower Colorado Basin operations on that river. The shortage affects seven states in the basin. Any linkage makes the Colorado River basin states nervous. We would like to avoid any link. The states recognize that you have an important fight here. The linkage is awkward for the Colorado River Basin states, and if we can avoid that, it will be much easier for those states.

Carlos Rubinstein: I very much appreciate your concern. Texas did not create the linkage. It's a matter of a "be careful what you ask for" kind of thing. The linkage was created as a result of a problem in Texas. The basin from Mexico flows into the Rio Grande. The portion that flows into the Rio Grande from Mexico contains all of the tail water from all of the agricultural production that takes place in Districts 25 and 26 and with it comes tremendous salinity. In 1964, the United States and Mexican governments recognized this was a problem and they devised a solution. They built a drain, or canal, system to prevent the saline water from reaching the Rio Grande, known as the Morillo Drain. It is jointly operated by both countries.

Mexico decided that even though they are getting money from the United States to operate it, they were not going to do upkeep or maintaining the capacity of the channel that is supposed to divert the tailwater. They would rather shut off the pumps in the Morillo Drain to conserve electricity.

This increases the linkages between the Rio Grande and the Colorado at the worst possible time. We raised this issue and it became a hot issue. Texas was invited to go to a meeting in Mexico City to talk to them about the importance of the Morillo Drain. The Bureau of Reclamation (Reclamation) was in attendance at the meeting. Texas found this a little odd as Reclamation has nothing to do with the Morillo Drain. It became evident that the purpose for which we were there is that Mexico wanted to tell us how much they appreciated the problems that the Morillo Drain is causing, and that they were going to do everything possible to correct that.

Mexico then pushed Texas aside, and said they wanted to speak to Reclamation about storing water in Lake Mead as a result of an April 2010 earthquake in the Mexicali Valley. Carlos said he has no problem with that. However, it took over two years for the Morillo Drain issue to be addressed. In looking for cooperative measures, you would think that the Morillo Drain issue would be dealt with in the same manner and the same expediency as that linkage. That is not where the linkage ended. It started that day. It became evident that the only reason Texas was invited was to do a trade of sorts.

As Texas has continued to raise the issue, the repeated response received from the State Department and IBWC is we learned a lot from historic Minute 319.

We were not there to talk about it, and we were not bringing it up. They have brought this up so many times to our congressional delegation that our congressional delegation then needed to be educated about historic Minute 319. This is where the linkages were created.

Mexico could correct this issue by recognizing that the treaty calls on them to treat Texas as a primary user, and they need to recognize us as a user. They therefore need to set water aside during their allocation processes, and they need to start complying with the treaty. Additionally, Mexico needs to (and this is completely apart from the Colorado Basin states) read Article 9. Article 9 gives Mexico a tremendous amount of latitude in how to manage water in their part of the basin that contributes to Texas.

I clearly understand your concern. The treaty is between countries, it is not between states. There is great value in saying that in the Colorado River Basin, we have never failed to comply. Yet the United States has repeated infractions from Mexico in the same treaty where the pay-off is.

Carlos mentioned that there is a linkage established with the 1906 Convention. This linkage does not impact Mexico in any way. It says that in return for the water that Mexico got under the 1906 Convention, they waived all rights to water between El Paso and Fort Quitman, Texas. The International Boundary and Water Commission has established an accounting where the minute the water spills over Fort Quitman dam, they are giving up that water back to Mexico. The 1944 Treaty never says that they are supposed to split it 50-50. This is a linkage that Texas has created. It is specific to the water that Mexico waived all rights to. It has no impact on any other state whatsoever.

Does that address your concerns?

Pat Tyrrell: It does. I think we want to help Texas with this fight because clearly you have a compliance issue to deal with. There needs to be some statement of support for Texas, as long as the linkage with the Colorado River is minimized. There is no finger pointing. The linkage is an obvious problem because we have never failed to comply on the Colorado River. We now have voluntary shortage that Mexico will take in certain conditions. We have never defined extraordinary drought in that basin, nor in the Rio Grande. It appears that we've had some success in the Colorado River Basin at the expense of Texas' compliance problems. I would like to be able to help Texas fight that fight without the linkage.

Carlos Rubinstein: I agree with you. One way to help is to look at the ten border governors conference held in Albuquerque, New Mexico in October 2012. The governors looked at all issues to help promote the borders. A joint declaration was signed by all ten governors that called on IBWC to ensure compliance by Mexico to deliver their part of the Treaty water. You can help us by pointing out that there needs to be compliance by both parties -- both countries. I get it, and I appreciate your points.

Tony Willardson: At one point, the Council had a border water issues subcommittee. We could reactivate it to look at some of these issues.

Jeanine Jones: Have you been able to leverage them through the NAD Bank process at all?

Carlos Rubinstein: Yes. We did that in the first deficit. We continue to look for all of those things. Geronimo was on the negotiating team, and he does not want this situation to get as bad as it got last time. Thanks for letting us talk about this today.

Michelle Klose: We also deal with border water issues. If you do get the group together again to deal with border water issues, we would be interested in participating.

SANDIA DATA REVIEW

Sara Larsen described what the Sandia energy and water study project encompasses. At previous Council meetings, we have only looked at a small portion of the whole study. It includes our water availability methods. They have done analysis on water for energy generation and different technologies; energy for water supply provision; climate change analysis; powerplant effluent temperatures; and biofuel analysis.

The overarching goal is to create a high-level screening tool by which to identify basins that might be good candidates for energy development. It was never intended to be a site specific powerplant

citing tool for the Western Electricity Coordinating Council (WECC) and for the Electric Reliability Council of Texas (ERCOT) . It introduces water as a constraint in their long-range planning models.

Sandia found they needed to get a lot of data from the states. They needed to get state water plans and access to state data through websites. They found that unfortunately this was not enough. Sandia's tried to retrieve data over the phone or via email from the states. They found that this was quite difficult, so they enlisted the assistance of the Western Governors' Association (WGA) and the Western States Water Council to try to make those connections. The contract that was drawn up with WGA for Sara's position (WaDE Program Manager) stipulates that we are to assist Sandia with their metric development. Sandia is required to contact the state agencies first, get their information, and use some secondary methodologies to come up with their metrics, things like using streamflow, or groundwater depletions reported, USDA data, estimates of how much agricultural water might be converted, and so on. These are the secondary methods used to estimate what might be available.

Because Sandia was also working on a time line to get this data into WECC's models, they opted to ask some of their sister labs for assistance. These entities are all working for the same play book. When these methods are not working together well, we have ended up with some significant problems.

In early 2012, the WSWC was asked to help convene a water availability metric team, to look at development of the metrics, comb through the data, and come up with estimates of water availability. The team met each week for about ten weeks to go over the information.

Sandia put together the metrics, which were presented at the WSWC's Fall 2012 meetings. Afterward, some of the States felt their maps looked a little too blue. They wanted time to look at things more closely to find out where Sandia's data came from. Sara built an online review tool for the States to help facilitate this review. The States can go online, look at their basins, look at the methods, and also provide feedback directly to the Sandia team and ask for changes. The Sandia team is very willing to set any basin where the States deem water is unavailable for energy development to zero.

Six states have completed the review process, while four states are still reviewing their data. Where the States had adequate communication with the lab they were assigned to work with, the estimates were good. On the other hand, where the states may not have had good communication, the data was coarse and less reliable. There was miscommunication with one of the labs on how much the states were to be involved in the initial round of data generation. Those states assigned to the Idaho National Lab have encountered a rough process. The Idaho National Lab (INL) used a different process (streamflow), which coupled with a clerical error by the Lab led to inaccuracies. This has been a headache for those states. The states assigned to INL have had to spend additional time in the review process. One upside of the review is that these mistakes have been uncovered, and they are being rigorously dealt with by the Sandia team. Sandia very much wants to fix the errors, and recognizes that the states are best at evaluating their data.

We have discovered that multiple agencies interfacing one-by-one is not the easiest way to promote effective communication or to reliably retrieve data for the study. These issues highlight why the WaDE project is needed. WaDE allows the states to share this kind of information quickly, easily, and effectively in a uniform manner, and avoids the communication issues. There will be more studies just like this with the same difficulties. We need to put the data horse (WaDE) ahead of the study cart (Sandia).

For those assigned to INL, we would ask that you not get too disagreeable over having to go through this process. It is difficult, but in the end, the information should be worthwhile. If any of the states are not satisfied with the data in Sandia's databases, and are not able to work through the process of getting the figures corrected to the State's comfort level, then the data will not be published in the Water Data Exchange. We have told Sandia that we will post their information for those states that are agreeable with the data.

Questions

Phil Ward: This has been a difficult process for a number of states. I think the communication piece and the assumptions Sandia made early on with the data they got from the states were not well presented. Oregon showed up basically as completely blue on the early Sandia maps. We gave them data which indicated when water was available in our state. Any time there was water available in any month, Sandia counted that as water available for our state. For example, if we told them there was water available in a basin in January, but not available in the remainder of the year, it still showed up as blue in that basin in the map exercise. We have worked with Sandia and particularly recently they have been very amenable to working to resolve the disparities. We are trying to correct those impressions. The flip side is that now we show up as mostly brown. Which may likely be reality for most of the western states. Oregon has spent about \$10,000 in staff time to get through the process. The hope for me would be that as we agree to assist a project the Council has become engaged in, that we can do it in a less time intensive way and that we won't have to dedicate so many resources to get things right. Sara, as you entered in and became involved in this process, it got much better. Certainly this was a bumpy process and it took a long time to get where we needed to be.

Jerry Rigby: When I first saw the map showing Idaho all blue, I wondered what Idaho that was from! It clearly was not reality. As Phil has mentioned, through the willingness of Idaho's Department of Water Resources to work through this, we hope to get the data corrected. It is unfortunate that we started out with the initial map because it is not good for anyone to see something that is not reality. They did not include things like minimum streamflows, wild and scenic rivers, and Idaho's requirement to send water downstream for fish augmentation. Those waters will show as in the river, but they are protected. They cannot be diverted. They are not available for energy and development. There are moratoria and wilderness areas that were not shown on the map. We started out in the hole to begin with. It's unfortunate that we started out in the blue and have had to work back. By the time we're done, I suspect Idaho will be brown. Otherwise, we've been litigating something for nothing. Gary Spackman is on the phone, and I would like his input as well.

Gary Spackman: Not being in attendance, I don't have the benefit of the personal interaction and contact that is helpful in these kinds of discussions. I hope that I can be measured and diplomatic enough in what I have to say.

I would like to call attention to a couple of statements in the presentation. Sara, I don't want to go on the attack. I hope I'm articulate enough to explain why there is a litany of reasons why Idaho said, "No." We are not saying "No, just because No!" We have articulated those reasons in a letter, and I know you were copied on the letter. This is a misstatement in the presentation. In the end, to say, "Please don't be so grumpy," I think we have cause to be grumpy. I'm a little astounded that there is not an apology to the states for the time and energy they have had to put into this effort at the tail end.

I'll confirm what Phil said, that we have been playing defense in this process, meaning that we are trying to defend against a statement that is at least tacitly supported by the Western States Water Council, that there is water everywhere in the state. I'm surprised that there was nothing in the presentation taking a greater share of responsibility for the problems that have been created. Out of the chute, those are the guns I will blaze with.

Beyond that, I will generally question the value of this particular effort, at least for the state of Idaho. Maybe we can refine it and put it in a form that has value to us, but I really wonder if it has any value, or if it has a greater propensity to mislead people who look at these generalizations about whether there is water available or not water available. The many variables within the hydrologic units, both in time or temporal matters, as well as spatial. Those kinds of specifics are not taken into account. I'm not sure right now whether this effort has value. Maybe to the other states it does, and maybe it does if those other states have been able to say they don't have water available for appropriation at all.

But, that may not be a responsible statement to make either. In Idaho, there are times when water is available, and there are places. However this information does not help people or capture that. I will leave my statement at that, and we can delve into the details if you want. For us to have to continue to play defense in this matter, we will have to dedicate a lot more time and energy to it.

Dennis Strong: I think the Council members made a decision to undergo this process some time ago, even if we didn't quite understand where the process would go. Many of us were concerned with the process. Any type of planning process that tries to identify a location and quantities of water that are available for anything, it can be difficult and suspect. We decided to go down this path. I don't believe this data has been released to the public. It is still under our control. Gary has raised some good questions. Do we want to continue to move forward? I think the discussion should be, should we continue forward? Are we going to get what we wanted? Have we started a process that is not going where we thought it was going? I don't know what options we have. Tony should speak to that. The staff has been doing a good job at trying to bring our concerns to bear.

Tony Willardson: I'll try to address that. Sara did mention this is part of a larger process. This is being funded by the Department of Energy, and in part by Federal Energy Regulatory Commission's (FERC) mandate on system reliability. The money is flowing in many different directions. Some of it is going to Sandia. As Sara mentioned, part of that is due to their expertise in different types of energy for electricity development, different types of plants, and how the water is used - - whether it is dry cooled or otherwise. With the Western Electricity Coordinating Council (WECC) and with the Electric Reliability Council of Texas (ERCOT), they are looking at system reliability and future water development. The Governors' interest is in renewables and creating renewable energy zones, which the western governors have identified.

The Western Governors' Association (WGA) contracted with the Department of Energy to look at water availability, and then the WGA subcontracted with the WSWC. The work was given to the WSWC by the WGA. The governors identified water availability as a constraint that should be considered as we look at future energy development. WECC is a private organization of all of the power companies. They have pooled together and have looked at different scenarios, and one of those scenarios was looking at the impacts of drought on energy development. They reviewed 10 year plans looking at existing powerplants that are being built or they expect to be built. We now have a first time effort to look at a 20-year plan for

these different scenarios. This is the first time they have included water availability as a constraint in their planning.

The grant was for one time money under the American Recovery and Reinvestment Act (ARRA). There is no guarantee that WECC will ever go through this process again. DOE looked to Sandia as the experts regarding water use by the different types of power plants. The WSWC recognized there were weaknesses in the water information.

WECC has run the model using Sandia's initial data. That was required by WECC as part of their timetable. Whatever comes out of this project at this point may be a paragraph or two in their 900 page report appendix.

Tony talked to WECC's modeler. We could have told them before we did all this that there would be some constraints in the Southwest on future energy development. The WSWC raised concerns before they even put the data into their model runs. The WSWC asked for more review, and we developed the mapping tool so that you could look at the different basins within your state.

This is a 20-year planning process. It is not a detailed siting process.

Phil Ward: So, this is part of a bigger process. We (the states) need to make sure the data they have for us is as good as we can get it, so that ultimately what is presented is as accurate as it can be for our states. That is why we have been willing to spend the time investment recently to keep the back and forth going with Sandia on this, and make some revisions. To their credit, and I think Sara's influence has been key with this, Sandia has been very responsive recently. I still share some of Gary's concern about the broad brush of the data, no matter how it is presented. Now Oregon is going to come out as a brown state, meaning there is not water available. Well, like Gary said, in certain times, instances, and locations, there is water available. But, when you're painting as broad of a brush as we've been having to paint with this particular exercise, it is difficult for the whole story to come out. I would encourage the WSWC as an organization to stay engaged in this process, and work to get the best presentation, the most realistic presentation of our states as we can, and then to deal with it from there on as we have to.

Tony Willardson: We will be dealing with USGS as they work on their National Water Assessment. They are looking at doing a water budget for each HUC 12 basin. We will likely have the same issues with the USGS as we start talking about how they define water availability as part of their water budgeting process. The WaDE effort is a real positive movement coming out of this effort, where the WGA is funding our development of an exchange so that we can provide them with state data, rather than having others tell us what our data is. That will provide benefits in the future.

John Simpson: I would echo what Phil said. The data does not always reflect the institutional restraints to water, at least in Idaho. This brings up the need for more communication between western states, within the state, and the people who are providing the information. At least in Idaho, we have been playing defense for the last couple of months. We have a limited budget from a resource perspective to put forth the manpower necessary to respond. Looking ahead, the restraints we have in Idaho could be a template for other states as well.

Tony Willardson: In addition to the WSWC working with WECC and the labs, our agreement with WGA also calls for a report on legal and institutional constraints. It will not necessarily be quantitative,

but qualitative. Gary, drawing from what you pointed out in your letter, there are a number of particular points which we will make in that report. You have to be careful in making determinations. That is a product which the WSWC will be doing over the next several months.

Jerry Rigby: This does throw the burden back on states, and it is unfunded. Is there a way to push the programs to help fund the states in their efforts?

Tony Willardson: The WSWC has worked to secure a grant from EPA. There are five states where we will be able to provide some money as a result of this grant; namely, Texas, Oklahoma, Oregon, Idaho, and Washington. These funds will help those states connect to WaDE, and will help them make the data available. After this initial grant, we may be in a position to secure additional funding to get other states connected.

Gary Spackman: I may be the agitator in the group, and I apologize. Under Tab I of the briefing materials, the first page has a summary entitled, "What is the Sandia Data Review Site?" It lists four purposes. The first purpose listed is for state and regional water planning. I don't see that we would ever use this for state water planning. When we talk about and label maps as water available for appropriation, does it talk about energy? The next bullet point is local development planning. Is there some intent that this would be used for local development planning by local governments? I doubt it. I thought the focus was on water for energy. What are the maps and what is the information that is to be published and sent out? It is generally labeled as unappropriated water that is generally available for whatever purpose. Built into the information that is being sent out is a generalization and an expectation that this information would be used far beyond what its original purposes were for. I think we need to pare it back to its original purpose. From my perspective, it goes way beyond that.

Secondly, I'd like to ask very directly, are we interested in getting money? Or are we interested in producing information that is valuable? If what we are getting or what we are doing with it is not of value, then maybe we need to rethink what we are doing.

Tony Willardson: I appreciate those comments, and I think you've made some good points. I cannot tell you all the moving parts of this contract with DOE and where they are going. In addition to looking at water for energy, they were also to look at what will the impact of energy development be on traditional water uses. In other words, they were looking broadly at: What are our demands? What are our demands for municipal and industrial use? What will happen in agriculture? and How does energy fit into that picture?

To repeat, the WSWC did not go looking for this agreement or the money. The governors came to us as the water experts, and asked for our assistance. We hope that it will be useful in the future as we can improve the data that is available. We struggled with the WGA staff to let them know that not all states have water availability information at hand. The states may have a water plan, but there is a good deal of data that is not available. There is not a consistent ongoing effort to develop the information. The WSWC tried to point out to the WGA staff that there are a lot of holes and gaps in the data, and we cannot answer all of the questions they want to answer. I think the WGA thought there would be information available for local governments and others that would be useful. We are trying to point out to them that we don't just go out and develop information. When there is a water right application in a specific case and basin, then you look at water availability. But all of our member states have not gone out and looked at all of the basins and said this is the water that is available in those basins. That is what

Sandia tried to do. I agree that we are doing some damage control, so that their data does not look like it shouldn't. We also don't want to say there is not water available for economic development through these maps either.

Phil Ward: That is the flip side of the coin. As Oregon has turned our map from mostly blue to mostly brown, what message are we sending? Again, there are ways to acquire water or to develop water. That is an interesting challenge. When something is presented with such a broad brush, is it of real use?

Tony Willardson: I would be interested in receiving your costs and an estimate of the staff time, so we can pass the information along. It is not insignificant.

Dennis Strong: We've kicked that around. In Utah, we are using some of this information in our state water planning process. I think there are still some advantages. It is not all just about what they want. Some of it is about what we can use. When we started this process, some of us said that the water for energy is not unappropriated water. I hope that comes out in the summary.

Sara Larsen: I apologize for making light. It was not my intent.

WaDE UPDATE

Sara Larsen related that the WSWC has been talking with a lot of federal agencies and others that are interested in sharing data, including CUAHSI and the National Groundwater Monitoring Network. If a state chooses, they can share information using the WaDE portal. We hope to be able to share some of the streamgaging and groundwater elevation data through the WaDE portal. WaDE is a data exchange, and Sandia would be an application that sits on top of WaDE. Agencies may use the data to develop policies.

The States serve data while Sandia is the westwide water availability analyst. The task is to develop a schema so we can share data. WaDE assembles estimates from state agencies using a common data schema. Sandia is using models, maps, and planning efforts (metrics) to develop their model. The WSWC is tasked with developing a schema and portal for sharing state water data. The states are developing water data and adapting it to the WaDE schema. Sandia is developing water availability and demand datasets for WECC and ERCOT.

The WSWC hopes to launch the portal with two to three states and Sandia data, however that is contingent upon the result of the discussion just held. The WSWC wants the states to help in deploying the WaDE system within their own IT departments, and work to adapt their data to the WaDE schema. Sandia would like to debut their dataset viewable with a series of maps accessed via the WaDE portal. Again this is contingent upon the states' comfort level with the data.

The timeline for 2013 tasks has been adjusted. The WSWC will start the WaDE deployment with two states, Utah and Wyoming. We need 1-2 more states that have SQL databases to volunteer for this process. The Energy-Water Workshop report has been published, which summarizes the talks and discussion held April 2, 2013 in Denver, Colorado. The State Water Program Planning Executive Summary and a State Water Program Capabilities Assessment survey matrix are included under Tab J for

review. Please let Sara know if you need to have changes made to the matrix. Not all of the states have yet responded.

The WSWC does not want to unfairly burden the states with WaDE deployment. Sara and Tony have conducted some scope of work meetings with several states to assess the costs. The WSWC would like to conduct scoping meetings with the remainder of the states, which will take a couple of hours via webinar with the state IT folks.

Sara just received word that the National Environmental Exchange Network (NEIEN) grant application was approved. This will provide funding for five states to deploy WaDE. Those states (Washington, Texas, Idaho, Oklahoma, and Oregon) will have three years in which to complete the WaDE deployment. A portion of the funds will also be used to continue funding Sara's position for a year and a half. Sara is looking for a state to volunteer to apply for a FY2014 grant. We would hope that a significant portion of that funding would then go to the remainder states to assist with WaDE deployment. The Governors are looking for this information. We have done work on water transfers. All of the issues the Council deals with rely on data.

Tony Willardson remarked that the WSWC is not asking the states to change the way they gather their information. We are presenting a framework that hopefully can be used as the states make incremental changes that then will be able to fit into the schema. Eventually, region-wide, we would be able to provide consistent information for decision making purposes. The Governors are interested in knowing what the trends are in the West. Most of the issues the WSWC deals with begin with data. We will be able to provide assistance to the states through the EPA grant, and possibly in the future through a USGS grant. We appreciate all those states that have participated thus far. We understand how difficult it is.

GAO WATER REPORT

Elizabeth Erdmann thanked the WSWC for allowing them to join the meeting, and apologized for not being there in person. We appreciate the arrangements to allow us to join you by phone.

For those unfamiliar with the Government Accountability Office (GAO), it is an independent non-partisan Legislative Branch agency that investigates and oversees how the government spends taxpayers' dollars. Most of our work is done at the request of Congressional Committees. We are joining you today to talk about work that is relevant to work you all do every day of the week.

In 2003, GAO issued a report looking at freshwater supplies, and essentially found that the demands on a number of basins were growing in part due to population growth and a shrinking resource. There were a number of potential federal actions that the state water managers identified that would be helpful.

As a follow up, last fall we were asked by the ranking member of the House Natural Resources Committee to update our 2003 report. Our efforts are focused on three main objectives: (1) How have the states and stakeholder perspectives changed over the past decade with regard to freshwater availability and use; (2) What are the drivers that have affected those changes?; and (3) How does the federal government support state water management efforts and what can it do to enhance their effectiveness.

We will look at the anticipated water availability and use over the next 10 years, and try to identify key sectors of use going forward.

As noted, we have a few ways we are trying to get at the data, but most essential is a survey of all 50 states. That effort is now complete with a 100% response rate. We are currently analyzing the results. I'm sure that many of you were the respondents to that survey, and I cannot thank you enough for taking the time to complete the survey. In addition to the survey, we are conducting a literature review and conducting a variety of interviews with other informed key organizations, including federal and state agencies, environmental groups, and other water resource stakeholders.

We wanted to introduce ourselves to you and talk about our activities. We welcome the opportunity to speak with you on the conditions in your state and information that would fit well with the focus of our review. We would be happy to set up follow up contacts with any of you.

Tony can provide email contact for Lisa Vojta, Analyst in Charge on the current engagement. GAO would be willing to report to the group after this study is complete.

Lisa has been taking lots of notes on your conversation and discussions at this meeting. Please reach out to us. Water availability is a very important issue.

NOAA BRIEFING MATERIALS

Tony Willardson reported that the WSWC has consistently been very supportive of basic data gathering. NOAA has provided some funding to the WSWC to develop some briefing materials for NOAA indicating the importance of basic data gathering. Due to challenges with the sequester for NOAA, a Congressional briefing has not yet been scheduled. It is anticipated this will be held in the near future.

Jeanine Jones and the California Department of Water Resources prepared a brochure on atmospheric rivers and the emerging technology that is available and how it may be used for water management on the coast as well as inland. Another brochure is in rough draft that will present the hydrologic cycle and the federal agencies participation in providing information -- USGS for streamgaging, NRCS with snow surveys, and NOAA with precipitation and atmospheric rivers information.

The WSWC has taken specific positions in support of NOAA's National Integrated Drought Information System (NIDIS) and has supported the RISAs. We will look to Council members for assistance in reviewing the materials.

CDWR/WSWC DROUGHT PREDICTION AND IMPACTS WORKSHOPS

Jeanine Jones provided background on a workshop that was cosponsored by the California Department of Water Resources (DWR) and the Western States Water Council on drought prediction that was held April 29 – May 1, 2013. She noted that the purpose was to highlight the need for drought

prediction with a particular emphasis to encourage NOAA to keep doing more in that subject area from a research standpoint.

NOAA released its draft strategic plan for climate research recently. The plan mentioned drought prediction and research. NOAA currently predicts drought through an ensemble of weather and climate models that are run through the Climate Prediction Center. At the workshop, we talked about what other approaches and techniques are available that might be used. One area that has been preliminarily identified is the atmospheric river research. We are encouraging the federal agencies to follow up on this research.

Specific outcomes of the workshop include sending letters to appropriate Congressional folks in support of NIDIS, and emphasize the predictive aspect. The letters have been drafted, but not yet sent. We also talked about a letter to the acting head of the National Weather Service focusing on the idea of mid-term weather forecasting, which extends the traditional 5-10 day forecast to possibly a month. This letter needs to be added to the "to do" list. Additionally, we talked about further implementing the observing system west-wide. Marty Ralph, one of the lead developers of that observing system, has just retired from NOAA, and is moving to Scripps to head up a center for extreme weather research. Both British Columbia and Mexico have interests in the forecasting.

The California DWR is also cosponsoring a workshop scheduled for August 5-7, 2013 in San Diego, to discuss measuring, quantifying, and reporting the impacts of drought. Jeanine encouraged folks to participate. The motivation for this is knowing that in the 2012 Midwest drought there were lots of large impacts. California is in a second dry year. Quantifiable impacts to the state will be seen in the third year. The metrics information is difficult to find. Many of the federal databases, especially those USDA has for agricultural impacts, can be very useful. For example, low interest loan payments that have been made after disaster designations, emergency livestock support programs that were authorized in the Farm Bill, and payouts made for those kinds of metrics.

Right now, you have to call individual state offices, and many times the information is one-to-two years in arrears. This is something that WestFAST could help us work on -- getting the information that is already available in one place and putting it on the federal drought website, for example. BLM has grazing impact data as well that would be useful to have in one place.

We hope to identify the data that is out there, what is available, the time lines associated with the data, and how can we move the ball along with respect to getting states access for their own reporting uses.

CALIFORNIA IRRIGATION MANAGEMENT INFORMATION SYSTEM (CIMIS)

Jeanine Jones provided a brief description of California's irrigation management information system (CIMIS). It has been operational in the state for about 25 years. There are about 140 weather stations that collect a suite of observations, a few of which include soil moisture. These stations input their data into the computers in headquarters. This is used to create irrigation scheduling information. It allows a grower to call in from a laptop or cellphone and download the evapotranspiration data information they need for crops in their particular area. We partnered with NOAA to blend that data with satellite observations, and we now supply the information on a 2 km grid basis throughout the entire state.

California has been approached by the Bureau of Reclamation to see if they can expand that capability to other states. With the satellite information and their program set up, they can actually cover the whole United States, although they don't have the ground truthing. Reclamation has inquired about doing this in parts of Arizona, where the AZMet agricultural network is run by the university, which provides ground truthing. We have been asked about the Pacific Northwest as well.

California is willing to work with other states or Reclamation to expand coverage to other states, with California providing hosting service, should that be of interest.

WSWC STRATEGIC DIRECTIONS

Phil Ward passed around the summary notes that stemmed from the future directions discussion held in Denver last April. The discussion was good, and Phil particularly appreciated Roland Westergard and Hal Simpson talking about the history of the Council, and their perspectives. Phil called attention to Item F, entitled Future Priorities. Phil underlined the items he sees as key priorities for the WSWC organization in the years ahead, which included the following: (1) protecting state rights primacy as applied to water; (2) drought and water scarcity solutions -- which Phil would actually divide into two separate areas; (3) infrastructure; (4) advocacy at the federal level on behalf of state issues and priorities, which seems to be an ongoing and historic mission of the WSWC; and (5) facilitating coordination and communication between the states.

Phil requested that members look at these priorities, and please see where they fit with your own priorities as states, and be prepared to provide input back either at a future meeting or through the survey. Tony has created a survey, and we are trying to slim it down a bit.

ACWI SHRINKING BUDGET WORK GROUP

Sue Lowry referred to Tab P in the briefing books, or page 294 in the electronic version. This summarizes a survey that was dealing with the shrinking budget assignment. Anne Castle requested that the Advisory Committee on Water Information (ACWI) and about 20 NGOs that have a role with the ACWI group help in making decisions for funding at the Interior Department, particularly for USGS monitoring program-related topics. A handful of ACWI members have had calls every other week since December 2012, and they are trying to get something to Anne Castle on the budget. The draft report from this group is available online. You can Google ACWI Shrinking Budget and you'll get to the report.

The focus of this group has been to determine what the federal responsibility is. During times of shrinking budgets, and we recognize that Interior does not have enough money to do everything we would like them to do, what is the federal component of that networking program? The report has been broken down into three components: observe, understand and predict. We all believe basic data collection is the primary focus and most crucial item. The "understand" piece is interpretive studies and data analysis of basic streamflow science. "Predict" is the ability to forecast and taking the analysis one step further.

Collect data first is the overall message and streamgaging is a priority. The national groundwater network folks have been quite vocal in this working group. In a shrinking budget, can we afford to

launch into another national network, when we're not doing a very good job of funding the existing network? We believe the Cooperative Program is very important, and the budget should reflect this.

Tony Willardson commented that it didn't take long to fill out the survey online. There have been over 50 responses. We may not completely agree with the final ACWI recommendations.

Tony Willardson: The Advisory Committee is looking both at short term and long term needs and priorities. Some of the decisions are hard decisions. If there are efficiencies that we can discover, obviously we would like to do things less expensively. We have been trying to do that with streamgaging for over a decade. Some of the decisions with respect to what funding areas need to be cut will be difficult. Anne Castle is looking for advice on where budget cuts would be least disruptive.

Jerry Rigby: Keep the focus and funding on streamgaging. I don't advocate for another groundwater network.

Sue Lowry: Right. We're hopeful that the report will make that point.

Tony Willardson: We spent a lot of time at the beginning of this process determining what USGS does as part of their program. USGS is spending in the neighborhood of \$8 million to look at fracking issues. Some may think fracking is an important area for budget dollars. The WSWC does not see this as a priority issue. It is that kind of feedback that we would like to give.

Phil Ward: It seems like in recent years there has been an emphasis away from the Cooperative Streamgaging Program by the USGS. Some of this seems to be coming from the USGS itself. Is there even an openness to hear what we are saying? The Council has consistently presented the message that basic data and the Coop Program are important, but it hasn't seemed to yield any significant results.

Sue Lowry: We have gotten some benefits from NSIP.

Tony Willardson: If you look at the survey results, you'll see how folks responded. A large number of western states support 70% funding for data and 30% for assessments. However, the results may not be entirely complete.

Sue Lowry: There are some states and some parts of the country that feel they can raise the money to put in streamgages, but they need the USGS' neutrality in working through the data. We have tried to be sensitive that it is not consistent across the board.

Dennis Strong: It behooves us to talk to our Congressional representatives about some of the requests that they make.

FEDERAL LEGISLATION UPDATE

Tony Willardson remarked that Nathan Bracken prepared a legislative update, which is found under Tab Q in the briefing books. It covers both water quantity and water quality legislation.

- a. Reclamation State Emergency Drought Relief Act -
WSWC has supported reauthorization of the Act. Legislation has been introduced in the Senate and a hearing has been held. Legislation has been introduced in the House. This goes back to 1990, and the WSWC hopes to see it reauthorized.
- b. National Integrated Drought Information System (NIDIS) Reauthorization -
The authorization has expired. A bill has been introduced in the Senate (S. 376), but no bill in the House yet.
- c. Reclamation Conduit Hydropower Development Authority and Hydropower Regulatory Efficiency Improvement Act of 2013 -
Legislation has been introduced by Senator Wyden. WSWC has written supporting the bill. A bill in the House has passed. It is pending in the Senate. For both bills, the WSWC wrote a joint letter with WGA in support of streamlining the regulation of hydropower.
- d. Water Resources Development Act -
WRDA has passed in the Senate, but has yet to be brought up in the House. The Council supports funding for the Water Infrastructure Financing and Innovation Authority (WIFIA). There are some concerns about whether that would take money from the State Revolving Funds (SRFs). There is separate legislation that would create different financing mechanisms. Infrastructure is a priority for all of our states.

CEQ PRINCIPLES AND REQUIREMENTS

Tony Willardson noted that CEQ's principles and requirements have been released. The agencies are in the process of developing guidance as to how to implement them. The WSWC commented on the previous CEQ guidelines, as well as the new guidelines. We essentially said the guidelines had not changed, and our position is that the project with the highest national economic development score is not necessarily the best project. One has to consider the environmental impacts, as well as some of the social and regional effects.

This is primarily on the agenda so that members can let staff know if you have concerns.

FY 2013-2014 DRAFT COMMITTEE WORK PLAN

The draft 2013-2014 Committee work plan is included under Tab E in the briefing books. Dennis Strong asked for any questions or comments.

Walt Baker suggested we hold a joint water quantity/water quality session to look at infrastructure financing. We expect to hold another infrastructure symposium next year, and will include water quality as part of that symposium.

For Item 1.C., Dennis Strong suggested that we ought to be using state data in what USGS does. He also raised a question for Item 1.D., in which he noted that it appears the WSWC is offering to help pay for some SNOTEL sites. Are there states that are contemplating paying? There are some states that fund streamgages.

Tony Willardson replied that the Colorado Water Conservation Board has funded some SNOTEL sites. New Mexico would also like to see more coverage. The installation of the sites is about \$25,000, so it is not a huge investment. Because of budget cuts, the NRCS does not have the staff to install the sites, nor to monitor and continue to report on the sites. Idaho has equipment upgrades in-house, but no one to install it.

Dennis Strong's question is whether or not the WSWC is supportive of the states offering money to the federal government for snow surveys?

Under Item 2, the Infrastructure Symposium, the last paragraph should be reworded to indicate that the Water Resources Committee will coordinate with the Water Quality Committee and assist the WSWC.

Dennis further commented that for Item 5 on WRDA, there is some work being done on non-market economics, the value of water, which is almost like a social value. They are doing non-market economics of the value of the Grand Canyon, and those kinds of things. Work is now being done on the non-market value of water. What does water do to our economy independent of the cost? That may be something we may wish to consider or at least be informed about as those studies are pursued.

OTHER MATTERS

Tony Willardson passed around information on Landsat with respect to the economic benefits. Anne Castle has asked the Advisory Committee on Water Information to look at the future of Landsat. There is a strong feeling from the University of Idaho that we should support a clone of Landsat 8 being built as soon as possible, and get it launched. There are some value questions as to whether or not there are alternatives. I have not seen any alternatives at this point that provide the same information. It has been estimated that there maybe as much as \$250M/year in benefits from the Landsat program. We've looked at the cost of measuring groundwater wells on the Snake Plain. Idaho was spending \$500,000 per year to do that using a power coefficient to estimate water use. It is estimated \$25 - \$75 million/year could be saved by using a westwide approach or well metering. Landsat to measure groundwater use as opposed to a power coefficient.

The Landsat 7 design life is only about 3 more years. The cost estimates are in the paper Tony presented at the UCOWR Conference. He passed around copies of the paper.

There being no further matters, the meeting was adjourned at 11:35 am.