

**Planning for an Uncertain Future:
Drought Contingency Planning, Demand Management, and West Slope Agriculture**

October 23, 2018, 10am – 3pm

Sponsored by Grand Valley Water Users Association

Hosted by CMU Water Center

Moderator: Luke Gingerich, P.E. J-U-B Engineers

DRAFT NOTES

The morning session was devoted to “Big River Policy Issues,” with Upper Basin and Colorado water officials describing the draft Colorado River Drought Contingency Plan and how it could be implemented. After lunch, the group heard a presentation on the Colorado River Risk Study from Eric Kuhn and a discussion of localized policy implications for West Slope agriculture. The meeting concluded with a facilitated discussion with the audience.

10:00---Big River Policy Issues

Amy Haas, Executive Director, Upper Colorado River Commission - [slides presented](#)

Summary of Remarks

Amy Haas discussed the role of the Upper Colorado River Commission (UCRC) and gave an overview of the draft Drought Contingency Plan (DCP). She said that the timing of negotiating the DCP was driven by the aridification of the region and the threat that the Secretary of the Interior would step in if the states could not find a solution to dropping reservoir levels. She described the DCP as a “patch” to get the region to 2026, when the 2007 agreement on managing Lakes Powell and Mead expires.

Haas emphasized that the Upper Basin portion of the draft DCP authorizes the storage of Demand Management (DM) water, but does not set up a DM program. She noted that one of the lessons learned from the System Conservation Pilot Program (SCPP) administered by the UCRC, a temporary, voluntary, compensated program to reduce water use, was that there was no point in further conservation without a pool to store it in that was protected from release under the 2007 guidelines. She noted that the backdrop to these discussions is that the hydrology is different than what negotiators were looking at in developing the 2007 guidelines.

She concluded by showing modeling runs demonstrating that the DCP would substantially reduce risks of both Lake Powell and Lake Mead falling below critical levels.

Amy Ostdiek, Assistant Attorney General, CO Dept. of Law, Federal & Interstate Water Unit, and **Brent Newman**, Section Chief, Interstate & Federal Section, Colorado Water Conservation Board - [slides presented](#)

Summary of Remarks

Amy Ostdiek and Brent Newman presented together. They contrasted imposed, involuntary curtailment under compact administration, which would bring lots of uncertainty and litigation, with the opportunity to develop a pro-active program under which we can control our own destiny. They tied the DCP to the Colorado Water Plan statement about avoiding a compact deficit, and emphasized that if stakeholders in

Colorado and the other Upper Basin states can't agree, there will be no DM program to fill the DM storage bucket set up by the DCP.

Newman emphasized that that Colorado Water Conservation Board (CWCB) staff were not assessing, pursuing, or recommending to the CWCB any type of "anticipatory curtailment" scenario at this time. He said they knew that no DM plan could work without support of water users around the state. He also stated that CWCB staff were developing a draft policy statement about how a DM strategy should be developed, which would be informed by comments and letters received, as well as interactions at public forums.

They concluded with a commitment to keep talking to stakeholders to keep everyone informed, and asked people to contact them upon hearing or reading anything that doesn't align with what they have said about the DCP and DM.

Kevin Rein, CO State Engineer & Director of the Colorado Division of Water Resources - [slides presented](#)

Summary of Remarks

Kevin Rein laid out what the State Engineer's Office needs to effectively administer water, with or without a DCP:

- Quantification of the water in question.
- A defined beneficial use for the water.
- No injury to other water users.

He said that for water to be shepherded into a DM pool in Lake Powell under a DCP, the beneficial use would have to be defined. The source could be an irrigation right that underwent a change of use analysis, the destination would be where to put it to use most effectively, and the details would have to spell out how to do that without injury to others, and not seeing a change to the river afterwards.

Panel Discussion

Following the presentations summarized above, Luke Gingerich asked the presenters several questions, to which they responded. The questions and answers are summarized below.

Gingerich: You've described the DCP as abandoned to get us to 2026; can we expect that renegotiation of the interim guidelines will take into account the effects of equalization that we've seen?

Haas: It is tempting to throw stones at the guidelines, especially with the hydrology we've had. They were heavily negotiated, using different hydrology. There are certainly things in the guidelines that will be put back on table, but 2007 Interim Guidelines will remain law until 2026.

Newman: The '07 Guidelines worked to keep us out of litigation, and we will get to work on them again. We're not letting the Lower Basin structural deficit slide, but DCP is enabling new mechanisms to respond to challenges.

Haas: Over course of the negotiations on the DCP, it was anathema initially to talk about the structural deficit in the Lower Basin, now the Lower Basin is openly acknowledging overuse. A Lower Basin person publicly stated that the DCP addresses the structural deficit.

Ostdiek: The '07 Guidelines did help protect critical levels in Lake Mead, and defined specific cuts for lower basin states. Things we're doing now will be informed by recent hydrology.

Gingerich: Do we anticipate that Lower Basin reductions will survive the DCP?

Haas: It is hard to predict the future, but I am encouraged that the Lower Basin will continue to play. CA's willingness to come to the table & take DCP reductions is important – they haven't done that before. This bodes well for the future. Beyond 2026, we will need a lot more than DCP, but what post 2026 reductions will look like is unclear.

Gingerich: Are we in a timeframe where post-2026 thinking about compact compliance is part of our operating plan?

Haas: Yes, Absolutely.

Newman: Levels at Powell are important for lots of things, including the endangered fish recovery program, and operation and maintenance on West Slope reservoirs – if we let power revenues lapse, a way of life is in jeopardy. Levels at Powell and compact compliance and storage and delivery are connected.

Gingerich: Is a 500k acre-foot pool protected from equalization enough? Some modeling suggests that the pool needs to be larger – how did you arrive at that number?

Haas: That's a negotiated number with some modeling behind it. SCPP determined that 200,000 – 500,000 would be needed to make a dent in levels at Powell. This was a comfortable maximum for us. If we can achieve that kind of savings within the term of this agreement – we will be in good shape. This would be a large task, phenomenal to achieve.

Newman: With all the concerns and logistics that we have to flip through, we still have years of discussion on the feasibility of such a program. It is optimistic to think that we could generate 500,000 acre-feet.

Gingerich: Are we saturated with weather modification?

Newman: We are doing a good job with the resources we have available. Lots of the funding is from local water districts.

Gingerich: If there's a water district here that wants to get involved, contact Brent Newman.

Gingerich: On the Western Slope, SCPP has been going for awhile and is a market based approach – is there a vision for any kind of a substitution plan to make transactions possible?

Rein: We don't have a vision or direct that. When it comes to that kind of thing, if it's allowed by law, we can administer it. There are mechanisms.

Haas: I would also like to take a stab at the question on administration and funding of DM. We prepared a report on the SCPP, posted on the UCRC website. We found that in the first 3 years, we invested 4.5

million to conserve 26-27,000 acre-feet. It was expensive. One of the sideboards we have on a DM storage agreement is funding for voluntary, compensated arrangements. That's a minimum condition to grapple with.

Gingerich: When we talk about DM, it feels West Slope agriculture-heavy. Is there the intention that municipal & industrial (M&I) providers and trans-mountain diverters would need to participate as well?

Newman: Absolutely, it's in the water plan. DM should affect every area of the state, just as benefits are across the state. DM is not feasible if not shared.

Haas: Based on our experience with the SCPP, we had some participation from M&I, though mostly agriculture. There was some following of ballfields, etc. There is a template for that.

Gingerich: When we are talking about DCP & DM, is it correct to assume that pre-compact water rights could only be curtailed voluntarily?

Ostdiek: Yes, everything we're discussing is around voluntary, temporary, compensated. Beyond that, all would be in compliance with state water law.

Newman: When we are talking about the DM pool, it doesn't matter where water comes from – it's anticipatory, to prevent compact curtailment, not to administer curtailment.

Gingerich: There is mention of imported water in the draft DCP agreements. Are there any plans to look into that?

Haas: As a member of the coordinating committee, imported water was contemplated not as any preordained, identified source, but just a way to consider using any imported water as a placeholder, so as not to preclude that from participation in any DM storage program.

12:15---Risk Study III, Hydrology, & Implications

Eric Kuhn, former General Manager of the Colorado River Water Conservation District - [slides presented](#)

Summary of Remarks

Kuhn stated that the purpose for the risk study was education, and the purpose of Colorado River District involvement was that the District accounts for a large portion of both input into Colorado River and Consumptive Use from river. He noted that the Colorado River District has a long history of involvement in interstate issues, alongside the CWCB.

Kuhn noted that the Law of River is a guide, but details on river management are worked out through negotiations and consultations. The Secretary of Interior has the final say for long-range operating criteria and plans, and has deferred to states – if states can make plans.

Kuhn explained that the following factors led to the need to do a risk study:

- Full development of the Colorado River: In the Lower Basin, the Central Arizona Project was built in 1970's & 80's, and became operational in 1990's in a wet cycle.

- Low hydrology.
- There was a need to answer this question: what's the likelihood we will need DM, and how much?

Kuhn explained that the Risk Study asked the question, what if we repeated droughts of recent years, starting now?

As background information, he noted that in the late 1900's, there was a 19-year period that was worse than what we've had so far in this drought. This is definitely not the worst drought experienced.

Risk Study assumptions:

- Need to take action when Lake Powell's water level is at an elevation of 3,525 feet above sea level to have cushion above the Minimum Power Pool, in case we miss by a bit.
- The Lower Basin implements DCP.

Results:

- You can't ask for a lot of water at once, need to ask for more in a wet year than a dry one (can't get it in a dry year).
- If you get up to a million acre-feet in a DM pool, you can really make it through a decent drought period.

He explained that phase III will provide more detail on alternatives, and what could happen within basins.

Kuhn said important takeaways from this work are that:

- A drought that will drain lake Powell is likely to happen again.
- We need more than just drought operations on upstream reservoirs.
- We need to have DM, and post-2026 will need more than the 500k storage.
- Nature could throw something worse at us – there are no guarantees of success.

Gingerich: What did we do wrong to get here?

Kuhn: we took very short view of hydrology in the 1920's. There were indications that we knew that droughts could occur, but we weren't conservative enough.

Gingerich: Describe what our new normal looks like in your crystal ball.

Kuhn: The new normal is something that looks like 12-14 million acre-feet per year, declining with warming & increased evaporation and evapotranspiration. What gets to Lee Ferry will be diminished, despite more rain in the headwaters. We will have to adapt to that on a continuing basis.

Gingerich: Can you comment on how the Lake Powell Pipeline fits into the Upper Basin/ Lower Basin picture?

Kuhn: St. George is in the Virgin drainage, Lower Basin, which produces about 150K af/ year. It is growing like crazy, and UT wants to run a pipeline from Lake Powell – is that an Upper or Lower Basin use? Under article 8, it's a Lower Basin use. This is not the first time we've run across that. The Navajo pipeline to Gallup also has that issue. It brings up how to address Lee Ferry flows. Utah's position is that it's their Upper Basin water, and if they want to use it in the Lower Basin, they can.

1:00---West Slope Ag Localized Policy Implications

Andy Mueller, General Manager, Colorado River Water Conservation District - [slides presented](#)

Summary of Remarks

Mueller opened by noting that the Colorado River District's job is to protect and develop, and DM is reducing use: there's a conflict there. But he said the Risk Study shows real risk, and if we come closer to a violation of the compact, it will create uncertainty for future of economy on the West Slope and Colorado. Mueller said we need to be aware of what that risk is, and to create as much certainty about our water future as we can.

On the DCP, Mueller said drought operations in upstream reservoirs to preserve the power pool in Lake Powell made sense, despite some potential local impacts on the Gunnison and Green Rivers. He said DM made sense, too, in the terms the CWCB has been using: voluntary, temporary, compensated water from both slopes being put into the pool, through a guided market that protects West Slope communities.

Mueller pointed to the breakdown of users depleting the Colorado River: W Slope Ag – 1.356 million acre-feet; Front Range Ag 180.5K acre-feet, and Front Range M&I – 360.3kaf and growing. He said the Front Range is what is pushing us towards curtailment, and they are junior. Mueller said the River District didn't want a DM program where we reduce our use and W Slope economy to only enable new trans-mountain diversions. He noted that this was in the conceptual framework in the Colorado Water Plan, and is very important.

Mueller said that if the state didn't adopt a policy on DM for the DCP that said any DM program would be voluntary, temporary, compensated, equal and consistent with the conceptual framework in the CO Water Plan, the Colorado River District and Southwestern Conservation District would oppose federal legislation to authorize the DCP.

Bruce Whitehead, Executive Director, Southwest Water Conservation District - [slides presented](#)

Summary of Remarks

Bruce Whitehead said that the River District and Southwest Water Conservation District were working together on the issue of the DCP. He said he got some comfort from some of the things said by previous speakers, including:

- The distinction between compact compliance and maintaining critical reservoir elevations.
- Mention of the impacts of DM to the economy and the environment. Whitehead said that there hasn't been enough emphasis put on that, looking at secondary impacts, and we could be underestimating the costs of a voluntary program.
- Rein's reaffirmation of what it means to protect water rights in the state in regard to protection of water rights and historic flows.

Whitehead noted that rivers in his district are part of the Colorado River Basin – including the San Juan and Dolores Rivers, with most of the rivers being tributary to the San Juan (except for Dolores that flows back to the north and into the mainstem of the Colorado River). He commented that we all meet at Lake Powell.

Whitehead noted that the Southwest District has some smaller trans-mountain diversions to those in the Colorado River District territory that divert water into the headwaters of the Rio Grande in Colorado. However, the San Juan – Chama Project, which is part of the New Mexico compact entitlement exports between 90,000 and 100,000 acre-feet a year on average out of the state.

Whitehead pointed to the non-depletion clause in Colorado River compact, and noted that we are clearly in compliance. He said reservoirs were established for a reason, and we have seen drops. He said Lake Powell can still drop to around 3,430 feet in elevation before the Upper Basin would have trouble with compact compliance releases.

Whitehead noted that there has been a lot of discussion about stress levels and minimum flows and hydrology scenarios– but we should also look at average and maximum hydrology and then get to the following “what ifs” regarding possible reductions in use.

- Voluntary or Non-voluntary?
- What would be the purpose of the reductions? Being out of compliance with the Compact, or approaching critical or target elevations in Lake Powell?
- If there were a non-voluntary reduction, what would be the amount of curtailment? How deep, who, time period, with what impacts to West Slope communities and new water rights and uses?
- What would strict compact administration look like?
- What about the development of Identified Projects and Programs?

Whitehead presented hypothetical examples to illustrate possible impacts to post-compact rights of filling a hypothetical 600,000 acre-foot DM pool in one year, from 300,000 acre feet/ year over 2 years to 150,000 acre-feet/ year over 4 years. He noted that junior post-compact uses keep getting hit in each scenario, and that many major Southwest projects were developed later than in other parts of the state.

Whitehead said the Southwest District’s intra-state request was to have the DM account not subject to equalization, to keep DM voluntary, compensated, and temporary, with proportional contributions from both sides of the continental divide.

Kevin McBride, District Manager, Upper Yampa River Conservancy District (UYWCD)

Summary of Remarks

Kevin McBride began by saying this had been a good, substantive conversation so far. He recognized 3 giants in the water world: John Wesley Powell, who recognized importance of watersheds; Herbert Hoover, who said there was “plenty of water in the Colorado River for the next 50 years,” and John Fetcher, the previous UYWCD manager. McBride said Fetcher advised to “keep it simple – I know it’s not, but keep it as simple as you can.” McBride said he wondered if we were doing that in this conversation.

McBride said his district had a couple of reservoirs and a little power plant and posed the following questions:

- How do we keep our reservoirs from dropping?
- What's not to like about voluntary, compensated and temporary? He noted that people voluntarily walk the plank when something is behind pushing them and asked if mandatory curtailment is pushing us.

On the issue of DM being compensated, McBride noted that we don't want to create a situation with a lot of speculation, so this needs to be balanced. On the issue of DM being temporary, McBride contended that hydrology will determine how temporary our program will be.

McBride stated that in the Yampa Basin, they only use about 10% of their native flows. He said that in compact discussions, there was a lot of talk about each basin getting a percentage of their native flows. He said lots of people would sign up for DM, but lots of other people are saying we only use 10%, and there shouldn't be curtailment in an underdeveloped basin.

McBride said the Colorado River District doing a good job with phase III of the Risk Study. He said people want to know what it means to their community, family, headgate, and worst case scenarios are very much worth looking at. On the uncertainties involved with what compact curtailment would look like, McBride said we should figure those out, arguing that if we're going to sue each other, we should do it before a crisis.

Frank Kugel, General Manager, Upper Gunnison River Water Conservancy District - [slides presented](#)

Summary of Remarks

Frank Kugel made the point that water and drought planning are of strong interest in the Upper Gunnison District. The District has a second-fill water right in Taylor Park that could be at risk. The District was also very involved in developing the Colorado Water Plan, and is also developing a watershed management plan. Kugel pointed out that the watershed management planning portion of the CO Water Plan calls for 80% of all priority streams to have plans by 2030, in part to be prepared for future shortages due to decreasing flows and increasing populations. He said that now, with the release of the draft DCP documents, it feels like we are on a faster track, shifting gears.

Kugel said the District board met last night, with 90 min to discuss the DCP. He said the room filled up with ag users, despite it being a very busy time of year for ranchers. Kugel reviewed the fact that the DCP contemplates 3 primary steps to prop up levels in Lake Powell: 1) cloud seeding and getting rid of phreatophytes, which the District is involved in; 2) Use of Colorado River Storage Project reservoirs to move water to L Powell. On that, he asked, how will we get much water out of Blue Mesa to help Lake Powell when Blue Mesa is so low? 3) Demand Management. Kugel said that's where the District has issues and concerns from the agricultural community.

Kugel explained that Dr. Cabot was doing some research on irrigation in the Upper Gunnison, where the main crop grown is grass hay. He said that for most of the Upper Gunnison Basin, ranchers can start irrigating in April and need to keep water in root zone until they hay in July, and any interruption has a big impact on their ability to grow hay. He said the research showed that if you fallowed a field for one

year, native grasses wouldn't return for several years. He said it was hard to envision how to adequately compensate growers for 5-6 years of recovery from one year of fallowing.

Kugel said the District was definitely concerned about the DCP moving forward, and that his board has endorsed the positions of the Southwestern and River Districts and thanked state staff for traveling to discuss the issue, concluding that communication was going to be the key to making this work for West Slope and Colorado.

Steve Anderson, CWCB Board Member & Uncompahgre Valley Water Users Association (UVWUA)
General Manager

Summary of Remarks

Steve Anderson was introduced as someone who wears several hats, and he remarked that the hat he is proudest to wear is the family farmer hat. He said his farm was an orchard, and now is a row crop farm with alfalfa and beans, as well as seed potatoes and squash for specialty markets. He said he grew up on the Uncompahgre Project, his father was the manager, and his grandfather was on the board. Anderson is also a CWCB director.

Anderson said that from the view of a farmer, his rights in the lower Uncompahgre are pre-compact. However, Uncompahgre Project storage at Taylor Dam is post compact. What that means in the event of a curtailment, Anderson said he didn't know. However, the bulk of the Project's rights are held by the federal government and are tied to the land, providing some protection from buy and dry. He said DM sounds like just another plan to get our water, but based on seeing the results of the pilot projects, with cash coming into farms, he wouldn't worry about the impacts on implement dealers for first year at least, while farmers use cash to update equipment. Anderson noted that farming is a tough business, and often the only payday for a farmer is at end of their career, when they sell land and equipment.

Anderson noted that he has listened to various discussions about DM, alternative transfer methods, pilot projects and water banking. He said that there is some skepticism from farmers about what these developments mean for the long term, but they also look at it as an opportunity to receive some cash.

He noted that the Uncompahgre Valley Project is over 100 years old and well-maintained, but there are still lots of infrastructure needs for maintenance and modernization. He said moneys to reduce salt and selenium levels in the river have funded the piping of 100 miles of canals and laterals. He noted that the cash from a DM program could provide a lot of benefits for the project. He said that concerns include uncertainty about how such a program would be administered, and getting consensus of shareholders could be difficult. He added that if we receive 80% of normal snowpack, UVWUA water users will be ok, but they won't be able to farm all acres on the Project if we get another winter like last year's.

Anderson noted that the Project has several levees on the canals, and maintains them constantly; fixing them will require millions of dollars. Within the foreseeable future, if we were to interrupt power at Powell, it would definitely put the Project in a bind due to the loss of funding for operations and maintenance.

Anderson continued that, speaking from a Director's point of view on CWCB, the DCP is a huge win. He said that getting the Lower Basin to finally recognize the structural deficit is a huge win, and CA stepping

up is another one. He also commented that, although it is a small player in Lower Basin, Nevada is a leader and we owe them thanks for helping make the Lower Basin DCP come together.

Anderson said that for the Upper Basin, a huge win is that we get DM storage for free. He emphasized the importance of maintaining the minimum power pool level at Lake Powell, and said DM could be a second line of defense. He said it was up to stakeholders to develop the DM program, and in Colorado, the basin roundtables can and should drive this policy.

Anderson pointed out that one of the biggest issues with DM is funding. He said that if you look at the experience in the Grand Valley, if you scale up to 500,000 acre-feet, you are talking about something like 100 million dollars. He noted that UVWUA diverts 500-600,000 acre-feet/ year, with consumptive use of 200k acre-feet/ year.

Anderson said he agreed with Bruce Whitehead's concern about economic and social aspects of demand management, and also agreed with the Southwest and Colorado River District position papers, stating that DM must be equitable across regions of the state. He also commented that shepherding must happen.

Anderson pointed out that with the DCP, one of the things that would no longer be a stumbling block for discussions of alternative transfer methods is that we would finally have a bank and be able to move on to other considerations.

Anderson said that the CWCB's policy on DM will state that it will be voluntary, compensated and temporary. He said he believed the policy would allay concerns that have been heard.

Anderson said his own concerns are that the DCP is not enough, and if we got into an involuntary curtailment being necessary, West Slope ag would still have target on it. He said that "Day 0" in metro CA, or metro CO will not happen. They will have water to fight fire with.

Anderson said that he appreciated the efforts of everyone involved in drawing up DCP, was thankful for CO leadership, and gave credit to James Eklund and all CWCB and Attorney General staff for helping. He concluded that we need to support the federal legislation, because it will be well worth it.

2:30---Facilitated Discussion

Gingerich: What risks does your organization see from DCP & DM that are local to your river basin?

Whitehead: One of the concerns we touched on is that if DM is limited to voluntary, compensated & temporary measures, all those terms need to be defined for a demand management program. Establishing a pool through federal legislation is good, however, proposed constraints or sideboards on how to fill that pool, even if they are adopted by the CWCB, are only there until 2026. The establishment of a pool or account is perpetual, which could be a concern. Hydrology is determining the need for insurance in the upper basin. Another possible concern is that the pool could potentially expand the State Engineer's existing authority regarding compact administration.

Mueller: I want to echo Bruce's comments. Our biggest concern is that hydrology will stay horrendous. If it does, even with a few wet years, how do we as a community protect our quality of life? We're talking about DM today, but we need to understand that if the predicted hydrology occurs, we're going

to have to work together to be really creative about how to use water to keep communities viable. More conversations like this will be necessary to avoid an awful fight.

McBride: In the Yampa, we're not sure what to be afraid of. We're experiencing our first call. We have very little storage; people aren't used to being bailed out by reservoirs. We're in a different situation than those with big reservoir help. People want to know more about what it means for them. Not one of our agricultural users has ever come to me asking about DCP. Our only DM project is in the hands of speculators. People want to stay productive.

Anderson: The one thing I can say that would help us with the plight we're looking at is the storage word. To be able to store more moisture for those dry years would be significant. I would go further and echo the comments of Alan Michelson at CO Water Congress, when he stated that you won't be able to conserve your way out of this, it will require additional storage.

Kugel: Our basin is concerned about the ability to shepherd water downstream with all the headgates.

Gingerich: are there any opportunities for West Slope river basins with DCP, with DM?

Whitehead: Yes, as water managers, we need to be looking down the road, we can't always anticipate what the future hydrology will be like. In southwest Colorado, we pulled down all of our storage this past year due to the limited runoff. We have an obligation to look at and plan for various scenarios, and DCP is a good thing to consider if done right. Inter and intra-state issues are connected and should move together. There are clear opportunities with DM. Meeting critical elevations is an important goal, but it is different than compact compliance. DCP and DM could help the system and water users, if done with sideboards that includes protection of water rights against injury.

Mueller: Opportunities at the local level from DM include infusions of cash into family farms to improve infrastructure to make it more efficient and user-friendly. There's a lot of opportunity to help modernize with DM money. Good things have been done with salt and selenium money.

Recognition and ownership of the structural deficit in the Lower Basin is important. Our DM won't do anything if they don't do theirs. There's lots more to do. Only at the lowest Mead levels do they conserve enough to meet the structural deficit. We need them to do that every year.

McBride: I drove down River Road along the river, then last night stayed at a hotel right on the Highline Canal. We kind of know the range, what we're playing with, but we don't really know... We're trying to create a situation with enough chips on the table to not go bankrupt. If we do that, it will be the first time I've seen people buck the hydrologic cycle and do something before a crisis.

Anderson: I worry – I have seen some ownership transfers on the West Slope that could be suspect, one thing that needs to be brought to light in DM is to make sure that it doesn't end up in wrong hands.

Kugel: It is alarming to look at numbers showing how fast Powell can drop. In the last year, Powell dropped 36 feet, we're there in 2 years if things don't change with hydrology or demand. I'm encouraged by what's happening with planning efforts and people's interest. They give me optimism that we'll be able to deal with the shortage heading our way.

Whitehead: The equitable contributions sideboard between the east slope and west slope request is also related to speculation, so the West Slope isn't the only place for water to come from.

Gingerich: Where do you see a market-based solution fitting in, or do you?

Mueller: If we are able, if DM moves forward, the Colorado River District and Southwest District are asking for a guided market, not a free market, with sideboards or protections. "Temporary" means for us limits on the percentage of any one operation's following and the number of years a ranch or farm can participate. We need to make it work for a locally-owned family farm, but not be so lucrative that it attracts outside money that's investing for a return. Not hedge funds. This is critically important.

Gingerich: Can we make it better in the future?

Many: Yes.

Whitehead: It depends. There are opportunities. I hope hydrology improves, and we are off to a better start this year. A good stress hydrology would be driving over Red Mountain in a snowstorm on the way home.

Anderson: Yes. I think it's going to happen. What we do with it depends on you to a great extent, making your voices heard through the roundtables and Inter-basin Compact Committee.

McBride: It will depend on hydrology. It's not all doom and gloom, we can make it better.

Audience question: We've heard many times "voluntary, temporary, compensated" – also uncertain hydrology. Where's compensation supposed to come from?

Mueller: There's an effort now to fund the CO Water Plan, a discussion statewide about how to do it, and we're likely to see a ballot or legislative push to get that funded. That's a partial source for that money. We also need to look to the entire basin. A large part of what's driving the problem is historic over-use in Lower Basin. Once water is in Powell, it's not coming back up, it will all go downstream, and they benefit just as much as we do from avoiding a call, with litigation and chaos. There's also conversation with federal representatives about federal funding. I would expect to see a range of sources. There's also a world of non-governmental organizations, which makes many of us uncomfortable, but can also bring some of that money. There is uncertainty and lots of work to do.

Audience question: how much has Powell storage been degraded by sedimentation?

Kuhn: A small percentage of a 25 million acre-foot reservoir, about 500,000 acre-feet.

Audience question: I'll bring up the elephant in the room. From this morning's panel, it seems like the likelihood of having an active DM program is 4-5 years away. What I'm understanding from

hydrology, with each additional year below average, risk of critical levels goes way up. As that risk goes up, the risk of Front Range junior water users being affected goes up, and then the pressure pendulums back over on the West Slope. Is that right?

Kuhn: You are reading it right. If you take the 2011 water year out of the equation, the system goes into chaos.

Audience question: Most of the water rights [on the Western Slope] are pre-compact, so the compact wouldn't affect the water rights, so I don't think that's correct.

Kuhn: CO uses 2.1 million acre-feet/ year, half pre & half post-compact. Most critical uses are post-compact. Green Mountain Reservoir is post-compact. In dry years like this one, you wouldn't have had water in the river without Green Mountain Reservoir storage.

Mueller: As we get closer to curtailment, responsible municipal managers, on either side of the hill, will look for ways to secure their water, and where they will look is West Slope agriculture. Cities can use eminent domain. Federal project water may be somewhat protected. The Secretary of the Interior won't allow Fire hydrants to go dry while ag uses continue at current levels. So we can't really be isolated.

Whitehead: Pre-compact water rights wouldn't be subject to curtailment, but many major storage projects we rely on are post compact rights.

Newman: The big question about a curtailment is uncertainty. That's why we're trying to avoid it.

Audience question: what is strict administration, and why do we not do it more now as a helpful measure?

Whitehead: We are only supportive of voluntary, compensated, temporary DM. If we get into an actual compact violation in the future, we're not trying to take any existing authority away from the State Engineer to curtail uses.

Audience comment/ question: We need to bring this discussion down to end water users. This has been high level. How do individuals make decisions? End water users have to make some decisions.

Rein: For the DCP planning portion, pre-compact, end water user, I hope they wouldn't see any impact. If we get to curtailment, then we are going through prior appropriation. If I found out today that our agency would have to administer tomorrow, we would go through the priority system.

McBride: On the Yampa, speaking to the uncertainty and potential for litigation – the court recognized that the postponement doctrine does not apply in distinct basins. Nobody in the Colorado will call out someone in the Yampa. Strict administration is complicated.

Mueller: We need our water users on West Slope to have the information to say "I'm at risk" or not, based on the seniority of their water rights. That's why we're doing Phase III of the Risk Study. A

number of the questions we are asking and modeling are how deep those cuts could be in each of the different sub-basins under different scenarios. Under this curtailment scenario, my water might be cut off – what does that mean for me and my economic future?

Rein: More detail – when it comes to compact curtailment, well-contemplated rule-making is really the way to go. If the situation comes on fast, it's different.

Audience comment/ question: We still have some time to develop this voluntary, compensated, temporary program. We need a more iterative process. In my community, end water users have been more concerned than we've given them credit for, we need their ideas as a state to make a voluntary, temporary, compensated program work. We have some sophisticated water users that could have good input. How do you want to think harder about how to get that feedback to make program better?

Newman: We do need to get people out, and get beyond the regular community. It's on all of us.

McBride: We need someone at Water Education Colorado from 4-H. At the Upper Yampa, they put a person to do education in their budget.

Whitehead: Do we have time to work on DM? I think we do. It is a contingency plan, in case we need it, no one is ready to move forward on DM until we answer difficult questions in all the states. There's also some urgency based on current hydrology, and that's why the conversation will continue.

Audience question: Can we do more projects higher in the basin? And why is shepherding so hard on West Slope when they do it on the East Slope?

Ostdiek: There has been the SCPP for 4 years, and there have been some projects upstream. That might be worth looking at.

Mueller: Part of our push to make sure water is equitably distributed, including trans-mountain diversions, is that when those uses are contributing, water will be coming from the headwaters. We need to recognize the technical nature of DM, the way you can measure, the way you can follow – there can be long-term damage in some situations. How do we generate water equitably from different parts of the basin? A primary concern is not putting any of our agriculture permanently out of business, and some might not be able to do rotational fallowing.

Whitehead: I assume the question is more related to environmental benefits of temporary reductions of use. There are also lots of environmental benefits associated with historic irrigation practices, and there could be negative impacts if those historic practices are changed.

Rein: On shepherding, we do it regularly on the West Slope – there's a weekly call on the Colorado River – but shepherding to the state line requires a special kind of water right. There's a question about if we have that in CO. Then, once it is at the state line, there's the question of how to get it to Powell.

3:00---Meeting Adjourned