

**MINUTES
of the
WATER RESOURCES COMMITTEE MEETING
Talking Stick Resort
Scottsdale, AZ
October 9, 2014**

Table of Contents

Welcome and Introductions	3
Approval of Minutes	4
Colorado River Basin Basin Challenges: Supplies and Demands	4
Freeport McMoRan – Hualapai Settlement	7
WGA Drought Forums/Water Related Activities	8
USFS Groundwater Directive	9
CDWR/WSWC Drought Activities	18
CDWR/WSWC/JPL Remote Sensing Workshop Report	19
National Science & Technology Council/Landsat Update	21
Water Data Exchange (WaDE) Update	21
Western Water Resources Infrastructure Symposium	23
FY 2015 Federal Funding Outlook	23
Federal Advisory Committee on Water Information	23
Other Matters	24

**MINUTES
of the
WATER RESOURCES COMMITTEE MEETING
Talking Stick Resort
Scottsdale, AZ
October 9, 2014**

MEMBERS AND ALTERNATES PRESENT

ALASKA	--
ARIZONA	Michael Lacey
CALIFORNIA	Jeanine Jones Tom Howard
COLORADO	James Eklund Trisha Oeth
IDAHO	Jerry Rigby John Simpson
KANSAS	David Barfield
MONTANA	Tim Davis Anne Yates (by phone)
NEBRASKA	Jesse Bradley
NEVADA	Roland Westergard
NEW MEXICO	Amy Haas Greg Ridgley
NORTH DAKOTA	Todd Sando Jennifer Verleger Michelle Klose
OKLAHOMA	J.D. Strong
OREGON	Tom Byler
SOUTH DAKOTA	Kent Woodmansey
TEXAS	Carlos Rubinstein

UTAH

Walt Baker
Eric Millis
Norm Johnson

WASHINGTON

Stephen Bernath (by phone)

WYOMING

Pat Tyrrell
Sue Lowry
Kevin Frederick
Chris Brown (by phone)

GUESTS

Carlee Brown, Western Governors' Association, Denver, CO
Chris Carlson, USDA Forest Service, Washington, DC
Curtis Seaton, Texas Water Development Board, Austin, TX
Alex Davis, Colorado Parks and Wildlife, Denver, CO
Bruno Bowles, Southern Nevada Water Authority, Las Vegas, NV
Stephanie Granger, NASA/JPL, Pasadena, CA
Paul Blanchard, Northwest Pipe Co., Vancouver, WA
Sandy Fabritz-Whitney, Freeport McMoRan, Phoenix, AZ (by phone)

WESTFAST

Patrick Lambert, Federal Liaison, Salt Lake City, UT
Becky Fulkerson, Bureau of Reclamation, Washington, DC
Jean Thomas, USDA Forest Service, Washington, DC

STAFF

Tony Willardson
Nathan Bracken
Sara Larsen
Cheryl Redding

WELCOME AND INTRODUCTIONS

Tim Davis, Chair welcomed those in attendance at the meeting.

APPROVAL OF MINUTES

The minutes of the meeting held in Helena, Montana in July 2014, were moved for approval by Roland Westergard and the motion was seconded by Carlos Rubinstein. The minutes were unanimously approved as presented.

COLORADO RIVER BASIN CHALLENGES: SUPPLIES AND DEMANDS (Roundtable Discussion)

Tim Davis remarked, to put this in context, there are 40 million people served by the Colorado River and its tributaries. The watershed of the Colorado River encompasses 246,000 square miles of southwestern North America, making it the seventh largest on the continent. About 238,600 square miles, or 97 percent of the watershed, is in the United States. It serves 22 tribes, contains seven national wildlife refuges, and eleven U.S. National Parks. In the last water year, Lake Mead dropped to historic lows.

Each of the seven states that comprise the basin provided a brief overview of the supplies and demands in their respective state.

Wyoming

Sue Lowry commented on the state's weather modification program, which has been ongoing in southern Wyoming for about the last ten years. The findings of the study will be made available in December. The weather modification efforts benefit the Colorado River. Because the infrastructure was already in place and weather modification was identified as an option to augment basin supplies, the State of Wyoming agreed to kick in a portion of the weather modification funds in order to keep the program running this upcoming winter.

Colorado

James Eklund noted that Colorado is heavily involved in the condition of the Colorado River system, as is Wyoming, Utah, and New Mexico. The two operating "buckets" that control how the river works are Lake Mead and Lake Powell. For those of you not familiar with the basin, Lake Mead is the operating reservoir for the Lower Basin States of Nevada and Arizona, and California. Lake Powell sits right above the dividing line between the basins, right above Lee's Ferry, Arizona. It operates essentially as an insurance policy for the Upper Basin States. The higher the level of the water in Lake Powell reservoir, the better for the Upper Basin States, and really the system as a whole.

Reclamation just announced on their website this morning a conservation pilot program that includes about \$2 million from each municipality (Denver Water in the Upper Basin, and Las Vegas, Phoenix, and Metropolitan Water District in the Lower Basin) and \$11 million from the Bureau of Reclamation being put into a fund. They will perform pilot projects on "demand management," which is basically trying to reduce consumptive use, so that the reservoir

elevations can be higher. The only way to do that is to reduce demand and the contracts for water out of Lake Mead.

In the Upper Basin, we have three approaches we are looking at to try to prop up the levels in Lake Powell so that it doesn't go below really critical elevations. Those are the operations of reservoirs higher up in the system, known as the Colorado River Storage Project (CRSP) reservoirs. These CRSP reservoirs are Flaming Gorge, which straddles Wyoming and Utah, the Aspinall Unit in western Colorado, and the Navajo Reservoir in New Mexico. These three reservoirs are used to help manage the system. Demand management and reoperations, as well as a suite of other things, such as weather modification, cloud seeding and phreatophyte removal. This will help them get their arms around managing the system. All of the Colorado River Basin states are working hard to get on the same page and move forward with a concept that will help their reservoir elevations.

The reason this is important is that if the water levels in Lake Powell drop below the minimum necessary to generate power, you cannot turn the turbines. In turn, if you cannot turn the turbines, you cannot produce power. If you cannot produce power, you cannot fund the Upper Colorado River Recovery Programs and the San Juan River Endangered Fish Recovery Program. Effectively, you have impacted the entire power grid, and power prices in rural parts of the Rocky Mountain West. You get to a situation where you can't get water out of the reservoir any other way than to use the by-pass tubes around the side of the dam. That creates cavitation, and the Bureau of Reclamation does not like that. Nobody likes that. Those tubes can only get about 5 Maf out in a given year. The Upper Colorado River Basins obligation to the Lower Basin is a 7.5Maf average. If we can only get 5 Maf out of the reservoir, then we eat into the "bank account" or the "insurance policy" that the reservoir functions as. We've got to be engaged in this suite of actions otherwise known as contingency planning.

Utah

Eric Millis stated he believes Utah has a good allocation of the river. We are using about 1 Maf now, and we have 1.4Maf allocated. Thus, we have some water development room for the future. We have been through several years of drought. The droughts cause issues with our interests in the water. Utah has some additional municipal and industrial water uses, agricultural use, as well as some Indian water right settlements. Climate change may cause things to get more intense - - as we get less snowpack and earlier runoff. We are trying to come up with plans for additional storage. Drought contingency planning is a plan in our pocket for how to continue to manage the system. The states are working together quite well. The states cooperate and the Upper Basin States seem to work well together. We need to "marry" some of our plans and efforts with the Lower Basin States.

New Mexico

Amy Haas commented that James Eklund did a great job in terms of outlining the components of contingency planning. She added that, with respect to looking at the operational flexibilities of the CRSP units, the reservoirs that James mentioned, those are all going to have to

be done within the context of the existing legal structures, and contractual relationships with users. With the existing legal framework, we are looking at those options.

Arizona

Mike Lacey noted that Arizona is trying to resolve Colorado River Basin plans from a total basin perspective. We may experience shortages in 20 years. Arizona has been banking water for future use and promoting water reuse. It is challenging.

Nevada

Roland Westergard deferred to Bruno Bowles of the Southern Nevada Water Authority. Mr. Bowles stated that Nevada is putting in a new intake pipe at the bottom of Lake Mead so that they can draw water from as low as 860 feet in elevation. We are at 1081 feet right now. That is 6 feet from the first shortage elevation, which is 1075. Water banking has been going on for a long time. We have banking agreements with both Arizona and California. We have been recharging the aquifer for quite some time. Nevada has conserved enough water now that we are not using our full allocation of lake water. We have conserved enough water to make it through the first two levels of cuts. Many folks do not realize the enormous amount of power that is generated through both Lake Powell and Lake Mead. Not only is there a water issue, but also power issues.

California

Jeanine Jones remarked that historically the Colorado River has been a reliable supply, in terms of the mainstem, unlike the rivers from the Sierra Nevada in California where they have experienced degradation of the ability to meet both water project allocations and requirements from other regulatory entities. The Colorado River is now getting to the point where it too will likely start to experience a paradigm shift, at least in the Lower Basin. The Bureau of Reclamation's recent study shows shortage to states in the Lower Basin in the 30% range. Historically, there has never been any shortage in the Lower Basin. Shortage then becomes something that happens, which has not been the case.

In 2007, states wrapped up a longstanding discussion with Reclamation that resulted in a Record of Decision for new operations criteria for Lake Mead and Lake Powell, and established guidelines for surplus and shortage criteria. Putting that Record of Decision into place was done with the idea that it would reduce the risk of shortages, and hopefully lessen the impacts. The guidelines remain in effect until 2025. We have had discussions about the follow-on actions.

The Lower Basin states have been discussing options to mitigate the shortage, and we have been very active in studies with Mexico and implementation of Minute 319. That is only a temporary or interim action, so it likewise will require further negotiation. The entities in the United States are looking at storing extraordinary conserved water in Lake Mead. Mexico is looking at doing the same thing with their allocation. There will be a lot of follow up discussions on these actions in the future.

Jeanine pointed out that this year, they are celebrating the tenth anniversary of the Lower Colorado River Multi-Species Conservation Program, which was created to balance the use of the Colorado River water resources with the conservation of native species and their habitats. The program involves 57 entities, including state and Federal agencies, water and power users, municipalities, Native American tribes, conservation organizations, and other interested parties. It was quite an accomplishment to get this into place.

FREEPORT McMoRAN - HUALAPAI SETTLEMENT

Sandy Fabritz-Whitney, a former WSWC member, now represents Freeport McMoRan, Inc., an international copper and gold mining company. She was unable to attend personally, but addressed Council members via telephone. Formerly, Sandy served as the Director of the Arizona Department of Water Resources. She noted Director Mike Lacey succeeded her, and was in attendance this morning.

Oftentimes, when securing water for water development and water planning for a private corporation, the same collaborative rules apply. We are looking at solutions for the mining operation. It is important for mining companies to work closely with their neighbors. Today, I want to focus on a cooperative agreement that we entered into with the Hualapai Tribe. They are located at the top of the rim of the Grand Canyon.

Freeport has a mining operation in which the water supply primarily comes from the Big Sandy River watershed, and that is supported by the agreement we entered into. Freeport has water rights along the Big Sandy River, but it also owns Planet Ranch, which is just upstream of the reservation and a wildlife refuge. Planet Ranch is totally operated as an agricultural facility. Freeport sold to the City of Scottsdale some water rights with the intent of transferring approximately two-thirds of their Planet Ranch water rights to their Wikieup well-field located on the Big Sandy River. Freeport filed for a water right transfer from Planet Ranch. Freeport already has water rights in the Wikieup well-field. The Planet Ranch water right has a higher priority and so it makes for a more secure water supply for the mining operation. Freeport is looking at water for 100 years and beyond.

When Freeport filed applications to transfer this water, objections were filed by the United States, the Hualapai Tribe, the Arizona Game and Fish Commission, and Mohave County. The Arizona Department of Water Resources (ADWR) agreed not to take administrative action on the sever and transfer applications and objections while the parties negotiated a resolution. During these negotiations, the United States conditioned dropping their objections to the sever and transfer applications on, among other conditions, the lease of the remaining 1/3 of the water rights at Planet Ranch to the Lower Colorado River Multi-Species Conservation Program (MSCP).

In late 2013, despite an agreement on almost all of the underlying issues, the parties decided to bifurcate the Hualapai settlement into two phases. Phase one addresses the sever and transfer of certain of Freeport's water rights from Planet Ranch and Lincoln Ranch to the

Wikieup Wellfield and the Multi-Species Conservation Program (MSCP), while phase two will comprehensively settle the Tribe's water rights claims to the Colorado River.

There is no adjudication in the basin. Freeport felt this was an opportunity to facilitate the arrangement in the short-term. Freeport agreed to waivers for 600 acre-feet for tribal trust land along the Big Sandy River, and Freeport will pay the Tribe \$1M to do the necessary water supply studies for the Tribe to develop water project proposals for them to access their Colorado River water supply. Their original proposal was to take water directly up to the rim of the Grand Canyon onto their reservation, which is located about 4,000 feet up in elevation and means the water would have to be lifted.

Freeport has made a significant contribution to an economic development fund for the Tribe. That fund limits how the Tribe can use it. The funds will allow the Tribe to purchase Colorado River Water and any appurtenant lands. The parties, including the Hualapai Tribe, acknowledge that this water is a key component of satisfying the Tribe's water rights claims in the comprehensive settlement by bridging the gap between the quantity of water the state parties' are willing to offer and the quantity that the Tribe has requested.

There is a bill in Congress right now called the Bill Williams River Water Rights Settlement Act of 2014. It has passed the Senate Indian Affairs Committee, but we are still awaiting the outcome in the House.

WGA DROUGHT FORUMS/WATER RELATED ACTIVITIES

Carlee Brown noted that the Drought Forums are WGA's main initiative right now. Jim Ogsbury, WGA Executive Director, is in Scottsdale, and will be attending the WSWC meetings.

Recent WGA water related activities include submitting formal comments on the U.S. Forest Service Proposed Groundwater Directive. WGA wrote a very detailed letter on the importance of recognizing state authority in water management. She expressed gratitude to Tony and Nathan and the WGA Staff Advisory Council members for assistance in reviewing the letter. WGA also submitted comments on the reserved water rights raised in the directives and the best management practices.

Another area WGA has been working on is the Clean Water Act definition of Waters of the United States. The main action WGA has taken is to ask EPA to extend their comment period. The governors originally asked for a comment period extension of 180 days, and there was a 91 day comment extension granted. The governors asked for an additional 89 days, which was not granted. WGA is going to be referring to the very detailed comment letter of the WSWC, and again talk about state authority.

The Western Governors' Drought Forum is an initiative of Governor Brian Sandoval of Nevada. It is designed to foster a regional dialogue in which states and industry can share case studies and best practices on drought policy, preparedness and management. Individual

workshops will focus on specific sectors. Additionally, WGA will create an online resource library that will feature a growing collection of drought resources. The forum meeting summaries will be posted on the Drought Forum website.

Carlee requested case studies from any state that may have a best practices case study in helping to manage drought, so it can be featured online.

In September, WGA held the first of the series of workshops in Norman, Oklahoma on managing drought in the energy sector. Sessions illustrated how the energy sector manages drought and ways the energy industry is using technology to prepare for, manage and recover from drought. WGA held the second workshop just this week in Phoenix, Arizona on drought impacts and solutions in the manufacturing, mining, and industrial sectors. In November, they will convene a workshop in Sacramento, California to discuss the myriad ways drought affects agricultural production. Following the WGA Winter Meeting in December, a Drought Forum workshop will be held to discuss how drought impacts water providers. In January, the forum will look at recreation and tourism. It is a very packed schedule.

Please give us feedback on the information posted on our website under the Drought Forum section.

USFS GROUNDWATER DIRECTIVE

Chris Carlson, Groundwater Program Technical Team Leader at the U.S. Forest Service (FS) discussed possible next steps regarding the U.S. Forest Services' proposed groundwater management directive with Council members.

Chris Carlson thanked the WSWC for the invitation to continue the conversation that was started at the meeting held in Helena, Montana. He said, he knows the USFS leadership respects the comments of the states, and the resources the states bring to address resource management challenges. After a number of discussions and comments the FS has received on the groundwater directive, there is a lack of confidence and a lack of trust by the states in the FS's actions and its intent, likely over water-related and non water-related issues. I understand that history colors our conversation today. Since we are not in a position to turn back the clock and address those challenges, we can roll up our sleeves and try to work on the challenges together going forward.

To provide context on what the FS has done with the proposed policy, the FS is the only federal land management agency that requires public notice for its internal direction. Internal direction does not and cannot increase agency authority, nor is it intended to. Rather internal direction is intended to provide structure to those existing authorities. The FS published an internal groundwater directive on May 6, 2014 and provided a public comment period. The agency then extended that comment period twice in response to input, so that the comment period ended last Friday.

The need for the directive stemmed from increased requests for siting oil wells, other water storage facilities, mineral activities, and as a result of adverse litigation decisions where the FS has been found to have not adequately addressed ground water issues. The proposed directive is designed to provide a consistent framework for addressing groundwater in the context of the FS operations and decisions, and to improve transparency and predictability. Thus, the FS believes they will be better partners for the states, tribes and others within the agency's existing decision space. The proposed directive explicitly recognizes the role of the states in allocation and states, tribes, and in some cases EPA, in regulating water quality. The proposed directive requires the local FS decision makers to work cooperatively with those entities. Fundamentally, the proposed directive is designed to elevate awareness in the improved NEPA analyses and decision making, and requires efficient use and conservation of groundwater resources and increased monitoring activities, particularly those associated with groundwater dependent ecosystems.

As mentioned, the comment period ended last Friday, and it will take us until mid-November to process the comments. We anticipate trying to have discussions with the states, tribes, and others through January. At that point, they will begin developing responsible comments. The FS will deliver a product to the Chief's office for consideration by the end of the spring. There is an opportunity to engage and try to find common ground.

With that I will stop and I'm hoping to have a conversation about where we can modify the language so the intent is clear, and so that we can find some common ground. Then we would modify the proposed directive and move through our process of bringing to the Chief and the Secretary of Agriculture the revised package for their consideration.

Tim Davis then commented on behalf of the western states that we appreciate the FS's willingness to have those conversations and discussions.

Questions

Greg Ridgley: I echo Tim's comments that we greatly appreciate your expression of willingness to work with the states and other parties. What would the mechanics of that kind of dialogue look like? Do we contact you to request a meeting? What do we do?

Chris Carlson: Earlier this week, I was at a meeting with a state forester, and having a conversation with folks like you, from state agencies about this particular concern. We will try to work things out in a way that works for everybody. There is a little bit of a tight timeline since we are to deliver a product to the Chief's Office in the Spring. But I think we can hold a conversation in a way that works for everyone. This is part of it.

Greg Ridgley: Okay, thank you.

J.D. Strong: Has the FS considered having a more formalized process such as working on the actual wording in the directive? We had a conference call last week. It was very useful and helpful. Thank you for allowing us to do that. It sounded like the FS intends to put language in

the directive about federal reserved rights to groundwater, which causes many of us a lot of angst. We also discussed the use of the word groundwater -- and maybe the allocation of groundwater for protecting water quality. The states would like to have a little more precision around the text that you use.

Chris Carlson: There are some procedural challenges we face in doing this. I don't have a real good answer as to how to have effective large-scale conversations across various entities for addressing details about the context. At some point, it goes beyond the comments and understanding those comments. It goes into changing the content. We have to be careful and it may require getting an attorney involved. How do we have that kind of a forum outside of the procedural constraints?

J.D. Strong: Is that FS procedural constraints? We have done this before with EPA, the Corps of Engineers and others on rulemaking exercises. I know this is not a rule making exercise.

Chris Carlson: I don't have an answer to that question.

Tim Davis: J.D., if I may, I'm guessing, but what I hear -- throwing it back to our conversation, is how can we have a conversation and potentially sit down and talk about language and alternatives? Where can you not go in that conversation? I'm seeing a lot of head nods around the table. You can take that away as a request from the Council.

Chris Carlson: Yes, we can have small group conversations, but when it turns into a large meeting potentially involving other entities there may be issues.

J.D. Strong: I think the Western States Water Council kind of helps with that. We have held plenty of discussions in the past where representatives from the western states that are interested in an issue designate a much smaller group. Then you don't have to deal with all 18 states. Would that be possible?

Chris Carlson: As far as that is concerned, I think there is a way to facilitate a conversation. I will have to get back with you.

Tony Willardson: I would mention that under Tab R in the briefing materials is the WSWC's letter and various materials. We have passed around WGA's official questions and Secretary Vilsack's response letter.

Carlee Brown: The WGA has scheduled a conference call on October 16, with the WSWC and the FS.

Tony Willardson: For your information, we have also provided in Tab R, the section by section comments from our member states. We also put on our website a map that shows the states that have commented. We have tried to identify information available from these states as a resource.

James Eklund: It seems to me, Chris, that you need to engage your legal counsel on this if you have not already.

Chris Carlson: They have been involved from the beginning.

James Eklund: Is the intent here to create something that is binding on the FS? Is this groundwater directive going to be something that is pushed out to all of the regions and they will be made to comply with it?

Chris Carlson: It is a national direction. This is the way the FS addresses these formalized policies and procedures, and how it intends that its agency representatives act in response to situations covered by such directives. In the end, the FS is a highly-centralized organization with decision making pushed to the lowest level of the organization possible. National direction is necessary but not sufficient in actually changing the nature of the level of decision making. Does that make sense?

James Eklund: It does. But I'm scratching my head because it sounds like we are going through a process here of trying to work within the public comment deadline for a guidance document -- and it sounds to me like a rulemaking. It sounds like you are trying to do something that would be more appropriately addressed in the formal rulemaking process.

Chris Carlson: Effectively, we have gone through the formal rulemaking process. The Administrative Procedures Act exempts the management of federal resources from most of the formal process, unless other statutory defined requirements call for a rulemaking process. We basically follow the same structure as a formal rulemaking process, even though technically we only need to provide the opportunity for public input. It does not say we have to go through a rulemaking process.

James Eklund: Your response to J.D. was that we have to be careful about how far we go because if we go too far, we are exceeding what we are allowed to do. And, I guess, if you need the handcuffs removed, or if you need to move outside that box, then I think that may be a foundational discussion worth having to see what the appropriate public comment forum is for this. You've read in the comment letters from the states, we feel that groundwater is the sole prerogative of states to administer and adjudicate, period. If we cannot have that stated somewhere due to the fact that the confines of what you can or cannot do are too narrow, then we need to broaden the confines, if that makes sense.

Chris Carlson: I'm not sure I grasp it entirely, but I get the gist.

J.D. Strong: Some states have proposed a more formal rulemaking process. Even though you say you have essentially done that, we've only been part of the formal federal relationship with regard to a resource that is managed by the states, where we require upfront consultation with the states through executive order or any other means. The economic impacts of the proposed directive alone should trigger a requirement to go through the formal rulemaking process.

Norm Johnson: I've read where the FS has said certain things they don't intend to do with this document, policy, rule – whatever it is. We might want to look at whether we could look at certain statements in the document. You might want to consider some kind of a settlements document. Whether you read it in this document or not, they don't seem to be quite the same.

Jean Thomas: I just thought of an analogy and it has to do with wildlife and federal agencies. You manage the wildlife and we manage the habitat. I think it is a similar situation. You manage the water, as far as who gets what, etc. We manage habitat for water. We want to make sure that the streams are capable of carrying water, that the wetlands are maintained and are viable. We have all kinds of things taking place on our lands -- minerals, mining, grazing, and various things that use water.

J.D. Strong: To get it straight for the record, you are talking about managing the water quality impacts on FS lands. We had a debate last week about federal reserved rights for groundwater and that there are still some in the FS that believe that this isn't just having, using your analogy, impacts on that resource, but actual allocation of that resource. The FS will need to clarify that. Is this really just the water quality impacts to groundwater and nothing more?

Jerry Rigby: We've just gone through a McCarren adjudication in our state and there were no claims filed by the FS as to these groundwater rights. Therefore, the question is what can the FS do? My opinion would be, they can't do anything. If they felt like they needed to own this resource, then they should have filed a claim. They failed to do so. We fought hard to get this McCarren Amendment adjudication. It is really a question of reserved rights.

Chris Carlson: That's absolutely right. All that the groundwater directive was is a reiteration of the existing law the FS has to apply to water rights for recognized uses in the stream for the original purposes of the reservation. It is not intended to subject or apply to anything broader than that. I think that has been litigated, and it is done. That is all that statement was about, and it has been taken much broader than was originally intended. For that, I have to apologize. We obviously did not convey the intent.

Jerry Rigby: The adjudication was completed with no federal reserved water rights and no claim filed. Let's say you get what you are asking for. What can you do in Idaho?

Chris Carlson: Nothing. It is already adjudicated. There is no more to be done. A process has been set up in Montana. There are a number of uses in Montana for recognized reserved purposes where water is being taken from groundwater. Those are well-documented and because of the process in Montana (and we anticipate that is the case in a number of other states as well), the wells supplying campgrounds and other sites that are appropriated under the Supreme Court's determination of the original purpose are there, in the records. I really apologize that it is being interpreted otherwise.

Tony Willardson: Chris, you might clarify that this is actually a process for the current directive. The other directive did not go through an external review, so we didn't have the opportunity of giving feedback.

Chris Carlson: That is right. The process we are going through with this directive is not the process that existed a decade ago, or even five years ago. We've been sued over how we addressed those records, and the courts have determined that basically all substantive directives have to go through a public process. That is a change. This directive was drafted before that change, and so a lot of this is really only intended for internal FS use and was not drafted for external reviewers. Some of the poor communication is as a result of that.

Tony Willardson: Some of the discussion is with the FS legal team. I think there is a fundamental divide at issue. The FS views groundwater as a national water resource. The WSWC views it as a state resource. There is a difference between maintaining the flows for navigable waters, given *U.S. v New Mexico*. We interpret it as maintaining watersheds for productive waterflow. The states do not see a FS role for maintaining streamflows or groundwater levels on FS lands. I think there is a fundamental difference in how we see that. How do we get past that? What is being done in other states to meet FS needs and recognize those needs?

There may be some other options. For example, Norm Johnson might mention what has been done in Zion National Park. Part of that is related to groundwater resources similarly around Yellowstone. These are some examples of how we can get to where we need to be with some of these challenges.

Tim Davis: Chris, one of the main points that the WSWC's letter made was to work with the states, as has been done with Wyoming, Montana, and Colorado. So let's talk about those scenarios.

Wyoming

Pat Tyrrell reviewed Wyoming's Memorandum of Understanding (MOU) with the FS, copies of which were passed around the room. Chris Carlson and I agree that this MOU has worked. It set up boundaries for the State of Wyoming to receive water rights applications on forest property within the State of Wyoming. In Wyoming, anyone can file for a water right anywhere, and the State Engineer can issue a water right. The question is what happens after that, things like ability to access, and any other permits that are needed to build a feature. There are other permissions needed to build certain features.

We wanted to make sure we addressed how to treat applications on the national forest versus on Bureau of Land Management lands versus on Wyoming State lands. We consolidated the processes and tried to make them consistent. The MOU was intended to serve as a framework for enhanced cooperation between the State of Wyoming and the Forest Service Regions 2 and 4 in Wyoming. We entered into negotiations and this process took many months to come to fruition.

Originally an MOU was entered into in 2006, which stood for a period of five years. In 2011, we started renegotiating and made changes to the document. These documents are not forever. They have a life span. There are statements of mutual respect for each other's jobs.

Wyoming has a statement of recognition of what the FS can do. There is a statement of recognition by the FS that the State of Wyoming is the “be all and end all” in managing, permitting and use of water relative to the state Constitution.

The authorities and mutual interests and benefits are set forth in Sections C and D. It says how the state will respond when they receive an application. Will the FS be an applicant or a co-applicant or will they not? The State does not require the FS’s approval or consent before they issue a permit to an individual. They take comments, but there is no role for denial or objection to a permit. There is an informational exchange.

There are situations where the FS may be a co-applicant. The state will issue the water rights, and the FS can object, but that does not mean the State has to accept or agree with the objection. This is not just for FS facilities, but for anything on the forest.

On page 3, Letter H, there was a concern among a number of constituents that the FS was going to move water rights and move water features off a grazing allotment, and essentially dry up the features. It was of as serious enough concern that Wyoming was considering litigation. Letter H was included, which essentially says that the FS will consent to permit holders, if they petition the State Engineer or the Board of Control to change or convey a water right. We were able to solve the problem for the allottees through the MOU, rather than having to pursue litigation.

This MOU has been a very helpful document. Wyoming has a similar MOU with the BLM and with their own Office of State Lands in Wyoming regarding how they deal with water rights. In Wyoming, when they issue a permit to, for example, a grazing allotment, and someone creates a use of water on the forest, on his allotment, whether it is wells, or whatever, and then seeks at some point to adjudicate that right, we communicate with the name of the landowner on which that use is made. Thus, when Wyoming grants a water right to an allottee, it is adjudicated in the name of the landowner or the FS when it comes to federal ownership. The State has been sued over that in the past and lost, because they had issued a permit that was adjudicated in the name of a lessee on State lands, and not to the State of Wyoming. The water right runs with the owner of the land, not the tenant of the land. If a water feature serves lands both on and off the forest, then it will be adjudicated in the names of both the FS and whoever owns the land, or the other points of use. In such cases, we have to have a certificate with two names on it.

That is a short overview of the MOU with Wyoming.

Questions

Pat Lambert – Does the draft of the proposed Forest Service directive raise issues and questions that go beyond the MOU success story that you just told? Does it create things that would have to be covered by another agreement or an extension to this agreement?

Pat Tyrrell: That is a good question. We are hopeful that this MOU is not affected by the proposed directive, although the directive does talk about things that are not in the MOU. The

MOU names things that are not in the directive. Temporary water uses are not built into the directive. Some things are not addressed in the directive. Our real questions were with respect to things that are not addressed in this MOU, like the groundwater/surface water connection or the adjacency questions, reserved rights, etc. Those types of things are not addressed in the MOU. I'm hopeful that the directive, whatever direction it takes, does not hurt our ability to extend this MOU. It might be that we add some things to this MOU that may be mooted by the directive.

Tony Willardson: One of the comments in the WSWC letter was on the FS being the landowner, which you described. The issuance of a water right does not require a special use permit on the Forest Service lands. To some extent it parallels the philosophical dilemma of "the chicken and the egg." The FS won't grant the special use permit or a right-of-way until you have a water right. One cannot get the water rights until they have a special use permit. There may need to be some kind of "hold in abeyance" approval for special use permits.

Pat Tyrrell: Not in Wyoming. We will issue a permit. Our position on a special use permit is that you've still got to have it before they can construct a facility. You may remember the Andrew Johnson issue, which is still ongoing, on a small stock dam in southwestern Wyoming. The State Engineer's Office issued a permit, and then the question came up as to whether or not he needed other approvals from either the EPA and/or the Corps under the Clean Water Act Section 404. Generally, this is an area where we have never even seen the Corps of Engineers do inspections. The State issued a water right, and their form letter states to the permit holder that they need to cover all of their bases. This gentleman did not have the other federal bases covered. His stock pond is characterized as a "Waters of the U.S.," by EPA so it is jurisdictional.

Tony Willardson: Assuming special use permits must have a term, at the end of the term, what happens if the FS determines they will not renew the special use permit, how would the state view that? Under state law the perfected water use would be a property right?

Pat Tyrrell: We don't control those other agreements. The water right will run with the land, even if land ownership changes. As long as the water right is actively used and is in good standing, the right exists, but we don't have control over who it is that runs the facility or owns lands that is off forest. Generally speaking, I think where you are headed may be to things that occur on the forest and are used off the forest. The water right will stay intact. I don't know that we have had any cases like that, where with a special use permit, their historic uses might be affected.

Chris Brown: The water right will stay, but the question would be with other rights. The water right is absolutely a property right. There are some general statutes in Wyoming which allow the State Engineer to enforce water rights and may be able to help in some regards. In Wyoming, the FS and the federal government in general, are in kind of a unique position. We have statutory provisions that allow for a water right owner to condemn access, so they can get to the water and put it to beneficial use, because water is so scarce in our state. Those condemnation

proceedings can't be taken up against the FS. So they are in an unique position that other landowners in the state are not in.

Montana

Tim Davis provided an overview of Montana's compact with the USFS. It took years and decades to come to a settlement with the FS. The Compact recognizes and settles all of FS federal reserved water rights claims in Montana. It created 78 state-based water rights specifically in the compact for both consumptive and non-consumptive uses for a variety of different purposes. It created a process, as well as standards for the FS to acquire state-based instream flow rights on FS land going forward. The State has received well over 100 applications for instream flow rights. It confirmed the FS's standing to object in the state adjudication. It established a sequencing process coordinating the special use permitting process and the water right permitting process. The FS has been active in pursuing new water reservations for instream flows on FS land across the state. The state processes them as quickly as they can.

The compact created conditions under which a FS water right could be objected to. Those are fairly limited.

Colorado

James Eklund discussed Colorado's MOU with the USFS. The MOU goes back to 2003, in response to USFS efforts to obtain bypass flows in lieu of getting instream rights under state law. The General Assembly did not like that, so they passed a resolution urging the FS to stop those attempts at bypass flows. The MOU was a by-product of the General Assembly's action.

The MOU was entered into in 2004, and was updated in 2009 around the issue of resource management plans. The MOU was good for five years. It was extended in 2014 for a one-year period to address issues the state is dealing with in the southwestern portion of the state. We hope to expand the MOU into other issues. We may even be able to address the groundwater issue more head-on.

It has been a good understanding, and it has been very useful to have the MOU in place.

Utah

Norm Johnson remarked that Utah has negotiated settlements with the federal government for reserved water rights claims at Zion and Arches National Parks, and some other national parks and monuments. They are not this kind of programmatic MOU. They are very important documents. However, they are actually part of the State's effort to settle rather than litigate reserved water rights in certain federal areas in Zion National Park. It is quite a

complicated and difficult process. It has been implemented successfully. Although, it is different than what is being discussed here.

Tony Willardson noted that one of the key features in Zion National Park is known as the weeping walls. It is actually a spring: groundwater from upstream is coming down through the sandstone walls and into the stream. The Park Service was concerned about upstream groundwater development that would dry up that source. I believe the State voluntarily agreed to limit upstream development to no more than 8,000 acre-feet of groundwater.

Norm Johnson stated that one of the interesting things about the settlement is an agreement by the State to curtail the issuance of future groundwater rights outside of the reserved areas for the purpose of controlling the impact on groundwater in the national park or national monument area. The different agreements are pending. An agreement that has been close to settlement has a similar thing in it, where the State has agreed to limit the use of groundwater in the Park. On the other hand, the State also has an agreement in certain areas for the State Engineer's Office to allow a certain amount of groundwater use. It does include land outside the Park, even though there is the assertion that there might be an impact on the Park area. So that goes both ways. The State has agreed to a limit use, but they have allowed a certain amount of groundwater use. It was critical to some of the local landowners. We struck a balance, even though it does include some areas outside of the National Park. Keep in mind that Zion National Park is not a headwaters area. It is a critically water short desert area. Nevertheless, we were able to negotiate this reserved right for the Park. It is a large park and it involves a lot of complicated issues.

Norm clarified that the federal reserved right is a state recognized right that covers a federal reserved water right claim for the National Park. It is ultimately recognized as a state-based right, evidenced by the fact that state adjudication is taking place, and it will be confirmed in the decree.

Pat Tyrrell: What was the public process and perception? How did that go?

Norm Johnson: It included extensive public involvement. It started with county commissioners in the area and there were public meetings held in the area with the water right holders. There was lots of involvement and ultimate buy off. All neighboring water right holders had the opportunity to object. There were very few objections. We were able to resolve all of the objections and have them withdrawn. The manager of the local water conservation district was very involved and critical in getting this done. There was an Indian tribe that had a reserved right which was negotiated as well. It was the convergence of a lot of work, a lot of public input, and a charismatic guy who pushed the effort through.

CDWR/WSWC DROUGHT ACTIVITIES

Jeanine Jones briefly reviewed the roundtable on drought activities which was held yesterday (October 8th). Jeanine noted that any Drought Relief Act is likely dead at this point,

including reauthorization of the Reclamation States Emergency Drought Relief Act of 1991 and storing non-project municipal and industrial (M&I) water in Reclamation projects.

Over the years there have been a number of spot bills that provided temporary authorities to Reclamation. P.L. 9518 provided temporary authorities to the Department of the Interior for water banking and temporary storage during the 1976-77 drought. California used this. Additionally, there was an emergency authorization for the Bureau to participate in a water banking effort in the Klamath Basin in Oregon and California.

Since there is a lot of duplication of past efforts, the WSWC Subcommittee would like to poll the states with respect to state administrative authorities on drought. We would ask that you provide any emergency authorities that have been taken in the past. The states use the Reclamation authorities in the 1991 Act. Jeanine noted that California is primarily a Reclamation Act state. California has a planning process and the ability to shift to forecast-based operations. Jeanine believes it would be a useful exercise to collect the drought authorities through the WSWC, and see if there are things that can be pulled out for the benefit of the whole WSWC membership.

The WSWC will then put together a bullet list. This would be shared with WGA, but it gets more to detailed levels. For example, Corps flood control rule curves, which are based on hydrology that was appropriate when the reservoirs were created. Most of these curves were put in place decades ago. Over time, things have changed, particularly with the hydrology, etc.

Tony will put a short query together to ask members for information they have readily on hand. The goal is to put together a short summary or survey and then have a technical meeting to discuss. We will then put together a summary for the WGA's June meeting.

Tony added that we ought to poll the WestFAST folks so as also to determine what kind of permanent authorities have been used by the federal agencies. Most drought authorities sunset and are not permanent. We want to find out how we can work together with Carlee and the efforts WGA is undertaking at the drought forums.

Carlee Brown added that it may be helpful to look at the National Drought Mitigation Center's (NDMC) website to see if they have some of this information available already. NDMC has catalogued state drought plans and categorized certain issues (e.g., grazing). WGA is working closely with NOAA on their efforts to strengthen collaboration on drought and flood preparedness, as well. In the Spring, we will work with the WSWC on gathering how states respond to drought and what they are thinking about for the future.

CDWR/WSWC/JPL REMOTE SENSING WORKSHOP

Jeanine Jones reported that the California Department of Water Resources (CDWR) has been working in partnership with the National Aeronautics and Space Administration (NASA) and their Jet Propulsion Laboratory (JPL) for some time. They wanted to invite other western

states to learn more about these joint efforts. Stephanie Granger from NASA JPL is attending here today.

The workshop included Landsat and other applied research areas. It brought together western water resource managers and folks from the scientific community to discuss potential remote sensing applications and capabilities that can be used to address water management challenges. It provided an opportunity to better understand and identify water resource challenges and information needs of water managers.

Among other things, the agenda included a discussion of an application being used in Arizona to model land subsidence monitoring for major urban areas in the state. The application is operational. We also discussed many efforts that are still in the research phases, which included things such as atmospheric rivers and the Madden-Julian oscillation; which are key phenomena, and how seasonal and sub-seasonal forecasts can be applied. NASA talked about some of their emerging capabilities and upcoming missions.

Jeanine believes the WSWC needs to entrain some of our federal partner agencies. How states measure snow for snowpack is something of great importance for improving runoff forecasting. NASA JPL wants to develop a new Water and Snow Center. How can we engage federal agencies such as NRCS to participate?

Stephanie Granger remarked that the workshop was a valuable experience for NASA JPL scientists to hear from the states about the challenges water managers face. The NASA Science Program has asked JPL to put together a Water and Snow Center. This will be for western states. The planning stage is being scoped right now. They plan to develop prototypes for western states, such as the snowpack measuring and monitoring.

Tim Davis stated that he attended the workshop and that Montana is very interested in continuing remote sensing projects such as Landsat. In Montana, the case is basically blue or red as shown by the data. The temporal and spatial scale of the data that comes back needs to be at field scale. He said those states who participated in the workshop talked about continuing use of Landsat to get field level data for evapotranspiration (ET) and there is a need for snow water equivalent. We also discussed where we as water managers think we need to see better data, as well as what the major areas are that we would like to see NASA study. Continuing Landsat and driving it down to a field level ET analysis will be useful. Tim would like to have NASA engage the WSWC if there are areas on which NASA is going to focus.

The scientific community suggests that water managers need to point out the areas where further work is needed. Jeanine added continuity of observations using satellite data.

Michelle Klose noted that North Dakota is working with a NASA employee in Colorado to develop connections and find ways to make things work.

In conclusion, Jeanine's opinion was this was a very good conference.

NATIONAL SCIENCE & TECHNOLOGY COUNCIL/LANDSAT UPDATE

Tony Willardson reported that the briefing materials under Tab G advise the National Geospatial Advisory Committee – Landsat Advisory Group. It provides an update to USGS on Landsat activities. It also provides estimates of the value of Landsat data, which are in the area of \$2 billion per year for operational efficiencies.

Tony mentioned a couple of examples in Idaho where Landsat is being used. In Idaho, an irrigation district used Landsat to identify areas where the crops were water short. Actually looking at the Landsat data, they found that the crops were not water short. Another example in Idaho where Landsat data has been used is in the Wood River Basin near Sun Valley. Idaho's Department of Water Resources (IDWR) gave us a value of \$30,000 per acre-foot of water. There was a change application to transfer water off a certain piece of ground. Using Landsat data, IDWR was able to demonstrate that only 20% of the acreage had been irrigated. Without the benefit of this data they might otherwise have allowed the transfer of a paper right of much more value.

NASA is going through a review of the follow on satellite to Landsat 8. One option is to launch a stand-alone thermal measuring satellite that may then follow a European satellite. During a conference call in early October, we talked about the costs and benefits and our needs. USGS handles the ground operating costs. NASA would like to see the mission limited to \$650M. USGS has a differing view, and they think their cost could be \$150M.

Tony said many of the users have reiterated the need for the thermal infrared band. The optical band allows for integrated calculations. If those bands are separated on two different satellites, the two satellites would have to orbit no more than an hour apart. We are working to ensure that they have this information. NASA will soon have a report out on their preference on the architecture.

Landsat does not see through clouds, which presents problems. Having only one satellite can be problematic. With two satellites orbiting, it takes two years to get a complete set of data, given the 8-day return cycle. If they only have one satellite flying, the time to get a complete data set extends from two years to five years. Having a view every five years probably won't suffice. We have been talking with NASA, USGS and the Office of Management and Budget to point out our needs and where things need to go.

WATER DATA EXCHANGE (WaDE) UPDATE

Sara Larsen showed a mapping application on the WSWC website which indicates the number of wells relative to the USFS groundwater directive.

A WaDE update was also included in the briefing materials. With respect to milestones, WSWC and TCEQ have completed the legal framework for TCEQ to pass along exchange network grant funds to the states participating.

Utah and Wyoming are in the midst of their deployments. Sara is working to get more states involved in the deployment. WSWC sent out some cost estimate worksheets in an attempt to get more states involved in the WaDE project. The worksheets provide a line item outline for a set of tasks. One can simply fill in how many hours you think the work will take. Sara explained that this will allow states to take advantage of WGA funding opportunities. WGA has offered to provide funding for deployment. One may use the spreadsheets and migrate them to the database format. Sara suggested that states could hire an intern to help transfer the documents, etc. Basically you may fund any of the low-hanging fruit in terms of data. If a state has more costs, we can hopefully get another grant set up. Sara requested the states to please complete the cost estimate worksheets.

We're looking at two new options that might work better for some states. There are concerns about the ease of deployment and network capacity or bandwidth and scalability. Security is of concern, even though there are firewalls. Long-term operation and maintenance causes concerns because once a state gets the WaDE project up and running, they still have to maintain it and update the databases. The WSWC has tried to figure out how to help defray those costs. One alternative is to create a WaDE database in the cloud, which would have much more capacity and scalability. Of course, the information still needs to be pushed up to the cloud. You may need to find out if your state IT has any problems with posting data to the cloud. Another potential hosting opportunity we've checked is the University of California at San Diego super computer center. RedHat has also done proof of concept in their OpenShift format in Colorado.

The WSWC is trying to make this as easy as possible for the states. The current status of the project is: Utah, Colorado, and Wyoming are in the process. Idaho, Oregon, Oklahoma, Texas, and Washington are working on contracts, and then hope to get their deployments up and running. California, Nevada, Alaska, Nebraska, and South Dakota are working on their cost worksheets. The remaining states (Kansas, Montana, New Mexico, and North Dakota) are not as engaged and are encouraged to join the effort. This project is important to help states get ahead of the "data request freight train," and will provide a more regional picture of water availability and use, as well as other kinds of data, in the West.

J.D. Strong commented that the states have the ability to shape this data, not Sandia, or the Corps of Engineers, or any other entity.

Carlee Brown echoed J.D.'s comments. The funding that Sara talked about is part of a DOE grant that WGA received, and our deadline for spending the grant funds is April 2015. This is why we encourage you to complete the cost estimate forms. WGA can get you some money quickly if they are notified soon. Carlee also said that WGA will try to feature WaDE at the WGA Annual Meeting in June 2015.

Jerry Rigby noted that the Idaho Department of Water Resources director suffered major heartburn with the Sandia data when this process began. Once he found out that the state and WSWC ultimately have control over the data, Idaho has been sold on the effort. Further, Jerry said that the selling point with respect to WaDE is that the states control the data that is made available. Basically, the sales pitch is: “Do you want to do this, or do you want someone else to describe your data?”

WESTERN WATER RESOURCES INFRASTRUCTURE SYMPOSIUM

Tony Willardson commented that this item is included in the Water Resources Committee work plan. The WSWC has held a series of symposia on different aspects of infrastructure challenges. We did a report in which we highlighted some of the next steps on infrastructure, one of which is streamlining regulatory requirements. As the WSWC is facing a number of regulatory changes, one option would be to hold a workshop to look at the Clean Water Act, the Endangered Species Act, BLM and USFS rights-of-way issues, and to discuss what could be done to streamline these requirements. There is a lot of interest in different areas and the President has an initiative to expedite infrastructure permitting.

Holding a symposium would be a significant undertaking. It would also require collaboration with WestFAST in getting federal participation. This would build on the dialogue we had in Montana with federal agencies regarding how states can do a better job meeting their needs, and also with respect to involving the regulated community. No specific dates have been selected at this point, nor an agenda defined. If we were to try to hold the symposium in our current fiscal year, it would likely need to take place in February or March. Time will be a consideration. Tony would appreciate any feedback.

Water Resources Committee Chairman Tim Davis offered the suggestion that due to state legislative sessions scheduled during the February/March timeframe, this should be put off until the next year. Perhaps it could be tagged with another Council meeting.

FY 2015 FEDERAL FUNDING OUTLOOK

Tony Willardson simply stated that we would hear more about this from Jennifer Gimbel and Tom Iseman during the Full Council meeting via phone on Friday morning.

FEDERAL ADVISORY COMMITTEE ON WATER INFORMATION

Tony Willardson noted that Bill Werkheiser will be in attendance at the Full Council meeting and will discuss this item tomorrow. In addition, he stated that Sue Lowry sits on the Committee. Dr. Robert Mace with the Texas Water Development Board is WSWC’s representative on the Advisory Committee on Water Information (ACWI), and Tony is an

alternate. Jeanine Jones of California and Nathan Bracken of the WSWC staff have both been involved in recent months on the ACWI climate working group.

There aren't many western states participating in ACWI. Many of the members are federal agency folks. Anne Castle tried to make it into much more of an active advisory organization. Bill Werkheiser is also trying to invigorate it. There are two or three subcommittees in which the states may want to participate in and be represented. It provides a good opportunity to understand the technical work of the federal agencies.

Sue Lowry added that she has been involved in the Committee for about ten years as a member of the Interstate Council on Water Policy. Sue reported that when she first became involved, many of the subcommittees were (and still are) heavily dominated by federal agencies. While Anne Castle made a significant effort to try to engage the other members of ACWI, and turn it more into a group that would give advice, rather than just holding meetings. A decade ago, we showed up and were given reports by various federal participants. I don't think the people who were members of ACWI really felt like we were being asked to give advice until Anne Castle worked to turn that around. There are two or three subcommittees that your staffs might have an interest in to really understand the technical work of our federal partners. One subcommittee is looking at some of the federal bulletins on probable maximum precipitation and floods at a very technical level. Another subcommittee which stems from a new initiative on spatial data and WaDE is a great example, together with the Water Census. The Department of the Interior is looking for some non-federal partners to participate on that group. The Climate Adaptation Subcommittee has been very active over the last 16 months. They are trying to put together a nice bibliography on the different federal resources that are out there.

ACWI did an extensive report on streamgaging and making recommendations on priority spending. Another working group is Interior's Open Water Data Initiative, and WaDE is specifically called out as an example of one of the types of work that Interior believes should be done.

Jeanine Jones commented that, in the interest of full disclosure, she asked California's State Climatologist to sit on one of the subcommittees on flood frequencies evaluation. He came back to Jeanine later and said, "What did I ever do to you?" It has been very painful for him.

OTHER MATTERS

There being no further matters, the meeting was adjourned at 11:25 a.m.