

From your perspective as a community leader in Northern Colorado, what is your key takeaway from today's session?

- One of my key takeaways from this month's session was the discussion regarding waterfowl and where they migrate to and what efforts are being made to preserve their habitat around the state of Colorado.
- I enjoyed Ben Costello's presentation about the whitewater rafting industry on the canyon stretch of the Poudre River, however, I do not think he adequately represented the importance of flows for recreation on the lower and in-town stretches of the Poudre River. Protecting flows for the new Fort Collins Whitewater Park will have a direct economic benefit to the downtown businesses. It will be important to maintain summer flows that are higher than the current environmental baselines in order to realize the potential that the park has for the community. It was also very interesting to hear how the water for recreation up in the canyon is so closely tied to the agricultural water needs downstream! It was really interesting to learn about the Leprino process for making cheese. Super interesting to manufacture a product where additional water is created for the system! It makes me wonder about complementary industries, like complementary crops that benefit from growing next to each other. Perhaps there is another industry that could also function off the water that is being extracted from the milk-to-cheese process, where together they reduce their overall water use impacts.
- This month's perspectives were very informative, and I am really glad that they are incorporated into this program. There are so many legitimate and necessary uses of water. It makes you realize there are many pieces to the puzzle and so many opportunities for win/win situations. Nearly all the business and industries are working hard to find ways to be more efficient and creative with their water use, so that is good to see. However, we can't forget that there are sometimes also unintended consequences to efficiency (for example the loss of wetlands or reduced return flows for downstream users), so we need to be cognizant of that, and also be willing to find creative ways to still support those needs.
- My key takeaway from this session is the critical role of water availability and quality for maintaining our recreation, business, and industry infrastructure. Recreation is a core value that many Coloradans share, and outdoor pursuits are important for a decent quality of life. Healthy rivers, streams, watersheds, and ecosystems are necessary to protect and preserve this core value and our natural resources. Many businesses and industries need water, a scarce and at-risk resource, for their production operations, and it is in their interest to have a triple bottom line business model – profit, sustainability, and community. The Windsor Open Lands and Trails Program is a great example of public-private collaboration in response to the top community priorities for investments in recreational facilities and river health. The Ducks Unlimited wetlands restoration projects are effective management practices that help protect and preserve waterfowl habitat while recharging aquifers, augmenting river flow, helping water supplies and quality, grasslands, and farmers

and ranchers. New Belgium's water-beer presentation highlighted their longstanding sustainability work – taking into serious consideration the impacts of climate change (climate moisture index) and reducing the industry's water life cycle footprint. The oil and gas and Leprino Foods presentations were also very instructive – learned about water management team – water on demand and recycling efforts that Occidental Petroleum undertakes – learned about the “Developed Water” Doctrine, CRS 37-82-10 and Leprino's efforts to use water efficiently.

- I was pretty aware of the volume of water it took to make beer and figured it was more of a pass-through process with return to the system, however, I was surprised how much water is returned from the cheese making process and efforts to reuse it. I knew groundwater was being affected due to the move to pivots vs flood irrigation but did not think about the loss of wetlands which was reported to be 26-51%.
- The recreation perspective of cities along the Poudre, tied in with business use of water, was one of the most informative sessions to date on collaborative efforts for water health. I thought Wade's presentation on the Poudre Trail corridor design and goal to increase right-of-ways for better management of wetlands, and relieve landowner's flooding concerns shows a "win/win" approach to river corridors. Greg Kernohan's talk of restoring and creating wetlands, based on historic data of previous locations, creates a map for increasing river flows and pathways to minimize flooding during spring runoff. The science of Ducks Unlimited's goal of increased wetlands, was very helpful in understanding the health of river flow and path.
- My key takeaway from this session stems from Gov. Ritter's plea to “not let the perfect be the enemy of the good.” That saying is borne out again and again with water issues. It's too easy to take a dogmatic position and then to stubbornly insist that all who don't agree with you are evil and wrong. He's right, we should let science be the basis of our approach to controversial issues like fracking and hydropower. Just because someone identifies as a staunch environmentalist doesn't mean that all hydropower and water storage projects are harmful and must be stopped. There's room for reasonable people to have their own opinions, but to respect the power of facts instead of propaganda.
- The importance of all the businesses/organizations is that we underestimate what part all take in society. I believe most of the time we think of water being “used” by municipalities, agriculture, and high water usage businesses. In reality, the concept is more how water is utilized not by those just mentioned but for recreation, recharging and environmental strategies (Ducks Unlimited), as well as our need for energy. It appears we place a greater emphasis on our “pet” issues and less priority on those we deem as not as important or at times “detrimental”. The reality is all are stakeholders in the utilization of our water. Creating the balance for the supply and demand curve of water becomes even more challenging to be able to sustain these existing interests and to some degree, those that we may not be aware of that provide some benefit.

- My key takeaway from March's session is how important collaboration is in dealing with the delicate balance of water issues so heavily impacted by our rapidly growing Front Range, without killing our rivers and our agriculture. We can't do our planning in silos! We need to collaborate on so many fronts: encouraging water education, sharing ideas of what everyone is doing to reuse water since that is huge in managing scarcity! Water and rivers are the lifeblood of our recreation and local businesses.
- My key takeaway was innovation. Gov. Ritter said the prior appropriations doctrine needs to change because it's not efficient. (That's probably more akin to revolution than innovation.) Leprino, New Belgium, and Occidental Petroleum are innovating in impressive ways to conserve water. Then, on the flip side, Greg Kernohan with Ducks Unlimited shared with us the unintended consequences of agriculture conserving water with sprinklers - we're losing wetlands due to a decrease in return flows.
- This past WLL session was very pertinent for a number of reasons and has underscored some major themes from the various speakers in past sessions. Plus we had beer, so it was a pretty good day. First, it was great to hear from my colleague Wade Willis from the Town of Windsor. For their relative size of community and staff, they are fighting way above their weight class in the significance of projects they can move forward on, and it's great to be their partner in conservation. Greg Kernohan's presentation was pertinent in two respects. First, I have been in discussions with Greg, DU, and others on potential partnerships with wetland mitigation banking opportunities in the lower portion of the Poudre watershed that both provide wetland credit potential for City of Greeley and commercial development projects, but also provide habitat creation and protection/restoration of degraded wetland complexes on Greeley Natural Areas sites. But the big takeaway from Greg's talk was the continuing discussion about water quality issues in the watershed, especially the lower watershed as the river passes through Greeley. Between water quality issues from stormwater runoff, water treatment plant effluent, and agricultural tailwater, there are significant water quality issues that downstream communities such as Windsor and Greeley will be dealing with long-term. In addition, sediment transport (or the lack thereof) is another downstream issue for the lower watershed communities, especially as NISP and other storage projects come online. We will all need to work together in the region to provide sustainable solutions to these new and evolving challenges. The more we can think of the Poudre River as "our river", not just "our stretch", the more and better solutions can come from this collaboration. I appreciated the New Belgium, Occidental, and Leprino presentations as it gave a comprehensive perspective of water use from a variety of different businesses. Finally, Gov. Ritter's discussion was a great glimpse into the nexus between water/politics/east vs west slope, etc. I thought his opinion on changing the prior appropriation doctrine was a very interesting one, and not without logic. That said, I can't imagine we'll see much movement on that front until we face a major water crisis and are forced to look at this issue head-on.

- The Poudre Trail is yet another illustration of the value and necessity of collaboration in managing a river. It also is proving that giving citizens easy access to the river increases their support for maintaining a healthy river. Rafting on the Poudre is a significant business and it would benefit from the communication of water releases from river water managers to the rafting companies. I was disappointed to learn that improving the efficiency of agricultural water use, which can keep more water in the river, has the downside of reducing the wetlands that waterfowl need. I was very impressed by Leprino Foods' programs to process the water extracted from making cheese from milk into "developed water" for return to the river, to convert organic waste into energy by anaerobic digestion, and to recover heat from wastewater.
- My key takeaway from today's session is that business partners are doing some very innovative things to reuse and recycle the water that they use. I was especially enthused about the new projects that Leprino Cheese accomplished. We need to see the business sector as strong collaborative partners who want to protect our water and realize the need for better water management. I see that building rapport, relationships, trust, and partnerships going forward in going to be key. We need all stakeholders at this water table going forward.

What questions do you have based on what you heard from today's speakers and group discussion?

- A question that I have based on what was discussed by one of our speakers this month was why do waterfowl like the San Luis Valley when there is very little water there? The speaker said that historically there was a lot of water in the San Luis Valley but it's pretty arid there now so why do waterfowl migrate there in very large numbers when the water there is a very scarce resource.
- The Colorado Water Plan states they need \$100M a year for the next 30 years, but the Colorado General Fund only grants \$10M a year. I know that Prop DD will bring in a fluctuating amount each year, and several larger Foundations also make contributions, however, if we already know there is a funding gap, how will the actions identified in the Plan be prioritized?; We hear a lot about the needs for the Poudre to be a "Healthy Working River." It would be good to hear more about how the Poudre Runs Through It Working Group operates to define that for our watershed. Who is in that group? And what do they work on?
- I would like to know more about the following topics: energy and water consortium, recharging aquifers for large scale water storage, and the climate moisture index.
- It would be nice to get more information on wastewater heat recovery.
- As the goals of businesses shift to become more productive and partners in water conservation, how can forward looking agreements be drafted to increase the reuse and quality of water discharge back to rivers and city sewer systems? Does the creation of "new water", e.g., Leprino Foods, provide cities with increased supply, or will judication of these waters require returning to river flows for augmentation demands?

- I'm curious about how new storage projects may help preserve healthy late-summer river flows and the rafting season.; I'd like to know more about how to encourage aquifer recharge projects and wetlands preservation through collaborative projects like the ones that Ducks Unlimited is undertaking.; I'd like to know more about the concept of "developed water" and how we can take advantage of more sources of it to help with water shortage issues.; What are the next steps toward adopting a more modern and sensible water doctrine to replace prior appropriation and the "use it or lose it" approach?; What is the "Public Trust Doctrine," and how might it be adopted as a powerful approach to water policy?; How can we encourage more shared use methods that result in powerful collaborations between urban and agricultural interests?
- Where would you trade your water usage/utilization to another one of these users (or others) in an exchange that will benefit both parties? An example is Greg Kernohan from Ducks Unlimited, that organization would certify grassland carbon offset trading. In essence, how can more collaboration be accomplished?
- I understand that Ag's more efficient use of water by switching to sprinklers means that there are fewer return flows, but isn't it better to more efficiently use water and not waste as much, even though that water will eventually return to the river?
- I'm wondering if we got the whole picture on groundwater contamination with fracking. It seems like there is more to that story.
- Since Gov. Ritter courageously stated that the doctrines of prior appropriation and "use it or lose it" are inefficient ways to manage water scarcity, I would like to learn about the alternatives and how Colorado could possibly transition to a better doctrine of water allocation.
- I am curious to learn about other innovative things that industry and the business sector are doing in our region and around the world in regard to water use, storage, reuse, and recycling.

What did you learn today that encouraged you, discouraged you, or captured your attention to the extent that you could see yourself engaging in it further?

- I'd like to know or engage more regarding Alternate Transfer Methods on the New Cache based on return flows mandated back to the Poudre. This was briefly mentioned, but the ATM's are a highly fascinating topic.
- It is encouraging to see more communities take ownership and care of the stretches of river that run through their towns. Especially as our population increases and living environments become denser, having a place to connect with nature will be more and more vital. The connection of the Poudre River bike trail is exciting to hear about. The NB Family Foundation will continue to prioritize funding for collaborative organizations that help restore and protect our urban rivers. If we provide examples of how our waterways should be cared for, then future generations will learn a new standard for stewardship too. I would recommend folks go down to the stretch of South Platte River running through Downtown Denver. The Greenway Foundation

has done an incredible job revitalizing the urban river and bringing nature and experience in the heart of a city. I believe our Poudre River has the same potential here. The conversation with Bill Ritter certainly drove home the importance of collaboration around water supply. It was slightly scary to hear him say that the Upper Basin is in the weaker legal position if there is litigation over the Colorado River Compact. I have heard from others that the current Colorado Governor is not prioritizing water needs in the state. Maybe Polis needs to be in next year's Water Literate Leaders class? Even Ritter mentioned that Polis is less informed about water policy. It is human nature to avoid the subjects you know less about. Perhaps if we can get him some additional education on the state's water challenges beyond water quality then he will be better prepared if the Front Range and state of Colorado need to defend their water allocation with the Lower Basin.

- One of the points that came through that I haven't thought about before was the impacts to recreation on the river. I have always considered and known that the natural river conditions would have an impact on rafting on the river (flows based on seasons and storms), but I hadn't thought about it from the perspective of releases from upstream reservoirs, or agriculture irrigation needs. These are things that are sometimes known ahead of time, and while those river operations still need to occur, if the information could be relayed ahead of time (when known), I now realize that it would make a big difference and help out the recreation businesses. This is something that I intend to follow-up on and engage in further.
- Invariably, I am encouraged by the level of public-private collaboration and the many examples of best practices to conserve and use wisely our most precious resource in Colorado – good, clean water. Frankly, it is quite amazing, and I wish we could do a better job of informing the public about what is working well and what practices we need to scale up. I remain discouraged that not enough serious attention is being given to land and water use – integrating these two fundamental areas to guide more sustainable growth patterns. There are various water storage and conveyance projects that will require informed and inclusive decision-making.
- It was encouraging to see that large water users were taking measures to be water-wise. I thought a couple of the uses were pretty creative.
- It was inspiring to learn of all the science, programs, and collaboration-of sometimes divergent groups-that can have beneficial outcomes and create higher quality watersheds for all stakeholders.
- I was encouraged by the innovative ways that major industries are finding to help mitigate their water impacts like the prospect that the cheese industry could eliminate the use of raw water by relying on developed water from the cheese-making process. I was discouraged by the growing number of buy and dry cases when there are attractive alternatives emerging from collaboration and shared use from effective Alternative Transfer Methods. I'm also discouraged that there isn't more discussion and effort being poured into moving away from outdated use-it or lose-it doctrines. I look forward to engaging further in better understanding

prospective aquifer recharge and wetlands preservation projects. I'd like to encourage more discussion and awareness about the "water footprint" that all sectors of the economy have. I'd love to know more about the concept of "developed water" and other ways we can take advantage of it. I also look forward to engaging further in the prospects for adopting a Public Trust doctrine to replace the worn-out use-it or lose-it approaches that are not serving us well.

- What is encouraging, is how these presenters and their organizations appear to anticipate for the long term, not just the immediate future. How can they contribute to conservation and hence, a reduction in demand and provide for their own sustainability?
- One of the things I learned that encouraged me, discouraged me or captured my attention was how wetlands serve as a wonderful nature filter/bio-reactor...just fascinating! I also wonder whether the government needs to provide tax incentives for Coloradoans to use artificial turf to curtail the inordinately high water usage for lawns. I also wondered whether, in these trying times for oil companies, those companies that have water on demand systems could sell this water to the municipalities since the oil companies obviously won't need frac water, considering the uneconomic price of drilling for oil. I also think it would be a wonderful public service to do a WLL type class for the energy industry!
- I've never been rafting on the Poudre. I want to do that!
- Regarding climate change, Fort Collins is at the boundary between where climate models predict increased or decreased precipitation, but precipitation may be in more intense events in a more energetic atmosphere. This means that we need more storage to assure supply while stormwater systems and bridges need to be strengthened. I strongly agree with Gov. Ritter that new developments need to demonstrate that they will have adequate water supplies well into the future before they can commence and I was encouraged by his efforts to train political leaders and to moderate their negotiations on water and energy policy.
- I still have concerns and questions about certain sectors who are using Colorado water that may not be able to be reused or recycled due to the forever and unknown chemicals added to the water. I am uncertain we are getting the whole story or picture. I am encouraged by other businesses like New Belgium who look to be a leader locally and globally in regards to water conversation, use, and policy.